

**Date and Time:** Monday 9 September 2024 18:01:00 CEST

**Job Number:** 233037991

**Documents (100)**

1. [*We've almost stopped killing each other. Now let's spare the planet The astonishing drop in violence between human beings needs to be matched by an end to violence against the natural world*](https://advance.lexis.com/api/document?id=urn:contentItem:5HMC-3DD1-F021-62P4-00000-00&idtype=PID&context=1516831)

**Client/Matter:** -None-

**Search Terms:** emission and energy or emission and reduction or emission and targets or emission and greenhouse gas or energy and reductions or energy and targets or energy and greenhouse gas or reductions and targets or reductions and greenhouse gas or targets and greenhouse gas

**Search Type:** Terms and Connectors

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| **Content Type** | **Narrowed by** |
| News | Timeline: 20 jul 2015 tot 20 jul 2016; Locatie: International; Plaats van publicatie: Europe; Taal: English |

2. [*Is this the most eco-friendly farm in Yorkshire?*](https://advance.lexis.com/api/document?id=urn:contentItem:5JV8-SMY1-F15H-C134-00000-00&idtype=PID&context=1516831)

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3. [*If we can stop killing each other, we can do the same for the planet Human peace and prosperity do not depend upon ecological violence, yet we are behaving as if they did*](https://advance.lexis.com/api/document?id=urn:contentItem:5HM5-49R1-JCJY-G0H7-00000-00&idtype=PID&context=1516831)

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4. [*We've almost stopped killing each other. Now let's spare the planet The astonishing drop in violence between human beings needs to be matched by an end to violence against the natural world*](https://advance.lexis.com/api/document?id=urn:contentItem:5HM5-H341-JCJY-G1RX-00000-00&idtype=PID&context=1516831)

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5. [*We've almost stopped killing each other. Now let's spare the planet The astonishing drop in violence between human beings needs to be matched by an end to violence against the natural world*](https://advance.lexis.com/api/document?id=urn:contentItem:5HM5-49R1-JCJY-G0H8-00000-00&idtype=PID&context=1516831)

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6. [*We've almost stopped killing each other. Now let's spare the planet The astonishing drop in violence between human beings needs to be matched by an end to violence against the natural world*](https://advance.lexis.com/api/document?id=urn:contentItem:5HMB-XSV1-F021-622S-00000-00&idtype=PID&context=1516831)

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7. [*Setting the EU agenda: The next six months*](https://advance.lexis.com/api/document?id=urn:contentItem:5H1H-P9X1-F03R-N52X-00000-00&idtype=PID&context=1516831)

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8. [*Abandon hype in climate models The economic models that are used to inform climate policy currently contain an unhealthy dose of wishful thinking. Technologies that remove carbon dioxide from the air are assumed in the models that avoid dangerous climate change - but such technologies do not yet exist and it is unclear whether they could be deployed at a meaningful scale.*](https://advance.lexis.com/api/document?id=urn:contentItem:5JMG-3D91-F021-61G7-00000-00&idtype=PID&context=1516831)

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9. [*From Tesla , a new car that vegans can get behind Synthetic leather offered in further effort to keep pro-environment image*](https://advance.lexis.com/api/document?id=urn:contentItem:5HVN-T1Y1-JC85-N2F9-00000-00&idtype=PID&context=1516831)

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10. [*Operation & maintenance - The road to climate resilience.*](https://advance.lexis.com/api/document?id=urn:contentItem:5JSY-HXK1-JD7R-X0MJ-00000-00&idtype=PID&context=1516831)

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11. [*Abandon hype in climate models The economic models that are used to inform climate policy currently contain an unhealthy dose of wishful thinking. Technologies that remove carbon dioxide from the air are assumed in the models that avoid dangerous climate change - but such technologies do not yet exist and it is unclear whether they could be deployed at a meaningful scale.*](https://advance.lexis.com/api/document?id=urn:contentItem:5JMG-DSD1-F021-6138-00000-00&idtype=PID&context=1516831)

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12. [*A new car that a vegan could love Tesla seeks to burnish its eco-friendly reputation with sustainable interiors*](https://advance.lexis.com/api/document?id=urn:contentItem:5HVS-BVX1-JC85-N33J-00000-00&idtype=PID&context=1516831)

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13. [*LONDON BRIEFING: Premier Inn And Holiday Inn Owners Lead Risers*](https://advance.lexis.com/api/document?id=urn:contentItem:5H65-2WX1-DYYF-M0JM-00000-00&idtype=PID&context=1516831)

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14. [*General Mills Outlines Emissions Plans*](https://advance.lexis.com/api/document?id=urn:contentItem:5GV4-0501-JD33-J01N-00000-00&idtype=PID&context=1516831)

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15. [*Aviation biofuel industry expanding in US*](https://advance.lexis.com/api/document?id=urn:contentItem:5HMY-27F1-JCN4-H0GF-00000-00&idtype=PID&context=1516831)

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16. [*When is enough taxpayer aid enough?*](https://advance.lexis.com/api/document?id=urn:contentItem:5JSX-NGW1-DY9P-N535-00000-00&idtype=PID&context=1516831)

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17. [*Global climate march 2015: hundreds of thousands march around the world - as it happened Thousands take to streets ahead of Paris climate summit Sydney to Seattle , via Hong Kong , Berlin, London and Sao Paulo, march on SundayClimate change protests take place across Australia Keep it in the ground: the Guardian's climate change campaignInteractive: why we are joining the global climate march*](https://advance.lexis.com/api/document?id=urn:contentItem:5HH4-HVR1-JCJY-G4YD-00000-00&idtype=PID&context=1516831)

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18. [*Climate change action at the local level – Challenges ahead*](https://advance.lexis.com/api/document?id=urn:contentItem:5H85-01R1-F11P-X1KH-00000-00&idtype=PID&context=1516831)

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19. [*China's challenge "" the pursuit of ecological civilisation*](https://advance.lexis.com/api/document?id=urn:contentItem:5HNC-67H1-JD1P-T4D8-00000-00&idtype=PID&context=1516831)

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20. [*Food security*](https://advance.lexis.com/api/document?id=urn:contentItem:5H3F-9T11-JCJY-G14V-00000-00&idtype=PID&context=1516831)

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21. [*A global coalition mapping and motivating decarbonization A coalition of governments, oil companies, and other key parties works for climate action and carbon pricing*](https://advance.lexis.com/api/document?id=urn:contentItem:5JM8-4771-JCJY-G312-00000-00&idtype=PID&context=1516831)

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22. [*Xxalcohol's Jet thrust Xxx The recent approval of one synthetic alternative to kerosene may have opened a path to cost-effective, large-scale production of low-carbon aviation fuel*](https://advance.lexis.com/api/document?id=urn:contentItem:5JX3-G071-DYX4-71XC-00000-00&idtype=PID&context=1516831)

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23. [*Five Key Themes For Europe Agribusiness*](https://advance.lexis.com/api/document?id=urn:contentItem:5HX0-2B91-JD33-J25T-00000-00&idtype=PID&context=1516831)

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24. [*Mekong Hydropower Development: Potential To Spark Conflict*](https://advance.lexis.com/api/document?id=urn:contentItem:5JF4-33H1-F0J5-80Y4-00000-00&idtype=PID&context=1516831)

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25. [*Mekong Hydropower Development: Potential To Spark Conflict*](https://advance.lexis.com/api/document?id=urn:contentItem:5J74-Y4R1-F0J5-80YS-00000-00&idtype=PID&context=1516831)

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26. [*Letters to the editor*](https://advance.lexis.com/api/document?id=urn:contentItem:5HX0-W581-F0JC-M3N4-00000-00&idtype=PID&context=1516831)

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27. [*Avoiding the tragedy of the horizon*](https://advance.lexis.com/api/document?id=urn:contentItem:5HNC-67H1-JD1P-T4DC-00000-00&idtype=PID&context=1516831)

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28. [*Here are the Environmental Protection Agency's figures for emissions from different sectors in Ireland*](https://advance.lexis.com/api/document?id=urn:contentItem:5HM8-8K51-JCW9-225T-00000-00&idtype=PID&context=1516831)

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29. [*CLIMATE CHANGE PLANS GO AHEAD*](https://advance.lexis.com/api/document?id=urn:contentItem:5K5C-7J51-JBVM-Y4JR-00000-00&idtype=PID&context=1516831)

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30. [*Putin writes article ahead of APEC summit in Philippines - text*](https://advance.lexis.com/api/document?id=urn:contentItem:5HD5-6WD1-DYRV-33B4-00000-00&idtype=PID&context=1516831)

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31. [*APEC: Towards open and equal cooperation in the interests of development*](https://advance.lexis.com/api/document?id=urn:contentItem:5HD6-7M81-F19S-J26P-00000-00&idtype=PID&context=1516831)

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32. [*IN OR OUT*](https://advance.lexis.com/api/document?id=urn:contentItem:5JNY-91Y1-DY9P-N0S2-00000-00&idtype=PID&context=1516831)

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33. [*A boon for soil, and for the environment Carbon farming seeks to lift food production and promote cleaner air*](https://advance.lexis.com/api/document?id=urn:contentItem:5JT0-KRX1-DYR7-C4F1-00000-00&idtype=PID&context=1516831)

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34. [*Corporate strategy - Company Profile - Pannonia finds a Hungarian home*](https://advance.lexis.com/api/document?id=urn:contentItem:5HKP-C5D1-F11C-80GP-00000-00&idtype=PID&context=1516831)

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35. [*FAIRR's Alan Briefel: time to face up to factory farming*](https://advance.lexis.com/api/document?id=urn:contentItem:5J0C-M2X1-F0CX-90S0-00000-00&idtype=PID&context=1516831)

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36. [*- Unilever : There is no business case for enduring poverty*](https://advance.lexis.com/api/document?id=urn:contentItem:5H07-9J71-JD3Y-Y1NF-00000-00&idtype=PID&context=1516831)

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37. [*Global Roof Insulation Market Growth Steady at 4.3% CAGR to 2021 Led by Rigid Insulation Segment*](https://advance.lexis.com/api/document?id=urn:contentItem:5K6V-1F71-DXP3-R4CW-00000-00&idtype=PID&context=1516831)

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38. [*ERRATUM: Implementation of INDCs another red line Africa will not cross in COP 21 negotiations, according to AMCEN Chair*](https://advance.lexis.com/api/document?id=urn:contentItem:5HK2-5Y71-JD3Y-Y20S-00000-00&idtype=PID&context=1516831)

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39. [*ERRATUM: Implementation of INDCs another red line Africa will not cross in COP 21 negotiations, according to AMCEN Chair*](https://advance.lexis.com/api/document?id=urn:contentItem:5HK2-5Y71-JD3Y-Y2DN-00000-00&idtype=PID&context=1516831)

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40. [*The global waste dilemma: where does our food go?*](https://advance.lexis.com/api/document?id=urn:contentItem:5HVH-7WD1-JCM7-G3RV-00000-00&idtype=PID&context=1516831)

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41. [*Company Summaries - Q2 2016*](https://advance.lexis.com/api/document?id=urn:contentItem:5J15-M411-F0J5-84N0-00000-00&idtype=PID&context=1516831)

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42. [*Company Summaries - Q1 2016*](https://advance.lexis.com/api/document?id=urn:contentItem:5H9B-9W51-F0J5-80TG-00000-00&idtype=PID&context=1516831)

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43. [*The U.S. Market for Green Building Materials*](https://advance.lexis.com/api/document?id=urn:contentItem:5HPX-MSC1-JD3Y-Y3YK-00000-00&idtype=PID&context=1516831)

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44. [*Pioneering projects in food and agriculture win £17.8 million*](https://advance.lexis.com/api/document?id=urn:contentItem:5H7P-FFT1-F0K1-N0R6-00000-00&idtype=PID&context=1516831)

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45. [*Who will make the top of the table- We can at last reveal the innovations that have made it through the first round of judging and will go on to the final stage in September. The category winners and overall winner for this year will be revealed in mid-October*](https://advance.lexis.com/api/document?id=urn:contentItem:5GTR-P621-DYX4-70PB-00000-00&idtype=PID&context=1516831)

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46. [*Pioneering projects in food and agriculture win £17.8 million*](https://advance.lexis.com/api/document?id=urn:contentItem:5H7P-FFT1-F0K1-N16H-00000-00&idtype=PID&context=1516831)

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47. [*Same-sex marriage and emissions target debates dominate parliament - politics live The Coalition tries to move past a six-hour party room debate which resolved against allowing a conscience vote. Half the frontbench opposed the prime minister's position. All the developments from Canberra*](https://advance.lexis.com/api/document?id=urn:contentItem:5GN9-MFJ1-JCJY-G32X-00000-00&idtype=PID&context=1516831)

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48. [*Proposed Cornwall highway project would break ground in 2016*](https://advance.lexis.com/api/document?id=urn:contentItem:5K45-4261-F0K1-N263-00000-00&idtype=PID&context=1516831)

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49. [*Impax Asset Management Group plc Interim Results*](https://advance.lexis.com/api/document?id=urn:contentItem:5JT9-KG01-JCXB-22N0-00000-00&idtype=PID&context=1516831)

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50. [*Proposed Cornwall highway project would break ground in 2016*](https://advance.lexis.com/api/document?id=urn:contentItem:5K45-4261-F0K1-N2KK-00000-00&idtype=PID&context=1516831)

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51. [*Company Summaries - Q4 2015*](https://advance.lexis.com/api/document?id=urn:contentItem:5GKP-X2V1-JD33-J1T5-00000-00&idtype=PID&context=1516831)

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52. [*Five Key Themes For Europe Agribusiness*](https://advance.lexis.com/api/document?id=urn:contentItem:5K4C-F481-F0J5-846V-00000-00&idtype=PID&context=1516831)

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53. [*Animal Nutrition Market is Expected to Generate a Revenue of 18,883.3 Million USD by 2020 - IndustryARC Research*](https://advance.lexis.com/api/document?id=urn:contentItem:5JDP-SNX1-F0K1-N1GX-00000-00&idtype=PID&context=1516831)

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54. [*Animal Nutrition Market is Expected to Generate a Revenue of 18,883.3 Million USD by 2020 - IndustryARC Research*](https://advance.lexis.com/api/document?id=urn:contentItem:5JDP-SNX1-F0K1-N18J-00000-00&idtype=PID&context=1516831)

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| News | Timeline: 20 jul 2015 tot 20 jul 2016; Locatie: International; Plaats van publicatie: Europe; Taal: English |

55. [*Greening: Our choice is climate aid or more refugees*](https://advance.lexis.com/api/document?id=urn:contentItem:5HJ5-F1K1-JBVM-Y1X0-00000-00&idtype=PID&context=1516831)

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56. [*- Coca-Cola Releases 2014/2015 Sustainability Report*](https://advance.lexis.com/api/document?id=urn:contentItem:5GJG-XFC1-F0K1-N35X-00000-00&idtype=PID&context=1516831)

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57. [*UK-India research partnerships announced worth £20 million to tackle major challenges in food security*](https://advance.lexis.com/api/document?id=urn:contentItem:5HND-VJ41-JD3Y-Y286-00000-00&idtype=PID&context=1516831)

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| News | Timeline: 20 jul 2015 tot 20 jul 2016; Locatie: International; Plaats van publicatie: Europe; Taal: English |

58. [*UK-India research partnerships announced worth £20 million to tackle major challenges in food security*](https://advance.lexis.com/api/document?id=urn:contentItem:5HND-VJ41-JD3Y-Y29M-00000-00&idtype=PID&context=1516831)

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59. [*UK-India research partnerships announced worth £20 million to tackle major challenges in food security*](https://advance.lexis.com/api/document?id=urn:contentItem:5HND-VJ41-JD3Y-Y1YF-00000-00&idtype=PID&context=1516831)

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| News | Timeline: 20 jul 2015 tot 20 jul 2016; Locatie: International; Plaats van publicatie: Europe; Taal: English |

60. [*Seeing the wood for the trees: 10 highlights of new forests study FAO 's most detailed study of forests yet shows deforestation down but not out*](https://advance.lexis.com/api/document?id=urn:contentItem:5GWW-JP41-JCJY-G3TC-00000-00&idtype=PID&context=1516831)

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| News | Timeline: 20 jul 2015 tot 20 jul 2016; Locatie: International; Plaats van publicatie: Europe; Taal: English |

61. [*As Paris summit tries to save the planet, how green is France ?*](https://advance.lexis.com/api/document?id=urn:contentItem:5HJT-4PF1-DY93-M46X-00000-00&idtype=PID&context=1516831)

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| News | Timeline: 20 jul 2015 tot 20 jul 2016; Locatie: International; Plaats van publicatie: Europe; Taal: English |

62. [*UK-India research partnerships announced worth £20 million to tackle major challenges in food security*](https://advance.lexis.com/api/document?id=urn:contentItem:5HND-VJ41-JD3Y-Y214-00000-00&idtype=PID&context=1516831)

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63. [*IN OR OUT? THE arguments are hotting up ahead of what both sides agree will be a defining vote on Britain 's future. There are 50 days of campaigning before the first referendum on our place in Europe since 1975. Metro asked the two official campaign teams for 12 essential reasons why the vote should go their way.*](https://advance.lexis.com/api/document?id=urn:contentItem:5JNY-91Y1-DY9P-N11V-00000-00&idtype=PID&context=1516831)

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64. [*California public school textbooks mislead students on climate, study says Books voice doubt over whether climate change is real and suggest global warming could be beneficial, researchers say in analysis of four science texts*](https://advance.lexis.com/api/document?id=urn:contentItem:5HFK-K3S1-JCJY-G38V-00000-00&idtype=PID&context=1516831)

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65. [*Official 'greenspeak' masks Ireland 's poor environmental performance The final part of our series on agriculture and climate change highlights how difficult it is to reduce emissions while increasing agri-production*](https://advance.lexis.com/api/document?id=urn:contentItem:5H1M-WKN1-JC8Y-801M-00000-00&idtype=PID&context=1516831)

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66. [*Blue carbon schemes: conserving coastal areas or commodifying nature? The UNFCCC's ideas to protect and develop coastal ecosystems have been dubbed 'a false solution' by civil society organisations, but praised by othersThe coastal Kenyan villages bringing their mangrove forest back to life*](https://advance.lexis.com/api/document?id=urn:contentItem:5J4V-YNG1-F021-626C-00000-00&idtype=PID&context=1516831)

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67. [*Ireland 's greenhouse gases fall - but not fast enough for EU*](https://advance.lexis.com/api/document?id=urn:contentItem:5HM9-97F1-DY9P-N259-00000-00&idtype=PID&context=1516831)

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68. [*California public school textbooks mislead students on climate, study says Books voice doubt over whether climate change is real and suggest global warming could be beneficial, researchers say in analysis of four science texts*](https://advance.lexis.com/api/document?id=urn:contentItem:5HFN-JTV1-F021-60BF-00000-00&idtype=PID&context=1516831)

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69. [*- Coca-Cola Releases 2014/2015 Sustainability Report Report Highlights Progress on Comprehensive 2020 Sustainability Goals with a Focus on Women, Water and Well-being*](https://advance.lexis.com/api/document?id=urn:contentItem:5GJG-XFC1-F0K1-N3N9-00000-00&idtype=PID&context=1516831)

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70. [*2015 revisited*](https://advance.lexis.com/api/document?id=urn:contentItem:5HM9-VP51-JB29-N328-00000-00&idtype=PID&context=1516831)

**Client/Matter:** -None-

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71. [*Where next for sustainability in fashion?*](https://advance.lexis.com/api/document?id=urn:contentItem:5GPG-T351-F14X-V1TR-00000-00&idtype=PID&context=1516831)

**Client/Matter:** -None-

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72. [*A vast effort for the environment In push for sustainability, Unilever is pledging to cut its impact in half*](https://advance.lexis.com/api/document?id=urn:contentItem:5HDV-0GW1-JC85-N25X-00000-00&idtype=PID&context=1516831)

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73. [*Our climate failures blamed on livestock*](https://advance.lexis.com/api/document?id=urn:contentItem:5H4F-6V21-DY9P-N1PJ-00000-00&idtype=PID&context=1516831)

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74. [*London Nusantara Plantations PLC Audited Results for the Year Ended 31 December 2015*](https://advance.lexis.com/api/document?id=urn:contentItem:5JVC-FC01-JCXB-241F-00000-00&idtype=PID&context=1516831)

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75. [*Pioneering projects in food and agriculture win &#163;17.8 million*](https://advance.lexis.com/api/document?id=urn:contentItem:5KRN-0451-F12F-F1TH-00000-00&idtype=PID&context=1516831)

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76. [*IN OR OUT? The official campaigns last week gave 12 reasons why the June 23 poll should go their way. This is how each side replied... IN'S RESPONSE TO OUT*](https://advance.lexis.com/api/document?id=urn:contentItem:5JR7-3411-DY9P-N55S-00000-00&idtype=PID&context=1516831)

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77. [*Historic climate deal agreed - but 'the real test comes ne- but 'the real test comes next'*](https://advance.lexis.com/api/document?id=urn:contentItem:5HKW-BPS1-JBVM-Y4G9-00000-00&idtype=PID&context=1516831)

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78. [*CSIRO cuts were about taking focus off 'public-good research', emails show Internal emails reveal motivation behind decision to cut climate research and cast doubt on assertions made by executives to Senate committee*](https://advance.lexis.com/api/document?id=urn:contentItem:5JT4-MMS1-JCJY-G3H5-00000-00&idtype=PID&context=1516831)

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79. [*Cadogan Petroleum Annual Financial Report -6-*](https://advance.lexis.com/api/document?id=urn:contentItem:5JMM-7F71-F0CC-S3NC-00000-00&idtype=PID&context=1516831)

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80. [*CSIRO cuts were about taking focus off 'public-good research', emails show Internal emails reveal motivation behind decision to cut climate research and cast doubt on assertions made by executives to Senate committee*](https://advance.lexis.com/api/document?id=urn:contentItem:5JG5-H5X1-F021-62VC-00000-00&idtype=PID&context=1516831)

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81. [*Handelsblatt Exclusive Trade, but Not at any Cost*](https://advance.lexis.com/api/document?id=urn:contentItem:5JM8-4WX1-DXKF-C29B-00000-00&idtype=PID&context=1516831)

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82. [*G7 Summit in Japan on 26 and 27 May: European Union's role and actions*](https://advance.lexis.com/api/document?id=urn:contentItem:5JV7-B9H1-F03R-N1M8-00000-00&idtype=PID&context=1516831)

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83. [*Debate on food security and climate change*](https://advance.lexis.com/api/document?id=urn:contentItem:5GSF-TKS1-JCW9-2017-00000-00&idtype=PID&context=1516831)

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84. [*- Terra Nitrogen Reports Fourth Quarter 2015 Results*](https://advance.lexis.com/api/document?id=urn:contentItem:5J41-4CY1-JD3Y-Y07M-00000-00&idtype=PID&context=1516831)

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85. [*- Terra Nitrogen Reports Second Quarter 2015 Results*](https://advance.lexis.com/api/document?id=urn:contentItem:5GM5-P6W1-F0K1-N563-00000-00&idtype=PID&context=1516831)

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86. [*The drip-drip wait for Big Oil to clean up its act The key to lower-carbon power generation is far removed from simply turning the taps off, say the energy giants, amid little sign of a collapse in demand for fossil fuels. Jillian Ambrose reports*](https://advance.lexis.com/api/document?id=urn:contentItem:5K0F-S1V1-JBVM-Y3R5-00000-00&idtype=PID&context=1516831)

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87. [*Is it time we all gave up eating meat? Arnold Schwarzenegger is the latest public figure to add his voice to the growing chorus urging us to give up eating animal products. Should we listen, asks Chrissie Russell*](https://advance.lexis.com/api/document?id=urn:contentItem:5HM3-B0P1-DY9P-N40V-00000-00&idtype=PID&context=1516831)

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88. [*How companies' responsibilities for supply chain workers are widening*](https://advance.lexis.com/api/document?id=urn:contentItem:5JS3-JVM1-F14X-V1WS-00000-00&idtype=PID&context=1516831)

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89. [*- Deere Announces First-Quarter Earnings of $ 254 Million*](https://advance.lexis.com/api/document?id=urn:contentItem:5J53-0951-JD3Y-Y1TB-00000-00&idtype=PID&context=1516831)

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90. [*Nitrogen Fertilisers: A Primer*](https://advance.lexis.com/api/document?id=urn:contentItem:5JYX-1HR1-F0J5-81J4-00000-00&idtype=PID&context=1516831)

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91. [*Wealth Management: Asian SRI's green shoots*](https://advance.lexis.com/api/document?id=urn:contentItem:5H4F-5071-JD1P-T2G8-00000-00&idtype=PID&context=1516831)

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92. [*Cellular agriculture shows future potential Post-animal food is going forward to assure every day's food consumption*](https://advance.lexis.com/api/document?id=urn:contentItem:5N8W-X6F1-DYG1-P3V7-00000-00&idtype=PID&context=1516831)

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93. [*UN drops plan to help move climate-change affected people Australia opposed the plan for a group to assist migration, and it has been left off the draft agreement for UN climate talks in Paris*](https://advance.lexis.com/api/document?id=urn:contentItem:5HGW-RG91-F021-64XX-00000-00&idtype=PID&context=1516831)

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94. [*What price Indonesia 's forests? Cover Story*](https://advance.lexis.com/api/document?id=urn:contentItem:5J7B-8GR1-JBFS-D031-00000-00&idtype=PID&context=1516831)

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95. [*-CORRECTING and REPLACING Terra Nitrogen Company Reports Second Quarter 2015 Results*](https://advance.lexis.com/api/document?id=urn:contentItem:5GM5-P6W1-F0K1-N562-00000-00&idtype=PID&context=1516831)

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96. [*Bio-based projects make more headway Commercial activity in the bio-based chemicals sector is proceeding rapidly, despite the decline in oil prices making economics less favourable*](https://advance.lexis.com/api/document?id=urn:contentItem:5J82-0N81-DYX4-7383-00000-00&idtype=PID&context=1516831)

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97. [*Bio-based projects make more headway Commercial activity in the bio-based chemicals sector is proceeding rapidly, despite the decline in oil prices making economics less favourable*](https://advance.lexis.com/api/document?id=urn:contentItem:5J8V-0KH1-JCF2-H26C-00000-00&idtype=PID&context=1516831)

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98. [*How to feed 9.7bn people? Startups take on the global food problem In the hunt for a sustainable solution to a rapidly rising population, agriculture has begun to adopt a venture capital mindset*](https://advance.lexis.com/api/document?id=urn:contentItem:5JX5-WM11-F021-64W2-00000-00&idtype=PID&context=1516831)

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99. [*Deere Announces Second-Quarter Earnings of $ 495 Million*](https://advance.lexis.com/api/document?id=urn:contentItem:5JTM-8PC1-JD3Y-Y04H-00000-00&idtype=PID&context=1516831)

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100. [*How to feed 9.7bn people? Startups take on the global food problem In the hunt for a sustainable solution to a rapidly rising population, agriculture has begun to adopt a venture capital mindset*](https://advance.lexis.com/api/document?id=urn:contentItem:5JXC-B9F1-JCJY-G4VR-00000-00&idtype=PID&context=1516831)

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# [***We've almost stopped killing each other. Now let's spare the planet; The astonishing drop in violence between human beings needs to be matched by an end to violence against the natural world***](https://advance.lexis.com/api/document?collection=news&id=urn:contentItem:5HMC-3DD1-F021-62P4-00000-00&context=1516831)

The Guardian

December 16, 2015 Wednesday 5:45 PM GMT

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**Section:** OPINION

**Length:** 1097 words

**Byline:** George Monbiot

**Body**

This is humanity's great paradox: we are the only animal capable of sustained empathy and altruism towards unrelated beings - and we are the only animal that murders so many of its own kind, and lays waste to the planet it inhabits.

Related: Cameron must make a climate U-turn immediately if he isn't to betray Paris | Craig Bennett

While our violence towards each other has diminished with astonishing speed, as Steven Pinker documents, our violence towards the living planet appears to be intensifying. The megafauna that once dominated most parts of the world is now confined to small and shrinking pockets, from which it is disappearing at great speed.

At the current rate of poaching, rhinos and elephants could vanish from almost every corner of Africa by the time a child born today leaves school. Lions once lived almost everywhere: across Europe, Asia, the Americas and throughout Africa. In the 1940s there were some 450,000 remaining in Africa. Now there are 20,000, and the population is forecast to halve over the next 20 years.

In just one fire season, much of the Indonesian rainforest has been fragmented and incinerated. The marine ecosystem is collapsing in front of our eyes, food webs unravelling through overfishing and pollution. Soil, according to the UN Food and ***Agriculture*** Organization, is being lost so fast that the world has, on average, just another 60 years of crop production. The climatic space in which human civilisation flourished is slamming shut.

Could it be that the two trends are related? Might the remarkable decline in the violence human beings inflict on each other have been obtained by violating the living world? Have we, by seizing and liquidating natural wealth, bought ourselves a temporary respite from resource conflict?

There is a more optimistic way of understanding the human paradox. With the possible exception of the naked mole rat, which is a eusocial mammal (it has a family structure similar to that of bees and ants), no vertebrate species is as sociable as we are. Mole rats subordinate their individual interests only to those with whom they share genetic material. But we are capable of subordinating ours even to those of total strangers: sending money to charities, taking in refugees, volunteering as human shields.

We use our social tendencies to normalise such remarkable behaviour. But the same ability to unite, to put ourselves in second place, can also be used to normalise our darkest tendencies: greed, violence, destruction, subordination to the demands of psychopaths. Most people align themselves with the status quo, whether it be democracy, monarchy, Stalinism, Nazism, care for the living planet or a carnival of ruin.

In other words, the problem is not that we are inherently inclined towards destruction, waste and killing, any more than we are inherently inclined towards angelic feats of kindness and love.

Our social brain is capable of normalising either tendency. It is not human nature we need to change, but the norms and institutions that play upon it. In other words, the task is not, as some imagine, impossible, but merely difficult.

Through the transformations that Pinker documents, we appear to have undergone what the novelist Michel Houellebecq calls a metaphysical mutation in our relations with each other: the precipitous decline in violence that has occurred, against all predictions, in less than a century. Now we have to do the same for our relationship with the living world.

Related: Climate deal: the pistol has fired, so why aren't we running? | Bill McKibben

Yes, there's a long way to go. We seem to be better at persuading ourselves we have changed than we are at changing. The climate agreement in Paris was widely greeted as a breakthrough. It is nothing of the kind. Shorn of ***targets***, timetables and binding instruments, it is a highly effective programme for salving the collective conscience of the delegates, and little more.

As the website climateparis.org explains, even if every pledge nations brought to the talks were honoured (and already governments such as the UK's are breaking theirs), by 2030 the world will be producing more ***greenhouse gases*** than it does today. At that point we will have 14 years to ***reduce*** global ***emissions*** to zero, to stand a fair chance of preventing more than two degrees of global warming.

If the Paris agreement's "aspirational" aim of no more than 1.5 degrees is to be achieved, other estimates suggest, carbon ***emissions*** must fall off a cliff soon after 2020. The festival of self-satisfaction with which the talks ended was a " mission accomplished " moment, a grave case of premature congratulation.

Such failures reflect a general conviction that more effective action is impossible. It's too difficult, too expensive to prevent the slow collapse of the biosphere; easier just to live with it - or die with it. But while the global support for renewable ***energy*** - $121bn a year - is widely decried as an outrageous drain upon the public purse, the $452bn with which the G20 nations support fossil fuels is, apparently, eminently affordable. It's out of the question to keep fossil fuels in the ground but not, according to some commentators, to move cities in response to climate change or, as one columnist infamously proposed, to allow the tropics to be ***reduced*** to "wastelands with few folk living in them".

The toxic stream of disinformation about climate change pumped out by companies such as Exxon mingles with a deep current of anti-intellectualism. But it is not our destiny to be swept away by this nonsense, any more than it is our destiny to resist it. This is a choice we take both alone and together. We have a remarkable capacity to make and to unmake social norms, as the great rejection of violence since the second world war attests.

There are plenty of examples -among both indigenous people and industrial economies - of collective agreements not to maximise the exploitation of resources. Such restraint is as much a human tendency as greed and profligacy. If we can stop killing each other so rapidly, we can just as easily and just as quickly stop killing the other beings that inhabit our planet. Human peace and prosperity do not depend on ecological violence. Indeed, it could be argued that they depend on its cessation.

· A fully linked version of this article can be found at Monbiot.com

· This article was amended on 16 December 2015. An earlier version referred to the UN Food and ***Agriculture*** Association, rather than Organization. Also, the spelling of Steven Pinker's first name was corrected (from "Stephen").

**Load-Date:** December 16, 2015

**End of Document**



[***Is this the most eco-friendly farm in Yorkshire?***](https://advance.lexis.com/api/document?collection=news&id=urn:contentItem:5JV8-SMY1-F15H-C134-00000-00&context=1516831)

Yorkshire Post

May 23, 2016 Monday

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**Length:** 1345 words

**Body**

Lynn Leadbeatter meets the couple behind the Nethergill Farm success story.

With hundreds of acres of windswept, peaty moorland climbing to 1,600ft, Nethergill Farm might not have seemed the most attractive of business propositions. But when Chris and Fiona Clark came across the remote uplands at the head of the River Wharfe, they knew that they had finally discovered what they were looking for. Their three-year quest to find a farm of their own had already taken them to 45 locations in Scotland, Wales, Devon and Yorkshire but they were planning to do things differently - and Nethergill had the potential to let them do just that.

"We wanted an ***agricultural*** conservation project and this was a blank canvas," says Chris. "The biggest asset that we have is the two of us, but the second is our location."

The Clarks knew that they would never be able to compete directly with more productive lowland farms so they would have to keep their costs down. But what they did next was tear up the rule book and throw it away. Conventional wisdom dictated that the best way of compensating for the poor quality of their marginal land would be to run more sheep on it. Instead, they made the counterintuitive move of ***reducing*** numbers so that their animals could be left to forage all the year round. Today a herd of just 12 hardy but docile White Shorthorn cattle together with 60 ewes thrive on tough grass and rank vegetation even through the harsh winter months.

Farming less intensively has also brought environmental benefits by helping to preserve the vast carbon sink underneath the Pennine hills and cutting methane production. But the changes make sense economically too. There has been no need to buy in fodder and cereals and low stocking levels have resulted in fewer cases of lameness of sheep by ***reducing*** transmission of bacterial infections. Even the nutritional quality of the meat has been enhanced. Research has shown that pasture-fed beef and lamb have a higher ratio of unsaturated to saturated fats than conventionally farmed alternatives and contain more omega-3 oils than salmon.

"We suddenly realised that the less stock we had, the more money we made," says Chris. "But we have never believed that there is a conflict between farming, conservation and sustainability. If we did not make a profit, we could not stay here."

That's a message the Clarks are keen to pass on and in August 2015 their efforts were recognised when they received Green Tourism's Gold Award. The old shippon that used to house cows over the winter has been converted into a field centre complete with microscope, telescopes, binoculars, identification guides, and an impressive collection of animal skulls. Passing Dales Way walkers leave cash in an honesty box in return for shelter, tea, coffee and home-made flapjack. Two stone hay lofts have been converted into self-catering accommodation, bird hides have been constructed from recycled plastic bags and farm trails take in some of the 30,000 newly planted trees.

Now black grouse are returning and other visitors include merlins, peregrine falcons, hen harriers, three species of owl, redstarts, crossbills, goosanders, herons, sandpipers and dippers. Rare breed farm animals are thriving too. Pure white Woodlander sheep from the Pendle area have recently been introduced to supplement the existing Dalesbred stock. Originally from the border area between Cumbria and Scotland, there are now only 160 breeding female White Shorthorn cattle in the world. And a colourful flock of free-range hens - albeit recently depleted by a stoat attack - struts around the farm buildings.

Work to restore the land to its natural state has included blocking peat grips from the fell tops. Back in the Sixties, these drainage channels were cut by dragging a plough down the fellside between two tractors stationed at the top and bottom. But significant erosion since 2008 meant that ditches that once reached knee level are now more than five feet deep. There has already been a marked ***reduction*** in water flow in the gills coming off the moors and the work should ***reduce*** the risk of flooding further down the dale. The planting of willow bundles along the banks of the beck will further slow run-off and provide habitats for wildlife.

Chris and Fiona are also working with the owners of nearby Greenfield Forest, one of only 17 red squirrel reserves in England. It would have been tempting to feed the biomass boiler that provides all of the farm's heat and hot water with wood pellets but the Clarks ***reduce*** ***energy*** costs by taking delivery of over 40 tons of logs a year and laboriously cutting them down to size with a firewood processor in an outbuilding. Solar panels provide 75 per cent of their electricity and a hybrid car further ***reduces*** ***greenhouse gas*** ***emissions***.

Self-catering guests have the option of buying home-made ready meals prepared using Nethergill Farm beef and mutton.

"We want people to leave here more knowledgeable about food, farming and the environment and how they link together than when they arrived," says Chris. "They are inextricably connected but at no time have we had representatives of all three here who agree to the same things. We are both becoming braver about saying what we think and we would like to see protocols that encompass the whole landscape."

Maybe that's easier said than done. Experts disagree over what a truly natural environment should look like - and even as to whether the Clarks should encourage the growth of traditional hay meadow flowers outside the field centre or leave the peaty soil as it is.

But at least the couple who "were green from the age of 18" are now in a position to provoke debate. Back in the Seventies it seemed that their prospects had already been written off because neither was from a traditional farming background. Chris was born in Tanganyika - now Tanzania - to parents who originally came from a fishing village in Devon and Fiona's family were from the Shadwell suburb of Leeds. They met in the first hour of their ***agricultural*** college course and were immediately told that students from outside the sector should not have aspirations of ever owning a farm.

"That was like a red rag to a bull for Chris," says Fiona. They set their hearts on proving the lecturer wrong by the time they were 50 - and managed with months to spare.

The Clarks' first jobs were on a game estate, which soon took on a herd of pigs. Chris was asked to manage it with Fiona as his assistant and they went on to set up their own farm on the Loseley Park Estate in Guildford, Surrey, which made yoghurts and ice cream. This meant borrowing large amounts of money at high interest rates - only for prices to plummet worldwide as their first batch of piglets were due to go to market.

But an exotic diet that included surplus chocolate mousse, lemon sorbet and double cream had done wonders for the flavour of the pork. While farming was rocked by the BSE crisis of the nineties, the Clarks had inadvertently blazed a trail by finishing their animals outside, taking bonemeal out of their feed and rearing them organically. After selling pigs to the Q Guild of butchers, working all hours while bringing up two children, Chris retrained in marketing and Fiona in graphic design - still with the ultimate goal of owning their own farm. They set up a new initiative providing promotional material and advice to meat retailers before diversifying into consultancy work with small and medium-sized companies and councils.

By 2005 they had saved up enough to invest in Nethergill Farm but it is still very much a work in progress. Future developments may include selling the range of ready meals online. Fiona is receiving an increasing number of commissions for her artwork, which draws inspiration from the farm's wildlife and domestic animals, and a circular walk could be created by building two bridges over the beck.

"The perception is that we are not proper farmers and that may be true," says Chris. "But we are very good business people."

For more information visit nethergill.co.uk

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[***If we can stop killing each other, we can do the same for the planet; Human peace and prosperity do not depend upon ecological violence, yet we are behaving as if they did***](https://advance.lexis.com/api/document?collection=news&id=urn:contentItem:5HM5-49R1-JCJY-G0H7-00000-00&context=1516831)

The Guardian

December 15, 2015 Tuesday 5:08 PM GMT

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**Section:** OPINION

**Length:** 1062 words

**Byline:** George Monbiot

**Body**

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The Guardian

December 15, 2015 Tuesday 7:09 PM GMT

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**Section:** OPINION

**Length:** 1060 words

**Byline:** George Monbiot

**Body**

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The Guardian

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**Section:** OPINION

**Length:** 1060 words

**Byline:** George Monbiot

**Body**

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The Guardian

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**Section:** OPINION

**Length:** 1084 words

**Byline:** George Monbiot

**Body**

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· A fully linked version of this article can be found at Monbiot.com

· This article was amended on 16 December 2015. An earlier version referred to the UN Food and ***Agriculture*** Association, rather than Organization.

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[***Setting the EU agenda: The next six months***](https://advance.lexis.com/api/document?collection=news&id=urn:contentItem:5H1H-P9X1-F03R-N52X-00000-00&context=1516831)

EU Reporter

September 28, 2015 Monday 1:13 PM EST

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**Length:** 1334 words

**Byline:** Catherine Feore

**Body**

Sep 28, 2015( EU Reporter: [*http://www.eureporter.co*](http://www.eureporter.co) Delivered by Newstex) <nl/>   [*http://www.eureporter.co/wp-content/uploads/2015/07/European-job-market.jpgOpinion*](http://www.eureporter.co/wp-content/uploads/2015/07/European-job-market.jpgOpinion) by Catherine Feore<nl/> The past year has been another bruising one for Europe, while Juncker has tried very hard to set an agenda for the new Commission, events from LuxLeaks to the Greek crisis have stolen the headlines.

To use Juncker's surprisingly frank analysis: 'Europe is not in a good place.' Greece may have been knocked off the headlines by the refugee crisis, but with high levels of unemployment and fragile growth across Europe, the EU's and the eurozone's problems, in particular, certainly haven't gone away. We look ahead at some of the external factors that might really set the EU agenda and the key 'scheduled' developments expected over the next six months.<nl/> External forces<nl/> It looks like the debate will yet again be dictated by forces outside the EU's control. The refugee crisis continues unabated. With countries closing borders and others facing a disproportionate burden, urgent EU agreement is needed. Juncker has called for solidarity; while a number of countries have closed their borders, there is a large question mark over the future of Schengen in this febrile atmosphere. Finding a political resolution to the war in Syria appears to be bleak. Neither the Syrian president nor his opposing forces are interlocutors with whom the West wishes to engage. Russian support for President Assad is also widening the rift between the EU and Russia, though it increasingly looks as though Assad will have to be part of the solution.<nl/> The Ukrainian-Russian conflict also appears to be impervious to a diplomatic resolution, with continual breaches of Minsk II. The big question here, especially for Europe's more eastern countries, is will there be a further escalation. In the meantime, the stand-off is damaging EU ***agriculture*** but is helping to drive the EU's plan for ***energy*** union, in particular the need for security of supply.<nl/> The problems of emerging markets are renewing concerns about the global economy. The volatility of China's markets over the summer has caused concern across the world about a further slowdown in growth. It is hard to assess the impact, but with most of the BRICS (Brazil, Russia, India, China and South Africa) struggling with their own structural and growth problems, it doesn't look like they will be able to reinvigorate the wider economy.<nl/> Finally, there are the many challenges from within the EU, the UK's renegotiations before a Brexit referendum and a series of elections from Greece to Spain that - if inspired by the recent Labour leadership election - will result in a seismic shift in Europe's political landscape.<nl/> Growth and job creation<nl/> Quantitative easing (QE) has raised asset values and assisted the financial sector but there haven't been many signs to date that the increase in liquidity has done much to reach the real economy and create growth. Interest rates are historically low, inflation remains well below its ***target*** and unemployment is stubbornly high, particularly for the young. The constraints of the eurozone and the Growth and Stability Pact mean that while QE might be a flawed instrument, it's about the only one that the EU is willing to use.<nl/> The Commission's response is the Juncker Plan, an investment fund that will use funds from the European Structural and Investment Fund, Horizon 2020 as well as loans and guarantees from the European Invesment Bank and Fund with the objective of leveraging more than €240 billion in private funds. The Juncker Plan hopes to make use of some of the liquidity sloshing around for substantial investments in ***energy***, transport and digital infrastructure and research, creating growth and jobs. Agreed in record time, we now move into the implementation phase. To have a much-needed impact, a fast take-up rate is being facilitated - but unless there are enough 'shovel-ready' projects, delivery will be slower than hoped for.<nl/> In response to the continuing eurozone crisis, Juncker launched the 'Five Presidencies' Report', on deeper and fairer economic and monetary union. The report outlines three stages, of which the third is meant to reach completion by 2025; one would hope that by then the crisis would have run its course. So, in the face of clear and immediate problems, the five presidents have agreed to concentrate on 'deepening by doing' over the next two years with some tinkering around the edges of the stability pact and a new 'social dimension' - read measures to increase labour -market flexibility - sorry, flexicurity. There are some more concrete proposals, such as the creation of a European Deposit Insurance Scheme modelled on the US Federal Deposit Insurance Scheme, but this proposal, which has been mooted for some time, has failed to receive German support - and that most dreaded of things - might require a further treaty change. Let's say that we expect a few more late nights for eurozone finance ministers.<nl/> Following the launch of the Capital Markets Union in February, an action plan with detailed proposals will be unveiled shortly. One of the main planks will be plans for the revival of securitization markets - think collateralized debt obligation, subprime mortgages, the bubble that burst and the crisis we're in. This time, however, the Commission will assure us that it will be safe, standardized and transparent. The Commission estimates that it will allow banks to provide around €100bn of additional credit to the private sector. Let's hope for some real vigilance…<nl/> Taxing times<nl/> Ironically, Luxembourg is in the Council hot seat just in time to oversee the publication of several in-depth investigations into tax rulings, including 'LuxLeaks' which uncovered the scale and extent of multinational corporation tax avoidance and the role of state actors in facilitating this practice. The fact that Juncker was prime minister of Luxembourg when the Duchy was encouraging companies to channel billions of dollars through the Duchy at 'beggar-thy-neighbour' tax rates of less than 1% might give some pause for thought when our 'Spitzenkandidat' calls for European solidarity, but let's put that behind us, it's all about transparency in the exchange of information and a level playing field now. Moves will be taken by to re-examine the possibility of a common corporate tax base and further co-operation with the OECD on BEPS (Base Erosion and Profit Shifting).<nl/> Fair COP<nl/> The UN-organized Conference of the Parties (COP) is organising its 21st annual get -ogether on climate change. One dreads to think of the carbon footprint of 40,000 participants from across the globe gathering to agree in Paris, but hopefully it can be offset with a legally binding deal that will ***reduce*** ***greenhouse-gas*** ***emissions*** by 2 degrees by 2050. The EU has already done a great deal by agreeing to cut ***emissions*** by at least 40% below 1990 levels by 2030. Ongoing negotiations between now and the deadline for agreement on 11 December will be difficult, but Europe will play a leading role in reaching a universal agreement and the demise of Australian Prime Minister and climate-change denier Tony Abbot might make ***targets*** more achievable.<nl/> And there's more…<nl/> The Commission has much ambition in other fields too. An area that has been embraced with particular gusto is the Digital Single Market. Again, the Commission suggests that in providing the right conditions for this market to flourish, 'hundreds of thousands of new jobs' will be created. The DSM has many elements from promoting interoperable standards to the reform of data protection where rules should be finalized by the end of the year.<nl/> Is it all getting too much? Are you tired of Europe's terrestrial problems? Never fear, the Luxembourg Presidency will also outline an integrated and comprehensive EU strategy on space.<nl/> END<nl/>

**Load-Date:** September 28, 2015

**End of Document**



[***Abandon hype in climate models; The economic models that are used to inform climate policy currently contain an unhealthy dose of wishful thinking. Technologies that remove carbon dioxide from the air are assumed in the models that avoid dangerous climate change - but such technologies do not yet exist and it is unclear whether they could be deployed at a meaningful scale.***](https://advance.lexis.com/api/document?collection=news&id=urn:contentItem:5JMG-3D91-F021-61G7-00000-00&context=1516831)

The Guardian

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**Section:** SCIENCE

**Length:** 1068 words

**Byline:** TIm Kruger, Steve Rayner and Oliver Geden

**Body**

The scenarios modelled for the IPCC's Fifth Assessment Report assume the large-scale deployment of technologies that achieve negative ***emissions*** that draw down carbon dioxide from the atmosphere and permanently store it. But whether such proposed methods could be deployed at a material scale is unproven. It would be more prudent to exclude these techniques from mitigation scenarios used by the IPCC, unless and until we have sufficient evidence of their availability and viability to support their inclusion.

Most of the modelled ***emissions*** pathways limiting warming to 2 °C (and all the ones that restrict the rise to 1.5 °C) require massive deployment of Biomass ***Energy*** with Carbon Capture and Storage (BECCS). This involves growing biomass which is used to generate power and geologically sequestering the carbon dioxide produced. While the constituent steps of this process have been demonstrated, there are but a few, small, examples of the combined process. To rely on this technique to deliver us from climate change is to demonstrate a degree of faith that is out of keeping with scientific rigour.

There is a distinct lack of evidence to determine whether BECCS is technically feasible, economically affordable, environmentally benign, socially acceptable and politically viable at a material scale. Technically, there are serious doubts about the ability to sequester the vast quantities of carbon dioxide that are implied in the models. Economically, without a substantial carbon price, the costs would be much higher than competing power-generation technologies. Environmentally, growing such volumes of biomass would have profound effects on biodiversity. Socially, the use of land for BECCS would restrict ***agriculture*** - contributing to substantial increases in food prices; while politically, the issue seems so toxic that the Paris Agreement carefully avoided mentioning negative ***emissions*** at all. Such impacts would not be material were BECCS to be deployed at a small scale, but the economic scenarios consistent with 1.5 °C (or even 2°C) assume that BECCS is deployed at a truly gargantuan scale, at which these adverse impacts would indeed be material.

For a technology to be deployable it needs not only to work, but also to possess a social licence to operate. For example, that Germany possesses the technical ability and financial means to build new nuclear power plants is not in question, but lacking the social and political will to do so makes the point moot.

The IPCC's own scenario database suggests that the ambition of the Paris Agreement cannot be achieved without negative ***emissions*** technologies. Even with rapid decarbonisation, there will be a need to achieve net negative ***emissions*** during the second half of this century. That objective cannot be achieved from a standing start. Well-functioning methods would need to be developed and rolled out at a rate unprecedented in human history. Yet to model what you want to happen, rather than what there is evidence could happen, is to lose the thread of reality. It is redolent of a defeated leader issuing orders to armies that have long since ceased to exist - not so much vision, as delusion.

Should modellers be able to model what they like? Of course. Scenarios allow us to undertake useful thought experiments that provide us with the means to assess potentially novel approaches.

But it is hazardous to rely on science fiction in the development of the scenarios that are used to inform policymakers. To include scenarios for avoiding dangerous climate change that employ entirely speculative approaches seems reckless in the extreme.

Some will defend the use of these technological imaginaries in IPCC scenarios by arguing that without them hopes of avoiding dangerous climate change are forlorn and that this would generate a degree of despair that would undermine the will to act.

But that is not the role of models. "Fake it 'til you make it" may work as a tactic, but it is a lousy strategy. As the dust settles on the Paris Agreement and policymakers face up to the challenge of achieving the ambition set out by their leaders, we need to reflect on what actually needs to happen. Policymakers can only hope to develop realistic plans, if the basis on which they are making those plans is itself realistic. While the boundary between ambition and delusion may be not be entirely sharp, the inclusion of negative ***emissions*** amounting to 600-800 billion tonnes of carbon dioxide (equivalent to 15-20 years of current annual ***emissions***) is clearly more than a stretch goal. For this reason, negative ***emission*** techniques should be excluded from the mitigation scenarios used by the IPCC unless and until there is sufficient evidence to warrant their inclusion and then only on a scale that is demonstrably realistic.

The IPCC recently announced a Special Report on the 1.5 °C ***target***. To be credible, this must include detailed assessment of proposed negative ***emission*** techniques, drawing on a wide range of expertise from natural sciences, engineering, social sciences and the humanities to assess to what extent, if any, such approaches could be deployed without creating countervailing side-effects.

On the basis of such a comprehensive assessment, policy makers will then have to make an explicit decision either to invest in the necessary research, development and demonstration of the technologies or to explain how they propose to meet their ambitious ***targets*** without such interventions. Policymakers cannot be allowed to hide behind the vague language of the Paris Agreement ("achieve a balance between anthropogenic ***emissions*** by sources and removals by sinks of ***greenhouse gases***").

In the absence of comprehensive research and indications of political feasibility, it seems prudent to exclude from the models what is currently magical thinking. Only by undertaking research will it be possible to determine whether today's science fiction could be transformed into tomorrow's science reality.

Tim Kruger is manager of the Oxford Geoengineering Programe. Steve Rayner is James Martin Professor of Science and Civilization and Director of the Institute for Science, Innovation and Society (InSIS) in the School of Anthropology and Museum Ethnography at Oxford University. Oliver Geden is head of EU division at the German Institute for International and Security Affairs (SWP),

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[***From Tesla, a new car that vegans can get behind; Synthetic leather offered in further effort to keep pro-environment image***](https://advance.lexis.com/api/document?collection=news&id=urn:contentItem:5HVN-T1Y1-JC85-N2F9-00000-00&context=1516831)

International New York Times

January 15, 2016 Friday

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**Section:** FINANCE; Pg. 15

**Length:** 926 words

**Byline:** DIANE CARDWELL

**Body**

**ABSTRACT**

Tesla, which has introduced synthetic leather interiors, is the latest automaker to join the industry's push to project a more environmentally responsible image.

**FULL TEXT**

For the eco-conscious car buyer, Tesla's luxury electric vehicles, with their neck-snapping acceleration, are proof that performance doesn't have to be sacrificed at the altar of saving the environment.

But for some discerning consumers, there is a nagging problem. The leather in the seats and steering wheel requires slaughtering animals, and the cloth substitute doesn't quite measure up for a vehicle that can cost more than $100,000.

Now, in response, comes the Tesla that even a luxury-minded vegan could love.

Synthetic leather, in a shade Tesla calls Ultra White, is available as an option for the new Model X sport utility vehicle.

Tesla is just the latest automaker to join in what even Euell Gibbons, the naturalist of Grape-Nuts fame, would have had a hard time imagining a generation ago: a rush by the car industry - long a symbol of environmental wreckage - to project a more responsible image.

''All the car companies want sustainability cred,'' said Jack Nerad, executive editorial director at Kelley Blue Book.

Perhaps it was inevitable. After all, celebrities like Beyoncé and Brad Pitt have given the vegan lifestyle gloss, while its growing number of adherents have pushed restaurants and food companies to create more palatable plant-based products that mimic meat and dairy items.

If vegans are willing to pay for a premium vehicle, why shouldn't they be able to have fake leather, too?

So in recent years, BMW, Mercedes-Benz, Lexus and Ferrari have begun offering models with faux leather seating, and Volvo and Ford have increasingly emphasized the use of more natural components like soy foam in their seats.

Consider the BMW i3. For $42,400 and up, a buyer gets an interior with open-pore eucalyptus wood harvested from a ''certified forest.'' (Translation: a forest that is responsibly managed.) The interior panels are made of a renewable Asian kenaf plant, and it is all assembled in a wind-powered factory in Germany.

''The aim of developing the BMW i cars is not simply to build ***emission***-free cars,'' the company's website says, ''but also to use the maximum possible amount of sustainably produced and recycled materials - especially inside.''

At BMW, it appears, environmental guilt no longer comes standard.

In the case of Tesla, whose brand represents a kind of sustainable luxe, many vegans have complained that it makes no sense for an eco-friendly car to include animal products, given the significant amount of ***greenhouse gases*** the industrial ***agriculture*** sector emits. Even Nikola Tesla, the inventor for whom the car is named, they point out, was a vegetarian.

Leilani Münter, a professional racecar driver and environmental advocate who is vegan, said she was disappointed when she first tried to buy the Model S and could not get the faster, sportier model without real leather seats.

She contacted Elon Musk, Tesla's founder and chief executive, who helped her get the desired model with cloth seats, she said. Not too long after - faced with several complaints from similar-minded would-be customers - the company made cloth seats, only in black, an option for all models and trim packages, with a synthetic-leather-clad steering wheel available on special request.

The new seating option for the Model X goes a step further.

''Tesla revolutionized the electric car, and now it's redefined luxury interiors by using these vegan materials, which are both animal- and environmentally friendly,'' said Anne Brainard, senior corporate liaison and manager of corporate affairs at People for the Ethical Treatment of Animals. The group urged Tesla to stop using leather at its shareholder meeting last June and had since remained in discussions with the carmaker.

''We find that customers enjoy both leather and nonleather options for their Teslas,'' Khobi Brooklyn, a company spokeswoman, said in an email. ''We are committed to giving customers the ability to build the Tesla that meets their needs and lifestyle choices.''

Jack Norris, executive director of Vegan Outreach, an advocacy group based in Davis, Calif., said Tesla's move indicated that enough people had voiced concern to push the carmaker to respond.

''Fortunately the options for this lifestyle are really expanding and becoming cool,'' Melissa Wood, who drives a BMW with synthetic leather seating, said in an email.

Still, as the push to ***reduce*** carbon dioxide ***emissions*** leads to the use of new ***energy*** sources, it may become even trickier to avoid animal products.

Biofuels aimed at ***reducing*** carbon dioxide ***emissions*** - like those United Airlines announced last year it would start using, and would invest $30 million to develop - are sometimes derived from animal fats. And the use of animal-based food waste to make electricity and fuel is on the rise in places like Cleveland, Boston and Orlando.

Ms. Münter, who turned down sponsorship from a company that was making lubrications from beef tallow, said that she looked forward to a day without liquid fuels entirely.

Mark and Elizabeth Peters, shareholders and S-Model owners who are vegan and have publicly pressed Tesla to abandon animal products, agreed, but said that it was difficult to completely avoid them.

''There's ingredients in most everything that we see, wear and experience in our daily lives that somehow have utilized a part of an animal, which is unfortunate,'' Ms. Peters said. ''But if we know, then we can make a choice.''

**Load-Date:** January 14, 2016

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[***Operation & maintenance - The road to climate resilience.***](https://advance.lexis.com/api/document?collection=news&id=urn:contentItem:5JSY-HXK1-JD7R-X0MJ-00000-00&context=1516831)

Water Power & Dam Construction

May 1, 2016

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**Section:** Pg. 34

**Length:** 3124 words

**Highlight:** The impact of climate change on precipitation patterns is likely to affect power production the world over, but the hydropower industry is being reminded that this should not always be viewed as a threat. In many cases plant designers and operators will be able to seize the opportunity and maximise the benefits of climate change. Suzanne Pritchard reports.

**Body**

Power plants across the world could be affected by changes in precipitation patterns, which are combining with increasing competition between water users to adversely affect the resilience of ***energy*** services," warns Christoph Frei, Secretary General of the World ***Energy*** Council (WEC). "The ***energy***-water-food nexus poses a systematic risk which could impact the robustness of ***energy*** and supply demand over many years to come."

While there is still a great deal of uncertainty about future projections of precipiataion, UN estimates suggest that by 2030 there could be a 40% global shortfall of available water. With 98% of electric power generation comprising hydro and thermoelectric power plants which are water-dependent, a new study published in Nature Climate Change indicates this could lead to ***reductions*** in production capacity for more than 60% of power plants from 2040-2069. Using data from 24,515 hydropower and 1427 thermoelectric power plants, Van Vliet et al's research is described as examining the links between climate change, water resources, and electricity production on a global scale.

The report's authors say the US, southern South America, southern Africa, central and southern Europe, Southeast Asia and southern Australia are vulnerable regions, because declines in mean annual streamflow are projected, combined with strong increases in water temperature under a changing climate. This could ***reduce*** the potential for hydropower generation in these regions, the report states.

This study has however been widely criticised in the hydropower community on a number of methodological points, particularly because the most advanced climate models show high variability at the regional scale, especially with regards to precipitation, which means there is a level of uncertainty at the river basin level as to a net positive or negative impact on hydropower generation in the decades to come. In addition, the authors do not take into account that storage hydropower projects increase the availability of freshwater not only for hydro, but also for other water uses. In addition to hydro's contribution to climate mitigation through its low-carbon characteristics, it's storage and flexibility facilitates the increased use of other clean ***energy*** solutions, further mitigating ***greenhouse-gas*** ***emissions***. Reservoirs will provide an increasing range of climate adaptation services in the context of increased hydrological variability and uncertainty about future climate conditions, a point which the paper omits in its survey of potential adaptation measures.

Cross-border co-operation

In an effort to counter problems with future access to water, cross-border co-operation is described as being 'vital'. Christoph Frei from WEC believes that we should be taking advantage of the 261 international trans-boundary basins that cover 45% of the earth's land surface.

"Clear co-ordination and planning needs to take place now or we will start to see the effects of water scarcity on ***energy*** supplies in the very near future," he adds. "***Energy*** resilience can only be achieved by moving from individual to joint efforts."

Calling for immediate action in order to secure resilient ***energy*** infrastructure, the World ***Energy*** Council (WEC) has released the early findings of its new report: "The road to resilience - managing the risks of the ***energy***-water-food nexus". Supported by a task force of over 140 experts from across the world, its key findings are that:

- ***Energy*** is the second largest freshwater user after ***agriculture***.

- The risks posed by the ***energy***-water-food nexus will become more significant because of growing demand for ***energy***, water and food. Some of the currently water stressed regions are also likely to see significant economic development, population growth and changing consumption patterns; intensifying the risks posed by the nexus.

- In many cases, there is a lack of location-specific knowledge on water issues and a lack of modelling tools to adequately reflect risks posed by the nexus in ***energy*** infrastructure investment decisions. Such risks can be associated with large economic stakes: in 2015, hydropower facilities in Brazil sustained economic losses of more than US$4.3B due to drought-related ***energy*** and water rationing measures.

- The risks posed by the nexus are often exacerbated by the lack of sound water governance.

- Cross-border co-operation is a key issue: 261 international trans-boundary basins cover 45% of the earth's land surface, serve 40% of the world's population and provide 60% of the earth's entire freshwater volume. This affects the operation of planned and proposed ***energy*** infrastructure, and there is a need to ensure that adequate cross-border water management frameworks are in place.

- Alongside growing demand, increasing uncertainty about water availability and quality - driven by climate change impacts, increased ocean temperatures and more extreme weather - will further increase the significance of risks posed by the nexus.

Hydropower survey

As the International Hydropower Association (IHA) acknowledges, climate change brings an unfamiliar set of risks and limited experience in how to address them. With the support of Mott MacDonald, the association recently conducted a survey of hydropower companies worldwide in an attempt to gain a better understanding of how the industry views climate threats and opportunities.

When asked if the impacts of climate change were already being felt through their organisations, 63% of respondents stated yes, with 36% believing that impacts will be felt within the next 30 years. Potential impacts were identified as being changes to flow variability, extreme weather events and changes to mean flow - all of which were cited as being of moderate or significant risk by respondents. Operational risks were cited as being the main type of climate risk for hydropower companies, with loss of production the highest indicator of whether or not climate change can impact an organisation.

"Hydropower systems are characterised by their longevity, and are traditionally designed on the basis of historical hydrological data. However, under climate change, the past is no longer a reliable indication of the future," Tracy Lane, programme director of hydropower development at IHA, explains. "Decision-makers must consider how to prepare for potential impacts of climate change through the development of systems - both physical and corporate - that are capable of absorbing change. In particular, decision-makers must act today with data and information that may or may not prove reliable over the longer term."

US perspectives

The impact of climate change on water sustainability has also come under the national spotlight in the US. "One of the greatest challenges we face is dealing with the impacts of climate change on our nation's water, which is really the lifeblood of our economy," says Deputy Secretary of the US Department of the Interior, Michael L Connor. "We need to continue to develop collaborative strategies across each river basin to ensure that our nation's water and power supplies, ***agricultural*** activities, ecosystems, and other resources all have sustainable paths forward."

In March 2016 the Department of the Interior, together with the US Bureau of Reclamation (USBR), released a basin-by-basin report on the impacts of climate change in the western states. As the largest manager and wholesaler of western water, USBR says that it has a responsibility to consider potential risks to its water supplies. With dams and hydropower plants constructed in 17 western states, USBR provides more than 10T gallons of water for municipal use each year, as well as irrigation water that contributes to the production of 60% of US vegetables and 25% of its fruit and nuts. In addition, Reclamation's 53 power plants generate more than 40BkWh of electricity annually.

Having identified climate change as a growing risk to western water supplies, USBR is working towards implementing measures to ensure it will be managed as effectively and sustainably as possible.

The SECURE Water Act Report says that water supply, quality and operations; hydropower; groundwater resources; flood control; recreation; and fish, wildlife and other ecological resources in the western states remain at risk from climate change. Specific projections in the report include:

- A temperature increase of 5-7 degrees Fahrenheit by the end of the century.

- A precipitation increase over the north western and north-central portions of the western US, and a decrease over the southwestern and south-central areas.

- A decrease for almost all of the April 1st snowpack, a standard benchmark measurement used to project river basin runoff.

- A 7 to 27% decrease in April to July stream flow in several river basins, including the Colorado, the Rio Grande, and the San Joaquin.

USBR says that it is already addressing such vulnerabilities through adaptation strategies being developed with water managers across the west. "Reclamation, its customers and stakeholders have adapted to various climate conditions for more than 100 years," says USBR Commissioner Estevan Lopez. "Now changing climate is creating a greater challenge; but through collaboration and co-operation, we will work to ensure a sustainable and secure water supply now and into the future."

Collaboration

Collaboration is key to IHA's activities. Working with international organisations such as the World Bank Group and European Bank for Reconstruction and Development, the association is striving to build knowledge and identify good practices when incorporating climate resilience into hydro project development, operations and modernisation.

In November 2015 the World Bank and IHA convened a workshop to review current understanding about climate change and discuss a common way forward. One encouraging observation was that collaborative partnerships are currently being developed throughout the industry. Indeed in its survey, IHA found that 60% of respondents are working with research organisations to better understand climate change, while others are also working with scientists to forecast future impacts.

Landsvirkjun for example has participated in the Nordic Climate Change Project, working with over 100 scientists and 30 organisations to project future climatic conditions in Iceland, Greenland and Scandinavia. While French electricity generation company, Compagnie Nationale du Rhone, partnered with Meteo France to study the impact of climate change on the availability and management of water resources in the south-west of France.

Other innovative partnerships described by IHA include the Ouranos Consortium which comprises Hydro-Quebec, Rio Tinto Alcan, Manitoba Hydro, Ontario Power Generation, and the water authority of Quebec. They are studying and exploring potential climate adaptation measures, such as future changes in probable maximum precipitation. In addition the European Bank for Reconstruction and Development is facilitating a partnership between Barki Tojik, the state-owned utility in Tajikistan, and Hydro-Quebec/Ouranos to support skills transfer and capacity building around best international practices in climate resilience and adaptation measures.

Although the majority of respondents in IHA's recent survey are well aware of the need to develop climate-resilient infrastructure, 74% said that their organisation did not have existing guidelines on the topic, with 83% adding that sector guidelines would be useful. IHA stressed that such guidelines should be developed in partnership between businesses, the finance sector, and the academic community. They should take into consideration recent experiences and current initiatives, while a common international approach would be particularly useful.

Changing climatic conditions are already having palpable effects on the sector, according to IHA, and these impacts are only expected to become more pronounced in the future. Current uncertainty surrounding climate change means that hydropower businesses are faced with the economic impacts of either decreased or increased generating capacity, while developers and operators will need to make design and operational changes to improve climate resilience. However, as IHA warns, it is important not to take such challenges out of proportion. Developers and operators are already dealing with a range of risk (including hydrological variability) and, although climate risk must be incorporated into these processes, IHA says that risk management should continue to be business as usual.

It is generally accepted that climate change will affect precipitation patterns but this could potentially create new opportunities for the hydropower sector: as 70% of IHA survey respondents agree. They believe there will be potential opportunities for adaptation services such as flood protection and drought management; expanded roles in ***energy*** system balancing; an increased need for reservoir services; and increased power generation.

Indeed such hydro opportunities were illustrated at the joint IHA/World Bank workshop. Iceland was given as an example where the generation capacity of the current hydro system has already increased by 8% due to warming. The same system will only be able to exploit 30% of additional ***energy*** brought by future projected increases in glacial runoff, so there is a need to increase capacity at existing plants.

Meanwhile, in order to optimise productivity due to increasing climate variability, the Qairokkum hydropower plant in Tajikistan is being rehabilitated to increase installed capacity from 126MW to 174MW.

A flexible approach

The importance of a flexible project design is vitally important in a world faced with the prospect of climate change. IHA has reiterated that it is necessary to understand and prepare for adaptations which may be required at a later date, but it is not always necessary to build all of these immediately.

"Hydropower developers must carefully assess if they are investing in a region where climate change is expected to have a positive or negative impact on hydropower production," says Martin Fuchs, chief hydrologist and head of the hydro-consulting section at Poyry Hydropower. "Knowing about the expected changes will allow developers to adapt plant design and operation to maximise the benefit from climate change, or to mitigate adverse impacts."

Fuchs acknowledges that issues of climate resilience and climate change adaptation have become increasingly important for large infrastructure investments. "In water resources management and hydropower development there is a concern that climate-induced changes in the flow regime might have adverse impacts on technical and economic project viability," he said, adding that this not only applies to new investments but existing infrastructure as well. "However," he stresses, "it is often forgotten that for hydropower assets, climate change is not always a threat but in many cases also an opportunity."

SECURE WATER ACT REPORT - IMPACTS OF CLIMATE CHANGE

According to the USBR basin-level impacts of climate change will be experienced as indicated below:

Southern California: In Southern California, warming and population growth are projected to increase water demand, reliance on imported water and the use of groundwater in the area, leading to development of alternative water supplies, such as recycled water.

Colorado River Basin: Described as a critical resource in the west, seven basin states (Arizona, California, Colorado, Nevada, New Mexico, Utah and Wyoming) depend on the Colorado River for water supply, hydropower, recreation, wildlife and fish habitats and other benefits. ***Reductions*** in spring and early summer runoff could translate into a drop in water supply for meeting irrigation demands and adversely impact hydropower operations at reservoirs.

Columbia and Missouri River Basins: The Missouri is the longest river in the US. It encompasses one-sixth of the country and USBR has more than 40 dams on river tributaries. The Columbia River is the fourth largest river system in North America and has more than 400 dams providing hydropower to meet up to 80% of electrical needs in the northwest, flood storage, irrigation and navigation for 17M tons of cargo annually. Climate change will mean that moisture falling as rain instead of snow at lower elevations will increase the runoff during the wintertime rather than the summer, translating to ***reductions*** for meeting irrigation demands, adversely impacting hydropower operations, and increasing wintertime flood-control challenges.

Klamath and Truckee River Basins: The Klamath project provides irrigation for 850km2 of cropland and surplus water is diverted for use in water deficient areas of California's Central Valley. Warmer conditions may result in increased stress on fisheries, ***reduced*** salmon habitat, increased electricity demand, increased water demands for in-stream ecosystems and increased likelihood of invasive species' infestations.

Sacramento and San Joaquin River Basins: Earlier season runoff combined with a potential for increasing upper watershed evapotranspiration may ***reduce*** the capacity to store runoff in Reclamation's Central Valley Project and state water resources reservoirs.

CLIMATE CHANGE KNOWLEDGE NETWORK

IHA has established a new forum called the Climate Change Knowledge Network. This aims to bring together IHA members and external experts to foster discussion and build and share knowledge on climate-related topics, including resilience and adaptation. Contact [*climate@hydropower.org*](mailto:climate@hydropower.org) for more details.

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**Load-Date:** May 17, 2016

**End of Document**



[***Abandon hype in climate models; The economic models that are used to inform climate policy currently contain an unhealthy dose of wishful thinking. Technologies that remove carbon dioxide from the air are assumed in the models that avoid dangerous climate change - but such technologies do not yet exist and it is unclear whether they could be deployed at a meaningful scale.***](https://advance.lexis.com/api/document?collection=news&id=urn:contentItem:5JMG-DSD1-F021-6138-00000-00&context=1516831)

The Guardian

April 26, 2016 Tuesday 12:57 PM GMT

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**Section:** SCIENCE

**Length:** 1076 words

**Byline:** TIm Kruger, Oliver Geden and Steve Rayner

**Body**

The scenarios modelled for the IPCC's Fifth Assessment Report assume the large-scale deployment of technologies that achieve negative ***emissions*** that draw down carbon dioxide from the atmosphere and permanently store it. But whether such proposed methods could be deployed at a material scale is unproven. It would be more prudent to exclude these techniques from mitigation scenarios used by the IPCC, unless and until we have sufficient evidence of their availability and viability to support their inclusion.

Most of the modelled ***emissions*** pathways limiting warming to 2 °C (and all the ones that restrict the rise to 1.5 °C) require massive deployment of Biomass ***Energy*** with Carbon Capture and Storage (BECCS). This involves growing biomass which is used to generate power and geologically sequestering the carbon dioxide produced. While the constituent steps of this process have been demonstrated, there are but a few, small, examples of the combined process. To rely on this technique to deliver us from climate change is to demonstrate a degree of faith that is out of keeping with scientific rigour.

There is a distinct lack of evidence to determine whether BECCS is technically feasible, economically affordable, environmentally benign, socially acceptable and politically viable at a material scale. Technically, there are serious doubts about the ability to sequester the vast quantities of carbon dioxide that are implied in the models. Economically, without a substantial carbon price, the costs would be much higher than competing power-generation technologies. Environmentally, growing such volumes of biomass would have profound effects on biodiversity. Socially, the use of land for BECCS would restrict ***agriculture*** - contributing to substantial increases in food prices; while politically, the issue seems so toxic that the Paris Agreement carefully avoided mentioning negative ***emissions*** at all. Such impacts would not be material were BECCS to be deployed at a small scale, but the economic scenarios consistent with 1.5 °C (or even 2°C) assume that BECCS is deployed at a truly gargantuan scale, at which these adverse impacts would indeed be material.

For a technology to be deployable it needs not only to work, but also to possess a social licence to operate. For example, that Germany possesses the technical ability and financial means to build new nuclear power plants is not in question, but lacking the social and political will to do so makes the point moot.

The IPCC's own scenario database suggests that the ambition of the Paris Agreement cannot be achieved without negative ***emissions*** technologies. Even with rapid decarbonisation, there will be a need to achieve net negative ***emissions*** during the second half of this century. That objective cannot be achieved from a standing start. Well-functioning methods would need to be developed and rolled out at a rate unprecedented in human history. Yet to model what you want to happen, rather than what there is evidence could happen, is to lose the thread of reality. It is redolent of a defeated leader issuing orders to armies that have long since ceased to exist - not so much vision, as delusion.

Should modellers be able to model what they like? Of course. Scenarios allow us to undertake useful thought experiments that provide us with the means to assess potentially novel approaches.

But it is hazardous to rely on science fiction in the development of the scenarios that are used to inform policymakers. To include scenarios for avoiding dangerous climate change that employ entirely speculative approaches seems reckless in the extreme.

Some will defend the use of these technological imaginaries in IPCC scenarios by arguing that without them hopes of avoiding dangerous climate change are forlorn and that this would generate a degree of despair that would undermine the will to act.

But that is not the role of models. "Fake it 'til you make it" may work as a tactic, but it is a lousy strategy. As the dust settles on the Paris Agreement and policymakers face up to the challenge of achieving the ambition set out by their leaders, we need to reflect on what actually needs to happen. Policymakers can only hope to develop realistic plans, if the basis on which they are making those plans is itself realistic. While the boundary between ambition and delusion may be not be entirely sharp, the inclusion of negative ***emissions*** amounting to 600-800 billion tonnes of carbon dioxide (equivalent to 15-20 years of current annual ***emissions***) is clearly more than a stretch goal. For this reason, negative ***emission*** techniques should be excluded from the mitigation scenarios used by the IPCC unless and until there is sufficient evidence to warrant their inclusion and then only on a scale that is demonstrably realistic.

The IPCC recently announced a Special Report on the 1.5 °C ***target***. To be credible, this must include detailed assessment of proposed negative ***emission*** techniques, drawing on a wide range of expertise from natural sciences, engineering, social sciences and the humanities to assess to what extent, if any, such approaches could be deployed without creating countervailing side-effects.

On the basis of such a comprehensive assessment, policy makers will then have to make an explicit decision either to invest in the necessary research, development and demonstration of the technologies or to explain how they propose to meet their ambitious ***targets*** without such interventions. Policymakers cannot be allowed to hide behind the vague language of the Paris Agreement ("achieve a balance between anthropogenic ***emissions*** by sources and removals by sinks of ***greenhouse gases***").

In the absence of comprehensive research and indications of political feasibility, it seems prudent to exclude from the models what is currently magical thinking. Only by undertaking research will it be possible to determine whether today's science fiction could be transformed into tomorrow's science reality.

Tim Kruger is a James Martin Fellow at Oxford University and manages the Oxford Geoengineering Programme. Oliver Geden is head of EU division at the German Institute for International and Security Affairs (SWP). Steve Rayner is James Martin Professor of Science and Civilization and Director of the Institute for Science, Innovation and Society (InSIS) in the School of Anthropology and Museum Ethnography at Oxford University.

**Load-Date:** April 26, 2016

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[***A new car that a vegan could love; Tesla seeks to burnish its eco-friendly reputation with sustainable interiors***](https://advance.lexis.com/api/document?collection=news&id=urn:contentItem:5HVS-BVX1-JC85-N33J-00000-00&context=1516831)

International New York Times

January 16, 2016 Saturday

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**Section:** FINANCE; Pg. 12

**Length:** 951 words

**Byline:** DIANE CARDWELL

**Body**

**ABSTRACT**

Tesla, which has introduced synthetic leather interiors, is the latest automaker to join a push to project an environmentally responsible image.

**FULL TEXT**

For the eco-conscious car buyer, Tesla's luxury electric vehicles, with their neck-snapping acceleration, are proof that performance doesn't have to be sacrificed at the altar of saving the environment.

But for some discerning consumers, there is a nagging problem. The leather in the seats and steering wheel requires slaughtering animals, and the cloth substitute doesn't quite measure up for a vehicle that can cost more than $100,000.

Now, in response, comes the Tesla that even a luxury-minded vegan could love.

Synthetic leather, in a shade Tesla calls Ultra White, is available as an option for the new Model X sport utility vehicle.

Tesla is just the latest automaker to join in what might have been hard to imagine a generation ago: a rush by the car industry - long a symbol of environmental wreckage - to project a more responsible image.

''All the car companies want sustainability cred,'' said Jack R. Nerad, executive editorial director at Kelley Blue Book.

Perhaps it was inevitable. After all, celebrities like Beyoncé and Brad Pitt have given the vegan lifestyle gloss, while its growing number of adherents have pushed restaurants and food companies to create more palatable plant-based products that mimic meat and dairy items.

If vegans are willing to pay for a premium vehicle, why shouldn't they be able to have fake leather, too?

So in recent years, BMW, Mercedes-Benz, Lexus and Ferrari have begun offering models with faux leather seating, and Volvo and Ford have increasingly emphasized the use of more natural components like soy foam in their seats.

Consider the BMW i3. For $42,400 and up, a buyer gets an interior with open-pore eucalyptus wood harvested from a ''certified forest.'' (Translation: a forest that is responsibly managed.) The interior panels are made of a renewable Asian kenaf plant, and it is all assembled in a wind-powered factory in Germany.

''The aim of developing the BMW i cars is not simply to build ***emission***-free cars,'' the company's website says, ''but also to use the maximum possible amount of sustainably produced and recycled materials - especially inside.''

At BMW, it appears, environmental guilt no longer comes standard.

In the case of Tesla, whose brand represents a kind of sustainable luxe, many vegans have complained that it makes no sense for an eco-friendly car to include animal products, given the significant amount of ***greenhouse gases*** the industrial ***agriculture*** sector emits. Even Nikola Tesla, the inventor for whom the car is named, they point out, was a vegetarian.

Leilani Münter, a professional racecar driver and environmental advocate who is vegan, said she was disappointed when she first tried to buy the Model S and could not get the faster, sportier model without real leather seats.

She contacted Elon Musk, Tesla's founder and chief executive, who helped her get the desired model with cloth seats, she said. Not too long afterward - faced with several complaints from similar-minded would-be customers - the company made cloth seats, in black only, an option for all models and trim packages, with a synthetic-leather-clad steering wheel available on special request.

The new seating option for the Model X goes a step further.

''Tesla revolutionized the electric car and now it's redefined luxury interiors by using these vegan materials, which are both animal- and environmentally friendly,'' said Anne Brainard, senior corporate liaison and manager of corporate affairs at People for the Ethical Treatment of Animals. The group urged Tesla at its shareholder meeting last June to stop using leather and had since remained in discussions with the carmaker.

''We find that customers enjoy both leather and nonleather options for their Teslas,'' Khobi Brooklyn, a company spokeswoman, said in an email. ''We are committed to giving customers the ability to build the Tesla that meets their needs and lifestyle choices.''

Jack Norris, executive director of Vegan Outreach, an advocacy group based in Davis, Calif., said Tesla's move indicated that enough people had voiced concern to push the carmaker to respond.

''Fortunately the options for this lifestyle are really expanding and becoming cool,'' Melissa Wood, who drives a BMW with synthetic leather seating, said in an email.

Still, as the push to ***reduce*** carbon dioxide ***emissions*** leads to the use of new ***energy*** sources, it may become even trickier to avoid animal products.

Biofuels aimed at ***reducing*** carbon dioxide ***emissions*** - like those United Airlines announced last year it would start using, and would invest $30 million to develop - are sometimes derived from animal fats.

And the use of animal-based food waste to make electricity and fuel is on the rise in places like Cleveland, Boston and Orlando.

Ms. Münter, who turned down sponsorship from a company that was making lubrications from beef tallow, said that she looked forward to a day without liquid fuels entirely.

''I don't like burning fuel,'' she said. ''Eventually, it's just not going to be a byproduct they're trying to use because hopefully there won't be this huge industry that's slaughtering billions of animals every year.''

Mark and Elizabeth Peters, shareholders and S-Model owners who are vegan and have publicly pressed Tesla to abandon animal products, agreed, but said that it was difficult to completely avoid them.

''There's ingredients in most everything that we see, wear and experience in our daily lives that somehow have utilized a part of an animal, which is unfortunate,'' Ms. Peters said. ''But if we know, then we can make a choice.''

**Load-Date:** January 15, 2016

**End of Document**



[***LONDON BRIEFING: Premier Inn And Holiday Inn Owners Lead Risers***](https://advance.lexis.com/api/document?collection=news&id=urn:contentItem:5H65-2WX1-DYYF-M0JM-00000-00&context=1516831)

Alliance News

October 20, 2015 Tuesday 07:16 AM GMT

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**Length:** 2286 words

**Body**

LONDON (Alliance News) - Shares opened flat in London Tuesday with little in the way of economic data to drive trading but plenty of UK and international company news.

Hoteliers Whitbread and IHG led FTSE 100 gainers, up 2.5% and 2.7%, respectively.

Whitbread, the owner of hotel and coffee chains Premier Inn and Costa Coffee, raised its interim dividend as it said pretax profit increased in the first half on higher sales and it remains on track to meet its growth plans.

IHG, which owns brands including Holiday Inn, Crowne Plaza and InterContinental Hotels, reported a drop in revenue per available room in the third quarter of 2015 due to the strengthening of the dollar, but said RevPAR grew in three of its four operating regions on a constant exchange rate basis.

Here is what you need to know at the London market open:

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MARKETS

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FTSE 100: flat at 6,352.39

FTSE 250: up 0.2% at 16,945.88

AIM ALL-SHARE: flat at 743.19

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Hang Seng: down 0.6% at 22,941.96

Nikkei 225: closed up 0.4% at 18,207.15

DJIA: closed up 0.1% at 17,230.54

S&P 500: closed flat at 2,033.66

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GBP: flat at USD1.5486 (USD1.5489)

EUR: up at USD1.1333 (USD1.1322)

GOLD: up at USD1,172.91 per ounce (USD1,170.76)

OIL (Brent): down slightly at USD48.74 a barrel (USD48.83)

(changes since previous London equities close)

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ECONOMICS AND GENERAL

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Tuesday's Key Economic Events still to come

(all times in BST)

09:00 EU Current Account

13:30 US Housing Starts and Building Permits

13:30 Canada Wholesale Sales

13:55 US Redbook index

14:15 US FOMC Member Powell speech

14:30 US Fed's William Dudley speech

16:00 US Fed Chair Yellen speech

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Germany's producer prices declined at the fastest pace in seven months and the fall was much worse than the decrease economists had predicted, preliminary data from Destatis revealed. The industrial producer price index dropped 2.1% year-on-year following a 1.7% slump in August. Economists had expected a 1.8% fall.

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Canada's Liberal Party beat the incumbent Conservatives of Stephen Harper, election results showed. "The Canadians have chosen change - real change," Liberal leader Justin Trudeau, the eldest son of former Liberal prime minister Pierre Trudeau, told his supporters at a rally broadcast live by several television channels. The Liberals had 173 confirmed seats, and were leading in another 11, giving them a likely total of 184, comfortably above the 170 needed for a majority, CBC reported online.

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Japan will remove tariffs on about 30% of the ***agricultural*** products it earlier defended as sensitive, under a recently concluded Pacific trade pact, local media reported. During negotiations, Japan sought to maintain its import tariffs on 586 goods in five key farm categories - rice, wheat, beef and pork, dairy products and sugar. Now 174 of those will be lifted under the Trans Pacific Partnership agreement, Kyodo News agency reported, citing unnamed government sources.

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Chinese hacking of US companies that appears to be aimed at stealing intellectual property has continued despite an agreement reached last month by US President Barack Obama and Chinese President Xi Jinping that aimed to halt such attacks. Online security firm Crowdstrike said that its systems had detected prevented intrusions into companies committed by "actors we have affiliated with the Chinese government."

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Syrian government forces claimed gains against Islamic State as they sought to relieve a military airbase besieged by the extremist group east of Aleppo. A Syrian military source, who declined to be named, said the army had captured three villages as it advanced towards Kweires airbase, where hundreds of troops are thought to be besieged.

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BROKER RATING CHANGES

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TRADERS: MACQUARIE INITIATES OCADO WITH 'OUTPERFORM' - ***TARGET*** 410 PENCE

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BERENBERG RAISES AVEVA GROUP TO 'BUY' ('HOLD') - ***TARGET*** 2,450 (1,977) PENCE

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TRADERS: DEUTSCHE BANK RAISES RANDGOLD RESOURCES TO 'BUY' ('HOLD')

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COMPANIES - FTSE 100

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Whitbread said its pretax profit increased in the first half on higher sales and said it will raise its interim dividend, as it remains on track to meet its growth plans. The company said its pretax profit for the six months to August 27 was GBP254.9 million, up from GBP241.8 million a year earlier. The latest half was hit by the group booking GBP25.2 million in exceptional charges on onerous leases for sold business and accelerated amortisation costs on its IT systems. Total revenue was up to GBP1.44 billion in the half-year from GBP1.29 billion a year ago, with like-for-like sales growth across the group of 3.6%.

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InterContinental Hotels Group reported a drop in revenue per available room in the third quarter of 2015 due to the strengthening of the dollar, but said RevPAR grew in three of its four operating regions on a constant exchange rate basis. The hotel operator said global RevPAR in the third quarter fell 0.4% on the same period the year before due to the strengthening of the dollar, although it grew 4.8% at constant exchange rates, led by a 3.6% rise in room rates.

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COMPANIES - FTSE 250

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Al Noor Hospitals Group confirmed it has received a "highly preliminary" indication of interest from Abu Dhabi-based VPS Healthcare Group, following its proposed reverse takeover of South Africa's Mediclinic International Ltd last week. This brings the number of potential suitors for the private hospital group to three, having also received a competing approach from London-listed peer NMC Health.

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Go-Ahead Group said its overall trading in the first quarter has been satisfactory and affirmed its full-year expectations for its bus and rail operations. The transport operator said trading in its UK regional bus business in the first quarter, covering June 28 to October 19, was broadly in line with the second half of its 2015 financial year, with revenue up 1.0% but passenger journeys down 1.5%. London bus revenue rose 2.0% in the quarter, though the group said its quality incentive contract continues to be hit by congestion in the capital from roadworks. The rail business performed well again, however, with passenger revenue from its Southeastern service up 6.0%, London Midland revenue up 11.0% and GTR revenue up 4.5%.

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Publishing and business information company Informa reaffirmed its full-year expectations on a "consistent performance" in its third quarter, taking its revenue growth for the first nine months of 2015 to 6.9%. Informa said that, on an organic basis, revenue growth for the nine months to end-September was around 2%.

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Electra Private Equity said it and fellow private equity firm Exponent Private Equity have proposed the acquisition of Photobox Group, the personalised gifts and products retailer. Photobox owns the Moonpig brand, along with a series of other companies which produce personalised products and gifts. The acquisition, which will be subject to consultation with employee representatives and competition clearance, will see Electra invest GBP89.0 million. The pair intend to back the growth of Photobox's business via mobile channels, product launches and international expansion.

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Polymetal International said revenue was down in the first nine months of 2015, as increased gold and silver sales failed to offset lower world metal prices, though the company reaffirmed it is on track to hits its full-year production guidance. The Russian gold miner generated USD402.0 million in revenue in the third quarter of 2015, down 11% year-on-year from USD451.0 million. That revenue came from the sale of 261,000 ounces of gold in the third quarter of 2015, up 3% from 254,000 ounces a year earlier.

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John Wood Group said its subsidiary has won a USD31.0 million contract to deliver operations management services to Carbon Creek ***Energy***'s coal-bed methane field in the Powder River basin in Wymoning in the US. Wood Group PSN, which services brownfield operations, has won the contract on the field, which is "the largest of its kind in the region" with over 7,000 wells producing 385.0 million cubic feet of gas per day.

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Entertainment One said it received take-up of 95.87% for its recent rights issue of shares to part-fund its acquisition of Peppa Pig creator Astley Baker Davies The discounted rights issue was announced earlier this month to raise GBP193.6 million through the issue of around 131.5 million new shares at 153.0 pence. Entertainment One said it had received valid acceptances in respect of 126.05 million new shares. Underwriters JP Morgan Cazenove and Credit Suisse will "endeavour" to find subscribers for the remaining 5.43 million not taken up under the rights issue, the company said.

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COMPANIES - LONDON MAIN MARKET AND AIM

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ASOS reported growth in profit in its recently-ended financial year as sales rose strongly and it invested in its warehouses and technology systems. The online fashion retailer reported a 1% rise in pretax profit in the year ended August 31 to GBP47.5 million from GBP46.9 million the year before, as revenue rose 18% to GBP1.15 billion from GBP975.5 million. By region, UK retail sales were up 27% and international retail sales increased 11%.

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International Greetings said trading in the first half of its financial year was in line with expectations and that it will meet expectations for the full year. The greetings card and gift packaging manufacturer said the sales it has made in the six months to September 30, together with a solid order book, mean it will meet its revenue expectations for the full year.

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Household and personal care products company McBride said trading in the first quarter of its financial year was in line with its expectations. The company said it made a solid start to the year, with constant currency revenue in the three months to the end of September slightly ahead year-on-year.

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Convenience store operator McColl's Retail Group said it has decided to sell around 100 newsagents following a review of its store portfolio. The company said the stores are expected to be sold for no less than their asset value, and the closure of the stores is anticipated to be earnings neutral in the 2016 financial year. McColl's said it will continue to run its profitable newsagents and will convert these into convenience stores where appropriate.

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COMPANIES - INTERNATIONAL

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Deutsche Bank mistakenly transferred about USD6 billion to a US hedge fund client in June and recovered the money a day later, Financial Times reported. The USD6 billion trade was processed by a junior member of the bank's forex sales team in June while his chief was on holiday. Instead of processing a net value, the person processed a gross figure. That meant the trade had "too many zeroes", the report said.

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International Business Machines reported an increase in profit for the third quarter profit, reflecting the absence of a hefty charges from last year related to IBM's former chip operations. However, the company's revenue for the third quarter fell 14% from last year, hurt largely by sharp drop in hardware sales and strong US dollar. The company's quarterly earnings came in above analysts' expectations, but its revenues fell short of expectations, sending its shares down a near 5% in the extended trading hours.

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German business software maker SAP reported that its profit attributable to owners of parent for the third-quarter 2015 increased to EUR898 million from last year's EUR880 million, with earnings per share improving to EUR0.75 from EUR0.73 in the previous year. Total revenue grew to EUR4.985 billion from EUR4.254 billion in the prior year.

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Flash memory card maker SanDisk is in advanced talks to sell itself to hard disk drive maker Western Digital and a deal could be reached as soon as this week, Bloomberg reported Monday, citing people with knowledge of the matter. According to the Bloomberg report, SanDisk was earlier in talks with both Western Digital and Micron Technology about a deal.

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e-commerce giant Amazon.com said it is creating 100,000 seasonal positions across its US network of fulfillment and sortation centers this holiday season to meet the increase in customer demand. In the months leading up to this holiday season, Amazon has also hired tens of thousands of regular, full-time employees. Amazon has more than 90,000 full-time employees across its more than 50 fulfillment centers and 20 sortation centers in the US In preparation for the 2015 holiday season, Amazon has hired over 25,000 full-time employees since August.

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Dozens of US companies joined a White House initiative to push global action against climate change and take steps to ***reduce*** their own environmental impact. More than five dozen companies signed onto the American Business Act on Climate Pledge, urging governments to reach an agreement on climate change at a summit in December in Paris and agreeing to ***reduce*** their own ***emissions*** and water usage and increase use of renewable ***energy***. Pledges include: a 30% ***reduction*** in ***greenhouse gas*** ***emissions*** by consumer products conglomerate Procter & Gamble by 2020; an 80% decrease in ***emissions*** by 2050 by household products manufacturer Johnson and Johnson; support for sustainable beef and palm oil production by global fast-food giant McDonald's; and social media website Facebook increasing its use of renewable ***energy***.

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Tuesday's Scheduled AGMs/EGMs

Scancell

Mcbride

Frontier Developments

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By Tom Waite; [*thomaslwaite@alliancenews.com*](mailto:thomaslwaite@alliancenews.com); @thomaslwaite

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**Load-Date:** October 20, 2015

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[***General Mills Outlines Emissions Plans***](https://advance.lexis.com/api/document?collection=news&id=urn:contentItem:5GV4-0501-JD33-J01N-00000-00&context=1516831)

Business Monitor Online

September 2, 2015 Wednesday

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**Length:** 128 words

**Highlight:** US-based food company General Mills plans to ***reduce*** its ***greenhouse gas*** ***emissions*** by about 28% across its entire value chain in the coming 10 years.

**Body**

**News:** US-based food company **General Mills** plans to ***reduce*** its ***greenhouse gas*** ***emissions*** by about 28% across its entire value chain in the coming 10 years. The company will also invest USD100mn in ***energy*** efficiency and clean ***energy*** initiatives. The company is planning to achieve sustainable ***emission*** levels in line with the 50-70% ***reduction*** in absolute ***emissions*** by 2050 suggested by the Intergovernmental Panel on Climate Change. The company will collaborate with suppliers to identify new solutions and adopt sustainable ***agriculture*** practices, which will lead to ***reductions*** in ***emissions***, said CEO and President Ken Powell, reports FBR. General Mills began the initiative in 2005 and has cut down absolute ***emissions*** within its operations by around 13% in the last decade.

**Load-Date:** September 3, 2015

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[***Aviation biofuel industry expanding in US***](https://advance.lexis.com/api/document?collection=news&id=urn:contentItem:5HMY-27F1-JCN4-H0GF-00000-00&context=1516831)

ICIS Chemical News

December 18, 2015 Friday

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**Length:** 845 words

**Body**

alaska airlines biofuel Seattle-Tacoma International Airport is among the first in the US poised to curb carbon ***emissions*** on a large scale with jet biofuel. (Image: Port of Seattle/Alaska Airlines)

HOUSTON (ICIS)--Boeing, Alaska Airlines and the Port of Seattle this week signed an agreement to launch a study that will work toward a long-term goal of utilising aviation biofuel in all flights in and out of the Seattle-Tacoma International Airport (Sea-Tac).

The $250,000 Biofuel Infrastructure Feasibility Study will be managed by the port and finished toward the end of 2016. It will examine costs and upgrades needed to create a system that will deliver a blend of regular jet fuel and aviation biofuel to the airport.

Conventional jet fuel recently has fallen to 11-year low prices, which could make the more sustainable but also more costly aviation biofuel less attractive to some would-be buyers. Conversely, the project partners have noted that the volatility of oil prices could make aviation biofuel more attractive. A UN board hopes to adopt international ***emissions*** standards for the aviation industry early in 2016.

The Federal Aviation Administration (FAA) aims for the US to use 1bn gal/year of sustainable alternative jet fuel by 2018. The Environmental Protection Agency (EPA) proposed in June to add jet fuel to the Clean Air Act, putting it on the list of ***greenhouse gas*** contributors.

In the Sea-Tac project, Boeing, which has a large presence both in Washington state and in the developing biofuels industry, said on Wednesday that it will provide knowledge about fuel types, technology and producers. The commercial airplane producer hopes that aviation biofuel will account for 1% of global jet fuel demand by 2016.

[1]Alaska Airlines has been in involved in the biofuel industry for years. Starting in 2011 the airline had flights with 20% aviation biofuel blends made from cooking oils and animal fats. In 2016, the airline plans to utilise alcohol-to-jet fuel and forest-industry waste fuels.

Other companies are making strides toward sustainable aviation fuels as well. FedEx and Southwest Airlines have both signed agreements with a biorefinery in Oregon in the past 15 months.

Colorado-based [2]Red Rock Biofuels uses forest residue to create the fuel. The feedstock includes bark, pine needles and branches from timber and saw mill operations. The company reported that its first plant should turn about 140,000 dry tons of forest feedstock into 12m gal/year of renewable jet, diesel and naphtha fuel.

FedEx will take 48m gallons of the blended fuel at its Oregon hub beginning in 2017. [3]Fedex says the fuel will be half-biofuel, half-conventional jet fuel. Southwest's agreement includes 3m gal/year of the fuel, the first of which is expected to be delivered in 2016.

Another upcoming biofuels company called Fulcrum has reached an agreement with United Airlines this year. United invested $30m in the company, adding to a 2014 investment by Cathay Pacific Airlines, which is in a decade-long agreement with the biofuels company that involves 375m gallons of fuel. Fulcrum's refinery will be built in [4]northern Nevada.

The US Department of ***Energy*** will have involvement in several of these projects, along with the US Navy and US Department of ***Agriculture*** (USDA). The USDA created an initiative called Farm to Fly with Boeing and airline trade group [5]Airlines for America.

"As leaders in aviation biofuels, this will send a signal to airlines and biofuel producers that Sea-Tac airport will be ready to integrate commercial-scale use of aviation biofuels," Port of Seattle Commissioner John Creighton said of the agreement on Wednesday.

"Biofuel infrastructure will make Sea-Tac airport an attractive option for any airline committing to use biofuel, and will assist in attracting biofuel producers to the region as part of a longer-term market development strategy," he added.

Currently, conventional jet fuel at Sea-Tac comes from Anacortes, Washington, by pipeline and the airport does not have a redundant fuel supply in place. Sea-Tac used 451m gallons of fuel in 2014 and maintains about nine days of fuel supply at a time.

Pushback from the refining industry is likely, as it is common with renewable fuels. There is consistent friction between the American Petroleum Institute (API), which says renewable fuels are bad for gasolines and engines. The Renewable Fuels Association supports ethanol being blended into motor fuels.

fuel farm The tank farm at Sea-Tac can hold up to nine days of jet fuel for the airport at one time. (Image: Port of Seattle/Alaska Airlines)

References

1. [*http://www.alaskaair.com/content/about-us/sustainability-report/environment/****emissions****-fuel/aircraft/fuel-we-use.aspx*](http://www.alaskaair.com/content/about-us/sustainability-report/environment/emissions-fuel/aircraft/fuel-we-use.aspx) 2.   [*https://www.icis.com/subscriber/news/2015/12/09/9951610/joule-absorbs-red-rock-in-bid-to-raise-funds-****reduce****-risk/*](https://www.icis.com/subscriber/news/2015/12/09/9951610/joule-absorbs-red-rock-in-bid-to-raise-funds-reduce-risk/) 3.   [*http://about.van.fedex.com/blog/biofuels-take-flight-with-fedex-infographic/*](http://about.van.fedex.com/blog/biofuels-take-flight-with-fedex-infographic/) 4.   [*https://www.icis.com/subscriber/news/2015/05/05/9882668/us-fulcrum-bioenergy-to-build-waste-to-fuels-refinery-in-nevada/*](https://www.icis.com/subscriber/news/2015/05/05/9882668/us-fulcrum-bioenergy-to-build-waste-to-fuels-refinery-in-nevada/) 5.   [*http://airlines.org*](http://airlines.org)/

**Load-Date:** December 19, 2015

**End of Document**



[***When is enough taxpayer aid enough?***](https://advance.lexis.com/api/document?collection=news&id=urn:contentItem:5JSX-NGW1-DY9P-N535-00000-00&context=1516831)

Irish Independent

May 17, 2016 Tuesday

Edition 1, National Edition

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**Section:** FARMING;NEWS; Pg. 16

**Length:** 686 words

**Byline:** ALAN MATTHEWS

**Body**

FARM incomes are back in the news again, with milk prices in particular having fallen from their record levels in early 2014. Although Teagasc economists were projecting a further growth of 5pc in family farm income in 2016 at their annual Outlook conference last December, this figure will be revised downwards in light of more disappointing milk returns than expected in the first half of 2016.

Nonetheless, Irish family farm income has been positively buoyant in the past five years compared to the previous five years (Table 1).

The expected fall in 2016 will be nothing like that experienced in the horrible years of 2009 and 2010. Also, the fall in income in 2016 will be cushioned by an allocation of (EURO)13.7m from the EU dairy crisis fund agreed last September, an amount which can be doubled by the national Government.

The table also shows the importance of public support to farm incomes in Ireland, principally the Single Farm Payment (now the basic payment and greening top-up) but also including payments under rural development programmes. These subsidies have been much less volatile than family farm income, although they show a gradual decline over time. This reflects in part the impact of the 2013 CAP reform which ***reduced*** the overall national ceiling for direct payments, as well as smaller payments under rural development programmes in recent years.

Nonetheless, it is noteworthy how stable public support to farming in Ireland has been despite the enormity of the crisis in the Irish public finances as a result of the financial crisis and bank collapses in 2008, and which led to major cutbacks in public spending in other sectors.

The column showing the value of public support to farming is labelled 'subsidies' because this is the technical term used in the national accounts - 'other subsidies not related to production'.

MOST OF THE EXPENDITURE IS A SUBSIDY TO FARMERS SIMPLY BECAUSE THEY ARE FARMERS Some of these payments remunerate farmers for the production of public goods when paid through agrienvironment programmes funded by the Rural Development Programme, although counted as subsidies in the national accounts.

But these are only a tiny part of the total. Most of the expenditure is indeed a pure subsidy to farmers simply because they are farmers.

The importance of these subsidies relative to family farm income should give anyone pause for thought. In all of the past 10 years, these transfers from taxpayers have contributed the bulk of family farm income and in four of the 10 years they exceeded the income that farmers have made from producing the milk, beef, cereals and other products of farming.

In other words, the market return from farming in Ireland is marginal and in many years negative.

Farm organisations will point out that these payments are partly to compensate for higher costs of production in the EU due to the high standards of food safety, animal welfare and environmental management demanded of farmers. They also argue that market prices are depressed because of the imbalances in market power along the food chain.

Indeed, increasing farm margins in the food chain is the top priority for the IFA President Joe Healy in his role as the new Chairman of the Copa-Cogeca Food Chain Working Party.

On the other hand, there are additional costs of farm production (in terms of poorer water quality, poorer air quality, larger ***greenhouse gas*** ***emissions*** and loss of biodiversity) which if reflected in market prices and in the national accounts, would tip the scales in the other direction.

But, when is enough enough? Farm groups are now calling for additional support for farm incomes in 2016 because of difficult commodity markets.

But family farm income is already almost totally dependent on public subsidies.

Are there not progressive voices in the farming industry who worry about this trend and feel a responsibility to reverse it? Is there a vision for Irish ***agriculture*** in which ***targeted*** public support continues to play a role but to a much less significant extent? Alan Matthews is Professor Emeritus of European ***Agricultural*** Policy at Trinity College Dublin

**Load-Date:** May 17, 2016

**End of Document**



[***Global climate march 2015: hundreds of thousands march around the world - as it happened; Thousands take to streets ahead of Paris climate summit Sydney to Seattle, via Hong Kong, Berlin, London and Sao Paulo, march on SundayClimate change protests take place across Australia Keep it in the ground: the Guardian's climate change campaignInteractive: why we are joining the global climate march***](https://advance.lexis.com/api/document?collection=news&id=urn:contentItem:5HH4-HVR1-JCJY-G4YD-00000-00&context=1516831)

The Guardian

December 1, 2015 Tuesday 9:47 AM GMT

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**Section:** ENVIRONMENT

**Length:** 14858 words

**Byline:** Claire Phipps in Sydney, Adam Vaughan in London and Oliver Milman in New York

**Body**

block-time published-time 9.43pm GMT

The day in climate change rallies

As the last of the day's climate marches get underway in the western reaches of North America, we will wrap up our live coverage of what has been a record-breaking day in global activism ahead of the COP21 talks in Paris tomorrow.

More than 600,000 people have taken to the streets in 175 countries around the world to call for a strong deal in Paris that will see a swift transition from fossil fuels to renewable ***energy***.

Melbourne and London led the way, with 60,000 people and 50,000 people, respectively, joining marches. Figures including Thom Yorke, Emma Thompson, Charlotte Church and Jeremy Corbyn attended the London gathering.

Pope Francis and Ban Ki-moon were among the people to donate 10,000 pairs of shoes to an installation in Paris to represent people who could not march because of orders imposed by authorities after the 13 November attacks.

Protests in Paris turned violent, with police arresting around 200 people after clashes with anti-capitalists and anarchists. Some activists allegedly hurled candles and bouquets from memorials to victims of the 13 November attacks. Organisers of the climate marches have condemned the violence.

Barack Obama boarded a flight to Paris, where he said he will reaffirm the US's support for France in the face of "barbaric attacks" as well as forge a deal to ***reduce*** ***greenhouse gas*** ***emissions*** and avert the worst ravages of climate change.

Climate talks will go on until 11 December, amid optimism among negotiators that an effective agreement can be reached. Let's hope Paris can finish the year on a positive note.

block-time updated-timeUpdated at 9.44pm GMT

block-time published-time 9.20pm GMT

Climate events are now underway on the west coast, with people gathering in Los Angeles and Vancouver.

There are tentative estimates of 25,000 people attending the climate march in Ottawa. Organisers expect more than 600,000 people worldwide have attended marches calling for fossil fuels to remain in the ground and for nations to shift to 100% renewable ***energy*** use.

May Boeve, executive director of organiser 350.org, said: "The scale and diversity of today's events are astounding. Worldwide people are ready for the end of fossil fuels and the dawn of renewables. World leaders can no longer ignore this urgent call for action as the climate crisis continues to unfold. It is time for them to stand on the right side of history."

enltrDrum circle warming up the crowds at #Vancouver#ClimateMarch by @VanArtGallerypic.twitter.com/SB85lyb8TX

- Geordon Omand (@gwomand) November 29, 2015

enltrPeople gathering for the #ClimateMarch at LA city hall. Come on down now!!!! pic.twitter.com/9wrhYxu1Di

- Daisy J Lin (@paradoxdaisy) November 29, 2015

block-time published-time 9.04pm GMT

The rather sedate gatherings taking place in the US and Canada are in contrast to the clashes between protestors and police seen in Paris earlier this week.

French newspaper La Figaro has reported that some activists hurled objects from the memorial to those killed in the 13 November attacks at police. Candles and bouquets were launched in the direction of police, the newspaper said.

Others responded, as "many people managed to form a human chain around the memorial to protect flowers and candles", La Figaro reported (in French).

350.org, one of the major organisers of the climate marches, said that the clashes had violated a "nonviolent pledge that every group involved in the climate coalition here in France has agreed to." It has distanced itself from violence but said it opposes any attempt to "unnecessarily clamp down on civil liberties."

The official climate march in Paris was banned due to security concerns. Around 200 people were arrested during the subsequent clashes, with police using tear gas to disperse protestors.

block-time published-time 7.58pm GMT

Climate activists in the US and Canada haven't been able to muster the kinds of numbers seen at marches in Europe and Australia (in particular), nor is there the celebrity impact of, say, Radiohead's Thom Yorke DJ-ing for the crowd, as happened in London earlier.

But hundreds of people have shown their support for a shift to renewables across North America, including the White House, New York and the Texas capitol building in Austin.

enltr #HappeningNow#ClimateMarch in front of White House! pic.twitter.com/j9hKd02aca

- Lee Camp [Redacted] (@LeeCamp) November 29, 2015

undltr #ClimateMarch#NYCpic.twitter.com/WJMqHoP5NG

- Alex Zucker (@Alex\_Zucker) November 29, 2015

enltrjessakwest: At #Austin 's #ClimateMarch for #COP21Paris ?? what an amazing #community -focused event. pic.twitter.com/b7pvagl0aj

- Stacy Markham (@AustinpalStacy) November 29, 2015

block-time published-time 7.20pm GMT

Ottawa and Vancouver will vie for the largest turnout of climate marchers in Canada. Several thousand people have gathered in Ottawa to hear environmentalist David Suzuki demand the "necessity" of a fully renewable ***energy*** system.

Prior to the march, Suzuki said he was glad to see the back of Stephen Harper, the pro fossil fuels former prime minister who was defeated earlier this month by Justin Trudeau and his Liberal party.

"We've had nine-and-a-half years of a Harper government that has basically not confronted the issue of climate change," Suzuki said. "I believe that it is wilful blindness."

enltrAnd we're off! #100possible#ClimateMarchpic.twitter.com/9capHE8jBO

- Greenpeace Canada (@GreenpeaceCA) November 29, 2015

block-time published-time 6.57pm GMT

Back in New York, a series of speakers have called for a greater effort to move towards 100% renewable ***energy***. Among them is Bill Nye, aka the science guy.

enltr"We can change the world!" - @BillNye the Science Guy before the #ClimateMarch in #NYC#ClimateForChange#COP21pic.twitter.com/kz8YaKK5bo

- Stephanie Colombini (@Steph\_Colombini) November 29, 2015

block-time published-time 6.33pm GMT

Organisers have announced that early estimates show the global climate marches are the largest ever held, with a likely total of more than 600,000 people.

Around 570,000 people have already marched in 2,300 events in 175 countries around the world. Further marches in Vancouver, Ottawa and Mexico City are anticipated to push this number over 600,000, more than double the record set in last year's series of marches.

All this was achieved despite the largest march, in Paris, called off due to security concerns. Instead, thousands of shoes were laid out to symbolise the missing protesters.

According to organisers Avaaz, the largest marches took place in Melbourne (60,000 people) and London (50,000 people).

Singer and activist Charlotte Church was one of those to attend the London march. She spoke to my colleague James Randerson about why she turned up - you can listen to their conversation here.

block-time published-time 6.14pm GMT

Climate marches have started in Chicago, where participants were asked to paint the world on their faces, and Ottawa. Climate activists in Canada and the US were recently buoyed by Barack Obama's blocking of the controversial Keystone pipeline project.

enltrFirst Nations youth kicking off Ottawa #climatemarch Indigenous in the lead all over! h/t @MikeHudemapic.twitter.com/rXqvkByjii

- Bill McKibben (@billmckibben) November 29, 2015

block-time published-time 6.04pm GMT

There will be no repeat of the enormous climate march that took place in New York in September last year. That gathering of more than 400,000 people featured plenty of stardust - UN secretary general Ban Ki Moon, former US vice president Al Gore, New York City mayor Bill de Blasio and actors Mark Ruffalo and Leonardo DiCaprio were among the hordes.

Thanksgiving, which happened on Thursday, has somewhat clipped the wings of organisers in the US. There will, however, be events across the country. In New York, de Blasio will be the ***target***, rather than participant, of a protest, with activists marching around City Hall at 2pm to demand greater investment in renewable ***energy*** and full divestment from fossil fuels.

block-time published-time 5.55pm GMT

Obama's comments on the Paris talks, posted on Facebook two hours ago, unsurprisingly laments the recent attacks in the French city before delving into the purpose of his trip:

I'm heading to Paris today to join nearly 200 countries for a global conference on climate change. It's an opportunity to stand in solidarity with our oldest ally, just two weeks removed from the barbaric attacks there, and reaffirm our commitment to protect our people and our way of life from terrorist threats. It's also an opportunity for the world to stand as one and show that we will not be deterred from building a better future for our children.

What makes this gathering different is that more than 180 nations have already submitted plans to ***reduce*** the harmful ***emissions*** that help cause climate change. And America's leadership is helping to drive this progress. In fact, our businesses and workers have shown that it's possible to make progress towards a low-carbon future while creating new jobs and growing the economy. Our economic output is at all-time highs, but our ***greenhouse gas*** ***emissions*** are down towards 20-year lows.

So what we're trying to do in Paris is put in place a long-term framework for further ***emissions*** ***reductions*** - ***targets*** set by each nation, but transparent enough to be verified by other nations. And we'll work to mobilize support to help the most vulnerable countries expand clean ***energy*** and adapt to the effects of climate change we can no longer avoid.

I'm optimistic about what we can achieve - because I've already seen America take incredible strides these past seven years. And with that - I'll see you in Paris.

block-time published-time 5.44pm GMT

Hello from a crisp New York afternoon as events to mark the start of the Paris climate talks start to unfold in the US and Canada.

US president Barack Obama won't be in the country to see any of them as he is enroute to Paris for the start of COP21. Obama will attend a series of meetings, opening with Xi Jinping, president of China. The White House hopes the meeting of the leaders of the two largest emitters of ***greenhouse gases*** will provide a helpful early shove to proceedings, helping avert the kinds of chaos seen at the Copenhagen talks in 2009.

Obama will also meet French president Francois Hollande, where the threat of terrorism is likely to be a topic of conversation as well as global warming. Afterwards, the US president is expected to sit down with leaders of low-lying island nations that are considered particularly vulnerable to climate change.

Leaders of countries such as Kiribati and the Marshall Islands hope the Paris talks not only provide a firm commitment to capping global temperature increases to just 1.5C but also to ensure the delivery of $100 billion in climate finance to help adaptation. Some island leaders aren't too hopeful over any of this.

block-time published-time 5.11pm GMT

Summary

A record-breaking 50,000 people have marched in London. 20,000 people marched in Madrid and a similar number in Rome

Climate marches in Australia and New Zealand were the biggest ever

Pope Francis and Ban Ki-moon were among the people to donate 10,000 pairs of shoes to an installation in Paris to represent people who could not march because of orders imposed by authorities after the 13 November attacks

Protests in Paris turned violent when hundreds of anti-capitalists clashed with police there

Archbishop has warned world leaders of the consequences if they don't act at the Paris climate summit

I'm signing off for now but my colleague in New York, Oliver Milman, will shortly be taking over the live blog reins. Please keep sharing your photos of the marches via Guardian Witness.

block-time updated-timeUpdated at 5.14pm GMT

block-time published-time 4.58pm GMT

Here's a lighter video from London, of Charlotte Church singing:

block-time published-time 4.54pm GMT

Green group distances itself from Paris clashes

We've just posted some video of the protests turning ugly in Paris:

Environmental group 350.org has issued a statement distancing itself from the violent protests:

Starting around 2:30pm, a small group of protesters unaffiliated with the climate movement arrived at Republique and began to clash with the police there, violating the nonviolent pledge that every group involved in the climate coalition here in France has agreed to. Police responded with tear gas and pepper spray. The protest dispersed by around 3:45pm.

block-time updated-timeUpdated at 5.12pm GMT

block-time published-time 4.45pm GMT

Events on the other side of the Atlantic are underway. Here are a series of photos from Rio de Janeiro, by author Jules Boykoff:

enltrScenes from today's #ClimateMarch in #Rio de Janeiro (1/3) pic.twitter.com/vUxoz8qlhx

- Jules Boykoff (@JulesBoykoff) November 29, 2015

enltrMore scenes from today's #ClimateMarch in #Rio de Janeiro, #Brazil (2/3) pic.twitter.com/hvDZrVgtwR

- Jules Boykoff (@JulesBoykoff) November 29, 2015

block-time published-time 4.37pm GMT

Protesters kettled in Paris by police

I'm still stuck in a corner of the square [Place de la Republique] with about 400 protesters. The space is cramped. About 50mx50m. People are being pulled occasionally from the crowd and dragged into police vans. People here are angry and frustrated that the police have swept everyone up. Some of them are core anarchists. Others are people just caught up in the police clearing of the square. "It seems like they are taking us randomly and just waiting for some of us to turn violent," said one protester who initially wanted to march for the climate. Police are still sporadically hitting the most confrontational activists with tear gas. The protesters had a sound system that was pumping out heavy dance music for a while. But police moved in and arrested a bunch of those dancing. "We are imprisoned, call the police!" They are yelling.

enltrEverybody now just waiting around. Thankfully someone brought a harmonica. Not really sure how this ends. pic.twitter.com/xp5M5b09I1

- Karl Mathiesen (@KarlMathiesen) November 29, 2015

block-time published-time 4.33pm GMT

Charlotte Church brought a choir from Wales to perform a song written for the march. She suggested people on the march should name it. "It' s an absolute priviledge and honour to march with you today. What we have done here today is stage the biggest climate march in UK history," she said. Here are the lyrics to the song:

Way before I was born we knew we had learned we should be concerned or we're doomed

But chose to laugh in this face of an escapable fate...how brave

To pass on the buck to the unborn, how brave

Politics to one little fish means nothing but the opinion of all of us millions must count for something

Despite facts irrefutable it's business as usual

block-time updated-timeUpdated at 9.47am GMT

block-time published-time 4.21pm GMT

Here's a great gallery of events around the world today, put together by my colleague Eric Hilaire:

Related: Global climate march 2015 - in pictures

block-time published-time 4.19pm GMT

Tutu: if leaders don't take action they will be saying very clearly that they don't care

Archbishop Desmond Tutu, who has previously called for people to divest from fossil fuel companies, has issued a statement calling on world leaders in Paris to act on climate change before it's too late. Here's an excerpt:

It is an opportunity to address inequality; for powerful people and nations to acknowledge that their environmental wellbeing, their security and sustainability, is dependent on the wellbeing, security and sustainability of others. To acknowledge our inter-dependence, and the strengths and vulnerabilities we share.

If we "carry on as usual", there may not be another opportunity.

The days of not understanding the disastrous human and environmental consequences of rampant consumerism and greed are gone. Our leaders can no longer claim not to know. If they don't take action they will be saying very clearly that they don't care.

Should they grasp the opportunity, and develop a legally binding treaty to mitigate climate change, it will signal the end of the age of reckless consumption, exploitation and greed.

But failing to grasp the nettle will send a direct message of contempt to poorer nations and people, who cannot afford the costs of mitigating the impacts of increasing temperatures. It will trigger unprecedented economic and refugee crises, and dramatically deepen global insecurity.

It's a simple equation, really. Agree on mechanisms to enforce adherence to environmental justice, or consciously embrace injustice and add fuel to the fire of human division and pain.

We know that the only answer is to ***reduce*** carbon ***emissions***, and the only way we can do that is by ***reducing*** our dependency on carbon fuels.

block-time updated-timeUpdated at 4.20pm GMT

block-time published-time 3.53pm GMT

I've been talking with actor and Greenpeace supporter Emma Thompson. "Unfortunately we live in a world which is absolutely in the pockets of fossil fuel companies," she said as we walked through London. Here are some brief clips of the interview:

enltrEmma Thompson on why she is marching at the #climatemarchpic.twitter.com/bhMZlg3rgh

- Emma Howard (@EmmaEHoward) November 29, 2015

enltrI asked Emma Thompson: 'what do you hope for from Paris?' Here's her response from the #climatemarchpic.twitter.com/fPRAZMzskW

- Emma Howard (@EmmaEHoward) November 29, 2015

block-time updated-timeUpdated at 4.31pm GMT

block-time published-time 3.45pm GMT

Record-breaking 50,000 people at London climate march

Organisers are saying more than 50,000 people have turned out for a march in the UK capital. That's far more than attended the London 'Wave' march in 2009, before the Copenhagen climate summit, and the 27,000 at last year's London climate march.

Alex Wilks, campaign director at Avaaz, said: "This is the biggest climate march in British history with over 50,000 people marching today in London and thousands more in other cities across Britain. Our footsteps are echoing around the world alongside hundreds of thousands have taken to the streets calling for a transition to 100% clean ***energy***."

A Met Police spokeswoman told me they would not be commenting on numbers on the march.

Campaign group Avaaz said 20,000 people had marched in Rome.

block-time updated-timeUpdated at 3.50pm GMT

block-time published-time 3.39pm GMT

Asad Rehman, a fixture at previous climate talks and Friends of the Earth's senior international climate campaigner, tells the London march:

There is something deeply wrong with our world...the great injustice is that those who are least response for our crisis have to deal with its impacts. We live with a broken economic system that says that black lives don't matter, poor lives don't matter....

And it's people power that is going to defeat this climate crisis. We have the solutions but we just have politicians who lack the political will.

block-time published-time 3.36pm GMT

Here are a group of Sámi, an indigenous people in Sweden who say their way of life is threatened by climate change, singing on the stage in London. Footage by James Randerson.

block-time published-time 3.22pm GMT

Speaking in London, Friends of the Earth's new CEO, Craig Bennett, says:

This is a fantastic display of people power with thousands upon thousands taking to the streets to demand urgent action on climate change.

From Australia to Mozambique and the Philippines, as well as here in London, millions of our fellow citizens are urging our leaders to stand up to the global crisis of more floods, storms, droughts and rising seas.

We know the challenge we face, we know the solutions: now is the time to act.

block-time published-time 3.20pm GMT

Meanwhile in London, marchers have reached parliament, where a second round of speeches is taking place. Here is the (slightly blurry) view from the stage:

enltrView from the stage at the #climatemarchpic.twitter.com/796ZnlcED3

- James Randerson (@james\_randerson) November 29, 2015

enltrReaching Westminster #ClimateMarch#cop21pic.twitter.com/xXeBBFhOyK

- Nabeelah (@lahnabee) November 29, 2015

block-time published-time 2.49pm GMT

I'm now stuck in a corner of the plaza surrounded by hundreds of police and a few hundred protesters who have been systematically pushed back. No one can get in or out.

The day of action in Paris has completely disintegrated into a stand off between groups of anarchist protesters and riot police. The large crowd who showed up to campaign for a positive outcome at COP21 left long ago.

Police moved into la place de la Republique and kettling those left. About 500 anarchists, including many from the "Black Bloc", are pelting police with glass bottles. Police responding with flash-bang bombs and tear gas.

block-time published-time 2.37pm GMT

Tear gas in Paris

An unauthorised demonstration at Place de la Republique degenerated into violence on Sunday afternoon. Hundreds of riot police sealed off the whole square and the roads around as clashes broke out with protestors.

The protesters began by throwing missiles at police. There were several very large explosions, thought to be fireworks. Police began using tear gas to clear the area that has been a symbolic place of gathering since the Friday 13 November attacks in Paris.

Police have now cleared the square. Still a helicopter overhead and sirens. Many of the flowers and candles left in tribute to the 130 people who died in the attacks have been trampled on and destroyed.

enltrPolice using tear gas to clear Place de la Republique. pic.twitter.com/dbvP2NXNvB

- Kim Willsher (@kimwillsher1) November 29, 2015

enltrPlace de la Republique. Two loud explosions. Not sure if tear gas or very big firecrackers. pic.twitter.com/VviY7BrjFw

- Kim Willsher (@kimwillsher1) November 29, 2015

block-time updated-timeUpdated at 3.13pm GMT

block-time published-time 2.34pm GMT

The Guardian's Nabeelah Shabbir is near the front of the London march, near musician Charlotte Church. Here are some of her photos of a 'die-in' over the impacts of climate change on the developing world.

enltr'die-in' for global south. Police walked round reasoning with protectors [*#COP21@guardianeco#keepitinthegroundpic.twitter.com*](mailto:#COP21@guardianeco#keepitinthegroundpic.twitter.com)/ryVEULKmZz

- Nabeelah (@lahnabee) November 29, 2015

enltrLondon climate march #COP21#thetimeisnowpic.twitter.com/PL6ZzvLM7P

- Nabeelah (@lahnabee) November 29, 2015

block-time published-time 2.21pm GMT

Here's a short film from our video team of the marches, including the shoes in Paris.

Paris climate protesters banned but 10,000 shoes remain

block-time updated-timeUpdated at 2.31pm GMT

block-time published-time 2.18pm GMT

20,000 protesters in Madrid

Organisers are saying that around 20,000 people marched in the Spanish capital.

esltr20.000 personas han pedido hoy en Madrid a líderes mundiales q salven el clima [*https://t.co/duG7M5Dx32#ClimateMarchpic.twitter.com/r0G6u0m9HB*](https://t.co/duG7M5Dx32#ClimateMarchpic.twitter.com/r0G6u0m9HB)

- Greenpeace España (@greenpeace\_esp) November 29, 2015

block-time published-time 2.14pm GMT

The future of the world may be decided inside a dozen or more vast, anonymous, rigid white structures on the edge of Paris. The convention centre at Le Bourget airport has been officially declared UN property for the duration of the meeting.

It boasts a mini Eiffel tower constructed of red chairs, the main street is lined with 30 or more plastic animals and the 195 countries' offices are empty and little is expected to happen until tomorrow morning.

Meanwhile Paris city centre is almost empty of traffic and all public transport has been made free for two days to discourage cars and allow nearly 150 world leaders to whizz around unhindered between bilateral meetings in five star hotels and embassies.

block-time published-time 2.11pm GMT

And in the meantime, here some are some photos from James Randerson and Emma Howard on marchers who are staying sunny despite the diabolical weather:

enltrDying for change at the #climatemarchpic.twitter.com/Xq9bBQ1YDj

- James Randerson (@james\_randerson) November 29, 2015

enltrTimes are tough in hell. Even the grim reaper is collecting pic.twitter.com/v3KvqRZPOi

- James Randerson (@james\_randerson) November 29, 2015

enltrSafety first at the #climatemarchpic.twitter.com/e4RDAhsgp5

- James Randerson (@james\_randerson) November 29, 2015

enltrSome beautifully painted placards out here in London today #climatemarchpic.twitter.com/Nm6P988t6D

- Emma Howard (@EmmaEHoward) November 29, 2015

enltrDespite the wind and rain, people have come to the global #ClimateMarch in London in their thousands. pic.twitter.com/NLBhhTTMmg

- Emma Howard (@EmmaEHoward) November 29, 2015

block-time published-time 2.06pm GMT

More soon from Paris, where Karl Mathiesen is among those caught up in the teargas used by police after people with an apparently anti-capatalist agenda clashed with police.

block-time published-time 2.04pm GMT

From Geneva and Barcelona to Paris and Lyon, and Laikipia in Kenya, here are some of your march photos:

CAFOD supporters at the London march

Man in pic = mark Harrington and son zacharie

He says: "we're here because our family can't march in Paris and the impact of climate change will be more significant for our children and we want them to have a voice in that"

element-witness--sourceSent via GuardianWitness

element-witness--authorauthor[*http://schema.org/Person*](http://schema.org/Person) By CAFODaidagency

element-witness--date 29 November 2015, 13:29

Showing Solidarity with Shoes

On the eve of the opening of COP21, demonstrators are gathered at Place de la Republique in Paris, leaving shoes as a symbol of solidarity with the nearly two million people expected to take part in a march today, but that was stopped for security reasons.

Photo: Sean Hawkey/WCC

element-witness--sourceSent via GuardianWitness

element-witness--authorauthor[*http://schema.org/Person*](http://schema.org/Person) By Carolyn Moncel

element-witness--date 29 November 2015, 13:16

Human Chain in Lyon, France

element-witness--sourceSent via GuardianWitness

element-witness--authorauthor[*http://schema.org/Person*](http://schema.org/Person) By Barbelle

element-witness--date 29 November 2015, 12:53

Climate March at noon on the Equator in Nanyuki, Laikipia, Kenya

200 marchers at the Equator joined the Worldwide march

element-witness--sourceSent via GuardianWitness

element-witness--authorauthor[*http://schema.org/Person*](http://schema.org/Person) By MaggieHobbs

element-witness--date 29 November 2015, 13:05

Young activists march for climate action in Makassar, Indonesia

29 November. This was the first ever climate march in Makassar, a coastal city in eastern Indonesia. Elementary school kids joined the march organised by Earth Hour Makassar and other community groups. Hand held signs represents domestic issues such as forest fires, coral bleaching and heavy reliance on coal.

element-witness--sourceSent via GuardianWitness

element-witness--authorauthor[*http://schema.org/Person*](http://schema.org/Person) By Reiko Yamada

element-witness--date 29 November 2015, 12:49

the Greens

Getting undressed in winter to show the Earth is heating up a little more every year

element-witness--sourceSent via GuardianWitness

element-witness--authorauthor[*http://schema.org/Person*](http://schema.org/Person) By ID220892

element-witness--date 29 November 2015, 12:49

block-time published-time 1.49pm GMT

Caroline Lucas, Green party MP, told crowds in London:

To change everything we need everyone. That's why people are gathering in cities around this country and the world. We are already so far ahead of the governments and the private corporations who block us....We already know that what's on offer in Paris is nowhere near enough.we know that business as usual will take us towards a world of 4C warming....that is a future of droughts desertification and disease. We refuse to leave our future in the hands of those inside the secure zone in a conference centre in Paris... We already know what needs to be done. We need a massive investment in renewable ***energy*** and efficiency to create hundreds of thousands of jobs...we need to be serious about ***agriculture*** because meat production creates more ***emissions*** than all the card and trains and planes out together.

Special shout out to divestment campaign who with all their inspiration have showed us the way

David Cameron is taking a wreaking ball to environmental policy....We are here to say the fight against fracking and nuclear is only just beginning.

block-time published-time 1.39pm GMT

Here's some video of Corbyn's speech, via James Randerson. Apologies for it being split into four parts:

block-time published-time 1.29pm GMT

Corbyn: make world leaders act at Paris

Corbyn, standing atop a fire engine in London next to shadow chancellor John McDonnell, tells his audience to send a message to the more than 147 world leaders expected to attend the Paris climate talks:

Those who are sitting around the tables in Paris have an enormous opportunity in front of them. Do not let them flake it or fool us. Make them understand that if we are to bequeath to future generations a world of flooding, a world of environmental disaster, a world where our children will not be able to live or eat properly, then they will do nothing and allow the pollution of this planet to continue. If however, they listen to the words of millions all around the world: it is possible to ***reduce*** the level of ***emissions***, it is possible to slow the rate of temperature change, it is possible to protect large parts fo the environment of this planet, then they will have done something useful. Our message today is to them: do what you are sent there to do.

Videos to come shortly.

block-time updated-timeUpdated at 2.23pm GMT

block-time published-time 1.22pm GMT

Cecelia Anim, president of the Royal College of Nursing, tells me:

Climate change is one of the greatest challenges we face. If it goes unchecked climate changewill be devastating for human health and will put a huge strain on our health system. Every healthcare professional has a duty to raise awareness of climate change. Health professionals must lead the way.

Related: UK reversing and undoing climate change policies, say doctors and nurses

block-time published-time 1.14pm GMT

Anti-capitalists clash with police in Paris

In Paris a group of socialist activists who have been circling La Place de la Republique have confronted police at one of the exits of the famous roundabout. Tear gas and batons are being used to push them back.

It appears to be a high jacking of the climate march by those with another agenda. "It is more to against capitalism [than a call for climate action]," said one.

Police just set off large bangs to deter the crowd. Which incensed them because of the resemblance to bombs.

block-time updated-timeUpdated at 1.19pm GMT

block-time published-time 1.07pm GMT

Fashion designer Vivienne Westwood is in London; she said:

It looks great. We are the people. Politicians are criminals. They are trapped in the rotten financial system which is the cause of poverty war and climate change....Politicians just talk about how they are going to deal with it....How are they going to deal with what will be absolute horror? These idiots accept it. We need to stop it! There is no choice between the green economy and mass extinction.

block-time updated-timeUpdated at 9.47am GMT

block-time published-time 12.57pm GMT

All parties were invited to speak in London but the Conservative party did not provide anyone. Lynne Featherstone is here from the Liberal Democrats. "We never find enough words to convey the cataclysm ahead. Unless we mitigate and adapt, the world will be in the greatest trouble we have ever seen," she said. Caroline Lucas is there for the Greens and Corbyn for Labour.

block-time published-time 12.39pm GMT

The wind is blowing hard, the rain is coming down but still the people have come to London in their thousands. People have travelled here from Wales, Scotland and fracking communities in Lancashire who are standing right at the front. One group from Brighton travelled here on a bus powered by chip fat, according to organisers. There are people from the Sápmi indigenous community in Sweden, where the melting arctic is having a big impact on their daily lives.

block-time updated-timeUpdated at 12.40pm GMT

block-time published-time 12.38pm GMT

Tens of thousands at London march

The Press Association is reporting that tens of thousands of people have gathered in central London for the march. I'll update you on numbers later, based on what organisers and police say.

block-time published-time 12.28pm GMT

And here's Corbyn in London, where he's due to speak shortly ( see 12:03 ). Next to him is Lisa Nandy MP, shadow ***energy*** and climate change secretary.

enltrIt may be a wet and windy Sunday in London but Labour are out in force for today's #ClimateMarchpic.twitter.com/JaV4JLRTGl

- Labour ***Energy*** (@labourenergy) November 29, 2015

block-time published-time 12.24pm GMT

Our reporter Karl Mathiesen is in Paris where the police are still out in numbers following the attacks just over a fortnight ago:

enltrNo marching. But lots of police in Paris today. pic.twitter.com/Y20XbreqBR

- Karl Mathiesen (@KarlMathiesen) November 29, 2015

enltrInstead of marching the streets. About 200-300 Parisians are circling around the monument in Place de la republique.

- Karl Mathiesen (@KarlMathiesen) November 29, 2015

block-time updated-timeUpdated at 12.31pm GMT

block-time published-time 12.22pm GMT

The march in London is attracting some big crowds, colourful outfits and famous faces (I've seen at least one Instagrammed selfie with musician Peter Gabriel. Actor Emma Thompson and singer/activist Charlotte Church are also out there somewhere). Emma Howard is on the ground for the Guardian and will be reporting live throughout the day.

enltrLondon climate march is turning out well pic.twitter.com/ArhmNVG9Hj

- Jacob Dixon (@Justabitofjacob) November 29, 2015

enltrRight at the front with the indigenous peoples, leading London's #climatemarchpic.twitter.com/7il4EN9bQT

- James Tennent (@duckytennent) November 29, 2015

enltrA pack of polar bears beside Wellingon Arch in London for the #ClimateMarch. pic.twitter.com/qefRkS1st5

- Claire Marshall (@BBCMarshall) November 29, 2015

enltrReady to march with the Suffolk Greens #cop21#ClimateMarch#Londonpic.twitter.com/2g1EJFfUM4

- SuffolkCoastalGreens (@SuffCoastGreens) November 29, 2015

Even the BT tower is joining in:

enltrIn #London ? Share your pictures of the BT Tower which is supporting #go100percent renewable ***energy*** #climatemarchpic.twitter.com/hJt2d4cpGs

- BT Better Future (@BTBetterFuture) November 29, 2015

block-time updated-timeUpdated at 12.25pm GMT

block-time published-time 12.03pm GMT

Addressing inequality essential for tackling climate change, Corbyn to say

Here's an excerpt of what Corbyn is expected to say in around half an hour's time:

The greener world I know is possible is a more just, a more equal, and a more productive world

To tackle climate change, we must tackle global inequality, we must show that defeating the menace of global warming will not only improve the prospects of our children and grandchildren, but will improve lives here and now

Britain should be at the forefront of that argument, leading global efforts to a political solution to climate change at the Paris conference.

block-time updated-timeUpdated at 12.08pm GMT

block-time published-time 11.59am GMT

People have marched across Asia, the Middle East, and Africa, in Yemen, Tanzania, Singapore, South Africa and Benin among many other countries.

Around 70 people reportedly turned up in Sanaa in Yemen, despite reported bombing by airplanes just a few miles away.

Walid Yehia Hassan Al-Hashef, an Avaaz member in Sanaa has written in to say:

Airstrike ***targets*** crowds of people and today early morning an airstrike hit around 4km from our protest location. We expected 150 people because of the airstrike only around 70 people showed up.

Yes, I have a message to every human being on our planet... In Yemen we are peaceful people we do not have place in our behaviors or culture for terror. We in Yemen love all people christians, jews, muslims and others.

Yemen climate change protest on 29 November 2015. Photograph: Avaaz

undltr #UNVolunteers#actioncounts#MarcheClimat#COP21pic.twitter.com/KqFIX8O7Vq

- UN Benin (@UNBenin) November 29, 2015Singapore sends its love to Paris as a Green Heart

element-witness--sourceSent via GuardianWitness

element-witness--authorauthor[*http://schema.org/Person*](http://schema.org/Person) By autumnclean

element-witness--date 29 November 2015, 9:43

Marches are getting underway in Berlin and Amsterdam:

Amsterdam is raring to go!!

element-witness--sourceSent via GuardianWitness

element-witness--authorauthor[*http://schema.org/Person*](http://schema.org/Person) By guardianUser11784703

element-witness--date 29 November 2015, 10:51

Climate Change March begins outside Berlin HBF

element-witness--sourceSent via GuardianWitness

element-witness--authorauthor[*http://schema.org/Person*](http://schema.org/Person) By Amy Newiss

element-witness--date 29 November 2015, 11:17

block-time updated-timeUpdated at 12.06pm GMT

block-time published-time 11.45am GMT

Latvian president: deal in Paris 'quite close'

Latvian President Raimonds Vejonis, Europe's first Green party head of state, tells Reuters that because most countries have already submitted their climate plans, a deal in Paris in two weeks' time is close.

"...We are quite close to... an accord and a new Kyoto agreement, which would be a Paris agreement, hopefully will be reached," he said in reference to the 1997 Kyoto protocol, the only previous legally-binding international climate treaty.

Vejonis also said he hoped all leaders would agree on a "legally-binding document" in Paris, apparently putting him at odds with the US, which has made clear it does not want a treaty.

block-time published-time 11.34am GMT

In case you were wondering (like me) what was going to happen to all the shoes in Place de la Republique, Avaaz tells me that they are being given to a social enterprise called Relais 75 Emmaus that works with homeless people.

block-time updated-timeUpdated at 11.45am GMT

block-time published-time 11.26am GMT

Maurice Strong has died

Tributes have been paid to Maurice Strong, the first executive director at the UN environment programme (Unep), who has died aged 86. He was also the secretary general at the Stockholm environment meeting in 1972 and Rio Earth Summit in 1992, which paved the way for the Paris climate summit that people are marching for today.

Maurice Strong. Photograph: David Karp/AP

The current Unep chief, Achim Steiner, said: "Strong will forever be remembered for placing the environment on the international agenda and at the heart of development. He shepherd global environmental governance processes."

Steiner added that a strong deal at Paris would be a "fitting tribute" to Strong's legacy. We'll have more on this later from my colleague John Vidal, who knew Strong.

enltrTeresa & I sad to hear of death of Rio Earth Summit organizer Maurice Strong. Our best tribute will be to advance climate agenda at #COP21.

- John Kerry (@JohnKerry) November 29, 2015

In his last interview with the Guardian, in 2010, Strong said of the state of the world's environment and the challenge of climate change:

Analytically, I'm pessimistic. I believe the odds are against us for making the changes we need to make in time. But, operationally, I'm optimistic because I believe that it is still possible. Tougher the longer we delay it.

block-time updated-timeUpdated at 4.22pm GMT

block-time published-time 11.18am GMT

Human chain in Paris

The march that was expected to attract hundreds of thousands of people on the streets of Paris today may have been forbidden, but there are still plenty of people out calling for action on climate change in the French capital today.

Tweets and live streams on Periscope show what appears to be hundreds of people forming a human chain in central Paris, holding placards calling for "climate justice" and to "keep it [fossil fuels] in the ground".

enltrMassive human chain in Paris for #climatejustice. No war, no warming. #COP21pic.twitter.com/Od9Osyg8sa

- Amis de la Terre FR (@amisdelaterre) November 29, 2015

enltrTaiwan #climate youth part of thousands forming human chain in #paris#nofibs#peoplesclimate#COP21pic.twitter.com/l9uCU03MfF

- John Englart EAM (@takvera) November 29, 2015

enltrA human chain "for peace and climate justice" Paris pic.twitter.com/g7Hw1O4A9Q

- Antonia Juhasz (@AntoniaJuhasz) November 29, 2015

block-time published-time 11.05am GMT

Pope Francis and UN secretary general donate shoes in Paris

As well as the Pope, UN secretary general Ban Ki-moon has donated his shoes (a pair of new-looking running trainers), to the Paris shoe installation:

enltrBan Ki-moon donated his shoes to stand in solidarity w/ people of Paris unable to join a #climatemarch today. #COP21pic.twitter.com/38JGGTqvOj

- United Nations (@UN) November 29, 2015

block-time published-time 10.59am GMT

Want to know what these marches are all about? If you can make it to London on Thursday, there's a Guardian Live event on the Paris climate summit with Australian Tim Flannery (former chief commissioner of the Climate Commission there), former UK climate diplomat John Ashton and Friends of the Earth CEO Craig Bennett. Find out more on the event listing.

Our climate talks expert, Fiona Harvey, has also written a guide on everything you need to know about the Paris summit. Or you can watch our 60-second video explainer:

block-time updated-timeUpdated at 11.02am GMT

block-time published-time 10.45am GMT

Record numbers in Australia and New Zealand

March organisers say there were at least 140,000 people marching in Australia and 33,000 in New Zealand, both of which they say are the highest ever turn-outs for climate marches in both countries. The Guardian is unable to independently verify the numbers.

block-time published-time 10.37am GMT

Climate Home, part of the Guardian Environment Network, is in Paris this morning interviewing Emma Ruby-Sachs, acting executive director at Avaaz, which has been heavily involved in organising the marches. You can watch the interview here:

Emma Ruby-Sachs

Of the shoes installation in Paris, she says:

It's kind of an incredible monument both to the voices that have been silenced but also to that hope for action that comes out of this city.

block-time updated-timeUpdated at 11.46am GMT

block-time published-time 10.29am GMT

Remember, you can share your photos and videos of the marches via Guardian Witness (just click the blue button above on this blog). Here are some already submitted, from Australia to Dublin:

I marched for Laurie

Website MarchlMe matched marchers with those in Paris whose March was cancelled.

element-witness--sourceSent via GuardianWitness

element-witness--authorauthor[*http://schema.org/Person*](http://schema.org/Person) By jillfavero

element-witness--date 28 November 2015, 13:35

Paris - preparing for tomorrow's virtual march

Since the march has been cancelled by the French authorities in the wake of the atrocious attacks on November 13, an alternative has been found in which people can deposit shoes tomorrow morning in la place de la République, together with their messages to world leaders. The shoes will march for us in a virtual way.

element-witness--sourceSent via GuardianWitness

element-witness--authorauthor[*http://schema.org/Person*](http://schema.org/Person) By SarahMarder

element-witness--date 28 November 2015, 13:50

A little bit of artivism for the march tomorrow

Double-sided placard which I'm carrying at the march tomorrow, bigging up the 'keep it in the ground' campaign...

element-witness--sourceSent via GuardianWitness

element-witness--authorauthor[*http://schema.org/Person*](http://schema.org/Person) By James Milroy

element-witness--date 28 November 2015, 13:22

The T-Shirts are in!

Getting ready for the Dublin Climate March on the 29th. The largest mobilisation Ireland will have ever seen!

element-witness--sourceSent via GuardianWitness

element-witness--authorauthor[*http://schema.org/Person*](http://schema.org/Person) By smartgreenliv

element-witness--date 28 November 2015, 19:30

block-time published-time 10.02am GMT

Corbyn to speak at London march

Labour leader Jeremy Corbyn is among the public figures attending the London march later today, a spokeswoman has just confirmed to me. I'll update this post when I know exactly when and where along the march - there's a rally at 1pm at Millbank and speeches later at 2.45pm by parliament.

Corbyn's attendance looks like a last-minute decision, given his name wasn't on lists of speakers even two days ago. According to my colleague Robin McKie, he will attack the Conservative party's leadership on climate change, following a series of green policies being cancelled over the summer, saying "There are no more hugs for the husky, instead it's a passionate embrace for the carbon polluters."

It's the first time I can think of a leading Labour politician speaking at a big climate march - the most high profile politician is usually Green party MP, Caroline Lucas.

Other speakers from 2.45pm include NUS vice-president, Piers Telemacque, and musician and activist Charlotte Church who is singing with a 12-piece choir.

block-time updated-timeUpdated at 10.08am GMT

block-time published-time 9.43am GMT

People are gathering in Cape Town's Keizergracht Street. The weather for the march there looks a lot better than London, where 40mph gusts are forecast this afternoon.

enltrThe #CapeClimateMarch crowds are gathering! For the love of our #CoolClimate ! #ClimateMarch#EmissionsMustFallpic.twitter.com/kVLRQ2hlw

- Cape Climate March (@CTClimateMarch) November 29, 2015

enltrLet's ROLL team! @CTClimateMarchpic.twitter.com/HSvl4Nivpa

- Greenpop (@GreenpopSA) November 29, 2015

block-time published-time 9.34am GMT

Summary

Good morning from London, where march organisers are hoping to beat the turn-out of last year's climate march which attracted around 27,000 people. The march starts at noon (local time) at Park Lane.

In Paris, as Claire pointed out, the planned march was forbidden over security fears. But thousands of shoes have been left in the Place de la Republique as an installation instead, among them a pair with Pope Francis's name on and the the inscription Laudato Si' (Praised be).

Cardinal Turkson, seen as a potential future Pope, said:

All members of the Catholic community are warmly invited to offer their support in prayer, word and action. And we're inviting all the bishops and priests around the world to offer the celebration of the Eucharist, on 29 November, for a responsible and successful international conference and summit. We want to encourage the faithful and many others to exercise their ecological citizenship.

The BBC's David Shukman is at the scene in Paris:

enltrA sea of shoes in Place de la Republique in Paris: protests are banned here so you have to imagine them #COP21pic.twitter.com/AetuepjzAt

- David Shukman (@davidshukmanbbc) November 29, 2015

Among those who are bringing their shoes is Yeb Sano, the former Philippines climate negotiator who famously broke down in tears at several summits. He's just finished a weeks-long pilgrimage from Rome to Paris for the climate talks - hence the pilgrim shoes.

enltrPope Francis has reportedly sent his pair of shoes in solidarity with the March of Shoes in Paris tomorrow. I'll bring my pair pilgrim shoes

- Yeb Saño (@YebSano) November 28, 2015

There's also a group of indigenous people meeting in Paris for a 'healing ceremony' in solidarity with those who lost their lives in the recent terror attacks.

enltr"A moment of prayer & a peace offering" - indigenous people coming together for healing ceremony [*#Paris@g0ldtoothpic.twitter.com*](mailto:#Paris@g0ldtoothpic.twitter.com)/5Ur7wkYm3I

- 350 dot org (@350) November 29, 2015

block-time updated-timeUpdated at 9.37am GMT

block-time published-time 9.14am GMT

I'm now handing over the live blog to my colleague Adam Vaughan in London, who'll continue the coverage of marches across the globe today.

Thanks for reading and for all your contributions here, on Twitter and via GuardianWitness.

block-time published-time 9.12am GMT

A reminder: you can share your pictures and videos from any of these marches - or any others taking place across the globe - via GuardianWitness or the blue button at the top of the live blog.

Here are some from readers across the globe:

Bangladesh Global Climate March - Bangladesh

Global Climate March - Bangladesh with representation of BRIT from ACTION/2015!

element-witness--sourceSent via GuardianWitness

element-witness--authorauthor[*http://schema.org/Person*](http://schema.org/Person) By rahatulashekin

element-witness--date 29 November 2015, 18:38

Kenya The climate change March

In Nairobi Kenya the Climate Change march was very successful,we managed to spread the information to the public,we got support from 350.org which to us was a double plus,and I believe the talk in Paris will bear fruits to our planet.

element-witness--sourceSent via GuardianWitness

element-witness--authorauthor[*http://schema.org/Person*](http://schema.org/Person) By fred buluku

element-witness--date 29 November 2015, 18:58

New Zealand Young and old Takaka NZ

300 or so Golden Bay citizens marched up ( and then back down) our small main street to voice our concern about Climate Change...to a Govt that so far isn't taking much notice

element-witness--sourceSent via GuardianWitness

element-witness--authorauthor[*http://schema.org/Person*](http://schema.org/Person) By Aroha88

element-witness--date 29 November 2015, 18:06

block-time published-time 9.03am GMT

Which countries are doing the most to stop global warming?

Check out how different nations compare in our interactive:

Related: Which countries are doing the most to stop dangerous global warming?

block-time published-time 8.47am GMT

Beirut march is underway

Despite the rain, Lebanese protesters are currently marching the streets of the capital, Beirut:

enltrThe March is still going regardless of the rain [*#ClimateMarch#peoplesclimate@IndyACTpic.twitter.com*](mailto:#ClimateMarch#peoplesclimate@IndyACTpic.twitter.com)/IeSyHxlWk7

- Safa' Al Jayoussi (@Safaaljayoussi) November 29, 2015

block-time published-time 8.25am GMT

This year, marchers will not be able to rally in Paris, the home of the climate talks starting on Monday - demonstrations were cancelled in the wake of the 13 November terror attacks. Instead, others have been encouraged by Parisians to #MarchlMe; we'll be keeping an eye on that campaign throughout the day.

Demonstrators who had planned to come to Paris have instead sent shoes in a sign of solidarity:

enltrOur shoes will march for us. Dawn #MarcheClimat#ClimateMarch#ActInParispic.twitter.com/hSEvhzXjsc

- Nicole Ghio (@nicoleghio) November 29, 2015

Writing in the Guardian last week, Naomi Klein argued that the banning of the Paris march was silencing the very voices that need to be heard at the climate summit:

For just two weeks every few years, the voices of the people who are getting hit first and worst get a little bit of space to be heard at the place where fateful decisions are made. That's why Pacific islanders and Inuit hunters and low-income people of colour from places like New Orleans travel for thousands of miles to attend. The expense is enormous, in both dollars and carbon, but being at the summit is a precious chance to speak about climate change in moral terms and to put a human face to this unfolding catastrophe.

Even in these rare moments, frontline voices do not have enough of a platform in the official climate meetings, in which the microphone is dominated by governments and large, well-funded green groups. The voices of ordinary people are primarily heard in grassroots gatherings parallel to the summit, as well as in marches and protests, which in turn attract media coverage.

Now the French government has decided to take away the loudest of these megaphones, claiming that securing marches would compromise its ability to secure the official summit zone where politicians will meet.

Related: What's really at stake at the Paris climate conference now marches are banned | Naomi Klein

Related: Quel est le véritable enjeu de la conférence sur le climat de Paris maintenant que les manifestations sont interdites ?

block-time published-time 8.14am GMT

Summary: Australia marches for climate action

Climate change rallies rolled on across Australia on Sunday, following well attended protests in Melbourne on Friday and Darwin and Brisbane on Saturday.

On Sunday, it was the turn of Sydney, Canberra, Adelaide, Hobart and Perth.

Australia's climate-sensitive neighbours in the Pacific were a key focus for the climate change rally in Sydney, with representatives of communities from Pacific nations - including Tuvalu, Nauru, Kiribati and Tonga - prominent at the front of the march from the Domain to Circular Quay.

More than 40,000 people braved Sydney's heat for the rally on Sunday afternoon, calling on Australia to play a lead role in brokering binding ***emissions*** ***targets*** for the world to keep global temperature rise below 2C, and to commit to greater domestic ***emissions*** cuts than the 26% to 28% the government is currently proposing.

In Canberra, people brought their children to march with them from Parliament House to the tent embassy, near Old Parliament House.

Police estimate about 3,000 people showed up, while protesters think the number was closer to 6,000

The Perth event started sombrely. At 3.25pm, at least 5,000 people sat in silence in Hay Street Mall to mark people who have lost their lives, homes and livelihoods to the effects of climate change. The group, in their colour blocks, had marched 2km from Wellington Square and stretched the whole 300-metre length, watched by bemused Christmas shoppers clutching plastic bags and taking photos of the crowd.

The march was led by a group from the Noongar Whadjuk nation and addressed by Christian, Islamic, Jewish, and Hindu faith leaders.

You can read the full report here:

Related: Climate change protests across Australia - tens of thousands march

block-time published-time 8.02am GMT

South Korea's climate march begins

The Seoul march is underway, with protesters making use of some inventive props:

Nuns holding balloons prepare to march during a rally in central Seoul. Photograph: Kim Hong-Ji/Reuters Participants holding umbrellas with the message "Well for us, Hell for earth" march in Seoul. Photograph: Kim Hong-Ji/Reuters

block-time published-time 7.54am GMT

And of course it's not just Europe that is yet to march: here's a selection of other cities that will be on the move today. Please do get in touch below the line to share details of others you know or are going to. Again, all times are local.

Durban, South Africa

10am at Suncoast Boulevard.

Cape Town, South Africa

11am from Cape Peninsula University of Technology.

Beirut, Lebanon

Leaving Horsh Beirut at 9am, marchers will take the Damascus Road to reach Beirut Downtown at 12.30pm.

Kampala, Uganda

9am from Makerere University Freedom Square.

Seoul, South Korea

1pm from Cheonggye Square.

Kiev, Ukraine

Shevchenko Park at 12.30pm.

You can find more listings here.

block-time updated-timeUpdated at 7.55am GMT

block-time published-time 7.37am GMT

European marches on Sunday: when and where

As Europe wakes up on Sunday morning, these are the places to keep an eye on - or head to - for climate marches today. All times are local.

London

Rally forming from 12 noon at Park Lane - nearest tube Hyde Park Corner & Green Park.

Berlin

Midday at central station.

Madrid

Midday at Plaza de Cibeles.

Barcelona

11.30am at the Via Laietana.

Rome

2pm at Piazza Campo de' Fiori.

Amsterdam

Midday at Museum Square.

Copenhagen

Leaving 1pm from Den Røde Plads Square in Nørrebro to march to the parliament building, Christiansborg.

Stockholm

1pm at Norra Latin schoolyard.

Budapest

Erzsébet Square at 1pm.

A reminder: you can share your pictures and videos from any of these marches - or any others taking place across the globe - via GuardianWitness or the blue button at the top of the live blog.

block-time published-time 7.16am GMT

Japanese campaigners march in Tokyo

Japan Today reported that around 1,000 people marched in Tokyo on Saturday, but that organisers had hoped for many more:

Some demonstrators were disappointed that the number of participants was not as many as expected, with Chigusa Okano, a 22-year-old university student in Tokyo, saying: "I especially want young people to show interest in this matter."

Alex Brodie, a 41-year-old company worker living in Tokyo, said he finds Japanese people's lack of interest in the issue "pathetic".

"Japan needs to wake up. We need to have solar power on every roof top," he said as he marched with his wife and child, while calling on the Japanese government to push for policies to introduce more renewable ***energy***.

The issue of clean, renewable ***energy*** has been a key one since a tsunami swamped the Fukushima nuclear plant in 2011, sending three reactors into meltdown.

"Japan must take the lead in the summit to promote renewable ***energy*** because Japan is a rare country that has experienced such a big disaster," rally organiser Daigo Ichikawa told AFP news agency.

Environmentalists hold up placards that read "Climate Action Now!" during a rally in Tokyo on Saturday. Photograph: Kazuhiro Nogi/AFP/Getty Images

block-time published-time 6.57am GMT

Bangladesh march for climate justice

AFP reports that more than 5,000 people took part in climate marches on Saturday across 30 different locations in Bangladesh - a country on the front line of climate change, exposed to rising seas, superstorms and expanding deserts.

People take part in the global climate march in Dhaka, Bangladesh, on Saturday. Photograph: KM Asad/ZUMA Press/Corbis

block-time published-time 6.43am GMT

Unity is the theme of the People's Climate rally in Perth. Led by Noongar Whadjuk MCs, and kicked off with a Whadjuk dance to clear the bad spirits, the crowd then listened in silence to a multi-faith speech led by Perth Anglican assistant Bishop Tom Wilmot.

Wilmot introduced Jewish, Hindu and Sikh leaders and made a point of referring to Rateb Jneid, president of the Islamic Council of Western Australia, as his "brother in the faith", repeating: "And he is my brother."

There has been no mention of the Paris attacks, but the group of more than 1000 people, which has now left Wellington Square to march on the city, will sit for a minute's silence in Hay Street Mall to mark those who have already lost their lives, homes and livelihoods from climate-related events. In particular the minute's silence will honour those affected by bushfires, which have killed six people in Australia this November.

Kevin Jolley, president of the firefighters' union of WA, said that anyone who had spent time on a fire line knew that the effects of man-made climate change were devastating and real. "There are no sceptics on the end of a fire hose," Jolly said.

block-time published-time 6.29am GMT

Philippines climate march

Activists in the Philippines marched on Saturday, with Rappler reporting that thousands took to the streets across several cities, including the capital, Manila.

Agence France-Presse reported:

Some 3,000 people including religious clergy, students and activists marched through the Philippine capital of Manila demanding curbs on ***emissions*** to mute the impact of climate change, which is blamed for a spike in disastrous extreme weather.

"Protect our common home" and "climate justice" were written on the placards held aloft by the surging crowd.

"We want to send a message to the rest of the world, especially the world leaders at the climate talks, to say that our survival is not negotiable," said Denise Fontanilla, spokeswoman for the Asian People's Movement on Debt and Development.

enltrPhilippines #ClimateMarch video from @inquirerdotnet@KSabilloINQ[*https://t.co/jvhZrToakn#ClimateJustice*](https://t.co/jvhZrToakn#ClimateJustice)

- Airah Cadiogan (@eightyseas) November 29, 2015

block-time published-time 6.09am GMT

The Perth marchers are getting ready to go. (Take a look at this post to get up to speed on the colour-coding.) They have been asked to "stay classy" as they march through the city streets, Calla Wahlquist reports.

enltrStarting to gather into colour blocks. Need a few photos to fit them all in. #peoplesclimatepic.twitter.com/LQeKP57pLC

- Calla Wahlquist (@callapilla) November 29, 2015

block-time published-time 6.02am GMT

Jakarta marches for climate action

Indonesian president Joko Widodo left Jakarta for Paris this morning. His country has pledged to cut its ***greenhouse gas*** ***emissions*** by 29% by 2030.

But activists say Indonesia could be doing more to ***reduce*** its use of fossil fuels.

In September, after months of raging forest fires, Indonesia overtook China and the US to become the world's biggest climate polluter.

Protesters participate in a climate march in Jakarta on Sunday. Photograph: STRINGER/Reuters

block-time published-time 5.47am GMT

A reminder: you can contribute to this live blog and our other climate march coverage via GuardianWitness here or the big blue button at the top of this page.

Here are some of the pictures readers have shared so far.

From Sydney, Australia: The Ice Cream is Melting

Sydney Domain, 2015, 29th Nov. Climate Change march

element-witness--sourceSent via GuardianWitness

element-witness--authorauthor[*http://schema.org/Person*](http://schema.org/Person) By Valeria Morich

element-witness--date 29 November 2015, 14:32

From New Zealand: Small-town New Zealand rises to the challenge

This parade engaged the creative spirits of a ladies knitting group, a recycle group and puppet makers to express a positive response to the challenges of climate change.

element-witness--sourceSent via GuardianWitness

element-witness--authorauthor[*http://schema.org/Person*](http://schema.org/Person) By Mairi Jay

element-witness--date 29 November 2015, 12:15

From Edinburgh, Scotland: Scotland's Climate March 28 November

Scotland's huge colourful climate march winding down the Mound

element-witness--sourceSent via GuardianWitness

element-witness--authorauthor[*http://schema.org/Person*](http://schema.org/Person) By Caitlin Hamlett

element-witness--date 29 November 2015, 4:15

From Geneva, Switzerland: Geneva climate march

5000 thousand people attended the climate march in Geneva this Saturday

element-witness--sourceSent via GuardianWitness

element-witness--authorauthor[*http://schema.org/Person*](http://schema.org/Person) By yvwinteler

element-witness--date 29 November 2015, 14:22

From San Luis Obispo, California, US: Getting ready to March in San Luis Obispo California

We had about 200 people come out today to create a better world. Our Mayor, framers,and children were amongst our speaking demanding action on climate change.

element-witness--sourceSent via GuardianWitness

element-witness--authorauthor[*http://schema.org/Person*](http://schema.org/Person) By Heidi Harmon

element-witness--date 29 November 2015, 10:44

block-time published-time 5.33am GMT

All roads in Sydney's CBD that were closed for the march have now reopened and there are no traffic delays reported.

Safe journey home, Sydney marchers. Keep reading the blog, though. There's plenty more to come ...

block-time published-time 5.29am GMT

Perth march begins

Noongar Whadjuk man Noel Nannup gives the welcome, saying: "Our planet is dying."

Protesters say the fight for the climate can't be separated from the right of Indigenous people to country, Calla Wahlquist reports from the Perth rally.

enltrNoongar spirit dance to clear the bad spirits. #peoplesclimatepic.twitter.com/btF1ovxCEO

- Calla Wahlquist (@callapilla) November 29, 2015

block-time published-time 5.17am GMT

More than 300 people are gathered in coloured clumps under the trees that line Perth's Wellington Square, ahead of the people's climate rally.

One of those is Gerard Siero, an ecological urbanism researcher at UWA (the University of Western Australia), who is wearing a yellow linen suit and leaning against his folding bike, which collapsed down to a 10kg stick for ease of commuting. He's marching for the solutions to climate change.

"We have all the solutions we need to solve the problem," Siero said. "We don't have the will on behalf of our politicians, but we have the will on behalf of the people.

"What we are really trying to march with today is to let the politicians know that they have to get out of the way."

Siero said Australia had the capacity and technology to switch off carbon, but it was fast running out of time. "We're at the point where if we don't so something it will be too late to do anything but get out the ambulances," he said.

block-time published-time 4.57am GMT

Sydney lord mayor: 'at least 45,000 marchers'

Clover Moore, Sydney's lord mayor, says these numbers would make today the biggest climate march ever held in the city :

enltrI've just been told by organisers there were at least 45,000 people, making it the biggest climate march ever in Sydney #PeoplesClimate

- Clover Moore (@CloverMoore) November 29, 2015

block-time published-time 4.49am GMT

My colleague Calla Wahlquist is in Perth, where marchers will be setting off in later today:

enltrMore than 100 people have already gathered at Wellington Square, clinging to the shade on the fringe. #peoplesclimatepic.twitter.com/Lu9BkNIvtm

- Calla Wahlquist (@callapilla) November 29, 2015

We'll be following the progress of that march once it gets underway too, plus you can keep an eye on updates @callapilla.

block-time published-time 4.41am GMT

With the march in Paris - host of the COP21 climate summit - cancelled after the terrorist attacks of 13 November, activists have turned to other ways of showing their support for the global climate march, Reuters reports:

Activists plan to join arms and form a "human chain" in Paris on Sunday to urge action on global warming, in a muted rally after attacks on the city by Islamic State.

More than 2,000 climate events are planned in cities including Sydney, Jakarta, Berlin, London, Sao Paulo and New York, making it one of the biggest days of action on climate change in history, organisers say.

Activists in France scaled back their plans when the government imposed a state of emergency after the attacks two weeks ago killed 130 people, banning the planned demonstration in Paris, meant as the biggest of all.

In France, activists plan to form a static human chain, formed by about 3,400 people joining arms along what had been the original 3km (1.9 miles) route through central Paris from the Place de la Republique to Place de la Nation.

"This is a moment for the whole world to join hands," said Iain Keith, campaign director for Avaaz, one of the organisers.

Separately, more than 10,000 demonstrators who had planned to come to Paris have instead sent shoes to form a big pile in a sign of solidarity. Organisers said the Vatican even sent a pair to represent Pope Francis.

Shoes are symbolically placed on a sidewalk in Paris near the Place de la Republique. Photograph: Eric Gaillard/Reuters

Alix Mazounie of French Climate Action Network said the activists reckoned a human chain would not violate the state of emergency.

"This is not civil disobedience," she said. The chain would break, for instance, wherever it crossed a road to avoid disrupting traffic.

But, underscoring security worries, France put 24 green activists under house arrest before the summit, interior minister Bernard Cazeneuve said on Saturday, saying they were suspected of planning violent protests at the talks.

Foreign minister Laurent Fabius welcomed the worldwide demonstrations. "It is very positive," Fabius said, for governments to feel public pressure to act.

block-time published-time 4.22am GMT

While Australian PM Malcolm Turnbull heads to Paris for the climate summit, Puppet Malcolm decided to take a turn in the Sydney march:

A giant Malcolm Turnbull puppet joins tens of thousands of marchers in Sydney's Domain as part of the global people's climate march on Sunday 29 November 2015. Photograph: Janine Israel/Guardian

And it seems he brought an old, um, pal with him:

undltr @GuardianAuspic.twitter.com/BrQ359YOUn

- Susan Mackay (@mackaysuzie) November 29, 2015

block-time published-time 4.08am GMT

The Sydney march is well and truly on the move, reports Ben Doherty :

Playing 'Hot, Hot, Hot' as they march down Macquarie St towards the Opera House. Jubilant, boisterous mood.

Sydney protesters march down Macquarie St in the people's climate march. Photograph: Ben Doherty for the Guardian

block-time published-time 4.05am GMT

The Canberra march has wrapped up without incident, and ACT Policing has issued Guardian Australia with this statement from operation commander Jo Cameron :

There was a large, well-behaved crowd and it was a peaceful event. There were no arrests and no incidents.

There were some road closures during the march, which were opened as soon as possible.

As you were, Canberra. Carry on with your weekend.

block-time published-time 3.52am GMT

My colleague Janine Israel has also been at the Sydney rally, and reports that many Islander and Indigenous communities are represented at the march.

She spoke to members of Australia's Tongan community. One protester told her:

Our islands are drowning. Where are we going to go?

Members of Australia's Tongan community at the Sydney people's climate march. Photograph: Janine Israel for the Guardian

block-time published-time 3.43am GMT

What are Australia's climate ***targets***?

Australia's prime minister, Malcolm Turnbull, will arrive in Paris later tonight for key international climate talks, armed with a climate ***target*** that's lower than many other developed countries.

The Australian government has committed to cutting ***emissions*** by 26%-28% of 2005 levels by 2030.

By comparison, the United States has vowed to cut ***emissions*** by 26%-28% too - but five years earlier than Australia, by 2025.

Canada has committed to a 30% cut and so has New Zealand, while the European Union has vowed to ***reduce*** ***emissions*** by 40% of 1990 levels by 2030.

The Labor party released its own ***targets*** on Friday. It wants a 45% cut by 2030, a figure Turnbull has criticised as "heroic" and expensive.

But modelling by leading economist Warwick McKibbon, did not find a large difference in the economic impacts of the ***targets***. A ***reduction*** of 26% would shave between 0.2% and 0.3% of the GDP, while a 45% ***reduction*** would see between 0.5% and 0.7% lost.

block-time published-time 3.32am GMT

Helpful reminder for those marching in Sydney right now:

enltrQuick PSA for Sydney: there are water stations dotted around. You should drink some #climatemarch#peopleclimatepic.twitter.com/JC6NySchf8

- GetUp! (@GetUp) November 29, 2015

block-time published-time 3.24am GMT

The crowds in Sydney have observed one minute's silence to reflect upon those most affected by climate change, ended by the sounding of a didgeridoo.

Many of those there are saying that the Domain - no small space - is almost full to capacity.

Once the speeches and songs are finished, the rally is set to march through the streets of Sydney in colour-coordinated blocks:

yellow for "solutions", eg renewables.

orange for "just transitions", advocating for fair jobs.

red to stand with those already on the front line of climate change.

purple for diversity of faith and cultures.

blue to represent future generations.

white for those in healthcare and science.

blue to stand up for threatened ecosystems.

and a group marching for Aboriginal and Torres Strait Islander peoples. The crowd listen to speeches at the Domain in Sydney, Australia, on 29 November 2015 as part of global climate marches in the lead-up to COP 21 in Paris. Photograph: Ben Doherty for the Guardian

block-time published-time 3.10am GMT

Although it is very hot in Sydney today, with protesters - those who weren't canny enough to bring their umbrellas - seeking out whatever shade they can find, activists are well aware that the real front line against climate change lies further west, in the Pacific islands.

A good primer on that situation is this report by my colleague Oliver Milman :

The cause for concern is clear - Nasa recently reported the world's sea level has risen nearly 8cm since 1992, with the Pacific experiencing a more rapid increase than other oceans.

A rise of around a metre by the end of the century now looks likely. For low-lying islands in the Pacific, this means coastal erosion, saltwater seeping into precious rainwater catchments and ruined crops.

Meanwhile, rising temperatures will heighten the risk of diseases, including those carried by mosquitos. Cyclones are expected to become more severe. The World Health Organisation estimates climate change will cause around 250,000 deaths globally between 2030 and 2050.

Pacific Islands will be on the 'frontline' of climate change, the Sydney climate change march is told. Photograph: Ben Doherty for the Guardian

block-time published-time 3.03am GMT

My colleague Ben Doherty is in Sydney's Domain, sheltering from the sun and hearing from Professor Tim Flannery, one of Australia's leading climate change activists, who says today "looks like the largest climate march ever in Australia ".

The Paris talks, he said, are the last chance to save "many things we care about, like the Great Barrier Reef ... We are coming to this issue very late."

There are no easy fixes to the climate problem, he warned, but Australia needs to close down polluting industries and dependence on fossil fuels:

We are meeting in the home city of the Australian prime minister. We need to send a very powerful message to him: do what the people demand.

He said the Australian people would not accept anything less than a successful outcome at Paris.

block-time published-time 2.55am GMT

It was a very peaceful, family-oriented affair in Canberra, as people brought their children to march with them from Parliament House to the tent embassy, near Old Parliament House.

Police estimate around 3,000 people showed up, while protesters think the number is closer to 6,000. Canberrans are fairly cautious about protesting, as many are public servants and are often reluctant to make political statements.

One of the coordinators of the event, Emma Robinson from the Conservation Council, said she was not surprised that so many showed up in the capital.

"Climate change is and has always been everyone's business," she said.

The event was staffed by about 80 volunteers, most of whom are Canberra locals who are part of the Conservation Council.

Former chief scientist of Australia, Penny Sackett, said that protests like Sunday's make people feel as though they are taking action on climate change.

"People can become discouraged because it appears as though [political] change does not happen swiftly enough," she told Guardian Australia.

She said the march was a message from voters to world leaders who are about to meet on climate change in Paris: "We're watching."

block-time published-time 2.45am GMT

The Canberra Times now estimates there are more than 5,000 people taking part in the march there.

enltrThis gives you a better ideas of the numbers marching down from Parliament House, #Canberra. #peoplesclimate#cbrpic.twitter.com/6aNEeVMYVQ

- Richard Tuffin (@RichardTuffin) November 29, 2015

Attendance numbers are always a tricky thing with marches, with totals from organisers and police often varying wildly.

Police estimates for Melbourne, for example, put the crowd numbers by the end of Friday night at about 40,000, but organisers said 60,000 turned out.

Similarly, estimates for Brisbane on Saturday came in at between 5,000 and 10,000.

We're yet to hear estimates for the Sydney crowd but organisers already seem overwhelmed by the numbers who have shown up so far.

block-time published-time 2.38am GMT

An enterprising cyclist at the Adelaide rally:

A cyclist wears a helmet with a solar panel attached as he participates in a march along the main street of Adelaide. Photograph: David Gray/Reuters

Meanwhile, some Sydney marchers seek out the shade:

enltrToo hot out in the middle! #peoplesclimatepic.twitter.com/Y7ejzXipdt

- Paddy Manning (@gpaddymanning) November 29, 2015

block-time published-time 2.20am GMT

Sydney is go!

The Sydney rally is underway, with thousands already in attendance and many more still arriving:

enltrThe power is ours! Yehhhh Sydney! #peoplesclimate#climatemarchpic.twitter.com/BqqlzByULb

- Greenpeace Aus Pac (@GreenpeaceAustP) November 29, 2015

enltrHuge #greens turnout for #PeoplesClimate !! Rally starting now. pic.twitter.com/laNbMg50Y4

- Greens NSW (@GreensNSW) November 29, 2015

Ben Doherty is now in the Domain, from where the march is leaving, and reports "massive numbers":

Much more multi-coloured than the Hyde Park beginnings, people in all manner of colours, lots of associated causes: anti-nuclear, church groups, refugee groups.

One guy has a mallard on his head, and a tree growing out of his backpack.

Sydney lord mayor Clover Moore tells the crowd that COP21 in Paris will be the most important meeting of our lifetime.

"On it depends the future of our planet," she says.

block-time published-time 2.18am GMT

Hello Hobart! Tasmanian marchers are also assembling, with a minute's silence for Paris, which is hosting this week's climate talks, but - after the terrorist attacks of 13 November - will not be holding its own climate march:

enltrA min of silence for #Paris & imagining a clean, compassionate future in #Hobart at #peoplesclimate march #cop21pic.twitter.com/p57G5JG1Yz

- Claire Havens (@ClaireHavens) November 29, 2015

block-time published-time 2.07am GMT

My colleague Ben Doherty is with the Sydney marchers and sends this dispatch from the start line:

At the Sydney march, there are red shirts everywhere. Solid, if not yet spectacular numbers are gathering at the north end of Hyde Park, and marching into the Domain in bright sunshine.

Labor deputy leader Tanya Plibersek, who brought her own phalanx of rosily-attired Young Laborites, gave a rangy press conference at which she rejected the 'heroic' label Malcolm Turnbull affixed to Labor's ***emissions*** ***targets*** (it wasn't meant as a compliment, Plibersek seems to suspect).

She condemned Turnbull for "stopping off on the way to Paris to lecture other heads of government to do more on climate change, while he is doing less".

Plibersek said Labor's ***targets*** would require significant change in Australia, but that the country had already seen, and embraced, change aimed at ***reducing*** ***emissions***.

She said the $1m Australia has offered to contribute to the Commonwealth's new Climate Finance Access Hub (established at the CHOGM meeting in Valetta) was "pathetically puny".

The hub will be set up to help small island nations vulnerable to climate change access global funds for mitigation and adaptation.

Plibersek said Australia, given its role as a leader in the Pacific region, needed to do more to help its neighbours, some of whom face "an existential threat" from climate change.

Related: Turnbull says Shorten's 'heroic' climate ***target*** aimed at making political point

block-time updated-timeUpdated at 2.08am GMT

block-time published-time 2.02am GMT

Sydney marchers are also warming up - as is the weather, with that blue sky deciding to put in an appearance after all - and is expected to be the biggest Australian march of the day. Will NSW be able to best Melbourne's 40,000+ from Friday ?

Reader Tim Senior and friends are well stocked with placards for the Sydney rally:

enltrOn our way to the #peoplesclimate#climatemarch. On public transport of course! pic.twitter.com/FMs5JiOPXZ

- Tim Senior (@timsenior) November 29, 2015

A reminder: do keep your pictures, videos, thoughts and headcounts coming, to me directly @Claire\_Phipps or via the blue GuardianWitness button at the top of the blog. Thank you!

block-time published-time 1.53am GMT

My colleague Shalailah Medhora is at the Canberra march, which has just started. She estimates there are around 3,000 people there so far:

enltrAnd they're off! Around 3,000 on the march to the tent embassy. @Claire\_Phippspic.twitter.com/Def0zmsbqz

- Shalailah Medhora (@shalailah) November 29, 2015

enltr"There are no climate sceptics at the end of a hose". ACT firefighters union at climate rally. @Claire\_Phippspic.twitter.com/HYP0ASWQoC

- Shalailah Medhora (@shalailah) November 29, 2015

I'll be tracking the progress of the Canberra march - along with the others today - on this live blog, plus you can keep an eye on it via @shalailah.

block-time published-time 1.40am GMT

Many thousands of people marched in New Zealand on Saturday, with more events today: check here for those listings.

An estimated 7,000 turned out in Wellington:

enltr @Claire\_Phipps we had a fantastic turn out in Wellington yesterday! #ClimateMarchpic.twitter.com/rFlsGye4YB

- Torken Faddy (@TFaddy) November 29, 2015

And there were around 15,000 marchers in Auckland, with 8,000 more in Christchurch:

Protesters of all ages marched in Christchurch, New Zealand, on Saturday. Photograph: PJ Heller/ZUMA Press/Corbis

block-time published-time 1.33am GMT

What is likely to be agreed in Paris?

We know already what the biggest emitters have committed to:

The EU will cut its ***emissions*** by 40%, compared with 1990 levels, by 2030.

The US will cut its ***emissions*** by 26% to 28%, compared with 2005 levels, by 2025.

China will agree that its ***emissions*** will peak by 2030.

Nations responsible for more than 90% of global ***emissions*** have now come up with their ***targets*** - known in the UN jargon as intended nationally determined contributions, or INDCs.

These include all of the major developed and developing countries, though their contributions vary: in the case of developed countries, actual cuts in ***emissions***, but for developing countries a range of ***targets*** including limits on ***emissions*** compared to "business as usual", and pledges to increase low-carbon ***energy*** or preserve forests.

Analysis of the INDCS, endorsed by the UN, has suggested that these pledges are enough to hold the world to about 2.7C or 3C of warming. That is not quite enough to meet the scientific advice.

However, that is not the end of the story. One of the key components of any Paris agreement would be to institute a system of review of the ***emissions*** ***targets*** every five years, with a view to ratcheting them upwards.

Another, and complementary, approach is to make more effort to bring down ***emissions*** outside the UN process, for instance by engaging "non-state actors" such as cities, local governments and businesses to do more.

block-time published-time 1.27am GMT

Canberra march gets started

It's Canberra's turn now, and again it looks to be a very healthy turnout under a beautiful blue sky (it's rather grey here in Sydney, not that that should put anyone off):

enltr #peoplesclimate March kicking off in Canberra! pic.twitter.com/d11z8jJYC6

- Fair Go For Canberra (@FairGoCanberra) November 29, 2015

block-time published-time 1.13am GMT

Adelaide march begins

The Adelaide rally is underway and it's a good turnout, estimated in the thousands:

enltrOver 5000 in #Adelaide marching for jobs, justice & a safe #climate ! #peoplesclimate#climatemarchpic.twitter.com/bn7LsXdm4f

- AYCC (@AYCC) November 29, 2015

enltrHuge turnout for the #adelaide#peoplesclimate march pic.twitter.com/5eD9KDQWIX

- Michael Garrod (@MickyJim74) November 29, 2015

enltrMarching for our planet! #climatemarch#adelaide#climatechange#peoplesclimatepic.twitter.com/IPVvmxVTcz

- Mike Crowhurst (@TheCunningCrow) November 29, 2015

A reminder: you can contribute your own pictures and videos via the blue GuardianWitness button at the top of this live blog, and/or to me @Claire\_Phipps.

block-time updated-timeUpdated at 1.13am GMT

block-time published-time 1.04am GMT

Avaaz, the campaign group behind the march, says more than 120,000 people have already taken part - with thousands of rallies yet to take place on Sunday, the main day of action.

Thousands of people marched in Brisbane on Saturday - organisers put it at 10,000 - and more in Darwin, following Friday's 40,000-strong rally in Melbourne.

Organisers said thousands took part in 35 New Zealand locations - the smallest being on Raoul Island, where the island's entire population of seven turned out.

My colleague Melissa Davey was at the Melbourne march on Friday evening and sent this report:

Thousands of people were marching through Melbourne's CBD on Friday evening in what is expected to the largest in a series of climate change protests being held throughout Australia over the weekend.

They gathered in front of the state library and, as the lawns filled with protesters putting finishing touches on their placards, they took to the surrounding roads just in time for peak hour.

Environmentalists, unionists, religious organisations, youth groups, doctors, Indigenous organisations, and people from the aid and development sector were part of the crowd. Police estimates put the crowd numbers by the end of the night at about 40,000, but organisers said 60,000 turned out for the event.

Related: Victorians take to the streets to demand urgent action on climate change

block-time published-time 12.56am GMT

Why Paris, why now?

After the terrorist attacks of 13 November, the meeting of world leaders in the French capital beginning on Monday has an added poignancy.

But the COP 21 talks - it stands for conference of the parties, the yearly United Nations climate change conference; this is the 21st - will focus on hammering out a new global agreement to ***reduce*** global ***greenhouse gas*** ***emissions*** and with them the threat of climate change.

Here are a couple of key questions answered by the Guardian's environment reporter Fiona Harvey :

Why now?

Current commitments on ***greenhouse gas*** ***emissions*** run out in 2020, so at Paris governments are expected to produce an agreement on what happens for the decade after that at least, and potentially beyond.

Why is this important?

Scientists have warned that if ***greenhouse gas*** ***emissions*** continue to rise, we will pass the threshold beyond which global warming becomes catastrophic and irreversible. That threshold is estimated as a temperature rise of 2C above pre-industrial levels, and on current ***emissions*** trajectories we are heading for a rise of about 5C.

That may not sound like much, but the temperature difference between today's world and the last ice age was about 5C, so seemingly small changes in temperature can mean big differences for the Earth.

Will world leaders go to Paris?

Yes. The heads of state or government of more than 130 countries have already said they will come. These include French president Francois Hollande, Barack Obama of the US, Xi Jinping of China, Narendra Modi of India, Angela Merkel of Germany, Australia's Malcolm Turnbull, John Key of New Zealand and David Cameron of the UK.

Unlike the Copenhagen talks in 2009, however, at which world leaders turned up at the last minute of the two weeks of talks, this time the leaders will arrive at the beginning of the conference, give their negotiating teams clear instructions, and expect a fully formed agreement at the end of it.

Related: Everything you need to know about the Paris climate summit and UN talks

block-time published-time 12.48am GMT

Marches in Australia

Some Australian cities have already met and marched, with Melbourne getting in first on Friday evening, and Darwin and Brisbane on Saturday. I'll have reports and pictures from those marches on this live blog shortly, along with news from New Zealand, which held most of its events on Saturday too.

Here's the line-up for today:

Adelaide : Action started from 11am local (11.30am AEDT) at Ester Lipman Gardens, adjacent to the Torrens Parade Ground.

Canberra: Speakers from 12 midday at Parliament Lawns before the march to the Tent Embassy grounds and West Lawns.

Sydney : Marchers are asked to gather at 12.30 for a 1pm start from the Domain.

Hobart : March begins at 1pm from Parliament Lawns.

Perth : Another 1pm start (4pm AEDT), from Wellington Square.

Plus a heap of other marches - if one can heap a march - in other towns and cities: check out the list on the People's Climate March website.

block-time published-time 12.36am GMT

Opening summary

Welcome to live coverage of the global climate march - a continent-spanning series of rallies which organisers hope will see millions of people join to highlight the need for a worldwide consensus on tackling climate change ahead of the COP21 talks in Paris, which open tomorrow.

I'll be kicking off this live blog from Sydney, handing over later to colleagues in London and New York, and aiming to bring you updates from marches in all those places and everywhere in between.

Last year, tens of thousands of people demonstrated in London, Paris, Berlin and Brussels; thousands more turned out in Sydney and Brisbane, with 30,000 thronging the streets of Melbourne. In New York, more than 300,000 marchers took part, on a day of 2,700 simultaneous climate events worldwide.

This year, marchers will not be able to rally in Paris, the home of the climate talks starting on Monday - demonstrations were cancelled in the wake of the 13 November terror attacks. Instead, others have been encouraged by Parisians to #MarchlMe; we'll be keeping an eye on that campaign throughout the day.

If you're taking part in the marches and want to share a story, an observation, a pun or a picture, please do get in touch below the line or give me a shout on Twitter @Claire\_Phipps. I'll tweet key developments from there too.

You can also share your pictures and videos of the march via GuardianWitness here or the blue button at the top of the blog, just up there.

**Load-Date:** December 1, 2015

**End of Document**



[***Climate change action at the local level – Challenges ahead***](https://advance.lexis.com/api/document?collection=news&id=urn:contentItem:5H85-01R1-F11P-X1KH-00000-00&context=1516831)

The Malta Independent

October 29, 2015

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**Length:** 723 words

**Body**

Addressing civil society representatives at a seminar on climate change on Friday 23rd October, Dr Vanni Xuereb, Head of MEUSAC and Diane Spiteri, Acting Head of the European Commission Representation in Malta, spoke of climate action as a collective responsibility to which every individual can contribute, just as every individual is responsible in one way or another to the effects of climate change.

The seminar, themed 'Climate Change Action at the Local Level - Challenges Ahead', was one of a series of initiatives in collaboration with the Ministry for Sustainable Development, the Environment and Climate Change, aimed at building a local knowledge base in order to better understand Malta's challenges in dealing with climate change.

Saviour Vassallo - Senior Environment Protection Officer at the Malta Resources Authority, explained how the adverse effects of climate change affect the social, economic and environmental aspects in Malta. Quoting the National Statistics Office, Mr Vassallo said that between 2004-2013 the mean temperature of 19.3oC was 0.8 oC higher than that recorded for 1974-1983. He also said that in 2012, the sectors that contributed most to ***greenhouse gas*** ***emissions*** in Malta were the industry, transport and ***agriculture***, with 65%, 18% and 6% respectively, with the release of CO2 amounting to 7.4 tonnes per capita.

Kathiana Ghio - Director, Environment and Climate Change Directorate, MSDEC, spoke of the actions taken by successive governments to address climate change. She referred to the Climate Change Adaptation Strategy in 2012 that had set out a number of actions and incentives to adapt to the effects of climate change.

The Climate Action Act, adopted by the House of Representatives in July binds government to prepare a National Low-Carbon Development Strategy and a National Adaptation Strategy and to establish the Climate Action Board and the Climate Action Fund.

With reference to the Low-Carbon Development Strategy, Ms Ghio said that the strategy will not contain a list of actions, but a framework and vision towards reaching a low-carbon status by 2050, about which MSDEC will be holding consultations in the coming months. The purpose of the Action Board would be that of bringing together key players from all sectors to act collectively on climate action.

Prof. Paul Pace - Director of the Centre for Environmental Education and Research of the University of Malta, started by questioning whether the efforts related to climate action so far have produced the desired results and whether new solutions should be sought. Educating for climate action should not just consist in the transfer of knowledge but in changing values and attitudes. He also said that the present economic model is not working, as it is protecting the very structures and practices that are causing climate change and so the primary responsibility for the main causes of climate change should not fall on consumers but on the industry.

As a small nation, we tend to behave according to the mentality that our resources are infinite; the uncontrolled use of the limited natural resources such as limestone and water, are the most striking examples.

On the other hand, Eko-skola is one example of good practices through which children are empowered to make their schools environment-friendly.

Various participants at the seminar highlighted several concerns: the need to tackle the administrative barriers encountered by those who want to change things; the irreversible damage to the national water resources and the need to enforce the existing legislation on water conservation; the lack of enforcement of existing environmental laws which is discouraging and demotivating; the setting of unrealistic ***targets*** with respect to climate action; the need for government to listen more to NGOs who often have the expertise and the experience on the ground; the need to talk of individual issues such as water and ***energy*** as people do not generally relate to climate change as a global and national issue that concerns them.

The outcomes of this seminar will serve as a basis for further discussions and the feedback will be submitted to the relevant authorities and to the government for consideration in any initiative that may be taken.

[*http://imgs.syndigate.info/542/1594/98/144613617227.aspx?f=115074&width=630&height=340*](http://imgs.syndigate.info/542/1594/98/144613617227.aspx?f=115074&width=630&height=340)

**Load-Date:** October 29, 2015

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[***China's challenge "" the pursuit of ecological civilisation***](https://advance.lexis.com/api/document?collection=news&id=urn:contentItem:5HNC-67H1-JD1P-T4D8-00000-00&context=1516831)

Global Capital Euroweek

November 30, 2015

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**Section:** CHINA,EMERGING MARKET,CHINESE INFRASTRUCTURE,SRI

**Length:** 2684 words

**Byline:** GlobalCapital

**Highlight:** According to some, infrastructure in China is now so well developed that it is perhaps the Asian economy that has the least need for infrastructure investment. However, it cannot afford to slow down, not least because of the noxious state of its environment.

**Body**

In comparison to India, much of China's infrastructure is space-age. "Overall, China has done very well in building up its infrastructure over the past decade," says Paul Procee, lead urban specialist at the World Bank in Beijing. "It has done especially well in developing much of the massive transportation infrastructure it needs to keep people moving, such as highways, high speed rail networks and airports. You read mind-boggling numbers that China has used more cement in building its infrastructure over the last five years than the US has in the last 100."

In areas like airports, there are no signs of this frenetic activity slowing down. According to research published by the CAPA Centre for Aviation, at the start of 2015 there were 51 airport projects in China worth close to $60bn. The largest of these, which was given the go-ahead at the end of 2014, is Beijing's new, $13.1bn four-runway airport at Daxing.

One result of the Chinese investment boom of the last decade, says Gavin Munro, head of Asia Pacific infrastructure finance at Société Générale in Hong Kong, is that the country's infrastructure is now so well developed that it is perhaps the Asian economy that has the least need for infrastructure investment. "If you look at transportation infrastructure, for example, some of China's regional airports now probably have enough capacity for the next 50 years," he says. "In Indonesia, by comparison, the whole system is log-jammed and congestion is chronic. Anecdotally, it is sometimes cheaper for Indonesian companies to fly products in from China than ship them from islands elsewhere in Indonesia because the ports are so congested."

While China's transportation system may now be the envy of emerging and developed economies across the world, this is no reason to suppose that the country can afford to slow down its infrastructure investment programme, for several reasons. One of these is that against the backdrop of well documented slowing growth, infrastructure investment is one option open to the Chinese government as an economic stimulant. According to research published by HSBC, issuing Rmb3tr-Rmb5tr of long term bonds to jump-start infrastructure projects in China could translate into a 2%-4% impact on GDP, assuming the investment is spread over two years.

The far more significant, long term reason why China cannot afford to ease up on its infrastructure investment programme is the noxious state of its environment. According to the World Bank, China faces some of the world's most formidable environmental challenges due to the ***energy*** and resource-intensive pattern of its growth in recent years, coupled with its binding natural resources constraints. China has 22% of the world's population, but only 6.4% of its land area, 7.2% of its farmland and 5.8% of its annual water resources. The grim consequence for China and for the planet, says the World Bank, is that "the value of environmental depletion and degradation (i.e environmental externalities) in China's economy are among the highest of any country. Given the magnitude of China's environmental impacts, global environmental problems cannot be solved without China's engagement."

The impact of urbanisation

Like in India, much of China's investment requirement for green or sustainable infrastructure over the coming two decades will be driven by an unprecedented wave of urbanisation.

According to a recent World Bank report, China's cities are growing at a rate and scale never seen before in human history. At the last count, this internal migration had seen 380m people relocating from rural to urban areas over the last two decades. By 2025, more than 200m others are expected to have made the same journey.

To put this movement of people into stark perspective, the World Bank estimates that the equivalent of the population of cities such as Hamburg or Vienna is now relocating every month.

At the World Bank in Beijing, Procee says that the key difference between Chinese urbanisation and the trend in other developing economies is that in China the process has been carefully planned and managed as a component of economic strategy. "The process of modernisation and urbanisation dates back to the 1980s, when Deng Xiaoping's government started to move from being an ***agricultural*** to an industrial-based economy," says Procee. "This process is now accelerating as China moves from an economic model based on heavy industry to an innovation-led economy driven by rising productivity and higher consumption. Cities are seen as the places where this will happen more quickly and efficiently than anywhere else."

Procee says that by creating a more mobile and productive workforce, this dynamic will have what he describes as "humongous benefits for China's economy". The impact on the environment, however, may be less positive, given the pressure it will exert on roads, urban railways and other civic services.

As the World Bank's report warns, "while urbanisation will drive growth and raise living standards, it also brings tremendous environmental and service delivery challenges. Smaller cities in particular are struggling to keep pace with demand, especially for sewerage and waste disposal services."

This process is creating opportunities for investors in modern, sustainable infrastructure. The World Bank estimates that China's cities will need to spend some $5.3tr on infrastructure over the next 15 years. But it adds that by developing more efficient, denser cities, China will be able to save $1.4tr on infrastructure spending "" which is about 15% of GDP in 2014.

In the water sector, meanwhile, where China faces the dual menace of shortages and pollution, Moody's estimates the country will need to invest some Rmb4tr-Rmb5tr, which will also create substantial investment opportunities. "Given the massive investment needs, Moody's expects the government to launch further policy reforms to encourage private capital investment," the agency says in a recent update. "As the industry is highly fragmented in China, the growth opportunities will result in intensifying competition and industry consolidation."

The ecological cost of China's economic boom

While urbanisation is one reason why China will need to invest heavily in sustainable infrastructure over the next decade, a more general driver is the legacy of the boom that has metamorphosed China economically as well as socially and environmentally.

Sean Kidney, CEO of the Climate Bonds Initiative (CBI), says that lifting one billion people out of poverty probably ranks as the achievement of the millennium in terms of its socioeconomic impact, both within China and elsewhere. But he adds the significant rider that this economic transformation has come at a very high ecological cost.

High indeed. The United Nations Environmental Programme (UNEP) reports that air pollution alone in China is estimated to lead to more than a million premature deaths. According to a recent report published by the Task Force on establishing a Green Financial System in China, meanwhile, around 82% of the Chinese population depend on shallow wells and rivers for their drinking water, but 75% of these sources are already polluted. Other studies, according to the same report, have found that 19.4% of arable land in China is also heavily polluted.

In financial terms, the cost of this ecological damage is considerable. In 2003, China asked the World Bank to estimate the annual cost of environmental aid and water pollution, factoring in the impact of its damage to human health. The Bank's findings were that it amounted to an eye-watering $100bn a year, or about 5.8% of GDP at the time. A more recent study, conducted by the Asian Development Bank and Tsinghua University in 2012, calculated that economic losses resulting from illness related to air pollution in China amount to 1.2% of national GDP.

China's response to its environmental challenge

The good news is that China has taken giant strides in recent years towards tackling its environmental shortcomings. During the 11th five year plan (2006-2010), it achieved a 19.1% decline in ***energy*** intensity per unit of GDP, according to UNEP, only narrowly missing its ultra-ambitious ***target*** of 20%. Over the same period, the amount of ***energy*** required to produce a tonne of cement fell by 41%, offsetting some of the environmental impact of China's great construction boom.

In 2009, meanwhile, China pledged that by 2002 it would lower carbon dioxide ***emissions*** per unit of GDP by 40% to 45% from the levels posted in 2009. It also promised to increase the share of non-fossil fuels in primary ***energy*** consumption to about 15%, lift the country's forested area by 40m hectares, and to increase its forest stock volume by 1.3bn cubic metres compared with the 2005 levels.

China is backing its commitment to what it describes as "ecological civilisation" with substantial public and private sector investment. Take the example of its commitment to renewables in general and wind power in particular, the scale of which is hard to overstate, with China having recently pledged to build 1GW of capacity of clean ***energy*** every week between now and 2030. "In only five years," said UNEP's 2013 report, "China has gone from being a minor player in the wind power sector into the world's largest market." The Global Wind ***Energy*** Council forecasts that China's investment in wind turbines will lead to an increase in installed capacity from a projected 143GW in 2016 to 217GW by 2020 and 414GW by 2030.

Impressive progress has also been made in other renewable ***energy*** sources. According to the government's Intended Nationally Determined Contributions (INDC) announced in the run-up to the COP21 talks in Paris, China's installed capacity of hydro power is now 300GW, which is more than 2.5 times as much as in 2005. In nuclear power, it is 19.88GW, or 2.9 times the 2005 level, and in solar power it is now just over 28GW, or 400 times the 2005 total "" dwarfing even the 90-fold increase over the same period in installed capacity of on-grid wind power.

Alongside its ambitious plans for scaling up its development of wind power, China aims to increase installed capacity of solar power to 100GW by 2020 and to "proactively develop geothermal, bio-***energy*** and maritime ***energy***".

These are impressive objectives. "The scale of Chinese investment in renewable ***energy*** is dwarfing the rest of the world," says Kidney at the CBI. "The switch in investment from fossil fuels to renewables has been unbelievable."

Kidney also welcomes much of China's investment in its transportation systems. Granted, he says, that many of the provinces and cities have channelled investment into poorly thought-through highways that have exacerbated rather than eased China's traffic congestion. But he echoes others when he applauds the job China has done in building the world's largest high speed railway network.

Aside from being a super-efficient way of moving people across its 16,000 kilometres of track, China's ultra-modern high-speed rail network is gentle on the planet. "It is a critical low-carbon investment which takes cars off the roads and aeroplanes out of the sky," says Kidney. That is an important initiative, given that the global aviation industry already accounts for about 3.5% of the total human contribution to climate change, according to Heathrow Airport. The Intergovernmental Panel on Climate Change has estimated that at current rates of growth, this will rise to between 5% and 15% by 2050.

Anecdotal evidence suggests that the Chinese population is already breathing easier "" literally "" as a result of the measures taking to address ***emissions*** over recent years. The World Bank's Procee, a Dutchman who grew up in Brazil and has lived in Beijing for the last 5-1/2 years, says that some of the most lurid stories about urban pollution in China are outdated, or apocryphal, or both. Accounts of housewives hanging white T-shirts out to dry in the morning, and finding them jet-black by evening are, he says, a misrepresentation. "In Beijing, we don't see the black soot we used to get, now that all the city's coal-fired plants have been shut down," he says. "In the time I've been here, I have seen a considerable improvement in terms of air quality. It's true that there are some days when we have concentrations of fine particles of 300ppm [parts per million]. But that is down on the levels of five years ago."

Perhaps. But as Procee says, some cities still have hazardous measurements, with Shenyan recently recording 1,500ppm. The urban average is perilously close to levels deemed to be unsafe, and it is generally recognised that China still has a huge problem with its air quality as well as with water pollution and scarcity, which Procee says will be the country's biggest long term ecological threat.

New environmental ***targets***

This is why China recognises that the progress it has made to date on mitigating ***greenhouse gas*** ***emissions*** represents little more than the tip of the iceberg. A clear recognition of this was made when President Xi recently announced tougher, revised ***targets*** requiring China's ***emissions*** to peak by 2030 at the latest, and for the non-fossil fuel share of the country's ***energy*** mix to rise to 20% by the same year. China has also announced that it will cap its coal use by 2020.

These ***targets*** were also specified in China's INDC statement released in June. This insisted that "China attaches great importance to addressing climate change, making it a significant national strategy for its social and economic development and promoting green and low-carbon development as an important component of the ecological civilisation process." It added that "new industrialisation, urbanisation"¦ ***agricultural*** modernisation and greenisation will be promoted in a co-ordinated manner. Resource conservation and environmental protection have become the cardinal national policy, placing mitigation and adaptation on equal footing, promoting innovation in science and technology and putting in place the necessary management and regulatory mechanisms and systems."

Among the recent pledges made by the National Development and Reform Commission (NDRC) is a commitment to the launch of China's national ***emission*** trading system in 2017, covering key industry sectors such as iron and steel, power generation, chemicals, construction materials, paper-making and non-ferrous metals. "China commits to promote low-carbon buildings and transportation, with the share of green buildings reaching 50% in newly built buildings in cities and towns by 2020 and the share of public transport in motorised travel reaching 30% in big and medium-sized cities by 2020," adds the NDRC. "It will finalise next-stage fuel efficiency standards for heavy-duty vehicles in 2016 and implement them in 2019."

Many believe that by establishing ***targets*** for attacking the ravages of climate change that would have been unimaginable a decade or so, China has manoeuvred itself into a leadership position in advance of COP21. At the historic US-China Climate Summit in Beijing in November 2014, the governments of the two superpowers paved the way for this by announcing that they would work together "to make sure international climate change negotiations"¦ reach agreement as scheduled at the Paris Conference in 2015." The US-Chinese accord was hailed by environmental groups such as Ceres, which describes itself as a non-profit organisation advocating for sustainability leadership, as a "game-changer" in the global battle against global warming.

When Premier Xi met US President Obama in Washington in September, they reaffirmed their "shared conviction that climate change is one of the greatest threats facing humanity and that their two countries have a critical role to play in addressing it".

At the same time, the China-US Joint Presidential Statement on Climate Change reaffirmed China's commitment to promoting "green power dispatch, giving priority, in distribution and dispatching, to renewable power generation and fossil fuel power generation of higher efficiency and lower ***emission*** levels."

**Load-Date:** December 21, 2015

**End of Document**



[***Food security***](https://advance.lexis.com/api/document?collection=news&id=urn:contentItem:5H3F-9T11-JCJY-G14V-00000-00&context=1516831)

thetimes.co.uk

October 7, 2015 Wednesday 6:47 PM GMT

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**Section:** THE BUSINESS DEBATE

**Length:** 993 words

**Byline:** Advertising feature

**Body**

It is often forgotten in our well-fed corner of the world that a year-round supply of affordable, health-giving food is the mainstay of social stability and quality of life. This means forward-thinking food policies are an imperative for everyone if we are to address the food supply challenge ahead. Some stakeholders say we must produce more food to feed a growing population on the existing ***agricultural*** land base, and some identify a logistics and transportation issue. Others insist we need to waste less food or eat less meat and dairy - a challenge considering the expanding population in developing and rapidly industrialising countries and the increasing appetite for the western diet.

Whatever our focus should be, all this needs to be done while adapting to the impact of climate change, preserving biodiversity, ***reducing*** ***greenhouse gases***, safeguarding the environment and staying within the narrowing limits of the public purse - the list of challenges seems to be endless.

These difficulties don't only face farmers, but also legislators, the crop protection and livestock industries, our plant scientists, the food industry and those involved with animal health, human nutrition, food safety and the development of ***agricultural*** markets. Failure will pose a real threat to ordinary people's lives. Human society is based on ***agriculture***, herd farming and fishing, and has been for some eight thousand years, but urban dwellers - that is, most of us - must occasionally be reminded of that. We can take comfort, however, from the fact that we have the ***agricultural*** technology and know-how to meet the challenge and produce the food: we just have to deploy it wisely and scientifically.

As these challenges to food production unfold, the population's demand for food will increase. By 2050, based on its current growth pattern, the world population is expected to reach anywhere between 9 and 10 billion. That compares to today's population estimate of just over 7 billion. Most of that growth will happen in the developing world and urbanisation will continue apace. The Food and ***Agriculture*** Organisation of the United Nations (FAO) estimates that ***agricultural*** production will need to increase by 70% by 2050 to cope with a possible 40% increase in world population. This translates into an additional 1 billion tonnes of cereals and 200 million tonnes of meat to be produced annually by 2050 (as compared with production in 2010/11).

Feeding this growing population will require an evidence-based global policy framework. This calls for consistently forward-thinking food policies, which are sadly lacking at the moment. The EU, for example, supports the FAO's call for increased productivity yet European governments are actively blocking the uptake of certain ***agricultural*** technologies that have the potential to increase productivity - and for reasons that are mainly ideological. At present, European ***agricultural*** policy is not addressing either the complexity of the issues nor the reality of present-day ***agriculture***, which is, emphatically, an evidence-based science and not a transient expression of public opinion.

Many point to the fact that we can't solve the problem by putting more land under the plough. The supply of ***agricultural*** land is severely limited and gone are the days when we would wish to cut down forests to grow food, here in Europe or anywhere else. Why not? Forests are essential to stem ***greenhouse gas*** ***emissions*** and wild lands preserve biodiversity and maintain ecological balance. Forests, green belts, parklands and wilderness areas are both rightfully treasured and severely threatened in much of the world. This means that to meet the food supply challenge we will, by necessity some argue, have to grow more food on the existing land base.

Biostimulants are among some of the earliest ***agricultural*** inputs used by humanity. However, historically little has been done to refine and improve their quality and efficacy.

During the past 10 years, however, an increasing amount of research has been undertaken by producers and their partners to identify new bioactive compounds and beneficial microorganisms and to better understand how biostimulants can enhance crop performance and quality under a wide range of growing conditions.

While biostimulants are still associated by many people with organic farming and organic gardening, they now have an important role to play in conventional ***agriculture*** as a complement to crop nutrition and crop protection. Biostimulants in fact can help address some of the most important challenges facing global ***agriculture***.

Given FAO and G7 warnings about the need to increase food productivity 70 per cent by 2050, it is reasonable to assert that food security will become the paramount societal and scientific issue for the foreseeable future. Understanding and addressing the complexity of increasing ***agricultural*** production is an urgent task for policymakers, but the biggest threat may not be nature, but the ideological clutter that tends to obscure our vision. What we need to clarify our vision on food supply is evidence - scientifically valid evidence backed by technology.

Presenting the choices in this way is very polarising: organic versus conventional versus GMOs versus a plethora of industry and other stakeholder groups... as if they were playing against each other in a tournament.

In fact, this does no justice to the whole question of Food Security. Each model has its place when the factors of productivity, nutrition, soil, climate, ***energy*** and markets are addressed in a rational, evidence-based scientific way. The fundamental question before us is how to maximise safe food production without undue damage to our environment in order to provide a secure, steady, affordable supply of health-giving food.

The articles on these pages are produced by The Business Debate, which takes sole responsibility for the contents

**Load-Date:** October 7, 2015

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[***A global coalition mapping and motivating decarbonization; A coalition of governments, oil companies, and other key parties works for climate action and carbon pricing***](https://advance.lexis.com/api/document?collection=news&id=urn:contentItem:5JM8-4771-JCJY-G312-00000-00&context=1516831)

The Guardian

April 25, 2016 Monday 11:02 AM GMT

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**Section:** ENVIRONMENT

**Length:** 912 words

**Byline:** Joseph Robertson

**Body**

Would it surprise you to learn that governments, oil companies, NGOs and major investors are coming together to map-and to motivate-the decarbonization of the global economy?

The Carbon Pricing Leadership Coalition (CPLC) is a policy-focused alliance of national and subnational governments, intergovernmental agencies, businesses and institutional investors, nonprofits and stakeholder networks. It was launched on the first day of the Paris climate negotiations, and its mission is simple: to collaborate across borders, across sectors, sharing information, know-how and capacity, to build the most economically efficient tools for decarbonization into every nation's climate plan as soon as possible.

The Paris Agreement calls for non-state support for national climate action. The 17th Sustainable Development Goal is devoted to partnerships that build capacity and speed implementation. At the CPLC table, all of the partners are peers, and this takes the project well beyond the the conventions of global governance: honest and capable support for success is the shared focus, so governments and leading businesses work with intellectuals and policy advocates, to ensure no good thinking is left off the menu.

Asked why he sees this multi-sectoral collaboration as so crucial to success in combating climate change, World Bank President Jim Yong Kim said "Putting a price on carbon pollution will cut ***emissions***, improve people's health, and spur new investments in clean technology," adding that success "will have a clear impact on our efforts to end extreme poverty in the world in 15 years."

When Ethiopia's Prime Minister Hailemariam Dessalegn joined the Carbon Pricing Panel last fall, he said his nation wanted to ensure it followed the most cost-effective route to leadership in the 21st century clean economy. Last week, he said he aims "to build a climate-resilient green middle-income economy." Ethiopia will also produce "recommendations on the role and possible forms of carbon pricing policies in Ethiopia, which might also be applicable to similar low-income developing countries."

On Friday, April 15, the CPLC held its first ever High-Level Assembly, a governance meeting bringing together leading diplomats, heads of government, and executive representation of all Coalition partners. Ségolène Royal, Minster of Environment for France, and Feike Sijbesma, CEO of Royal DSM, co-chaired the Assembly. They were joined by Dr. Kim, UN Secretary General Ban Ki-moon, IMF Managing Director Christine Lagarde, OECD Secretary General Angel Gurri´a, and Prime Minister Daniel Kablan Duncan of Côte d'Ivoire.

In her opening remarks to the inaugural governing Assembly, Minister Royal called for carbon pricing that is "high enough, significant enough to have a clear and rapid impact on various behaviors, namely on investment choices." Royal, who is now also President of the Conference of the Parties to the UN Climate Convention, added that "This is the key element of the Paris Agreement."

Specifically, Article 4 of the Paris Agreement calls on all nations to "promote environmental integrity, transparency, accuracy, completeness, comparability and consistency, and ensure the avoidance of double counting" in designing policy strategies that track, limit or eliminate carbon pollution. Article 6 outlines ways to transition market mechanisms developed under the Kyoto Protocol into a sharing of responsibility for climate action across borders, in fulfillment of new national climate action commitments.

As a venue to share policy aims, build new collaborative strategies, and work toward ensuring best practices are made available to all policy-makers, the CPLC has a real chance to ensure effective, efficient, and equitable strategies are part of every nation's climate action agenda. Some approaches focus on covering one or more sectors of the economy-power generation, transport, ***agriculture***. Others prioritize rewarding early actors while limiting ***emissions*** overall. But a simple fee applied to carbon-emitting fuels at the source with revenues recycled back into the economy can cover all sectors while adding day to day economic value at the human scale.

It is due to the already serious work being done between the CPLC partners that six heads of state, along with the leaders of the World Bank, IMF and OECD, were able to issue such a bold call to action on the day before the Paris Agreement was signed. Their Vision Statement calls for an expansion in carbon pricing policies from covering 12% of global ***greenhouse gas*** ***emissions*** now to 25% by 2020, then doubling again to 50%within ten years.

Those ***targets*** are the framing of a 10-year vision for broadening carbon pricing coverage, deepening carbon pricing where it exists, and expanding and enhancing international cooperation, through a well-designed, diverse, multisectoral coalition of working partners. This first-of-its-kind international policy collaboration is an effort to ensure we transition efficiently to climate-smart ***energy*** practices. No community should suffer the degradation brought on by pervasive climate disruption, and all nations can and should be part of a new and inclusive economy of sustainable shared prosperity.

Joseph Robertson is Global Strategy Director for the nonpartisan nonprofit organization Citizens' Climate Lobby, and serves as CCL's representative in Carbon Pricing Leadership Coalition meetings.

**Load-Date:** April 25, 2016

**End of Document**



[***Xxalcohol's Jet thrust; Xxx The recent approval of one synthetic alternative to kerosene may have opened a path to cost-effective, large-scale production of low-carbon aviation fuel***](https://advance.lexis.com/api/document?collection=news&id=urn:contentItem:5JX3-G071-DYX4-71XC-00000-00&context=1516831)

Flight International

May 24, 2016

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**Section:** FEATURES

**Length:** 1252 words

**Body**

One version of alcohol-to-jet (ATJ) fuel recently became the latest kerosene alternative approved for commercial aviation – a milestone that its only producer hopes will light the touchpaper for the explosion in airline demand needed to economically scale up production.

On 1 April, certificating body ASTM International revised its D7566 jet fuel standard to include the alcohol-to-jet synthetic paraffinic kerosene (ATJ-SPK) pathway for fuel made using isobutanol as a feedstock. At the moment, only Colorado-based Gevo produces this type of ATJ fuel.

Similar agents using ethanol as a feedstock, such as those made by Byogy Renewables and LanzaTech, are uncertificated for commercial aviation. However, the ASTM specification “outlines a pathway for inclusion of any C2-C5 alcohol feedstocks as additional data is generated by such producers”, says the Commercial Aviation Alternative Fuels Initiative.

ATJ-SPK approval has been more than six years coming, and follows the certification of four other alternative jet fuel pathways. These include fuels produced from plant oils and animal fats (hydroprocessed esters and fatty acids, or HEFA); fuels derived from plant sugars converted into farnesane (synthesised iso-paraffins, or SIP) and two types of fuel developed using Fischer-Tropsch technology (FT-SPK and FT-SKA).

blend limits

Unlike HEFA and FT fuels, which have been certificated for use up to a 50% blend with kerosene, ATJ-SPK can only be blended up to 30% for now. SIP fuels are certified to a 10% maximum blend.

“We originally put in for 50% but this would have required more work. We can go back and do that later,” says Gevo chief executive Patrick Gruber. “We haven’t focused on it yet. As we’re such a tiny drop of nothingness, 30% is more than adequate for now.”

The recent approval by ASTM gives the green light for Alaska Airlines to operate the first commercial flight using ATJ fuel, and gives Gevo hope it can drum up enough demand from other carriers to enable it to build more facilities and ramp up production.

“Airlines are interested, there’s no question. Now that we’ve got ASTM approval we’re having dialogues with lots of people,” says Gruber. “ASTM approval was the trigger – now [airlines] are willing to put the effort in nothing happens without demand from airlines. They’ve got to put their money where their mouth is.”

In July, Alaska Airlines signed a strategic alliance agreement to purchase Gevo’s fuel and operate an alcohol-to-jet-fuelled commercial flight. The airline says it will still “be scheduling a test flight”, but has not provided any details on when. Gruber expects it “relatively soon”.

Lufthansa was also an early mover, agreeing in 2014 to help co-ordinate an evaluation of Gevo’s fuel as part of a European Union-funded project.

Gruber believes the feedstocks used to create Gevo’s fuel – primarily corn starch and sugarcane although “in future we will see wood and ***agricultural*** waste used” – can be much more readily grown than the feedstocks used to produce HEFA fuels, meaning the opportunities to scale up production are greater.

“What’s good is that there is an abundant supply of carbohydrates around the world,” he says, noting carbohydrate crops can be grown at a fifth of the cost and twice the volume of vegetable oil-producing counterparts. “Our [fuel] is a different game – we’re going for something that works across the world and can be scaled up.

“Our technology is the most cost-effective technology to be approved. It is 98% efficient to convert chemical isobutanol to jet fuel, so the economics make this the most cost-effective route.”

price premium

However, for alternative fuels to truly take off, airlines may have to accept that ***reducing*** their climate impact will cost more than continuing to burn fossil fuels – particularly while oil prices remain at current lows.

“Today, with the oil price down, we would be at a premium. But [when oil gets to the] $75 [per barrel] range, then it starts to be cost-competitive,” says Gruber.

The type of airlines that accept they will have to pay a premium will be first movers demonstrating a commitment to ***reducing*** ***emissions***. Not all carriers fall into this category, as Gruber points out: “There are two camps of people: one that says ‘I will do something’, like Alaska and United Airlines, and another that says, ‘just tax me’.”

When it comes to scaling up production – the key issue with renewable aviation fuels – there are two steps for Gevo. The first is to add the capability to produce jet fuel at its plant in Luverne, Minnesota, at an initial volume of 10 million US gal (38 million litres) per year. The next step would be to build multiple plants with licensees, with the capacity to produce up to 50 million gal a year.

The feedstock used for each plant would vary, depending on location. For instance, in Minnesota it would be corn starch, whereas in South America or Australia it would probably be sugarcane. In the future, cellulosic sugars – derived from non-food biomass – could be used, although Gruber says this “is not ready for prime time yet”. Gevo was awarded $5 million by the US Department of ***Agriculture*** in 2011 to develop cellulosic jet fuel from woody biomass and forest product residues.

Adding to the Luverne plant would take about two years because “we have so much installed there already” says Gruber, while other plants developed alongside partners would take an additional two years as they would be starting from scratch. Gevo already operates a biorefinery in Silsbee, Texas, in collaboration with South Hampton Resources.

Gruber says the company “should be able to do something relatively soon” on the partnership front now that ASTM approval has been secured, describing it as a “chicken and egg” process. “We have to get the supply contracts and we’ve got to get people from all sides working together,” he says.

***energy*** security

Gevo has also been working with the US Department of Defense for several years to develop and test its fuel. The company signed an initial contract to supply more than 16,000gal of fuel to the US Army, as part of its ***energy*** security strategy to ensure that all of its air platforms can run on alternative or renewable fuels by 2016.

In 2013, the Sikorsky UH-60 Black Hawk helicopter became the first US Army aircraft to fly on a 50/50 blend of Gevo’s isobutanol ATJ fuel. The following year, the US Navy tested a 50/50 ATJ blend in supersonic afterburner operations – a test needed to clear the Boeing F/A-18 Hornet for ATJ operations throughout its entire flight envelope.

“The DoD has been our biggest sponsor during development and we would never have been able to get this far without [it],” says Gruber, adding that the Lockheed Martin F-35 “is the only airframe in the [US] military that hasn’t flown” on Gevo’s fuel.

With the US DoD firmly on board and with certification now secured, it is up to commercial airlines to create the demand needed to ensure that companies such as Gevo can scale up production of alcohol-to-jet fuels to commercially viable levels.

Gruber emphasises: “If the aviation industry really wants to ***reduce*** its ***greenhouse gas*** ***emissions***, it must have renewable carbon as a feedstock.”

Alaska Airlines has agreed to test-fly Gevo’s alcohol-to-jet fuel

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patrick gruber

Chief executive, Gevo

The US defence department has been the “biggest sponsor” of ATJ fuel development

ENVIRONMENT

special REPORT

Alaska Airlines

US Navy

ENVIRONMENT

synthetic FUEL

**Load-Date:** May 31, 2016

**End of Document**



[***Five Key Themes For Europe Agribusiness***](https://advance.lexis.com/api/document?collection=news&id=urn:contentItem:5HX0-2B91-JD33-J25T-00000-00&context=1516831)

BMI Emerging Europe Food and Drink Insights

April 1, 2016 Friday

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**Length:** 852 words

**Highlight:** The EU is in the midst of modifying several of its policies related to ***agriculture***. The ongoing reform of the EU's renewables and biofuel policy will limit palm oil import demand growth in Europe in the coming years. Meanwhile, changes to the CAP will have a clear impact on production levels, including for milk and sugar. The dairy sector will also face consolidation in the coming years, with Western EU member states outperforming.

**Body**

*BMI View: TheEUis in the midst of modifying several of its policies related to* ***agriculture****. Theongoing reformofthe EU's renewablesand biofuel policywill limitpalm oil import demand growth in Europe in the coming years. Meanwhile, changes to theCAP will have a clear impact on production levels, including for milk and sugar.The dairy sector will also face consolidation in the coming years,with Western EU member states outperforming*. **1. Central Asia: Increasing Imports From Russia & Ukraine** Central Asia (Afghanistan, Kazakhstan, Kyrgyzstan, Pakistan, Tajikistan, Turkmenistan and Uzbekistan) will generally remain self-sufficient in its wheat requirements for the foreseeable future, though imports from Russia and Ukraine will increase. Kazakhstani production will stagnate around current levels as the area devoted to the crop will continue to decline, while yields in any given year will be dictated by weather conditions. We believe that Russia and Ukraine will export a greater amount of grains to Central Asia in the coming years, given their geographic location and our belief that grains production growth will be strong in both countries.

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| An Important Wheat Region |
| Central Asia - Wheat Production & Share Of World Total |
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| *Note: Central Asia comprises of Afghanistan, Kazakhstan, Kyrgyzstan, Pakistan, Tajikistan, Turkmenistan and Uzbekistan. Source: USDA* |

**2. EU Dairy Industry To Consolidate To 2020** The EU dairy industry will undergo significant consolidation in the next five years, as the most efficient producers will benefit from a less regulated environment while smaller farmers will see their funding decrease. EU-15 countries will fare better than newer EU-N13 countries, with the exception of Poland, due to its greater investment and export prospects. Over this period, the EU will benefit from strong export opportunities, mainly for cheese and milk powder.

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| Export-Driven Growth For Cheese & Milk Powder |
| EU-28 - Cheese & Whole Milk Powder Production Forecasts ('000 tonnes) |
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| *f = BMI forecast. Source: EU Ministry of* ***Agriculture****, USDA, FAPRI, BMI.* |

**3. Slower Palm Oil Demand Ahead With Biofuel Policy Reform** Palm oil demand in the EU is slowing down after a decade of spectacular consumption growth. We forecast this trend to continue in the coming years. Indeed, ongoing reform to the EU's renewables and biofuel policy will cap the use of palm oil-based biodiesel in the region, which has been one of the main drivers behind strong expansion in palm oil consumption over recent years. The EU is now in the process of amending its renewables policy, which we believe will come in the form of a cap on consumption of first-generation biofuels, around 6-7%. However, the reform is creating new opportunities in the form of the development of second- and third-generation biofuel production, which will boost demand for palm oil waste products *(see 'Slower Palm Oil Demand Ahead With Biofuel Policy Reform', February 112015).*

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| Sugarcane, Palm Oil Biofuels Among The Most Efficient |
| Biofuel - Net CO2 ***Emissions*** From Select Crops (% of CO2 ***emissions*** of fuel replaced) |
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| *Note: Negative percentages suggest that a biofuel produced from a given* ***energy*** *crop emits less* ***greenhouse gas*** *(GHG) than the fuel it replaces; positive percentages suggest it emits more GHG than the fuel it replaces. ILUC = indirect land use change impacts. Source: European Parliament, based on data and models from Econometrica, E4tech, LCFS II, EPA, AGLINK, IIASA, IFPRI BAU, IFPRI FT.* |

**4.France & Germany To Strengthen Dominance AmidSugarConsolidation Wave**In September 2017, the EU will abolish its sugar production quota, as it did with dairy quotas in March 2015. As in the case of dairy, we believe the quota removal will lead to an increase in production and subdued sugar prices, ***reducing*** the premium over world (ICE) prices that EU sugar producers can sell their crop domestically. France and Germany will strengthen their dominance of the EU sugar sector over the next five years as they increase market share while the sector consolidates at the expense of smaller and less efficient producers. The EU will become an important global exporter of sugar once the consolidation phase is over.

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| Sector Consolidation Likely |
| Sugar Beet - Number Of Factories By Country (2012) |
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| *Source: European Association Of Sugar Producers* |

**5. European *Agriculture*: The Future Of The CAP** The EU's reformed CAP came into full effect at the beginning of 2015 and will remain in place until 2020. Over this period, there will be substantial changes in European ***agriculture*** due to trade agreements, payment distribution and the removal of production quotas. Over the long term, the CAP will realign its core focus towards the environment and the sustainability of the region's farming, rather than regional commodities prices. Generally speaking, the premium between ***agricultural*** goods prices in Europe and the world will narrow, as policymakers will limit direct market intervention ( *see 'European* ***Agriculture****: The Future Of The CAP', November 20 2014*).

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| A Less Market-Focused Role... |
| Historical Development Of The CAP |
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| *Source: European Commission, BMI* |

**Load-Date:** May 4, 2021

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[***Mekong Hydropower Development: Potential To Spark Conflict***](https://advance.lexis.com/api/document?collection=news&id=urn:contentItem:5JF4-33H1-F0J5-80Y4-00000-00&context=1516831)

Asia Monitor - South East Asia Vol 1

May 1, 2016 Sunday

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**Length:** 1538 words

**Highlight:** Over the past few decades, the growing need for ***energy*** and the desire for economic growth have driven regional economies in the Lower Mekong Basin to increase their pace of building up hydropower capacity along the Mekong River. This trend will continue to have complicated social, economic and environmental impacts on the countries in the region, further exacerbating the effects of climate change. As such, we believe that regional governments (particularly Vietnam) and other significant stakeholders are likely to protest more aggressively against further attempts to increase the number of dams along the river, potentially creating more hurdles to hydropower development in the region.

**Body**

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| Power Needs Will Continue To Increase |
| Asia - Electricity Consumption, TWh |
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| *e/f = BMI estimate/forecast. Source: EIA, BMI* |

In particular, Laos' desire to become the battery of Southeast Asia by harnessing the river's hydropower potential has significant economic and social repercussions for the countries around the Lower Mekong Basin. At the same time, Cambodia's concurrent attempt to build up its hydropower capacity will further exacerbate the effects of climate change in the region, as well as intensify the environmental, social and economic issues surrounding the construction of river dams. Given Vietnam and Cambodia both have significant stakes in the Lower Mekong Basin (particularly their ***agricultural*** sectors), we believe that Laos' attempt to ramp up its hydropower capacity will face increasing objections from stakeholders and governments in the region. In particular, Vietnam's economy and its river delta, which already face high risks from climate change, will be adversely impacted by Cambodia's and Laos' plans to build dams on the river.The Mekong River is a trans-boundary waterway located in Southeast Asia which runs from the Tibetan Plateau in China, through Yunnan province, Myanmar, Thailand, Laos, Cambodia, Vietnam, and into the South China Sea. The Mekong Basin can be further divided into two parts, namely the 'Upper Mekong Basin' in Tibet, Yunnan, and Myanmar, as well as the 'Lower Mekong Basin' in Laos, Thailand, Cambodia and Vietnam. Most of the Mekong River's waterflow (80%) comes from its tributaries in the Lower Mekong Basin, which is home to more than 60mn people. According to some estimates, around 80% of the population rely directly on the river system for food, drinking water, and their livelihoods. The river system is also home to one of the most diverse biodiversities in the world, supporting over 1,000 animal species including over 560 endemic fish species.Given the vast human population and ecosystems which are dependent on the river, proposed plans to build numerous dams along the river's mainstream and tributaries have thus raised significant concerns due to potential changes in the river flow. The accumulation of major hydroelectric dams on the river and its tributaries will not only result in the loss of forest and farmlands, it will force the eviction of local communities, destroy fisheries, damage riverbeds, cause more erosion, and dramatically ***reduce*** the amount of silt and sediment transported downstream, all of which will have significant social, ecological and economic implications.

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| Disruption Of River Flow To Have Extensive Implications |
| Asia - Mekong River |
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| *Source: BMI, RFA* |

**Laos: Battery Of Southeast Asia** One of Laos' key goals is to become the battery of Southeast Asia ( *see 'Laos To Drive SEA Hydropower Expansion', November 5 2015*). To do so, Laos plans to build more than 70 major dams, including seven across the entire width of the Mekong River over the next 15 years. Although its intention is to partly ***reduce*** its ***greenhouse gas*** ***emissions***, the construction of the river dams is aimed at generating income from selling electricity to Laos' neighbours, particularly Thailand. Thailand is facing notable gas supply issues as domestic gas production in Thailand is waning, forcing the government to look at alternative options to meet power demand, with a focus on Laos and Myanmar hydropower generation ( *see 'Power Development Plan Sparking Investment Opportunities', September 14 2015*).

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**Load-Date:** May 4, 2016

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[***Mekong Hydropower Development: Potential To Spark Conflict***](https://advance.lexis.com/api/document?collection=news&id=urn:contentItem:5J74-Y4R1-F0J5-80YS-00000-00&context=1516831)

Business Monitor Online

March 3, 2016 Thursday

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**Length:** 1548 words

**Highlight:** Over the past few decades, the growing need for ***energy*** and the desire for economic growth have driven regional economies in the Lower Mekong Basin to increase their pace of building up hydropower capacity along the Mekong River. This trend will continue to have complicated social, economic and environmental impacts on the countries in the region, further exacerbating the effects of climate change. As such, we believe that regional governments (particularly Vietnam) and other significant stakeholders are likely to protest more aggressively against further attempts to increase the number of dams along the river, potentially creating more hurdles to hydropower development in the region.

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The Mekong River is a trans-boundary waterway located in Southeast Asia which runs from the Tibetan Plateau in China, through Yunnan province, Myanmar, Thailand, Laos, Cambodia, Vietnam, and into the South China Sea. The Mekong Basin can be further divided into two parts, namely the 'Upper Mekong Basin' in Tibet, Yunnan, and Myanmar, as well as the 'Lower Mekong Basin' in Laos, Thailand, Cambodia and Vietnam. Most of the Mekong River's waterflow (80%) comes from its tributaries in the Lower Mekong Basin, which is home to more than 60mn people. According to some estimates, around 80% of the population rely directly on the river system for food, drinking water, and their livelihoods. The river system is also home to one of the most diverse biodiversities in the world, supporting over 1,000 animal species including over 560 endemic fish species.

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**Cambodia: Playing Catch-Up In Hydropower**

The hydropolitical stakes are raised further south as the Mekong River flows into Cambodia and Vietnam. Cambodia may be a victim of Laos' efforts to construct dams along the Mekong, but it is also planning to build over 40 dams along the Mekong and its tributaries over the coming years to meeting growing electricity demand in the country - driven by efforts to improve rural electrification and economic development. These dams are likely to have major economic and ecological impacts further south in Vietnam and will force large-scale evictions of local communities. In particular, the construction of the 400MW Lower Se San 2 dam, which is due for completion in 2019, will block two of the Mekong's major tributaries creating a 335 square kilometres reservoir that would displace thousands of people. The project, which is located at the junction of the Se San and the Srepok River, is one of the most controversial and ecologically devasting dams as the tributaries that it blocks contribute the most sediment to the Mekong mainstream. Furthermore, according to a study done by the Proceedings of the National Academy of Sciences of the United States of America (PNAS), the Lower Se San 2 dam alone may result in a 9.3% decline in fish stocks throughout the entire Mekong Basin.

**Vietnam: The Most Affected**

The Mekong Delta in South Vietnam faces a double whammy from the construction of hydro dams upstream, as well as the ongoing effects of climate change. The building of dams on the upstream section of the river has resulted in a decrease of silt deposits downstream. Meanwhile, the delta is also shrinking due to the negative impact of climate change such as coastal erosion and rising sea level. Given that the vast low lying Mekong delta is home to nearly 20 million people, accounts for more than 50% of staple food crop production, and contributes to more than a quarter of the country's GDP, the shrinking Mekong Delta puts the entire Vietnamese economy at risk.

According to Vietnam's Prime Minister Nguyen Tan Dung, the average flow of the Mekong River has been ***reduced*** by 10% in the past 30 years as a result of the construction of dams along the Mekong and its tributaries. Moreover, according to experts from the Worldwide Fund For Nature (WWF), the amount of silt that is being washed downstream today has more than halved (160mn tonnes in 1990, versus 75mn tonnes today) in comparison to two decades ago. Geographically, the Mekong Delta is the result of the build up of silt brought down by the Mekong River, which historically extended the shoreline by around 80 metres per year. The result is a highly fertile area where vast quantities of staple crops are being produced, allowing Vietnam to achieve self sufficiency in rice and become the second largest regional exporter after Thailand.

**Opposition To Gain Traction**

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**Load-Date:** March 4, 2016

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[***Letters to the editor***](https://advance.lexis.com/api/document?collection=news&id=urn:contentItem:5HX0-W581-F0JC-M3N4-00000-00&context=1516831)

Craven Herald

January 21, 2016 Thursday

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**Section:** READERS' LETTERS

**Length:** 1030 words

**Body**

IT is disastrous news that yet again, the main Trans-Pennine crossing of the A59 between Skipton and Harrogate will remain closed at Kex Gill for several weeks (see this week's front page).

The strategic route is of huge economic importance for the businesses of our region and the wider Northern England.

The current proposals to further stabilise this steep ravine is yet again only a short-term stitch to patch up the moorland bog. Pouring more hundreds of thousands of pounds down that hillside cannot in any way be termed as value for money for the hard-pressed taxpayers of Craven. North Yorkshire County Council has a full scheme, proposed some years ago, worked up and ready to go to solve this problem once and forever. This scheme can be pulled off the shelf, dusted down and implemented without delay. What is needed is the government to release the capital funding.

This proposed relief road would follow the old Roman road on the top of the north side of Kex Gill. After all, the Romans did know a thing or two about building roads. The relief road already constitutes part of the current North Yorkshire County Council transport policies programme.

It was unfortunate no elected member from Skipton or the wider Craven was invited to the briefing for affected communities. Unless we all work and pull together, then the A59 at Kex Gill will remain at the mercy of the vagaries of the Pennine weather, with the ongoing closures for decades to come.

Several years ago, when Bolton Bridge, over the River Wharfe, failed, all the councils and agencies involved worked closely and constructively together. Back then, a new bridge and the diversion roads required were designed and the financing secured in a few short months. If the government is serious about the Northern Powerhouse, then it must respond with the capital funding, otherwise we will continue to be the poor relations in the Northern Powerhouse. Political photoshoots are two-a-penny. What Skipton and Craven needs is action.

COUNCILLOR ROBERT HESELTINE

Skipton

I THANK Messrs Rigby and Emmett for responding to my letter - Time to wake up to climate danger (Craven Herald, December 31) - although neither responded to the main point, which was whether fracking under the national park on the grounds that it might ***reduce*** domestic ***energy*** bills should be supported.

Mr Rigby rightly says we need to deal urgently with the huge surges of water that flow from our river catchments. Grips in moorland that contribute to flash floods were installed to create grazing land to produce meat and lower domestic food bills. Good river catchment management could have foreseen and alleviated or even prevented the "unintended consequences", to which Mr Rigby refers. This should act as a warning that today's dash for allegedly cheap shale gas will cost future generations dearly.

Mr Rigby attributes my support for the Brightenber Hill wind farm to a "beggar my neighbour" attitude. The national park contributes significantly in other ways to ***reducing*** human impact on the environment, including good river catchment management, but is highly vulnerable to climate change. My statement to the planning committee focused on the wider need to combat a very real threat to our environment.

Mr Rigby's contention wind farms only generate 24 per cent of the time is part of the steady stream of misinformation and myth emanating from the anti-wind lobby. Wind farms generate 85 to 90 per cent of the time, comparable to a fossil-fuelled power station, but at a rate safely below their rated maximum because, thankfully, the wind doesn't blow at 65mph 100 per cent of the time.

I am accused of being unwilling to accept that "loss of residential amenity" is a key factor in planning decisions. I contend that whole communities driven out of their homes by flooding is a far greater loss of residential amenity than a few wind turbines sited a kilometre away from the nearest country mansion. Of course, to Mr Rigby, the above is green hogwash. With virtually all of the world's scientific opinion warning of the effects of human-induced climate change, 195 nations signing a treaty in Paris to curb ***greenhouse gas*** ***emissions***, and backing from our own prime minister, it would be irresponsible to ignore the challenge this threat presents to the planet.

I have never accused the group Friends of Craven Landscape of being "climate change deniers", as Mr Emmett's letter claims. He dreams of "far better technologies less damaging to the landscape". In rural landscapes, community renewable ***energy*** is appropriate in scale, practical and safe. Find out more at the gamaenergy.co.uk website.

It's time for us all, regardless of postcode, to do our bit to tackle and adjust to inevitable changes in climate resulting from human activity, which are threatening our civilisation.

SANDY TOD

Malham

ONE sympathises with John Howard, who has been ordered to demolish a barn he rebuilt near Gargrave - Demolish the barn or face court action (Craven Herald, January 14).

Anyone who has met John Howard will not doubt his passion for the future of ***agriculture*** and support for rural life.

Unfortunately, if a barn doesn't look like a barn then it's possibly not meant to be a barn. Given its location at his attractive holiday-let hamlet, which also manages weddings, and an earlier application to use it for leisure activity, this suggests it was aimed at tourism rather than farming. Planners don't like having the wool pulled over their eyes.

They are not daft.

However, it would be a pity to see all that skilled work dismantled.

FREDERIC MANBY

High Street, Gargrave

LAST week's Craven Herald reported that council members were being advised to approve the building of a number of houses on what is known as the pig field - Housing plan set for the go-ahead (January 14).

The term advised does not appear to be the correct way to reach a decision.

Most voters in Skipton realise we don't have the brightest members to look after our welfare but to state "be advised" from whom, Belle Vue Fun Factory or further afield.

Councillors ruin our town, Elsey Croft, Wyvern Park, Pig Field, disabled parking charges and the list goes on.

G BEWES

Castle Street, Skipton

**Load-Date:** January 21, 2016

**End of Document**



[***Avoiding the tragedy of the horizon***](https://advance.lexis.com/api/document?collection=news&id=urn:contentItem:5HNC-67H1-JD1P-T4DC-00000-00&context=1516831)

Global Capital Euroweek

November 30, 2015

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**Section:** CHINA,EMERGING MARKETS,CLIMATE CHANGE

**Length:** 2684 words

**Byline:** GlobalCapital

**Highlight:** As much as $60tr will need to be spent between now and 2030 just to plug the global infrastructure gap. The challenge of meeting this vast requirement will be all the more formidable given that solutions for doing so will be utterly pointless if they fail to incorporate sustainability safeguards to prevent further irreversible damage caused by climate change.

**Body**

Imagine canoeing down Fifth Avenue. Or participating in a regatta on the site of Schiphol airport. Neither may be as improbable as they sound, if the gloomiest climate change experts are right. Some are forecasting that if the world sits and watches as the climate and sea levels rise, central Manhattan could find itself under water by 2050. So could much of the Netherlands.

The threat is one that New York is taking seriously enough. Having seen the sea level on its coast rise by at least a foot since 1900, the city is committed to helping the planet by ***reducing*** its ***emissions*** by 80% between now and 2050.

Science fiction-style images of people snorkelling in the central thoroughfares of Manhattan may well be alarmist. Besides, New York's own analysis of its vulnerability to rising sea levels are less apocalyptic than those of some scientists. But make no mistake about it. Climate change is bad news, whatever mavericks like the French meteorologist, Philippe Verdier, may say. He was recently fired by a television station for arguing that because it supports tourism and viniculture, climate change is no bad thing.

Those with rather more direct experience of the havoc that climate change is already causing have presented a very different interpretation to Verdier's. Héla Cheikhrouhou, executive director of the $10bn Green Climate Fund, which was set up in 2010 by 194 governments to help developing countries implement ***greenhouse gas*** mitigation measures and is accountable to the United Nations, has been at the forefront of the battle against climate change.

As she said at a conference in New York in June, "I have met with the leaders of small Pacific islands that have their very existence threatened by rising sea levels. I have seen the aftermath of catastrophic weather events such as Typhoon Haiyan in the Philippines that are wreaking devastation upon Asian countries; I have seen evidence of how deforestation in Latin America is on the rise. And my own country, Tunisia, and other African states, are facing desertification, water shortages, and a mounting ***energy*** crisis."

Encouragingly, for individuals such as Cheikhrouhou, the message about the irreversible long term damage that is being created by ***greenhouse gas*** ***emissions*** is reaching an increasingly broad audience. It is also being delivered by institutions that have traditionally distanced themselves from the environmental debate. Addressing an audience outside the White House in September, for example, Pope Francis said that climate change was a problem that can "no longer be left to a future generation."

Equally encouragingly, the battle against environmental degradation is being joined, almost on a daily basis, by deep-pocketed institutional investors with the resources to help counter the damage. At the September 2014 UN Climate Summit, institutions with assets under management of $43tr indicated that they see climate change as the dominant threat to the planet. They also declared that they stand ready to channel investment into supporting efforts to decelerate or reverse the process.

This represents quite a breakthrough for an industry that is notorious "" rightly or wrongly "" for its short-termism. But as the Bank of England's governor, Mark Carney, said in a recent speech, it is essential that economic policymakers as well as the financial services industry break new ground by adopting long-range strategies to tackle climate change, which he described as "the tragedy of the horizon".

"We don't need an army of actuaries to tell us that the catastrophic impacts of climate change will be felt beyond the traditional horizons of most actors "" imposing a cost on future generations that the current generation has no direct incentive to fix," said Governor Carney. "The horizon for monetary policy extends out to two to three years. For financial stability, it is a bit longer, but typically only to the outer boundaries of the credit cycle "" about a decade.

"In other words, once climate change becomes a defining issue for financial stability, it may already be too late."

The economics of climate change

This grim warning is an echo of the comprehensive Stern Review, an independently commissioned, 700-page report originally published in the UK in 2006 "as a contribution to assessing the evidence and building understanding of the economics of climate change".

"Even if the annual flow of ***emissions*** did not increase beyond today's rate, the stock of ***greenhouse gases*** in the atmosphere would reach double pre-industrial levels by 2050"¦ and would continue growing thereafter," the Stern Review warned. "But the annual flow of ***emissions*** is accelerating, as fast-growing economies invest in high carbon infrastructure and as demand for ***energy*** and transport increases around the world. The level of 550ppm CO2e [parts per million of carbon dioxide] could be reached as early as 2035. At this level there is at least a 77% chance "" and perhaps up to a 99% chance, depending on the climate model used "" of a global average temperature rise exceeding 2°C." To put this hazardous ppm number into alarming perspective, 350ppm is generally recognised as the maximum level that the planet can sustain.

It is precisely because time may be running out that this month's COP21 gathering in Paris is regarded as being a decisive moment for the future of the planet. COP21 is the rather more digestible acronym for the 21st Session of the Conference of the Parties to the UN Framework Convention on Climate Change (UNFCCC). It is hoped that when they meet in France, representatives from 196 governments will achieve rather more than they did at their last assembly, in Lima in 2014. This ended in what Greenpeace described at the time as a "messy compromise that set no common time frame for future pollution cuts".

Since the Lima meeting, progress has been made towards an agreement. China, which is the world's largest emitter of carbon, has pledged to cut its greenhouse ***emissions*** per unit of GDP by 60%-65% from 2005's levels, and to increase the share of non-fossil fuels in its primary ***energy*** consumption to 20% by 2030. That has raised hopes that the COP21 talks will lead to an agreement on the measures that political and business leaders need to take if global warming is to be kept below 2°C, compared with the 5°C rise that may be the unavoidable by-product of a business-as-usual scenario.

If heads can be banged together decisively, a legally binding and universal agreement on climate change will be reached for the first time in more than 20 years of UN negotiations. If they can't, the consequences will be dire, with France's president, FranÃ§ois Hollande, having spoken of an impending "disaster" if COP21 is as indecisive as previous COP sessions.

Failure at Paris risks being a disaster that will have an increasingly quantifiable long term impact on the global economy. According to the Stern Review, "with 5°C-6°C warming "" which is a real possibility for the next century "" existing models that include the risk of abrupt and large-scale climate change estimate an average 5%-10% loss in global GDP, with poor countries suffering costs in excess of 10% of GDP."

It is not all bad news. A number of respected environmentalists have argued that the money that needs to be channelled into protecting the planet from climate change should be regarded as an "investment" rather than a "cost". The Stern Review adds that for those prepared to embrace the changes necessary to tackle this threat, there will be significant new opportunities across a wide range of industries and services. Markets for low-carbon ***energy*** products, says the review, are likely to be worth at least $500bn per year by 2050, and perhaps much more. "Individual companies and countries should position themselves to take advantage of these opportunities," the Stern Review adds.

Plugging the global infrastructure gap

Many of these opportunities will be a function of the substantial investment that will need to be channelled over the next 20 or 30 years into plugging the world's so-called infrastructure gap.

Estimates of the size of the global infrastructure gap vary, but all point to a vast investment requirement. In a two-volume report published in 2006 and 2007, the OECD put the total at $50tr between then and 2030. A more recent McKinsey analysis reached a similar conclusion, projecting a requirement of $57tr between 2013 and 2030.

The challenge of tackling this deficit will be all the more formidable given that solutions for doing so will be counterproductive if they fail to incorporate sustainability safeguards to prevent further irreversible damage caused by climate change.

The International ***Energy*** Agency has estimated that adapting to and mitigating the effects of climate change will call for an annual investment of some $1tr to 2050. Ceres, a non-profit advocate for sustainability leadership, puts the figure slightly above this, saying in 2014 that the world will need to invest $44tr over the next 36 years if global warming is to be limited to 2°C. Greenpeace, meanwhile, says that $64.6tr "" or $1.6tr a year "" needs to be invested by 2050.

The infrastructure gap in emerging markets

As with the estimates for the global infrastructure deficit, projections of how much emerging market regions will need to spend on upgrading its infrastructure over the next few years differ markedly.

According to the World Bank, Latin America's infrastructure spending is expected to reach $557bn a year by 2025, with Brazil, Chile and Colombia likely to be accounting for a large share of regional spending. Africa's annual infrastructure investment requirement has been put at close to $100bn over the next decade.

In Asia, meanwhile, the Manila-based Asian Development Bank (ADB) has calculated that between 2010 and 2020, the region will need to invest just over $8.2tr in infrastructure, which equates to about $730bn a year. A little over two-thirds of this total is for building new facilities in areas ranging from ***energy*** to transportation, with the balance earmarked for maintenance and replacement. The ADB puts these numbers into perspective when it explains that investment in infrastructure across the region will need to average "in the order of 5%-6% of GDP" to underpin growth, competitiveness, productivity and job creation.

The lion's share of the Asian infrastructure investment requirement is accounted for by the three most heavily populated countries in the region "" China, India and Indonesia. According to McKinsey's estimates, China will need to invest some $16tr in its infrastructure between 2013 and 2030, or 28% of the global total. A large share of this requirement will arise from an acceleration in urbanisation (see page 6), which will create substantial demand for investment in water and air pollution treatment. As HSBC notes in a recent report, Chinese government officials have suggested that total planned investments on water and air pollution treatment and prevention will reach Rmb4.6tr ($720bn) and Rmb1.7tr ($270bn) respectively between 2016 and 2020.

India, meanwhile, will need Rp65tr ($1.1tr) of infrastructure funding over its 12th five year plan (2012-2017), according to ADB projections. Much of this will also be driven by an unprecedented phase of urbanisation, which will see 40% of India's population concentrated in urban areas by 2030, compared with 30% today. This migration, according to the government, will "exponentially increase the demand for urban amenities like housing, ***energy***, transport, water [and] waste disposal." The stark consequence, adds the same government report, is that "it is estimated that more than half of India of 2030 is yet to be built". Against that background, the government's projection that Indian electricity demand will grow by more than 300%, from 776TWh in 2012 to 2,499TWh in 2030, looks like an underestimate.

In Indonesia, meanwhile, the daunting challenge is to provide a larger share of the country's 256m people with access to basic services. It is estimated that almost 20% of Indonesian households are still not equipped with modern electricity, while just over 30% have no access to clean water. This, twinned with a hopelessly inadequate transportation system, means that Indonesia will need to invest over $360bn in social infrastructure between 2015 and 2019, according to estimates from the planning ministry.

Funding infrastructure: the institutional role

Regardless of the size of the bill that will be presented to the world for upgrading its infrastructure over the next 20 or 30 years, it is a certainty that the public sector's pocket won't be deep enough to pay it in full. By McKinsey's reckoning, if governments spend 3% of GDP a year on infrastructure, this will still leave a funding gap between now and 2030 of $8.4tr. That equates to a nice round number for the infrastructure investment deficit of $500bn a year.

While the capacity of governments in developed markets to fund infrastructure will be stretched by their commitment to fiscal consolidation, in emerging markets the challenge will be to maintain levels of spending that in some cases are already much higher than the global average. According to S&amp;P, India has been allocating roughly 4.7% of GDP to infrastructure spending, while the Chinese government, which has been earmarking 8.5%, is the world's largest single infrastructure investor. "This pace of government support will likely decline over the longer term relative to historical high levels," says S&amp;P.

It is not just governments that are much less able to foot the bill for essential infrastructure than they were a decade or so ago. As the OECD points out in a recent report, the financial crisis has also moved the goalposts for infrastructure finance by flushing monoline insurers out of the system and forcing banks to keep a nervous eye on their capital levels and risk weightings.

Development banks are doing their best to step up to the plate to provide funding for the infrastructure development that is needed to combat the damaging impact of climate change. The ADB, for example, announced in September that by 2020 it will have doubled its annual climate financing from $3bn to $6bn. Two-thirds of this will be earmarked for climate change mitigation through support for renewable ***energy***, ***energy*** efficiency, sustainable transport and building smart cities. The balance will be invested in adaptation through more resilient infrastructure, climate-smart ***agriculture***, and better preparation for climate-related disasters. ADB added that its spending on tackling climate change will rise to around 30% of its overall financing by the end of this decade.

The Inter-American Development Bank has also upped its commitment to sustainable financing, announcing recently that it aims to double the volume of its climate-related financing by 2020 to between 25% and 30% of the total.

With governments and multilateral development banks unable to fund more than a small part of the world's infrastructure investment requirement, much of the burden will fall on the shoulders of institutional investors. It is a burden that in today's low yield environment many are only too happy to bear, given the properties of infrastructure as an asset class. These include typical yields of 4% or 5%, a track record of high recoveries, long maturities which are suitable from an asset-liability management perspective and low correlation with mainstream asset classes.

In its report on the global infrastructure gap, S&amp;P says that institutional investors have the firepower as well as the appetite to fill a good chunk of the global infrastructure deficit, estimating that they could allocate $200bn a year to the asset class, or $3.2tr by 2030. Whether they will be able to deploy funds of this magnitude is open to question. This is because as bankers say, for the time being, there is still an imbalance between supply of viable project investment opportunities and institutional demand, with regulation, project complexity and illiquidity all acting as a drag on supply.

**Load-Date:** December 21, 2015

**End of Document**



[***Here are the Environmental Protection Agency's figures for emissions from different sectors in Ireland***](https://advance.lexis.com/api/document?collection=news&id=urn:contentItem:5HM8-8K51-JCW9-225T-00000-00&context=1516831)

BreakingNews.ie

December 15, 2015 Tuesday 11:51 AM GMT

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**Section:** IRISH NEWS

**Length:** 176 words

**Body**

The Environmental Protection Agency says latest data shows that Ireland will meet its compliance limits on ***Greenhouse Gas*** ***Emissions***.

The agency has released figures for the time period of 1990 to 2014, and they show that the total ***greenhouse gas*** ***emissions*** for Ireland in 2014 were around 58.2 million tonnes carbon dioxide equivalent (Mt CO2 eq), which is 0.7 % lower than ***emissions*** in 2013.

It follows a 1.3% decrease in ***emissions*** reported for 2013 and shows ***emission*** ***reductions*** in eight of the last nine years.

The EPA says there were increases across Industry, Transport and Waste sectors last year.

However, they report that there were decreases in ***greenhouse gas*** ***emissions*** in the ***Energy***, Residential and ***Agriculture*** sectors.

More than 70% of Ireland's ***greenhouse gas*** ***emissions*** come from three sectors.

***Agriculture*** is the largest single contributor to overall ***emissions*** at over 33%, Transport is at 19.5% and ***Energy*** at 19.1%.

The remainder shows ***emissions*** from the Industry and Commercial sector at 15.5%, from the Residential sector at 9.8% and Waste is at 2.7%.

**Load-Date:** December 15, 2015

**End of Document**



[***CLIMATE CHANGE PLANS GO AHEAD***](https://advance.lexis.com/api/document?collection=news&id=urn:contentItem:5K5C-7J51-JBVM-Y4JR-00000-00&context=1516831)

Irish Independent

July 5, 2016 Tuesday

Edition 1, National Edition

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**Section:** FARMING;NEWS; Pg. 16

**Length:** 184 words

**Byline:** BRUSSELS BRIEFING

**Body**

COMMISSIONER Phil Hogan also confirmed the Brexit vote would not affect the EU's upcoming climate change proposals. The Commission is due to publish two new draft laws on July 20 on how sectors such as ***agriculture*** and forestry can contribute to reaching the bloc's ***emission*** ***reduction*** ***targets***. "We are going ahead," Mr Hogan said.

The Irish government has been lobbying EU commissioners, including ***energy*** chief Miguel Arias Cañete, to ensure the needs of Ireland's large ***agricultural*** sector are taken into account.

Mr Hogan said he was "working closely" with Mr Cañete on a "European-wide response on how ***agriculture***'s contribution and the forestry contribution can play its part towards ***reducing*** ***emissions*** and meeting our international objectives" under the Paris agreement.

"***Agriculture*** will have to play its part in meeting the ***reduction*** in ***greenhouse gas*** ***emissions***," Mr Hogan said. He pointed to the October 2014 declaration by EU leaders acknowledging the "lower mitigation potential" of the ***agricultural*** sector and pledging to look at how forests could offset the sector's contribution to the climate goals.

**Load-Date:** July 5, 2016

**End of Document**



[***Putin writes article ahead of APEC summit in Philippines - text***](https://advance.lexis.com/api/document?collection=news&id=urn:contentItem:5HD5-6WD1-DYRV-33B4-00000-00&context=1516831)

BBC Monitoring Former Soviet Union - Political

Supplied by BBC Worldwide Monitoring

November 17, 2015 Tuesday

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**Length:** 1091 words

**Body**

Text of Russian President Vladimir Putin's article in the run-up to the Asia-Pacific Economic Cooperation (APEC) summit on 18-19 November in the Philippines "APEC: Towards open and equal cooperation in the interests of development, 17 November 2015", published in English by Russian presidential website on 16 November

The latest Asia-Pacific Economic Cooperation (APEC) summit will take place on 18-19 November in Manila. This year's summit takes place under the motto chosen by the Philippines presidency - Building inclusive economies, building a better world.

For a long time trade has been the driving force of economic growth in the Asia-Pacific region and other parts of the world. However, as the effect of tariff liberalization started to wear off, it became clear that we need additional agreements covering services, investment, non-tariff barriers, competition policy and subsidies. Of course, we cannot reach such agreements without complicated negotiations and mutual concessions.

Deeper regional economic integration offers us a possible way out of the current situation. Today, Russia and its close neighbours - Armenia, Belarus, Kazakhstan and Kyrgyzstan - have taken successful steps to develop the Eurasian Economic Union (EAEU). Our integration project is based on the WTO's universal and transparent principles and is designed from the outset to work together with other countries and their organizations. In May this year, we signed a free trade agreement between the EAEU and Vietnam. Another 40 countries are examining the possibility of signing similar agreements.

One example of responsible and transparent partnership is the agreement to converge our EAEU project with China's Silk Road Economic Belt initiative. This will allow us to resolve a number of bottlenecks in transport infrastructure and procedures for cross-border movement of goods and services. It will also give a big boost to effective integration of the Asia-Pacific economies.

We hope to reach mutually advantageous agreements on traditional and renewable ***energy*** sources, emergency and disaster response, food security and ***agriculture*** at the Russia-ASEAN summit next year in Sochi.

Overall, the creation of new free trade zones will help to create good conditions for liberalizing trade and investment flows in the region. At the same time however, the confidential fashion in which the Trans-Pacific Partnership (TPP) negotiations were conducted is probably not the best way to facilitate sustainable growth in the Asia-Pacific region.

We believe that the strategic road ahead lies not only in increasing the number of free trade zones, but also in joint development and implementation of the best liberalisation practices among all APEC members, taking into account each other's positions and interests. In this respect, we should continue our course of bolstering APEC's role as a coordinator of various integration initiatives aimed at developing in the region a common and open market, free of discrimination and bloc-based barriers. Here, effective implementation of the Beijing roadmap for APEC's contribution to establishing an Asia-Pacific free trade zone, approved in Beijing in 2014, is particularly important.

Realizing the APEC countries' development potential will take more than just reaching agreement on the rules of the game for today's trade flows. We need to work out common approaches to development and regulation of the emerging markets that make up the digital technology-based 'new economy'. We need to put in place the institutions and rules that will contribute to development and create new opportunities for our countries' businesspeople to create modern, promising products and high quality jobs.

Russia, for its part, is active in the work of the region's new financial institutions - the [New Development] Bank BRICS and the Asian Infrastructure Investment Bank. I am sure that their work will help to develop the region and will also help to make the global financial system stronger and more stable.

At the national level, Russia continues its efforts to create the most comfortable business climate. Our efforts have received international appraisal and over the last 4 years, Russia has moved up 69 points in the World Bank's Doing Business rating, from 120th place to 51st place.

We place great importance on developing the potential of Russia's Far East. This year, we began developing the priority development areas - economic zones offering what for Russia are unprecedented tax and other incentives. A special law was passed on a free port in Vladivostok. We plan to extend this status to other key ports in the Far East. The Far East ports, the Northern Sea Route, and modernisation of our mainline railways will all contribute to greater integration with the Asia-Pacific region and create an important infrastructure link between the Asia-Pacific region and Europe.

APEC countries are showing real interest too in Russia's proposals to form a common education space in the region. Today, when the Asia-Pacific region has established itself ever more solidly as part of the world's leading technology centres, it is more relevant than ever to combine our efforts to create big research platforms and centres. Recognising Russia's sense of initiative in this area, our partners have entrusted our country, together with Peru, the right to preside over the APEC Education Ministerial Meeting, which will take place in Lima in 2016.

Rapid economic growth is not possible without guaranteed ***energy*** security in the APEC region and fair and long-term climate regulation. Russia supports APEC's efforts to establish good conditions for investing in the regional ***energy*** transport system, develop integrated ***energy*** markets, increase the share of eco-friendly and renewable ***energy*** sources, and ensure access to low-carbon technologies.

The Paris Climate Change Conference will take place soon, in December. This conference will try to reach a global agreement on ***reducing*** ***greenhouse gas*** ***emissions***. Russia wants to see this work succeed and we have already presented our report on our country's contribution to these efforts.

The scale and diversity of APEC's tasks is very impressive. I believe that we will be successful in resolving these tasks if we keep to the fundamental principles of working together as partners and acting in the interests of our peoples and our efforts to create a united Asia-Pacific family.

17 November 2015

Source: President of the Russian Federation website, Moscow, in English 2200 gmt 16 Nov 15

**Load-Date:** November 17, 2015

**End of Document**



[***APEC: Towards open and equal cooperation in the interests of development***](https://advance.lexis.com/api/document?collection=news&id=urn:contentItem:5HD6-7M81-F19S-J26P-00000-00&context=1516831)

Russian Government News

November 17, 2015

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**Section:** FOREIGN POLICY

**Length:** 1138 words

**Body**

In the run-up to the Asia-Pacific Economic Cooperation (APEC) summit on November 18–19 in the Philippines, an article by Vladimir Putin, APEC: Towards open and equal cooperation in the interests of development, has been published.

The latest Asia-Pacific Economic Cooperation (APEC) summit will take place on November 18–19 in Manila. This year’s summit takes place under the motto chosen by the Philippines presidency – Building inclusive economies, building a better world.

For a long time trade has been the driving force of economic growth in the Asia-Pacific region and other parts of the world. However, as the effect of tariff liberalisation started to wear off, it became clear that we need additional agreements covering services, investment, non-tariff barriers, competition policy, and subsidies. Of course, we cannot reach such agreements without complicated negotiations and mutual concessions.

Deeper regional economic integration offers us a possible way out of the current situation. Today, Russia and its close neighbours – Armenia, Belarus, Kazakhstan, and Kyrgyzstan – have taken successful steps to develop the Eurasian Economic Union (EAEU). Our integration project is based on the WTO’s universal, transparent principles and is designed from the outset to work together with other countries and their organisations. In May this year, we signed a free trade agreement between the EAEU and Vietnam. Another 40 countries are examining the possibility of signing similar agreements.

One example of responsible and transparent partnership is the agreement to converge our EAEU project with China’s Silk Road Economic Belt initiative. This will allow us to resolve a number of bottlenecks in transport infrastructure and procedures for cross-border movement of goods and services. It will also give a big boost to effective integration of the Asia-Pacific economies.

We hope to reach mutually advantageous agreements on traditional and renewable ***energy*** sources, emergency and disaster response, food security and ***agriculture*** at the Russia-ASEAN summit next year in Sochi.

Overall, the creation of new free trade zones will help to create good conditions for liberalising trade and investment flows in the region. At the same time however, the confidential fashion in which the Trans-Pacific Partnership (TPP) negotiations were conducted is probably not the best way to facilitate sustainable growth in the Asia-Pacific region.

We believe that the strategic road ahead lies not only in increasing the number of free trade zones, but also in joint development and implementation of the best liberalisation practices among all APEC members, taking into account each other’s positions and interests. In this respect, we should continue our course of bolstering APEC’s role as a coordinator of various integration initiatives aimed at developing in the region a common and open market, free of discrimination and bloc-based barriers. Here, effective implementation of the Beijing roadmap for APEC’s contribution to establishing an Asia-Pacific free trade zone, approved in Beijing in 2014, is particularly important.

Realising the APEC countries’ development potential will take more than just reaching agreement on the rules of the game for today’s trade flows. We need to work out common approaches to development and regulation of the emerging markets that make up the digital technology-based ‘new economy’. We need to put in place the institutions and rules that will contribute to development and create new opportunities for our countries’ businesspeople to create modern, promising products and high quality jobs.

Russia, for its part, is active in the work of the region’s new financial institutions – the [New Development] Bank BRICS and the Asian Infrastructure Investment Bank. I am sure that their work will help to develop the region and will also help to make the global financial system stronger and more stable.

At the national level, Russia continues its efforts to create the most comfortable business climate. Our efforts have received international appraisal and over the last 4 years, Russia has moved up 69 points in the World Bank’s Doing Business rating, from 120th place to 51st place.

We place great importance on developing the potential of Russia’s Far East. This year, we began developing the priority development areas – economic zones offering what for Russia are unprecedented tax and other incentives. A special law was passed on a free port in Vladivostok. We plan to extend this status to other key ports in the Far East. The Far East ports, the Northern Sea Route, and modernisation of our mainline railways will all contribute to greater integration with the Asia-Pacific region and create an important infrastructure link between the Asia-Pacific region and Europe.

APEC countries are showing real interest too in Russia’s proposals to form a common education space in the region. Today, when the Asia-Pacific region has established itself ever more solidly as part of the world’s leading technology centres, it is more relevant than ever to combine our efforts to create big research platforms and centres. Recognising Russia’s sense of initiative in this area, our partners have entrusted our country, together with Peru, the right to preside over the APEC Education Ministerial Meeting, which will take place in Lima in 2016.

Rapid economic growth is not possible without guaranteed ***energy*** security in the APEC region and fair and long-term climate regulation. Russia supports APEC’s efforts to establish good conditions for investing in the regional ***energy*** transport system, develop integrated ***energy*** markets, increase the share of eco-friendly and renewable ***energy*** sources, and ensure access to low-carbon technologies.

The Paris Climate Change Conference will take place soon, in December. This conference will try to reach a global agreement on ***reducing*** ***greenhouse gas*** ***emissions***. Russia wants to see this work succeed and we have already presented our report on our country’s contribution to these efforts.

The scale and diversity of APEC’s tasks is very impressive. I believe that we will be successful in resolving these tasks if we keep to the fundamental principles of working together as partners and acting in the interests of our peoples and our efforts to create a united Asia-Pacific family.

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[*www.president.kremlin.ru*](http://www.president.kremlin.ru)

**Load-Date:** November 17, 2015

**End of Document**



[***IN OR OUT***](https://advance.lexis.com/api/document?collection=news&id=urn:contentItem:5JNY-91Y1-DY9P-N0S2-00000-00&context=1516831)

Metro (UK)

May 3, 2016 Tuesday

Edition 1, National Edition

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**Section:** FEATURES; Pg. 12,13

**Length:** 1166 words

**Body**

1 STRONGER ECONOMY: Membership of the European Union supports a stronger economy that delivers growth, trade and investment, as well as jobs and lower prices. That provides opportunities today and for future generations. Leaving Europe would hurt family finances, making Britain permanently poorer to the tune of £4,300 per household per year.

2 JOBS: Independent experts have found that over 3million jobs in Britain are linked to our trade with Europe. This would be put at risk by leaving. Studies have shown that young people and entry positions would be the first to be hit.

3 LOWER PRICES: Being part of Europe means cheaper prices in our supermarkets, cheaper petrol, and lower ***energy*** prices. The governor of the independent Bank of England has warned that leaving Europe could lead to higher mortgage rates.

4 SECURITY: Many of the threats to Britain's security are global in nature, like terrorism, Russian aggression and cross-border crime. Whether it's implementing sanctions against Russia, sharing intelligence about terrorists or arresting and deporting criminals using the European arrest warrant, being in Europe makes us all safer.

5 BRITISH TRADE: Businesses can sell tariff-free to 500million consumers across Europe, Britain's home market. That supports £627million in trade every day, 44 per cent of the UK's total exports. Leaving would put that at risk, putting the thousands of British jobs that trade supports on the line.

6 PUBLIC SERVICES: EU membership is vital to a strong economy and well-funded vital public services. Leaving Europe would be a body blow to our economy, creating a knock-on £36billion black hole in our public finances. That would mean less money for services such as the NHS.

7 CHEAPER HOLIDAYS: Flights and mobile roaming charges are cheaper because of EU action: namely, allowing low-cost airlines to set up and legislating to ban extra data charges. The chief executive of easyJet has warned that budget air passengers would face less choice and higher fares if Britain leaves the EU.

8 FUTURE GENERATIONS: This referendum is crucial to future generations and to the ability of young people to get on in life. Entry-level jobs are already at risk due to uncertainty around leaving Europe. The EU also offers young people opportunities to study, work and travel abroad through the Erasmus programme.

9 WORLD STANDING: Leaving the EU would diminish our influence on the world stage. In today's complex world, the UK has more control over its destiny staying inside organisations such as the EU. We would never dream of leaving the UN or Nato. Why would we leave the EU?

10 CLIMATE CHANGE: The EU, led by Britain, has spearheaded global action to tackle the challenge of climate change, setting out clear ***targets*** to cut ***greenhouse gas*** ***emissions***. A collective approach to cross-border environmental problems is crucial. Turning our back on Europe is not the answer.

11WOMEN'S RIGHTS: Being in Europe ensures protections for women in the workplace, tackling gender discrimination and fighting against income inequality. From maternity leave and work protections during pregnancy, to rules preventing harassment and unequal treatment at work, women in Britain benefit from hard-fought EU protections every day.

12WORKING RIGHTS: The EU works to protect people in the workplace by making sure they have access to parental leave, paid holiday, protection for part-timers and limits on excessive hours. Leaving would put these employment rights at risk.

1OUR to the EU every week, enough to build a new fullystaffed NHS hospital. This payment is forecast to go up in the coming years and will be £400million in 2020. We can take back control of this money and spend it on our priorities.

2 CONTROL OF OUR LAWS: Sixty per cent of our laws now come from Brussels, with the EU in control of our trade, our borders and our democracy. If we Vote Leave, UK law will have ultimate authority and we will take back control. We should be able to vote out the people who make our laws.

3 A FAIRER IMMIGRATION SYSTEM: We will be able to create a fairer, more humane system based on the skills we need. We'll be able to control numbers without having to turn away talented people from outside the EU who want to contribute to our society and economy.

4 SUPPORT BUSINESS: Regulation from the EU costs our businesses £600million every week. Only six per cent of UK businesses export to the EU, yet 100 per cent have to comply with these burdensome rules. Outside the EU we can free our entrepreneurs and small businesses and allow them to focus on driving economic growth and creating jobs.

5 PROTECT OUR NHS: Uncontrolled immigration has put huge strain on A&E waiting times and demand for GP registrations. EU law also prevents UK authorities from checking qualifications and language skills of doctors coming from the EU, putting patient safety at risk. It's safer for the NHS to Vote Leave.

6 THE EU IS INTEGRATING MORE: If we Vote Remain it will be more money and power to Brussels. The EU is set to integrate more with the creation of a eurozone treasury with new powers and common positions at international institutions. We will be marginalised even more than we already are.

7 FREE TO TRADE WITH THE WHOLE WORLD: The EU has control over who we can strike free trade deals with, and currently we don't have any with important countries such as China, India and Australia. We can take back control of our trade policy to ensure our businesses have access to fast-growing markets across the globe.

8 SAFER BORDER PROTECTION: Free movement within the EU means that the European Court has control over who can come into the UK. This means we have been unable to prevent dangerous individuals walking into our country. We can take back control and make our borders more secure.

9 CONTROL OF OUR TAX SYSTEM: The EU decides the levels of VAT we pay on goods and services. This was most recently evident when the government couldn't ***reduce*** VAT on women's sanitary products. Outside the EU we can create a tax system which suits our economy, not that of 27 other countries.

10BETTER INVESTMENT FOR ***AGRICULTURE***: For every £2 we put into the EU, we only get £1 back, therefore outside the EU we will be able to continue supporting our farmers but a far more ***targeted*** and efficient way. We can decide our own rural policy with people who fully understand the UK industry and environment.

11THE RENEGOTIATION FAILED: The PM's deal leaves the European Court in charge of exactly the same things as it was at the start. It doesn't bring any powers back. It doesn't save us any money. The deal is not legally binding on the court so it can drop any concessions the PM won as soon as our referendum is out of the way.

12HIGHER LIVING STANDARDS: Leaving the EU would improve the lives of individuals and families. Independent research has found that rules from Brussels increase the cost of your food shop. On top of this, the head of the In campaign has admitted that wages would rise after we Vote Leave.

**Graphic**

Vote Leave: London mayor Boris Johnson is backing the Brexit campaignVote Remain: David Cameron heads the official Conservative campaign to stay in

**Load-Date:** May 3, 2016

**End of Document**



[***A boon for soil, and for the environment; Carbon farming seeks to lift food production and promote cleaner air***](https://advance.lexis.com/api/document?collection=news&id=urn:contentItem:5JT0-KRX1-DYR7-C4F1-00000-00&context=1516831)

International New York Times

May 18, 2016 Wednesday

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**Section:** FINANCE; Pg. 12

**Length:** 1441 words

**Byline:** BETH GARDINER

**Dateline:** LONDON

**Body**

**ABSTRACT**

A growing number of experts, environmentalists and farmers themselves see their fields as a powerful weapon in the fight to slow climate change.

**FULL TEXT**

When Gabe Brown and his wife bought their farm near Bismarck, North Dakota, from her parents in 1991, testing found the soil badly depleted, its carbon down to just a quarter of levels once considered natural in the area.

Today the Brown farm and ranch is home to a diverse and thriving mix of plants and animals. And carbon, the building block of the rich humus that gives soil its density and nutrients, has more than tripled. That is a boon not just for the farm's productivity and its bottom line, but also for the global climate.

***Agriculture*** is often cast as an environmental villain, its pesticides tainting water, its hunger for land driving deforestation. Worldwide, it is responsible for nearly a quarter of all ***greenhouse gas*** ***emissions***.

Now, though, a growing number of experts, environmentalists and farmers themselves see their fields as a powerful weapon in the fight to slow climate change, their very soil a potentially vast repository for the carbon that is warming the atmosphere. Critically for an industry that must produce an ever-larger bounty to feed a growing global population, restoring lost carbon to the soil also increases its ability to support crops and withstand drought.

''Everyone talks about sustainable,'' Mr. Brown said. ''Why do we want to sustain a degraded resource? We need to be regenerative, we need to take that carbon out of the atmosphere and put it back into the cycle, where it belongs.''

Since people began farming, the world's cultivated soils have lost 50 percent to 70 percent of their natural carbon, said Rattan Lal, a professor of soil science at the Ohio State University. That number is even higher in parts of south Asia, sub-Saharan Africa and the Caribbean, he added.

Globally, those depleted soils could reabsorb 80 billion to 100 billion metric tons of carbon, ***reducing*** atmospheric carbon dioxide by 38 to 50 parts per million, Mr. Lal said. That does not include the carbon that could be simultaneously sequestered into vegetation, but the numbers are significant on their own, equaling up to 40 percent of the increase in concentrations since pre-industrial times. Last year, atmospheric carbon dioxide for the first time hit a monthly average of 400 parts per million, a symbolic threshold but one that many experts say could indicate that warming will soon spiral beyond control.

When carbon escapes from soil, it combines with oxygen to form carbon dioxide. Sometimes the loss is gradual, the result of plowing that leaves upturned layers of earth exposed to the elements, or of failure to replant or cover fields after harvest.

Sometimes it happens more suddenly. The thick prairie sod of America's Great Plains was a rich carbon store until settlers tore it up for farms, leaving hundreds of millions of tons of topsoil to be blown away in the Dust Bowl years. The destruction of millions of acres of carbon-rich Indonesian peatlands for palm oil plantations is helping to drive climate change today.

Low carbon levels leave the ground nutrient-poor, requiring ever-greater amounts of fertilizer to support crops. They also make for thin soil that is vulnerable to erosion and less able to retain water, so yields suffer quickly in times of drought.

To bring levels back up, a set of techniques known as carbon farming, or regenerative farming, encourage and complement the process by which plants draw carbon dioxide from the atmosphere, break it down and sequester carbon into soil. They include refraining from tilling, or turning, the soil; mixing crops together rather than growing large fields of just one type; planting trees and shrubs near or among crops; and leaving stalks and other cuttings on fields to decay.

Mr. Brown keeps his fields planted for as much of the year as possible to minimize nutrient loss. When he mixes clover and oats in the same field, the clover fixes nitrogen into the soil. After the oats are harvested, livestock graze the clover and leave their manure behind.

Such strategies have allowed him to stop using synthetic fertilizers and pesticides, ***reducing*** costs. And the rich soil not only yields higher volumes, but the crops are more nutritionally dense than those grown on depleted land, he says.

''Economically, it's much, much, much more profitable,'' he said.

Mr. Brown's approach is very different from the techniques of industrial-scale farming that have taken hold in the United States and other wealthy countries, where single crops stretch over many acres, and fertilizers and pesticides are used heavily.

Things are worse in poorer nations, where farmers' desperation often means they are unable to care for the soil, Mr. Lal said. He recalled seeing a Mexican sharecropper carting corn straw away from the fields to sell: ''I said, 'Why don't you leave it on the land? The land will be better next year.' And he said, 'This land will not be mine next year, and I need money now.'''

There is some momentum behind a shift. The French government, which helped broker last year's landmark Paris Agreement on climate change, is pushing an effort to increase soil carbon stocks by 0.4 percent annually, which it says would halt the rise in atmospheric carbon dioxide levels.

Mr. Lal called the ***target*** unrealistic, but said achieving just a quarter of that sequestration would be meaningful. In a generation, he said, ***agriculture*** could become carbon neutral, removing all the ***emissions*** it creates, for example through the ***energy*** used by farm equipment.

Worldwide, 5 percent to 10 percent of growers are using regenerative, climate-friendly techniques, said Louis Bockel, a policy officer at the United Nations' Food and ***Agriculture*** Organization. That number is likely to increase, he said, as multinational institutions and wealthy nations start incorporating carbon sequestration incentives into existing aid to farmers in poor countries.

''More and more additional funding will be available'' to encourage such efforts, Mr. Bockel added. ''We are moving quite quickly on this.''

Farmers need financing to help them adopt new techniques, though generally only through a two-to-three-year transition period, said Eric Toensmeier, author of ''The Carbon Farming Solution.'' That money could come through a higher price charged for foods whose cultivation encourages sequestration, via a carbon tax or through trading systems in which polluters buy credits to offset their ***emissions***, he said. Programs known as payment for environmental services, in which governments or others pay farmers for stewardship of land, are another potential avenue.

With that kind of support, the industry could be ready to do things differently, said Ceris Jones, a climate change adviser at the National Farmers Union in Britain.

''People say that farmers are pretty conservative, but actually practice can change quite quickly,'' she said.

Another obstacle is the lack of an agreed-upon system for measuring carbon sequestration in soil, which will be required as the basis for any payments, Mr. Toensmeier said.

Technically, though, many elements of carbon farming are ready to be put into practice quickly, he said. Something as simple as planting trees around fields drastically increases the amount of carbon fixed into soil, Mr. Toensmeier said.

''I would love to see a huge, major transformation of ***agriculture*** in the industrialized world, but if we started with just adding trees to the system we have, it's a huge gain,'' he said. ''We can sort of meet farmers where they are''

It's not just crops. The earth beneath the world's grasslands, from America's Great Plains to the Tibetan Steppe and the Sahel of Africa, holds about a fifth of all soil carbon stocks, the Food and ***Agriculture*** Organization estimates. In many places that soil is badly depleted.

''This land is waiting to be filled up again with carbon if we could manage it sustainably,'' said Courtney White, author of the book ''Grass, Soil, Hope.''

That means moving livestock frequently so each patch of land is grazed just once a year, mimicking the patterns of the native bison that once roamed the American West, he said. The combination of stimulation during animals' brief presence and long periods of rest encourages plants to lay down more carbon, Mr. White said.

With policies that encourage change, Mr. Toensmeier said, ***agriculture*** could benefit the climate rather than harming it. ''There do seem to be a remarkable number of win-win opportunities, which is great news,'' he said. ''You don't hear a lot of great news about climate change.''

**Load-Date:** May 17, 2016

**End of Document**



[***Corporate strategy - Company Profile - Pannonia finds a Hungarian home***](https://advance.lexis.com/api/document?collection=news&id=urn:contentItem:5HKP-C5D1-F11C-80GP-00000-00&context=1516831)

Foreign Direct Investment (fDI)

December 1, 2015

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**Section:** GLOBAL OUTLOOK

**Length:** 1046 words

**Body**

Ambitious global ***targets*** that aim to slash ***greenhouse gas*** ***emissions*** by 2030 are generating an increasing number of opportunities for FDI in rural regions. The EUs continued commitment to renewables is providing opportunities for investors in the sector throughout Europe. One growth area delivering promising results is the production of biofuel for the transport industry in facilities based in ***agricultural*** regions.

An hours drive south of Hungarys capital city of Budapest is the town of Dunafoldvar, home to a corn-to-ethanol plant backed by the Turley family of Ireland. Pannonia Ethanol, a subsidiary of Ethanol Europe Renewables, was established in 2009 to pursue the permitting and construction of a 200-million-litre ethanol plant. It purchases corn from farmers in the Dunafoldvar area and turns it into ethanol, corn oil, dried distillers grains with solubles and carbon dioxide.

Location choice

Chief executive Zoltan Reng says: The company was formed in response to the EUs Renewable ***Energy*** Directive in 2009, and the public statements around this directive about EU commitment to investors and renewable ***energy***. The founders had no connection to Hungary and simply identified it as potentially the best location in Europe for an ethanol investment, thanks to good logistics and an abundance of corn.

Mr Reng says the country offers a number of advantages. We initially looked at several countries in the region. Hungary was the most straightforward in terms of regulations, political climate and the education of the workforce. These have been fundamental to the success of the investment. The people are skilled and industrious, the farmers progressive and engaged, the cost base is competitive and the government is supportive.

Pannonia Ethanols strategy is to build on the core operation in and around Dunafoldvar, and develop a diverse portfolio of projects and businesses. That doesnt exclude projects in other regions and countries, but Hungary will remain the flagship, adds Mr Reng.

Capacity expansion

The company is now completing a major expansion in capacity. This has given a boost in the region as it is concrete evidence not only that the initial project has been a success, but also that the programme is on an upward trajectory, says Mr Reng. In September 2015, we hosted an ***agricultural*** innovation show in the region and it attracted close to 1000 farmers, a dozen technology providers and three of our partner banks eager to help farmers to make ***agricultural*** investments.

Pannonia Ethanol says it now supports more than 2000 direct and indirect jobs in Hungary, 93% in the service and industrial sectors, and 7% in farming. We buy produce from more than 500 farmers and offer them long- term market security. We have helped create a climate of innovation and investment in the region, and a sense of mission around the bioeconomy, says Mr Reng. While actual construction of bioeconomy assets in the rest of Europe has ground to an almost total halt, in Hungary today there are citric acid and isoglucose plants under construction.

A major investment such as this inevitably faces challenges. Mr Reng says: The investors have been dismayed by the failure of Brussels to respect valid investor expectations of regulatory stability.

The company has also had to deal with a number of local issues associated with the project. We used US technology, which had requirements and specifications in US standard measurements, so we needed to harmonise everything to European and Hungarian requirements, says Mr Reng.

Public perception

The renewables sector has also come in for some criticism and ethanol production is no exception. For example, those who oppose it claim that using land for ethanol production can drive up the cost of animal feed resulting in higher food prices for consumers, as well as arguing that producing it can use more ***energy*** than it generates.

However, Mr Reng argues that the biggest challenges arise from the gap between public perceptions of the industry and reality. Biofuel production goes hand in hand with animal feed production. The more fuel we make, the more feed we make. And that feed is extremely high quality, GMO free, antibiotic free and home grown. By getting farmers to invest more in their own businesses, we stimulate the production of corn that otherwise would never have been grown.

Mr Reng concedes that if biofuel production was increased globally too quickly, then it would affect feed and eventually food prices. He adds: But what the empirical evidence of the past decade shows pretty definitively is that displacing 0.5% to 1% of transport sector ***energy*** a year with biofuels doesnt seem to cause adverse impacts. If it is done as part of a stable, long-term policy that gets farmers to invest, then it can actually result in more feed and more fuel, so theres a triple benefit for the climate, for food security and for sustainable rural livelihoods.

Strength in adversity

Mr Reng emphasises that the industry brings other benefits. Adversity has made the industry strong and through innovation, year on year, we are making our plants more cost efficient and sustainable, he says. In stark contrast to the oil-refining sector, the average ethanol plant in Europe today produces no waste. In Pannonias case, we contribute almost EU500m annually to Hungarys GDP.

Mr Reng is bullish about the future. I deal with farmers on a daily and weekly basis, he says. They all tell me that what they need are stable, local industries, so they are not dependent on export markets. If they see strong and committed industrial consumers, they will spend money on irrigation and other improvements. Some of them have already started investing in irrigation systems, which is important in Hungary as were getting longer and longer dry periods in the summer due to climate change.

Our strategy is to keep ahead of the curve and be there first. Cutting carbon production is such a high priority at the moment. We need everything to move into low carbon. Everything we are involved in is about climate change, and being green and being renewable. We believe demand will at least treble in the next 15 years as European governments develop their climate and ***energy*** plans and as a consequence push for greater use of biofuels on their roads.

**Load-Date:** December 13, 2015

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[***FAIRR's Alan Briefel: time to face up to factory farming***](https://advance.lexis.com/api/document?collection=news&id=urn:contentItem:5J0C-M2X1-F0CX-90S0-00000-00&context=1516831)

Agri Investor

February 1, 2016 Monday

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**Length:** 834 words

**Body**

Alan Briefel is executive director of the Farm Animal Investment Risk and Return (FAIRR) Initiative, an executive at the Jeremy Coller Foundation and chief executive officer at Stratcom, a research-based strategy consultancy focused on asset management and financial services. After we reported on the Business Benchmark for Animal Welfare last week, Briefel makes a case for why investors should be aware of animal welfare.

I first became aware of animal welfare concerns in the 1970s when the debate was focused on endangered species, hunting and mistreated pets. It was certainly not an issue for the red-blooded investors of the City of London, and even now few investors pay attention to the issue - even though many will be exposed it.

The world has changed since the 70s. One of the largely unseen phenomenon has been the dramatic shift to large-scale, intensive, highly-mechanised systems of meat production. Over the last 50 years global meat production has quadrupled, and over 70 percent of the world's farm animals are factory farmed (in the US it is closer to 99 percent) - a proportion rising fast as emerging economies increasingly harness the method.

Many investors are aware of how industrialisation has affected, say, the sustainability of our climate or international labour regimes, yet few have stopped to think how industrialisation has affected global food production, particularly when it comes to livestock.

But I believe that's changing - because the long-term risks of intensive farming of animals are becoming the next big sustainability issue for investors.

Alarm bells should be ringing

This should ring alarm bells for forward-looking investors. Just as with the global climate, industrialisation has created some long-term risks alongside its benefits. In this case, issues of human health and the environment in particular are rapidly ***reducing*** our options for feeding the world, and may eliminate many of the yield increases brought about to date.

My colleagues and I at the Farm Animal Investment Risk and Return (FAIRR) Initiative recently released a landmark report Factory Farming: Assessing the Investment Risks, that highlights some of these risks.

The one I find captures investors' attention most is the threat to human health. Intensive farming methods have been shown to catalyse the spread of deadly viruses such the H1N1 swine flu, which in 2009 killed over 150,000 people and wiped billions off some portfolios. For example the MSCI US ***Agriculture*** & and Food Index plunged over 1.5 percent in two weeks in April that year due to the impact of the virus.

The massive overuse of antibiotics by factory farms also makes them breeding grounds for antibiotic-resistant superbugs that could threaten to set medical advances back by years.

Of just as much concern are the environmental issues. For example, over 14 percent of global ***greenhouse gas*** ***emissions*** come from the livestock sector, more than the transport sector, so the sector is likely to be hit hard by the transition to a low carbon economy, a transition fast-tracked by the recent Paris Agreement.

The forgotten ESG issue

Meanwhile, investors globally have changed too. Investors managing around $60 trillion of assets, around a third of the world's investable capital, have recognised the importance of considering environmental, social and governance (ESG) risks by signing the UN-supported Principles for Responsible Investment (PRI). But while these investors may be well versed in the ESG risks in sectors such as healthcare, infrastructure or ***energy***, they have a vast knowledge gap when it comes to issues in the food sector. This is a dangerous blind spot for investors and society.

Opportunities ahead

And its not just about risk, there are opportunities too.

The next wave of a food revolution is emerging through food technology companies that are bringing together biotechnology, sensory experience and data to create affordable, sustainable alternatives to meat.

For example, Hampton Creek is a food technology company in California that uses plant proteins as egg substitutes, to create products such as 'Just Mayo' and 'Just Scrambled'. Their products are cheaper and use less natural resources than egg-based equivalents. Since the outbreak of avian flu in the US this year - another example of a virus catalysed by intensive farming - the company has reported enquires from most major food chains and is now on track to become the fastest-growing food company in history.

Another example is Impossible Food, which uses proteins and other nutrients to recreate the complex taste and texture of meats and dairy products.

It won't all be plain sailing. New food technology companies will have to battle with issues such as economies of scale, consistency of output and opposition from powerful industry lobbies but many private equity and other investors have already realised these are calculated risks.

The growing risks and opportunities mean its time for smart investors to pay attention.

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**Load-Date:** February 1, 2016

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[***-Unilever: There is no business case for enduring poverty***](https://advance.lexis.com/api/document?collection=news&id=urn:contentItem:5H07-9J71-JD3Y-Y1NF-00000-00&context=1516831)

ENP Newswire

September 22, 2015 Tuesday

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**Length:** 688 words

**Body**

The UN launches its new Sustainable Development Goals this month - 17 'Global Goals' which aim to ensure the health, safety and future of our planet in the next 15 years.

We're backing the UN's Global Goals

Become a global citizen

With the overarching aim of ending extreme poverty, fixing inequality and injustice, and tackling climate change, 193 world leaders will be signing up to support the Goals on 25 September. It is a historic opportunity to build a better future for everyone.

For Unilever, the challenges the Global Goals aim to tackle have a huge impact on our business and are aligned with our own ambitions set out in our Unilever Sustainable Living Plan. We see the Goals as a framework for action.

Making the Goals a reality

Ben & Jerry's 100% electric car

Our sustainable living brands are already working towards making the Goals a reality. Here are just a few examples.

Ben & Jerry's is helping build a broad based social movement to pressure world to deliver the low carbon economy of the future (Goal 13 for climate action). Their campaign called 'Save our Swirled' is activating their fans to create a 100% clean ***energy*** future in partnership with AVAAZ. They have also found ways to save ***energy*** through The Chunkinator, which uses ice cream waste to create biogas, ***reducing*** ***greenhouse gases*** ***emissions*** that contribute to global warming.

Family with new toilet Domestos Toilet

Lifebuoy's vision to bring health and hygiene to a billion people though their 'help a child reach 5' programme is helping to deliver Goal 3 (good health and wellbeing). Having taught the lifesaving habit of handwashing with soap to over 257 million people, Lifebuoy is now helping save neo-natal lives.

Domestos has committed to helping 25 million people gain improved access to a toilet by 2020, and in doing so is supporting Goal 6 (clean water and sanitation). By improving sanitation, we contribute towards a basic human right, and help keep kids healthy and in school. We are improving sanitation by working with UNICEF on its global sanitation behaviour change programmes, through our Domestos Toilet Academy and through our schools programmes, focused on WASH (water, sanitation and hygiene) education and the building and maintenance of toilets.

World food day 2014

Knorr is helping to address Goal 2 (zero hunger) through its partnership with the World Food Programme and their shared ambition to create a world where everyone has access to nutritious food. Supporting Goal 15 (life on land), the brand is committed to sourcing all its ***agricultural*** ingredients sustainably, for the benefit of farmers and to protect their land.

Changing the way we do business

Meeting these ambitious goals will mean fundamentally changing how we do business and account for our impacts. We also know that delivering the goals can happen only if the public sector, private sector and civil society all step up and demonstrate real leadership and a willingness to work together.

We know that providing all countries with better infrastructure, a healthy, well-educated workforce and the systems for better resource management will deliver higher economic and commercial returns. There is no business case for enduring poverty.

As Unilever CEO Paul Polman says: 'We're already bringing the Global Goals to life through our sustainable living brands and their social missions.

'The challenges the goals aim to tackle have a significant impact on, and opportunity for, our business and are aligned with our own ambitions set out in our Unilever Sustainable Living Plan such as deforestation, women's empowerment, and health and hygiene,' he adds.

Play your part

We will continue to help deliver the Global Goals through our business. But supporting the Global Goals isn't just a job for businesses and politicians - we all can, and should, play our part.

The more people are aware of the Global Goals, the more successful they will be. All you need to do is chose the Goal that means the most to you, and share it with as many people as you can. Social media is a great way to do so.

[Editorial queries for this story should be sent to [*newswire@enpublishing.co.uk*](mailto:newswire@enpublishing.co.uk) ]

**Load-Date:** September 22, 2015

**End of Document**



[***Global Roof Insulation Market Growth Steady at 4.3% CAGR to 2021 Led by Rigid Insulation Segment***](https://advance.lexis.com/api/document?collection=news&id=urn:contentItem:5K6V-1F71-DXP3-R4CW-00000-00&context=1516831)

PR Newswire Europe

July 11, 2016 Monday 4:00 AM EST

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**Length:** 1007 words

**Dateline:** PUNE, India, July 11, 2016

**Body**

The global roof insulation market is forecast to reach $10.85 billion by 2021 at a CAGR of 4.3% between 2016-2021 driven by growth of the construction industry in the emerging economies such as China, India, Brazil and stringent regulatory environment in the developed countries such as US, Canada & Germany to ***reduce*** ***greenhouse gas*** ***emissions***.

Complete report on global roof insulation market spread across 156 pages, profiling 10 companies and supported with 119 tables and 52 figures is now available at[*http://www.reportsnreports.com/reports/610959-roof-insulation-market-by-application-flat-roof-pitched-roof-type-batts-rolls-rigid-insulation-spray-applied-reflective-systems-others-material-glass-wool-stone-wool-plastic-foam-others-region-europe-north-america-asia-pacific-mea-latin-america-global-forecast-to-2021.html*](http://www.reportsnreports.com/reports/610959-roof-insulation-market-by-application-flat-roof-pitched-roof-type-batts-rolls-rigid-insulation-spray-applied-reflective-systems-others-material-glass-wool-stone-wool-plastic-foam-others-region-europe-north-america-asia-pacific-mea-latin-america-global-forecast-to-2021.html).

Pitched roof is the fastest-growing application segment of the global roof insulation market. One or more roof surfaces of a pitched roof is pitched more than 10° and two of its slopes meet at a central ridge. This type of roof is ideal for areas where there are heavy rains and snowfalls. Pitched roof is comparatively easy to insulate, which makes it a favorable choice for residential projects. Increasing demand from new construction activities, especially in the emerging economies across the globe, are expected to drive the growth for the market. Fiberglass, stone wool, foam board, and PUR insulation are the materials that are majorly used for insulating pitched roof.

Rigid insulation is the fastest-growing type segment in the global roof insulation market. Rigid insulation is the fastest-growing segment of the global roof insulation market. Rigid insulation possesses qualities such as high R-value and compact design, which makes it favorable for applications where space is limited. This has led to an increased demand for rigid insulation from contractors as well as individuals, and is expected to drive the growth of the market in the coming years.

Asia-Pacific is the fastest-growing region in the global roof insulation market. Asia-Pacific is the fastest-growing market for global roof insulation, globally. The ***energy***-saving initiatives and modifications in building regulations have aided the growth of the market in the region. With the presence of emerging economies, such as China, Indonesia, and India the construction sector in this region is expected to witness significant growth in the coming years. This is consequently expected to lead to growth in the roof insulation market in Asia-Pacific. Some of the key players operational in the market in Asia-Pacific are Knauf Insulation (U.S.), Uralita (Spain), Rockwool International (Denmark), Rectical (Belgium), Kingspan (Ireland), Saint Gobain (France), and BASF SE (Germany).

The key companies operational in the market are International A/S (Denmark), Knauf Insulation GmbH (Germany), Saint-Gobain (France), Owens Corning Corporation (U.S.), Berkshire Hathaway, Inc. (U.S.), BASF (Germany), and Paroc (Finland).Order a copy of"Roof Insulation Market by Application (Flat Roof, Pitched Roof), Type (Batts & Rolls, Rigid Insulation, Spray Applied, Reflective Systems, Others), Material (Glass Wool, Stone Wool, Plastic Foam, Others), Region (Europe, North America, Asia Pacific, MEA, Latin America) - Global Forecast to 2021" research report at[*http://www.reportsnreports.com/purchase.aspx?name=610959*](http://www.reportsnreports.com/purchase.aspx?name=610959).

In the process of determining and verifying, the global roof insulation market size for several segments and sub segments gathered through secondary research, extensive primary interviews were conducted with key people. In Tier 1 (45%), Tier 2 (22%) and Tier 3 (33%) companies were contacted for primary interviews. The interviews were conducted with various key people such as C-level Executives (50%), Director Level (10%) and others (40%) from various key organizations operating in the global roof insulation market. The primary interviews were conducted worldwide covering regions such as North America (17%), Europe (33%), Asia-Pacific (17%), Middle East & Africa (25%) and Latin America (8%).

On a related note, another research onWaterproofing Membranes Market Forecast to 2021says, the market size of waterproofing membranes is estimated to reach $36.62 billion by 2021, at a CAGR of 9.2%. Waste & water management one of the fastest-growing applications of waterproofing membranes. Asia-Pacific is the fastest growing market for waterproofing membranes in terms of value and volume in the forecast period. Companies like Carlisle Companies Inc. (U.S.), Firestone Building Products Company, LLC (U.S.), Soprema Group (France), GSE Environmental (U.S.), BASF SE (Germany), The Dow Chemical Company (U.S.), Johns Manville (U.S.), Sika AG (Switzerland), and GAF Materials Corporation (U.S.) have been profile in this 201 pages research report available at[*http://www.reportsnreports.com/reports/403121-waterproofing-membrane-market-by-type-modified-bitumen-pvc-tpo-epdm-hdpe-ldpe-by-application-roofing-walls-building-structures-waste-water-management-tunnel-liners-bridges-highways-by-region-trends-forecasts-to-2020.html*](http://www.reportsnreports.com/reports/403121-waterproofing-membrane-market-by-type-modified-bitumen-pvc-tpo-epdm-hdpe-ldpe-by-application-roofing-walls-building-structures-waste-water-management-tunnel-liners-bridges-highways-by-region-trends-forecasts-to-2020.html).

Explore more reports on Chemicals market at[*http://www.reportsnreports.com/market-research/chemicals/*](http://www.reportsnreports.com/market-research/chemicals/).

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[***ERRATUM: Implementation of INDCs another red line Africa will not cross in COP 21 negotiations, according to AMCEN Chair***](https://advance.lexis.com/api/document?collection=news&id=urn:contentItem:5HK2-5Y71-JD3Y-Y20S-00000-00&context=1516831)

FinancialWire

December 10, 2015 Thursday

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**Length:** 1034 words

**Body**

ADDIS ABABA, Ethiopia -- The joint Pan African lead institutions brought together African ministers; representatives of their leaders and policymakers to plan the way forward under a new climate change agreement in Paris while upholding Africa's priorities through regional solidarity on the Intended Nationally Determined Contributions (INDCs) during the 2015 United National Conference on Climate Change in Paris (COP21) Africa Day event today.

The three Pan-African institutions, including the African Union Commission (AUC); the African Development Bank (AfDB); the United Nations Economic Commission for Africa (UNECA) and the NEPAD Planning and Coordinating Agency (NPCA) brought together hundreds of African policy makers and experts attending COP 21 to enlighten them on Africa's proposed amendments to the draft Paris Agreement (especially Articles on the INDCs) now making its way through the negotiation process.

The Egyptian Minister of Environment, Dr. Khaled Fahmy who currently chairs the African Ministerial Conference on Environment (AMCEN) told the meeting that the provision of means of implementation for the INDCs is a thick red line that Africa will not cross in Paris just because "we want an agreement at all cost."

He said that the other red lines concerned the necessity to have an agreement with a real balance between adaptation and mitigation; while the other is on the legally binding aspect of the expected agreement.

"We are not in Paris to re-write the Convention but to ensure its judicious implementation", he said, charging that "all African countries having drawn up their different INDCs in accordance with the Peru outcome, the time now is for implementation; and for all to abide by it.

All parties to the COP21 including African countries are expected to express their INDCs--public declarations of post-2020 climate actions they intend to take under a new international agreement to help global mitigation ambitions, as well as adaptation goals within the context of their national priorities, circumstances and capabilities. With INDC submissions to date, global warming is expected to be maintained at 2.7 degrees Celsius, which is above the global ambition of 2 degrees Celsius increase. So far, out of the fifty-four African nations, fifty-three have submitted INDCs.

The day began with an opening session chaired by the Ethiopian Minister of Environment, Forest and Climate Change. The AU Commissioner for Rural Economy and ***Agriculture***, Mrs. Tumusiime Rhoda Peace in her opening statement, stressed that the Africa Day is not about lamenting the risks and challenges posed by climate change, but instead to serve as an opportunity for the continent to showcase to the rest of the world solutions underway to mitigate these challenges, specifically through the development of INDCs.

"The Paris Climate COP is the pinnacle of the global climate change negotiations that has historic milestone from the Africa COP in Durban COP17". It proofs the level of commitment by the global community in addressing the adverse impacts of climate change and ***reduction*** of the ***greenhouse gases***", she said.

Mr. Carlos Lopes, Executive Secretary of the UNECA, said that it is important, therefore, that Africa's Parties submission on INDCs lead to the conclusion of a new agreement under the Convention that is in full conformity with its principles and provisions, in particular those of equity and common but differentiated responsibilities and respective capabilities.

"In addition, Annex I Parties need to make "equitable and appropriate" mitigation contributions towards achieving the objective of the Convention taking into account their cumulative historical responsibility and use of atmospheric space and resources and that cumulative ***emissions*** in Africa remain extremely low", Mr. Lopes concluded.

The contributions forthcoming from developed country Parties relating to mitigation, adaptation, finance, technology and capacity are in a balanced manner in the context of a global and comprehensive agreement for the period beyond 2020.

AfDB representative, Anthony Okon Nyong, speaking on behalf of Mr. Akinwumi Adesina, AfDB President noted that "the vision of the African Heads of State and Government to embrace green growth and low carbon development for Africa's transformation outlined today are meant to propel us into a future which promotes sustainable development for generations to come."

"Africa has come with solutions on renewable ***energy***; adaptation and loss and damage", he said.

There were two technical presentations on INDCs by the African Group of Negotiators on Climate Change and the UNECA. A Ministerial dialogue followed on INDCs showcasing Africa's readiness in addressing climate change, including its ability to deliver on its own potential with international cooperation in addition to the contribution of INDCs to the overall development of the continent. The ministerial dialogue was chaired by H.E Ambassador Ramtane Lamamra, Foreign Minister of Algeria; and vote of thanks was given by H.E Dr. Elham Ibrahim, Commissioner for Infrastructure & ***Energy***, AUC while Ms. Olushola of the AUC served as a Master of Ceremony.

Over 500 participants attended Africa Day, which saw the participation of high level delegates from the governments of Algeria; Cameron, Egypt, Ethiopia, Malawi, Namibia, Niger, Nigeria, South Africa and Uganda, in addition to the African Group of Negotiators on Climate Change, African Union Commission, African Ministerial Conference on Environment, Pan-African Parliament, African Development Bank, East African Community, European Investment Bank, Green Climate Fund, International Labor Organization, NEPAD Planning and Coordinating Agency, Pan African Climate Justice Alliance, United Nations Development Program, and United Nations Economic Commission for Africa.

Throughout the day, leaders discussed the region's priorities with respect to climate change, while considering the status of INDCs development in Africa and their challenges and opportunities moving forward in implementation.

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[***ERRATUM: Implementation of INDCs another red line Africa will not cross in COP 21 negotiations, according to AMCEN Chair***](https://advance.lexis.com/api/document?collection=news&id=urn:contentItem:5HK2-5Y71-JD3Y-Y2DN-00000-00&context=1516831)

M2 PressWIRE

December 10, 2015 Thursday

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**Length:** 1030 words

**Body**

December 10, 2015

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[***The global waste dilemma: where does our food go?***](https://advance.lexis.com/api/document?collection=news&id=urn:contentItem:5HVH-7WD1-JCM7-G3RV-00000-00&context=1516831)

FT.com

January 14, 2016 Thursday 6:02 AM GMT

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**Length:** 973 words

**Byline:** Vaclav Smil

**Body**

Some food waste, be it measured in mass or as lost ***energy***, is inevitable: potato peels, woody broccoli stalks, steak bones and beef gristle, egg shells, tea leaves. Other waste is avoidable but excusable, part of the quotidian inefficiency of human lives: a few last slices of stale bread, the remainder of some milk or yoghurt that is past its best-before date, a piece of fatty meat or exotic fruit rejected by a child.

But most  [*food*](http://www.ft.com/reports/future-food-industry) waste is both unnecessary and avoidable, and, over the past decade, a series of studies have given us a better appreciation of the problem’s scale as well of its considerable environmental and economic impact.

That is a welcome change. In 1999, when I was doing research at the UN’s Food and ***Agriculture*** Organization in Rome, my most memorable impression of the institution was that hundreds of its rooms in Mussolini’s former Ministry of the Colonies were filled with thousands of people preoccupied with how to increase food output, while the study of food waste was delegated to a single man in a one-room office.

In 2011, when the FAO published  [*its first detailed study*](http://www.fao.org/ag/ags/ags-division/publications/publication/en/c/74045/) into food waste, it contracted the job out to the Swedish Institute for Food and Biotechnology.

That study found that roughly a third of the food produced globally for human consumption — 1.3bn tonnes a year — is lost or wasted. Predictably, the highest wastage occurred in the EU and North America at about 100kg per person per year. Losses in sub-Saharan Africa and Southeast Asia were far lower, at 6kg-11kg.

In 2009, the UK’s first food waste assessment was produced by the Waste and Resources Action Programme (WRAP). Using data from 2007, it found that UK households wasted a third of all their food, with nearly 90 per cent of that waste going to landfill. It concluded that about 60 per cent of that waste was avoidable.

But an update in 2013 registered an encouraging shift: UK household food waste was found to have fallen by 15 per cent between 2007 and 2012, down from 8.3m to 7m tonnes.

A separate US study in 2012 put total food waste along the entire food chain at 40 per cent of the country’s food supply. Another inquiry found that, between 1974 and 2005, US food waste had risen by 50 per cent, with subsequent further increases.

Losses at the production level are particularly high. About 20 per cent of some vegetables, most fruits and many kinds of seafood, are wasted at this early stage. Post-harvest losses have been greatly ***reduced*** in rich economies with proper produce handling, chilling, refrigeration, protective packaging and anti-spoilage additives. But such losses remain high in the tropics.

In rich countries, losses at household level account for the largest share of food waste, not only for fruits, vegetables and seafood but also for grains due to wasted bread.

Why do rich countries waste so much food? The two most obvious reasons are that first they produce more than they need and then sell that produce so cheaply.

But another, less well-appreciated, factor is the decline of home cooking. About half of all meals in the US are now eaten outside the home, a major source of plate waste — particularly given the gargantuan restaurant portions in the US. People in rich countries tend also to be overzealous observers of best-before dates — even though you can eat that yoghurt a day after its “expiry” with impunity.

Food availability in the EU and in the US averages at about 3,500 kilocalories (kcal) a day per capita but the average food intake per person of the west’s increasingly sedentary and ageing populations is no more than 2,100 kcal. This creates a 1,400 kcal (40 per cent) waste gap.

And food is too cheap: it costs the average American family just 11 per cent of its disposable income. In the EU consumers spend 14.5 per cent of household expenditure on food, but that too is far less than in the past and than in most low-income countries.

Among affluent countries,  [*Japan*](http:///www.ft.com/japan-world) is the only notable exception in terms of wasting less food. That is due to a combination of its high dependence on food imports — at 60 per cent — and a more frugal and ageing population. Average daily food availability is now only about 2,400 kcal/capita, significantly lower than the Chinese mean, and food waste amounts to only about 20 per cent of the total supply.

The global waste of a third of our food means that 30 per cent of farmland is ploughed, planted, fertilised, irrigated and harvested without any real benefit. To make matters worse, these processes generate significant ***emissions*** of carbon dioxide, methane and nitrous oxide. If the world’s food waste were its own country, it would be the world’s third-largest emitter of ***greenhouse gases*** following China and the US, require 250 cubic kilometres of water per year — more than Danube’s annual discharge. Such demands also leach nitrates into groundwater and streams creating coastal dead zones, accelerating soil erosion, ***reducing*** biodiversity and promoting the spread of antibiotic-resistant bacteria.

Better food literacy would help in the campaign to curb waste. So would more home cooking and less eating out, but, in the long run, there is only one effective measure, especially given the fact that food consumption is fairly price-elastic, which could substantially ***reduce*** waste in affluent countries: that is paying more for the food we buy.

Ending all food subsidies and enforcing food-related environmental safeguards would accomplish that goal — but western governments remain unwilling to pursue that course and altruistic consumers eager to buy more expensive food are few and far between.

*Vaclav Smil is Distinguished Professor Emeritus at the University of Manitoba, Canada, a Fellow of the Royal Society of Canada and the author of nearly 40 interdisciplinary books on* ***energy****, food, environment and technical advances.*

**Load-Date:** February 15, 2016

**End of Document**



[***Company Summaries - Q2 2016***](https://advance.lexis.com/api/document?collection=news&id=urn:contentItem:5J15-M411-F0J5-84N0-00000-00&context=1516831)

Hong Kong Oil & Gas Report

April 1, 2016 Friday

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**Length:** 2440 words

**Highlight:** Company Summaries - Q2 2016

**Body**

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| **Shell** | Shell's retail network extends to almost 50 mostly modern outlets, placing it third in terms of the total number of service stations. Shell has two franchise stations at Hong Kong International Airport at Chek Lap Kok and four stations in Macau. There are 15 sites in Kowloon and more than 20 in the New Territories. The Anglo-Dutch major is also the market leader in supplying liquefied petroleum gas (LPG) in Hong Kong and Macau, providing cylinder LPG to 125,000 households. Shell supplies piped LPG to 68 housing estates managed through six regional operators. The company is a member of the consortium that provides aviation fuel services at Hong Kong International Airport and is also the exclusive fuel supplier to the Business Aviation Centre that serves corporate jets. Other members of the Aviation Fuel Supply Consortium include: Caltex, ExxonMobil, Sinopec, China Resources and Kuwait Petroleum. In addition, Shell is the leading lubricants supplier in Hong Kong, serving both the automotive and industrial sectors, as well as being the biggest provider of road- and industrial-grade bitumen products to Hong Kong and mainland China. In December 2014, Shell Hong Kong became the first oil major in Hong Kong to commercially launch the 5% biodiesel blend product, ***targeting*** corporate customers seeking to meet their ***greenhouse gas*** ***emission*** ***reduction*** and development sustainability goals. But the company has no plan to launch the cleaner-burning fuel at its network of fuel stations, citing uncertain demand and limited storage capacity at this stage. Jacobs Engineering Group announced in April 2013 that it had been selected by Shell Hong Kong to provide detailed design for its Transformer Oil Project located at its Tsing Yi installation in Hong Kong. Officials did not disclose the contract value, but noted that the work is being performed from Jacobs' China operations in Hong Kong and Shanghai. Shell's 47-acre Tsing Yi installation supplies Hong Kong and Macau with a wide range of oil, gas and chemical products. |

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| **Chevron** | The retail chain of Chevron-owned Caltex comprises more than 40 outlets. In October 2005, Caltex Oil Hong Kong changed its name to Chevron Hong Kong. The US group is the main fuels supplier to one of Hong Kong's major bus companies, owns two marine service stations and operates 150 dealerships and car service centres, as well as sites selling fuels, LPG, lubricants and marine products. Caltex provides aviation refuelling services through its membership of the Aviation Fuel Supply Consortium. |

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| **Exxonmobil** | ExxonMobil, also a member of the aviation supply consortium, has the country's largest fuel retail network with more than 50 service stations in Hong Kong. It has historically been a significant player in the island's utilities sector, through its 60% interest in a JV (Castle Peak Power Co) with local firm CLP Power Hong Kong, which owns three power stations serving Kowloon and the New Territories with a combined generating capacity of 6,908MW. However, Exxon Mobil has now sold its majority stakes in the Hong Kong utility and power storage firm for a combined USD3.4bn. Under the deal, CLP Holdings assumed control of Castle Peak, lifting its stake to 70% by buying half of Exxon's holding for HKD12bn. State-controlled China Southern Grid (CSG) bought the other 30% held by Exxon, but did not disclose financial terms. A person close to the transaction told Reuters that CSG also paid HKD12bn. CLP also revealed plans to buy Exxon's 51% stake in Hong Kong Pumped Storage Development Co for HKD2bn. The sale of its stake comes after Exxon ran an auction to find a buyer for half its stake in 2013. While the sale process elicited some interest from Japanese and South-East Asian bidders, CLP was seen as the natural buyer given its 40% existing shareholding. CLP used internal resources and a HKD10bn loan facility from HSBC to fund the acquisition. |

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| **Sinopec/china Resources** | By April 2015, China's Sinopec had completed the capital injection agreement reached in September 2014 with 25 domestic and foreign investors taking a stake in the group's fuels marketing business. The investors subscribed for a 29.99% equity interest in the Sinopec marketing company for an aggregate amount of CNY107.1bn in cash. Following the completion of the deal, Sinopec holds a 70.01% equity interest in the marketing company. In March 2007, Sinopec entered into a framework agreement with China Resources regarding the acquisition of its petroleum business in Hong Kong. The core business of China Resources Petrol Filling Station Co is managing petrol stations. The company operates 20 stations in Hong Kong, covering gasoline, diesels, LPG and automotive gas. China Resources Chemicals trades in various petroleum by-products, such as chemical fertilisers, rubber, plastics and ***agricultural*** chemicals. |

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The use of natural gas enabled it to ***reduce*** total ***emissions*** during a period when electricity consumption on its system increased by 80%. CLP plans to increase usage of gas for its local generation when more gas becomes available; this change is in line with the Hong Kong government's proposed enhancements to the Air Quality Objectives and Climate Change Strategy. Castle Peak is one of the largest coal-fired power stations in the world. Two of the units can burn gas as a backup fuel. Castle Peak Power Station was constructed in the 1980s as the means to meet high growth in Hong Kong's electricity demand and to change CLP's primary fuel from oil to coal. With the ***Emissions*** Control Project for ***reducing*** sulphur dioxide and nitrogen oxide ***emissions*** phasing in from 2010, together with the ongoing ***emissions*** management measures in place, these make Castle Peak one of the cleanest coal-fired power stations in the world. Exxon Mobil agreed to sell its majority stakes in the Hong Kong utility and power storage firm for a combined USD3.4bn. Under the deal, CLP Holdings assumed control of Castle Peak Co, lifting its stake to 70% by buying half of Exxon's holding for HKD12bn. State-controlled China Southern Grid bought the other 30% held by Exxon. CLP also revealed plans to buy Exxon's 51% stake in Hong Kong Pumped Storage Development Co for HKD2bn. The sale comes after Exxon ran an auction to find a buyer for half of its stake in 2013. While the sale process elicited some interest from Japanese and Southeast Asian bidders, CLP was seen as the natural buyer given its 40% existing shareholding, people familiar with the matter said. CLP used internal resources and a HKD10bn loan facility from HSBC to fund the acquisition. CLP Holdings in April 2014 said it will dispose of two of its Chinese assets for CNY2.3bn, a move to exit the company's investment in certain electricity plants in China for capital reallocation. CLP said it agreed to sell its entire stakes of CLP Power China Tianjin and CLP Power China Shenmu to CA Holdings, an investment holding company which has major units engaged in industrial investment, property renting, property management and commercial shopping mall operation in China. The consideration for the disposal of CLP China Tianjin is CNY2.1bn and for CLP China Shenmu it is CNY160mn, terms which CLP directors consider 'fair and reasonable', CLP said. CLP Holdings has urged the local government to boost the use of natural gas for electricity generation, rather than increasing power imports from China. Both options are being considered in a bid to cut ***emissions*** as part of a review of the fuel mix, which is heavily tilted towards coal. The city launched a three-month public consultation on the proposals in mid-March. Hong-Kong's coal-fired power generating units are expected to go offline from 2017. In the first quarter of 2015, local sales of electricity were 6,483GWh, representing a slight decrease of 0.2% over the same period of 2014. The Residential sector recorded a significant decrease of 7.1%, mainly due to a lower heating load as a result of the warmer weather. This offsets the increase in the Commercial, Infrastructure & Public Services and Manufacturing sectors. Sales to the Mainland amounted to 167GWh, a decrease of 46.5% over the same period of 2014, because CLP did not have any electricity sales to Guangdong Power Grid Co during the quarter. Total electricity sales in the period, including both local sales and sales to the Mainland, decreased by 2.3% to 6,650GWh. CLP announced that it has reached agreement to sell EnergyAustralia's entire interests in the Iona Gas Plant in the State of Victoria, Australia, for a cash consideration of AUD1,782mn (HKD9,882mn). The purchasers are ultimately owned by Queensland Investment Corporation (QIC) consortium comprising the QIC Global Infrastructure Fund and existing QIC clients. In the first six months of 2015, CLP's operating earnings reached HKD5,525mn, a 16% increase over the corresponding period of the previous year. Total earnings were down by 15% to HKD5,723mn simply because a one-off gain from the acquisitions of Castle Peak Power Company Limited (CAPCO) and Hong Kong Pumped Storage Development Company (PSDC) was booked in 2014. |

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| **Hk Electric** | Listed on the Stock Exchange of Hong Kong in January 2014, HK Electric Investments is the first fixed single investment trust in Hong Kong with a focus on the power industry. Its principal operating subsidiary, The Hongkong Electric Company (HK Electric), which was incorporated in January 1889 and commenced operations in 1890, is one of the world's longest-established utility companies. As a vertically integrated power utility, HK Electric is the sole electricity provider to more than half a million commercial and domestic customers on Hong Kong Island and Lamma Island. Its operations cover power generation, transmission and distribution, supply and customer service under a Scheme of Control Agreement with the Hong Kong government. Qatar Investment Authority has bought an aggregate stake of 19.9% in HK Electric Investments from billionaire Li Ka-shing's firms for HKD9.3bn (USD1.2bn), as the global investor seeks investment opportunities in Asia. Power Assets Holdings in June 2015 said it sold a stake worth HKD7.7bn in HK Electric to Qatar Investment Authority, as the Hong Kong power utility eyes new acquisitions in the global ***energy*** industry. Power Assets said its holding in HK Electric fell to 33.37% after it sold a 16.53% stake, remaining as the controlling shareholder of the power supplier. Together with a stake of 3.37% bought from Cheung Kong Infrastructure Holdings, Qatar's sovereign wealth fund holds a stake of 19.9% in HK Electric, Power Assets said in a separate statement. Power Assets said the latest sale was consistent with its intent of maintaining its stake in HK Electric at between 30% and 49.9%. HK Electric supplies electricity to Hong Kong Island, Ap Lei Chau and Lamma Island, with 568,000 customers. It is regulated by the government of Hong Kong and operates the Lamma Power Station, which has total installed capacity of 3.42GW with eight coal-fired units, five gas turbine units and one combined-cycle unit. The main generating units are largely designed for 100% coal firing. To maintain fuel flexibility, capability for oil firing has been provided. Hong Kong's first commercial-scale wind turbine has been put into operation in Lamma. In addition, Lamma is being expanded to house additional combined-cycle gas turbine units, the first of which was commissioned in 2010. Electricity is distributed by HEC at 11 kilovolts (kV) and 22kV to more than 3,500 customer (distribution) substations on Hong Kong Island and Lamma Island. HEC has around 538km of 400kV lines, 1,079km of 132kV lines, 414km of 33kV lines, and 11 400kV substations. HEC commissioned Hong Kong's largest solar power system, on Lamma Island, in July 2010, which has a capacity of 550kW. The project was the first large-scale application of amorphous silicon thin-film technology in the territory. |

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| **Hkcgc** | Town gas is manufactured and distributed by the Hong Kong and China Gas Company (HKCGC). The principal uses of town gas are for cooking and water heating for domestic customers and catering and heat processing for commercial and industrial customers. There is an even split in gas consumption between domestic and commercial/industrial use. On March 17, 2010, HKCGC announced that Towngas China would acquire interests in six of its mainland piped gas companies for around USD220mn and, as a result, HKCGC would own 56.4% of Towngas China's share capital. Towngas China is a leading supplier of piped gas in China and has been investing in the country's gas industry since 1998. It has cumulatively invested over HKD5bn and established more than 60 piped city-gas projects in 12 provinces/autonomous regions/municipalities including Anhui, Guangdong, Guangxi, Heilongjiang, Jiangsu, Jiangxi, Jilin, Liaoning, Shandong, Sichuan, Zhejiang and Chongqing city, serving more than 5mn households. Profit after taxation attributable to shareholders of the group for the 2014 year amounted to HKD7,109mn, an increase of HKD255mn compared with 2013. Exclusive of the group's share of a revaluation surplus from investment properties and unrealised exchange differences on the renminbi, the group's profit after taxation for the year increased by approximately HKD640mn to approximately HKD7bn, an increase of 10% compared with 2013 mainly attributable to a rise in profit from the group's local businesses and mainland utility business. Unaudited profit after taxation attributable to shareholders of the group for the six months ended June 30 2015 amounted to HKD4,197mn, an increase of HKD470mn compared with the same period of the previous year. |

**Load-Date:** February 5, 2016

**End of Document**



[***Company Summaries - Q1 2016***](https://advance.lexis.com/api/document?collection=news&id=urn:contentItem:5H9B-9W51-F0J5-80TG-00000-00&context=1516831)

Hong Kong Oil & Gas Report

January 1, 2016 Friday

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**Length:** 2441 words

**Highlight:** Company Summaries - Q1 2016

**Body**

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| **Shell** | Shell's retail network extends to almost 50 mostly modern outlets, placing it third in terms of the total number of service stations. Shell has two franchise stations at Hong Kong International Airport at Chek Lap Kok and four stations in Macau. There are 15 sites in Kowloon and more than 20 in the New Territories. The Anglo-Dutch major is also the market leader in supplying liquefied petroleum gas (LPG) in Hong Kong and Macau, providing cylinder LPG to 125,000 households. Shell supplies piped LPG to 68 housing estates managed through six regional operators. The company is a member of the consortium that provides aviation fuel services at Hong Kong International Airport and is also the exclusive fuel supplier to the Business Aviation Centre that serves corporate jets. Other members of the Aviation Fuel Supply Consortium include: Caltex, ExxonMobil, Sinopec, China Resources and Kuwait Petroleum. In addition, Shell is the leading lubricants supplier in Hong Kong, serving both the automotive and industrial sectors, as well as being the biggest provider of road- and industrial-grade bitumen products to Hong Kong and mainland China. In December 2014, Shell Hong Kong became the first oil major in Hong Kong to commercially launch the 5% biodiesel blend product, ***targeting*** corporate customers seeking to meet their ***greenhouse gas*** ***emission*** ***reduction*** and development sustainability goals. But the company has no plan to launch the cleaner-burning fuel at its network of fuel stations, citing uncertain demand and limited storage capacity at this stage. Jacobs Engineering Group announced in April 2013 that it had been selected by Shell Hong Kong to provide detailed design for its Transformer Oil Project located at its Tsing Yi installation in Hong Kong. Officials did not disclose the contract value, but noted that the work is being performed from Jacobs' China operations in Hong Kong and Shanghai. Shell's 47-acre Tsing Yi installation supplies Hong Kong and Macau with a wide range of oil, gas and chemical products. |

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| **Chevron** | The retail chain of Chevron-owned Caltex comprises more than 40 outlets. In October 2005, Caltex Oil Hong Kong changed its name to Chevron Hong Kong. The US group is the main fuels supplier to one of Hong Kong's major bus companies, owns two marine service stations and operates 150 dealerships and car service centres, as well as sites selling fuels, LPG, lubricants and marine products. Caltex provides aviation refuelling services through its membership of the Aviation Fuel Supply Consortium. |

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| **Exxonmobil** | ExxonMobil, also a member of the aviation supply consortium, has the country's largest fuel retail network with more than 50 service stations in Hong Kong. It has historically been a significant player in the island's utilities sector, through its 60% interest in a JV (Castle Peak Power Co) with local firm CLP Power Hong Kong, which owns three power stations serving Kowloon and the New Territories with a combined generating capacity of 6,908MW. However, Exxon Mobil has now sold its majority stakes in the Hong Kong utility and power storage firm for a combined USD3.4bn. Under the deal, CLP Holdings assumed control of Castle Peak, lifting its stake to 70% by buying half of Exxon's holding for HKD12bn. State-controlled China Southern Grid (CSG) bought the other 30% held by Exxon, but did not disclose financial terms. A person close to the transaction told Reuters that CSG also paid HKD12bn. CLP also revealed plans to buy Exxon's 51% stake in Hong Kong Pumped Storage Development Co for HKD2bn. The sale of its stake comes after Exxon ran an auction to find a buyer for half its stake in 2013. While the sale process elicited some interest from Japanese and South-East Asian bidders, CLP was seen as the natural buyer given its 40% existing shareholding. CLP used internal resources and a HKD10bn loan facility from HSBC to fund the acquisition. |

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| **Sinopec/china Resources** | By April 2015, China's Sinopec had completed the capital injection agreement reached in September 2014 with 25 domestic and foreign investors taking a stake in the group's fuels marketing business. The investors subscribed for a 29.99% equity interest in the Sinopec marketing company for an aggregate amount of CNY107.094bn in cash. Following the completion of the deal, Sinopec holds a 70.01% equity interest in the marketing company. In March 2007, Sinopec entered into a framework agreement with China Resources regarding the acquisition of its petroleum business in Hong Kong. The core business of China Resources Petrol Filling Station Co is managing petrol stations. The company operates 20 stations in Hong Kong, covering gasoline, diesels, LPG and automotive gas. China Resources Chemicals trades in various petroleum by-products, such as chemical fertilisers, rubber, plastics and ***agricultural*** chemicals. |

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**Load-Date:** November 4, 2015

**End of Document**



[***The U.S. Market for Green Building Materials***](https://advance.lexis.com/api/document?collection=news&id=urn:contentItem:5HPX-MSC1-JD3Y-Y3YK-00000-00&context=1516831)

M2 PressWIRE

December 28, 2015 Monday

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**Length:** 1229 words

**Body**

December 28, 2015

The U.S. market for green building materials reached nearly $ 40.0 billion and $ 43.8 billion in 2013 and 2014, respectively. This market is expected to grow at a compound annual growth rate (CAGR) of 9.5% to nearly $ 69.0 billion over the period 2014-2019.

This report provides:

-An overview of the U.S. market for green building materials.

-Analyses of global market trends, with data from 2013 and 2014, and projections of CAGRs through 2019.

-Information on green building materials which include those originating from salvaged, recycled, or ***agricultural*** waste content; those materials manufactured with the goal of resource-efficiency or environmentally friendliness, as well as materials meant to benefit the environment or that will be recyclable after their lifetime.

Analysis of technical, commercial, and other prerequisites need to succeed in the green building materials market.

Details pertaining to the market's drivers, inhibitors, and opportunities for growth.

INTRODUCTION

BACKGROUND

The man-made environment has significantly impacted the natural environment, human health and the economy. This profound impact has become increasingly noticeable in recent decades. According to the Environmental Protection Agency (EPA), buildings in the U.S. account for:

-36% of the nation's total ***energy*** use.

-12% of its potable water consumption.

-65% of total electricity consumption.

-30% of the carbon dioxide (***greenhouse gas***) ***emissions***.

-30% of waste output (136 million tons, annually).

In addition, a growing body of research has established the connection between indoor air quality (IAQ) and the health of building occupants. While most of the problems associated with poor IAQ are the result of inadequate ventilation, some are also caused by various types of airborne contaminants or toxins.

The presence of some of these contaminants, such as formaldehyde, trace back to the use of certain building materials. Overexposure to formaldehyde may result in nose irritation, sneezing, dry throat, eye irritation, headache and nausea. Formaldehyde is used extensively in the manufacture of certain building products (e.g., as bonding/laminating agents, adhesives, paper and textile products, and foam insulation) from which formaldehyde gas may be released in the course of normal use.

"Green" or "sustainable" building involves the use of building practices and materials that use resources as efficiently as possible, while constructing healthier, more ***energy***-efficient and environmentally friendly buildings. One key objective of some green building projects focuses on creating esthetic harmony between a building and its environment.

The market for green building materials has seen rapid growth in recent years. As of Oct. 17, 2014, more than 3.3 billion sq. ft. of building space had been certified by the U.S. Green Building Council's (USGBC) Leadership in ***Energy*** and Environmental Design (LEED) Program. An article in the June 2006 issue of the Harvard Business Review accurately predicted that green construction would become a mainstream technology in the next five to 10 years following its publication. Market growth notably helped drive down the cost of green building products, and building owners had and continue to become increasingly aware of the economic, health and environmental advantages of green building. The article's author, Charles Lockwood, went so far as to note that the ultimate impact of green building becoming mainstream will have as profound of an effect on commercial real estate as the invention of central air conditioning in the 1950s and 1960s or elevators in the 19th century. According to the USGBC, as of April 2014, more than 4.3 million people live and work in LEED-certified buildings. By 2015, McGraw-Hill projects that an estimated 40% to 48% of new nonresidential construction by value will be green, at a total opportunity value of $ 120 to $ 145 billion.

According to the USGBC, more than 500 U.S. companies, including a number of Fortune 500 companies, are involved in the production of green building materials and the design and construction of green buildings. This number is likely to grow rapidly as more building owners and investors become aware of the potential of green building.

The green building industry was not immune to the recession that began in 2008. The market for all types of green building materials was down by nearly 40% in 2008 compared with 2009, reflecting the significant decline in construction activity. However, the housing and commercial construction markets began gradually recovering in 2010 and as of 2014, seem to have made a significant recovery. The market for the green building industry should continue to experience above-average growth rates over the forecast period through 2019 due to increased demand for sustainable building products and the national push toward and adoption of green building practices.

These trends provide an opportunity for both existing players and new entrants into the green building materials market. This BCC Research report analyzes these new developments and their potential impact on industry participants.

GOALS AND OBJECTIVES

The overall goal of this report is to identify and prioritize the business opportunities for providers of green building materials that will arise over the five-year forecast period (2014 to 2019) as green building technologies increase their market penetration. In support of this goal, specific objectives of the report include:

-Identification of green building technologies with the greatest commercial potential over the five-year forecast period (2014 to 2019).

-Estimation of the potential U.S. markets for these technologies.

Analysis of the technical, commercial and other prerequisites of success in these markets.

INTENDED AUDIENCE

The report is intended especially for manufacturers and distributors of green building materials and other technologies. Although the report is structured around specific technologies, it is largely nontechnical in nature. That is, it is concerned less with theory and jargon than with what works, how much of the latter the market is likely to purchase and at what price.

As such, this report's primary audience ***targets*** executive management, marketing and financial analysts. It is not written specifically for scientists and technologists, although certain findings concern the market respective to their work. Specifically, the availability of government and corporate research funding for different technologies and applications should interest them as well.

Others who should find the report informative include, but are not limited to government agencies; green building industry-specific organizations; market research groups; academic institutions; and environmental and public policy interest groups with an interest in sustainable development, the environment, ***energy*** and worker health.

For more information kindly visit : [*https://www.bharatbook.com/materials-chemicals-market-research-reports-186688/us-green-building-materials.html*](https://www.bharatbook.com/materials-chemicals-market-research-reports-186688/us-green-building-materials.html)

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**Load-Date:** December 28, 2015

**End of Document**



[***Pioneering projects in food and agriculture win £17.8 million***](https://advance.lexis.com/api/document?collection=news&id=urn:contentItem:5H7P-FFT1-F0K1-N0R6-00000-00&context=1516831)

FinancialWire

October 27, 2015 Tuesday

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**Length:** 4105 words

**Body**

Pioneering projects to improve ***agriculture*** and food production at home and overseas, have been funded to the tune of £17.8 million, under the latest round of the Government's Agri-Tech Catalyst.

Projects include one assessing the potential to commercialise the farming of lobsters, a proposal to cultivate scallops on ropes and a way of continuing to make whisky with UK wheat, by using a novel variety.

The technologies are among 21 successful bids that have won a competition run by the UK's innovation agency, Innovate UK, to ***target*** commercially promising new technologies to provide an economic boost to the UK ***agriculture*** sector.

Speaking at the opening of Agrimetrics, the UK's first big data centre of excellence for the whole food system, at Rothamsted Research, in Harpenden, Hertfordshire, Life Sciences Minister George Freeman MP said:

By harnessing science to ***reduce*** water and pesticide usage, and to pioneer greener modern farming, the UK is leading the way in boosting ***agricultural*** productivity.

Investing in pioneering agri-tech projects like these is win-win for the UK as these technologies will improve food production and create businesses and jobs up and down the country. British solutions for ***agricultural*** challenges

Ian Meikle, head of ***agriculture*** and food, at Innovate UK, said:

By supporting these project partnerships - many of which include small businesses - Innovate UK is backing British solutions for ***agricultural*** challenges. These schemes are helping to create new jobs and will open up new markets and drive productivity.

Professor Jackie Hunter, BBSRC chief executive, said:

Investing in advances in ***agriculture*** is vital, not only for our future food supply but also to help build the UK bio-economy. These new research projects highlight how UK bioscience is at the forefront of innovative approaches for modern farming.

Agri-Tech Catalyst

The funding was awarded through the Agri-Tech Catalyst,which was set up by the Department for Business, Innovation and Skills, Innovate UK, Department for International Development and the Biotechnology and Biological Sciences Research Council (BBSRC) with a £70 million investment to help make the UK a world leader in ***agricultural*** technology, innovation and sustainability.

The Agri-Tech Catalyst offers funding for collaborative projects, taking innovative ideas from any sector or discipline with the potential to provide an economic boost to the UK agri-tech industry, by tackling challenges in ***agriculture***.

The scheme will help to take innovations all the way from concept to commercialisation, awarding grants for early-stage pre-industrial research feasibility studies, industrial research, and late-stage pre-experimental and experimental feasibility studies. Any UK business or academic researcher can apply.

The Agri-Tech Catalyst will fund proposals relating to:

- primary crop and livestock production, including aquaculture

- non-food uses of crops including ornamentals (for example, for biomass)

- food security and nutrition challenges in international development

- challenges in downstream food processing, provided the solution lies in primary production.

Full summaries of funded projects:

Agri-Tech Catalyst Round 4 - Late Stage

Project 1: VerticalVale: Viability of the Saturn Grower in commercial farming

Partners: Saturn Bioponics, ValeFresco

Saturn Bioponics are working on a collaborative project with leading fresh produce growers ValeFresco, to prove and showcase the benefits that the Saturn Grower vertical growing system offers in a commercial growing environment.

The project will demonstrate the 2.5-3.5% yield increase and ***reduced*** costs of production the system delivers on leafy crops, with particular focus on pak choi.

Results have wider application across the fresh produce industry, in particular for leafy salads, herbs and soft fruit. The project enables a step change in the economics of high-value crop production.

Project 2: Improving hydroponic production using new online nitrate sensor

Partners: Sharp Laboratories Ltd; Lincolnshire Herbs Ltd; APS Salads Ltd; May Barn Horticultural Consultancy Ltd

Many crops, including tomatoes, lettuce, herbs, strawberries, raspberries and ornamental flowers are often grown using hydroponics, where fertiliser for the growing plants is supplied in the irrigation water. Hydroponic farming produces excellent quality crops with good efficiency but there is an opportunity to improve the method by continuously monitoring and controlling the fertiliser components in the irrigation water.

This project aims to enable better control over the use of nitrate, which is an important component of the fertiliser. A new sensor, which can be used to continuously measure the nitrate concentration in irrigation water will be deployed at commercial hydroponic farms, allowing continuous nitrate monitoring for the first time.

We will evaluate the potential for expected benefits including ***reductions*** in fertiliser use and expense and smaller discharge of fertiliser into natural waters, helping to meet environmental legislation.The technology is relevant to UK and global farming.

Project 3: Real-time information systems for precision pig production

Partners: Farm ***Energy*** & Control Services Ltd; ARM Buildings Ltd; Garth Pig Practice Ltd; DC & RJ Allen & Partners; J M Sankey Fmrs; DA & EM Skinner; Stockcroft Ltd; Yorkwold Pigpro Ltd

This project unusually involves a consortium of prime producers and technology suppliers. It is farmers who will actually deliver on sustainable intensification and that is why this project involves them directly as full partners.

Entitled real-time information systems for precision pig production, the project will commercially pilot a recently developed system - Guardian Action - as a precursor to full UK industry roll-out. The information system provides real-time remote data recovery from pig production units and allows browser access to the processed and analysed data designed to create knowledge at a farm level.

In addition, anonymous data will be pooled and analysed to add further value for end users. Crucially, the pilot will include the setting up of a customer support resource to ensure that end users can turn the knowledge into profit. Uniquely, veterinary and nutritional expertise will complement the data analysis and interpretation. The system will be supplied and supported on a subscription fee basis.

Agri-Tech Catalyst Round 4 - Industrial Research

Project 1: Cocoa farm of the future

Partners: Mondelez UK R&D Limited; Tree Global Ghana Ltd; Cocoa Research Institute of Ghana

Without cocoa there is no chocolate and without the next farming generation, there is no cocoa. A vibrant cocoa supply chain is essential for the future of chocolate and - through the Mondelez Cocoa Life sustainability programme - we are leading its transformation.

As part of the programme, Mondelez UK R&D Limited is leading a project to transform the way cocoa is grown and dramatically boost farm yields and farmer incomes. By implementing this project in Ghana we are seeking to directly improve farming practices and technologies for the benefit of many thousands of Ghanaian cocoa producers and to ensure that high-quality Ghana cocoa continues to be the foundation ingredient in some of the UK's best loved chocolates, like Cadbury Dairy Milk.

Project 2: Third generation polyethylene greenhouse cladding materials

Partners: British Polythene Ltd; Haygrove Tunnels Ltd; Berry Gardens Ltd; Finlays Horticulture (Kenya) Ltd; A. Schulman Inc Ltd.; The University of Reading; The University of Lincoln; East Malling Research

This project will develop a range of novel, third-generation, greenhouse film cladding materials. The films will be spectrally modified to drive completely passive benefits to primary greenhouse growers worldwide.

We will modify materials to change their UV transmission, the scattering of photosynthetically active radiation and to reflect near infra red heat. The benefits ***targeted*** will include yield and quality gains, the ***reduction*** of solar heat load and potential ***reductions*** in pest incidence.

For primary producers the technology is low cost, and small production gains will justify investment in the technology. In terms of film manufacturers the global market for specific greenhouse film is worth c. £1.4 billion. However, it has a low level of product differentiation. Thus, innovations within this project have real potential to secure significant sales and export opportunities.

Project 3: MUST: Miscanthus scaling technology

Partners: Terravesta Assured ***Energy*** Crops, Bell Brothers Nurseries, Edwards Farm Machinery, Aberystwyth University, Nutriss, CERES

The UK needs to ***reduce*** CO2 ***emissions*** in order to mitigate climate change, and green technologies will also stimulate economic activity. Bioenergy crops provide an alternative to fossil fuels, where wood, straw and other biomass is burnt in power stations, in order to generate electricity. 75% of the biomass we burn is imported.

Miscanthus is a plant with a straw-like stem that grows 2-3 metres high in a year, is harvested in spring and grows back from the roots to produce a crop each year. The harvested crop is burnt in power stations. It grows well on land that is not suitable for food crops.

The current method for planting miscanthus is from sections of root dug up from other miscanthus plants, but this limits how much we can plant each year. Planting miscanthus seed would allow us to speed up deployment. This project aims to understand how to produce miscanthus seed, plant and look after it successfully, and harvest it effectively, so we can grow more of the crop in the UK and create a new industry.

Project 4: BirdEase: An integrated diagnostic system for bacterial detection in poultry farms

Partners: Greengage Lighting Ltd; University of Cambridge; Cramasie Ltd; 2 Sisters Food Group; Campden BRI; CASI Everysite (TLR Ltd)

There is increasing pressure within the poultry industry to improve biosecurity measures & cleanliness in primary production; advanced diagnostics for early disease detection are high on the agenda. In response to this specific industry need, this project will develop an integrated on-farm early-warning bacterial sensing system for intensive poultry production systems, ***targeting*** key food-borne disease pathogens prevalent in poultry meat: campylobacter, E.coli & salmonella.

The proposed innovation integrating sample collection, chemical-free enrichment, acousto-optic detection & seamless user presentation, is enabled only by the inter-disciplinary convergence of leading agri-scientists & engineers with poultry producers & industry informers. The overarching objective is to enable earlier decision making by producers to instigate preventative control measures that minimise downstream cross-contamination, thereby decreasing foodborne disease incidence within the supply chain.

Project 5: Aquaculture of the great scallop: Field tests for rope-growing techniques

Partners: Scalloptech Limited; Portland Oystermen Limited

The project focuses on UK field testing of rope growing methods for the great scallop in the UK. The project will test variables affecting productivity of rope-growing techniques in order to (i) prove that it is a viable mode of production for large-scale commercial application; (ii) demonstrate the advantages of rope growing over current scallop aquaculture practices; and (iii) to optimise methodology for the implementation of the technique.

The output of the project is intended to be data and know-how which will form the basis of a model to generate funding for commercial exploitation of such methods. One project is examining the feasibility of rearing scallops on ropes

Project 6: Novel low-viscosity wheats for distilling

Partners: The Scotch Whisky Research Institute, Rothamsted Research, Limagrain UK

A new collaboration between industry and academics has been funded which aims to utilise a novel non-GM approach to improve a major UK crop. The project, which involves Rothamsted Research and two industrial partners, The Scotch Whisky Research Institute and Limagrain UK, will run from 2015-2018. A successful outcome will demonstrate the potential to greatly accelerate development of novel varieties of crops for different end uses.

A novel variety of wheat could be used for whisky distillation among other things

Project 7: Lobster Grower 2 - Assessing the technical, economic and environmental potential for a novel candidate aquaculture species

Partners: The National Lobster Hatchery; University of Exeter; West Country Mussels; CEFAS; Falmouth University

Support from the Agri-tech Catalyst has been secured for a 36-month project, addressing fundamental food security challenges by examining novel angles to expand aquaculture; to include a species not currently exploited, the European lobster. This species commands the highest value (by volume) of any species landed in the UK and exhibits a significant supply deficit. Sea-based culture, in containers (SBCC) exhibits the potential for a low-carbon form of rearing with no feed costs.

The project will use containers specifically designed for the species, developed in an early stage project, to assess performance and develop holistic application of SBCC systems. The project will run a pilot scale lobster farm to gather practical, operational, environmental, biological, engineering, economic and social data that can be used to develop an essential tool to encourage and inform future investment. The consortium will be led by the National Lobster Hatchery and consists of two SMEs, two HEIs and a government agency.

Project 8: Innovative plant breeding & phenotyping technologies to ***reduce*** nutrient requirement of forages and improve livestock production efficiency

Partners: Germinal Holdings; Aberystwyth University

A major challenge facing the UK livestock centre is the need to fulfil the increasing demand for meat and milk products whilst ***reducing*** the environmental impact of production. This project will apply innovative plant genetics and breeding approaches to the development of improved varieties of perennial ryegrass and white clover with increased nutrient use efficiency (NUE) and deliver environmental and economic benefits to primary producers and wider society.

It will also deliver commercial return to the seed company Germinal Holdings Ltd., who will market the improved varieties. The project will use the National Plant Phenotyping Centre in Aberystwyth as a bridge between studies in flowing solution culture and in the field and to develop high throughput technologies for the effective screening of new plant varieties with improved NUE in the glasshouse and in the field.

Project 9: Improving female fertility and calf survival in the UK beef industry

Partners: British Limousin Cattle Society, SRUC

Fertile suckler beef cows and low calf mortality are essential for profitable beef production systems. To improve cow fertility and calf survival, national data will be used to develop genomic breeding values for fertility and survival.

Genomic selection is a novel breeding tool, which increases the rate of genetic improvement for traits that have traditionally been difficult to improve, such as fertility and survival. As a result, the overall efficiency of the UK beef industry can be improved as cows will be more fertile and produce more calves in their lifetime and more calves will survive.

This will increase production, but just as important do it in a sustainable way that ultimately will ***reduce*** the ***greenhouse gas*** ***emissions*** per kg beef produced. This project is innovative as beef genomics is still in its infancy and there are currently no breeding tools available for the genetic improvement of survival.

Project 10: Benchmark scenario planning in primary production: creating sustainable change

Partners: Syngenta Limited; AGCO Limited; AGCO Zambia Limited; University of Southampton; Aberystwyth University

Across the world we face growing issues of food security and nutrition. Agri-science is one of the eight great technologies where the UK can link research strength to practical application to farming practices and the food industry.

This project focuses on improving outcomes in primary production, and hence food security, by using advanced technologies to facilitate efficiency benchmarking for both productivity and environmental performance. The hypothesis we will investigate is that historic data patterns can be used to support farmers' decision making, a positive impact on global food security in a sustainable way.

High resolution data measurements will be evaluated in large scale and smallholder ***agriculture*** at locations in Zambia and the UK. Syngenta, AGCO, the University of Aberystwyth and the University of Southampton are working with other academic and international development organisations to deliver the project.

Project 11: Building genomic breeding pyramids for Indian cattle

Partners: Tropical Animal Genetics Private Limited (TAG); University of Edinburgh

The objective of this project is to increase the incomes of resource-poor, including landless, dairy farmers in India by establishing a process of continuing genetic gain. This will be achieved by developing a breeding pyramid to offer routinely to farmers first-cross heifers between Holstein and Sahiwal.

This will be achieved through two innovations: the first, to establish specialist producers of heifer calves produced following embryo transfer; the second, to use DNA technology to establish reciprocal recurrent genomic selection (RRGS) for both Holstein and Sahiwal parents to maximize the productivity of the crossbred.

This will capture in a sustainable structure the hybrid vigor in productivity of the crossbred in both yield and fitness for the production environment. The direct benefits will be obtained by the women of the household as they are typically responsible for the dairying activity and receive the income from it. In addition the scheme will diversify the sector and secure the indigenous breed resources.

Agri-Tech Catalyst Round 4 - Early Stage

Project 1: Feasibility study to develop technology for predicting wheat yield

Partners: Selex ES; SOYL

The collaborative project between Selex ES and SOYL will test the feasibility of developing new technology for predicting wheat yield using a wide range of data including remotely sensed information describing the crop and soil. The project is highly innovative as it seeks to produce the first commercially viable yield prediction service that not only predicts yield, but also identifies the key factors expected to limit yields.

New applications for remote sensing technologies will be developed and innovative techniques for integrating a wide range of data types will be employed. The ultimate goal of this initiative is to produce a decision support tool that enables more efficient operating practices for a wide range of clients within the wheat industry.

Project 2: Development and validation of a system for automatic detection of lameness in sheep

Partners: University of Nottingham; Dunbia (Wales); Farm Wizard

This project seeks to address the challenge of sheep lameness, a predominant cause of both poor productive and reproductive performance on sheep farms costing industry around £80 million a year. Lameness control relies on early detection and treatment of lame sheep yet there are no suitable/optimal tools for lameness detection. The project proposes to develop and test validity of a system for automatic lameness detection in sheep.

Project 3: Vaccine diluent improvement for ECF-ITM

Partners: GALVmed, CTTBD, Arecor Ltd

This project represents a unique opportunity to translate British technology and expertise from the human health sector into livestock disease control in the developing world context. The project focuses on East Coast Fever (ECF), a major constraint on small-holder cattle production in East, Central and Southern Africa.

An effective vaccine, ECF-ITM, currently exists for the disease but it has a number of important drawbacks that affect its use in the field. This project will trial the use of novel formulations as a replacement for the ECF-ITM vaccine diluent. Success in the project will deliver important ECF-ITM vaccine product enhancements, notably vaccine stability.

This will afford far greater mobility and flexibility to ECF vaccinators resulting in an estimated 300,000 additional cattle being effectively immunised per year. This will be a notable development in the sustainable intensification of small-holder cattle production in the region.

Project 4: Aphid-resistant wheat for the smallholder farmer in Africa

Partners: Rothamsted Research; Seed-Co Ltd

Seed-Co are the largest seed company in Africa, operating in 13 countries in Eastern, Central, Western and Southern Africa and have developed varieties suitable for different environmental conditions as well as for the smallholder farmer, therefore any pest resistance traits will benefit farmers in Africa and further afield.

Smallholder farmers face difficult challenges in protecting their crops against pests and diseases in these countries. Aphid pests can cause severe damage and yield losses to wheat. This project will identify wheat lines which show resistance to aphids, which can be bred into wheat varieties suitable to be grown in rain-fed, low-potential environments, thereby safeguarding the yield of smallholder farmers and ***reducing*** the reliance on expensive and environmentally unfriendly pesticides. By doing this we hope to contribute to the food and income security of the African smallholder farmer.

Project 5: Application of general repellents against ***agricultural*** pests

Partners: Russell IPM Ltd; Russell IPM Bangladesh Ltd; Bangabandhu Sheikh Mujibur Rahman ***Agricultural*** Uni; East Malling Research; Natural Resources Institute, University of Greenwich

General semiochemical repellents are widely used for protecting humans and livestock from attacks by arthropod pests in developing and developed countries, but they have been little explored or used for crop protection. The aim of this project is to prove the concept that volatile, repellent chemicals can be used to ***reduce*** the damage caused to ***agricultural*** crops by a range of insect pests.

This could provide a widely-applicable new approach to management of crop pests that ***reduces*** the use of conventional pesticides and is compatible with integrated pest management and sustainable ***agricultural*** intensification. The approach is applicable in both developed and developing countries.

The project will be a collaboration between a UK SME, Russell IPM, two UK research institutes, East Malling Research and the Natural Resources Institute, and an SME, Russell IPM Bangladesh, and university, Bangabandhu Sheikh Mujibur Rahman ***Agricultural*** University, in Bangladesh

Project 6: Pan-specific vaccine to control Streptococcus agalactiae disease in tilapia aquaculture

Partners: Moredun Research Institute, Benchmark Animal Health Ltd.

As the world population grows and becomes more affluent, an increasing number of people include protein in their diet. Aquaculture is the fastest growing source of animal protein and a major source of income in Asia, South America and Africa.

Tilapia is a popular fish, both with farmers and consumers, but disease can cause massive losses on tilapia farms. Streptococcus agalactiae, which can affect tilapia as well as people, is a major cause of such losses. Currently, antibiotics are commonly used to combat this problem. This is not sustainable because of the risk of antimicrobial resistance.

As an alternative, we propose to develop a vaccine that would protect fish from all types of S. agalactiae that affect them. This project brings together scientific expertise in the area of fish disease and vaccine development and commercial expertise in vaccine production and distribution. Jointly, the partners aim to provide the global aquaculture industry with effective and affordable tools for sustainable disease control.

Project 7: Early attractants for the major new fruit pest, Drosophila suzukii; a 'super lure'

Partners: Berry Garden Growers; Real IPM; East Malling Research; University of Greenwich

The UK fruit industry is under continual pressure from the introductions of non-native pests and diseases. This project will aim to better monitor and time pesticide application against a highly damaging soft and stone fruit pest, Drosophila suzukii. It will achieve this by developing a more species specific attractant for future use in monitoring traps and, eventually, control technologies.

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[***Who will make the top of the table-; We can at last reveal the innovations that have made it through the first round of judging and will go on to the final stage in September. The category winners and overall winner for this year will be revealed in mid-October***](https://advance.lexis.com/api/document?collection=news&id=urn:contentItem:5GTR-P621-DYX4-70PB-00000-00&context=1516831)

ICIS Chemical Business

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**Section:** FEATURES

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**Body**

Ernesto Occhiello

Ernesto Ochiello is executive vice-president, technology & innovation at SABIC. He has spent his career in R&D leadership with Montedison, EniChem and Dow Chemical. His current role covers leadership of technology development, licensing, venture capital and sustainability.

Olivier Lorge

Olivier Lorge is new product identification manager in the New Product Platform group at ExxonMobil Chemical and manages the pursuit of new product opportunities. He joined the company in France in 1998 and has degrees in chemistry and chemical engineering from ESPCI ParisTech.

CATEGORY SPONSOR U.S. CHEMICALS

MEET THE 2015 PANEL OF JUDGES

OVERALL SPONSOR ROLAND BERGER STRATEGY CONSULTANTS

Dr Neil Checker

Dr Neil Checker is a partner at Roland Berger Strategy Consultants and part of the global chemicals leadership team, based out of the firm’s Dusseldorf office. Neil has over 30 years’ industry and consulting experience in the chemicals and process industries.

ExxonMobil Chemical is one of the largest chemical companies in the world. Our unique portfolio of commodity and specialty businesses generates annual sales of more than 24m tonnes of prime products.

The commitment by ExxonMobil Chemical to maintain a leadership position in technology is fundamental to our continued success. We have a broad portfolio of proprietary process, product and product applications expertise.

Now, more than ever, chemicals are the building blocks of modern life. Chemicals play a key role in fields integral to human progress, including transportation, ***agriculture***, pharmaceuticals, medical equipment, as well as efficient manufacturing and packaging of a wide array of consumer goods.

Gains in technology will remain essential and should be promoted. This is vital to maximising economic opportunities and boosting living standards the world over. Scientists, engineers and other innovators in the global chemical industry are engaged in developing new and better process technologies, new chemical compounds and products, and new applications for existing chemical products.

As an organisation with technological achievements that have enriched the lives of people everywhere, ExxonMobil Chemical is pleased to sponsor the Small to Medium Enterprise category of the 2015 ICIS Chemical Business Innovation Awards.

ExxonMobil Chemical

GAINS IN TECHNOLOGY REMAIN ESSENTIAL

This year’s ICIS Innovation Awards – now in their 12th year – have attracted a record number of entries, resulting in a strong shortlist of innovations to progress to the final stages of the competition. ICIS will reveal the category winners and the innovation of the year in this magazine in mid-October, after the judges have met to discuss the entries in detail.

The Awards are again sponsored overall by Roland Berger Strategy Consultants, which also supports the Best Product Innovation category. The environmental/sustainability category is once more sponsored by U.S. Chemicals. Both are long-term supporters of the Awards and ICIS thanks them for their ongoing interest. This year we are also pleased to welcome ExxonMobil Chemical as a new category sponsor, supporting the Best Innovation by an SME category.

The range of innovations in the short-list is, as usual, extensive, emphasising the depth and breadth of innovation of which the chemical industry is capable. For the first time in the Awards, the US shale oil and gas phenomenon has brought forth some chemical innovations, based around water conservation and proppants. There is also the now regular clutch of entries from the biobased chemicals sector, and some important innovations in some more well-established areas, such as antifouling coatings and PVC polymerisation, for instance.

You can read a description of each shortlisted entry in the following pages. They have been chosen by this year’s specially selected panel of judges (see opposite), who will meet in early September to consider each entry in detail and select the winners. ICIS also thanks them for bringing their expertise to the Awards and ensuring that the best innovations are recognised. All that remains for me to do is wish all our finalists the very best of luck. May the best innovations win!

Full details at [*www.icis.com/awards*](http://www.icis.com/awards)

BEST PRODUCT INNOVATION

sponsored by roland berger

AkzoNobel International Paint

Pritesh Patel, Kevin Reynolds, Brent Tyson, Jennifer Longyear, Victoria Frank, David Moore, MeiFen Ng, Trevor Solomon and John Willsher

Intersleek 1100SR – patented slime release technology

Foul-release coatings ***reduce*** hydrodynamic drag on ships, yielding significant benefits for vessel operators through ***reduced*** fuel consumption and environmental ***emissions***. But existing products use biocides, with adverse implications for marine ecology, and are not effective against slimes. AkzoNobel has developed a novel biocide-free, patented fluoropolymer coating using a novel high-throughput slime growth and removal protocol. The screening process allowed accelerated biofilm settlement and precise quantification of release and was designed and validated with hydrodynamicists at Newcastle University in the UK. The work has led to the launch of Intersleek 1100SR, with tailored surface chemistry that specifically influences the settlement and adhesion of organisms that make up slime. Being biocide-free and bringing verified CO2 savings means that Intersleek 1100SR qualifies for carbon credits from the UN-approved Gold Standard organisation.

Dow Chemical and Preferred Technology

Kaoru Aou, Juan Carlos Medina, Rajat Duggal, Will Koonce and Rajesh Paradkar (Dow) and Robert McDaniel, Spiros Monastiriotis and Ralph Barthel (Preferred Technology)

Garnet 2.0 with Teraforce technology

Garnet 2.0 is a resin-coated sand (proppant) used in shale oil and gas production. The novel technology is said to deliver superior performance in well completions, maximising oil and gas production. These benefits are enabled by the Teraforce technology developed with sustainability advantages by Dow Chemical and Preferred Technology. The key attribute of the new product is that it minimises proppant flow back into the well bore, which can cause equipment damage, oil production losses and safety hazards. Also, it eliminates the need for an activating plasticizer, which is conventionally used to try to prevent flow back, but with little success in many US shale basins. Improved performance is derived from improved interparticle adhesion, which is sufficient to reliably prevent proppant flowback, thereby eliminating costly rework, and as leaching of formaldehyde is ***reduced*** to levels that are safe in drinking water.

Teijin

Toshiya Koyama

Innovative separators for next-generation lithium-ion batteries’ specifications

With the growing popularity of mobile devices, lithium-ion batteries (LIBs) are required to achieve larger capacity and higher ***energy*** density. This has created demand for high-performance separators that electrically isolate the cathode from the anode and inhibit thermal runaway caused by short circuits to provide greater safety and high voltage stability. Teijin has developed Lielsort, innovative separators using a microporous polyethylene substrate – one coated with Teijinconex meta-aramid for higher heat resistance, and another other coated with the world’s first fluorine-based compound, especially for pouch-type cells for consumer electronics devices. Lielsort separators have superior resistance to oxidation and high affinity or wettability with electrolyte. In addition to improving output by about 20% compared to conventional LIBs, Lielsort can be combined with a high-potential cathode to extend the battery’s lifespan several times over.

BEST PROCESS INNOVATION

AkzoNobel

George Nolan

Continuous initiator dosing (CiD)

AkzoNobel is a leading supplier of initiation systems to the suspension polyvinyl chloride (S-PVC) industry and has built on its extensive experience to develop an innovative patented process for ***reducing*** polymerisation time by continuously dosing a very fast initiator during PVC production. The CiD technology solves an elusive problem for PVC, which has not previously been able to benefit from continuous initiator dosing, unlike many other polymers. AkzoNobel developed two “plug and play” demonstration units and partnered with a PVC producer to scale and test the technology in a manufacturing environment. Customer trials exceeded expectations and today CiD technology is helping customers better use ***energy*** and raw materials, improve economic outlooks and deliver safer performance and lower environmental impact. Specific benefits include a 20-40% capacity increase through shorter polymerisation times, ***reduced*** cooling ***energy*** requirement and use of a single peroxide emulsion.

AVA Biochem

Thomas Klaeusli

Continuous, scalable production of platform chemical 5-HMF

AVA Biochem has successfully developed a continuous, scalable production process for renewable platform chemical 5-hydroxy-methylfurfural (5-HMF). By using water as a non-toxic solvent for 5-HMF production, AVA Biochem’s technology will bring about price competitiveness with petro-based alternatives. 5-HMF is a versatile, biobased molecule and offers pathways to over 175 downstream chemicals and 20 performance polymers including FDCA (furandicarboxylic acid) and PEF (polyethylene furanoate) which is set to replace PET. AVA Biochem’s process makes the biological oxidation to FDCA easy and cost-efficient. The proprietary process is based on a hydrothermal reaction of sugars and will allow the use of second-generation sugars in the near future. The process first hydrolyses then dehydrates sugars. During the dehydration step, water molecules are removed and, among others, 5-HMF is formed and then extracted from the process. Due to the recycling of non-reacted sugars, the process has a very high 5-HMF yield.

GFBiochemicals

Kathryn Sheridan

Making levulinic acid through technology innovation

Italian biotech start-up GFBiochemicals is the first company to produce levulinic acid at commercial scale directly from biomass, thus creating a cost-competitive platform chemical with huge potential. The product has been recognised by the US Department of ***Energy*** as one of the top bio-based building-block chemicals of the future. Applications include agrochemicals; detergents; resins and coatings; plastics; and pharmaceuticals, with many of the derivatives delivering additional performance compared to incumbent products. GFBiochemicals’ breakthrough process has produced cost-competitive economics through superior biomass utilisation and feedstock flexibility through lower capital requirements. A range of biomass can be used, including ligno-cellulosics. The cost-effective thermochemical conversion process is now being used in a retrofitted facility in Caserta in Italy, with 10,000 tonne/year output planned for 2017.

BEST INNOVATION BY AN SME

Sponsored by ExxonMobil Chemical

Cella ***Energy***

Eleni Polychroniadou

Solid hydrogen

Hydrogen is an ideal fuel: it has huge ***energy*** and is ***emissions***-free. However, as a gas, it is difficult to package for applications. UK-based Cella ***Energy*** has combined a boron-based hydride and a polymer to create a plastic-like solid that is safe to handle, easy to process and releases large quantities of hydrogen rapidly when heated to over 100 C. The price of the material is comparable to other forms of hydrogen when made in bulk, and when chemically regenerated using renewable ***energy*** is a viable low-carbon alternative to fossil fuels. When combined with a fuel cell, Cella’s material can deliver three times the ***energy*** of even the best lithium-ion batteries. Cella is now developing a pelletised form that can be pumped like a fluid. The pellets are extruded, chopped and then coated in a hydrogen-permeable polymer which acts as a filter to purify the hydrogen. Pellets make it possible to transport the hydrogen in tankers and pump it into systems that require large quantities of fuel.

Global Bioenergies

Ronan Rocle

Direct fermentation to high-purity bio-based isobutylene

French company Global Bioenergies uses synthetic biology to adapt metabolic pathways in micro-organisms so they produce light olefins directly from carbohydrates. Light olefins are the main petrochemical building blocks and can be integrated into current value chains, making them entirely bio-sourced. The light olefins produced evaporate from the fermentation medium and can thus be recovered at low cost. For isobutylene, a partnership has been established with France’s Arkema for use in paints and acrylic glass, leading to an industrial pilot in France with a capacity of 10 tonnes/year. This pilot started operations in November 2014 and has delivered samples of bio-based isobutylene. In May 2015, Cristal Union, a leading French sugar producer and the fourth largest in Europe, announced that it had formed a joint venture with Global Bioenergies to build and operate the first commercial bio-isobutene plant in France, with 50,000 tonne/year capacity, expected to start operations in 2018.

BEST BUSINESS INNOVATION

Dow Chemical

Corey Newsom

Pack Studios – Dow introduces new collaboration model for the packaging industry

Retail store shelves are being transformed as the move from rigid to flexible packaging continues to gain momentum. Moving beyond traditional product and process development, polymer and packaging specialist Dow Chemical has created Pack Studios to enhance collaborative engagement with customers and key value chain members, including brand owners and retailers. Collaboration across the value chain is enabled through open innovation, driving innovation in packaging, ***reducing*** time-to-market and accelerating adoption of new, better, more efficient and more sustainable packaging solutions. Pack Studios is a global network of packaging experts, equipment and testing capabilities that fosters the collaborative development of better packaging. Dow has established four regional innovation centres and maintains that this new business model for collaboration offers unprecedented ability to rapidly develop new packaging solutions.

Enerkem

Vincent Chornet

Technology to produce renewable chemicals and biofuels from non-recyclable waste

Canadian company Enerkem has developed a breakthrough technology to produce renewable chemicals and biofuels from non-recyclable waste. The proprietary technology is now being commercially deployed at the Enerkem Alberta Biofuels facility in Edmonton, Canada. This full-scale project, which began commissioning in 2013, is the first collaboration between a waste-to-biofuels producer and a metropolitan centre to address waste disposal challenges. It is also leading the first wave of commercial advanced biofuels facilities in the world while serving as a model for other municipalities on how to sustainably manage their waste. Enerkem has mastered the ability to process heterogeneous materials, such as municipal solid waste (MSW), and convert them into a synthetic gas, which is then conditioned so it can be converted into advanced biofuels and green chemicals. Enerkem’s innovative technology platform drives the circular economy and provides a sustainable alternative to the growing demand for renewable chemicals and the challenges associated with waste disposal and ***greenhouse gas*** ***emissions***.

INNOVATION WITH BEST BENEFIT FOR ENVIRONMENT AND SUSTAINABILITY

Sponsored by U.S. Chemicals

Archroma

Manel Domingo and Albert Llort

EarthColors – developing natural waste-based dyes with full traceability

The fashion industry is under tremendous pressure to implement more sustainable practice along its supply chain. Archroma recently launched EarthColors, a range of “biosynthetic” dyes for cotton and cellulose-based fabrics derived from almond shells, saw palmetto, rosemary leaves and other natural products. The dyes make use of ***agriculture*** waste products and can be used to provide rich red, brown and green colours to denim and casual wear. Archroma transforms the biomass in a patent-pending process to obtain a dyestuff with the same performance as existing petrol-based dyes. Archroma is providing shoppers with the possibility of transparency along the complete supply chain, with the help of just a smartphone. For each garment dyed with EarthColors the garment label will include a Near Field Communications (NFC) chip that contains information and tracking of the dyestuff from the natural waste raw material to the shop.

Dow Chemical

Bill Cai and ChengFeng Wang

Dow ultrafiltration Purinze applied to an eco-washing machine

Dow Chemical’s Purinze is the first ultra-filtration (UF) module designed for recycling of water in a domestic washing machine. The technology has been used since 2014 in Haier Group’s washing machines to purify and recover water, dramatically ***reducing*** water usage. The technology can also be used in dishwashers and other home uses. The fine pore size of the UF membrane forms the core of the Purinze technology. It collects suspended solids, debris, bacteria, mites and more, and circulates much cleaner filtrated water back to the washing tub. The filtration and rinsing are carried on simultaneously. Patented steps clean the membrane by aeration and detergent cleaning to ensure long product life and minimal maintenance, a key to deployment in consumer machines. The new machine ***reduces*** water consumption by 33%, limits waste water discharge to environment by 33% and improves washing quality. Replacing one-third of the washing machines in China with the new UF models would save over 1bn m3 of water per year.

Global Green Products

Larry Koskan

Fresh water conservation in the Bakken

Oil wells in the US Bakken shale field produce more than just oil, they also produce salty formation water (typically 1-3 bbl of water/bbl of oil). Until now, the oilfield’s answer to this problem has been to dilute the formation water with fresh water at up to 50 bbl/day. This is an expensive proposition and it consumes a precious natural resource. US-based Global Green Products has developed a patented halite inhibitor product called Water-Tek that drastically ***reduces*** that fresh water consumption (by up to 80%) and is biodegradable, non-toxic, non-hazardous and hypoallergenic. This innovative green chemistry has already conserved millions of barrels of fresh water in the Bakken field and saved operators tens of millions of dollars, the company says. Less fresh water downhole means less produced water, a ***reduction*** in waste water disposal and an increase in deferred production.

DIGITAL SOLUTIONS dRIVE BUSINESS INNOVATION

Dr Detlef Kratz

Dr Detlef Kratz is responsible for corporate technology & operational excellence at BASF and is a member of BASF’s commission for investment and M&A. He has experience in R&D, production, strategy, technology and business, and a PhD from the University of Heidelberg.

CATEGORY SPONSOR EXXONMOBIL CHEMICAL

international management consultancy Roland Berger Strategy Consultants is honoured and delighted to continue as overall sponsor of the ICIS Innovation Awards 2015 and to continue this year as sponsor of the Best Product Innovation category. Our sponsorship of this prestigious programme reflects Roland Berger’s commitment to helping clients develop and improve their innovation capabilities from innovation strategy through to implementation of innovation processes and organisation structures.

Digital innovation

Traditionally, “innovation” has been most strongly linked to, or synonymous with, R&D. We have actively supported the ICIS programme in extending the scope of “innovation” to include and recognise examples of innovative business models being adopted by firms within the broader context of business innovation. We believe no better example of extending such boundaries is the emergence of digital technologies and solutions when applied to areas of product and process technology, engineering and manufacturing.

At Roland Berger we are actively supporting companies in the industry to identify opportunities for efficiency improvement and market effectiveness across the whole internal value chain, from product innovation through to manufacturing and customer-facing solutions enabled though digital technologies. Examples of innovations range from topics such predictive maintenance solutions in “classical chemicals” processes, through to new market intelligence systems and services for customer management in crop protection.

We believe that faster market impact of product and process innovation across global value chains will be enabled through this increasing shift from analogue to digitally enabled business models.

Roland Berger Strategy Consultants, founded in 1967, is the only leading global consultancy of German heritage and European origin.

With 2,400 employees working from 36 countries, we have successful operations in all major international markets. Our 50 offices are located in the key global business hubs. The consultancy is an independent partnership owned exclusively by its 220 partners.

Dr Neil Checker

Partner, Roland Berger

Dr Peter Nagler

Dr Peter Nagler was chief innovation officer at Evonik Industries and previously head of Corporate Innovation Strategy & Management. He now focuses on stepping up efforts to internationalise innovation at Evonik. He holds a doctorate in chemistry.

FOR THE past six years, U.S. Chemicals has been honoured to have sponsored the Best Environmental Benefit category of the ICIS Chemical Business Innovation Awards. Each year has offered a positive look at responsible manufacturing and creative ways of doing things differently to help improve our environment.

We were pleased to see the category widened recently to include innovations that support and drive sustainability innovation as well, which is in line with our own company philosophy.

Serving the needs of the chemical industry for over 50 years, U.S. Chemicals combines quality, innovation and service like none other. U.S. Chemicals has built a team of industry experts that thoroughly understands the complexities of the chemical industry and includes experts at material sourcing and acquisition.

U.S. Chemicals serves as a single source for the chemical acquisition needs of many industry sectors, including paint, ink and coatings; chemicals and textiles; cosmetic and personal care products; flame retardants; food and pharmaceutical; plastic; and rubber. It offers prompt delivery from multiple warehouse locations throughout the US.

Its worldwide network of resources assures customers of highly competitive pricing, optimum quality and consistency, and rapid worry-free sourcing and delivery.

Carol Piccaro

President and CEOU.S. Chemicals

Pascal Juery

Pascal Juery is a member of the executive committee of Solvay. He joined Rhone-Poulenc in 1988 and eventually became head of Rhodia’s Novecare business and a Rhodia executive committee member in 2010. He is a graduate of the European Business School of Paris (ESCP).

SUSTAINABILITY IS GROWING IN IMPORTANCE

Cultura/Rex Shutterstock

Dr Walter Vermeiren

Dr Walter Vermeiren is head of technology intelligence in the R&D division of Total Refining & Chemicals. Until recently he headed the new technologies department in Refining & Chemicals. He has a Masters degree in bio-engineering and a PhD in catalysis from University of Leuven.

**Load-Date:** September 1, 2015

**End of Document**



[***Pioneering projects in food and agriculture win £17.8 million***](https://advance.lexis.com/api/document?collection=news&id=urn:contentItem:5H7P-FFT1-F0K1-N16H-00000-00&context=1516831)

M2 PressWIRE

October 27, 2015 Tuesday

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**Length:** 4101 words

**Body**

October 27, 2015

Pioneering projects to improve ***agriculture*** and food production at home and overseas, have been funded to the tune of £17.8 million, under the latest round of the Government's Agri-Tech Catalyst.

Projects include one assessing the potential to commercialise the farming of lobsters, a proposal to cultivate scallops on ropes and a way of continuing to make whisky with UK wheat, by using a novel variety.

The technologies are among 21 successful bids that have won a competition run by the UK's innovation agency, Innovate UK, to ***target*** commercially promising new technologies to provide an economic boost to the UK ***agriculture*** sector.

Speaking at the opening of Agrimetrics, the UK's first big data centre of excellence for the whole food system, at Rothamsted Research, in Harpenden, Hertfordshire, Life Sciences Minister George Freeman MP said:

By harnessing science to ***reduce*** water and pesticide usage, and to pioneer greener modern farming, the UK is leading the way in boosting ***agricultural*** productivity.

Investing in pioneering agri-tech projects like these is win-win for the UK as these technologies will improve food production and create businesses and jobs up and down the country. British solutions for ***agricultural*** challenges

Ian Meikle, head of ***agriculture*** and food, at Innovate UK, said:

By supporting these project partnerships - many of which include small businesses - Innovate UK is backing British solutions for ***agricultural*** challenges. These schemes are helping to create new jobs and will open up new markets and drive productivity.

Professor Jackie Hunter, BBSRC chief executive, said:

Investing in advances in ***agriculture*** is vital, not only for our future food supply but also to help build the UK bio-economy. These new research projects highlight how UK bioscience is at the forefront of innovative approaches for modern farming.

Agri-Tech Catalyst

The funding was awarded through the Agri-Tech Catalyst,which was set up by the Department for Business, Innovation and Skills, Innovate UK, Department for International Development and the Biotechnology and Biological Sciences Research Council (BBSRC) with a £70 million investment to help make the UK a world leader in ***agricultural*** technology, innovation and sustainability.

The Agri-Tech Catalyst offers funding for collaborative projects, taking innovative ideas from any sector or discipline with the potential to provide an economic boost to the UK agri-tech industry, by tackling challenges in ***agriculture***.

The scheme will help to take innovations all the way from concept to commercialisation, awarding grants for early-stage pre-industrial research feasibility studies, industrial research, and late-stage pre-experimental and experimental feasibility studies. Any UK business or academic researcher can apply.

The Agri-Tech Catalyst will fund proposals relating to:

- primary crop and livestock production, including aquaculture

- non-food uses of crops including ornamentals (for example, for biomass)

- food security and nutrition challenges in international development

- challenges in downstream food processing, provided the solution lies in primary production.

Full summaries of funded projects:

Agri-Tech Catalyst Round 4 - Late Stage

Project 1: VerticalVale: Viability of the Saturn Grower in commercial farming

Partners: Saturn Bioponics, ValeFresco

Saturn Bioponics are working on a collaborative project with leading fresh produce growers ValeFresco, to prove and showcase the benefits that the Saturn Grower vertical growing system offers in a commercial growing environment.

The project will demonstrate the 2.5-3.5% yield increase and ***reduced*** costs of production the system delivers on leafy crops, with particular focus on pak choi.

Results have wider application across the fresh produce industry, in particular for leafy salads, herbs and soft fruit. The project enables a step change in the economics of high-value crop production.

Project 2: Improving hydroponic production using new online nitrate sensor

Partners: Sharp Laboratories Ltd; Lincolnshire Herbs Ltd; APS Salads Ltd; May Barn Horticultural Consultancy Ltd

Many crops, including tomatoes, lettuce, herbs, strawberries, raspberries and ornamental flowers are often grown using hydroponics, where fertiliser for the growing plants is supplied in the irrigation water. Hydroponic farming produces excellent quality crops with good efficiency but there is an opportunity to improve the method by continuously monitoring and controlling the fertiliser components in the irrigation water.

This project aims to enable better control over the use of nitrate, which is an important component of the fertiliser. A new sensor, which can be used to continuously measure the nitrate concentration in irrigation water will be deployed at commercial hydroponic farms, allowing continuous nitrate monitoring for the first time.

We will evaluate the potential for expected benefits including ***reductions*** in fertiliser use and expense and smaller discharge of fertiliser into natural waters, helping to meet environmental legislation.The technology is relevant to UK and global farming.

Project 3: Real-time information systems for precision pig production

Partners: Farm ***Energy*** & Control Services Ltd; ARM Buildings Ltd; Garth Pig Practice Ltd; DC & RJ Allen & Partners; J M Sankey Fmrs; DA & EM Skinner; Stockcroft Ltd; Yorkwold Pigpro Ltd

This project unusually involves a consortium of prime producers and technology suppliers. It is farmers who will actually deliver on sustainable intensification and that is why this project involves them directly as full partners.

Entitled real-time information systems for precision pig production, the project will commercially pilot a recently developed system - Guardian Action - as a precursor to full UK industry roll-out. The information system provides real-time remote data recovery from pig production units and allows browser access to the processed and analysed data designed to create knowledge at a farm level.

In addition, anonymous data will be pooled and analysed to add further value for end users. Crucially, the pilot will include the setting up of a customer support resource to ensure that end users can turn the knowledge into profit. Uniquely, veterinary and nutritional expertise will complement the data analysis and interpretation. The system will be supplied and supported on a subscription fee basis.

Agri-Tech Catalyst Round 4 - Industrial Research

Project 1: Cocoa farm of the future

Partners: Mondelez UK R&D Limited; Tree Global Ghana Ltd; Cocoa Research Institute of Ghana

Without cocoa there is no chocolate and without the next farming generation, there is no cocoa. A vibrant cocoa supply chain is essential for the future of chocolate and - through the Mondelez Cocoa Life sustainability programme - we are leading its transformation.

As part of the programme, Mondelez UK R&D Limited is leading a project to transform the way cocoa is grown and dramatically boost farm yields and farmer incomes. By implementing this project in Ghana we are seeking to directly improve farming practices and technologies for the benefit of many thousands of Ghanaian cocoa producers and to ensure that high-quality Ghana cocoa continues to be the foundation ingredient in some of the UK's best loved chocolates, like Cadbury Dairy Milk.

Project 2: Third generation polyethylene greenhouse cladding materials

Partners: British Polythene Ltd; Haygrove Tunnels Ltd; Berry Gardens Ltd; Finlays Horticulture (Kenya) Ltd; A. Schulman Inc Ltd.; The University of Reading; The University of Lincoln; East Malling Research

This project will develop a range of novel, third-generation, greenhouse film cladding materials. The films will be spectrally modified to drive completely passive benefits to primary greenhouse growers worldwide.

We will modify materials to change their UV transmission, the scattering of photosynthetically active radiation and to reflect near infra red heat. The benefits ***targeted*** will include yield and quality gains, the ***reduction*** of solar heat load and potential ***reductions*** in pest incidence.

For primary producers the technology is low cost, and small production gains will justify investment in the technology. In terms of film manufacturers the global market for specific greenhouse film is worth c. £1.4 billion. However, it has a low level of product differentiation. Thus, innovations within this project have real potential to secure significant sales and export opportunities.

Project 3: MUST: Miscanthus scaling technology

Partners: Terravesta Assured ***Energy*** Crops, Bell Brothers Nurseries, Edwards Farm Machinery, Aberystwyth University, Nutriss, CERES

The UK needs to ***reduce*** CO2 ***emissions*** in order to mitigate climate change, and green technologies will also stimulate economic activity. Bioenergy crops provide an alternative to fossil fuels, where wood, straw and other biomass is burnt in power stations, in order to generate electricity. 75% of the biomass we burn is imported.

Miscanthus is a plant with a straw-like stem that grows 2-3 metres high in a year, is harvested in spring and grows back from the roots to produce a crop each year. The harvested crop is burnt in power stations. It grows well on land that is not suitable for food crops.

The current method for planting miscanthus is from sections of root dug up from other miscanthus plants, but this limits how much we can plant each year. Planting miscanthus seed would allow us to speed up deployment. This project aims to understand how to produce miscanthus seed, plant and look after it successfully, and harvest it effectively, so we can grow more of the crop in the UK and create a new industry.

Project 4: BirdEase: An integrated diagnostic system for bacterial detection in poultry farms

Partners: Greengage Lighting Ltd; University of Cambridge; Cramasie Ltd; 2 Sisters Food Group; Campden BRI; CASI Everysite (TLR Ltd)

There is increasing pressure within the poultry industry to improve biosecurity measures & cleanliness in primary production; advanced diagnostics for early disease detection are high on the agenda. In response to this specific industry need, this project will develop an integrated on-farm early-warning bacterial sensing system for intensive poultry production systems, ***targeting*** key food-borne disease pathogens prevalent in poultry meat: campylobacter, E.coli & salmonella.

The proposed innovation integrating sample collection, chemical-free enrichment, acousto-optic detection & seamless user presentation, is enabled only by the inter-disciplinary convergence of leading agri-scientists & engineers with poultry producers & industry informers. The overarching objective is to enable earlier decision making by producers to instigate preventative control measures that minimise downstream cross-contamination, thereby decreasing foodborne disease incidence within the supply chain.

Project 5: Aquaculture of the great scallop: Field tests for rope-growing techniques

Partners: Scalloptech Limited; Portland Oystermen Limited

The project focuses on UK field testing of rope growing methods for the great scallop in the UK. The project will test variables affecting productivity of rope-growing techniques in order to (i) prove that it is a viable mode of production for large-scale commercial application; (ii) demonstrate the advantages of rope growing over current scallop aquaculture practices; and (iii) to optimise methodology for the implementation of the technique.

The output of the project is intended to be data and know-how which will form the basis of a model to generate funding for commercial exploitation of such methods. One project is examining the feasibility of rearing scallops on ropes

Project 6: Novel low-viscosity wheats for distilling

Partners: The Scotch Whisky Research Institute, Rothamsted Research, Limagrain UK

A new collaboration between industry and academics has been funded which aims to utilise a novel non-GM approach to improve a major UK crop. The project, which involves Rothamsted Research and two industrial partners, The Scotch Whisky Research Institute and Limagrain UK, will run from 2015-2018. A successful outcome will demonstrate the potential to greatly accelerate development of novel varieties of crops for different end uses.

A novel variety of wheat could be used for whisky distillation among other things

Project 7: Lobster Grower 2 - Assessing the technical, economic and environmental potential for a novel candidate aquaculture species

Partners: The National Lobster Hatchery; University of Exeter; West Country Mussels; CEFAS; Falmouth University

Support from the Agri-tech Catalyst has been secured for a 36-month project, addressing fundamental food security challenges by examining novel angles to expand aquaculture; to include a species not currently exploited, the European lobster. This species commands the highest value (by volume) of any species landed in the UK and exhibits a significant supply deficit. Sea-based culture, in containers (SBCC) exhibits the potential for a low-carbon form of rearing with no feed costs.

The project will use containers specifically designed for the species, developed in an early stage project, to assess performance and develop holistic application of SBCC systems. The project will run a pilot scale lobster farm to gather practical, operational, environmental, biological, engineering, economic and social data that can be used to develop an essential tool to encourage and inform future investment. The consortium will be led by the National Lobster Hatchery and consists of two SMEs, two HEIs and a government agency.

Project 8: Innovative plant breeding & phenotyping technologies to ***reduce*** nutrient requirement of forages and improve livestock production efficiency

Partners: Germinal Holdings; Aberystwyth University

A major challenge facing the UK livestock centre is the need to fulfil the increasing demand for meat and milk products whilst ***reducing*** the environmental impact of production. This project will apply innovative plant genetics and breeding approaches to the development of improved varieties of perennial ryegrass and white clover with increased nutrient use efficiency (NUE) and deliver environmental and economic benefits to primary producers and wider society.

It will also deliver commercial return to the seed company Germinal Holdings Ltd., who will market the improved varieties. The project will use the National Plant Phenotyping Centre in Aberystwyth as a bridge between studies in flowing solution culture and in the field and to develop high throughput technologies for the effective screening of new plant varieties with improved NUE in the glasshouse and in the field.

Project 9: Improving female fertility and calf survival in the UK beef industry

Partners: British Limousin Cattle Society, SRUC

Fertile suckler beef cows and low calf mortality are essential for profitable beef production systems. To improve cow fertility and calf survival, national data will be used to develop genomic breeding values for fertility and survival.

Genomic selection is a novel breeding tool, which increases the rate of genetic improvement for traits that have traditionally been difficult to improve, such as fertility and survival. As a result, the overall efficiency of the UK beef industry can be improved as cows will be more fertile and produce more calves in their lifetime and more calves will survive.

This will increase production, but just as important do it in a sustainable way that ultimately will ***reduce*** the ***greenhouse gas*** ***emissions*** per kg beef produced. This project is innovative as beef genomics is still in its infancy and there are currently no breeding tools available for the genetic improvement of survival.

Project 10: Benchmark scenario planning in primary production: creating sustainable change

Partners: Syngenta Limited; AGCO Limited; AGCO Zambia Limited; University of Southampton; Aberystwyth University

Across the world we face growing issues of food security and nutrition. Agri-science is one of the eight great technologies where the UK can link research strength to practical application to farming practices and the food industry.

This project focuses on improving outcomes in primary production, and hence food security, by using advanced technologies to facilitate efficiency benchmarking for both productivity and environmental performance. The hypothesis we will investigate is that historic data patterns can be used to support farmers' decision making, a positive impact on global food security in a sustainable way.

High resolution data measurements will be evaluated in large scale and smallholder ***agriculture*** at locations in Zambia and the UK. Syngenta, AGCO, the University of Aberystwyth and the University of Southampton are working with other academic and international development organisations to deliver the project.

Project 11: Building genomic breeding pyramids for Indian cattle

Partners: Tropical Animal Genetics Private Limited (TAG); University of Edinburgh

The objective of this project is to increase the incomes of resource-poor, including landless, dairy farmers in India by establishing a process of continuing genetic gain. This will be achieved by developing a breeding pyramid to offer routinely to farmers first-cross heifers between Holstein and Sahiwal.

This will be achieved through two innovations: the first, to establish specialist producers of heifer calves produced following embryo transfer; the second, to use DNA technology to establish reciprocal recurrent genomic selection (RRGS) for both Holstein and Sahiwal parents to maximize the productivity of the crossbred.

This will capture in a sustainable structure the hybrid vigor in productivity of the crossbred in both yield and fitness for the production environment. The direct benefits will be obtained by the women of the household as they are typically responsible for the dairying activity and receive the income from it. In addition the scheme will diversify the sector and secure the indigenous breed resources.

Agri-Tech Catalyst Round 4 - Early Stage

Project 1: Feasibility study to develop technology for predicting wheat yield

Partners: Selex ES; SOYL

The collaborative project between Selex ES and SOYL will test the feasibility of developing new technology for predicting wheat yield using a wide range of data including remotely sensed information describing the crop and soil. The project is highly innovative as it seeks to produce the first commercially viable yield prediction service that not only predicts yield, but also identifies the key factors expected to limit yields.

New applications for remote sensing technologies will be developed and innovative techniques for integrating a wide range of data types will be employed. The ultimate goal of this initiative is to produce a decision support tool that enables more efficient operating practices for a wide range of clients within the wheat industry.

Project 2: Development and validation of a system for automatic detection of lameness in sheep

Partners: University of Nottingham; Dunbia (Wales); Farm Wizard

This project seeks to address the challenge of sheep lameness, a predominant cause of both poor productive and reproductive performance on sheep farms costing industry around £80 million a year. Lameness control relies on early detection and treatment of lame sheep yet there are no suitable/optimal tools for lameness detection. The project proposes to develop and test validity of a system for automatic lameness detection in sheep.

Project 3: Vaccine diluent improvement for ECF-ITM

Partners: GALVmed, CTTBD, Arecor Ltd

This project represents a unique opportunity to translate British technology and expertise from the human health sector into livestock disease control in the developing world context. The project focuses on East Coast Fever (ECF), a major constraint on small-holder cattle production in East, Central and Southern Africa.

An effective vaccine, ECF-ITM, currently exists for the disease but it has a number of important drawbacks that affect its use in the field. This project will trial the use of novel formulations as a replacement for the ECF-ITM vaccine diluent. Success in the project will deliver important ECF-ITM vaccine product enhancements, notably vaccine stability.

This will afford far greater mobility and flexibility to ECF vaccinators resulting in an estimated 300,000 additional cattle being effectively immunised per year. This will be a notable development in the sustainable intensification of small-holder cattle production in the region.

Project 4: Aphid-resistant wheat for the smallholder farmer in Africa

Partners: Rothamsted Research; Seed-Co Ltd

Seed-Co are the largest seed company in Africa, operating in 13 countries in Eastern, Central, Western and Southern Africa and have developed varieties suitable for different environmental conditions as well as for the smallholder farmer, therefore any pest resistance traits will benefit farmers in Africa and further afield.

Smallholder farmers face difficult challenges in protecting their crops against pests and diseases in these countries. Aphid pests can cause severe damage and yield losses to wheat. This project will identify wheat lines which show resistance to aphids, which can be bred into wheat varieties suitable to be grown in rain-fed, low-potential environments, thereby safeguarding the yield of smallholder farmers and ***reducing*** the reliance on expensive and environmentally unfriendly pesticides. By doing this we hope to contribute to the food and income security of the African smallholder farmer.

Project 5: Application of general repellents against ***agricultural*** pests

Partners: Russell IPM Ltd; Russell IPM Bangladesh Ltd; Bangabandhu Sheikh Mujibur Rahman ***Agricultural*** Uni; East Malling Research; Natural Resources Institute, University of Greenwich

General semiochemical repellents are widely used for protecting humans and livestock from attacks by arthropod pests in developing and developed countries, but they have been little explored or used for crop protection. The aim of this project is to prove the concept that volatile, repellent chemicals can be used to ***reduce*** the damage caused to ***agricultural*** crops by a range of insect pests.

This could provide a widely-applicable new approach to management of crop pests that ***reduces*** the use of conventional pesticides and is compatible with integrated pest management and sustainable ***agricultural*** intensification. The approach is applicable in both developed and developing countries.

The project will be a collaboration between a UK SME, Russell IPM, two UK research institutes, East Malling Research and the Natural Resources Institute, and an SME, Russell IPM Bangladesh, and university, Bangabandhu Sheikh Mujibur Rahman ***Agricultural*** University, in Bangladesh

Project 6: Pan-specific vaccine to control Streptococcus agalactiae disease in tilapia aquaculture

Partners: Moredun Research Institute, Benchmark Animal Health Ltd.

As the world population grows and becomes more affluent, an increasing number of people include protein in their diet. Aquaculture is the fastest growing source of animal protein and a major source of income in Asia, South America and Africa.

Tilapia is a popular fish, both with farmers and consumers, but disease can cause massive losses on tilapia farms. Streptococcus agalactiae, which can affect tilapia as well as people, is a major cause of such losses. Currently, antibiotics are commonly used to combat this problem. This is not sustainable because of the risk of antimicrobial resistance.

As an alternative, we propose to develop a vaccine that would protect fish from all types of S. agalactiae that affect them. This project brings together scientific expertise in the area of fish disease and vaccine development and commercial expertise in vaccine production and distribution. Jointly, the partners aim to provide the global aquaculture industry with effective and affordable tools for sustainable disease control.

Project 7: Early attractants for the major new fruit pest, Drosophila suzukii; a 'super lure'

Partners: Berry Garden Growers; Real IPM; East Malling Research; University of Greenwich

The UK fruit industry is under continual pressure from the introductions of non-native pests and diseases. This project will aim to better monitor and time pesticide application against a highly damaging soft and stone fruit pest, Drosophila suzukii. It will achieve this by developing a more species specific attractant for future use in monitoring traps and, eventually, control technologies.

**Load-Date:** October 27, 2015

**End of Document**



[***Same-sex marriage and emissions target debates dominate parliament - politics live; The Coalition tries to move past a six-hour party room debate which resolved against allowing a conscience vote. Half the frontbench opposed the prime minister's position. All the developments from Canberra***](https://advance.lexis.com/api/document?collection=news&id=urn:contentItem:5GN9-MFJ1-JCJY-G32X-00000-00&context=1516831)

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**Byline:** Katharine Murphy

**Body**

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Nighty night

That will be all for this evening. Fortunately all quiet, no convulsions, just an orderly lurch into Thursday, the final parliamentary day of the week.

Communications minister Malcolm Turnbull during question time on Wednesday. Photograph: Mike Bowers for the Guardian

Well, we hope so anyway.

Opposition leader Bill Shorten during question time on Wednesday. Photograph: Mike Bowers for the Guardian

Thanks again for your company. I can't actually recall whether I got down into the thread today or not, but in any case thanks for the Politics Live conversation.

Today, Wednesday:

* <strong>Tony Abbott gave a strong signal the Coalition will pursue a plebiscite as part of resolving where to go on same-sex marriage, some time after the next federal election.

1. The prime minister presented this as an aspirational thing - look guys, you all get a vote, the people's vote - while declining to linger on the key point that a key stakeholder, <strong>Tony Abbott, would be leading the no case rather than the yes case.
2. Labor said this was a delaying tactic, pure and simple. The prime minister confirmed the matter would get less than expeditious treatment by declining the Liberal MP <strong>Warren Enstch's polite request that the plebiscite be put at the next federal election.
3. The communications minister, <strong>Malcolm Turnbull, <strong /> told reporters for his part that the plebiscite was not yet government policy. Presumably cabinet would get a say in it, for example. He also made the point that a plebiscite ensured the issue would continue to run when the government would be better placed focussing on other issues.
4. <strong>Christopher Pyne, who compared <strong>Tony Abbott to a branch stacker on Wednesday when the prime minister insisted that marriage would be debated by the joint parties, not by the Liberal party, stuck by his argument that the Liberal party should have been permitted to carry out its own affairs.

Education minister Christopher Pyne and prime minister Tony Abbott during question time on Wednesday. Photograph: Mike Bowers for the Guardian

That's your main points.

Have a lovely evening.

Let's do it all again in the morning.

block-time updated-timeUpdated at 6.07pm AEST

block-time published-time 5.33pm AEST

Sinodinos is remarkably frank about the implications for Tony Abbott's leadership. He says it's neutral. If you are an Abbott supporter, you'll go on being that in the wake of this outcome. If you aren't...

(It's possibly about then in the answer when the senator realises his little boat is out quiet a long way. He doesn't linger on the thought.)

block-time updated-timeUpdated at 6.07pm AEST

block-time published-time 5.30pm AEST

Q: If you are going to have a plebiscite on this, why not on euthanasia or on climate change?

Arthur Sinodinos:

That's a good point.

He says, well, this is where we've ended up. We all had a say. We all can own the outcome.

block-time published-time 5.28pm AEST

Liberal senator Arthur Sinodinos is being interviewed on Sky now and is being asked about same-sex marriage. Sinodinos spoke up in favour of marriage equality last night. He confirms he told colleagues:

I can't look a gay person in the eye and say you are children of a lesser god.

Sinodinos said he wanted a free vote but it's clear the numbers just aren't there for change.

In that sense the outcome was fair.

What does he think of a plebiscite?

It's beginning to sound very reminiscent of 1999 and the republican debate.

I supported a free vote because I thought it was a good idea to deal with the issue now and get on with other things.

I was happy for parliament to have the say but this is where we've ended up and I can live with it.

Sinodinos notes that if you support same-sex marriage, it's time to ramp up the yes campaign.

Time to get busy.

block-time updated-timeUpdated at 6.08pm AEST

block-time published-time 4.46pm AEST

Pyne is however more sanguine about the plebiscite than his colleague Malcolm Turnbull evidently is. He makes the point that the numbers aren't there in the House of Representatives right now for a yes vote on marriage equality. Pyne thinks the plebiscite might help deliver the result, in effect delivering a yes vote, which then forced the hand of the parliament. He suggests he supported a conscience vote as a matter of principle, not as the only way of skinning the marriage equality cat.

block-time published-time 4.42pm AEST

Christopher Pyne stands by his position that marriage should have gone to the Liberal party room

The manager of government business is speaking on Sydney radio. Christopher Pyne isn't taking a backward step after events yesterday.

He says is view was the Liberal party should have had a meeting on its own to determine the position on same sex marriage. He says there was absolutely no reason why that couldn't happen.

Pyne says the debate yesterday evening uncovered the fact that half the front bench and one third of the backbench supported a free vote.

But a decision was made not to have one.

block-time published-time 4.36pm AEST

I'm sorry I keep talking to people calling by the office. I'm a disgrace to live blogs.

It really is funny isn't it - the prime minister's aspirational pitch on the people's vote on same-sex marriage. I don't think he's said once today that he would campaign against it.

block-time updated-timeUpdated at 6.09pm AEST

block-time published-time 4.08pm AEST

Meanwhile, to our south (or to my south anyways), the Victorian Liberal leader Matthew Guy has some choice words for the party leadership in Canberra.

Wake up, Tony - you are spoiling things for all of us.

Matthew Guy:

I think Australians are just utterly sick of federal politics and I'm not surprised why. They are poisoning the well of good will for all other elected politicians in the country.

People who feel that members should be bound on matters of conscience by a party vote, well, they need to go back and look at the rationale on which our party was founded by Robert Menzies - it wasn't one of binding votes, it was one of conscience.

block-time updated-timeUpdated at 6.09pm AEST

block-time published-time 4.02pm AEST

Sky News political editor David Speers asks about the costs of abatement. Hunt says the costs between 2018-2030 will be $2.4bn - a very manageable cost.

Speers points out that assumes the government can achieve abatement at an effective carbon price of $14 a tonne. Will you get abatement at $14 a tonne? Hunt says he wont speculate because it's a commercial bidding process.

In the event the budget blows out, will the government spend more or will it miss the ***target***? Hunt initially shrugged that off as a hypothetical, then said what the government usually says about this: our expenditure is always on a capped basis.

That means the government won't spend more. It will miss the ***target***.

Hunt was asked about policies keeping to pledges on 2 degrees warming. He said the UN-led talks in Paris won't tie everything off. He says the world could undertake another pledging round in five years.

Speers asks when the government will reveal penalties for business who pollute too much. Hunt said the government will release a paper on that in the coming weeks.

Q: Will the penalties be serious?

There are provisions to deal with rogue emitters.

Q: Financial penalties?

Yes.

But he adds the system is about meaningful baselines and safeguards, not about punishments.

block-time published-time 3.47pm AEST

Environment minister Greg Hunt is on Sky News, trying to steer the conversation back to ***emissions*** ***reduction*** that won't club the economy.

He references the United States ***target*** but more precisely than the prime minister - Australia has the same headline cut, but on a different time frame.

block-time published-time 3.25pm AEST

A journey of ignorance and hate to acceptance and love

I didn't get to share this before question time, but it's a contribution well worth your time this afternoon. The Labor MP Tim Watts today shared a story of his Uncle Derek, who died of Aids in rural Queensland in the 1980s.

Tim Watts: 'Believe it or not, not all gay men are Italian fashion designers.'

Watts told the chamber his plan was to contribute a very clinical speech in support of same-sex marriage, but his plans changed when he read the government Senate leader Eric Abetz's characterisation of gay men during yesterday's marathon same-sex marriage debate.

Believe it or not, not all gay men are Italian fashion designers.

block-time updated-timeUpdated at 5.03pm AEST

block-time published-time 3.12pm AEST

Labor's climate spokesman Mark Butler persists on the modelling.

Q: It's been reported today that government modelling shows that an ***emissions*** ***target*** of 45% ***reduction*** would mean a cut of between 0.5% and 0.7% of GDP. Does the prime minister still stand by the answer he just gave?

Butler is referring to Lenore Taylor's story this morning that I linked to earlier in the day. She's seen the as-yet unreleased modelling.

Here's Lenore:

The government's modelling showed that the 26% ***target*** would shave between 0.2% and 0.3% from Australian GDP in 2030, but the same modelling found a 35% ***target*** would cut only 0.3% to 0.5% and a 45% ***target*** would cut between 0.5% and 0.7%. (The modelling looked at the costs of doing no more after the 2020 ***target*** was reached, and of cutting by 26% by 2030, by 25% and by 45%.)

This is obviously quite different to the 2% Abbott just referenced in his answer to Plibersek. Abbott avoids the contradiction by talking about other modelling commissioned by the former Labor government and throws in a "Carbon Bill" for good measure.

Further questions have been placed on the notice paper.

block-time published-time 3.04pm AEST

I note the interwebz is fired up about this terrific chamber shot from Mike Bowers of the treasurer Joe Hockey.

Treasurer Joe Hockey during question time in the House of Representatives on Wednesday 12 August. Photograph: Mike Bowers for the Guardian

undltr. @[*rs200077@BrettLeeRetired@mpbowers@murpharoo@GuardianAus@sports\_banter@On\_Da\_Ball#qtpic.twitter.com*](mailto:rs200077@BrettLeeRetired@mpbowers@murpharoo@GuardianAus@sports_banter@On_Da_Ball#qtpic.twitter.com)/ZXfAKkeJZS

- Jules The Red (@RedJules4) August 12, 2015

enltr @BrettLeeRetired@mpbowers@RedJules4@murpharoo@GuardianAus@sports\_banter@On\_Da\_Ball Token Joe the new Pavarotti pic.twitter.com/BA2knK8dqC

- David Walsh (@rs200077) August 12, 2015

But I need to sprint back to modelling, quick sticks.

block-time updated-timeUpdated at 3.10pm AEST

block-time published-time 3.00pm AEST

Labor's Tanya Plibersek wants to know if the prime minister stands by another statement in the House yesterday: that his government's modelling shows a 40% cut results in a cut to GDP of 2%?

The prime minister says he does, yes.

block-time published-time 2.55pm AEST

Is aspiration a ***target***?

Shorten asks the prime minister will he apologise for misleading the House yesterday when he said Australia's post-2020 ***target*** was the same as America's when the US ***target*** is about 40%, not 26-28%?

Speaker Smith would like misleading withdrawn because there are other forms of the House for dealing with such matters.

Shorten drops misleading.

Abbott digs in as he answers.

The United States has no ***target*** beyond 26 to 28%.

My understanding is the US has a two-tier ***target***. The US has said it will ***reduce*** greenhouse ***emissions*** by 26% to 28% below 2005 levels in 2025 and aim for an 80% ***reduction*** by 2050.

The first tier involves action more quickly than the Australian road map. Perhaps the prime minister doesn't regard aspiration as ***targets***?

block-time updated-timeUpdated at 3.12pm AEST

block-time published-time 2.46pm AEST

If you won't rule out increasing the GST, why did you promise 33 times not to increase the GST?

This question is from Labor's Tony Burke to Tony Abbott. The prime minister says any increase will go to the voters at an election. Why don't you join the conversation, the prime minister says. The jobs and growth conversation.

Funny, Wayne Swan used to have that same conversation all the time he was in treasury portfolio in the previous Rudd and Gillard governments.

Jobs and growth. Same mantra.

block-time updated-timeUpdated at 3.13pm AEST

block-time published-time 2.42pm AEST

Put down the props, Speaker Smith says. On the seat.

Education minister Christopher Pyne holds up the Daily Telegraph during question time in the House of Representatives on Wednesday afternoon. Photograph: Mike Bowers for the Guardian

block-time updated-timeUpdated at 3.14pm AEST

block-time published-time 2.40pm AEST

The shadow treasurer, Chris Bowen, asks the prime minister why, if he's concerned about dudding voters by saying one thing before an election and doing another after it, he won't rule out increasing the GST? Abbott says he won't shut down a sensible conversation about tax reform.

I'm not going to rule out a sensible conversation about a better tax system.

The prime minister says any tax increase would go to the voters at the election, because the government keeps faith with the voters.

block-time updated-timeUpdated at 3.15pm AEST

block-time published-time 2.31pm AEST

Since Speaker Smith's ascension to the chair, Labor has been trying to persuade him to bump questions from the government that ask for reflections on opposition policies. The relevant locution is always does the minister know about any alternative policies ? Smith is not inclined to give Labor what it wants. I'm reserving judgment on Smith's performance in the chair, but I'd note that thus far the new Speaker is pretty straight bat.

Shorten asks Abbott whether he'll sack any frontbencher crossing the floor on same-sex marriage.

The prime minister says he doesn't run a Stalinist party. Some laughter at that from the opposition bench.

Abbott says members of the executive, as usual, as always, are bound by the policy of the government.

block-time updated-timeUpdated at 3.17pm AEST

block-time published-time 2.20pm AEST

Bill Shorten to Tony Abbott. How can Abbott claim to lead the party of the individual when he won't allow a conscience vote?

The prime minister is running Shorten through the results of last night. He tells Shorten voters will have a clear choice going forward, given the government has a strong disposition to put this matter to the people.

Tony Abbott:

Over there they want the politicians choice and over here, we want the people's choice - and what could be fairer than leaving this to the people of Australia?

block-time published-time 2.16pm AEST

First Dorothy Dixer is on ***emissions*** ***reduction*** ***targets***, to Tony Abbott. Better than Japan, better than Korea, vastly better than China, a whisker below Canada and New Zealand, Abbott says of the 26-28% cut on 2005 levels by 2030. Much better than the Labor party. It just has that wicked carbon tax.

Labor backbencher Pat Conroy takes a point of order. The question was about the government's dog of a policy not any other policy.

Speaker Smith deems dog offensive and asks that Conroy withdraw.

block-time published-time 2.11pm AEST

First question from Labor. Will the cross party same-sex marriage bill come to a vote this year? The question is to Tony Abbott. The prime minister says the bill will be treated exactly the same way as any other bill that comes before the House.

Tony Abbott:

No special treatment, no favouritism.

block-time updated-timeUpdated at 2.13pm AEST

block-time published-time 2.05pm AEST

Question time

The hour of glower is opening with statements noting the passing of the former MP Alby Schultz, who passed away recently after illness. Tony Abbott and Bill Shorten are making contributions in the debate now.

block-time published-time 2.02pm AEST

Labor's deputy leader Tanya Plibersek is taking the opportunity of member's statements before question time to deliver a down-the-barrel monologue to same-sex attracted kids, and to kids in families with same-sex parents. Plibersek is telling young people not to lose heart and hope about the legalisation of same-sex marriage. She says kids with two mums and two dads don't need to worry about their families - their families are just fine.

block-time updated-timeUpdated at 2.14pm AEST

block-time published-time 1.56pm AEST

Liberal senator Simon Birmingham, a same-sex marriage supporter, is on the ABC and bringing characteristic diplomacy to the same-sex marriage washup. He's very open to hearing what people think about a plebiscite to resolve the issue, but plebiscites come at a cost, he notes.

What does he think about a plebiscite as a concept?

It's never been seriously on the agenda in Australia before.

block-time updated-timeUpdated at 1.59pm AEST

block-time published-time 1.51pm AEST

Dennis Shanahan from the Australian thinks the communications minister, Malcolm Turnbull, has undercut the prime minister's "strategic success" on same-sex marriage.

Malcolm Turnbull has defied his leader and the party room over same-sex marriage and ratcheted up a sense of crisis within the Liberal party. The former Liberal leader, who was agitated at yesterday's meetings and disappointed with the result, has immediately undercut the prime minister's strategic success in getting a majority result from the Coalition parties on the divisive issue of same-sex marriage. Abbott was enjoying an enhancement of his leadership...

Was he?

Confess I missed that.

block-time updated-timeUpdated at 1.54pm AEST

block-time published-time 1.19pm AEST

The trade minister is asked whether Australia legalising same-sex marriage would cause us problems in Asia. Readers might recall ***agriculture*** minister Barnaby Joyce made that argument a month ago.

Ah, no, says Robb.

From my observation, social issues tend not to be a factor in a lot of agreements in trade.

block-time updated-timeUpdated at 1.55pm AEST

block-time published-time 1.13pm AEST

The minister for trade, Andrew Robb, addresses the National Press Club in Canberra on Wednesday afternoon. Photograph: Mike Bowers for the Guardian

block-time updated-timeUpdated at 1.56pm AEST

block-time published-time 1.12pm AEST

Turnbull's cabinet colleague Andrew Robb is speaking at the National Press Club about his trade portfolio. He's basically arguing that multilateral trade deals are hard, really hard. Which is why Australia has been pursuing bilateral deals like the China free-trade agreement - a deal that Robb says will be as significant economically in 20 years' time as floating the dollar in the 1980s.

Notwithstanding China's importance to the Australian economy and the global economy, this seems a rather large call.

Robb is being asked now about live asses by my neighbour Shane Wright, the economics correspondent for the West Australian newspaper. The trade in live asses.

Robb deadpans.

A great opportunity.

block-time updated-timeUpdated at 1.58pm AEST

block-time published-time 1.07pm AEST

Malcolm Turnbull really is king of the intra-day surgical strike.

block-time published-time 12.59pm AEST

The reason I haven't advocated a plebiscite, but I note the prime minister has said he is disposed to having one...

enltrMalcolm Turnbull effectively says plebiscite on #SSM an election distraction @FinancialReview#auspolpic.twitter.com/vbITGENqBx

- Primrose Riordan (@primroseriordan) August 12, 2015

block-time updated-timeUpdated at 1.29pm AEST

block-time published-time 12.52pm AEST

A policy as yet unformed

Here's the full exchange.

Q: Can I ask you about the outcome of the party room meeting last night? What did you think of it? What did you think of the idea of some sort of plebiscite?

Malcolm Turnbull:

I have supported for a long time a free vote on this issue. I made that point before the election. As Tony Abbott conceded last night, that is consistent with Liberal party tradition although he made the point, because of the 2004 amendment, it wasn't appropriate in this case but that has been very much in the Liberal party tradition.

While this issue of marriage equality is a very important one, and very important to many of my constituents, and if there were a free vote I would vote in favour of it, there are a lot of other very big issues. Telecommunications, innovation, economic growth, jobs, the Productivity Commission's report on industrial relations. There is a huge number of big issues.

So one of the attractions of a free vote is that it would have meant the matter would be resolved in this parliament one way or another in a couple of weeks. The reason I have not advocated a plebiscite, but I note the prime minister has said he is disposed to having one... the reason I haven't advocated a plebiscite after the next election is that it would mean, it will mean, that this issue is a live issue all the way up to the next election and, indeed, at the next election and, if we are returned to office, it will be a very live issue in the lead-up to the plebiscite itself.

I want to be clear. I think it is an important issue but I would - particularly between now and the election - the more time I can talk about the economy, about jobs, about innovation, about digital technology and digital efficiency, the happier I'll be.

Q: What's the way forward for you on this issue?

The party room decision last night was that there would not be a free vote in this parliament. As to the prime minister has described the - expressed a disposition to having some form of public vote, a plebiscite or a referendum after the next election, but obviously that is a policy as yet unformed but it will presumably have to go through the normal cabinet process before it is fleshed out. But on that note, I may take my leave and wish you all a good day.

block-time updated-timeUpdated at 1.29pm AEST

block-time published-time 12.48pm AEST

Oh, hello Malcolm

The communications minister has found the cameras. More in sorrow than in anger, Malcolm Turnbull notes the lack of a conscience vote on same-sex marriage means the issue will drag on unresolved past the next election cycle.

Turnbull said he supports a free vote. He noted the prime minister had conceded during last night's party room debate that a free vote is consistent with Liberal party tradition. One of the attractions of a free vote is this matter would have been resolved expeditiously, he says.

Not now.

And about that plebiscite. Turnbull notes the prime minister has expressed a disposition in favour of the plebiscite. He notes that is not yet government policy. There will need to be a cabinet process to make that policy.

The plebiscite is a policy as yet unformed.

block-time updated-timeUpdated at 1.22pm AEST

block-time published-time 12.41pm AEST

There is a whirl of excitement in Canberra at the moment because it is snowing. Allegedly. I say allegedly because I haven't seen any snow.

enltrOnly rain on this side of the building, @AboutTheHouse#nosnow

- Australian Senate (@AuSenate) August 12, 2015

block-time published-time 12.28pm AEST

Politics, this lunchtime

Let's take stock of events this Wednesday morning.

* Tony Abbott hit the airwaves early to explain to Australia how the Coalition party room could meet for six hours on Tuesday night and come out with a position endorsing the status quo on same-sex marriage.

1. The prime minister said the government was respecting deep feelings on the question of marriage equality by standing up for heterosexual marriage in this parliament before putting the issue to a people's vote some time after the next election. The deep feelings of marriage equality supporters were not mentioned lest they complicate the narrative.
2. Abbott also forgot to foreground that he would campaign against said plebiscite given he is not a supporter of same-sex marriage because the objective of the political morning was to present his fair solution to the people of Australia.
3. Liberal Warren Entsch moved quickly to cut through an overly obviously delaying tactic from the prime minister by saying, plebiscite? Great. Let's get cracking and put it to people at the federal election expected next year.
4. Er, no, Warren, the prime minister said at lunchtime. This coming election must be a clear contest between the Coalition and Labor, and not be confused with extraneous material, like marriage equality.
5. Exactly, said Labor. Bill Shorten told reporters at the ANU that plebiscite or not, the coming election would present voters with a very clear choice. You can have marriage equality, or Tony Abbott, but not both.
6. Just in case they were getting any ideas about personal freedom, the prime minister also reminded frontbenchers - given 50% of Team Abbott supports same-sex marriage - they would need to vote as per the direction of the leadership if the issue accidentally came to a vote in this parliament.
7. Backbenchers too. Abbott said sure they could cross the floor in theory but he for one would be disappointed to see that happen.
8. But don't worry, the prime minister reasoned. That cross-party bill won't come to a vote because the usual processes will apply - which means the government controls the selection committee and the parliamentary agenda and therefore "we decide who comes here and the circumstances in which (bills) come".
9. Feeeel the progress.

And so it goes.

block-time updated-timeUpdated at 1.21pm AEST

block-time published-time 12.00pm AEST

For folks wanting to refresh their memories about the roll call of marriage reform bills since John Howard inserted his discriminatory clause into the Marriage Act in 2004 - here's a helpful chronology from the parliament.

block-time published-time 11.51am AEST

Well, Christopher has a wonderful turn of phrase...

The Liberal senator Simon Birmingham on his South Australian colleague Christopher Pyne's observation yesterday that the prime minister was behaving like a branch-stacker in pushing the resolution of same-sex marriage into the joint party room rather than the Liberal party room.

enltr"Well Christopher has a wonderful turn of phrase sometimes and he is very witty and clever" - Birmingham on FiveAA pic.twitter.com/KiGCFSnmTi

- Daniel Hurst (@danielhurstbne) August 12, 2015

block-time updated-timeUpdated at 1.18pm AEST

block-time published-time 11.45am AEST

enltr. @mpbowers 's photo from Queanbeyan this morning reminds me of a scene from WALL-E pic.twitter.com/mhktXZ3Wqq

- James Jeffrey (@James\_Jeffrey) August 12, 2015

block-time published-time 11.41am AEST

Hello, young people pursuing practical environmentalism that doesn't club the economy.

The prime minister, Tony Abbott, with the environment minister, Greg Hunt, and local member for Eden-Monaro, Peter Hendy, at a green army initiative at Barracks Flat park in Karabar near Queanbeyan on Wednesday. Photograph: Mike Bowers for the Guardian

How delightful to meet you.

block-time updated-timeUpdated at 1.16pm AEST

block-time published-time 11.33am AEST

Is this a sapling I see before me?

Mike Bowers on the photographic trail in Queanbeyan.

The prime minister, Tony Abbott, with the environment minister, Greg Hunt, and local member for Eden-Monaro, Peter Hendy, at a green army initiative at Barracks Flat park in Karabar near Queanbeyan on Wednesday. Photograph: Mike Bowers for the Guardian

block-time updated-timeUpdated at 1.16pm AEST

block-time published-time 11.31am AEST

Abbott makes it clear he does not expect the cross-party bill to come to a vote. He also repeats his line from this morning: ministers need to abide by the government's position on marriage. Don't think about crossing the floor.

I would expect the usual rules to apply.

block-time updated-timeUpdated at 1.14pm AEST

block-time published-time 11.27am AEST

The prime minister says the contrast between the government and Labor on marriage equality is the Coalition wants a people's vote and Labor wants a parliamentary vote.

block-time published-time 11.26am AEST

Abbott rejects the Entsch push to have a plebiscite at the coming election

Questions open on the plebiscite on same-sex marriage. Why not have it at the next election? Liberal Warren Entsch has called for that this morning, via my colleague Daniel Hurst.

Abbott pushes the plebiscite out past the next election and into the next term of parliament. The next election needs to be a contest between two political movements and then we can all have a conversation about marriage equality, the prime minister says.

block-time updated-timeUpdated at 1.13pm AEST

block-time published-time 11.21am AEST

They work rain, hail or shine.

That's Greg Hunt, praising the green army, who must be like drowned rats in Queanbeyan.

block-time published-time 11.18am AEST

Feral animals, and weeds, to be clear.

The prime minister wants to get back on the environment and his climate ***targets*** and practical environmentalism that doesn't club the economy.

block-time published-time 11.17am AEST

Tony Abbott addresses reporters in Queanbeyan

The prime minister is speaking about ferals in Queanbeyan, where the winter rain is hammering down. Unfortunate that today's event is held in a park.

block-time updated-timeUpdated at 1.12pm AEST

block-time published-time 11.06am AEST

It continues to be open season on MPs and travel entitlements. The Daily Telegraph has a story about the attorney general, George Brandis, and a $6,000 water taxi in Venice.

The 12-hour water limo ride around the city was commissioned by Australia's embassy in Rome, according to documents obtained under freedom of information. It claimed that it was the only boat left for hire in the entire archipelago.

"All travel arrangements in Venice were a matter for the Australia ­embassy in Italy," a spokesman for Brandis said. "Neither I nor my office requested a water taxi. I note that the embassy advised my department that a water taxi was the only transport option in Venice."

block-time updated-timeUpdated at 1.12pm AEST

block-time published-time 10.45am AEST

Mike Bowers brings you a sequence of the suspension motion.

The Greens leader, Richard Di Natale, during a motion moved by the Greens to suspend standing orders to debate same-sex marriage on Wednesday morning. Photograph: Mike Bowers for the Guardian Senator Mathias Cormann speaks on the motion moved by the Greens to suspend standing orders to debate same-sex marriage on Wednesday morning. Photograph: Mike Bowers for the Guardian Labor senator Claire Moore speaks to the motion moved by the Greens to suspend standing orders to debate same-sex marriage on Wednesday. Photograph: Mike Bowers for the Guardian Liberal National party senator Matthew Canavan speaks to the motion moved by the Greens to suspend standing orders to debate same-sex marriage on Wednesday. Photograph: Mike Bowers for the Guardian Labor senator Doug Cameron speaks to the motion moved by the Greens to suspend standing orders to debate same-sex marriage on Wednesday. Photograph: Mike Bowers for the Guardian

block-time updated-timeUpdated at 11.35am AEST

block-time published-time 10.30am AEST

Eric Abetz: I am not a clown

Perhaps stung by the Labor leader, Bill Shorten, describing him as a "clown" for telling colleagues in the party room last night that Dolce & Gabbana didn't want to get married, Eric Abetz has issued a statement.

The statement doesn't explicitly reference Italian fashion designers and their lifestyle choices.

Eric Abetz:

Reports in the media today that I said that "gay men did not want to get married" are simply false. My view is well known. As I said at a public forum in Hobart last week, not all members of the gay community have the same view on this question.

Basing a story on second- or third-hand reports of a party room discussion without any verification with me or my office is extremely poor journalism. It is even worse that the Labor leader, without knowing what was actually said, has chosen to accept this false report. But, of course, he has form in this approach.

block-time updated-timeUpdated at 11.12am AEST

block-time published-time 10.25am AEST

Tracking back, the prime minister, addressing reporters, earlier this morning.

Abbott on the same-sex marriage smorgasbord.

block-time updated-timeUpdated at 11.10am AEST

block-time published-time 10.23am AEST

The division is under way now. Because there was a cross-current there at the start, let me quickly recap.

* The Greens leader, Richard Di Natale, moved a motion to suspend the standing orders to bring on a debate in the Senate about same-sex marriage.

Greens leader moves the suspension motion.

* The government, not surprisingly, opposed it. Labor opposed it too on the grounds that the Greens were grandstanding, putting the party brand ahead of the imperative to work collaboratively through the impasse.

1. The Liberal Democratic party senator David Leyonhjelm used the opportunity to launch a recruitment drive for disaffected Liberals.

The suspension motion will be defeated in a minute.

block-time updated-timeUpdated at 11.46am AEST

block-time published-time 10.18am AEST

I don't deny this is a stunt but there are plenty of stunts in this place.

LDP senator David Leyonhjelm, a supporter of marriage equality.

The Senate president, Stephen Parry, tells him he has 44 seconds.

Leyonhjelm says if Liberals denied a conscience vote over the past 12 hours need a new home, there is another place that champions liberalism.

My party will welcome you.

block-time updated-timeUpdated at 10.55am AEST

block-time published-time 10.02am AEST

The press conference has wrapped. The suspension in the Senate seems to have broken down into a procedural wrangle. The Greens have led the suspension effort this morning. Labor is objecting to a lack of consultation before moving the motion.

Labor senator Claire Moore :

The Labor party will not be supporting this methodology, to bring forward a debate that could happen in another way. The Greens will be trying to say we do not want to debate this issue. We have a clear record.

block-time updated-timeUpdated at 10.54am AEST

block-time published-time 9.53am AEST

I'll tune in to the suspension shortly but am sticking with the press conference for now.

Q: Do you support the Climate Change Authority's ***target*** of 40 to 60% ***reduction***?

Mark Butler:

We have significant respect for the authority but there are other pieces of work that we will look to as well.

block-time updated-timeUpdated at 10.53am AEST

block-time published-time 9.51am AEST

While Shorten and Butler are talking, the Greens are attempting to suspend the standing orders in the Senate to debate the following motion: that this parliament should act to end discrimination in the Marriage Act 1961.

block-time updated-timeUpdated at 10.50am AEST

block-time published-time 9.48am AEST

Good question.

Q: What is your ***emissions*** ***reduction***? How can you criticise the Coalition's ***target*** when Labor itself won't commit to one?

Shorten throws to Mark Butler.

What Bill and I and others have said about the ***targets*** released yesterday is they would squarely put Australia right at the back of the pack. There is no question about that.

All of the countries to which we usually compare ourselves have ***targets*** significantly higher than Australia's. The US over 2030 would be 41%, not 26%. The United Kingdom 48%. Germany 46%. There is no question Australia coming from the point of being the heaviest polluting country per head of population in the OECD is still going to be right at the back of the pack.

As Bill said, we want to see the modelling, the data on which they have taken this decision and can convince the Australian people that this is in accordance with the commitment we made with 194 other countries to keep global warming to no more than 2 degrees celsius.

We need to see the modelling. We [also] need Tony Abbott to recognise that whatever the ***target*** is, Direct Action will not get us there.

Handing billions of dollars of taxpayers' money to big polluters will not get us there.

block-time updated-timeUpdated at 10.50am AEST

block-time published-time 9.43am AEST

Q: What do you make of reports that Eric Abetz argued to the party room last night that gay men don't want to get married and citing the example of the Italian fashion designers Dolce and Gabbana?

Bill Shorten:

Senator Eric Abetz is a clown.

block-time published-time 9.40am AEST

Q: Would Labor support a plebiscite on same-sex marriage?

Bill Shorten:

There hasn't been a plebiscite held in this country since 1976. It is a strategy to delay marriage equality. The quickest and best way to achieve marriage equality, if Mr Abbott continues on his path to oppose it, is to vote Labor at the next election.

I promise all Australians within 100 days of being elected Labor will introduce a bill for marriage equality, and I am confident if we win the election there will be sufficient votes in this country to finally remove discrimination against people.

Q: Would it be best to have a plebiscite at the same time as the next election to save money?

Can I make a sporting bet with you? Mr Abbott will never support marriage equality. When it comes time, if he gets re-elected at the next election, you can forget about marriage equality.

The choices in this country: you either have Mr Abbott or you have marriage equality.

But you can't have both.

block-time updated-timeUpdated at 10.48am AEST

block-time published-time 9.34am AEST

The Labor leader, Bill Shorten is at an event at the Australian National University with his climate spokesman, Mark Butler.

Bill Shorten:

The Liberals are lurching from crisis to crisis, not dealing with the issues that a modern Australia thinks are important. They have no plan for jobs, no plan for renewable ***energy***. It is time that Mr Abbott and the Liberals started to be a good government instead of the crisis-ridden circus that we have seen in the last 24 hours.

block-time updated-timeUpdated at 10.46am AEST

block-time published-time 9.26am AEST

Entsch to Abbott: plebiscite with the next election

The Liberal MP Warren Entsch has called on Tony Abbott to allow a public vote on same-sex marriage to occur at the same time as the next election, despite the prime minister's suggestion that such a plebiscite would not occur until some time in the next parliamentary term.

Entsch met Abbott on Wednesday morning and told him he still planned to introduce his private member's bill to allow same-sex marriage to parliament next week, undeterred by the Coalition's decision during six hours of talks on Tuesday to not grant MPs a free vote.

The prime minister signalled on Wednesday that the cross-party legislation may not even come to a vote on the floor of parliament, given that private members' bills routinely lapse.

Abbott conceded after the lengthy party room meeting that this was the last term when the Coalition could bind its MPs and senators to oppose same-sex marriage, and that it would formulate a policy ahead of the next election that could include a plebiscite or referendum.

Entsch said he had asked to be involved in the policy development process and would like the public vote to occur at the same time as the next election, which is due in 2016.

Entsch:

I think we need to do it as quickly as possible and not have it drag on. These sorts of issues have a tendency to be very emotive and whilst you see the best of both sides you also see the worst and the longer you let it go the more you're going to see that type of attack from both sides. So let's move, short and sharp, and let's have it dealt with. We drag it on, it just festers there... Let's move quickly. Let's do it. Let's make the decision, and whoever wins the next election will be bound by it.

Entsch said having the vote at the same time as the next election would also "save us a lot of money" and ensure everyone was voting.

People are going to have to vote one way or the other... otherwise we end up with a situation where you have those that say no in Australia somehow demeaning the Irish vote running around with percentages saying as to how many actually voted, somehow suggesting it was a lesser outcome than it was. If it's tacked on to a national vote that means everyone is voting.

Abbott has set out a longer timeframe, suggesting the plebiscite could occur some time after the next election during the subsequent three-year term. "There is the prospect of change in the next term of parliament if that is the will of the Australian people," he told the ABC.

block-time updated-timeUpdated at 10.40am AEST

block-time published-time 9.23am AEST

I've already noted that it was odd of the prime minister to suggest (during his radio interview this morning) the coal industry won't go backwards under policies that are designed specifically to constrain carbon ***emissions***. The argument is counter-intuitive.

Lenore Taylor has been chasing the materials underpinning the government's new ***emissions*** ***targets*** for several days, and this morning has a scoop drawn from yet-to-be-released modelling on the impact of the ***targets***.

Her insight makes Abbott's observation even odder.

Coal will be hit hardest by the Abbott government's new ***greenhouse gas*** ***targets*** and global climate action - with a 14% cut in the value of coal production in 2030 due to the new Australian ***target*** and an 8% cut due to the policies of other countries.

The forecasts for the sector that Tony Abbott has insisted is "good for humanity" and has "a big future as well as a big past" are contained in yet-to-be-released modelling provided to the government as it made the decision to promise that Australia would ***reduce*** ***emissions*** by between 26% and 28% of 2005 levels by 2030.

Go. Figure.

block-time updated-timeUpdated at 10.36am AEST

block-time published-time 9.13am AEST

From ABC24. Liberal senator Cory Bernardi on tricky tactics in yesterday's party room meeting.

Q: Did you and your conservative colleagues organise to bring this issue of same-sex marriage to a head yesterday during the party room meeting?

Cory Bernardi:

It was initially raised by Warren Entsch, an advocate for change, who said he wanted to have a discussion on the free vote. You can either allow them to drag on and [keep] haemorrhaging, it starts and lasts a long time. Or you can deal with them and cauterise whatever open wound is there.

block-time updated-timeUpdated at 10.35am AEST

block-time published-time 9.07am AEST

A couple of must-reads about the past 12 hours or so.

Phil Coorey and Laura Tingle in the Australian Financial Review. Dolce & Gabbana didn't get married so why should anyone else?

There were bitter fights between minsters. Eric Abetz and Michaelia Cash said ministers who supported gay marriage should resign their positions. Abetz contended that gay men didn't really want to get married and pointed out that the Italian fashion designers Dolce & Gabbana never wed.

Malcolm Turnbull, whose leadership was destroyed in 2009 when Abbott and others resigned on him to protest against his support for a carbon price, lashed back, saying it was "a good idea to keep the team together" given the Coalition's poor standing in the polls.

Turnbull said cabinet should have discussed the issue first and the assistant treasurer, Josh Frydenberg, said the refusal to change policy to a conscience vote flew in the face of the spirit of the party's founder, Robert Menzies.

Lenore Taylor, reflecting on the wash-up :

Even when he wins, he also loses. Same-sex marriage would have been a difficult issue for any Coalition prime minister, but Tony Abbott played it more like a factional warrior than a leader.

After six hours of debate his preferred position won the night, but he didn't resolve the issue, because he is on the wrong side of public opinion on this ( a Crosby Textor poll showed 72% support) and, looking at global trends, the wrong side of history.

The government is veering towards chaotic process and open insurrection, with angry confusion and divisions in the cabinet and leadership group about strategy and direction. The prime minister's judgment and authority is, once again, under question.

block-time updated-timeUpdated at 10.34am AEST

block-time published-time 8.56am AEST

Tiny Tony Tapes

The prime minister harking back to his student days this morning in the AM interview has prompted Kate Doak, a long-time contributor to my various live blog projects, to remind me about the wonderful Tiny Tony Tapes that hit the public domain courtesy of Kate while I was still at Fairfax Media.

This recording is of an interview Abbott did in 1979 with the University of New England when he was president of the Sydney University SRC.

At about the eight-minute mark, just after a reflection about whether the study of punk rock is a Marxist activity, Abbott is asked about representation for minority groups on campus.

The future prime minister of Australia tells his host that minorities don't need special representation.

Young Tony:

I'm very wary, I find it a little alarming, that people today tend to think of themselves not as members of the community but as women, blacks, migrants, homosexuals or whatever.

Abbott says if the community is represented then so are minority groups.

The whole conversation is a gem. Do have a listen if your day permits.

Thanks muchly to Kate.

block-time updated-timeUpdated at 10.31am AEST

block-time published-time 8.29am AEST

Brisk business in the corridor. We've had the prime minister, the treasurer, Joe Hockey, and Labor's Senate leader, Penny Wong, hitting the airwaves in the past hour.

The treasurer, Joe Hockey, in the press gallery of parliament house in Canberra on Wednesday morning. Photograph: Mike Bowers for the Guardian

Wong told Radio National the battle was not done and dusted.

"I suspect the Senate is where some Liberals are going to have to decide if they have the courage to show their convictions. What we saw yesterday was an exercise in raw power by a man who is prepared to do anything, including dividing his cabinet, to get his own way," she said of Tony Abbott, who she described as "yesterday's man".

Wong said that divisions within the Coalition would continue to fester. "There will be moves, because so many people in this parliament think it's time. I think the majority of Australians think it's time."

She thought that the issue should be settled via legislation. "This is the job for parliament," she said. "A plebiscite is simply the parliament refusing to do its job. There will be a vote on this - it's the next election."

block-time updated-timeUpdated at 10.30am AEST

block-time published-time 8.24am AEST

The back half of the AM interview was concerned with the government's other big policy issue from Tuesday - new ***emissions*** ***reductions*** ***targets*** post-2020 - and with the government's political fortunes more generally.

Abbott was asked about the polls. Polls go up and polls go down, the prime minister said. Isn't your problem the polls haven't gone up for 15 months, Brissenden inquired? Abbott said he was confident the government was doing exactly what it was elected to do.

Sure there's a lot of political static. The intensity of politics seems to be increasing all the time.

But Abbott says if you want competence and stability, stick with the Coalition.

He defended the post-2020 ***target*** as responsible and achievable, a ***target*** that won't clobber jobs and growth.

Abbott told his host constraining ***emissions*** won't hurt the coal industry (which seems a contradiction in basic logic).

We are not expecting a ***reduction*** in the coal industry. Some mines will close and others will open.

Abbott reasons that expanding Australia's coal industry helps developing countries ***reduce*** their ***emissions*** intensity because our coal is better than theirs.

Renewables? Jobs of the future?

Well, Michael, they are highly subsidised jobs. Without the subsidy we wouldn't have renewables on anything like the scale we do.

(What have renewables done for anyone lately?)

block-time updated-timeUpdated at 10.28am AEST

block-time published-time 7.58am AEST

Good morning, good people

Good morning blogans, bloganistas and welcome to the morning after the night before. Last night the Coalition met for six hours to thrash out its position on same-sex marriage and resolved to preserve the status quo, with fine print.

The prime minister told reporters about 10pm that the Coalition would defend heterosexual marriage for this term of parliament but the government may take a reform position to voters at the next election, which may be either a conscience vote, a plebiscite or a constitutional referendum. This is known in the trade as speaking out both sides of your mouth. Here you are voters: take our same-sex marriage smorgasbord.

This morning, the prime minister presented himself to the ABC bright and early to explain the smorgasbord to Australia's commuters. In so doing Abbott told his host, Michael Brissenden, the cross-party same-sex marriage bill, which is on its way to federal parliament next week, may not come to a vote.

Tony Abbott:

Let's see where things go. We don't actually know what the bill provides at this point.

He's indicated that if the bill hits the house and manages to come to a vote, backbenchers are entitled to exercise their personal views.

There's a but though.

I would be disappointed if they went against the party position.

Abbott told listeners it was reasonable to wait a bit longer to legalise same-sex marriage given that it's really only this generation that has ever thought of this. He says when he was at university, the idea of gay people wanting something as bourgeois as marriage would have been laughable.

Brissenden presented the prime minister with polling that suggests a clear majority of voters support marriage equality. Yes, sure, the prime minister said, but legalising same-sex marriage is a subject on which many people have very deep feelings. Abbott said he was respecting those deep feelings.

Well the prime minister is certainly resolved to respect some deep feelings in the debate, and frustrate the deep feelings that don't conform with his deep feelings.

That's actually the truth of the matter and it's the danger for Abbott in this. I don't think same-sex marriage will define the outcome of the next federal election, but Abbott's ambivalence about the future and his discomfort with contemporary community attitudes can easily reinforce a feeling that this prime minister governs for a tetchy minority of special interests that reflect his world views, not for the political centre.

That's his vulnerability here.

Quite a lot more in that interview. I'll get to that in the next few posts but first let's get cracking with our politics live conversation. The thread is open for your business. You can also reach Mikearoo and me on the twits @murpharoo and @mpbowers

Buckle up. Here comes Wednesday.

block-time updated-timeUpdated at 10.26am AEST

**Load-Date:** September 2, 2015

**End of Document**



[***Proposed Cornwall highway project would break ground in 2016***](https://advance.lexis.com/api/document?collection=news&id=urn:contentItem:5K45-4261-F0K1-N263-00000-00&context=1516831)

FinancialWire

June 29, 2016 Wednesday

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**Length:** 1347 words

**Body**

The Government of Prince Edward Island is seeking federal funding for a new highway project that would redirect the Trans-Canada Highway around the Town of Cornwall, making travel safer and allowing for more business development in the town.

"The Cornwall Perimeter Highway would fulfil a longstanding request by Cornwall residents to re-route the thousands of tractor-trailers and cars that pass through the heart of their town every day while crossing the province," said Premier Wade MacLauchlan. "This is a strategic infrastructure investment that would bring the highway up to today's safety standards, improve the transport of goods and benefit all Islanders."

Member of Parliament for Malpeque, Hon. Wayne Easter, welcomes the project. Easter said, "The Trudeau government's federal infrastructure program was developed to stimulate the economy and improve infrastructure. The announcement today does both, and provides the public with the information needed for long term community and business development."

The Department of Transportation, Infrastructure and ***Energy*** has applied to the federal New Building Canada Fund for 50 percent funding for the first phase of the project, which would include new roundabouts on the Trans-Canada at the Maypoint intersection and at the Poplar Island (COWS) intersection. Application for the second phase, a six kilometre route running from New Haven to the York Point Road, will be submitted in the coming weeks.

The cost of construction for both phases is estimated to be $ 65 million, making it one of the largest projects ever undertaken in the province.

With more than 5,000 residents, Cornwall is the fourth largest town in the province. It is home to many young families and three schools which are attended by 1,600 students.

Transportation, Infrastructure and ***Energy*** Minister Paula Biggar said the route would improve safety on one of the busiest stretches of the Trans Canada Highway. The highway between Maypoint Road and York Point Road sees up to 26,400 vehicles per day, while up to 17, 200 vehicles travel the stretch between York Point Road and Meadowbank Road each day. From 2009 to 2013, there were 159 collisions on the highway between Clyde River and Maypoint Road, although none were fatal.

"The Cornwall Perimeter Highway would be accessed through roundabouts and interchanges, which are much safer than the existing intersections. This would ***reduce*** the likelihood of accidents and the severity of collisions," said Minister Biggar.

The bypass would ***reduce*** driving time for people crossing the province and lower ***greenhouse gas*** ***emissions*** by removing many traffic interruptions. "There would be six fewer traffic lights for drivers approaching Charlottetown from the west. Drivers leaving Borden would not see a traffic signal until they reached Malpeque Road," Minister Biggar said.

Many new development opportunities would open up within Cornwall if the town's main road was no longer part of the Trans-Canada Highway. This would make it possible for the town to consider new entrances and streets connecting to the road, without being affected by highway access limits.

Cornwall Mayor Minerva McCourt said the town has long advocated for construction of a perimeter road and that uncertainty over the project has hindered development in the community. "Extremely limited access options on the existing Trans-Canada Highway have restricted development in the town for many years" she said. "We look forward to the development opportunities that would result from this significant improvement to the highway system in and around Cornwall."

"The Town is hopeful that the commitment shown today from all levels of government will give developers the confidence to move their projects forward and help grow our town," said Mayor McCourt. "The majority of our residents support this project, with the results of a 2003 plebiscite showing more than 80 percent in favour of a perimeter highway. While there may be some temporary challenges, there is no question that this is in the best long term interests of the town."

Backgrounder:

Cornwall is the fourth largest, and one of the fastest growing towns in Prince Edward Island. Incorporated in 1995, it now has a population of more than 5,000 residents. In 2011, the Town of Cornwall had a population of 5,162, representing a percentage change of 10.4 percent from 2006. This compares to the national average growth of 5.9%.

Cornwall is a young community with three schools including Westwood Primary, Eliot River Elementary and East Wiltshire Intermediate. Hundreds of students travel in and out of the community each day, while the Trans Canada Highway and thousands of vehicles still run right through the middle of the town.

In October 2015, the Town of Cornwall endorsed a proposed realignment of the Trans-Canada Highway. The route would be located within a corridor that starts at the York Point Road intersection, continues west around the north side of Cornwall and joins back to the TCH in Clyde River. The bypass would allow easy access to Cornwall and the South Shore, while allowing vehicles bound for Charlottetown and further to take a route around, rather than through the community.

Coming from New Haven, the route would cut across the Baltic Road and Bannockburn Road to Clyde River Road, across Cornwall Road, rejoining the current Trans-Canada through a roundabout at the intersection of Warren Grove Road.

Phase One would include the installation of roundabouts at the Maypoint intersection and at the Poplar Island (COWS) intersection. Work on this phase would begin in the fall of 2016.

Phase Two would include the construction of a six-kilometre route running from New Haven to the York Point Road. Construction would begin in 2017 and end in the fall of 2019.

If the project is approved under the federal New Building Canada Fund, public meetings on the roundabouts would begin in July, and the Environmental Assessment Impact study consultations would follow immediately. Public meetings would be held to gather community input on the proposed route, followed by the detailed design phase and a spring construction start. The final decision on a preferred route would be made after an independent environmental review. The route chosen would have minimal impact on the environment and the least disruption to watercourses and wetlands, forested areas, ***agricultural*** land and residential properties. The corridor being proposed is primarily cleared ***agricultural*** land with one river crossing but no protected lands or established forests.

The Town has been lobbying for the project for 20 years. With through traffic re-routed around the perimeter, it would be able to consider new entrances and streets connecting to the road, without being affected by highway access limits. For example, it could construct a new entrance into the Terry Fox Sports Complex, which currently only has access through a neighbouring subdivision. When complete, the route would become a Community Connector road, creating more road access to housing and business development.

The safety of Cornwall and Clyde River residents would improve by redirecting heavy truck and commuter traffic onto a limited access road away from children, students, pedestrians and cyclists. With less highway traffic, fewer intersections and more consistent speed limits, Cornwall residents would have easier access to businesses and a much safer community.

One of the largest projects the province has ever undertaken, construction of the Cornwall Bypass would put hundreds of people to work and create substantial economic spin-offs for Island businesses. While some existing businesses may feel the impact in the short term, most will benefit over time as the town grows. The longer terms benefits of a safer community and increased opportunities for housing development would be good for business in Cornwall and Clyde River.

For more information visit the Cornwall Bypass web page at [*www.princeedwardisland.ca/en/information/cornwall-perimeter-highway-project*](http://www.princeedwardisland.ca/en/information/cornwall-perimeter-highway-project)

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**Load-Date:** June 29, 2016

**End of Document**



[***Impax Asset Management Group plc Interim Results***](https://advance.lexis.com/api/document?collection=news&id=urn:contentItem:5JT9-KG01-JCXB-22N0-00000-00&context=1516831)

London Stock Exchange Aggregated Regulatory News Service (ARNS)

May 18, 2016 Wednesday 7:00 AM GMT

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**Length:** 1636 words

**Body**

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Impax Asset Management Group plc

18 May 2016

Impax Asset Management Group plc - Interim Results to 31 March 2016

London, 18 May 2016 - Impax Asset Management Group plc, ("Impax" or the "Company"), the AIM listed investment manager dedicated to investing in the opportunities created by the scarcity of natural resources and growing demands for cleaner more efficient products and services, announces its results for the six months to 31 March 2016.

Highlights

-- Assets under management and advice ("AUM") increased 26% since year end to new peak of GBP3.6bn

-- Net inflows of GBP300 million, predominantly from the US and Continental Europe

-- Strong investment performance: all listed equity strategies outperformed MSCI ACWI

-- Strong balance sheet maintained

-- Interim dividend increased by 25 per cent to 0.50 pence per share

-- Encouraging discussions with investors on raising new monies in real assets strategies

Financial results

H1 2016 H2 2015 H1 2015 2015

Revenue GBP9.4m GBP9.3m GBP10.4m GBP19.7m

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Operating earnings(1) GBP1.6m GBP0.8m GBP2.3m GBP3.1m

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Profit before GBP2.1m GBP3.2m GBP1.9m GBP5.1m

tax

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Earnings per

share 1.35p 1.52p 1.61p 3.13p

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Dividend 0.50p 1.70p(2) 0.40p 2.10p(2)

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A material proportion of the AUM flows were received near the end of the Period, and therefore Revenue during the Period does not fully reflect the Company's AUM growth. Fees from our largest private equity fund fell from 1 April 2015 which contributed to Revenue being lower than in H1 2015; this should be replaced when the Company raises new capital in this area. Based on our current cost base and run rate revenues from AUM at the end of the Period, we would expect operating earnings to increase during the second half.

Ian Simm, Chief Executive commented:

"Impax has had a strong first half year. Our AUM has reached a new peak with net inflows of GBP300m and our funds have demonstrated superior investment performance."

"Our investment hypothesis is clearly resonating with investors around the world. Over the last year we have witnessed unprecedented levels of investor interest in our investment strategies and our pipeline is encouraging. I am optimistic on Impax's prospects and positioning and believe that the Company is well placed to deliver long term shareholder value."

(1) Revenue less operating costs

(2) Includes special dividend of 0.50p

Enquiries:

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Chief Executive

Impax Asset Management Group plc

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Guy Wiehahn Tel: +44 (0) 20 7418 8893

Nominated Adviser

Peel Hunt LLP

Chief Executive's Statement

Over the first half year for Impax Asset Management Group plc ("Impax" or the "Company"), i.e. the Period from 1 October 2015 to 31 March, the Company's assets under management and advisory ("AUM") increased by 26 per cent to a new peak of GBP3,562 million, inclusive of net inflows of ca. GBP300 million. On 30 April 2016, AUM were GBP3,557 million.

During the Period, global equity markets were notably more volatile than during early to mid 2015, with heightened geopolitical risk, softer economic growth in many regions and further uncertainty in developing markets. However, the environmental and resource efficiency markets in which Impax focuses its investments proved particularly resilient and significantly outperformed the MSCI All Countries World Index.

Impax has had a strong "first half", with investment outperformance from most strategies and robust net inflows into Listed Equities. Investor interest in our capabilities and investment products remains high and we have a healthy pipeline of potential new inflows.

Developments in Environmental & Resource Efficiency Markets

Over the period we have seen a number of important developments that will underpin further growth of environmental and resource efficiency markets. We are also witnessing accelerating developments and expansion across many of the sectors in which we invest.

The successful outcome of the Paris Climate Agreement last December was more positive than most commentators had expected and is already proving to be a powerful catalyst for many of our holdings. Over the longer term we will undoubtedly see governments around the world further strengthen policy to ***reduce*** ***greenhouse gas*** ***emissions***.

Shortly after the start of 2016 the oil price hit US$26 a barrel(1) , its lowest level for more than a decade, before rising to US$45 a barrel at the time of writing. As we have reported previously, the impact of oil prices on environmental markets is complex; for example, low prices stimulate far higher levels of fuel consumption and pollution, but also more demand for goods, including those addressing environmental problems. Recent oil price "lows" have not been a headwind to our performance.

We believe that investments in environmental and resource efficiency markets are currently well positioned for continued strong performance. For example, renewable ***energy*** generation, particularly solar, continues to grow rapidly as technology costs fall and reliance on subsidies ***reduces***.

Similarly, the transportation sector is undergoing a significant transformation with the roll-out of new ***energy*** efficiency technologies and the increased adoption of hybrid and electric vehicles. Meanwhile, in food and ***agriculture*** we see interesting investment opportunities arising from rapidly changing consumer habits, shifts in trade flows and stricter regulation around food safety.

The announcement in March of the details in China's 13(th) Five Year Plan should provide further momentum for companies providing solutions to environmental protection in the region. In particular, the Chinese government's plans to the end of 2020 highlight huge additional investments to tackle water and air pollution and a notable new ***target*** to address soil pollution.

Investor interest in environmental and resource efficiency markets continues to build. Post the Paris Climate Agreement we are seeing significantly more requests for information from investors who want to add climate change investment solutions to their portfolios. They are seeking solutions that offer superior growth as well as a hedge against longer term risks.

Financial results for the Period

Revenue for the six months to 31 March 2016 was GBP9.4 million (H1 2015: GBP10.4 million; H2 2015: GBP9.3 million). Operating earnings(2) for the Period were GBP1.6 million (H1 2015: GBP2.3 million; H2 2015: GBP0.8 million) and the associated operating margin was 17 per cent (H1 2015: 22 per cent; H2 2015: 8 per cent).

The result for the Period was a profit before tax ("PBT") of GBP2.1 million (H1 2015: GBP1.9 million) and the earnings per share for the Period were 1.35 pence (H1 2015: 1.61 pence).

Revenue for the Period was impacted as fees from our largest private equity fund fell from 1 April 2015 following the end of the fund's investment period. In addition, revenue does not take into account the recent growth in AUM as a material proportion of the AUM flows were near the end of the period, and therefore made little contribution to these results. Based on our current cost base and run rate revenues from AUM at the end of the Period, we would expect operating earnings to increase during the second half.

Dividends

At the Annual General Meeting on 3 March 2016, shareholders approved payment of a dividend of 1.2 pence per share, taking the total dividend for the year ended 30 September 2015 to 1.6 pence per share (2014: 1.4 pence). Shareholders also approved an additional special dividend of 0.5 pence.

In line with the Company's progressive dividend policy and confidence in the Company's prospects, the Board is declaring an interim dividend for the Period of 0.5 pence per share (2015: 0.4 pence). This will be paid on 23 June 2016 to ordinary shareholders on the shareholder register at the close of business on 27 May 2016.

Board update

Sally Bridgeland, who joined the Board in August 2015, has assumed the Chair of the Audit & Risk Committee, taking over from Vince O'Brien, who remains Chair of the Remuneration Committee. Sally brings nearly 30 years' experience of governance and risk analysis to this role.

Listed Equities

During the Period, all Impax's Listed Equity strategies delivered strong performance and our major strategies significantly outperformed the MSCI All Country World Index ("ACWI"), which returned 11.0 per cent(3) .

Water remains our largest asset pool with AUM of GBP956million and was again our best performing strategy, returning 18.3 per cent in the six months to 31 March 2016. Leaders, our all cap global strategy, delivered 14.9 per cent, and Specialists, our small and mid-cap global strategy, rose by 18.0 per cent. Our smaller strategies, Food & ***Agriculture***, and Asia-Pacific, returned 16 per cent and 11.3 per cent respectively. The longer term investment performance of all our strategies remains strong.

**Load-Date:** May 18, 2016

**End of Document**



[***Proposed Cornwall highway project would break ground in 2016***](https://advance.lexis.com/api/document?collection=news&id=urn:contentItem:5K45-4261-F0K1-N2KK-00000-00&context=1516831)

M2 PressWIRE

June 29, 2016 Wednesday

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The cost of construction for both phases is estimated to be $ 65 million, making it one of the largest projects ever undertaken in the province.

With more than 5,000 residents, Cornwall is the fourth largest town in the province. It is home to many young families and three schools which are attended by 1,600 students.

Transportation, Infrastructure and ***Energy*** Minister Paula Biggar said the route would improve safety on one of the busiest stretches of the Trans Canada Highway. The highway between Maypoint Road and York Point Road sees up to 26,400 vehicles per day, while up to 17, 200 vehicles travel the stretch between York Point Road and Meadowbank Road each day. From 2009 to 2013, there were 159 collisions on the highway between Clyde River and Maypoint Road, although none were fatal.

"The Cornwall Perimeter Highway would be accessed through roundabouts and interchanges, which are much safer than the existing intersections. This would ***reduce*** the likelihood of accidents and the severity of collisions," said Minister Biggar.

The bypass would ***reduce*** driving time for people crossing the province and lower ***greenhouse gas*** ***emissions*** by removing many traffic interruptions. "There would be six fewer traffic lights for drivers approaching Charlottetown from the west. Drivers leaving Borden would not see a traffic signal until they reached Malpeque Road," Minister Biggar said.

Many new development opportunities would open up within Cornwall if the town's main road was no longer part of the Trans-Canada Highway. This would make it possible for the town to consider new entrances and streets connecting to the road, without being affected by highway access limits.

Cornwall Mayor Minerva McCourt said the town has long advocated for construction of a perimeter road and that uncertainty over the project has hindered development in the community. "Extremely limited access options on the existing Trans-Canada Highway have restricted development in the town for many years" she said. "We look forward to the development opportunities that would result from this significant improvement to the highway system in and around Cornwall."

"The Town is hopeful that the commitment shown today from all levels of government will give developers the confidence to move their projects forward and help grow our town," said Mayor McCourt. "The majority of our residents support this project, with the results of a 2003 plebiscite showing more than 80 percent in favour of a perimeter highway. While there may be some temporary challenges, there is no question that this is in the best long term interests of the town."

Backgrounder:

Cornwall is the fourth largest, and one of the fastest growing towns in Prince Edward Island. Incorporated in 1995, it now has a population of more than 5,000 residents. In 2011, the Town of Cornwall had a population of 5,162, representing a percentage change of 10.4 percent from 2006. This compares to the national average growth of 5.9%.

Cornwall is a young community with three schools including Westwood Primary, Eliot River Elementary and East Wiltshire Intermediate. Hundreds of students travel in and out of the community each day, while the Trans Canada Highway and thousands of vehicles still run right through the middle of the town.

In October 2015, the Town of Cornwall endorsed a proposed realignment of the Trans-Canada Highway. The route would be located within a corridor that starts at the York Point Road intersection, continues west around the north side of Cornwall and joins back to the TCH in Clyde River. The bypass would allow easy access to Cornwall and the South Shore, while allowing vehicles bound for Charlottetown and further to take a route around, rather than through the community.

Coming from New Haven, the route would cut across the Baltic Road and Bannockburn Road to Clyde River Road, across Cornwall Road, rejoining the current Trans-Canada through a roundabout at the intersection of Warren Grove Road.

Phase One would include the installation of roundabouts at the Maypoint intersection and at the Poplar Island (COWS) intersection. Work on this phase would begin in the fall of 2016.

Phase Two would include the construction of a six-kilometre route running from New Haven to the York Point Road. Construction would begin in 2017 and end in the fall of 2019.

If the project is approved under the federal New Building Canada Fund, public meetings on the roundabouts would begin in July, and the Environmental Assessment Impact study consultations would follow immediately. Public meetings would be held to gather community input on the proposed route, followed by the detailed design phase and a spring construction start. The final decision on a preferred route would be made after an independent environmental review. The route chosen would have minimal impact on the environment and the least disruption to watercourses and wetlands, forested areas, ***agricultural*** land and residential properties. The corridor being proposed is primarily cleared ***agricultural*** land with one river crossing but no protected lands or established forests.

The Town has been lobbying for the project for 20 years. With through traffic re-routed around the perimeter, it would be able to consider new entrances and streets connecting to the road, without being affected by highway access limits. For example, it could construct a new entrance into the Terry Fox Sports Complex, which currently only has access through a neighbouring subdivision. When complete, the route would become a Community Connector road, creating more road access to housing and business development.

The safety of Cornwall and Clyde River residents would improve by redirecting heavy truck and commuter traffic onto a limited access road away from children, students, pedestrians and cyclists. With less highway traffic, fewer intersections and more consistent speed limits, Cornwall residents would have easier access to businesses and a much safer community.

One of the largest projects the province has ever undertaken, construction of the Cornwall Bypass would put hundreds of people to work and create substantial economic spin-offs for Island businesses. While some existing businesses may feel the impact in the short term, most will benefit over time as the town grows. The longer terms benefits of a safer community and increased opportunities for housing development would be good for business in Cornwall and Clyde River.

For more information visit the Cornwall Bypass web page at [*www.princeedwardisland.ca/en/information/cornwall-perimeter-highway-project*](http://www.princeedwardisland.ca/en/information/cornwall-perimeter-highway-project)

**Load-Date:** June 29, 2016

**End of Document**



[***Company Summaries - Q4 2015***](https://advance.lexis.com/api/document?collection=news&id=urn:contentItem:5GKP-X2V1-JD33-J1T5-00000-00&context=1516831)

Hong Kong Oil & Gas Report

October 1, 2015 Thursday

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**Length:** 2140 words

**Highlight:** Company Summaries - Q4 2015

**Body**

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| **Shell** | **Shell**'s retail network extends to almost 50 mostly modern outlets, placing it third in terms of the total number of service stations. Shell has two franchise stations at Hong Kong International Airport at Chek Lap Kok and four stations in Macau. There are 15 sites in Kowloon and more than 20 in the New Territories. The Anglo-Dutch major is also the market leader in supplying liquefied petroleum gas (LPG) in Hong Kong and Macau, providing cylinder LPG to 125,000 households. Shell supplies piped LPG to 68 housing estates managed through six regional operators. The company is a member of the consortium that provides aviation fuel services at Hong Kong International Airport and is also the exclusive fuel supplier to the Business Aviation Centre that serves corporate jets. Other members of the Aviation Fuel Supply Consortium include: **Caltex**, **ExxonMobil**, **Sinopec**, **China Resources** and **Kuwait Petroleum**. In addition, Shell is the leading lubricants supplier in Hong Kong, serving both the automotive and industrial sectors, as well as being the biggest provider of road- and industrial-grade bitumen products to Hong Kong and mainland China. In December 2014, Shell Hong Kong became the first oil major in HK to commercially launch the 5% biodiesel blend product, ***targeting*** corporate customers seeking to meet their ***greenhouse gas*** ***emission*** ***reduction*** and development sustainability goals. But the company has no plan to launch the cleaner-burning fuel at its network of fuel stations, citing uncertain demand and limited storage capacity at this stage. **Jacobs Engineering Group** announced in April 2013 that it had been selected by Shell Hong Kong Limited to provide detailed design for its Transformer Oil Project located at its Tsing Yi installation in Hong Kong. Officials did not disclose the contract value, but noted that the work is being performed from Jacobs' China operations in Hong Kong and Shanghai. Shell's 47-acre Tsing Yi installation supplies Hong Kong and Macau with a wide range of oil, gas and chemical products. |

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| **Chevron** | The retail chain of **Chevron**-owned Caltex comprises more than 40 outlets. In October 2005, Caltex Oil Hong Kong Limited changed its name to Chevron Hong Kong Limited. The US group is the main fuels supplier to one of Hong Kong's major bus companies, owns two marine service stations and operates 150 dealerships and car service centres, as well as sites selling fuels, LPG, lubricants and marine products. Caltex provides aviation refuelling services through its membership of the Aviation Fuel Supply Consortium. |

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| **Exxonmobil** | ExxonMobil, also a member of the aviation supply consortium, has the country's largest fuel retail network with more than 50 service stations in Hong Kong. It has historically been a significant player in the island's utilities sector, through its 60% interest in a JV ( **Castle Peak Power Co**) with local firm **CLP Power Hong Kong**, which owns three power stations serving Kowloon and the New Territories with a combined generating capacity of 6,908MW. However, Exxon Mobil has now sold its majority stakes in the Hong Kong utility and power storage firm for a combined USD3.4bn. Under the deal, **CLP Holdings** assumed control of Castle Peak, lifting its stake to 70% by buying half of Exxon's holding for HKD12bn. State-controlled China Southern Grid (CSG) bought the other 30% held by Exxon, but did not disclose financial terms. A person close to the transaction told Reuters that CSG also paid HKD12bn. CLP also revealed plans to buy Exxon's 51% stake in **Hong Kong Pumped Storage Development Co** for HKD2bn. The sale of its stake comes after Exxon ran an auction to find a buyer for half its stake in 2013. While the sale process elicited some interest from Japanese and South-East Asian bidders, CLP was seen as the natural buyer given its 40% existing shareholding. CLP used internal resources and a HKD10bn loan facility from **HSBC** to fund the acquisition. |

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| **Sinopec/china Resources** | By April 2015, China's **Sinopec** had completed the capital injection agreement reached in September 2014 with 25 domestic and foreign investors taking a stake in the group's fuels marketing business. The investors subscribed for a 29.99% equity interest in the Sinopec marketing company for an aggregate amount of CNY107.094bn in cash. Following the completion of the deal, Sinopec holds a 70.01% equity interest in the marketing company. In March 2007, Sinopec entered into a framework agreement with **China Resources** regarding the acquisition of its petroleum business in Hong Kong. The core business of **China Resources Petrol Filling Station Co** is managing petrol stations. The company operates 20 stations in Hong Kong, covering gasoline, diesels, LPG and automotive gas. China Resources Chemicals trades in various petroleum by-products, such as chemical fertilisers, rubber, plastics and ***agricultural*** chemicals. |

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| **Clp** | **China Light and Power** provides vertically integrated power services to 2.3mn, representing 80% of Hong Kong's population. It has historically operated the Castle Peak power station, Black Point power station and Penny's Bay power station, on behalf of **CAPCO**, a partnership between CLP and ExxonMobil. The three plants have a combined total power generation capacity of 6,908MW. CLP also manages over 13,900km of cables and more than 13,550 substations. CLP is regulated by the Hong Kong government under a Scheme of Control Agreement that defines the company's role as an electricity provider, monitors its performance and agrees levels of investment and return. Black Point Power Station is located in the New Territories of Hong Kong and is one of the world's largest gas-fired combined cycle power stations. CLP became the first electricity supplier in Hong Kong to use natural gas for power generation when Black Point started operation in 1996. The use of natural gas enabled it to ***reduce*** total ***emissions*** during a period when electricity consumption on its system increased by 80%. CLP plans to increase usage of gas for its local generation when more gas becomes available; this change is in line with the Hong Kong Government's proposed enhancements to the Air Quality Objectives and Climate Change Strategy. Castle Peak is one of the largest coal-fired power stations in the world. Two of the units can burn gas as a backup fuel. Castle Peak Power Station was constructed in the 1980s as the means to meet high growth in Hong Kong's electricity demand and to change CLP's primary fuel from oil to coal. With the ***Emissions*** Control Project for ***reducing*** sulphur dioxide and nitrogen oxide ***emissions*** phasing in from 2010, together with the ongoing ***emissions*** management measures in place, these make Castle Peak one of the cleanest coal-fired power stations in the world. Exxon Mobil agreed to sell its majority stakes in the Hong Kong utility and power storage firm for a combined USD3.4bn. Under the deal, CLP Holdings assumed control of Castle Peak Co, lifting its stake to 70% by buying half of Exxon's holding for HKD12bn. State-controlled China Southern Grid bought the other 30% held by Exxon. CLP also revealed plans to buy Exxon's 51% stake in Hong Kong Pumped Storage Development Co for HKD2bn. The sale comes after Exxon ran an auction to find a buyer for half of its stake in 2013. While the sale process elicited some interest from Japanese and Southeast Asian bidders, CLP was seen as the natural buyer given its 40% existing shareholding, people familiar with the matter said. CLP used internal resources and a HKD10bn loan facility from HSBC to fund the acquisition. CLP Holdings in April 2014 said it will dispose of two of its Chinese assets for CNY2.25bn, a move to exit the company's investment in certain electricity plants in China for capital reallocation. CLP said it agreed to sell its entire stakes of CLP Power China Tianjin and CLP Power China Shenmu to **CA Holdings**, an investment holding company which has major units engaged in industrial investment, property renting, property management and commercial shopping mall operation in China. The consideration for the disposal of CLP China Tianjin is CNY2.09bn and for CLP China Shenmu it is CNY160mn, terms which CLP directors consider 'fair and reasonable', CLP said. CLP Holdings has urged the local government to boost the use of natural gas for electricity generation, rather than increasing power imports from China. Both options are being considered in a bid to cut ***emissions*** as part of a review of the fuel mix, which is heavily tilted towards coal. The city launched a three-month public consultation on the proposals in mid-March. Hong-Kong's coal-fired power generating units are expected to go offline from 2017. In the first quarter of 2015, local sales of electricity were 6,483GWh, representing a slight decrease of 0.2% over the same period of 2014. The Residential sector recorded a significant decrease of 7.1%, mainly due to a lower heating load as a result of the warmer weather. This offsets the increase in the Commercial, Infrastructure & Public Services and Manufacturing sectors. Sales to the Mainland amounted to 167GWh, a decrease of 46.5% over the same period of 2014, because CLP did not have any electricity sales to Guangdong Power Grid Co during the quarter. Total electricity sales in the period, including both local sales and sales to the Mainland, decreased by 2.3% to 6,650GWh. |

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| **Hk Electric** | Listed on the Stock Exchange of Hong Kong in January 2014, **HK Electric Investments** is the first fixed single investment trust in Hong Kong with a focus on the power industry. Its principal operating subsidiary, **The Hongkong Electric Company, Limited** (HK Electric), which was incorporated in January 1889 and commenced operations in 1890, is one of the world's longest-established utility companies. As a vertically integrated power utility, HK Electric is the sole electricity provider to more than half a million commercial and domestic customers on Hong Kong Island and Lamma Island. Its operations cover power generation, transmission and distribution, supply and customer service under a Scheme of Control Agreement with the Hong Kong government. HK Electric supplies electricity to Hong Kong Island, Ap Lei Chau and Lamma Island, with 568,000 customers. It is regulated by the government of Hong Kong and operates the Lamma Power Station, which has total installed capacity of 3.42GW with eight coal-fired units, five gas turbine units and one combined-cycle unit. The main generating units are largely designed for 100% coal firing. To maintain fuel flexibility, capability for oil firing has been provided. Hong Kong's first commercial-scale wind turbine has been put into operation in Lamma. In addition, Lamma is being expanded to house additional combined-cycle gas turbine units, the first of which was commissioned in 2010. Electricity is distributed by HEC at 11 kilovolts (kV) and 22kV to more than 3,500 customer (distribution) substations on Hong Kong Island and Lamma Island. HEC has around 538km of 400kV lines, 1,079km of 132kV lines, 414km of 33kV lines, and 11 400kV substations. HEC commissioned Hong Kong's largest solar power system, on Lamma Island, in July 2010, which has a capacity of 550kW. The project was the first large-scale application of amorphous silicon thin-film technology in the territory. |

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| **Hkcgc** | Town gas is manufactured and distributed by the **Hong Kong andChina Gas Company** (HKCGC). The principal uses of town gas are for cooking and water heating for domestic customers and catering and heat processing for commercial and industrial customers. There is an even split in gas consumption between domestic and commercial/industrial use. On March 17 2010, HKCGC announced that **Towngas China** would acquire interests in six of its mainland piped gas companies for around USD220mn and, as a result, HKCGC would own 56.4% of Towngas China's share capital. Towngas China is a leading supplier of piped gas in China and has been investing in the country's gas industry since 1998. It has cumulatively invested over HKD5bn and established more than 60 piped city-gas projects in 12 provinces/autonomous regions/municipalities including Anhui, Guangdong, Guangxi, Heilongjiang, Jiangsu, Jiangxi, Jilin, Liaoning, Shandong, Sichuan, Zhejiang and Chongqing city, serving more than 5mn households. Profit after taxation attributable to shareholders of the group for the 2014 year amounted to HKD7,109mn, an increase of HKD255mn compared with 2013. Exclusive of the group's share of a revaluation surplus from investment properties and unrealised exchange differences on the renminbi, the group's profit after taxation for the year increased by approximately HKD640mn to approximately HKD7bn, an increase of 10% compared with 2013 mainly attributable to a rise in profit from the group's local businesses and mainland utility business. |

**Load-Date:** August 4, 2015

**End of Document**



[***Five Key Themes For Europe Agribusiness***](https://advance.lexis.com/api/document?collection=news&id=urn:contentItem:5K4C-F481-F0J5-846V-00000-00&context=1516831)

United Kingdom Agribusiness Report

July 1, 2016 Friday

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**Length:** 902 words

**Highlight:** Changes to the CAP will have a clear impact on production levels, including for milk and sugar. The dairy sector will also face consolidation in the coming years, with western EU member states outperforming. However, these sectors could face growing uncertainty as a result of Brexit, which could see the UK leave the EU in the next two-to-three years. In any event, the UK farm sector will be disproportionately affected if the country eventually leaves. Moreover, Brexit could delay the other key trends we see in the industry over the long term.

**Body**

*BMI View: Changes to theCAP will have a clear impact on production levels, including for milk and sugar.The dairy sector will also face consolidation in the coming years,with western EU member states outperforming.However, these sectors could face growing uncertainty as a result ofBrexit, which could see theUKleave the EUinthe nexttwo-to-threeyears. In any event, the UK farm sector will be disproportionately affected if the country eventually leaves.Moreover, Brexit could delay the other key trends we see in the industry overthelong term.***1.Brexit To Impact UK More Than EU Farm Sector**In opposition to our core view, the UK voted to leave the EU during the June 23 referendum on its membership of the union. Although Brexit will have limited consequences for the UK ***agricultural*** industry in the short term, we believe farming will be the UK's most negatively impacted sector due to a combination of lower public funding, higher trade costs with the EU, lower investment and higher labour costs. The EU's ***agricultural*** sector will face limited headwinds following Brexit, but fundamental risks to its ***agricultural*** policy will emerge ( *see 'Brexit On* ***Agriculture****: Initial Thoughts', June 24*).

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| Ranking Brexit Impact |
| Select UK Industries - Negative Impact Under Brexit Scenario |
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| *Note: 4 = high negative impact, 0 = no impact. Source: BMI* |

**2. EU Dairy Industry To Consolidate To 2020** The EU dairy industry will undergo significant consolidation in the next five years, as the most efficient producers will benefit from a less regulated environment while smaller farmers will see their funding decrease. EU-15 countries will fare better than newer EU-N13 countries, with the exception of Poland owing to its greater investment and export prospects. Over this period, the EU will benefit from strong export opportunities, mainly for cheese and milk powder ( *see 'Three Key Trends For EU Dairy Industry', December 17 2015*).

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| Export-Driven Growth For Cheese & Milk Powder |
| EU-28 - Cheese & Whole Milk Powder Production Forecasts ('000 tonnes) |
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| *f = BMI forecast. Source: EU Ministry of* ***Agriculture****, USDA, FAPRI, BMI* |

**3. Slower Palm Oil Demand Ahead With Biofuel Policy Reform** Palm oil demand in the EU is slowing after a decade of spectacular consumption growth. We forecast this trend to continue in the coming years. Ongoing reform to the EU's renewables and biofuels policy will cap the use of palm oil-based biodiesel in the region, which has been one of the main drivers behind strong expansion in palm oil consumption over recent years. The EU is now in the process of amending its renewables policy, which we believe will come in the form of a cap on consumption of first-generation biofuels, around 6-7%. However, the reform is creating new opportunities in the form of the development of second- and third-generation biofuels production, which will boost demand for palm oil waste products *(see 'Slower Palm Oil Demand Ahead With Biofuel Policy Reform', February 112015).*

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| Sugarcane, Palm Oil Biofuels Among The Most Efficient |
| Biofuel - Net CO2 ***Emissions*** From Select Crops (% of CO2 ***emissions*** of fuel replaced) |
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| *Note: Negative percentages suggest that a biofuel produced from a given* ***energy*** *crop emits less* ***greenhouse gas*** *(GHG) than the fuel it replaces; positive percentages suggest it emits more GHG than the fuel it replaces. ILUC = indirect land use change impacts. Source: European Parliament, based on data and models from Econometrica, E4tech, LCFS II, EPA, AGLINK, IIASA, IFPRI BAU, IFPRI FT.* |

**4.France AndGermany To Strengthen Dominance Amid Sugar Consolidation Wave**In September 2017, the EU will abolish its sugar production quota, as it did with dairy quotas in March 2015. As in the case of dairy, we believe the quota removal will lead to an increase in production and subdued sugar prices, ***reducing*** the premium over world (ICE) prices that EU sugar producers can sell their crop domestically. France and Germany will strengthen their dominance of the EU sugar sector over the next five years as they increase market share while the sector consolidates at the expense of smaller and less-efficient producers. The EU will become an important global exporter of sugar once the consolidation phase is over ( *see 'France & Germany To Strengthen Dominance Amid Sugar Consolidation Wave', February 25*).

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| France And Germany To Drive EU Sugar Output Growth To 2020 |
| Select Regions - EU Sugar Production (LHC, mn tonnes) & Share Of Total EU Sugar Production (RHC, %) |
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| *f = BMI forecast. RHC: 'Other EU' includes Greece, Spain, Italy, Romania, UK and Poland. Source: Eurostat, FAO, BMI* |

**5. European *Agriculture*: The Future Of The CAP** The EU's reformed common ***agricultural*** policy (CAP) came into full effect at the beginning of 2015 and will remain in place until 2020. Over this period, there will be substantial changes in European ***agriculture*** due to trade agreements, payment distribution and the removal of production quotas. Over the long term, the CAP will realign its core focus towards the environment and the sustainability of the region's farming, rather than regional commodities prices. Generally speaking, the premium between ***agricultural*** goods prices in Europe and the world will narrow, as policymakers will limit direct market intervention ( *see 'European* ***Agriculture****: The Future Of The CAP', November 20 2014*).

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| A Less Market-Focused Role... |
| Historical Development Of The CAP |
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| *Source: European Commission, BMI* |

**Load-Date:** July 28, 2016

**End of Document**



[***Animal Nutrition Market is Expected to Generate a Revenue of 18,883.3 Million USD by 2020 - IndustryARC Research***](https://advance.lexis.com/api/document?collection=news&id=urn:contentItem:5JDP-SNX1-F0K1-N1GX-00000-00&context=1516831)

M2 PressWIRE

March 30, 2016 Wednesday

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**Length:** 985 words

**Body**

March 29, 2016

Growing awareness among the producers driving animal nutrition market growth globally; estimated to reach $ 18,883.3 Million by 2020.

The Report "Animal Nutrition Market - By Nutrient Type (Amino Acids, Minerals, Vitamins, Lipids, Eubiotics, Enzymes and Carotenoids), By Livestock (Ruminant, Poultry, Aquaculture, Swine, Equine, Pets and Others), By Administration Method (Oral, Topical and Injection) and By Geography (2015 - 2020)", published by IndustryArc, estimates the market to reach $ 18,883.3 Million by 2020

Growing population has led to increased demand for food resulting in need of raising animals of high genetic merit in optimum conditions. Farmers expect safe, healthy and sustainable feed for their livestock. Animals that receive improper nutrition are vulnerable to health and reproductive problems and prove to be less productive and marketable. Thus to ensure profitability in ***agricultural*** operations animal nutrition is of high significance. The animal nutrition market is segmented into livestock, nutrient type, administration method and geography. Global animal nutrition market is estimated to grow at a rate of 5.4% CAGR to reach $ 18,883.3m by 2020.

Make an inquiry @ [*http://www.industryarc.com/inquiry-before-buying.php?id=15015*](http://www.industryarc.com/inquiry-before-buying.php?id=15015)

The rapidly increasing industrialization of meat production is fostering unhygienic growing practices among few famers to cut down operation costs. The risk for disease outbreaks is increasing due to mal practices such as cramping animals in cages, supply of substandard feed, lack of proper health checks and preventive measures. These outbreaks are threat to livestock breeding industry and hampering animal growth, financial loss and also hazardous to human health. Use of feed enzymes in feed protect the livestock from such outbreaks and ensure healthy growth. Growing awareness have created a need for medical assistance in livestock breeding industry driving demand for animal nutrition products which includes nutrients such as vitamins, minerals and amino acids.

Amino Acids holds the major share in global animal nutrition market in the nutrient type segment as they are essential and integral part of feeding regime. They act as a substitute to feed protein sources ***reducing*** nitrogen excretion and minimize ***greenhouse gas*** ***emissions***. Eubiotic is estimated to be the fastest growing during the forecast period due to strong demand. Swine animal nutrition market is projected to be the fastest growing during 2015-2020. Growing cases of outbreaks is set to increase the demand for high quality meat and thus force producers to opt for animal nutritional products. Oral administration method is estimated to hold the highest share in global animal nutrition market in administration method segment in 2015. Asia-Pacific is the dominant market for animal nutrition and is estimated to reach $ 5,970.1m by 2020 at a rate of 6.8% CAGR.

The Major Players in Animal Nutrition Market Include

\* Cargill Inc.

\* BASF SE

\* Archer-Daniels-Midland Company

\* E.I. Du Pont Nemours & Co.

\* Evonik Industries AG

Animal Nutrition market is consolidated with the presence of key global players. High quality, tailor made products, and ease of administration are the major factors manufacturers are considering in the development of new animal nutrition products. Frequent product launches, acquisitions and expansion are few of the growth strategies the key players in the industry are striving to increase their market share.

Various end-use applications included in the report are:

\* Feed Manufacturers

\* Premix Manufacturers

\* Animal Nutrition product Manufacturers

\* Compound Feed Manufacturers

\* Academic Institutions

\* Animal Feed Safety Regulatory Authorities

\* Distributors and Suppliers of Feed and Animal Nutrition products

\* Government Regulatory Institutions

\* Meat Producers, Premixers, Integrated Feed Producers

\* Farmers

The overall market is also presented from the perspective of different geographic regions and the key countries for this industry.

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Related Reports of Your Interest:

"Animal Feed Testing Market: By Type (Pet Food, Forages, Equine Feed, Poultry Feed, Premixe, Medicated Feed) Testing Type (Proximate Analysis, Pathogen Testing, Drugs, Antibiotics, Pesticides, Fertilizers, Metals, Minerals, Others)-Forecast 2015-2020":

[*http://www.industryarc.com/Report/37/global-animal-feed-testing-market.html*](http://www.industryarc.com/Report/37/global-animal-feed-testing-market.html)

"Animal Feed Additive Market Analysis: By Type (Technological & Zoo technical feed additives, Nutritional Feed Additives, and Sensory Feed Additives), By Livestock (Swine, Poultry, Cattle, Aquaculture and Others) - With Forecast (2015 - 2020)":

[*http://www.industryarc.com/Report/226/Animal-Feed-Additives-Market-Research-Report.html*](http://www.industryarc.com/Report/226/Animal-Feed-Additives-Market-Research-Report.html)

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We look forward to support the client to be able to better address customer needs; stay ahead in the market; become the top competitor and get real-time recommendations on business strategies and deals. Contact us to find out how we can help you today.

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**Load-Date:** March 30, 2016

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[***Animal Nutrition Market is Expected to Generate a Revenue of 18,883.3 Million USD by 2020 - IndustryARC Research***](https://advance.lexis.com/api/document?collection=news&id=urn:contentItem:5JDP-SNX1-F0K1-N18J-00000-00&context=1516831)

FinancialWire

March 30, 2016 Wednesday

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**Length:** 990 words

**Body**

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Growing population has led to increased demand for food resulting in need of raising animals of high genetic merit in optimum conditions. Farmers expect safe, healthy and sustainable feed for their livestock. Animals that receive improper nutrition are vulnerable to health and reproductive problems and prove to be less productive and marketable. Thus to ensure profitability in ***agricultural*** operations animal nutrition is of high significance. The animal nutrition market is segmented into livestock, nutrient type, administration method and geography. Global animal nutrition market is estimated to grow at a rate of 5.4% CAGR to reach $ 18,883.3m by 2020.

Make an inquiry @ [*http://www.industryarc.com/inquiry-before-buying.php?id=15015*](http://www.industryarc.com/inquiry-before-buying.php?id=15015)

The rapidly increasing industrialization of meat production is fostering unhygienic growing practices among few famers to cut down operation costs. The risk for disease outbreaks is increasing due to mal practices such as cramping animals in cages, supply of substandard feed, lack of proper health checks and preventive measures. These outbreaks are threat to livestock breeding industry and hampering animal growth, financial loss and also hazardous to human health. Use of feed enzymes in feed protect the livestock from such outbreaks and ensure healthy growth. Growing awareness have created a need for medical assistance in livestock breeding industry driving demand for animal nutrition products which includes nutrients such as vitamins, minerals and amino acids.

Amino Acids holds the major share in global animal nutrition market in the nutrient type segment as they are essential and integral part of feeding regime. They act as a substitute to feed protein sources ***reducing*** nitrogen excretion and minimize ***greenhouse gas*** ***emissions***. Eubiotic is estimated to be the fastest growing during the forecast period due to strong demand. Swine animal nutrition market is projected to be the fastest growing during 2015-2020. Growing cases of outbreaks is set to increase the demand for high quality meat and thus force producers to opt for animal nutritional products. Oral administration method is estimated to hold the highest share in global animal nutrition market in administration method segment in 2015. Asia-Pacific is the dominant market for animal nutrition and is estimated to reach $ 5,970.1m by 2020 at a rate of 6.8% CAGR.

The Major Players in Animal Nutrition Market Include

\* Cargill Inc.

\* BASF SE

\* Archer-Daniels-Midland Company

\* E.I. Du Pont Nemours & Co.

\* Evonik Industries AG

Animal Nutrition market is consolidated with the presence of key global players. High quality, tailor made products, and ease of administration are the major factors manufacturers are considering in the development of new animal nutrition products. Frequent product launches, acquisitions and expansion are few of the growth strategies the key players in the industry are striving to increase their market share.

Various end-use applications included in the report are:

\* Feed Manufacturers

\* Premix Manufacturers

\* Animal Nutrition product Manufacturers

\* Compound Feed Manufacturers

\* Academic Institutions

\* Animal Feed Safety Regulatory Authorities

\* Distributors and Suppliers of Feed and Animal Nutrition products

\* Government Regulatory Institutions

\* Meat Producers, Premixers, Integrated Feed Producers

\* Farmers

The overall market is also presented from the perspective of different geographic regions and the key countries for this industry.

Request a Sample @   [*http://www.industryarc.com/pdfdownload.php?id=15015*](http://www.industryarc.com/pdfdownload.php?id=15015)

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"Animal Feed Testing Market: By Type (Pet Food, Forages, Equine Feed, Poultry Feed, Premixe, Medicated Feed) Testing Type (Proximate Analysis, Pathogen Testing, Drugs, Antibiotics, Pesticides, Fertilizers, Metals, Minerals, Others)-Forecast 2015-2020":

[*http://www.industryarc.com/Report/37/global-animal-feed-testing-market.html*](http://www.industryarc.com/Report/37/global-animal-feed-testing-market.html)

"Animal Feed Additive Market Analysis: By Type (Technological & Zoo technical feed additives, Nutritional Feed Additives, and Sensory Feed Additives), By Livestock (Swine, Poultry, Cattle, Aquaculture and Others) - With Forecast (2015 - 2020)":

[*http://www.industryarc.com/Report/226/Animal-Feed-Additives-Market-Research-Report.html*](http://www.industryarc.com/Report/226/Animal-Feed-Additives-Market-Research-Report.html)

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IndustryARC primarily focuses on Cutting Edge Technologies and Newer Applications of the Market. Our Custom Research Services are designed to provide insights on the constant flux in the global demand-supply gap of markets. Our strong analyst team enables us to meet the client research needs at a very quick speed with a variety of options for your business.

We look forward to support the client to be able to better address customer needs; stay ahead in the market; become the top competitor and get real-time recommendations on business strategies and deals. Contact us to find out how we can help you today.

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[***Greening: Our choice is climate aid or more refugees***](https://advance.lexis.com/api/document?collection=news&id=urn:contentItem:5HJ5-F1K1-JBVM-Y1X0-00000-00&context=1516831)

The Sunday Telegraph (London)

December 6, 2015

Edition 1, Scotland

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**Section:** NEWS; Pg. 18

**Length:** 1001 words

**Byline:** Emily Gosden

**Body**

BRITAIN risks having to take more refugees if it fails to spend billions of pounds tackling climate change overseas, according to Justine Greening, the international development secretary.

Helping poor countries to go green and adapt to the effects of global warming is in Britain's "national interest" because climate change will render other countries unliveable, sending displaced people in search of new homes, she argues.

In an interview with The Sunday Telegraph, Ms Greening said Britain's commitment to spend almost £6 billion on overseas climate aid in the next five years was "the smart thing to do", because climate change could trigger refugee crises similar to that caused by the conflict in Syria.

Ms Greening was speaking as she prepared to travel to Paris for the UN climate change talks, where she joined other G7 ministers yesterday in a declaration to help poor and vulnerable countries access insurance against natural disasters. There was "no doubt" climate change would lead to more "extreme weather events" such as more frequent droughts, she said.

Setting out the rationale for climate aid, she said: "We see from the Syrian crisis, which is of course driven predominantly by conflict, that when people can't live where they are at the moment they have to go to places that are safer, securer and more viable.

"Climate change, equally, will mean that if people are unable to farm where they have farmed for generations because that land suddenly becomes unviable, they will move.

"It's bad for them but also it's bad for countries when you get significant degrees of displaced people."

Asked if Britain would face more refugees if it failed to provide climate aid, she said: "Yes, I think over time you'll see more extreme weather events that make certain parts of the world that are already challenging to live in become simply unliveable, and so people will end up needing to find new places to go."

She however distanced herself from suggestions by Prince Charles that climate change was a major reason for the Syrian crisis. "The Syrian crisis is a man-made one, but it's man-made by President Assad," she said. "What has driven the crisis in Syria is 40 years of an oppressive regime that people rose up against and are still fighting against." David Cameron announced earlier this year that the UK would increase its spending on tackling climate change overseas from £3.9 billion over the past five years to £5.8 billion over the next five, funding projects including encouraging poor countries to adopt solar ***energy*** and developing flood-resistant crops.

Britain wants developing countries to grow sustainably so "investment in renewable ***energy*** is critical", Ms Greening said. "We [also] need to work with ***agricultural*** sectors, for example smallholder farmers who might be able to get through one year in eight of a drought but in future may need to be able to cope with two years in eight."

Ms Greening's visit to Paris came halfway through the UN summit, at which world leaders last week pledged their desire to agree a binding deal to cut ***greenhouse gas*** ***emissions*** in order to prevent dangerous global warming.

But the scale of funding that rich nations such as the UK should pay to help developing and vulnerable nations is proving to be one of the biggest obstacles to a deal.

Under previous deals, developed nations are committed to "mobilising" $100 billion (£66 billion) a year of climate finance by 2020. But poorer nations argue they are failing to deliver on this promise and want evidence the support will emerge if they are to agree to cut their own ***emissions***.

A group of developing nations, including India and China, have argued that the finance must be substantially increased beyond $100billion after 2020. Ms Greening declined to say whether Britain would be prepared to further increase its funding in future, but said the UK wanted "to see that $100billion ***target*** reached and then continued" and had been "lobbying other countries to step up to the plate more".

China and India have voluntarily pledged funding to help poorer nations. But they are resisting attempts by the UK and US to make the Paris deal stipulate that funding should be provided not only by countries formally classed as developed but also by others "in a position to do so".

Ms Greening said: "I think all countries need to ask themselves whether they are doing enough domestically to limit their own ***emissions***, but also what role they can play more internationally to help other countries collectively achieve our common goal."

The declaration Ms Greening signed yesterday sets out how the G7 nations plan to honour a pledge to help up to 400 million people in vulnerable countries obtain insurance coverage against natural disasters by 2020.

"It's about changing the way we deal with disasters and putting countries in a position, steadily over time, to deal with them through the way many of us deal with disasters, which is to get insurance," she said.

Countries signing up to the schemes are first required to put in place "pre-agreed contingency plans" for dealing with events such as drought, with the insurance then paying out to implement the plans if drought takes place.

"It means they are incentivised to put proper contingency planning in place but also it could take some of the weight off the humanitarian system to respond, because countries will get the planning and the money then to be able to do it in part for themselves," Ms Greening said.

Britain has already contributed aid to establish the African Risk Capacity, the first insurance pool in Africa, with four countries signed up and four more joining.

Last year the scheme paid out £17.7 million to Senegal, Mauritania and Niger to provide food to 1.3 million people following widespread drought.

The UK is also providing millions of pounds of funding to a similar insurance pool in the Pacific.

'I think more extreme weather events will make parts of the world simply unliveable, so people will end up needing to find new places to go'

**Graphic**

Justine Greening: helping poor countries go green is in Britain's national interest

**Load-Date:** December 6, 2015

**End of Document**



[***-Coca-Cola Releases 2014/2015 Sustainability Report***](https://advance.lexis.com/api/document?collection=news&id=urn:contentItem:5GJG-XFC1-F0K1-N35X-00000-00&context=1516831)

ENP Newswire

July 29, 2015 Wednesday

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**Length:** 1428 words

**Body**

ATLANTA - The Coca-Cola Company today released its 12th annual Sustainability Report highlighting progress made in 2014 against the Coca-Cola system's 2020 sustainability goals.

'At Coca-Cola, we're committed to integrating sustainability into the very heart of the enterprise, where our efforts create value for our shareowners and the communities we proudly serve,' said Bea Perez, Chief Sustainability Officer at The Coca-Cola Company. 'We believe the majority of innovation over the next decade will happen at the intersection of sustainability and the supply chain.

Working together with our bottling partners to empower women, better manage water resources and promote well-being gives us new opportunities to build business resiliency and add value across our system.'

The report follows the Company's sustainability framework - 'Me, We, World' - and is rooted in three leadership priorities:

Women: 5by20, one of our value chain innovations continues progress in its commitment to enable the economic empowerment of 5 million women entrepreneurs by 2020. As of Dec. 31, 2014, our 5by20 programs had helped enable nearly 865,000 women in 52 countries since the program launched in 2010.

Water: We are also building business resiliency through our water stewardship efforts. In 2014, we replenished an estimated 94 percent (a calculated estimate of 153.6 billion liters) of the equivalent amount of water used in our finished beverages worldwide (based on 2014 sales volume) through 209 community water partnership projects in 61 countries. The foregoing is a global, aggregate number. The replenishment figure for individual countries may vary and/or be more or less.

Well-being: The Coca-Cola system continues its work to meet global business commitments to promote well-being and to help address the public health challenge of obesity. In 2014, Coca-Cola introduced more than 400 new beverage options, more than 100 of which are ***reduced***-, low- or no-calorie and we supported more than 330 active, healthy living programs in 112 markets.

The report also updates other areas of progress, including efforts to ***reduce*** the carbon footprint of the 'drink in your hand' by 25 percent and to sustainably source key ***agricultural*** ingredients globally by 2020. In addition, through the end of 2014, Coca-Cola had distributed more than 30 billion fully recyclable PlantBottle packages across nearly 40 countries since the program launched in 2009.

The 2014/2015 Sustainability Report demonstrates The Coca-Cola Company's commitment to continuous improvement, increased disclosure, risk assessment and expanded stakeholder engagement. This year, the Company developed the report at the Core In Accordance level of the GRI G4 guidelines.

Ernst & Young LLP, a registered public accounting firm, provided independent external assurance on sustainability indicators related to low- or no-calorie beverages, active, healthy living programs, water use ratio, PlantBottle packaging, lost-time incident rate, front-of-pack labeling compliance, and ***greenhouse gas*** ***emissions*** related to our manufacturing activities.

About The Coca-Cola Company

The Coca-Cola Company (NYSE: KO) is the world's largest beverage company, refreshing consumers with more than 500 sparkling and still brands. Led by Coca-Cola, one of the world's most valuable and recognizable brands, our Company's portfolio features 20 billion-dollar brands including Diet Coke, Fanta, Sprite, Coca-Cola Zero, vitaminwater, Powerade, Minute Maid, Simply, Georgia and Del Valle. Globally, we are the No. 1 provider of sparkling beverages, ready-to-drink coffees, and juices and juice drinks. Through the world's largest beverage distribution system, consumers in more than 200 countries enjoy our beverages at a rate of 1.9 billion servings a day.

With an enduring commitment to building sustainable communities, our Company is focused on initiatives that ***reduce*** our environmental footprint, support active, healthy living, create a safe, inclusive work environment for our associates, and enhance the economic development of the communities where we operate. Together with our bottling partners, we rank among the world's top 10 private employers with more than 700,000 system associates.

The Coca-Cola Company Forward Looking Statements

This press release may contain statements, estimates or projections that constitute 'forward-looking statements' as defined under U.S. federal securities laws. Generally, the words 'believe,' 'expect,' 'intend,' 'estimate,' 'anticipate,' 'project,' 'will' and similar expressions identify forward-looking statements, which generally are not historical in nature. Forward-looking statements are subject to certain risks and uncertainties that could cause actual results to differ materially from The Company's historical experience and our present expectations or projections.

These risks include, but are not limited to, obesity concerns; water scarcity and poor quality; evolving consumer preferences; increased competition and capabilities in the marketplace; product safety and quality concerns; perceived negative health consequences of certain ingredients, such as non-nutritive sweeteners and biotechnology-derived substances, and of other substances present in our beverage products or packaging materials; increased demand for food products and decreased ***agricultural*** productivity; changes in the retail landscape or the loss of key retail or foodservice customers; an inability to expand operations in emerging and developing markets; fluctuations in foreign currency exchange rates; interest rate increases; an inability to maintain good relationships with our bottling partners; a deterioration in our bottling partners' financial condition; increases in income tax rates, changes in income tax laws or unfavorable resolution of tax matters; increased or new indirect taxes in the United States or in other major markets; increased cost, disruption of supply or shortage of ***energy*** or fuels; increased cost, disruption of supply or shortage of ingredients, other raw materials or packaging materials; changes in laws and regulations relating to beverage containers and packaging; significant additional labeling or warning requirements or limitations on the availability of our products; an inability to protect our information systems against service interruption, misappropriation of data or breaches of security; unfavorable general economic conditions in the United States; unfavorable economic and political conditions in international markets; litigation or legal proceedings; adverse weather conditions; climate change; damage to our brand image and corporate reputation from negative publicity, even if unwarranted, related to product safety or quality, human and workplace rights, obesity or other issues; changes in, or failure to comply with, the laws and regulations applicable to our products or our business operations; changes in accounting standards; an inability to achieve our overall long-term growth objectives; deterioration of global credit market conditions; default by or failure of one or more of our counterparty financial institutions; an inability to timely implement our previously announced actions to reinvigorate growth, or to realize the economic benefits we anticipate from these actions; failure to realize a significant portion of the anticipated benefits of our strategic relationships with Keurig Green Mountain, Inc. and Monster Beverage Corporation; an inability to renew collective bargaining agreements on satisfactory terms, or we or our bottling partners experience strikes, work stoppages or labor unrest; future impairment charges; multi-employer plan withdrawal liabilities in the future; an inability to successfully integrate and manage our Company-owned or -controlled bottling operations; an inability to successfully manage the possible negative consequences of our productivity initiatives; global or regional catastrophic events and other risks discussed in our Company's filings with the Securities and Exchange Commission (SEC), including our Annual Report on Form 10-K for the year ended December 31, 2014 and our subsequently filed Quarterly Report on Form 10-Q, which filings are available from the SEC.

You should not place undue reliance on forward-looking statements, which speak only as of the date they are made. The Company undertakes no obligation to publicly update or revise any forward-looking statements.

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[Editorial queries for this story should be sent to [*newswire@enpublishing.co.uk*](mailto:newswire@enpublishing.co.uk) ]

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[***UK-India research partnerships announced worth £20 million to tackle major challenges in food security***](https://advance.lexis.com/api/document?collection=news&id=urn:contentItem:5HND-VJ41-JD3Y-Y286-00000-00&context=1516831)

M2 PressWIRE

December 21, 2015 Monday

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**Length:** 963 words

**Body**

December 21, 2015

A £20 million UK-India fund is now available to support research that addresses critical food security challenges. The fund was announced earlier this month by Jo Johnson MP, Minister of State for Universities and Science during his visit to India.

Four Virtual Joint Centres in ***Agricultural*** Nitrogen will be established between leading UK and Indian researchers to deliver innovative research over the next three years, which will contribute to the sustainable use of nitrogen fertiliser in Indian ***agriculture***. This represents a £10 million investment from the Newton-Bhabha fund, delivered in partnership by the Biotechnology and Biological Sciences Research Council (BBSRC), the Natural Environment Research Council (NERC) and the Department of Biotechnology India (DBT). This collaboration will help meet the challenge of sustainably producing enough food for a growing population whilst ***reducing*** pollution and ***greenhouse gas*** ***emissions***.

The UK-India Virtual Joint Centres in ***Agricultural*** Nitrogen are:India-UK Nitrogen Fixation Centre (IUNFC)Newton-Bhabha Virtual Centre on Nitrogen Efficiency of Whole-cropping Systems for improved performance and resilience in ***agriculture*** (NEWS India-UK)Cambridge-India Network for Translational Research in NitrogenIndo-UK Centre for the improvement of Nitrogen use Efficiency in Wheat (INEW)

The Minister also announced a £10 million UK-India Research and Innovation Bridge programme in Agri-food, funded by Innovate UK, RCUK and DBT, which will bring together academia and industry to tackle key challenges existing at the post-harvest stage in India's agri-food sector, that impact on food security, and are limiting the country's ability to maintain a healthy, fast growing population. The competition is now open for applications and closes on 27 January 2016.

The announcements were made in the Minister's speech to senior representatives from the UK and Indian science and innovation arena at a showcase event held on Thursday 10th December at the at the Indian Institute of Science in Bangalore, hosted by Research Councils UK (RCUK) India in partnership with the UK's Science and Innovation Network (SIN). The event demonstrated how the UK-India research partnership has delivered impact.

Professor Jane Elliott, RCUK International Champion and Chief Executive of the Economic and Social Research Council (ESRC), added: "These investments further strengthen collaborative research between the UK and India based on equal partnership to deliver excellence with impact. They also form part of a wider strategic partnership between DBT and the UK Research Councils."

The value of joint investment in UK-India research has grown from less than a million in 2008 to now over £200 million, demonstrating the Research Councils' commitment to working towards the goal of making the UK India's partner of choice for research collaboration.

- ends - Further information

Contact:

Katie Clark

Tel: 01793 444387 or email: Katie Clark

Notes to editors

The event was hosted by RCUK India at the Indian Institute of Science (IISc), Bangalore in partnership with the UK's Science and Innovation Network (SIN). The event brought together senior representatives from the UK and Indian science and innovation arena, including several vice chancellors from the UK universities who were part of the Ministerial delegation to India. Professor Calie Pistorius and Professor Dame Nancy Rothwell, the Vice Chancellors of the universities of Hull and Manchester respectively, along with Professor Anurag Kumar, Director of IISc and other senior representatives from IISc shared their vision for the future direction of the UK-India partnership in research and innovation, and concluded that there was a great opportunity to develop a strategic relationship between the two countries.

The event also saw the launch of a report from RCUK India, Shaping the Future - Assessing the impact of the RCUK-India research and innovation partnership. The analysis shows that the partnership is developing a substantial cohort of UK and Indian researchers, at all levels, who are addressing global challenges such as food, water and ***energy*** security and climate change.

Research Councils UK (RCUK) India, launched in 2008, brings together the best researchers in the UK and India through high-quality, high-impact research partnerships. RCUK India, based at the British High Commission in New Delhi, has facilitated co-funded initiatives between the UK, India and third parties exceeding £200 million. The research collaborations are often closely linked with UK and Indian industry partners, with more than 90 partners involved in the research. RCUK India is actively involved in co-funded research activities with seven major Indian research funders on a wide array of research themes addressing global challenges. [*www.rcuk.ac.uk/india*](http://www.rcuk.ac.uk/india)

Research Councils UK (RCUK) is the strategic partnership of the UK's seven Research Councils. Our collective ambition is to ensure the UK remains the best place in the world to do research, innovate and grow business. The Research Councils are central to delivering research and innovation for economic growth and societal impact. Together, we invest £3 billion in research each year, covering all disciplines and sectors, to meet tomorrow's challenges today. Our investments create new knowledge through: funding research excellence; responding to society's challenges; developing skills, leadership and infrastructure; and leading the UK's research direction. We drive innovation through: creating environments and brokering partnerships; co-delivering research and innovation with over 2,500 businesses, 1,000 of which are SMEs; and providing intelligence for policy making. Find out more about our work at   [*www.rcuk.ac.uk*](http://www.rcuk.ac.uk).

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FinancialWire

December 21, 2015 Monday

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The event also saw the launch of a report from RCUK India, Shaping the Future - Assessing the impact of the RCUK-India research and innovation partnership. The analysis shows that the partnership is developing a substantial cohort of UK and Indian researchers, at all levels, who are addressing global challenges such as food, water and ***energy*** security and climate change.

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Research Councils UK (RCUK) is the strategic partnership of the UK's seven Research Councils. Our collective ambition is to ensure the UK remains the best place in the world to do research, innovate and grow business. The Research Councils are central to delivering research and innovation for economic growth and societal impact. Together, we invest £3 billion in research each year, covering all disciplines and sectors, to meet tomorrow's challenges today. Our investments create new knowledge through: funding research excellence; responding to society's challenges; developing skills, leadership and infrastructure; and leading the UK's research direction. We drive innovation through: creating environments and brokering partnerships; co-delivering research and innovation with over 2,500 businesses, 1,000 of which are SMEs; and providing intelligence for policy making. Find out more about our work at   [*www.rcuk.ac.uk*](http://www.rcuk.ac.uk).

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**Load-Date:** December 21, 2015

**End of Document**



[***Seeing the wood for the trees: 10 highlights of new forests study; FAO's most detailed study of forests yet shows deforestation down but not out***](https://advance.lexis.com/api/document?collection=news&id=urn:contentItem:5GWW-JP41-JCJY-G3TC-00000-00&context=1516831)

The Guardian

September 11, 2015 Friday 3:51 PM GMT

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**Section:** FAO PARTNER ZONE

**Length:** 945 words

**Body**

The planet's forests continue to shrink but their rate of loss has slowed in recent years, according to a new UN report presented at the World Forestry Congress in Durban, South Africa from 7 to 11 September.

The Global Forest Resources Assessment 2015, the most detailed study of forests that the Food and ***Agriculture*** Organization of the United Nations (FAO) has produced to date, reveals that 129 million hectares of forest - an area close to the size of South Africa - have been lost since 1990.

However, deforestation, literally the act of clearing forest, has more than halved in the past 25 years as increasing numbers of forests have come under protection and improved management.

The report, which covers 234 countries and territories, is published ahead of two major summits this year in which the value of forests will be a central theme: the post-2015 summit in New York, where world leaders will gather between 25 and 27 September to adopt new global Sustainable Development Goals (SDGs) for the next 15 years; and the Conference of the Parties of the United Nations Framework Convention on Climate Change (COP21) from 30 November to 11 December, when governments will meet in Paris amid high hopes of reaching a climate agreement.

Forests, which are critically important to the global economy, local livelihoods and the environment, feature prominently among the SDGs. A dedicated goal, SDG15, reads "Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss".

A natural fit with the new sustainability agenda, forests contribute to decent livelihoods for millions while providing clean air and water, conserving biodiversity and mitigating climate change.

**Here are 10 highlights of the report**

Forest loss

The planet's forest cover is shrinking as world population increases and forest land is converted to ***agriculture*** and other uses. In 2015, forests make up 30.6 percent, or 3 999 million hectares of the world's land areas, compared to 31.6 percent, or 4 128 million hectares, in 1990.

Deforestation slowdown

The annual rate of deforestation has slowed from 0.18 percent in the early 1990s to 0.08 percent in 2015, contributing to a ***reduction*** in total carbon ***emissions*** of more than a quarter between 2001 and 2015. While trees and forests absorb carbon dioxide in the atmosphere, deforestation and forest degradation increase the concentration of ***greenhouse gases***.

Variety of life

Forests harbour most of Earth's terrestrial biodiversity. However, deforestation, chiefly caused by conversion of forest land to ***agriculture*** and livestock areas, is threatening the variety of life on our planet. Forest area primarily designated for biodiversity conservation now accounts for 13 percent of the world's forest.

Renewable ***energy***

Forests are renewable. As woodfuel reliance continues and global demand for wood increases, forests can help to provide the planet's growing global population with environmentally friendly fuel, fibre, and food, as well as essential ecosystem services.

An economic treasure

The forest sector contributes about $600 billion annually to global GDP and provides employment to over 50 million people, of which nearly 13 million work in the forest. Forests make vital contributions to local economies where both industrial and community forestry provide crucial sources of income. They play an important role in combating poverty, ensuring food security and providing decent livelihoods.

Under cover

Forests are increasingly coming under protection and more countries are improving forest management. Additional forest land for conservation has increased by 150 million hectares since 1990, with forest in protected areas increasing by over 200 million hectares.

Natural and planted forest

Natural forests make up 93 percent of total forest area. The proportion of planted forest is increasing in the world, now representing 7 percent of total forest area.

Forests in the tropics

Of the world's climatic regions, the tropics have lost the greatest proportion of forest cover since 1990. Rich in biodiversity, tropical forests are home to more than half the planet's living species. Compared to a quarter of a century ago, there are now fewer trees per person in all regions except temperate climes, where net forest area has actually increased.

Africa, South America losses

Africa and South America are the continents recording the highest levels of deforestation, with annual levels in 2010-2015 of 2.8 and 2 million hectares respectively. Despite continued forest loss in the regions, the figures represent a decrease in the rate of deforestation.

Forests and islands

Small island states may possess less than one percent of the world's forest area, but they make up six of the top ten countries in the world with the highest percentage of land area covered by forest. Their role is crucial in soil and water protection and disaster risk resilience. Coastal and mangrove forests are vital for marine habitat and for protection from coastal erosion.

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**Load-Date:** September 11, 2015

**End of Document**



[***As Paris summit tries to save the planet, how green is France?***](https://advance.lexis.com/api/document?collection=news&id=urn:contentItem:5HJT-4PF1-DY93-M46X-00000-00&context=1516831)

Agence France Presse -- English

December 9, 2015 Wednesday 3:13 AM GMT

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**Length:** 790 words

**Dateline:** Paris, Dec 9 2015

**Body**

UN climate change chief Christina Figueres may have called Paris "a beacon of hope for the world" as leaders gathered last week to begin hammering out a deal to slow global warming.

But how good is the city's -- and France's -- environmental record?

France leads the G20 group of industrialised countries in low-carbon ***energy***, but experts point out that is only because of its massive reliance on nuclear power.

With Paris, which is hosting the climate talks, often so choked with traffic that schools have been forced to keep children indoors during peaks of pollution, many insist that France is in no position "to give lessons to anyone".

Yannick Jadot, an MEP for France's small and divided Green party, is even more scathing. "The only area that we are leading the world in is in our environmental rhetoric... I really struggle to think of an area in which we set a good example."

Paris has pioneered a much-copied bicycle hire scheme, Velib, and its electric car equivalent, which has been extended to utility vehicles for small business.

Yet it has been reluctant to follow some 200 other European cities that now charge or restrict car drivers, despite chronic problems with diesel pollution.

French carmakers have also been slow to get on the hybrid bandwagon, according to Anne Bringault of the NGO, Reseau Action Climat.

"We have only just started to explore making vehicles which run on biogas while in Italy they are have 72,000 on the roads."

- No real progress -

Jadot insists the big picture shows that "France is very behind. Many think we may not even make the legally-binding ***target*** to produce 23 percent of our ***energy*** from renewables by 2020."

Greenpeace's ***energy*** expert Cyrille Cormier is equally downbeat. "France has not made any real progress in terms of CO2 in 10 years. While our neighbours, many of whom were relying on coal, gas or oil, have made huge changes we have not. They are catching up and leaving us behind."

It is also playing catch-up on renewable ***energy***, he said, while Spain, Italy and most of all Germany power ahead.

"Our great economic argument for nuclear power was that it produced cheap electricity for industry," but Germany is now capable of beating it on price with renewables, he claimed.

But the doom and gloom is not universally shared. Benoit Hartmann, of the group France Nature Environment, hopes France's secret weapon could be a law passed in July that aims to divide the country's ***energy*** consumption in half by 2050.

***Greenhouse gases*** are to be cut by three quarters over the same period. "The only problem with the law," said Hartmann, "is that it only provides the means for 30 percent of the objectives it has set."

In recycling too, France is lagging behind according to the government's own ***energy*** and environment watchdog Ademe.

While single-use shopping bags will be banned from January, the agency admitted that France is "one of the worst countries in the EU" at recycling plastic.

It wasn't always thus -- France was one of the leaders in the development of solar power in the 1970s.

So where did it all go wrong?

Jadot, Cormier and Hartmann place the blame squarely on the powerful nuclear lobby and France's giant ***energy*** and utility companies.

"Almost all research funding (in the past) was concentrated on nuclear in the name of ***energy*** independence when in fact 100 percent of the uranium we used had to be imported," Cormier said.

While nuclear may be a low-carbon fuel, it has other obvious risks, particularly as France's reactors begin to age.

"Some of our reactors are 30 to 40 years old with the added risk of accidents that brings," Cormier said, "never mind the risks associated with transporting and storing nuclear waste."

- 'Gigantic potential' -

France is paying the price of allowing "big monopolies to dictate public policy", Cormier argued.

"The state tends to turn automatically to big business or ***agriculture*** to formulate policy," Jadot said. "So ***energy*** policy is decided with EDF and Total, water and recycling policy with Veolia and Suez and cars with Renault and Peugeot."

But there are signs of hope. There is evidence that after decades of flatlining, France is now making progress on ***emissions***.

And in a report in October, Ademe declared that France could technically generate 100 percent of its electricity from renewable sources by 2050.

It all comes down to political will, said Greenpeace's Cormier.

"We and others have been arguing for years that could generate all our needs and more from renewables. We have an gigantic potential in almost every area -- wind, sun, forests, sea and in biogas.

"We have an almost embarrassing abundance of sources. We have no excuse," he said.

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**Load-Date:** December 9, 2015

**End of Document**



[***UK-India research partnerships announced worth £20 million to tackle major challenges in food security***](https://advance.lexis.com/api/document?collection=news&id=urn:contentItem:5HND-VJ41-JD3Y-Y214-00000-00&context=1516831)

FinancialWire

December 21, 2015 Monday

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**Length:** 967 words

**Body**

A £20 million UK-India fund is now available to support research that addresses critical food security challenges. The fund was announced earlier this month by Jo Johnson MP, Minister of State for Universities and Science during his visit to India.

Four Virtual Joint Centres in ***Agricultural*** Nitrogen will be established between leading UK and Indian researchers to deliver innovative research over the next three years, which will contribute to the sustainable use of nitrogen fertiliser in Indian ***agriculture***. This represents a £10 million investment from the Newton-Bhabha fund, delivered in partnership by the Biotechnology and Biological Sciences Research Council (BBSRC), the Natural Environment Research Council (NERC) and the Department of Biotechnology India (DBT). This collaboration will help meet the challenge of sustainably producing enough food for a growing population whilst ***reducing*** pollution and ***greenhouse gas*** ***emissions***.

The UK-India Virtual Joint Centres in ***Agricultural*** Nitrogen are:

- India-UK Nitrogen Fixation Centre (IUNFC)

- Newton-Bhabha Virtual Centre on Nitrogen Efficiency of Whole-cropping Systems for improved performance and resilience in ***agriculture*** (NEWS India-UK)

- Cambridge-India Network for Translational Research in Nitrogen

- Indo-UK Centre for the improvement of Nitrogen use Efficiency in Wheat (INEW)

The Minister also announced a £10 million UK-India Research and Innovation Bridge programme in Agri-food, funded by Innovate UK, RCUK and DBT, which will bring together academia and industry to tackle key challenges existing at the post-harvest stage in India's agri-food sector, that impact on food security, and are limiting the country's ability to maintain a healthy, fast growing population. The competition is now open for applications and closes on 27 January 2016.

The announcements were made in the Minister's speech to senior representatives from the UK and Indian science and innovation arena at a showcase event held on Thursday 10th December at the at the Indian Institute of Science in Bangalore, hosted by Research Councils UK (RCUK) India in partnership with the UK's Science and Innovation Network (SIN). The event demonstrated how the UK-India research partnership has delivered impact.

Professor Jane Elliott, RCUK International Champion and Chief Executive of the Economic and Social Research Council (ESRC), added: "These investments further strengthen collaborative research between the UK and India based on equal partnership to deliver excellence with impact. They also form part of a wider strategic partnership between DBT and the UK Research Councils."

The value of joint investment in UK-India research has grown from less than a million in 2008 to now over £200 million, demonstrating the Research Councils' commitment to working towards the goal of making the UK India's partner of choice for research collaboration.

Further information

Contact:

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**Load-Date:** December 21, 2015

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[***IN OR OUT?; THE arguments are hotting up ahead of what both sides agree will be a defining vote on Britain's future. There are 50 days of campaigning before the first referendum on our place in Europe since 1975. Metro asked the two official campaign teams for 12 essential reasons why the vote should go their way.***](https://advance.lexis.com/api/document?collection=news&id=urn:contentItem:5JNY-91Y1-DY9P-N11V-00000-00&context=1516831)

Metro (UK)

May 3, 2016 Tuesday

Edition 1, Scotland

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**Section:** NEWS; Pg. 12,13

**Length:** 1201 words

**Body**

1 STRONGER ECONOMY: Membership of the European Union supports a stronger economy that delivers growth, trade and investment, as well as jobs and lower prices. That provides opportunities today and for future generations. Leaving Europe would hurt family finances, making Britain permanently poorer to the tune of £4,300 per household per year.

er th, wer price.s 2 JOBS: Independent experts have found that over 3million jobs in Britain are linked to our trade with Europe. This would be put at risk by leaving. Studies have shown that young people and entry positions would be the first to be hit.

3 LOWER PRICES: Being part of Europe means cheaper prices in our supermarkets, cheaper petrol, and lower ***energy*** prices. The governor of the independent Bank of England has warned that leaving Europe could lead to higher mortgage rates.

4 SECURITY: Many of the threats to Britain's security are global in nature, like terrorism, Russian aggression and cross-border crime. Whether it's implementing sanctions against Russia, sharing intelligence about terrorists or arresting and deporting criminals using the European arrest warrant, being in Europe makes us all safer.

5 BRITISH TRADE: Businesses can sell tariff-free to 500million consumers across Europe, Britain's home market. That supports £627million in trade every day, 44 per cent of the UK's total exports. Leaving would put that at risk, putting the thousands of British jobs that trade supports on the line.

6 PUBLIC SERVICES: EU membership is vital to a strong economy and well-funded vital public services. Leaving Europe would be a body blow to our economy, creating a knock-on £36billion black hole in our public finances. That would mean less money for services such as the NHS.

7 CHEAPER HOLIDAYS: Flights and mobile roaming charges are cheaper because of EU action: namely, allowing low-cost airlines to set up and legislating to ban extra data charges. The chief executive of easyJet has warned that budget air passengers would face less choice and higher fares if Britain leaves the EU.

8 FUTURE GENERATIONS: This referendum is crucial to future generations and to the ability of young people to get on in life. Entry-level jobs are already at risk due to uncertainty around leaving Europe. The EU also offers young people opportunities to study, work and travel abroad through the Erasmus programme.

9 WORLD STANDING: Leaving the EU would diminish our influence on the world stage. In today's complex world, the UK has more control over its destiny staying inside organisations such as the EU. We would never dream of leaving the UN or Nato. Why would we leave the EU? 10CLIMATE CHANGE: The EU, led by Britain, has spearheaded global action to tackle the challenge of climate change, setting out clear ***targets*** to cut ***greenhouse gas*** ***emissions***. A collective approach to cross-border environmental problems is crucial. Turning our back on Europe is not the answer.

11 WOMEN'S RIGHTS: Being in Europe ensures protections for women in the workplace, tackling gender discrimination and fighting against income inequality. From maternity leave and work protections during pregnancy, to rules preventing harassment and unequal treatment at work, women in Britain benefit from hard-fought EU protections every day.

12 WORKING RIGHTS: The EU works to protect people in the workplace by making sure they have access to parental leave, paid holiday, protection for part-timers and limits on excessive hours. Leaving would put these employment rights at risk.

1 OUR staffth MONEY, OUR PRIORITIES: We send £350million to the EU every week, enough to build a new fullystaffed NHS hospital. This payment is forecast to go up in the coming years and will be £400million in 2020. We can take back control of this money and spend it on our priorities.

2 CONTROL OF OUR LAWS: Sixty per cent of our laws now come from Brussels, with the EU in control of our trade, our borders and our democracy. If we Vote Leave, UK law will have ultimate authority and we will take back control. We should be able to vote out the people who make our laws.

3 A FAIRER IMMIGRATION SYSTEM: We will be able to create a fairer, more humane system based on the skills we need. We'll be able to control numbers without having to turn away talented people from outside the EU who want to contribute to our society and economy.

4 SUPPORT BUSINESS: Regulation from the EU costs our businesses £600million every week. Only six per cent of UK businesses export to the EU, yet 100 per cent have to comply with these burdensome rules. Outside the EU we can free our entrepreneurs and small businesses and allow them to focus on driving economic growth and creating jobs.

5 PROTECT OUR NHS: Uncontrolled immigration has put huge strain on A&E waiting times and demand for GP registrations. EU law also prevents UK authorities from checking qualifications and language skills of doctors coming from the EU, putting patient safety at risk. It's safer for the NHS to Vote Leave.

6 THE EU IS INTEGRATING MORE: If we Vote Remain it will be more money and power to Brussels. The EU is set to integrate more with the creation of a eurozone treasury with new powers and common positions at international institutions. We will be marginalised even more than we already are.

7 FREE TO TRADE WITH THE WHOLE WORLD: The EU has control over who we can strike free trade deals with, and currently we don't have any with important countries such as China, India and Australia. We can take back control of our trade policy to ensure our businesses have access to fast-growing markets across the globe.

8 SAFER BORDER PROTECTION: Free movement within the EU means that the European Court has control over who can come into the UK. This means we have been unable to prevent dangerous individuals walking into our country. We can take back control and make our borders more secure.

9 CONTROL OF OUR TAX SYSTEM: The EU decides the levels of VAT we pay on goods and services. This was most recently evident when the government couldn't ***reduce*** VAT on women's sanitary products. Outside the EU we can create a tax system which suits our economy, not that of 27 other countries.

10 BETTER INVESTMENT FOR ***AGRICULTURE***: For every £2 we put into the EU, we only get £1 back, therefore outside the EU we will be able to continue supporting our farmers but in a far more ***targeted*** and efficient way. We can decide our own rural policy with people who fully understand the UK industry and environment.

11 THE RENEGOTIATION FAILED: The PM's deal leaves the European Court in charge of exactly the same things as it was at the start. It doesn't bring any powers back. It doesn't save us any money. The deal is not legally binding on the court so it can drop any concessions the PM won as soon as our referendum is out of the way.

12 HIGHER LIVING STANDARDS: Leaving the EU would improve the lives of individuals and families. Independent research has found that rules from Brussels increase the cost of your food shop. On top of this, the head of the In campaign has admitted that wages would rise after we Vote Leave.

What's your opinion? Text the word VIEWS followed by your comment, name and where you live to 65700. Standard network charges apply.

**Graphic**

Vote Leave: London mayor Boris Johnson is backing the Brexit campaignVote Remain: David Cameron heads the official Conservative campaign to stay in

**Load-Date:** May 3, 2016

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[***California public school textbooks mislead students on climate, study says; Books voice doubt over whether climate change is real and suggest global warming could be beneficial, researchers say in analysis of four science texts***](https://advance.lexis.com/api/document?collection=news&id=urn:contentItem:5HFK-K3S1-JCJY-G38V-00000-00&context=1516831)

The Guardian

November 24, 2015 Tuesday 12:17 AM GMT

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**Section:** US NEWS

**Length:** 849 words

**Byline:** Oliver Milman

**Body**

Textbooks in California public schools are misleading students on climate change, with material that expresses doubt over whether it is real and promotes the view that increasing temperatures may be beneficial, according to a Stanford University study.

An analysis of four key science texts given to sixth-grade students in California showed that the books "framed climate change as uncertain in the scientific community - both about whether it is occurring as well as about its human-causation".

Researchers studied 2,770 words used in the books, which are given to students as their first introduction to climate science, and found that the widely accepted opinion that the climate is changing and that humans are the main cause wasn't represented in the books.

Whereas California science textbooks on other subjects list facts, the books focused on climate change use conditional words like "could", "might" or "may" throughout. Three of the textbooks are called Focus on Earth Science, published separately by Prentice Hall, Glencoe-McGraw-Hill and CPO Science. The fourth is called Earth Science, published by Holt, Rinehart & Winston.

The Prentice Hall book, first published in 2008, states: "Not all scientists agree about the causes of global warming. Some scientists think that the 0.7 Celsius degree rise in global temperatures over the past 120 years may be due in part to natural variations in climate."

The same book stresses that climate change "could have some positive effects".

"Farmers in some areas that are now cool could plant two crops a year instead of one," it reads. "Places that are too cold for farming today could become farmland. However, many effects of global warming are likely to be less positive."

Meanwhile, Earth Science has a passage that reads: "Until recently, climatic changes were connected only to natural causes. However, studies indicate that human activities may have an influence on climate change."

The Stanford University study concludes that the language used in the textbooks is likely to promote doubt over the science of climate change and dampen any sense of urgency in dealing with the issue.

"Instead of saying climate change is happening, it's: 'Climate change may be happening,' which isn't what is generally known and understood," said KC Busch, of Stanford Graduate School of Education. Busch conducted the work with assistant professor Diego Roman, a linguist at Southern Methodist University in Dallas.

"The inference throughout these books is to create doubt," Busch said. "Perhaps the textbook companies are making them palatable in a politically charged environment in order to get published. I think they are softening the language. I'm shocked that California has allowed them, to be honest."

Busch said textbooks shouldn't be prescriptive works that "scare the wits" out of sixth graders, but should accurately represent the science.

"There is an ideology in these books. They use the same kind of language seen on climate change denier blogs," she said. "These books should present accurate information and then let students explore the issues further. Saying that 'if temperatures go up, climate change could occur' is completely misleading. We don't want children to be brainwashed; we just need to be clear about what scientists know and what they are uncertain of. We know temperatures are going up, that humans are the main cause that this is causing climate change."

Busch said that uncertainty over climate science propagated by textbooks only adds to confusion over the issue. Recent research by Yale University found that only 57% of US teenagers understood that global warming was fueled by human activity such as burning fossil fuels. This is, however, still slightly higher than the 50% of US adults who accept the science.

The California State Board of Education produces a list of recommended textbooks that school districts can choose from, though they are not mandatory. The board said on Monday that a new round of textbooks was currently in development and would be introduced in 2018. The four publishing companies did not respond by Monday evening to requests for comment from the Guardian.

Scientists have known for more than a century that certain gases, like carbon dioxide, trap heat. Last year, more than 32bn tonnes of these ***greenhouse gases*** were pumped into the atmosphere by human activity, including power plants, ***agriculture*** and transport. These ***emissions*** have helped push the world's average temperature up by around 1C over the past century, fuelling sea level rises and extreme weather events.

Representatives from nearly 200 countries will gather in Paris next week for highly anticipated talks on how to ***reduce*** ***emissions*** and stay within an internationally agreed ***target*** of ensuring the world doesn't breach 2C of warming. Analysis has shown that ***emissions*** cuts already announced by emitters - including the US - will still take temperatures to around 2.7C above the pre-industrial average, leading to extreme heatwaves, coastal erosion and food insecurity for many countries.

**Load-Date:** November 24, 2015

**End of Document**



[***Official 'greenspeak' masks Ireland's poor environmental performance; The final part of our series on agriculture and climate change highlights how difficult it is to reduce emissions while increasing agri-production***](https://advance.lexis.com/api/document?collection=news&id=urn:contentItem:5H1M-WKN1-JC8Y-801M-00000-00&context=1516831)

The Irish Times

September 29, 2015 Tuesday

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**Section:** IRELAND; Pg. 8

**Length:** 2487 words

**Byline:** Paddy Woodworth

**Body**

If we can be sure of just one thing, in the complex debates about the linked futures of our environment and our ***agriculture***, it is that the Department of ***Agriculture*** and the farming and food industries have become extraordinarily fluent in "greenspeak".

And no doubt they often speak it sincerely. But it can be very hard to translate what they are saying into satisfactory actions. The word "sustainable" occurs so often in national plans such as Food Harvest 2020 and Food Wise 2025 that it sometimes seems drained of any real meaning.

For example, from the former: "A sustainable ***agricultural*** sector requires that the highest possible returns are secured for the high-quality food produced." If you substitute "super-profitable" for "sustainable" in that sentence, it makes a lot more sense.

Or consider this gem, from the same document: "Ireland's historic association with the colour green is linked to our unspoilt ***agricultural*** landscape." Passing quickly over the grim human and environmental history of our landscapes in the 19th century, a cynic might say the colour green is more closely linked in recent years to the excessive use of nitrate fertilisers that turned some of our fields to an unnaturally luminous shade of emerald - and did great damage to our waterways - than to supposedly healthy habitats.

**Dire performance**

Reports the National Parks and Wildlife Service (NPWS) has sent to the EU Directorate-General for Environment since we joined the EU show that, far from being at the top of the European environmental class, as our ***agricultural*** marketing persistently suggests, our performance is often dire.

The only place to start our journey to environmental recovery is from recognition of this fact. That does not mean that the journey is impossible, or that our ***agriculture*** cannot play a major role in the process. But it can only fulfil that potential when we stop imagining that painful conflicts of interest will vanish if sufficient magical thinking is applied to them.

Nor does it mean we should abandon initiatives such as Bord Bia's Origin Green, though its publicity - Saoirse Ronan drifting through monocultural fields while praising biodiversity - could have won a greenspeak Oscar.

Bord Bia has in fact done sterling work in persuading many farmers and food companies to take the first real steps in considering the totality of their relationship to the environment, and how they might improve it. It has also applied considerable ingenuity to the difficult question of how such improvements can be measured.

As it stands, however, Origin Green gives far too much latitude to the individual producer in deciding how much improvement is actually necessary. We would never accept such latitude in matters of health and safety, for example. Yet our blind insistence on increasing ***emissions*** that accelerate climate change would, in any rational view of things, constitute the mother of all health and safety violations.

Siobhán Egan, senior policy officer for BirdWatch Ireland, was the only environmental NGO representative on the FoodWise 2025 committee. "It was a really frustrating process," she says. Egan finds the published plan "very alarming", and says: "The level of rhetoric being used has no basis in reality and far exceeds what the content of the plan can deliver, yet the rhetoric is what is being presented to the public.

"Sustainability is used as a marketing tool, when what we need is evidence for claims that our ***agriculture*** is sustainable. There was an attitude that we can continue doing what we are doing now, disregarding the reality of significant declines in habitats and farmland species. It was also frustrating because there is a lot of good stuff happening with farming and conservation, but it's not getting adequate support."

She says that the plan needs "a robust environmental assessment", but doubts whether the assessment delivered in September, extraordinarily quickly after a public consultation closed at the end of August, will have any impact at all on the final plan.

**Urgency**

We just do not seem to appreciate the urgency of our situation.

"Climate change is a serious threat," former president Mary Robinson told a meeting at the Irish Institute of European Affairs (IIEA) last February. "It demands a completely new way of doing things, a complete transformation. Business-as-usual, with a little green-ness attached, won't be enough."

Six months closer to the crucial United Nations climate conference in Paris in December, Robinson, the UN's special envoy on climate change, believes we have still not had the "broad debate" that moving beyond business-as-usual requires.

"We in Ireland recognise the importance of the ***agricultural*** sector," she told *The Irish Times*, "but we are not looking at it in the context of how Ireland can see its future in 10, 20, 30 years' time.

"There was the beginnings of such a debate at the Trócaire conference on climate justice. It would be welcome to have a broader debate along these lines . . . I don't want to comment specifically on Irish policy, as a former president, but I just see a great potential for us to understand the importance of the food sector, but also, as a European country, to meet our obligations and cut ***emissions***. At the moment we are kind of doing special pleading but it's not really very convincing."

Robinson believes we already have a good, nationally-funded model for climate-smart ***agriculture***, but we are putting it into practice abroad rather than at home.

"Irish Aid is already doing climate-smart ***agriculture*** in Malawi, Tanzania, Uganda, with all the elements of diverse, bottom-up ***agriculture*** - less meat-producing, more focused on maize and wheat and local plants. It would be very good to be able to align our policy in supporting genuinely climate-smart ***agriculture*** in developing countries and the policies we have in Ireland itself."

Such change, she says, would offer us the opportunity to give world leadership on this issue.

But there is little sign that most of our policymakers have even begun to grasp this kind of message. There is still no clear understanding that the economy is a subset of the environment, not vice versa. We need to adjust our economic thinking to environmental imperatives, or there will be no stable ground on which our children can build any kind of prosperous economy.

Yet we persist in thinking that we can have it all, ever-increasing production and consumption, with just a little environmental tweaking here and there. This thinking appears quite clearly in the "sustainability" section of Food Wise 2025, though this was hardly the intention of the writers.

**Natural resources**

It says: "Future food production systems must be as focused on managing and sustaining our natural resources as they are on increasing production . . . environmental protection and economic competitiveness are equal and complementary: one will not be achieved at the expense of the other."

But what if "increasing production", at least at the rates envisaged in this ***agricultural*** plan, is simply incompatible with sustaining our natural resources? What if "economic competitiveness", of the type proposed in the plan, is itself the antithesis of environmental protection, not its complement?

Our natural capital is finite, but we are behaving as if it were infinite. We live in a world with a volatile climate system that we have changed and are continuing to change with potentially catastrophic consequences.

Yet we treat this crisis as requiring only techno-fixes and eco-labelling, not radical changes in policy and behaviour.

If we took climate change seriously, could we really be drastically increasing dairy production, when we know that ***agriculture*** already generates one-third of all our ***greenhouse gas*** (GHG) ***emissions***?

In fairness, the challenge of GHG ***emissions*** is recognised in Food Wise 2025, but the assumptions and arguments advanced to meet that challenge are not convincing. There is a recurrent assumption that techno-fixes can be found to ***reduce*** overall ***emissions***, while continually increasing the production that creates them.

Well, we just might discover the secret of nuclear fusion as well, but it's dangerous to bet so heavily on extraordinary advances in science as our main response to a clear and present danger. Nor do crippling cutbacks at Teagasc suggest that the Government is really serious about this option.

Harold Kingston, chairman of the IFA's Environment and Rural Affairs committee, accepts that "we are in a very tight situation regarding climate change. But I believe we can fix it in our generation, if by fixing it we mean maintaining warming below a 2-degree rise."

He makes a cogent case for the current IFA position: our grass-based dairy and beef production is already among the most carbon-efficient in Europe. If we ***reduced*** production, he says, it would simply shift to less carbon-efficient countries to meet market demand. Our farmers would suffer huge losses, and climate would suffer more damage, not less. Our national interest would be damaged, with no gain to the global environment.

**Blaming *agriculture***

He says, with some justice, that "people who are up in arms about climate change sometimes seem to blame ***agriculture*** for everything". He believes that most farmers want to practise conservation, in the sense of passing on their land in better condition, in every sense, than they found it. But he points out that sustainability must include economic and social well-being, as well as environmental considerations.

Kingston argues that the ***emissions*** ***targets*** agreed by the Government put an undue burden on farmers, and that his sector is given no credit for the significant amount of carbon sequestered on ***agricultural*** land.

The counter-argument is that our relative carbon efficiency does not make our substantial agri-***emissions*** cause any less climate change.

A responsible government would not be making an exceptional case for derogation for ***agriculture***, but would be working hard internationally to build institutions that prevent the problem being shifted elsewhere.

And what kind of national interest puts the poorest countries in the world, and our own future generations, at severe risk? Why can we not summon up the imagination to even consider that there might now be a compelling need to place limits on growth? Or that our economic - and dietary - dependence on the mass consumption of beef and dairy products, which we are now selling into cultures that were never dependent on them, and did perfectly well without them, might ultimately be an addiction more dangerous to the livelihoods of our children than heroin?

Of course, we must recognise, as a society, that radically cutting GHG ***emissions*** in ***agriculture*** will have serious impacts on many farm incomes, at least in the short term. We must all be prepared to share that burden, if necessary through increased taxation to subsidise vulnerable farmers through a transition to more climate-friendly kinds of land management.

**Considerable potential**

There is also considerable potential on productive land for restoring corridors and patches of native forest and other habitats of high biodiversity value, the necklaces that are so badly needed to string the jewels of our conservation sites together. Again, such environmentally friendly management must be properly rewarded financially.

There are also opportunities in eco-tourism and recreation. Enterprise and innovation will be needed in spades to make this transition successful. But this task is likely to be much more feasible than attempts to increase dairy production while cutting GHG ***emissions***.

There will be much scope for marketing expertise also, leading consumers to switch from beef and dairy, at least in part, towards cereals, vegetables and fruit. That might cut our soaring health costs - so there could be unexpected benefits along this route.

Meanwhile, the IFA's case that carbon credits and debits on the land are not being accurately accounted for certainly deserves to be examined in depth.

These are all complex equations, to be sure. But we need to start working on them. Very urgently.

Paddy Woodworth is the author of *Our Once and Future Planet: Restoring the World in the Climate Change Century* (University of Chicago Press 2013, published in paperback this month) and a founding member of the Irish Forum on Natural Capital Series concluded

**Challenges Adapt to change**

One place where the issues of ***agriculture*** and climate change are on the table is the IIEA/RDS Leadership Forum on Climate Smart ***Agriculture***, an initiative championed by the IIEA's director general Tom Arnold, who also sits on the board of Mary Robinson's Foundation for Climate Justice.

Arnold is in a better position than most to gauge how the discussion will go though he is naturally keen not to close off any options at this stage.

"Our motivation," he says, "is to bring the key protagonists together, to foster a more serious, high-quality debate aimed at clarifying the issues and educating the various parties, and hopefully arriving at sensible and progressive policy prescriptions which could attract the support of the main stakeholders. Whether these are achievable objectives remains to be seen.

"In working towards a final report for the project, there has to be clarity on a number of key issues."

He asks:

What is the objective and fact-based position about Ireland's relative competitive position as a producer of carbon-efficient food?

What are the GHG consequences of the expansion in milk and beef envisioned in Food Wise 2025?

What are the consequences for other economic sectors of ***agricultural*** expansion in the context of ***emission*** commitments for 2020 and 2030?

Arnold accepts that the forum is based on the assumption that it is possible to "square this circle of increasing food production and meeting climate change obligations".

"I am not convinced there is any realistic prospect of a radical change in dietary patterns in the short to medium term in either developed or developing countries, in the same way as I don't think there is any realistic chances of changing in our use of cars in favour of a massive shift to public transport," he says.

But he also agrees that "it is possible to argue that a more radical conclusion is a more reasonable position to reach. I certainly agree we have to move in a direction of changing land use and indeed supporting more schemes like Burren Life."

Arnold is certainly right to point up the challenge of changing our behaviour. And perhaps the IIEA/RDS debate can indeed square the circle of cutting ***emissions*** while increasing production.

But if it can't, we could do worse than ponder a succinct paraphrase of Darwin's theory of evolution by the marketing and management expert Leon C Megginson: "It is not the strongest of the species that survives, nor the most intelligent that survives. It is the one that is most adaptable to change."

**Load-Date:** September 28, 2015

**End of Document**



[***Blue carbon schemes: conserving coastal areas or commodifying nature?; The UNFCCC's ideas to protect and develop coastal ecosystems have been dubbed 'a false solution' by civil society organisations, but praised by othersThe coastal Kenyan villages bringing their mangrove forest back to life***](https://advance.lexis.com/api/document?collection=news&id=urn:contentItem:5J4V-YNG1-F021-626C-00000-00&context=1516831)

The Guardian

February 22, 2016 Monday 3:14 PM GMT

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**Section:** GLOBAL DEVELOPMENT PROFESSIONALS NETWORK

**Length:** 944 words

**Byline:** Carla McKirdy

**Body**

In the coastal town of Tanjung Balai in North Sumatra where Riza Damanik grew up, learning how to fish is a right of passage. But, he says, initiatives by the Indonesian government over the past couple of decades have left small-scale fishermen like him adrift.

First came intensive shrimp farming, which a 2007 report by the Food and ***Agriculture*** Organisation blamed for mangrove depletion. Then came palm oil; in an effort to ***reduce*** reliance on fossil fuels, extensive sections of coastal areas were converted into palm oil plantations to produce biofuel.

The consequences were catastrophic. Damanik recalls how the fish catch plummeted and major floods swept away entire villages. The biofuel policy was a death knell for these small communities, who were displaced from their ancestral lands and fishing grounds.

Damanik, the chairman of Kesatuan Nelayan Tradisional Indonesia (KNTI) - Indonesia's traditional fisherfolks' union - took his plight to meetings held by civil society organisations alongside the UN climate talks in Paris in December.

At the Climate Action Zone, a space dedicated to sharing experiences on climate change actions, attendees raised questions about the solutions proposed by the UN, in particular the blue carbon initiatives put forward by United Nations Framework Convention on Climate Change (UNFCCC).

Blue carbon refers to carbon dioxide stored in coastal ecosystems such as mangroves, coastal salt marshes and seagrass meadows. The concept was first introduced by a number of UN institutions in the 2009 report, Blue Carbon: the role of healthy oceans in binding carbon.

Blue carbon initiatives aim to protect and develop these coastal ecosystems as they play a vital role in pollution filtration and carbon storage, which is crucial for mitigating global ***greenhouse gas*** ***emissions*** and combating climate change.

Organisations like Conservation International (CI) and the International Union for the Conservation of Nature (IUCN) recognise this - as do some CSOs - and have been at the forefront of initiatives to highlight the importance of blue carbon in conservation efforts, and getting governments to include conservation within their policy-making.

Through their efforts, the International Blue Carbon Initiative (ICBI) - lauded as the first integrated programme focused on mitigating climate change by conserving and restoring coastal marine ecosystems globally - came into existence.

Related: Climate change: western states fail to fulfil pledges to developing countries

Yet blue carbon schemes in general have been dubbed a "false solution" by CSOs like the World Forum of Fisher Peoples. Controversy has risen over how agencies propose to conserve endangered areas: by monetising mangroves and including them within carbon markets.

"It is virtually ocean-grabbing, under another name," says Mads Barbesgaard, chair of political affairs at Afrika Kontakt. "[The idea of blue carbon initiatives] doesn't tackle the core of the issue that's driving the climate crisis," which he believes is pollution caused by transnational corporations and unsustainable industrial techniques.

"Instead, it paints a rosy picture in which transnational corporations can continue to pollute in one place as long as they do a bit of so-called conservation somewhere else, without paying much attention to what conservation actually means to the people who've lived off these resources for generations."

For CSOs, blue carbon schemes represent an extension of programmes such as REDD+ that are said to breed initiatives geared towards the commodification of nature. "The underlying idea of blue carbon initiatives is to shift the focus of our government away from their obligation to ensure the rights of small-scale fishers," says Damanik. "The overall proposal of blue carbon initiatives is to expand ocean grabbing practices which, for us, means risking the loss of our food, jobs, and welfare."

On the other hand, those in favour of blue carbon initiatives say they can lead to a prosperous marriage between the public and private sector to ***target*** environmental woes.

Gabriel Grimsditch, a IUCN representative, believes that environmental markets can bring green into the mainstream. He adds that such initiatives speak to transnational corporations in a language they understand, and these are then more likely to factor environmental issues into their ongoing activities. In short, these markets can then help societies take the step towards creating a greener economy.

"If organised correctly, [carbon markets] can provide sustainable financing for environmental management and conservation without depending on donor hand-outs," he says.

Related: 12 ways to mobilise the money needed to stop climate change

While this would represent a breath of fresh air for cash-strapped conservation efforts, Grimsditch issues a word of warning. "Social and ecological safeguards and regulations are important for carbon markets in order to avoid malpractices, perverse incentives and abuses."

Back in Langkat, the KNTI is working with a number of organisations and local government bodies to restore the ravaged coastal ecosystem on their own terms : "for the benefit of the people and the planet - not for profit".

It might not be the easiest path, but this is just one battle in their struggle to assert that the best solutions to climate change are those based on their traditional knowledge and artisanal practices.

Join our community of development professionals and humanitarians. Follow @GuardianGDP on Twitter, and have your say on issues around water in development using #hlOideas.

**Load-Date:** February 22, 2016

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[***Ireland's greenhouse gases fall - but not fast enough for EU***](https://advance.lexis.com/api/document?collection=news&id=urn:contentItem:5HM9-97F1-DY9P-N259-00000-00&context=1516831)

Irish Independent

December 16, 2015 Wednesday

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**Section:** NEWS; Pg. 10

**Length:** 182 words

**Byline:** Paul Melia

**Body**

***GREENHOUSE gases*** from ***energy***, transport, ***agriculture*** and buildings continue to fall - but not at a fast enough rate to meet EU ***targets*** to decarbonise the economy.

The Environmental Protection Agency (EPA) says that some 58.2 million tonnes were released in 2014, down 0.7pc, and while the overall ***reduction*** is welcome, the picture in individual sectors is mixed.

The sharpest drop is in residential ***emissions***, down 10.4pc, largely due to a milder winter which resulted in less fuel being used. ***Emissions*** also dropped in ***energy*** (down 1.9pc) and ***agriculture*** (1.1pc). However, they increased in industry (up 2.8pc) - and by 31.4pc in the cement industry - and by 2.5pc in transport.

EPA director general Laura Burke said that while Ireland would meet its 2014 ***emissions*** ***targets***, based on current trends the ***targets*** for 2018, 2019 and 2020 remained at risk.

"Significant effort is required if we are to maintain this compliance over the next five years," she said, adding we could not rely on the "luck of a mild winter" to ensure compliance, and that ***targeted*** measures across the economy were needed.

**Load-Date:** December 16, 2015

**End of Document**



[***California public school textbooks mislead students on climate, study says; Books voice doubt over whether climate change is real and suggest global warming could be beneficial, researchers say in analysis of four science texts***](https://advance.lexis.com/api/document?collection=news&id=urn:contentItem:5HFN-JTV1-F021-60BF-00000-00&context=1516831)

The Guardian

November 24, 2015 Tuesday 3:09 PM GMT

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**Section:** US NEWS

**Length:** 911 words

**Byline:** Oliver Milman

**Body**

Textbooks in California public schools are misleading students on climate change, with material that expresses doubt over whether it is real and promotes the view that increasing temperatures may be beneficial, according to a Stanford University study.

An analysis of four key science texts given to sixth-grade students in California showed that the books "framed climate change as uncertain in the scientific community - both about whether it is occurring as well as about its human-causation".

Researchers studied 2,770 words used in the books, which are given to students as their first introduction to climate science, and found that the widely accepted opinion that the climate is changing and that humans are the main cause wasn't represented in the books.

Whereas California science textbooks on other subjects list facts, the books focused on climate change use conditional words like "could", "might" or "may" throughout. Three of the textbooks are called Focus on Earth Science, published separately by Prentice Hall, Glencoe-McGraw-Hill and CPO Science. The fourth is called Earth Science, published by Holt, Rinehart & Winston.

The Prentice Hall book, first published in 2008, states: "Not all scientists agree about the causes of global warming. Some scientists think that the 0.7C degree rise in global temperatures over the past 120 years may be due in part to natural variations in climate."

The same book stresses that climate change "could have some positive effects".

"Farmers in some areas that are now cool could plant two crops a year instead of one," it reads. "Places that are too cold for farming today could become farmland. However, many effects of global warming are likely to be less positive."

Meanwhile, Earth Science has a passage that reads: "Until recently, climatic changes were connected only to natural causes. However, studies indicate that human activities may have an influence on climate change."

The Stanford University study concludes that the language used in the textbooks is likely to promote doubt over the science of climate change and dampen any sense of urgency in dealing with the issue.

"Instead of saying climate change is happening, it's: 'Climate change may be happening,' which isn't what is generally known and understood," said KC Busch, of Stanford Graduate School of Education. Busch conducted the work with assistant professor Diego Roman, a linguist at Southern Methodist University in Dallas.

"The inference throughout these books is to create doubt," Busch said. "Perhaps the textbook companies are making them palatable in a politically charged environment in order to get published. I think they are softening the language. I'm shocked that California has allowed them, to be honest."

Busch said textbooks shouldn't be prescriptive works that "scare the wits" out of sixth graders, but should accurately represent the science.

"There is an ideology in these books. They use the same kind of language seen on climate change denier blogs," she said. "These books should present accurate information and then let students explore the issues further. Saying that 'if temperatures go up, climate change could occur' is completely misleading. We don't want children to be brainwashed; we just need to be clear about what scientists know and what they are uncertain of. We know temperatures are going up, that humans are the main cause that this is causing climate change."

Busch said that uncertainty over climate science propagated by textbooks only adds to confusion over the issue. Recent research by Yale University found that only 57% of US teenagers understood that global warming was fueled by human activity such as burning fossil fuels. This is, however, still slightly higher than the 50% of US adults who accept the science.

The California State Board of Education produces a list of recommended textbooks that school districts can choose from, though they are not mandatory. The board said on Monday that a new round of textbooks was currently in development and would be introduced in 2018. Three of the publishing companies did not respond by Monday evening to requests for comment from the Guardian.

A spokeswoman for Pearson, the company that owns Prentice Hall, said: "Pearson curriculum is developed by expert author teams and is reviewed by independent, academic reviewers.

"We always are committed to presenting balanced, unbiased, and accurate material, and welcome the opportunity to meet with parents and educators to listen to their concerns about textbook content."

Scientists have known for more than a century that certain gases, like carbon dioxide, trap heat. Last year, more than 32bn tonnes of these ***greenhouse gases*** were pumped into the atmosphere by human activity, including power plants, ***agriculture*** and transport. These ***emissions*** have helped push the world's average temperature up by around 1C over the past century, fuelling sea level rises and extreme weather events.

Representatives from nearly 200 countries will gather in Paris next week for highly anticipated talks on how to ***reduce*** ***emissions*** and stay within an internationally agreed ***target*** of ensuring the world doesn't breach 2C of warming. Analysis has shown that ***emissions*** cuts already announced by emitters - including the US - will still take temperatures to around 2.7C above the pre-industrial average, leading to extreme heatwaves, coastal erosion and food insecurity for many countries.

**Load-Date:** November 24, 2015

**End of Document**



[***-Coca-Cola Releases 2014/2015 Sustainability Report; Report Highlights Progress on Comprehensive 2020 Sustainability Goals with a Focus on Women, Water and Well-being***](https://advance.lexis.com/api/document?collection=news&id=urn:contentItem:5GJG-XFC1-F0K1-N3N9-00000-00&context=1516831)

ENP Newswire

July 29, 2015 Wednesday

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**Length:** 1486 words

**Body**

ATLANTA- The Coca-Cola Company today released its 12th annual Sustainability Report highlighting progress made in 2014 against the Coca-Cola system's 2020 sustainability goals.

'At Coca-Cola, we're committed to integrating sustainability into the very heart of the enterprise, where our efforts create value for our shareowners and the communities we proudly serve,' said Bea Perez, Chief Sustainability Officer at The Coca-Cola Company. 'We believe the majority of innovation over the next decade will happen at the intersection of sustainability and the supply chain. Working together with our bottling partners to empower women, better manage water resources and promote well-being gives us new opportunities to build business resiliency and add value across our system.'

The report follows the Company's sustainability framework - 'Me, We, World' - and is rooted in three leadership priorities:

Women: 5by20, one of our value chain innovations continues progress in its commitment to enable the economic empowerment of 5 million women entrepreneurs by 2020. As of Dec. 31, 2014, our 5by20 programs had helped enable nearly 865,000 women in 52 countries since the program launched in 2010.

Water: We are also building business resiliency through our water stewardship efforts. In 2014, we replenished an estimated 94 percent (a calculated estimate of 153.6 billion liters) of the equivalent amount of water used in our finished beverages worldwide (based on 2014 sales volume) through 209 community water partnership projects in 61 countries. The foregoing is a global, aggregate number. The replenishment figure for individual countries may vary and/or be more or less.

Well-being: The Coca-Cola system continues its work to meet global business commitments to promote well-being and to help address the public health challenge of obesity. In 2014, Coca-Cola introduced more than 400 new beverage options, more than 100 of which are ***reduced***-, low- or no-calorie and we supported more than 330 active, healthy living programs in 112 markets.

The report also updates other areas of progress, including efforts to ***reduce*** the carbon footprint of the 'drink in your hand' by 25 percent and to sustainably source key ***agricultural*** ingredients globally by 2020. In addition, through the end of 2014, Coca-Cola had distributed more than 30 billion fully recyclable PlantBottle packages across nearly 40 countries since the program launched in 2009.

The 2014/2015 Sustainability Report demonstrates The Coca-Cola Company's commitment to continuous improvement, increased disclosure, risk assessment and expanded stakeholder engagement. This year, the Company developed the report at the Core In Accordance level of the GRI G4 guidelines. Ernst & Young LLP, a registered public accounting firm, provided independent external assurance on sustainability indicators related to low- or no-calorie beverages, active, healthy living programs, water use ratio, PlantBottle packaging, lost-time incident rate, front-of-pack labeling compliance, and ***greenhouse gas*** ***emissions*** related to our manufacturing activities.

To view The Coca-Cola Company's 2014/2015 Sustainability Report, please visit [*www.coca-colacompany.com/sustainability*](http://www.coca-colacompany.com/sustainability).

About The Coca-Cola Company

The Coca-Cola Company (NYSE: KO) is the world's largest beverage company, refreshing consumers with more than 500 sparkling and still brands. Led by Coca-Cola, one of the world's most valuable and recognizable brands, our Company's portfolio features 20 billion-dollar brands including Diet Coke, Fanta, Sprite, Coca-Cola Zero, vitaminwater, Powerade, Minute Maid, Simply, Georgia and Del Valle. Globally, we are the No. 1 provider of sparkling beverages, ready-to-drink coffees, and juices and juice drinks. Through the world's largest beverage distribution system, consumers in more than 200 countries enjoy our beverages at a rate of 1.9 billion servings a day. With an enduring commitment to building sustainable communities, our Company is focused on initiatives that ***reduce*** our environmental footprint, support active, healthy living, create a safe, inclusive work environment for our associates, and enhance the economic development of the communities where we operate. Together with our bottling partners, we rank among the world's top 10 private employers with more than 700,000 system associates. For more information, visit Coca-Cola Journey at ?   [*www.coca-colacompany.com*](http://www.coca-colacompany.com), follow us on Twitter at twitter.com/CocaColaCo, visit our blog,?Coca-Cola Unbottled, at   [*www.coca-colablog.com*](http://www.coca-colablog.com) or find us on LinkedIn at   [*www.linkedin.com/company/the-coca-cola-company*](http://www.linkedin.com/company/the-coca-cola-company).

The Coca-Cola Company Forward Looking Statements

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[Editorial queries for this story should be sent to [*newswire@enpublishing.co.uk*](mailto:newswire@enpublishing.co.uk) ]

**Load-Date:** July 29, 2015

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[***2015 revisited***](https://advance.lexis.com/api/document?collection=news&id=urn:contentItem:5HM9-VP51-JB29-N328-00000-00&context=1516831)

Meat Trades Journal

December 18, 2015

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**Section:** NEWS; Pg. 2

**Length:** 1216 words

**Highlight:** Our month-by-month look at what has happened in the meat industry over the past year

**Body**

J

**anuary**

The New Year started off with a bang with the appointment of Jane King as chief executive of the ***Agriculture*** & Horticulture Development Board (AHDB). The former editor of Farmers' Weekly oversaw a tough year for the levy body with resignations over marketing (see August) and protests over farm prices (see July). AHDB chairman Sir Peter Kendall cited her communication skills and experience of leading a well-known ***agricultural*** service brand through a period of change as key reasons for her appointment, which have certainly been put to the test over the past year.

**February**

Animal welfare was under the spotlight in February as hidden camera footage emerged of animals being mistreated at two abattoirs in the UK. The incidents at Bowood Lamb and S Bagshaw and Sons showed botched stunning and slaughtering taking place and led to a call for the introduction of legislation to make CCTV mandatory in abattoirs. So far the appeals to introduce it have been unsuccessful, but many abattoir operators decided to adopt it anyway to pre-empt any future introduction of CCTV legislation and help create more transparency in the meat industry.

**March**

AHDB continued its overhaul as it made sector chair appoint-ments for its Beef & Lamb and Pork divisions. Meryl Ward took over as sector chair for Pork, while Stuart Roberts took over at Beef & Lamb although it wouldn't be the last we heard from the latter.

This month also saw a pre-emptive strike against campylobacter as the industry prepared for some high incidence rates of the superbug (see May). Industry bodies launched campaigns to raise awareness of campylobacter as it was expected to be found in almost three-quarters of whole fresh chickens surveyed.

**APRIL**

A European diktat ensured country-of-origin labelling (COOL) was introduced. The law requires all packaged unproces-sed meat products to be labelled where the animal was reared and slaughtered. European Commis-sion research suggested that more than 90% of consumers deemed it important for meat products to be labelled. The legislation does not apply to processed meats. Despite the European Parliament wanting to introduce similar mandatory labelling for meat used as an ingredient in processed foods, this was rejected by members of the British meat industry as too difficult and costly to impose.

**MAY**

Campylobacter was on everyone's lips as the results of the Food Standards Agency's (FSA) year-long survey of the superbug were revealed. It found that campylobacter was present in 73% of fresh chickens from major retailers, with Asda having the highest rate of incidences. For a change, Tesco was in the good books as it had the lowest rate of campylobacter incidences. The results led to all major retailers embarking on plans to cut incidences of the bug, with some introducing new technologyand others working with new suppliers.

The FSA is currently on its second year-long survey and has broadened its reach to include discount retailers Aldi and Lidl.

**JUNE**

The Republic of Ireland returned to 'controlled risk' status following the confirmation of BSE on a farm in Co Louth.

The Department of ***Agriculture***, Food and the Marine investigated following a positive result in a rapid screening test earlier this month. It was confirmed as an isolated case after all 63 cohort animals and four progeny involved in the probe tested negative for BSE as well as the grand-dam of the infected animal. It was the first confirmed case of BSE in Ireland since 2013 and meant the country returned to having a ban on the feeding of meat and bone meat, undergoing systematic testing of feed supplies, active and passive animal testing and checks conducted on all animals by vets prior to slaughter.

**July**

Plummeting lamb prices paid to farmers and static supermarket prices led to some Welsh and English farmers protesting over the behaviour of some major retailers. Hybu Cig Cymru - Meat Promotion Wales (HCC) figures during July revealed that Welsh farmers received between £25 and £30 less per lamb than a year ago, due to a strong pound and increased red meat imports, prompting farmers to refuse to sell their prime lambs.

The protest, operating under the #nolambweek hashtag, gained a lot of mainstream support. However, prices only increased slightly the week after and are still seeing declines.

**August**

After less than six months in the job, Stuart Roberts resigned from his role as chairman of AHDB Beef & Lamb, citing disapproval over how the levy money was being spent. At the time, he told Meat Trades Journal: "After the General Election I have seen an increasing desire by government to exert more influence than I believe was in place previously over the way in which AHDB levy payers' money should be spent." His resignation sparked an outpouring of support for Roberts and lamb farmers, with several waves of promotional activity for the lamb sector being approved.

**September**

One of the bigger news stories this month turned out to be the appointment of Kerry McCarthy as shadow environment minister. While her skills were not in question for the job, the fact she is a vegan and would have to spend a lot of time dealing with the meat and dairy industry was a sticking point for some. Her appointment attracted a lot of attention on social media and she has insisted that her personal views wouldn't impact her role. While this has certainly been the case so far, it could be down to the fact that she hasn't done much in the role yet.

**October**

Meat went mainstream as the combination of a slow news day and overzealous headline writers meant a World Health Organiza-tion report into red and processed meat and its carcinogenic properties was all over the national media. The report, which utilised data from over the past 15 years, placed processed meat into the same category as tobacco and asbestos in terms of potentially causing cancer while red meat was labelled as "potentially carcinogenic". Processed meat was reported to have suffered a 10% drop in sales in the wake of the report, but butchers didn't seem to take a hit.

**November**

The meat industry and government were at loggerheads this month over regulations on the welfare of animals during slaughter. The Welfare of Animals at the Time of Killing (WATOK) regulation, which came from the European Commission, included a requirement for all abattoirs to have a Certificate of Competence. This was labelled as "bureaucratic nonsense" by the Association of Independent Meat Suppliers which had "serious concerns over the quality of veterinary advice". Although the application deadline for a Certificate of Competence has now passed, the debate is expected to continue into 2016.

**December**

Global warming was placed at the feet of the meat industry following yet another report criticising the sector. Changing Climate, Changing Diets, from Chatham House revealed the ***agricultural*** sector was responsible for 15% of ***greenhouse gas*** ***emissions***. The report suggested a tax on meat in an effort to ***reduce*** consumption. This was quickly dismissed by key parties in the industry as "unrealistic" as beef and lamb consumption per capita has actually ***reduced*** over the past 25 years. Again, the Chatham House report made national headlines, with many outlets ***targeting*** meat as the cause of all the world's woes.

**Load-Date:** December 16, 2015

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[***Where next for sustainability in fashion?***](https://advance.lexis.com/api/document?collection=news&id=urn:contentItem:5GPG-T351-F14X-V1TR-00000-00&context=1516831)

just-style global news

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**Length:** 1677 words

**Byline:** Katie Smith

**Body**

It is easy to underestimate the complexity of sustainability in the apparel supply chain. But while there are no simple solutions, industry experts believe improvements can come about through social change, collaboration and innovation.

A lot has changed in the last eight years when it comes to environmental issues in the textile and apparel supply chain. Back in 2007, the main buzzword surrounding sustainability in the textile industry was organic cotton. "It was the number one issue on the agenda," according to John Mowbray, joint founder of the Rite Group (***Reducing*** the Impact of Textiles on the Environment), which was formed to provide an independent, industry-led platform to address environmental issues within the sector. "Everybody was talking about organic cotton like that was going to solve the problems of the industry," he told a Rite Group conference in Leeds recently.

But although brands were investing in organic cotton at the time, this "wasn't the universal panacea for sustainability in the textile sector", he explained, adding that "there were much wider issues that needed to be addressed".

First steps in this direction also took place in 2007 with the launch of Marks & Spencer's Plan A sustainability strategy, outdoor wear specialist Patagonia signing up to the Bluesign sustainability scheme, and the introduction of the UK government's Sustainable Clothing Action Plan (SCAP).

But a lot has changed since then. In 2010, the Sustainable Apparel Coalition (SAC) was formed, Greenpeace's Detox campaign to eliminate the discharge of hazardous chemicals from supply chains by 2020 was set out in 2011, and the Rana Plaza factory collapse in Bangladesh killed more than 1,100 garment workers.

As a result, Mowbray said, there have been five key developments in terms of environmental issues since 2007: a drive towards greater product transparency; improved chemicals management and technical innovation; the potential for new closed loop production models to ***reduce*** waste; corporate social responsibility (CSR) pushed to the top of the agenda; and increased pressure on the industry through environmental legislation.

He also believes there has been more "competitor collaboration", with chemical suppliers, but also retailers within groups such as the Zero Discharge of Hazardous Chemicals (ZDHC).

Sustainability challenges

But sustainability within any industry, not just the fashion industry, comes at a cost. Taking the food industry as an example, it's quite staggering. A farmer making GBP900 (US$1,390) per hectare of wheat, using the average amount of fertiliser, will create GBP333.61 worth of damage to the environment, including water use and ***greenhouse gas*** ***emissions***.

According to Professor Tim Benton, UK champion for global food security, the UK discards around one-third of the food it buys. "If we actually start trying to drive wise consumption decisions then there's an awful lot to be gained in terms of environmental goods," he said.

"It's not about making your processes more efficient, because you're still destroying the earth, you're just doing it more slowly. Somehow we've got to make sure that all of these things are embedded in our thinking about sustainability," he added.

And this, Benton believes, is something the fashion industry can learn from to ensure a secure supply of its key raw materials in the future.

But, he warned, there is no straightforward approach to sustainability, noting: "Ultimately, we have to recognise that there are limits to what the earth can provide." But "unless we have this step-change, and for me the step-change is partly about demand management, things are going to carry on business as usual."

One solution is innovation. Benton believes there is a need for more sustainable innovation such as in ***agriculture***, maintaining ecosystem services, reusing water and ***reducing*** demand.

Closed loop innovation

In terms of innovation, NIRI Technologies is one company that has been working on a new textile technology which allows garments to be disassembled for recycling or repair, instead of going to landfill. The wear2 yarn is an electrically conductive composite thread incorporated into selected seams during manufacture, which can be taken apart using microwave ***energy***.

It allows zips, buttons, fastenings and linings to be removed, with UK retailer George at Asda having successfully completed trials of the thread.

This technology, says Steven Neill, head of innovation and new product development at NIRI Technologies, creates opportunities for corporate clothing, which needs to be permanently labelled as workwear. Due to security issues workwear is often shredded and sent to landfill, but the wear2 yarn could allow workwear to be upcycled, he suggested.

Meanwhile, Dr Sandra Roos, researcher of ***energy*** and the environment, has been working on a project to improve the sustainability of the Swedish fashion industry. The four-year Mistra Future Fashion Project, which began in 2011, is based on integrating design, technology, supply chains, policy and the consumer to create systematic change.

"We want to actually make change in the Swedish [textile] industry, and we see that we need to change," she said, adding that change is "connected". If policy changes, so does consumer behaviour.

One of the lessons from phase one, Roos said, is that young shoppers want to be sustainable but they don't know how. "Knowledge about the consumer is really key if we want to impact them."

Additionally, phase one highlighted "big challenges" concerning the recycling of used materials, how leasing and recycling can be good for business, and how extended producer responsibility (EPR) would affect the fashion industry and society. For phase two, Roos said: "The aim is that we will move towards a circular economy."

Collaboration

That said, sustainability needs a collaborative approach. UK department store retailer John Lewis has around 350,000 different products in its assortment, of which a third are own-brand items. It sources from 53 countries, working with around 1,600 factories. Although this can fluctuate, the company's top three sourcing countries, where it has 70% of its factories, are China (641 factories), the UK (nearly 200), and India (141).

Highlighting the complexity of this, Steven Crawley, head of sustainability and responsible sourcing at John Lewis, said: "From our perspective, we have this globalised supply chain which makes it really difficult for us to keep a handle on everything we're doing."

To help with this, John Lewis partnered with Cotton Connect, a social enterprise working on pioneering a transparent, sustainable supply chain for cotton, to develop a programme aimed at increasing cotton yields among small-scale cotton farmers in India.

Focusing on cotton used for towels and bathmats, the programme has worked with nine villages in the Rajkot area of Gujarat, impacting 1,500 farmers. The project trains farmers on irrigation and natural pesticides, helping them to pick better cotton. They were also taught about child and migrant labour.

Over the last few years John Lewis has been running the project and the farmers involved have seen an 8% yield increase, a 3% more efficient use of water, and a 9% drop in the use of chemical fertilisers.

Separately, VF Corp, owner of the Timberland, The North Face and Vans brands, will produce 530m products this year, with 1.5m pieces shipped per day. The company operates 30 manufacturing facilities, which produce one quarter of its products, while the remaining three quarters are manufactured at around 2,000 of its first-tier suppliers.

Sean Cady, vice president of global responsible sourcing at VF Corp, said: "If you think about the diversity and complexity of a VF supply chain, no longer is it that anything happening in our supply chain is a secret."

He added: "We're living in this world and we're operating our businesses in a transparent world on instantaneous communications."

Through its Chem-IQ and Lee ReThink programmes, the company is making great strides in sustainability. Developed in collaboration with third-party organisations, including the Natural Resources Defense Council (NRDC) and Modern Testing Services, Chem-IQ helps VF to identify and eliminate potentially harmful chemicals from its supply chain.

Meanwhile, VF's Lee ReThink denim programme in China uses Better Cotton and works with Netherlands-based non-governmental organisation (NGO) Solidaridad to utilises environmental responsible processes for all phases of jeans production. As a result, Lee ReThink jeans require around 1,100 less gallons of water to produce compared to a typical pair of Lee jeans.

What next?

But where does all of this leave the fashion industry for the next five years? Well, according to Mowbray, EU legislation is "gathering momentum" and could even supersede some industry initiatives. What's more interesting is that, while he believes the supply chain's phasing out of chemicals will improve, the textile industry will not meet Greenpeace's goals on zero discharge.

There will also be a need to integrate consumers into a governance role such as the Institute of Public and Environmental Affairs (IPE) in China, allowing them to monitor air pollution in their area, and get in touch with government officials who Mowbray says "will do something about it".

Also, the Higg Index sustainability measurement tool will "gain new ground" as long as brands continue to back it; near-shoring will gain momentum in the garment sector; waste will become a more important issue; and there will be continued growth of national government initiatives.

In order to achieve a systematic change in the fashion supply chain, Roos believes the industry needs to change market and business models as well as consumer behaviour, improve lifecycle assessment methodology; establish routines for sustainable design; improve policy instruments; and establish a sustainable textile production. This, she explained, includes pushing for eco-efficient textile fibres and eco-efficient textile processing technologies.

**Load-Date:** August 17, 2015

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[***A vast effort for the environment; In push for sustainability, Unilever is pledging to cut its impact in half***](https://advance.lexis.com/api/document?collection=news&id=urn:contentItem:5HDV-0GW1-JC85-N25X-00000-00&context=1516831)

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**Body**

**ABSTRACT**

The Unilever sustainable living plan pledges to cut the company's environmental impact in half and intends to improve the health of one billion people.

**FULL TEXT**

Hellmann's mayonnaise is known for many things - making egg salad delicious, being loaded with fat, that old ''bring out the best'' jingle. To date, however, it hasn't been associated with sustainability. Mayo is a processed food made by huge conglomerates, not a symbol of environmentalism.

Paul Polman would like that to change. As chief executive of Unilever, Mr. Polman has made the sustainable production of Hellmann's - and Lipton tea, Dove soap, Axe body spray and all the other products Unilever makes - the company's top priority. Detergents are being reformulated to use less water. Packaging is becoming more efficient. And Unilever is taking preliminary steps to make soy, a main ingredient in mayonnaise, more eco-friendly.

Mr. Polman, 59, is hardly the only chief executive claiming that his corporation will become a better steward of the planet and an outstanding global citizen. The chief of Walmart is buying clean ***energy***, PepsiCo's leader is promoting healthier snacks, and Apple's boss is into recycling. But Mr. Polman's plan is unique in its audacious ambition. Not only does the Unilever sustainable living plan pledge to cut the company's environmental impact in half by 2020, but it also vows to improve the health of one billion people and enhance livelihoods for millions, all while doubling Unilever's sales.

None of this is easy to achieve, and the goals can seem to work at cross-purposes. Selling more products means consuming more ***energy*** and more natural resources - not exactly the way to shrink an environmental footprint.

Yet six years into his tenure, Mr. Polman is starting to make good on some of his lofty promises. Unilever's factories are emitting 37 percent less ***emissions*** than in 2008, even while producing more goods. Waste going to landfills is down 85 percent. Those things please environmentalists, while shareholders are happy that revenue is up 22 percent since Mr. Polman took over.

Mr. Polman also has become something of a roving sustainability evangelist, calling for stricter environmental regulations, pressuring other companies to become green and speaking out against a fixation on short-term profits. He worked with the United Nations to shape the recently adopted sustainable development goals and will help rally business leaders at the scheduled United Nations climate change conference in Paris at the end of this month. Unilever tops the Dow Jones sustainability index among food, beverage and tobacco companies. This year the United Nations bestowed upon Mr. Polman its Champions of the Earth Award.

''If there is a standout company in sustainability, it is Unilever,'' said Mindy Lubber, president of Ceres, a nonprofit that advocates social and environmental responsibility in the business world. ''That doesn't make them perfect. That doesn't mean they don't have a long way to go. That doesn't mean they don't have a lot to accomplish. But Paul Polman sees these issues in a very comprehensive and visionary way.''

Born in the Netherlands, Mr. Polman attended a Carmelite seminary as a young man and considered the priesthood before going into business. His career path was accomplished but entirely conventional. He spent 27 years climbing through the ranks of Procter & Gamble and was chief financial officer at Nestlé before going to Unilever, which is based in London. He looks the part of a strait-laced chief executive and speaks in a hushed monotone, no matter the subject.

His words, however, contain a moral fire. He argues that corporations have the capacity - and the obligation - to combat climate change and ''irreversibly eradicate poverty in a more sustainable and equitable way.'' Failing to confront these challenges, he says, will lead to ever more catastrophic natural disasters and spiraling social disruption.

But this moralistic vision goes only so far. Unilever is, after all, a multinational corporation worth more than $125 billion. Its purpose is to make things. Cutting carbon ***emissions*** grows harder after doing the obvious things, like buying more clean power and upgrading ***energy*** efficiency in buildings. Some of the goals, Mr. Polman acknowledges, will be nearly impossible to achieve.

Dig into the specifics of how to sustainably produce 1,000 different mass-market brands and the complications multiply endlessly. Scores of issues arise in just one jar of Hellmann's mayonnaise, starting with soybean oil, which is a main ingredient.

And even as Unilever rushes headlong into this brave new world, Mr. Polman and his team are still trying to answer a basic question: What the heck is sustainability anyway? Despite its righteous timbre, it's a fuzzy term that means different things to different people - and sometimes a lot less than it might seem.

On a humid day in late September, as the skies unleashed an occasional downpour, Kenny Sutter navigated his red Ford F-350 along gravel roads near Pleasantville, Iowa, assessing the coming harvest. His soybean fields were golden, almost ready for the combines.

Mr. Sutter, who grows soy, corn and alfalfa on 4,000 acres spread across an area homesteaded by his family in the mid-1800s, is not a Unilever employee. Yet Mr. Polman is counting on him, and other farmers around the globe, to help carry out the sustainable-living plan.

Unilever buys more soy in the United States than any other crop, and among Mr. Polman's many goals is ensuring that the soy oil - used in Hellmann's mayonnaise and I Can't Believe It's Not Butter spread - is sourced from sustainable farms by 2017. But when Unilever began looking into the matter in 2012, it hit a roadblock: No one was really certifying sustainable soybeans in the United States.

Elsewhere in the world, third-party groups like the Rainforest Alliance certify sustainable cocoa and coffee. And in South America, soybeans are certified by the Round Table on Sustainable Soy. If Unilever wanted certified sustainable soybeans in the United States, however, it was going to have to create a system for certifying them.

The first step was contacting Archer Daniels Midland, a huge commodities trader. ADM buys soybeans from hundreds of farms, including Mr. Sutter's, and turns the beans into soy oil at a plant in Des Moines. ADM then sells the soy oil to Unilever. Aiming to promote sustainability (and keep Unilever's gargantuan business), ADM agreed to help, and the Iowa sustainable soy program was born.

Unilever brought on the United Soybean Board and the Iowa Soybean Association, two trade groups, to give the program bona fides. The World Wildlife Fund signed up as a scientific consultant. Practical Farmers of Iowa, a nonprofit that focuses on farm ecology, joined in, as did Field to Market, an alliance of ***agricultural*** companies that has developed software especially for farmers. This ad hoc coalition then began reaching out to Iowa farmers.

**Seeds of Promise**

The pitch to soybean growers is simple. For participating in the program, they receive an extra 10 cents a bushel of soybeans from ADM, have access to additional state subsidies for certain eco-friendly farming techniques and receive education about sustainable farming. Three years into the program, 250 farmers responsible for 285,000 acres have signed up.

Mr. Sutter is among those who joined the sustainable soy program. As he surveyed his fields, he saw that heavy rains and stiff winds had recently flattened a few acres of his soybeans. That would mean a loss of several thousand dollars. But Mr. Sutter said that changes he made to improve sustainability would mitigate the damage.

During the winter months when soy won't grow, Mr. Sutter has begun planting cover crops, like cereal rye, that can improve soil health, prevent erosion and keep nutrients near the surface for the next season's soy crop. Around his soybeans, Mr. Sutter had also installed contour strips - grassy barriers that improve irrigation and water quality. Between the cover crops and the contour strips, Mr. Sutter said, his soy was stronger and more resilient, and his overall harvest would be fuller this year, helping make up for the lost acres.

He has made other changes, too. To cut down on fuel for his trucks, he now stores his harvested soybeans in a silo on the north end of his farm, closer to their ultimate destination in Des Moines, rather than in their usual silo to the southeast.

''Without sustainability we're not going to be here,'' Mr. Sutter said. ''We as a people.''

Unilever doesn't ask the farmers for much at all. All that the program requires is that farmers pledge to become more ecologically sound and use the Field to Market software to share voluminous data about how they run their farms. The software then calculates things like the efficiency of water use, ***greenhouse gas*** ***emissions*** and soil carbon levels. These metrics are compared with benchmarks set by the United Soybean Board and endorsed by Unilever. As long as the farmer's total practices meet some minimum thresholds, the crops are certified sustainable.

So far, Unilever and ADM aren't even enforcing these rules. Even though little has changed on most of the soy farms in the Iowa program, Unilever counts their crops toward the 28 percent of soy it says is now ''sustainable.''

Unilever says it is instead focused on enrolling farmers in the program, rather than holding them to high standards that they might not be able to meet.

''We aren't telling them they're not sustainable or kicking them out of the program,'' said Clint Piper, the general manager for North American soybean processing at ADM. ''Right now it's about getting people in the program and sharing knowledge.''

While Unilever performs random audits on participating farms, the loose criteria and absence of enforcement have left even some of those who created the program dissatisfied. Sarah Carlson, a researcher with Practical Farmers of Iowa, said that while things like fuel conservation and better irrigation were well and good, the real key to sustainable soy was the use of cover crops. Without cover crops, she said, ''those soybeans are no more sustainable than anyone else's soybeans.''

Not many of the farms meet Ms. Carlson's definition of sustainability. Fewer than 75 farmers have received state subsidies to use cover crops, which amounts to less than a quarter of 1 percent of all the 40,000 soybean growers in Iowa.

The conflicting views about the soy program's worthiness underscore one of the fundamental challenges of Unilever's sustainable living plan: the word ''sustainable.'' Like ''natural,'' the word ''sustainable'' is sufficiently vague to mean quite a lot or nothing at all.

''The challenge in setting standards and measuring progress is that there is no universally agreed definition for sustainability,'' said Aron Cramer, chief executive of BSR, a consulting firm. ''And the standards that do apply vary by industry, commodity and even product line.''

According to the United States Environmental Protection Agency, sustainability means ''the conditions under which humans and nature can exist in productive harmony to support present and future generations.'' To the Rainforest Alliance, which Unilever uses to certify its tea, cocoa and vanilla, sustainability means ''environmental protection, social equity and economic viability.'' To the Round Table on Sustainable Soy, which certifies the crop in South America, sustainability means avoiding deforestation, protecting tribal lands and not using child labor - important issues, but not ones that resonate in Iowa. For Unilever, it's about ''continuous improvement.''

''There is no absolute measure of farm sustainability. It's a moving ***target***,'' the company said in a statement, responding to questions about the soy program. ''We take the long view. This means continuous improvement over time.''

Even if Unilever could get every farmer in Iowa to plant cover crops, that wouldn't make its mayonnaise sustainable. Soy is just one ingredient. There are eggs (goal: 100 percent from cage-free hens by 2020, certified by the American Humane Association). There is the container (Unilever introduced new eco-friendly plastic jars and encourages recycling). There is the ***energy*** needed for production (Unilever is buying carbon offsets, but has not installed wind or solar power at the Hellmann's factory in Chicago).

And Hellmann's is just one brand in Unilever's vast portfolio. Cover crops on Iowa farms don't help Unilever make Dove soap sustainable, ***reduce*** its carbon footprint, improve livelihoods or meet any of the sustainable living plan's other goals. Mr. Polman himself acknowledges that change in the heartland is incremental at best.

''We recognize that with our U.S. sustainable soybean program, it is still early days,'' Mr. Polman said. ''Over the coming years we expect to be able to report more confidently on some of the improvements on the ground.''

**The Spirit of Port Sunlight**

Unilever's work in Iowa is a microcosm of the monumental challenges it faces as it tries to overhaul the manufacturing and distribution of 1,000 soaps, ice creams and spreads that it sells in 190 countries.

In Vietnam, Unilever has introduced Comfort One Rinse, a fabric softener meant to use a third as much water as usual. In Nigeria, it has replaced its Sunlight dishwashing detergent paste with a concentrated powder that requires less ***energy*** to distribute and less water to work. In Brazil, it is selling new, more efficient Omo laundry detergent.

Selling products that use less water is necessary if Unilever is to achieve Mr. Polman's goals. As part of the sustainable living plan, Unilever has pledged to take responsibility for the behavior of its consumers. So when Mr. Polman talks about cutting the environmental impact of Unilever in half, he is including the ***energy*** and resources that customers consume when using its products.

According to Unilever's calculations, 70 percent of the environmental impact of the making and use of its products comes from consumers. There simply is no easy way to heat a gallon of water with half as much fuel, or to wash a load of clothes with drastically less water.

This, as Mr. Polman sees it, is the hardest part. ''A lot of the water usage in our value chain comes from cooking and showering, from heating up water,'' Mr. Polman said. ''How you halve that? It's very difficult.''

Indeed, consumer habits aren't changing. Unilever estimates that the ***greenhouse gas*** impact from consumers using its products has actually increased by about 4 percent since 2010 and that water use by consumers has gone down just 2 percent. In other words, Unilever's goal of halving its environmental impact by 2020 is nearly impossible.

But Mr. Polman hasn't pulled back on his pledges. As he tells it, they are part of Unilever's DNA.

When he became chief executive in 2009, Mr. Polman drew inspiration from William Lever, the founder of the company that eventually became Unilever. Lever began making soap in 1884 near Liverpool, England, hoping to improve hygiene and make money. The soap, called Sunlight, was a hit, and with the profits, he bought cheap land on the marshy banks of the River Mersey. There, he built Port Sunlight, a company town where soap factory workers lived in pleasant houses near the improving influences of libraries and museums.

By the paternalistic standards of Victorian England, Lever's business practices were exceptionally enlightened. The son of a grocer, he was made a lord. Today, Mr. Polman is trying recapture Lord Lever's business spirit, updated for 21st-century challenges.

''The sustainable living plan is much broader than the sustainable sourcing of ***agricultural*** materials,'' Mr. Polman said. ''It's really using your business model to address big issues in society and make a positive contribution.''

Keen to appear more pragmatic than idealistic, Mr. Polman says the sustainable living plan is not just ethical, but also profitable. The company claims that efficiency upgrades to Unilever factories have created savings of 400 million euros, or $430 million, since 2008. It is also aggressively marketing sustainable brands in the hope of increasing sales

Unilever's sustainability measures can have ripple effects. All of Unilever's bagged Lipton tea is now certified verified sustainable by the Rainforest Alliance, which has been certifying farmers in the developing world for decades, as is the chocolate for its Magnum ice cream bars and the vanilla in Breyers ice cream. After Unilever began using Rainforest Alliance certified tea, other big tea producers including Twinings and Tata followed suit.

''It's more effective than anything else going on out there,'' said Ana Paula Taveres, interim president of the Rainforest Alliance. ''In a capitalist world, Unilever is using the global market to drive sustainability.''

**A Corporate Holy Grail**

Like any company of its size, Unilever has its troubles. Inefficiencies and waste are still rampant. Human rights advocates have assailed poor conditions at Unilever tea estates in Kenya. In India, the company is under fire, accused of failing to clean up a contaminated factory.

It recently sued a vegan mayonnaise competitor to Hellmann's, attracting widespread ridicule, before dropping the case.

But these issues (along with the fact that Lord Lever used forced labor in Belgian Congo to supply palm oil for Sunlight soap) go largely unmentioned as Mr. Polman spreads his gospel of conscientious capitalism.

If Unilever can actually double revenue and simultaneously cut its environmental impact in half, it will have achieved something extraordinary: It will have decoupled economic growth and resource consumption. To sustainability mavens, this is the holy grail. It would reconcile the expanding needs of a growing population with the fact that natural resources are finite.

''It is essential that economic growth and natural resource use be decoupled,'' Mr. Cramer of BSR said. ''Simply replicating Western consumption patterns as they are today would require more natural resources than are available.''

Mr. Polman knows he is aiming high, and contemplating these existential conundrums has led him to the vanguard of environmental thinking. He speaks of ''planetary boundaries,'' a concept developed by European academics that describes a set of tipping points that, if hit, could cause ''abrupt or irreversible environmental changes.'' And he promotes the ''circular economy,'' a version of radical sustainability that imagines a world without waste.

**Load-Date:** November 20, 2015

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[***Our climate failures blamed on livestock***](https://advance.lexis.com/api/document?collection=news&id=urn:contentItem:5H4F-6V21-DY9P-N1PJ-00000-00&context=1516831)

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**Section:** NEWS; Pg. 20

**Length:** 190 words

**Byline:** Sarah Slater

**Body**

METHANE gas from livestock is one of the reasons Ireland is almost bottom of the pile when it comes to meeting legal climate-change commitments, a leading researcher has found.

Ireland, which is second only to Luxembourg, has the highest ***greenhouse gas*** ***emissions*** in the EU and if we do not meet our ***target*** ***reduction*** of 20 per cent by 2020, a multimillion-euro fine will be imposed. According to the Environmental Protection Agency, Ireland is on track for a ***reduction*** of 9-14 per cent in ***greenhouse gas*** ***emissions*** by 2020. However, Dr Diarmuid Torney an International Relations lecturer in Dublin City University, said Ireland's report card would read 'very definitely could do better'.

He said: 'With additional effort by the Government and us all, we could reach the 20 per cent ***target*** by 2020. Because we are such a heavily ***agriculture***-dependent country, ***agriculture*** seems to be taking precedence over the greenhouse issue.' Dr Torney added that the Department of ***Agriculture***'s strategy, Food Harvest 2020 - which is trying to 'ramp up' production from the entire sector - was 'completely counteractive' to our EU climatechange commitments.

**Load-Date:** October 12, 2015

**End of Document**



[***London Nusantara Plantations PLC Audited Results for the Year Ended 31 December 2015***](https://advance.lexis.com/api/document?collection=news&id=urn:contentItem:5JVC-FC01-JCXB-241F-00000-00&context=1516831)

London Stock Exchange Aggregated Regulatory News Service (ARNS)

May 23, 2016 Monday 10:00 AM GMT

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**Length:** 1643 words

**Body**

23 May 2016

LONDON NUSANTARA PLANTATIONS PLC

("London Nusantara" or the "Company")

Audited Results for the Year Ended 31 December 2015

CHAIRMAN'S STATEMENT

I am pleased to present the Company's audited financial results for the year

ended 31 December 2015. With no operating business the company made a pre-tax

loss for the year of GBP165,706 (2014: GBP168,065). Cash at bank at the end of

December 2015 was GBP191,097 (2014: GBP372,476). During the year, the Company

completed an investment of GBP111,772 in 404 hectares of land suitable for oil

palm, as reported in our year end 2014 financial statement. Our net assets

stood at GBP292,067 (2014: GBP447,773).

The Company to date remains as an ISDX Growth Market investment vehicle seeking

to identify and secure potential acquisition opportunities within the

***agriculture*** sector, primarily in oil palm plantations and also vacant land

suitable for oil palm cultivation.

Principal Activities and Review of the Business

The principal activity of the Company is to invest in companies, or assets, in

the ***agriculture*** sector primarily in oil palm plantations and/or vacant land

suitable for oil palm cultivation. The Company has continued in this activity

since listing on ISDX in June 2014.

We are pleased to report that, the two parcels of land (404 hectares), via our

investment in Next Oasis Sdn. Bhd. is currently in the final stages of being

cleared and planted with young oil palm trees. Our joint venture partner, Fima

Corporation Berhad, has intimated that the planting is ***targeted*** to be completed

by the middle of 2016.

The year 2015 has been a difficult one domestically and globally with the drop

in crude oil, slowdown of the Chinese economy and Yuan devaluation and other

commodity prices, including palm oil. Palm oil prices dipped to a 6½-year low

of RM1,860, (approximately GBP320). During the year we have been actively

involved in negotiations with a number of estate owners, but faced difficulty

in raising conventional debt and equity to finance our acquisitions. However,

on a more positive note, there has been a marked increase of oil palm estates

up for sale at relatively lower prices, approximately 20%-30% lower from the

boom years, giving rise to mergers & acquisitions opportunities. We plan to

take advantage of this window to acquire an income generating oil palm estate

in 2016. We also intend to capitalise on the joint venture business model as it

allows us to tap into the experience of more established players, possibly

working together to raise conventional bank loans to finance acquisitions.

Our plan is to embark on an aggressive fund raising exercise in 2016 in

conjunction with a potential acquisition of a mature oil palm estate.

Financial Review

The audited results for the year show a loss of GBP165,706. The Company's primary

expenses are largely to maintain its listing status and other expenses related

to business development incurred in identifying potential investment ***targets***

and fund raising expenses. In addition to the above, the company-incurred a

foreign exchange loss of GBP44,955 due to the severe depreciation of the Ringgit

vs. other major currencies, namely, against the Dollar and British Sterling.

Despite this we also recorded a revenue of GBP8,651 from interest received from

our treasury fund placements.

The Directors consider the results for the year to be satisfactory despite the

adverse conditions faced during 2015.

The Directors do not recommend the payment of a dividend for the year ended

31 December 2015.

Industry Outlook 2016

As anticipated, 2015 saw palm oil prices plummeting to historic lows while the

rest of the commodities in Malaysia merely stayed afloat. Palm oil, like many

major commodities in the world, was affected by sluggish demand due to slow

growth in global economy, high-stockpile, currency fluctuation and geopolitical

issues. The palm oil market was further mired in a downturn cycle as the

benchmark Malaysian palm oil prices slumped to a 6½-year low at RM1,860,

(approximately GBP320) in mid-August 2015. This was mainly due to China

intervening in currency markets and devaluing the Yuan by nearly 2 per cent

resulting in a shockwave in the foreign exchange, capital and commodity

markets.

However, concerns on the potential dent to production and hence supply from the

effects of drought in South East Asia due the strengthening of El Nino weather

phenomenon, weak Ringgit and India's record demand, the benchmark for November

2015 contract on the Bursa Malaysia Derivatives Exchange rebounded to RM2,050

(approximately GBP353). The rebound was also supported by the Malaysian

government's announcement of an incentive payment scheme for the early

replanting of old oil palm trees and a statement reinforcing both Malaysia and

Indonesia's commitment to their respective biodiesel mandate, helped to

stabilise prices which ended the year at RM2,200 (approximately GBP379).

2015 Review

2015 was indeed a challenging year for oil palm as prices fluctuated violently

especially in the third quarter, as apart from the weak fundamentals of

sluggish demand due to slow growth in global economy, high-stockpile and

currency fluctuation, China's intervention in the currency market not only

affected the foreign exchange and capital markets but also put a dampener on

the commodity market as well. The Malaysian crude palm oil ("CPO") prices did

not surpass RM2,302 (approximately GBP397 per tonne whilst recoding an average

monthly low of RM1,975 (approximately GBP340) in August 2015. The year averaged

at RM2,172 (approximately GBP374) compared to RM2,382 (approximately GBP410) in

2014.

The supply perspective showed a marginal increment at 19.96 million tonnes of

CPO production as compared to the 2014 production of 19.66 million tonnes of

CPO. The demand side also showed a marginal increase from the previous year's

performance with India maintaining its position as the largest destination of

Malaysian palm oil exports.

Among the major key developments that took place in the industry during the

year was the establishment of the Council of Palm Oil Producing Countries by

Malaysia and Indonesia. Both countries announced their commitments to

sustainable palm oil practices, ensuring price stability in palm oil prices,

harmonize stock management, improve competitiveness as well as create demand

for biodiesel mandates.

To ensure consumption is sustained the Malaysian B7 Biodiesel mandate, a blend

of 7% palm oil (palm, methyl and ester) and 93% diesel aimed at meeting

Malaysia's obligations in ***reducing*** ***greenhouse gas*** carbon ***emissions*** as well as

stabilising palm oil prices by creating greater internal demand, is to be fully

implemented as a mechanism to manage the palm oil stock. Similarly, the

Indonesian B15 biodiesel mandate is expected to boost local palm oil

consumption. Both countries are committed to enhance their respective

biodiesel mandate to B10 and B20 respectively.

Analysts are in agreement that that the palm oil sector for 2016 will be

greatly influenced by the vagaries of the El Nino weather phenomenon, the full

impact of which is still not apparent. Malaysian palm oil production is

estimated at 20 million tonnes for 2016. However, with a full blown El Nino,

analyst predict it would negatively impact production by approximately 5%.

Conversely, stock is expected to go below the 2.0 million tonnes level.

Indonesia is also expected to show a similar trend with production maintaining

the 2015 level of approximately 34.0 million tonnes for 2016. On the demand

side, the world's population is expected to grow by 100 million in 2016 to 7.42

billion. Of this, 30% of the population is between the age group of 15 to 50

years old and will form the main demand drivers. The World Economic Outlook

predicted an economic growth of 3.4% up from the forecasted 3.1% for 2015.

India is expected to maintain its position as the biggest destination whilst

continuous and growing demand from Japan, South Korea and Philippines will prop

up prices.

Meanwhile palm oil is becoming a major force in Central America and Eastern

Europe. China, although is expected to have a higher carry-over stock, would

see an increase in imports due to demands from its food industry.

Palm oil prices in Q1-2016 saw a welcomed spike to RM2,600 (approximately

GBP456) from RM2,300 (approximately GBP403) in January only to recede to the

current level of RM2,450 (approximately GBP429) on account of weakening crude

oil prices. For 2016, analysts have forecasted a wider range of price mobility

of between RM2,300 (approximately GBP403) to RM3,200 (approximately GBP561)

averaging at RM2,500-2,600 (approximately GBP438 -GBP456) per tonne CPO.

China's rebalancing of its economic activity away from investments and

manufacturing to consumption and services will have an impact on global market

if the transition is slow. A further drop in the ***energy*** market would also put

a strain on other commodity producers. Further US Dollar appreciation and

geopolitical shocks would also put a dampener on a pick-up on economic

activities.

While crude has come off near six-year lows hit in January 2016, prices are

still down about 50% from their highs reached in June 2014. The anticipated

increase in biodiesel would help garner a more supportive outlook as it may

translate to more stocks being blended into biofuel.

Therefore it's predicted the CPO price outlook for 2016 is expected to average

RM2,500 (approximately GBP438) per tonne compared with RM2,380 (approximately

GBP417) per tonne in 2015. CPO prices can be traded within a low of RM2,200

(approximately GBP386) per tonne and a high of RM2,700 (approximately GBP473)

per tonne this year.

Principal Risks and Uncertainties

The principal risks and uncertainties lie in the investments the Company holds.

The ***agriculture*** sector means that returns are influenced by external factors

**Load-Date:** May 23, 2016

**End of Document**



[***Pioneering projects in food and agriculture win &#163;17.8 million***](https://advance.lexis.com/api/document?collection=news&id=urn:contentItem:5KRN-0451-F12F-F1TH-00000-00&context=1516831)

UK Government News

October 27, 2015 Tuesday 10:31 PM EST

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**Length:** 5068 words

**Body**

U.K., Sept. 27 -- The UK Government made the following announcement:

Lobster farming, scallop cultivation & whisky distillation among projects winning &#163;17.8 million Agri-Tech Catalyst funding.

Updated: Changed an incorrect partner for "Project 2: Development and validation of a system for automatic detection of lameness in sheep" from Dunbia to Intel UK.

Pioneering projects to improve ***agriculture*** and food production at home and overseas, have been funded to the tune of &#163;17.8 million, under the latest round of the Government's Agri-Tech Catalyst.

Projects include one assessing the potential to commercialise the farming of lobsters, a proposal to cultivate scallops on ropes and a way of continuing to make whisky with UK wheat, by using a novel variety.

The technologies are among 21 successful bids that have won a competition run by the UK's innovation agency, Innovate UK, to ***target*** commercially promising new technologies to provide an economic boost to the UK ***agriculture*** sector.

Speaking at the opening of Agrimetrics, the UK's first big data centre of excellence for the whole food system, at Rothamsted Research, in Harpenden, Hertfordshire, Life Sciences Minister George Freeman MP said:

By harnessing science to ***reduce*** water and pesticide usage, and to pioneer greener modern farming, the UK is leading the way in boosting ***agricultural*** productivity.

Investing in pioneering agri-tech projects like these is win-win for the UK as these technologies will improve food production and create businesses and jobs up and down the country.

British solutions for ***agricultural*** challenges

Ian Meikle, head of ***agriculture*** and food, at Innovate UK, said:

By supporting these project partnerships - many of which include small businesses - Innovate UK is backing British solutions for ***agricultural*** challenges. These schemes are helping to create new jobs and will open up new markets and drive productivity.

Professor Jackie Hunter, BBSRC chief executive, said:

Investing in advances in ***agriculture*** is vital, not only for our future food supply but also to help build the UK bio-economy. These new research projects highlight how UK bioscience is at the forefront of innovative approaches for modern farming.

Agri-Tech Catalyst

The funding was awarded through the Agri-Tech Catalyst,which was set up by the &lt;a href="[*https://www.gov.uk/government/organisations/department-for-business-innovation-skills*](https://www.gov.uk/government/organisations/department-for-business-innovation-skills)"&gt;Department for Business, Innovation and Skills&lt;/a&gt;, Innovate UK, &lt;a href="   [*https://www.gov.uk/government/organisations/department-for-international-development*](https://www.gov.uk/government/organisations/department-for-international-development)"&gt;Department for International Development&lt;/a&gt; and the &lt;a rel="external" href="   [*http://www.bbsrc.ac.uk*](http://www.bbsrc.ac.uk)/"&gt;Biotechnology and Biological Sciences Research Council&lt;/a&gt; (BBSRC) with a &#163;70 million investment to help make the UK a world leader in ***agricultural*** technology, innovation and sustainability.

The Agri-Tech Catalyst offers funding for collaborative projects, taking innovative ideas from any sector or discipline with the potential to provide an economic boost to the UK agri-tech industry, by tackling challenges in ***agriculture***.

The scheme will help to take innovations all the way from concept to commercialisation, awarding grants for early-stage pre-industrial research feasibility studies, industrial research, and late-stage pre-experimental and experimental feasibility studies. Any UK business or academic researcher can apply.

The Agri-Tech Catalyst will fund proposals relating to:

primary crop and livestock production, including aquaculture

non-food uses of crops including ornamentals (for example, for biomass)

food security and nutrition challenges in international development

challenges in downstream food processing, provided the solution lies in primary production.

Full summaries of funded projects:

Agri-Tech Catalyst Round 4 - Late Stage

Project 1: VerticalVale: Viability of the Saturn Grower in commercial farming

Partners: &lt;a rel="external" href="[*http://www.saturnbioponics.com*](http://www.saturnbioponics.com)/"&gt;Saturn Bioponics&lt;/a&gt;, &lt;a rel="external" href="   [*http://www.valefresco.com*](http://www.valefresco.com)/"&gt;ValeFresco&lt;/a&gt;

Saturn Bioponics are working on a collaborative project with leading fresh produce growers ValeFresco, to prove and showcase the benefits that the Saturn Grower vertical growing system offers in a commercial growing environment.

The project will demonstrate the 2.5-3.5% yield increase and ***reduced*** costs of production the system delivers on leafy crops, with particular focus on pak choi.

Results have wider application across the fresh produce industry, in particular for leafy salads, herbs and soft fruit. The project enables a step change in the economics of high-value crop production.

Project 2: Improving hydroponic production using new online nitrate sensor

Partners: &lt;a rel="external" href="[*http://www.sle.sharp.co.uk/sharp/apps/sle-web/index.html*](http://www.sle.sharp.co.uk/sharp/apps/sle-web/index.html)"&gt;Sharp Laboratories Ltd&lt;/a&gt;; &lt;a rel="external" href="   [*http://www.lincolnshire-herbs.co.uk*](http://www.lincolnshire-herbs.co.uk)/"&gt;Lincolnshire Herbs Ltd&lt;/a&gt;; &lt;a rel="external" href="   [*http://www.apssalads.com*](http://www.apssalads.com)/"&gt;APS Salads Ltd&lt;/a&gt;; &lt;a rel="external" href="   [*http://www.maybarnconsultancy.co.uk*](http://www.maybarnconsultancy.co.uk)/"&gt;May Barn Horticultural Consultancy Ltd&lt;/a&gt;

Many crops, including tomatoes, lettuce, herbs, strawberries, raspberries and ornamental flowers are often grown using hydroponics, where fertiliser for the growing plants is supplied in the irrigation water. Hydroponic farming produces excellent quality crops with good efficiency but there is an opportunity to improve the method by continuously monitoring and controlling the fertiliser components in the irrigation water.

This project aims to enable better control over the use of nitrate, which is an important component of the fertiliser. A new sensor, which can be used to continuously measure the nitrate concentration in irrigation water will be deployed at commercial hydroponic farms, allowing continuous nitrate monitoring for the first time.

We will evaluate the potential for expected benefits including ***reductions*** in fertiliser use and expense and smaller discharge of fertiliser into natural waters, helping to meet environmental legislation.The technology is relevant to UK and global farming.

Project 3: Real-time information systems for precision pig production

Partners: &lt;a rel="external" href="[*http://www.farmex.co.uk*](http://www.farmex.co.uk)/"&gt;Farm ***Energy*** & Control Services Ltd&lt;/a&gt;; &lt;a rel="external" href="   [*http://www.armbuildings.co.uk*](http://www.armbuildings.co.uk)/"&gt;ARM Buildings Ltd&lt;/a&gt;; &lt;a rel="external" href="   [*http://www.garthvet.co.uk*](http://www.garthvet.co.uk)/"&gt;Garth Pig Practice Ltd&lt;/a&gt;; DC & RJ Allen & Partners; J M Sankey Fmrs; DA & EM Skinner; &lt;a rel="external" href="   [*http://www.stockcroft.co.uk*](http://www.stockcroft.co.uk)/"&gt;Stockcroft Ltd&lt;/a&gt;; Yorkwold Pigpro Ltd

This project unusually involves a consortium of prime producers and technology suppliers. It is farmers who will actually deliver on sustainable intensification and that is why this project involves them directly as full partners.

Entitled real-time information systems for precision pig production, the project will commercially pilot a recently developed system - Guardian Action - as a precursor to full UK industry roll-out. The information system provides real-time remote data recovery from pig production units and allows browser access to the processed and analysed data designed to create knowledge at a farm level.

In addition, anonymous data will be pooled and analysed to add further value for end users. Crucially, the pilot will include the setting up of a customer support resource to ensure that end users can turn the knowledge into profit. Uniquely, veterinary and nutritional expertise will complement the data analysis and interpretation. The system will be supplied and supported on a subscription fee basis.

Agri-Tech Catalyst Round 4 - Industrial Research

Project 1: Cocoa farm of the future

Partners: &lt;a rel="external" href="[*http://eu.mondelezinternational.com*](http://eu.mondelezinternational.com)/"&gt;Mondelez UK R&D Limited&lt;/a&gt;; Tree Global Ghana Ltd; &lt;a rel="external" href="   [*https://cocobod.gh/oursubsidiaries.php*](https://cocobod.gh/oursubsidiaries.php)"&gt;Cocoa Research Institute of Ghana&lt;/a&gt;

Without cocoa there is no chocolate and without the next farming generation, there is no cocoa. A vibrant cocoa supply chain is essential for the future of chocolate and - through the Mondelez Cocoa Life sustainability programme - we are leading its transformation.

As part of the programme, Mondelez UK R&D Limited is leading a project to transform the way cocoa is grown and dramatically boost farm yields and farmer incomes. By implementing this project in Ghana we are seeking to directly improve farming practices and technologies for the benefit of many thousands of Ghanaian cocoa producers and to ensure that high-quality Ghana cocoa continues to be the foundation ingredient in some of the UK's best loved chocolates, like Cadbury Dairy Milk.

Project 2: Third generation polyethylene greenhouse cladding materials

Partners: &lt;a rel="external" href="[*http://www.bpipoly.com*](http://www.bpipoly.com)/"&gt;British Polythene Ltd&lt;/a&gt;; &lt;a rel="external" href="   [*http://www.haygrove.co.uk*](http://www.haygrove.co.uk)/"&gt;Haygrove Tunnels Ltd&lt;/a&gt;; &lt;a rel="external" href="   [*http://berrygardens.co.uk*](http://berrygardens.co.uk)/"&gt;Berry Gardens Ltd&lt;/a&gt;; &lt;a rel="external" href="   [*http://www.finlays.net/fresh-produce/produce-partners*](http://www.finlays.net/fresh-produce/produce-partners)"&gt;Finlays Horticulture (Kenya) Ltd&lt;/a&gt;; &lt;a rel="external" href="   [*http://www.aschulman.com/Default.aspx?reset=2*](http://www.aschulman.com/Default.aspx?reset=2)"&gt;A. Schulman Inc Ltd.&lt;/a&gt;; &lt;a rel="external" href="   [*http://www.reading.ac.uk*](http://www.reading.ac.uk)/"&gt;The University of Reading&lt;/a&gt;; &lt;a rel="external" href="   [*http://www.lincoln.ac.uk/home*](http://www.lincoln.ac.uk/home)/"&gt;The University of Lincoln&lt;/a&gt;; &lt;a rel="external" href="   [*http://www.emr.ac.uk*](http://www.emr.ac.uk)/"&gt;East Malling Research&lt;/a&gt;

This project will develop a range of novel, third-generation, greenhouse film cladding materials. The films will be spectrally modified to drive completely passive benefits to primary greenhouse growers worldwide.

We will modify materials to change their UV transmission, the scattering of photosynthetically active radiation and to reflect near infra red heat. The benefits ***targeted*** will include yield and quality gains, the ***reduction*** of solar heat load and potential ***reductions*** in pest incidence.

For primary producers the technology is low cost, and small production gains will justify investment in the technology. In terms of film manufacturers the global market for specific greenhouse film is worth c. &#163;1.4 billion. However, it has a low level of product differentiation. Thus, innovations within this project have real potential to secure significant sales and export opportunities.

Project 3: MUST: Miscanthus scaling technology

Partners: &lt;a rel="external" href="[*http://www.terravesta.com*](http://www.terravesta.com)/"&gt;Terravesta Assured ***Energy*** Crops&lt;/a&gt;, &lt;a rel="external" href="   [*http://www.bellbrothersnurseries.co.uk*](http://www.bellbrothersnurseries.co.uk)/"&gt;Bell Brothers Nurseries&lt;/a&gt;, &lt;a rel="external" href="   [*http://www.edwardsfarmmachinery.com*](http://www.edwardsfarmmachinery.com)/"&gt;Edwards Farm Machinery&lt;/a&gt;, &lt;a rel="external" href="   [*http://www.aber.ac.uk/en*](http://www.aber.ac.uk/en)/"&gt;Aberystwyth University&lt;/a&gt;, Nutriss, &lt;a rel="external" href="   [*https://www.ceres.org*](https://www.ceres.org)/"&gt;CERES&lt;/a&gt;

The UK needs to ***reduce*** CO2 ***emissions*** in order to mitigate climate change, and green technologies will also stimulate economic activity. Bioenergy crops provide an alternative to fossil fuels, where wood, straw and other biomass is burnt in power stations, in order to generate electricity. 75% of the biomass we burn is imported.

Miscanthus is a plant with a straw-like stem that grows 2-3 metres high in a year, is harvested in spring and grows back from the roots to produce a crop each year. The harvested crop is burnt in power stations. It grows well on land that is not suitable for food crops.

The current method for planting miscanthus is from sections of root dug up from other miscanthus plants, but this limits how much we can plant each year. Planting miscanthus seed would allow us to speed up deployment. This project aims to understand how to produce miscanthus seed, plant and look after it successfully, and harvest it effectively, so we can grow more of the crop in the UK and create a new industry.

Project 4: BirdEase: An integrated diagnostic system for bacterial detection in poultry farms

Partners: &lt;a rel="external" href="[*http://greengagelighting.com*](http://greengagelighting.com)/"&gt;Greengage Lighting Ltd&lt;/a&gt;; &lt;a rel="external" href="   [*https://www.cam.ac.uk*](https://www.cam.ac.uk)/"&gt;University of Cambridge&lt;/a&gt;; &lt;a rel="external" href="   [*http://www.cramasie.com*](http://www.cramasie.com)/"&gt;Cramasie Ltd&lt;/a&gt;; &lt;a rel="external" href="   [*http://www.2sfg.com*](http://www.2sfg.com)/"&gt;2 Sisters Food Group&lt;/a&gt;; &lt;a rel="external" href="   [*http://www.campdenbri.co.uk*](http://www.campdenbri.co.uk)/"&gt;Campden BRI&lt;/a&gt;; &lt;a rel="external" href="   [*http://www.everysite.co.uk/home.eb*](http://www.everysite.co.uk/home.eb)"&gt;CASI Everysite (TLR Ltd)&lt;/a&gt;

There is increasing pressure within the poultry industry to improve biosecurity measures & cleanliness in primary production; advanced diagnostics for early disease detection are high on the agenda. In response to this specific industry need, this project will develop an integrated on-farm early-warning bacterial sensing system for intensive poultry production systems, ***targeting*** key food-borne disease pathogens prevalent in poultry meat: campylobacter, E.coli & salmonella.

The proposed innovation integrating sample collection, chemical-free enrichment, acousto-optic detection & seamless user presentation, is enabled only by the inter-disciplinary convergence of leading agri-scientists & engineers with poultry producers & industry informers. The overarching objective is to enable earlier decision making by producers to instigate preventative control measures that minimise downstream cross-contamination, thereby decreasing foodborne disease incidence within the supply chain.

Project 5: Aquaculture of the great scallop: Field tests for rope-growing techniques

Partners: Scalloptech Limited; Portland Oystermen Limited

The project focuses on UK field testing of rope growing methods for the great scallop in the UK.

The project will test variables affecting productivity of rope-growing techniques in order to (i) prove that it is a viable mode of production for large-scale commercial application; (ii) demonstrate the advantages of rope growing over current scallop aquaculture practices; and (iii) to optimise methodology for the implementation of the technique.

The output of the project is intended to be data and know-how which will form the basis of a model to generate funding for commercial exploitation of such methods.

One project is examining the feasibility of rearing scallops on ropes

Project 6: Novel low-viscosity wheats for distilling

Partners: &lt;a rel="external" href="[*http://www.swri.co.uk*](http://www.swri.co.uk)/"&gt;The Scotch Whisky Research Institute&lt;/a&gt;, &lt;a rel="external" href="   [*http://www.rothamsted.ac.uk*](http://www.rothamsted.ac.uk)/"&gt;Rothamsted Research&lt;/a&gt;, &lt;a rel="external" href="   [*http://www.limagrain.co.uk/index.php*](http://www.limagrain.co.uk/index.php)"&gt;Limagrain UK&lt;/a&gt;

A new collaboration between industry and academics has been funded which aims to utilise a novel non-GM approach to improve a major UK crop. The project, which involves Rothamsted Research and two industrial partners, The Scotch Whisky Research Institute and Limagrain UK, will run from 2015-2018. A successful outcome will demonstrate the potential to greatly accelerate development of novel varieties of crops for different end uses.

A novel variety of wheat could be used for whisky distillation among other things

Project 7: Lobster Grower 2 - Assessing the technical, economic and environmental potential for a novel candidate aquaculture species

Partners: &lt;a rel="external" href="[*http://www.nationallobsterhatchery.co.uk/?gclid=CJW42Zfa4sgCFSIOwwodHlQJMQ*](http://www.nationallobsterhatchery.co.uk/?gclid=CJW42Zfa4sgCFSIOwwodHlQJMQ)"&gt;The National Lobster Hatchery&lt;/a&gt;; &lt;a rel="external" href="   [*http://www.exeter.ac.uk*](http://www.exeter.ac.uk)/"&gt;University of Exeter&lt;/a&gt;; &lt;a rel="external" href="   [*http://www.westcountrymussels.co.uk*](http://www.westcountrymussels.co.uk)/"&gt;West Country Mussels&lt;/a&gt;; &lt;a rel="external" href="   [*https://www.cefas.co.uk*](https://www.cefas.co.uk)/"&gt;CEFAS&lt;/a&gt;; &lt;a rel="external" href="   [*http://www.falmouth.ac.uk*](http://www.falmouth.ac.uk)/"&gt;Falmouth University&lt;/a&gt;

Support from the Agri-tech Catalyst has been secured for a 36-month project, addressing fundamental food security challenges by examining novel angles to expand aquaculture; to include a species not currently exploited, the European lobster. This species commands the highest value (by volume) of any species landed in the UK and exhibits a significant supply deficit. Sea-based culture, in containers (SBCC) exhibits the potential for a low-carbon form of rearing with no feed costs.

The project will use containers specifically designed for the species, developed in an early stage project, to assess performance and develop holistic application of SBCC systems. The project will run a pilot scale lobster farm to gather practical, operational, environmental, biological, engineering, economic and social data that can be used to develop an essential tool to encourage and inform future investment. The consortium will be led by the National Lobster Hatchery and consists of two SMEs, two HEIs and a government agency.

Project 8: Innovative plant breeding & phenotyping technologies to ***reduce*** nutrient requirement of forages and improve livestock production efficiency

Partners: &lt;a rel="external" href="[*http://www.germinal.com*](http://www.germinal.com)/"&gt;Germinal Holdings&lt;/a&gt;; &lt;a rel="external" href="   [*http://www.aber.ac.uk/en*](http://www.aber.ac.uk/en)/"&gt;Aberystwyth University&lt;/a&gt;

A major challenge facing the UK livestock centre is the need to fulfil the increasing demand for meat and milk products whilst ***reducing*** the environmental impact of production. This project will apply innovative plant genetics and breeding approaches to the development of improved varieties of perennial ryegrass and white clover with increased nutrient use efficiency (NUE) and deliver environmental and economic benefits to primary producers and wider society.

It will also deliver commercial return to the seed company Germinal Holdings Ltd., who will market the improved varieties. The project will use the National Plant Phenotyping Centre in Aberystwyth as a bridge between studies in flowing solution culture and in the field and to develop high throughput technologies for the effective screening of new plant varieties with improved NUE in the glasshouse and in the field.

Project 9: Improving female fertility and calf survival in the UK beef industry

Partners: &lt;a rel="external" href="[*http://limousin.co.uk*](http://limousin.co.uk)/"&gt;British Limousin Cattle Society&lt;/a&gt;, &lt;a rel="external" href="   [*http://www.sruc.ac.uk*](http://www.sruc.ac.uk)/"&gt;SRUC&lt;/a&gt;

Fertile suckler beef cows and low calf mortality are essential for profitable beef production systems. To improve cow fertility and calf survival, national data will be used to develop genomic breeding values for fertility and survival.

Genomic selection is a novel breeding tool, which increases the rate of genetic improvement for traits that have traditionally been difficult to improve, such as fertility and survival. As a result, the overall efficiency of the UK beef industry can be improved as cows will be more fertile and produce more calves in their lifetime and more calves will survive.

This will increase production, but just as important do it in a sustainable way that ultimately will ***reduce*** the ***greenhouse gas*** ***emissions*** per kg beef produced. This project is innovative as beef genomics is still in its infancy and there are currently no breeding tools available for the genetic improvement of survival.

Project 10: Benchmark scenario planning in primary production: creating sustainable change

Partners: &lt;a rel="external" href="[*http://www.syngenta.com/global/corporate/en/Pages/home.aspx*](http://www.syngenta.com/global/corporate/en/Pages/home.aspx)"&gt;Syngenta Limited&lt;/a&gt;; &lt;a rel="external" href="   [*http://www.agcocorp.com*](http://www.agcocorp.com)/"&gt;AGCO Limited&lt;/a&gt;; &lt;a rel="external" href="   [*http://www.agcocorp.com*](http://www.agcocorp.com)/"&gt;AGCO Zambia Limited&lt;/a&gt;; &lt;a rel="external" href="   [*http://www.southampton.ac.uk*](http://www.southampton.ac.uk)/"&gt;University of Southampton&lt;/a&gt;; &lt;a rel="external" href="   [*http://www.aber.ac.uk/en*](http://www.aber.ac.uk/en)/"&gt;Aberystwyth University&lt;/a&gt;

Across the world we face growing issues of food security and nutrition. Agri-science is one of the eight great technologies where the UK can link research strength to practical application to farming practices and the food industry.

This project focuses on improving outcomes in primary production, and hence food security, by using advanced technologies to facilitate efficiency benchmarking for both productivity and environmental performance. The hypothesis we will investigate is that historic data patterns can be used to support farmers' decision making, a positive impact on global food security in a sustainable way.

High resolution data measurements will be evaluated in large scale and smallholder ***agriculture*** at locations in Zambia and the UK. Syngenta, AGCO, the University of Aberystwyth and the University of Southampton are working with other academic and international development organisations to deliver the project.

Project 11: Building genomic breeding pyramids for Indian cattle

Partners: Tropical Animal Genetics Private Limited (TAG); &lt;a rel="external" href="[*http://www.ed.ac.uk/home*](http://www.ed.ac.uk/home)"&gt;University of Edinburgh&lt;/a&gt;

The objective of this project is to increase the incomes of resource-poor, including landless, dairy farmers in India by establishing a process of continuing genetic gain. This will be achieved by developing a breeding pyramid to offer routinely to farmers first-cross heifers between Holstein and Sahiwal.

This will be achieved through two innovations: the first, to establish specialist producers of heifer calves produced following embryo transfer; the second, to use DNA technology to establish reciprocal recurrent genomic selection (RRGS) for both Holstein and Sahiwal parents to maximize the productivity of the crossbred.

This will capture in a sustainable structure the hybrid vigor in productivity of the crossbred in both yield and fitness for the production environment. The direct benefits will be obtained by the women of the household as they are typically responsible for the dairying activity and receive the income from it. In addition the scheme will diversify the sector and secure the indigenous breed resources.

Agri-Tech Catalyst Round 4 - Early Stage

Project 1: Feasibility study to develop technology for predicting wheat yield

Partners: &lt;a rel="external" href="[*http://www.selex-es.com*](http://www.selex-es.com)/"&gt;Selex ES&lt;/a&gt;; &lt;a rel="external" href="   [*http://www.soyl.com*](http://www.soyl.com)/"&gt;SOYL&lt;/a&gt;

The collaborative project between Selex ES and SOYL will test the feasibility of developing new technology for predicting wheat yield using a wide range of data including remotely sensed information describing the crop and soil. The project is highly innovative as it seeks to produce the first commercially viable yield prediction service that not only predicts yield, but also identifies the key factors expected to limit yields.

New applications for remote sensing technologies will be developed and innovative techniques for integrating a wide range of data types will be employed. The ultimate goal of this initiative is to produce a decision support tool that enables more efficient operating practices for a wide range of clients within the wheat industry.

Project 2: Development and validation of a system for automatic detection of lameness in sheep

Partners: &lt;a rel="external" href="[*https://www.nottingham.ac.uk*](https://www.nottingham.ac.uk)/"&gt;University of Nottingham&lt;/a&gt;; &lt;a rel="external" href="   [*http://www.intel.co.uk/content/www/uk/en/homepage.html*](http://www.intel.co.uk/content/www/uk/en/homepage.html)"&gt;Intel UK&lt;/a&gt;; &lt;a rel="external" href="   [*http://www.farmwizard.co.uk*](http://www.farmwizard.co.uk)/"&gt;Farm Wizard&lt;/a&gt;

This project seeks to address the challenge of sheep lameness, a predominant cause of both poor productive and reproductive performance on sheep farms costing industry around &#163;80 million a year. Lameness control relies on early detection and treatment of lame sheep yet there are no suitable/optimal tools for lameness detection. The project proposes to develop and test validity of a system for automatic lameness detection in sheep.

Project 3: Vaccine diluent improvement for ECF-ITM

Partners: &lt;a rel="external" href="[*http://www.galvmed.org*](http://www.galvmed.org)/"&gt;GALVmed&lt;/a&gt;, &lt;a rel="external" href="   [*https://cttbdlaunch.wordpress.com*](https://cttbdlaunch.wordpress.com)/"&gt;CTTBD&lt;/a&gt;, &lt;a rel="external" href="   [*http://www.arecor.com*](http://www.arecor.com)/"&gt;Arecor Ltd&lt;/a&gt;

This project represents a unique opportunity to translate British technology and expertise from the human health sector into livestock disease control in the developing world context. The project focuses on East Coast Fever (ECF), a major constraint on small-holder cattle production in East, Central and Southern Africa.

An effective vaccine, ECF-ITM, currently exists for the disease but it has a number of important drawbacks that affect its use in the field. This project will trial the use of novel formulations as a replacement for the ECF-ITM vaccine diluent. Success in the project will deliver important ECF-ITM vaccine product enhancements, notably vaccine stability.

This will afford far greater mobility and flexibility to ECF vaccinators resulting in an estimated 300,000 additional cattle being effectively immunised per year. This will be a notable development in the sustainable intensification of small-holder cattle production in the region.

Project 4: Aphid-resistant wheat for the smallholder farmer in Africa

Partners: &lt;a rel="external" href="[*http://www.rothamsted.ac.uk*](http://www.rothamsted.ac.uk)/"&gt;Rothamsted Research&lt;/a&gt;; &lt;a rel="external" href="   [*http://www.seedco.co.zw*](http://www.seedco.co.zw)/"&gt;Seed-Co Ltd&lt;/a&gt;

Seed-Co are the largest seed company in Africa, operating in 13 countries in Eastern, Central, Western and Southern Africa and have developed varieties suitable for different environmental conditions as well as for the smallholder farmer, therefore any pest resistance traits will benefit farmers in Africa and further afield.

Smallholder farmers face difficult challenges in protecting their crops against pests and diseases in these countries. Aphid pests can cause severe damage and yield losses to wheat. This project will identify wheat lines which show resistance to aphids, which can be bred into wheat varieties suitable to be grown in rain-fed, low-potential environments, thereby safeguarding the yield of smallholder farmers and ***reducing*** the reliance on expensive and environmentally unfriendly pesticides. By doing this we hope to contribute to the food and income security of the African smallholder farmer.

Project 5: Application of general repellents against ***agricultural*** pests

Partners: &lt;a rel="external" href="[*http://www.russellipm.com*](http://www.russellipm.com)/"&gt;Russell IPM Ltd&lt;/a&gt;; &lt;a rel="external" href="   [*http://www.russellipm.com*](http://www.russellipm.com)/"&gt;Russell IPM Bangladesh Ltd&lt;/a&gt;; &lt;a rel="external" href="   [*http://bsmrau.edu.bd*](http://bsmrau.edu.bd)/"&gt;Bangabandhu Sheikh Mujibur Rahman ***Agricultural*** Uni&lt;/a&gt;;

&lt;a rel="external" href="[*http://www.emr.ac.uk*](http://www.emr.ac.uk)/"&gt;East Malling Research&lt;/a&gt;; &lt;a rel="external" href="   [*http://www.nri.org*](http://www.nri.org)/"&gt;Natural Resources Institute&lt;/a&gt;, &lt;a rel="external" href="   [*http://www2.gre.ac.uk*](http://www2.gre.ac.uk)/"&gt;University of Greenwich&lt;/a&gt;

General semiochemical repellents are widely used for protecting humans and livestock from attacks by arthropod pests in developing and developed countries, but they have been little explored or used for crop protection. The aim of this project is to prove the concept that volatile, repellent chemicals can be used to ***reduce*** the damage caused to ***agricultural*** crops by a range of insect pests.

This could provide a widely-applicable new approach to management of crop pests that ***reduces*** the use of conventional pesticides and is compatible with integrated pest management and sustainable ***agricultural*** intensification. The approach is applicable in both developed and developing countries.

The project will be a collaboration between a UK SME, Russell IPM, two UK research institutes, East Malling Research and the Natural Resources Institute, and an SME, Russell IPM Bangladesh, and university, Bangabandhu Sheikh Mujibur Rahman ***Agricultural*** University, in Bangladesh

Project 6: Pan-specific vaccine to control Streptococcus agalactiae disease in tilapia aquaculture

Partners: &lt;a rel="external" href="[*http://www.moredun.org.uk*](http://www.moredun.org.uk)/"&gt;Moredun Research Institute&lt;/a&gt;, &lt;a rel="external" href="   [*http://www.benchmarkplc.com*](http://www.benchmarkplc.com)/"&gt;Benchmark Animal Health Ltd.&lt;/a&gt;

As the world population grows and becomes more affluent, an increasing number of people include protein in their diet. Aquaculture is the fastest growing source of animal protein and a major source of income in Asia, South America and Africa.

Tilapia is a popular fish, both with farmers and consumers, but disease can cause massive losses on tilapia farms. Streptococcus agalactiae, which can affect tilapia as well as people, is a major cause of such losses. Currently, antibiotics are commonly used to combat this problem. This is not sustainable because of the risk of antimicrobial resistance.

As an alternative, we propose to develop a vaccine that would protect fish from all types of S. agalactiae that affect them. This project brings together scientific expertise in the area of fish disease and vaccine development and commercial expertise in vaccine production and distribution. Jointly, the partners aim to provide the global aquaculture industry with effective and affordable tools for sustainable disease control.

Project 7: Early attractants for the major new fruit pest, Drosophila suzukii; a 'super lure'

Partners: &lt;a rel="external" href="[*http://berrygardens.co.uk*](http://berrygardens.co.uk)/"&gt;Berry Garden Growers&lt;/a&gt;; &lt;a rel="external" href="   [*http://www.realipm.com*](http://www.realipm.com)/"&gt;Real IPM&lt;/a&gt;; &lt;a rel="external" href="   [*http://www.emr.ac.uk*](http://www.emr.ac.uk)/"&gt;East Malling Research&lt;/a&gt;; &lt;a rel="external" href="   [*http://www2.gre.ac.uk*](http://www2.gre.ac.uk)/"&gt;University of Greenwich&lt;/a&gt;

The UK fruit industry is under continual pressure from the introductions of non-native pests and diseases. This project will aim to better monitor and time pesticide application against a highly damaging soft and stone fruit pest, Drosophila suzukii. It will achieve this by developing a more species specific attractant for future use in monitoring traps and, eventually, control technologies. For any query with respect to this article or any other content requirement, please contact Editor at [*htsyndication@hindustantimes.com*](mailto:htsyndication@hindustantimes.com)

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**End of Document**



[***IN OR OUT?; The official campaigns last week gave 12 reasons why the June 23 poll should go their way. This is how each side replied... IN'S RESPONSE TO OUT***](https://advance.lexis.com/api/document?collection=news&id=urn:contentItem:5JR7-3411-DY9P-N55S-00000-00&context=1516831)

Metro (UK)

May 9, 2016 Monday

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**Section:** NEWS; Pg. 24,25

**Length:** 2399 words

**Body**

1 Stronger economy: Membership of Europe supports a stronger economy that delivers growth, trade and investment as well as jobs and lower prices. That provides opportunities today and for future generations. Leaving Europe would hurt family finances, making Britain permanently poorer to the tune of £4,300 per household per year.

Many of the people who predicted disaster if we stayed out of the euro are now warning of economic misery if we leave the EU. The single currency has been the disaster. Thankfully Britain ignored the scare stories. They were wrong then and they are wrong now.

2 Jobs: Independent experts have found that over three million jobs in Britain are linked to our trade with Europe. This would be put at risk by leaving. Studies have shown that young people and entry positions would be the first to be hit.

It is ludicrous to suggest three million jobs are at risk. Trade with Europe will continue uninterrupted because it is in the EU's interests and our own. Exports elsewhere will grow once we are free to negotiate trade deals. The overall result will be more employment and more prosperity, not less.

3 Lower prices: Being part of Europe means cheaper prices in our supermarkets, cheaper petrol, and lower ***energy*** prices. The governor of the independent Bank of England has warned that leaving Europe could lead to higher mortgage rates. The EU means higher bills. It imposes charges on consumer goods we import from outside Europe and Brussels law prevents our elected government scrapping VAT on things such as ***energy*** bills. There will be no reason to raise mortgage rates as lenders will realise leaving the EU strengthens our economy.

4 Security: Many of the threats to Britain's security are global in nature, like terrorism, Russian aggression and cross-border crime. Whether it's implementing sanctions against Russia, sharing intelligence about terrorists or arresting and deporting criminals using the European arrest warrant, being in Europe makes us all safer. Threats are indeed global, so we must cooperate with allies everywhere. We do not need to do this through Brussels, which is much more interested in grabbing power than improving security. For our safety, we need to take back control of our laws from meddling EU bureaucrats and judges.

5 British trade: British businesses can sell tariff-free to 500million consumers across europe, Britain's home market. that supports £627million in trade every day, 44 per cent of the UK's total exports. Leaving would put that at risk, putting the thousands of British jobs that trade supports on the line.

The European free-trade zone stretches from Iceland to Turkey and Britain will remain part of that market if we leave the EU. Member states sold us £68billion more of goods and services in 2015 than we sold them. They will not slam the door on their best customer.

6 Public services: EU membership is vital to a strong economy and well-funded public services. Leaving Europe would be a body blow to our economy, creating a knock-on £36billion black hole in our public finances. That would mean less money for services such as the NHS.

Getting back our £350million a week membership fee will give us more money to spend on our priorities such as the NHS. By getting back control over our borders, we will be able to ***reduce*** the pressure of unlimited EU immigration on school places, hospitals, housing and the benefits system.

7 Cheaper holidays: Flights and mobile roaming charges are cheaper because of EU action: namely, allowing low-cost airlines to set up, and legislating to ban Swift Brexit: Justice secretary Michael Gove wants the UK to be free of EU regulations extra data charges. The chief executive of EASYJET has warned that budget air passengers would face less choice and higher fares if Britain leaves the EU.

The government has admitted roaming prices will not rise if we leave. Mobile firms are scrapping roaming charges for travellers going outside Europe - that has nothing to do with Brussels. There is no reason for air fares to rise. We would keep the international agreements that have led to ticket prices falling.

8 Future generations: This referendum is crucial to future generations and to the ability of young people to get on in life. Entry-level jobs are already at risk due to uncertainty around leaving Europe. The EU also offers young people opportunities to study, work and travel abroad through the Erasmus programme.

Non-EU countries take part in the Erasmus scheme, after we vote Leave young people will still take part and will still be able to travel and enjoy Europe. They won't though have their economic security put at risk by Brussels which cares far more about 'more Europe' than the economic well-being of the future generations paying the bills for it.

9 Standing in the world: Leaving the EU would diminish our influence on the world stage. In today's complex world, the UK has more control over its destiny staying inside organisations such as the EU. We would never dream of leaving the UN or Nato. Why would we leave the EU? Being in the EU ***reduces*** our standing. If we leave, we will be able to reclaim control of our seats in key bodies such as the World Trade Organization. The EU has its eyes on our seats at the UN Security Council, the IMF and the International Maritime Organization.

10Climate change: The EU, led by Britain, has spearheaded global action to tackle the challenge of climate change, setting out clear ***targets*** to cut ***greenhouse gas*** ***emissions***. A collective approach to cross-border environmental problems is crucial. Turning our back on Europe is not the answer.

Outside the EU, we will work with countries across the world to tackle climate change. Brussels currently represents the UK in many international negotiations, so we cannot play our full part. Its diplomacy is often incompetent, like at the 2009 Copenhagen summit when Europe was marginalised by the US and China.

11Women's rights: Being in Europe ensures protections for women in the workplace, tackling gender discrimination and fighting against income inequality. From maternity leave and work protections during pregnancy, to rules preventing harassment and unequal treatment at work, women in Britain benefit from hard-fought EU protections every day.

From the right to vote, to equal pay, divorce reform and the availability of the contraceptive pill on the NHS, British women have not needed Brussels to achieve their greatest advances. The European courts have outlawed lower car insurance premiums for women, although they are safer drivers.

12Working rights: The EU works to protect people in the workplace by making sure they have access to parental leave, paid holiday, protection for part-timers and limits on excessive hours. Leaving would put these employment rights at risk.

Britain has a proud history of improving workers' rights. Our minimum wage, holiday pay and statutory maternity leave were all introduced by British governments. Leaving does not mean scrapping everything from Europe that is now part of our law, but representatives we have elected will get back control of our rights.

1 Our money, our priorities: We send £350million to the EU every week, enough to build a new fully staffed NHS hospital. This payment is forecast to go up and will be £400million in 2020. We can take back control of this money and spend it on our priorities. The UK Statistics Authority - the independent expert authority on statistics in the UK - has slammed the £350million figure, calling it 'potentially misleading' - ignoring the rebate we get and the funding we receive. Treasury analysis puts the budget black hole at £36billion if we leave, a risk to our economy and spending.

2 Control of our laws: Sixty per cent of our laws now come from Brussels, with the EU in control of our trade, our borders and our democracy. If we vote Leave, UK law will have ultimate authority and we will take back control. We should be able to vote out the people who make our laws.

The UK is a sovereign nation state that is also a member state of the EU. Our parliament in Westminster decides on the laws that govern this country.

The EU, its treaties, and Britain's special status within it, have been agreed to and ratified by our democratically elected British governments.

3 A fairer immigration system: We will be able to create a fairer, more humane system based on the skills we need. We'll be able to control numbers without having to turn away talented people from outside the EU who want to contribute to our society and economy.

Britain is stronger with a fair immigration system and single market access. People from abroad shouldn't get benefits before paying in themselves - exactly what David Cameron has secured.

Single market access means we must - as Brits already do - welcome those who come here to work, pay taxes and support our public services.

4 Support business: Regulation from the EU costs our businesses £60million every week. Only six per cent of UK businesses export to the EU, yet all have to comply with these rules. Outside the EU we can free our entrepreneurs and small businesses and allow them to focus on driving economic growth and creating jobs.

Businesses large and small overwhelmingly support and are stronger thanks to Britain's EU membership. A CBI survey of businesses employing 1.5 million people showed that 80 per cent favour remaining in Europe. The governor of the Bank of England agrees that 'the actual regulatory burden in the United Kingdom is remarkably low'.

5 Protect our NHS: Uncontrolled immigration has put huge strain on A&E waiting times and demand for GP registrations. EU law also prevents UK authorities from checking qualifications and language skills of doctors coming from the EU, putting patient safety at risk. It's safer for the NHS to vote Leave.

Leaving would hit the economy, leaving the NHS with less money. Treasury analysis puts the hole in public finances created by leaving the EU at a third of the NHS England budget - £36billion.

More than 100,000 EU citizens work in health care. Leave campaigners support privatisation and cuts to NHS spending.

6 The EU is integrating more: If we vote Remain it will be more money and power to Brussels. The EU is set to integrate more with the creation of a eurozone treasury with new powers and common positions at international institutions. We will be marginalised even more than already.

The old project to create a United States of Europe is dead. Germany doesn't want to stop being German, the French are never going to cease being French. We have the right to veto on many t f th EU i l di l t d ill aspects of the EU, including enlargement, and will never have to join the euro.

7 Free to trade with the whole world: The EU has control over who we can strike free trade deals with, and currently we don't have any with important countries such as China, India and Australia. We can take back control of our trade policy to ensure businesses have access to markets across the globe. The EU is a powerful negotiating bloc, magnifying Britain's trade power. It is negotiating trade deals with China, India, Australia and many other economies. We don't want to miss this. Leaving would mean years of uncertainty and worse trade terms than we have now, harming business and the economy.

8 Safer border protection: Free movement within the EU means that the European Court has control over who can come into the UK. This means we have been unable to prevent dangerous individuals walking into our country. We can take back control and make our borders more secure. This is simply not true. Because we are not part of the border-free Schengen area, we operate our own border controls. Since 2010 we have refused entry to almost 6,000 EEA nationals at the border. Over 3,800 of these were stopped at Calais before they even got to the UK.

9 Control of our tax system: The EU decides the levels of VAT we pay on goods and services. This was most recently evident when the Government couldn't ***reduce*** VAT on women's sanitary products. Outside the EU we can create a tax system which suits our economy, not that of 27 other countries. The Leave campaign likes to pretend Britain is powerless in the EU. But we have a veto over EU tax law, so we're in control. The highly respected OECD has said the cost of leaving Europe would be like an extra tax - taking money out of every British person's pocket.

10 Better investment for ***agriculture***: For every £2 we put into the EU, we only get £1 back. Outside the EU we will be able to continue supporting our farmers but in a far more ***targeted*** and efficient way. We can decide our own rural policy with people who understand the UK industry and environment. British farmers want to stay in the EU. The NFU has said that farmers could lose up to £29,000 a year if we left, while the independent analysts Agra Europe found that only 10 per cent of farms could survive without the funding received as a result of our EU membership.

11The renegotiation failed: The PM's deal leaves the European Court in charge of exactly the same things as it was at the start of the negotiation. It doesn't solve any problems, bring any powers back, or save us any money. The deal is not legally binding on the European Court which is in charge of enforcing it.

The renegotiated deal delivers in all areas where the Prime Minister sought change. The deal's legally binding nature was confirmed by the attorney general Jeremy Wright QC, former attorney general Dominic Grieve, the solicitor general Robert Buckland, European Council president Donald Tusk, and president of the European Parliament Martin Schulz.

12Higher living standards: Leaving the EU would improve the lives of individuals and families. Independent research has found that rules from Brussels increase the cost of your food shop. On top of this, the head of the Remain campaign has admitted that wages would rise after we vote Leave. This adds further evidence that the British people will be better off outside the EU.

Britain's EU membership supports jobs and lower prices. Treasury analysis shows that outside the EU, families would be £4,300 a year worse [*www.off.No*](http://www.off.No) credible economist thinks we'd be better off out. The leader of economists for Brexit even admitted last week that wages would fall if we left.

Let us stay: George Osborne says Treasury analysis shows Brexit would hit family pockets

**Graphic**

Swift Brexit: Justice secretary Michael Gove wants the UK to be free of EU regulationsLet us stay: George Osborne says Treasury analysis shows Brexit would hit family pockets

**Load-Date:** May 9, 2016

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[***Historic climate deal agreed - but 'the real test comes ne- but 'the real test comes next'***](https://advance.lexis.com/api/document?collection=news&id=urn:contentItem:5HKW-BPS1-JBVM-Y4G9-00000-00&context=1516831)

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**Byline:** Paul Melia

**Body**

LORNA GOLD, head of policy at aid agency Trocaire, perhaps put it best.

Signing a deal is one thing, the test is what actions come next, she said.

She was speaking shortly after almost 200 nations agreed to ratify the Paris Agreement to address climate change at the 21st Conference of the Parties (COP21).

'Historic' is an often overused term, but this deal deserves such a description. Never before, despite 20 previous COPs, has the global community come together to tackle such a pressing issue.

For two decades, the science has warned that our climate is changing. But national self-interest prevented a common approach to action, even as a series of increasingly alarming reports from the UN's Intergovernmental Panel on Climate Change (IPCC) spelt out in detail how the ice caps were melting, sea levels rising, ***greenhouse gas*** ***emissions*** reaching record levels and rainfall patterns changing.

In 2009, at COP15 in Copenhagen, a deal slipped out of sight after the Danish hosts lost control of the process. COP21 was a second chance. French diplomatic skills were brought to bear, and incredible attention paid to detail to ensure the event ran smoothly.

Staff couldn't have been nicer. The food at the conference venue was excellent, and the toilets spotless. Each person was given a re-usable water bottle to refill from coolers to help prevent waste, and delegates moved through airport-style security at the conference venue quickly.

There were some wonderful, typically French moments throughout the week. On Saturday, when a deal was still in doubt, the parties broke for lunch before the final plenary which would dictate whether agreement had been reached.

Earlier in the week this reporter, having finished a nice dinner in a city centre restaurant with a colleague, spotted a mouse running around. In Ireland, you'd refuse to pay and complain to the HSE. In Paris, it would be disappointing if a mouse wasn't present.

The organisers also made access to the city and conference venue as easy as possible.

Free travel passes were provided, allowing people access the extensive - and low-carbon - electrified Metro and RER train system.

Public transport hubs had directions to the lines which would transport people to Le Bourget train station, where they were ferried by hybrid bus to the conference venue.

Paris aims to have an electrified, low-carbon transport system before 2020, and what better place to show off the art of the possible than to a captive audience in the city to discuss climate change.

But it was no holiday. The negotiating process was long and difficult, with many unsung heroes involved. Linguists were employed to help agree a form of words, as parties argued over whether 'should' or 'shall' were included, for example. The Irish delegation included officials from the departments of environment, finance, foreign affairs and ***agriculture***, as well as the Environmental Protection Agency, Sustainable ***Energy*** Authority of Ireland and Office of the Attorney General.

They helped negotiate technical aspects of the deal over 12 days and three all-night sessions.

By the end, they knew all about running on empty and surviving on sandwiches and coffee.

In fact, just before the accord was adopted, a series of legal changes had to be made to the text because, as the last plenary was told, it was drafted by lawyers functioning with little or no sleep.

Environment Minister Alan Kelly, who led the delegation, paid tribute to officials, saying the country should be "genuinely proud" of them.

"At key moments late in the night, they were crucial in maintaining political momentum behind a deal," he said. "I was very proud to have them with me as minister. They have served their country and department well."

Not everyone is happy with the final text. Friends of the Earth described it as a "sham", while Niacaragua said it was "kicking the problem down the road".

Professor John Sweeney, from Maynooth University and who was part of the IPCC team awarded the 2007 Nobel Prize, said the potential in the agreement was 'huge'.

"We don't want to go back moaning and groaning," he said. "Nobody got everything they wanted, but that always happens in negotiations. The potential of this agreement is huge, and the ratcheting up (of ***targets***) is very positive.

"It's historic because I don't know of any other agreement involving the 196 nations in the UN, certainly not in this area. It's quite an achievement when you think of all the disparate countries involved."

There is disappointment that the agreement - as opposed to the preamble - doesn't make explicit reference to human rights, but it does include a reference to gender, an important addition as most of the world's farmers are women who are among the most affected by crop failure caused by climate change.

Key to its success will be the response of business and investors.

The Paris Agreement means oil, gas and coal have no longterm future, and it will be interesting to see what impact it will have on share prices in the short-term.

There were many moments when it appeared the parties were moving further from a deal, rather than closer.

Compensated Some fossil fuel-producing countries suggested they would have to be compensated for leaving their oil in the ground.

There were calls for vulnerable countries to be compensated for loss and damage caused by climate change, which bigger emitters like the US opposed.

Some of the left-wing Latin American states indicated they shouldn't have to do anything at all, as the West had caused the problem in the first place, and even right at the end Malaysia was threatening to scupper a deal, while Africa was arguing it was among the most vulnerable, meaning it was entitled to more finance.

But, more than a day late, a deal eventually came.

When COP president Laurent Fabius opened the last plenary to the floor, he said the words that so many had waited so long to hear: "I see no objections. The Paris Agreement is adopted."

And with that, the tide of history had turned. What happens next will dictate whether those late nights were worth it.

A series of legal changes had to be made to the text because it was drafted by lawyers functioning with little or no sleep

**Graphic**

Above: An environmentalist wears a red nose as she demonstrates near French riot police in Paris. Photo: Pascal Rossignol; right: President of COP21 Laurent Fabius (centre) raises hands with UN secretary general Ban Ki Moon (second left) and French President François Hollande (right) after adoption of a historic global warming pact at the COP21 Climate Conference in Paris. Photo: AFP/François Guillot. Bottom right: protests at the Eiffel Tower

**Load-Date:** December 14, 2015

**End of Document**



[***CSIRO cuts were about taking focus off 'public-good research', emails show; Internal emails reveal motivation behind decision to cut climate research and cast doubt on assertions made by executives to Senate committee***](https://advance.lexis.com/api/document?collection=news&id=urn:contentItem:5JT4-MMS1-JCJY-G3H5-00000-00&context=1516831)

The Guardian

May 18, 2016 Wednesday 5:10 AM GMT

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**Section:** AUSTRALIA NEWS

**Length:** 1445 words

**Byline:** Michael Slezak

**Body**

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The internal decision-making process behind the CSIRO's decision to cut its climate research has been revealed in a 700-page document dump, delivered as part of a Greens-Labor inquiry into federal government budget cuts. Many key emails sent from private accounts were not included in the disclosure, but the documents reveal a shopping-list of controversial internal decisions.

In March CSIRO executives told a Senate committee the organisation was not moving away from "public-good science", but the emails appear to cast doubt on that assertion.

They show one of the central reasons climate science could not continue to make money for the CSIRO was the federal government's decision to cut grants for environmental research.

They also contain a detailed analysis of all the climate research capabilities that would be scrapped, as well as surprisingly callous language in discussions about which researchers would be made redundant, with remarks from managers referring to employees' age, their work hours and how strong their union links were.

Related: CSIRO climate cuts attack a national treasure when we need it most

In November 2015, the CSIRO leadership began a "deep dive" into the oceans and atmosphere business unit, which houses most of the CSIRO's researchers that focus on monitoring and modelling climate change.

On 21 November, before a meeting at which that investigation was discussed, the deputy director of the oceans and atmosphere business unit, Andreas Schiller, sent an email summarising what CSIRO executives thought ought to be done.

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But Schiller said if they aimed for fewer cuts, "we will inevitably face the problem of keeping some of the climate scientists".

Ken Lee, director of the oceans and atmosphere unit, responded: "I agree - let's overshoot first."

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Related: Why Malcolm Turnbull should reverse the destructive, clumsy, and dumb CSIRO cuts | Mark Dreyfus

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But that practice appeared to be abandoned, with staff still not aware of who will be made redundant. In an email on 25 February, Peter Oke, an acting director in the oceans and atmosphere unit, defended that course of action. A staff member said: "The feeling is that, if there were even a rudimentary understanding of what we do, then the plan as put forward appears rushed, and illogical. This is further magnified by the fact that management is only now thinking about the full ramification and is not yet able to end the uncertainty."

Oke replied: "Consider the alternative. There's an announcement that there are 100 FTEs [full-time equivalent positions] lost and here's a list. Or ... there are 100 FTEs lost, and our leadership team will try to figure out the best way to retain a workforce that can function properly and deliver impact."

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Morgan said "public-good research" still had a key role within the organisation and the emails quoted were just a small selection of the more than 700 documents provided by the CSIRO to the Senate inquiry.

"Research for national benefit absolutely belongs in CSIRO, as it has done for almost a century. This is CSIRO's mandate and that has not changed," Morgan said.

"Our new strategy will see us continue to deliver research outcomes that benefit Australians and the international community. This includes in our key focus areas such as cybersecurity and digital disruption, business transformation, ***agriculture***, health, and climate adaptation and mitigation.

"We have to make decisions about where we should invest our budget and we do this with a view to what Australia needs most. The Australian economy is in transition and CSIRO has a critical role to play in preparing people for climate change and for things like digital disruption that will change the way they work and live."

A senior researcher in the oceans and atmosphere unit told Guardian Australia CSIRO executives were rethinking some of the plans after the enormous international response to the cuts. That reaction included hundreds of climate scientists signing a petition, a front-page story in the New York Times and a report arguing the cuts would breach international commitments.

In earlier comments, Marshall said the response was surprising and was "more like religion than science". He said the climate science lobby appeared more powerful than the oil lobby was in the 1970s. Marshall later apologised for any offence caused by those comments.

"We appreciate this can be an uncertain and challenging period for affected staff and remain committed to supporting staff throughout this process," he said.

**Load-Date:** May 18, 2016

**End of Document**



[***Cadogan Petroleum Annual Financial Report -6-***](https://advance.lexis.com/api/document?collection=news&id=urn:contentItem:5JMM-7F71-F0CC-S3NC-00000-00&context=1516831)

London Stock Exchange Aggregated Regulatory News Service (ARNS)

April 26, 2016 Tuesday 2:04 PM GMT

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**Length:** 1634 words

**Body**

measured and published annually by the International Association of Oil & Gas

Producers. In 2015, the Group recorded close to 324,000 man hours worked. There

were no Lost Time Incidents ("LTIs") recorded in 2015 and over two million man

hours have been worked without an LTI since the previous incident was recorded

in July 2011.

Vehicle safety and driving conduct remain among the Company's priorities in

controlling hazards and preventing injuries. As of the end of 2015, the Company

has recorded almost ten million kilometres driven without an LTI.

During the year 2015 the Company continued to monitor the activity's

performances in terms of ***greenhouse gas*** ***emissions*** reporting, as well as

Company-wide collection of statistical data related to consumption of

electricity and industrial water and fuel consumption by cars, plants and other

work sites.

Employees

Wellness and professional development is part of the Company's sustainable

development policy and wherever possible local staff is recruited; procedures

are in place to ensure that all recruitments are undertaken on a transparent

and fair basis with no discrimination against applicants. Each operating

company has its own Human Resources staff to ensure that the Group's employment

policies are properly implemented and followed. As required by Ukrainian

legislation, Collective Agreements are in place with the Group's Ukrainian

subsidiary companies which provide an agreed level of staff benefits and other

safeguards for employees. The Group's Human Resources policy covers key areas

such as equal opportunities, wages, overtime and non-discrimination. All staff

is aware of the Group's grievance procedures.

The contingent E&P industry conditions forced the Group to ***reduce*** the level of

staffing; the concerned personnel were duly informed and all the necessary

procedures for a smooth solution were applied. Local qualified contractors are

considered for supplementing the required expertise when and to the extent

which is necessary.

Sufficient levels of health insurance are provided by the Group to employees to

ensure they have access to good medical facilities. Each employee's training

needs are assessed on an individual basis to ensure that their skills are

adequate to support the Group's operations, and to help them to develop.

Gender diversity

The Board of Directors of the Company comprised of six male Directors

throughout the year to 31 December 2015. The appointment of any new Director is

made on the basis of merit. See pages 21 to 23 for more information on the

composition of the Board.

In 2015 the new nominated Company Secretary is female.

As at 31 December 2015, the Company comprised a total of 84 employees, as

follows:

Male Female

Non-executive directors 4 -

Executive directors 3 -

Management, other than Executive directors 7 3

Other employees 45 22

All employees 59 25

Human rights

Cadogan's commitment to the fundamental principles of human rights is embedded

in our HSE polices and throughout our business processes. We promote the core

principles of human rights pronounced in the UN Universal Declaration of Human

Rights. Our support for these principles is embedded throughout our Code of

Conduct, our employment practices and our relationships with suppliers and

partners wherever we do business.

Community

The Group's activities are carried out in rural areas of Ukraine and the Board

is aware of its responsibilities to the local communities in which the Group

operates and from which some of the employees are recruited. At current

operational sites, management works with the local councils to ensure that the

impact of operations is as low as practicable by putting in place measures to

mitigate their effect. Key projects undertaken include improvement of the road

infrastructure in the area, which provides easier access to the operational

sites while at the same time minimising inconvenience for the local population

and allowing improved road communications in the local communities. Specific

community activities are undertaken for the direct benefit of local

kindergartens, schools, sporting facilities and medical services, as well as

other community-focused facilities. All activities are followed and supervised

by managers who are given specific responsibility for such tasks.

The Group's local companies see themselves as part of the community and are

involved not only with financial assistance, but also with practical help and

support. The recruitment of local staff generates additional income for areas

that otherwise are predominantly dependent on the ***agricultural*** sector.

Approval

The Strategic Report was approved by the Board of Directors on 25 April 2016

and signed on its behalf by:

Marta Halabala

Company Secretary

25 April 2016

CORPORATE GOVERNANCE

Board of Directors

Zev Furst, 68, American

Independent Non-executive Chairman

Appointed to the Board on 2 August 2011, Mr Furst is a leading global business

and communications strategist who has advised political leaders, foreign

principals and corporate executives of Fortune 100 companies. He is the

Chairman and CEO of First International Resources, an international corporate

and political consulting firm he founded in 1992. Mr Furst specialises in

providing strategic counsel on crisis management, market entry, corporate

positioning and personal reputational issues. In recent years, he has also

advised and consulted with candidates running for national office in Israel,

Japan, Mexico and Ukraine.

In 1986, Mr Furst was a founding partner of Meridian Resources and Development

Ltd, an international commodities trading company specialising in chemicals and

petroleum products.

Mr Furst currently serves as Chairman of the International Board of the Peres

Center for Peace and is a member of the Advisory Board of the Kennan Institute

in Washington, DC. He has written and lectured extensively on international

affairs, business and political strategy and the role of media in politics and

diplomacy.

Mr Furst is Chairman of the Company's Nomination Committee and a member of the

Remuneration Committee.

Guido Michelotti, 61, Swiss

Chief Executive Officer

Mr Michelotti was appointed to the Board of Directors as Chief Executive

Officer on 25 June 2015. An Oil & Gas executive with over 30 years' of

international experience across the entire E&P cycle, he spent more than 10

years in senior executive roles with eni, leading E&P companies as well as

managing major capital projects.

Prior to joining Cadogan he was CEO of a Luxembourg based Private Equity fund

investing in E&P.

Mr Michelotti is a Senior Advisor to the ***Energy*** Practice of the Boston

Consulting Group, a member of the Society of Petroleum Engineers (SPE) and a

former member of SPE's Industry Advisory Council.

Bertrand des Pallieres, 49, French

Chief Trading Officer

Mr des Pallieres was appointed as Chief Executive Officer on 1 August 2011,

having joined the Board as a non-executive Director on 26 August 2010. Mr des

Pallieres is also the CEO of SPQR Capital Holdings SA, a major shareholder of

the Company. On 22 June 2015, Mr des Pallieres was appointed as Chief Trading

Officer.

Previously he was the Global Head of Principal Finance and member of the Global

Market Leadership Group of Deutsche Bank from 2005 to 2007. From 1992 to 2005

he held various positions at JPMorgan including Global Head of Structured

Credit, European Head of Derivatives Structuring and Marketing, and Co-Head of

sales for Europe, Middle East and Africa. He is a non-executive director of

Versatile Systems Inc. listed on the Toronto and London Stock Exchanges and

Equus Total return, Inc., listed on the NYSE.

Mr des Pallieres is a member of the Nomination Committee.

Adelmo Schenato, 64, Italian

Chief Operating Officer

Mr Schenato was appointed to the Board as Chief Operating Officer on 25 January

2012. He joined the Company after a 35 year career at Eni S.p.A ("Eni"), the

Italian integrated ***energy*** business, where he served in senior global and

regional positions.

His global roles at Eni included Well Operations Research and Development and

Technical Management, and Vice President HSE & Sustainability. His regional

roles include General Manager of Tunisia, Gabon and Angola as well as CEO of

Eni's Italian gas storage company.

Mr Schenato is a member of the Health, Safety and Environment Committee.

Gilbert Lehmann, 70, French

Senior Independent non-executive Director

Mr Lehmann was appointed to the Board on 18 November 2011. He is currently

acting as an adviser to the Executive Board of Areva, the French nuclear ***energy***

business, having previously been its Deputy Chief Executive Officer responsible

for finance. He is also a former Chief Financial Officer and deputy CEO of

Framatone, the predecessor to Areva, and was CFO of Sogee, part of the

Rothschild Group. Mr Lehmann is also Deputy Chairman and Chairman of the Audit

Committee of Eramet, the French minerals and alloy business. He is Deputy

Chairman and Audit Committee Chairman of Assystem SA, the French engineering

and innovation consultancy. He was Chairman of ST Microelectronics NV, one of

the world's largest semiconductor companies, from 2007 to 2009, and stepped

down as Vice Chairman in 2011.

Mr Lehmann is currently Chairman of the Company's Audit Committee and a member

of the Remuneration and Nomination Committees.

Michel Meeùs, 63, Belgian

Non-Independent non-executive Director

Mr Meeùs was appointed as a Non-executive Director on 23 June 2014. Mr. Meeùs

is currently acting as Chairman of the Board of Directors of Theolia, an

independent international developer and operator of wind ***energy*** projects, of

which he is a major shareholder. Since 2007, he has been a director within the

**Load-Date:** April 26, 2016

**End of Document**



[***CSIRO cuts were about taking focus off 'public-good research', emails show; Internal emails reveal motivation behind decision to cut climate research and cast doubt on assertions made by executives to Senate committee***](https://advance.lexis.com/api/document?collection=news&id=urn:contentItem:5JG5-H5X1-F021-62VC-00000-00&context=1516831)

The Guardian

April 6, 2016 Wednesday 1:21 AM GMT

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**Section:** AUSTRALIA NEWS

**Length:** 1445 words

**Byline:** Michael Slezak

**Body**

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**Load-Date:** April 6, 2016

**End of Document**



[***Handelsblatt Exclusive; Trade, but Not at any Cost***](https://advance.lexis.com/api/document?collection=news&id=urn:contentItem:5JM8-4WX1-DXKF-C29B-00000-00&context=1516831)

Handelsblatt Global Edition

April 25, 2016 Monday

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**Section:** POLITICS

**Length:** 4464 words

**Highlight:** In an interview, Sigmar Gabriel, Germany's vice chancellor and economics minister, explained why a trans-Atlantic pact is critical for Germany - but also why he could be prepared to let it fail.

**Body**

Few other politicians in Europe are walking a finer line than Sigmar Gabriel. And perhaps no other issue holds as many minefields for him as the trans-Atlantic free-trade pact between the United States and the 28-nation European Union.The vice chancellor in a coalition government with German Chancellor Angela Merkel, Mr. Gabriel is also the country's economy and ***energy*** minister. Added to those twin roles, he's the head of the center-left Social Democrats.In an exclusive interview with Handelsblatt, Mr. Gabriel said that failing to agree a trans-Atlantic pact with the United States would represent a missed opportunity for Europe to play a role in setting the standards for global trade.But, in a nod to the opponents within his own political ranks, Mr. Gabriel warns that he's not afraid to let the negotiations fail if the United States doesn't compromise and meet the Continent's demand on some thorny issues - whether on public arbitration courts for settling investor disputes or greater E.U. access to public contracts in the United States.The interview was conducted on the eve of the world's largest industrial trade fair in Hanover, where Mr. Gabriel said he's also pushing German businesses and his own government to step up their efforts to digitalize German industry. He calls the task of creating the world's best digital infrastructure a "man-to-the-moon project" for Europe's largest economy, but one that is sorely needed if Germany wants to remain the world's export powerhouse for years to come.Also in Hanover on Sunday, U.S. President Barack Obama opened the trade fair together with Chancellor Angela Merkel. Both offered a final plea for the U.S.-E.U. free trade pact to become a reality, in spite of the anti-trade sentiment that has swept both sides of the Atlantic.Mr. Obama and U.S. negotiators have their own demands of the Europeans if the trade talks, which will go into their 13th round at a meeting in New York on Monday, are to really be completed.The following is the Handelsblatt's full interview with Germany's vice chancellor.Handelsblatt: Digitalization is changing society and the economy.

How well prepared is Germany for the changes?Sigmar Gabriel: Many things have been launched in recent years, from programs to promote digitalization in the Mittelstand [the mid-sized companies that form the backbone of the German economy] to the General Data Protection Regulation in Europe. But there is still more to be done.What exactly?We need greater data security and a new understanding of data privacy. And we mustn't forget investments in education and a shared understanding of the goals and contents of digital education. Most of all, our goal must be to have the world's best digital infrastructure, complete with gigabit networks, by 2025 at the latest.That's a project that will cost billions. Where will the money come from?It will be even more expensive if we continue to lag behind with these developments. Creating the world's best digital infrastructure is a "man-to-the-moon project." But it would also get young people enthusiastic about Europe again, and it would show that we are working on the future here. What we need now is courage, not timidity. Most of the funding would come from the private economy. But the government needs to move things forward with good regulation.\"Our notion of data privacy needs to change. The classic data privacy concept calls for the minimization of data, which is essentially the opposite of a Big Data business model.\". Such ambitious goals have surfaced again and again in Europe, and yet the United States is dominant when it comes to digitization. So how is Europe supposed to achieve the next quantum leap now?It isn't the biggest but the fastest one who prevails, especially in the digital world. And competition begins all over again every day. We should stop spending the money from the Juncker fund for odds and ends. We need a major, ambitious project to promote Europe's competitiveness. We expanded our railway networks 100 years and our airports 50 years ago. Those should be our benchmarks.Are regulators and competition watchdogs getting in the way?We would certainly have problems building a European aircraft-manufacturing group like Airbus today. The competition commission would cite the state aid directive, and they would also argue that it is important to prevent monopolies from forming in Europe. I think that's timid and the wrong approach. We need to allow European champions to take shape. We need to recognize the relevant market in the competition rules, because it is often global.Even with government support?No, that's not what I mean. But the government cannot stand in the way of every entrepreneurial decision.It's interesting that a politician with the Social Democratic Party (SPD) is advocating a more laissez-faire approach to economic policy.It has nothing to do with laissez-faire, but rather with active industrial policy. Our problem is not the size of our European players, but that the Internet giants from the United States are forcing us to become more and more dependent.Will expansion of the digital infrastructure in Europe work without public funds?I'm convinced that the money is already there. Instead of pumping 40 percent of E.U. funds into ***agricultural*** subsidies, it would be appropriate to invest in improving the continent's competitiveness and make the digital revolution in Europe a reality. Europe needs to find the political strength to do so. I'm convinced that this would be more than purely a growth program.There are regions in Europe that are cut off from economic development. Would that change through the expansion of digital infrastructure?Yes, I'm sure it would. But this isn't just true of the troubled regions of Southern Europe, but also for parts of Germany. First and foremost, we need the best broadband infrastructure, in places like the northern part of Dortmund or in the Marxloh neighborhood of Duisburg. In other words, in all the regions where there is high youth unemployment and weak economic development. We could say to young IT companies: go into these neighborhoods and revive them. They have low rents and high-speed Internet. We also need regional laboratories for digitization, places where we create regulatory breathing room for new data networking in ***energy*** and medicine, driverless cars and other things. This is where lawmakers should create ***targeted*** incentives for founders of companies and provide them with the necessary infrastructure.And the best schools, too.That's the second major issue. The best schools should be located in the worst neighborhoods. And I'm not just talking about having the most modern buildings and the right technical equipment. They should also include the right teachers, as well as comprehensive, attractive sports and recreational opportunities. These schools must be our country's cathedrals, not the office towers of banks. We need major investment in education. We are a country of growing inequality. We can counteract this by creating better opportunities, especially for the lower third of society. Our goal must be to become a bold, upwardly mobile society once again.Has the German economy actually understood the challenges associated with digitization?Yes. But in parts of the Mittelstand, many companies still rely on the success stories of the last 100 years. They invest in the further development of their successful products, and then they fail to notice that a data-based platform economy is forcing its way between product and customer. My concern is that this will result in old business models eventually going under while nothing is created to replace them.Many business owners fear that business secrets could be revealed through data. Isn't that understandable?Data security is a vital condition of digitization. We should also set ourselves an ambitious goal in this respect, namely to become the world's safest data site. That would give us a competitive edge over the United States, which is not given much credit in this regard. But our notion of data privacy needs to change. The classic data privacy concept calls for the minimization of data, which is essentially the opposite of a Big Data business model. But the goal is precisely to gain knowledge from as much data as possible and use it to develop business models. The right key word here is data sovereignty. In a transparent data market, every citizen, every consumer and every company should be able to decide what happens with his or its personal data. It should always be possible to delete or transfer data to competing companies. That's my vision of digital emancipation. In addition, every company needs to develop the competency to use its data successfully and profitably.The average mid-sized company in Germany certainly takes a different view of this.That's true. For quite a few people, the concept of the data cloud makes them think of data theft. It is vital that we attach great importance to data security. But a fundamental change in attitudes is needed in the development of data-based business models.What contribution is the economy minister making to this change in attitudes?We have established five competency centers to digitize the Mittelstand. It is now clear that these centers will be set up in every German state. Any business owner can go there and, together with experts, try things out that he can later implement in his company. Besides, owners of Mittelstand companies must recognize the opportunities startups provide. They can act as an outsourced research and development department. But Germany also has a need for a central service agency, a first-class think tank of digital strategy. The British are ahead of us in this regard.Is Siemens a role model? Joe Kaeser has just opened up Siemens for startups.It's certainly an interesting approach. But it shouldn't just be a question of whether or not you buy a startup. Instead, it needs to be about communication and the transfer of competency. Startups must be perceived as partners that can improve an established company's scope of evaluation.Doesn't that also require better conditions for startups?Yes, there is still much to be done. At least we have ensured, with the Investment Taxation Reform Act, that the sale of diversified holdings remains tax-free after certain holding periods. I expect that the states will follow suit. And we have also made progress in government funding of venture capital. I think the German economy should become at least as involved as my ministry and the KfW development bank.For years, the business community has been calling for tax breaks to encourage research. Isn't this more necessary than ever, in times of growing digitization?We are currently in discussion with the Finance Ministry over whether fiscal support for investment and research could make sense in certain areas. This isn't easy, because you have to avoid windfall effects. I do believe that it's possible, however.A number of Social Democrats are at odds over the issue of digitization. When it comes to structuring the workplace in the age of digitization, the first thing Labor Minister Andrea Nahles thinks of is to establish works councils everywhere. Is this a good fit for the startups you know?Andrea Nahles has initiated a broad debate over Labor 4.0. I think that's fantastic. When the Internet bubble of the year 2000 burst, people who worked in companies with works council were pleased. Collective advocacy will certainly work differently in the future. But it is, or course, an achievement that we will take with us into the new era.Does Germany need a minister of digital affairs?Governments need a shared understanding of how to modernize our country, socially, economically and culturally, for our digital age. The idea of delegating this to one person only results in everyone else avoiding taking responsibility.Wasn't the battle lost long ago? Or do you still believe that there could be a European or even a German Google one day?I'm not pessimistic at all in this regard. When it comes to Industry 4.0, for example, German companies are at the forefront. This certainly doesn't apply to business models that directly ***target*** the end-user. But it does apply to business-to-business solutions.Are you saying the Americans can learn from Germany?Yes, and the Americans think so, too! U.S. President Barack Obama has made his country's reindustrialization a declared goal, and he has repeatedly cited Germany as a role model. Here in Germany, industry's share of gross value added is almost twice as high as in the United States. This is precisely one of the key strengths of the German economy. And it's also one of the reasons we regained our old strength faster than everyone else after the 2008 collapse. This is why I caution against losing sight of the strategic goal of strengthening industry once again.What risks do you see?With industry having a 23-percent share of gross value added, Germany is among the exceptions in the European Union. In the E.U., we are still far away from a 20-percent share. I strongly advocate changing this. Those who call for a 20-percent ***reduction*** in ***greenhouse gas*** ***emissions*** must also define a 20-percent industrial share of gross value added as a binding objective.What has to happen to ensure that Germany is still an industrialized country in 2030?We have to fight to preserve closed supply chains. These supply chains begin with ***energy***-intensive basic industry and end in the high-tech sectors. In Germany, all the links in this chain are very effectively connected to one another. But if one link breaks away, the entire model unravels.How can this be prevented?I strongly believe that we should abide by our ambitious national climate protection goals. But if the steel or chemical industry is contending with competitors that have no or significantly smaller climate protection requirements to comply with, it can't be sustained in the long term. The result would be that jobs are lost in Germany and production takes place in other parts of the world, under conditions that are deeply harmful to the climate. That doesn't do anyone any good. We need to be very cautious in this regard. Once industry has left the country, it won't come back. That's why I am strictly opposed to imposing new restrictions on the top 10 percent of industry.But aren't we really talking about a structural change that sectors such as the steel industry simply have to confront?The German steel industry is highly modern and very efficient - and it has a future. It underwent a structural transformation long ago. If we continue to impose burdens on the steel industry, companies that are much less efficient and far worse environmentally will survive in the end.What could the consolidation of the steel industry look like?I'm certainly not about to comment on the plans of individual companies. I do have a concern, however: If we now talk about a "German solution" to this issue, the consolidation will only take place in Germany, which will cost us jobs and economic clout. I want the world's most efficient locations, and the ones that are most likely to protect the climate, to emerge strengthened from the consolidation. Those with the best locations, not those that pay the highest dumping subsidies, should prevail. That has to be the decisive criterion. And if that's the case, German steel sites will stand a good chance.How do you intend to prevent global competitors from exploiting the cost benefits they have as a result of more lax efforts to protect the climate? At the world climate summit in Paris, governments agreed to binding ***targets*** to ***reduce*** their CO2 ***emissions***. We should think about how we treat countries that do not adhere to the binding requirements.That's likely to contradict WTO rules.In the case of environmental and health standards, is it indeed possible to introduce such regulations.Speaking of trade policy, don't you believe that the TTIP negotiations will succeed?Those who want standards for globalization shouldn't believe that these standards will appear out of nowhere. We need to take matters into our own hands. TTIP gives us an opportunity to do so. I would very much welcome it if Americans and Europeans took advantage of this opportunity. The Trans-Pacific Partnership Agreement (TPP) concluded by the Americans and the Asians shows how bad the standards countries agree to can be when Europe isn't involved. We need to prove that this can be done much more effectively. CETA, the agreement between the European Union and Canada, is a good model, and one that we should use a guideline with TTIP. That's my benchmark.\"I hear a lot of skepticism from the Americans.\". What distinguishes CETA from other trade agreements?There are no private arbitration panels, but rather an arbitration court with two entities. The agreement states that public services that are privatized can be nationalized again. That regulation is left up to the contracting parties. That social and cultural standards are not affected. And, most of all, that the rights of parliaments cannot be limited. It's become a truly effective agreement.How has the United States reacted to your proposal to install public instead of private arbitration boards?I hear a lot of skepticism from the Americans. I will not agree to a treaty that calls for private arbitration panels.What do you not like about the Americans' list of demands?The Americans want to retain their "buy American" idea. We can't accept that. The Americans don't want to open up their public bidding process to European companies. To me, this is precisely the opposite of free trade. If the Americans cling to this position, we won't need a free trade agreement, and TTIP will fail"¦Do you see a risk that the Europeans and Americans will eventually agree to a "TTIP light," one that excludes the contentious issues?I don't think that's a good idea. My goal is not to avoid the worst. I want a good agreement, not an agreement at all costs.Does U.S. President Barack Obama bring new momentum to the TTIP negotiations?Mr. Obama and the chancellor are not conducting the negotiations"¦ It would be more important to see some progress in the negotiations with the European Commission. Just look at the American election campaign. Both Hillary Clinton and Donald Trump have made remarks that are very hostile to trade. That concerns me.Why is the Mittelstand so skeptical?We need to emphasize the benefits for the Mittelstand more effectively. Big companies have no problem with all the bureaucracy involved in European and American regulations. They have entire departments filled with lawyers who handle these things. A Mittelstand company can benefit from an agreement that achieves mutual recognition of regulation and ***reduces*** bureaucratic effort.As a proponent of the agreement, you have encountered hostility within your own party. Wouldn't a failure of the agreement work out well for you, since the issue would then be off the table?I have been campaigning for the agreement for months, despite all the resistance within our own ranks. Because I don't believe that it's a good idea for Europe to be forced to conform to the poor standards of others in a few years. And because world trade needs and will get rules. It's better for us to be involved in the process than for others to make decisions for us. But unfortunately those involved in the negotiations keep telling me that they are not making any progress. And it isn't the European Commission's fault.What would a failure of TTIP mean?It would feel like a validation of anti-American sentiments, and not just in Germany. It's not as if there is any other country in the world that we Europeans are closer to. That rubs me the wrong way. Of course, a failure of TTIP would not spell disaster for the German economy. Still, we would miss out on a chance for Europe and the United States to set global economic standards.Experts fear a relapse into re-nationalization?It's an illusion to believe that it's possible to exist with a re-nationalized economy in a globalized world. We don't need a new Biedermeier period. We do need more international cooperation. All I can say to the TTIP opponents is this: We can't prevent globalization, just as we can't prevent tomorrow's weather. But we can make sure we have the right clothing. The goal of globalization is not wealth for a few, but justice for all. This still sounds like an unattainable vision today, but human progress has always begun this way.But aren't many citizens afraid of free trade and digitization? Of a world that no longer seems to have a place for them as individuals? Citizens remember the experience that liberalized markets have always gone hand-in-hand with a lowering of social standards. Many see the United States as the place where this development comes from. Just look at the financial markets. But the solution is not that we can do everything on our own. We need to do the right thing.How do you intend to explain this to the many parts of the SPD that are opposed to TTIP?Well, it isn't as if there were no support for it at all. SPD-led administrations like the ones in the states of Hamburg and North Rhine-Westphalia, which need open markets for their industry, support the plan. But they are also right in saying that it won't work without social standards.Given the SPD's low approval ratings, wouldn't you need more support from the leaders of these two states, Olaf Scholz in Hamburg and Hannelore Kraft in North Rhine-Westphalia?I can't complain about a lack of support.Why do you think the party is struggling with approval ratings of around 20 percent?Many decent Social Democrats think that we're doing the right thing. We have achieved our government projects, such as the minimum wage and retirement at 63. But the low approval ratings must be the chairman's fault.But you are holding up to this pressure?Yes. The social democratic movement is struggling with a declining faith in collective advocacy in an individualized society. In the first industrial revolution, the debate revolved around expanding the social welfare state. This is not the case in the second industrial revolution, which is today, because a strong national, social welfare state alone can no longer control global capitalism. This doesn't mean that the social welfare state is incapacitated. It's just that we have weakened it more and more in the last 25 years. A strong and capable government, one that invests in education as well as internal security, is indispensable today. This is because many people justifiably have a deep-seated need for greater social and cultural certainty. But we need strong Europe for that. Both are our issues.You're not likely to be able to fix that by the next general election.Name me a party in Germany that stands for democratic cohesion as much as the SPD. The SPD is the only party that attempts to bring together economic success, security in social terms and environmental sense. All other parties succumb to the temptation to focus on only one thing at a time. But that's bound to fail in a modern society. The SPD has never abandoned its claim to shape social policy, not in good and not in bad times. And we're sticking to that.Is that why you're opening up the debate on pensions?At its core, it's a debate about values. Is work and achievement worth anything in our society? After all, a decent pension is nothing but the result of a lifetime of achievement. In one of the richest countries on earth, a person who has worked for 45 years, or even longer in some cases, should be able to retire without pension cuts.Is combating poverty in old age your main concern?My concern is proper compensation for the work people have done. My concern is appreciation for work that people have performed. There has been much talk about lower pensions lately. Fine. But we're also talking about perfectly normal pensions. I can't send someone who has worked for 40 years into retirement with only 40 percent of his salary, but we're moving in that direction. There's more at stake than the pension level. The question is whether politicians are perceived as cynical.Is pension policy an opportunity to ***reduce*** the influence of the Alternative for Germany?The pension issue is closely tied to the low-interest phase in Europe. It undermines pretty much everything we have said about private pension plans in recent years. It also destroys the basic notion we have received from our parents, namely that we should save for a rainy day. People say to me: "First you introduced the euro, and then everything became more expensive. Than you ***reduced*** pension levels and told people to contribute to private pension plans. Meanwhile, hundreds of billions were spent on ailing banks. And now all of this has led to nothing." It comes as no surprise that people perceive the ***reduction*** in pension levels, together with the low interest-rate policy, as cynical. That's what right-wing populists are exploiting throughout Europe.Is European Central Bank President Mario Draghi primarily responsible for this policy?No. I think it's fundamentally wrong to hold Mr. Draghi responsible. The root of the problem lies in the weak growth we've had since 2008, which is crippling Europe. The real question in Europe should be how we combine growth and structural reforms. The European left believes it's merely a question of investments. The conservatives believe it's all about austerity. We need to combine these two things. It isn't just about spending money. It's also about investing intelligently, in education, research and the digital world. That's our future.Does the ECB policy pose a threat to social cohesion?The actions of the ECB are a consequence of misguided policy in the euro zone. This misguided policy is dangerous in the long run.Sven Afhuppe is Handelsblatt's editor in chief. Thomas Ludwig leads Handelsblatt's political coverage from Berlin. Klaus Stratmann writes about the ***energy*** sector. To contact the authors: [*afhuppe@handelsblatt.com*](mailto:afhuppe@handelsblatt.com), [*ludwig@handelsblatt.com*](mailto:ludwig@handelsblatt.com), [*stratmann@handelsblatt.comWHY*](mailto:stratmann@handelsblatt.comWHY) IT MATTERSGerman Economics Minister Sigmar Gabriel has a tough balancing act in supporting the U.S.-E.U. free trade deal that much of the German public and his own Social Democrats oppose. FACTSU.S. President Obama and German Chancellor Merkel were to speak in favor of the trans-Atlantic pact at the opening of the Hanover industrial trade fair Sunday. Mr. Gabriel's own support for the TTIP agreement with the United States is opposed by many of his fellow Social Democrats. Mr. Gabriel also explains why Germany's goal should be to have the world's best digital infrastructure by 2025.

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[***G7 Summit in Japan on 26 and 27 May: European Union's role and actions***](https://advance.lexis.com/api/document?collection=news&id=urn:contentItem:5JV7-B9H1-F03R-N1M8-00000-00&context=1516831)

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May 23, 2016( EU Reporter: [*http://www.eureporter.co*](http://www.eureporter.co) Delivered by Newstex) This year, the G7 summit[1] will take place from 26 to 27 May in Ise-Shima (Japan). The European Union will be represented by the President of the European Commission, Jean-Claude Juncker, and the President of the European Council, Donald Tusk.The main topics on the agenda, as set out by this year's Japan presidency, are the global economy, investment, trade, the refugee crisis, climate change and ***energy***, the fight against terrorism, foreign policy and development. Leaders will also discuss several global health policy issues, gender equality and women's rights. Global economy G7 leaders will take stock of the global economy, and will discuss commitments to further strengthening economic policy responses to the growing global economic uncertainty, including structural, monetary and fiscal measures. The role of the EU: Despite a more difficult global environment, the EU's recovery continues.

According to the EU's latest economic forecast[2] (3 May), the economy in all member states is expected to grow next year - albeit unevenly - unemployment in Europe is expected to fall below the 10% mark in 2017; and the fiscal outlook is continuing to improve as the general government deficit and the debt-to-GDP ratio will continue to decline gradually in both the eurozone and the EU as a whole. As external factors supporting Europe's moderate recovery are fading, domestic sources of growth are gaining in importance. In its Spring 2016 European Semester package[3], presented on 18 May, the Commission's country-specific recommendations focused on three priority areas: investment (still low compared to pre-crisis levels but gaining traction, also helped by the Investment Plan for Europe); faster progress on structural reforms (necessary to boost the recovery and raise the long-term growth potential of EU economies); and the need for all member states to pursue responsible fiscal policies and ensure growth-friendly composition of their budgets. Investment G7 leaders will address the global demand-supply gap in investment and will help promoting infrastructure investments. They will discuss G7 commitments to invest in areas that contribute to sustainable growth, like green growth, ***energy*** and the digital economy. The role of the EU: the Investment Plan for Europe - Investment is a top priority for the EU. After a take-off in record time, the brand new Investment Plan for Europe InvestEU is kick-starting investments of at least €315 billion into the real economy over three years. In less than one year into its existence, the European Fund for Strategic Investments (EFSI) has already mobilized more than €100 billion across the European Union. 141,000 small and medium enterprises will already enjoy better access to finance, thanks to the Investment Plan. The Investment Plan has started to produce structural change. Until now, European investment has often been dominated by a limited number of large, expensive projects. Today, we are starting to see more local projects, which are smaller and more diverse. Public money is mobilizing private finance, and supporting structural reforms. We see more interaction between the European Investment Bank and local institutions. In short, we are beginning to see the investment that the market has often failed to deliver. EFSI is helping to find new treatments for Alzheimer's disease; transforming old industrial sites into new offices; bringing ***energy*** efficiency into our homes and cutting our bills; and lending a hand to start-ups who were turned away by other lenders. In more than half of our projects, research and development are pushing the boundaries of what we can achieve. The money for InvestEU does not solely come from reallocations from the EU budget. EU Member States - as well as non-EU countries - can contribute either at the level of the risk-bearing capacity, through a brand new European Investment Project Portal[4] (EIPP) - the online meeting place for project promotors and investors - or by directly co-financing certain projects and activities. More information here.[5] Trade At the summit, the G7 members are likely to send a strong message in support of free trade as a tool to promote jobs and higher living standards, including calling for strengthening the rules-based multilateral trading system and the functions of the WTO.The issue of global excess capacity, especially in the steel sector, will also be addressed. Furthermore, the G7 summit will be an occasion for the EU to take stock of the ongoing trade negotiations with Japan and the US. 'Trade for all': the EU's new trade strategy - Trade remains a key component of the Commission's strategy for jobs, growth and investment. The EU is the world's largest trading bloc and a staunch defender of fair and open trade and of the multilateral trading system. Last autumn, the Commission presented a new trade and investment strategy for the European Union, entitled 'Trade for All: Towards a more responsible trade and investment policy'[6]. The new strategy will make EU trade policy more responsible and based on three key principles: 1. Effectiveness: Making sure trade actually delivers on its promise of new economic opportunities. That means addressing the issues that affect today's economy, which involves services and digital trade. It also means including provisions for SMEs in future trade agreements. 2. Transparency: Opening up negotiations to more public scrutiny by publishing key negotiating texts from all negotiations, as is being done in the TTIP negotiations. 3. Values: Using trade agreements as levers to promote sustainable development and European values such as human rights, fair and ethical trade and the fight against corruption. This means including rules on human rights, sustainable development and good governance in future trade agreements with third countries. The overall goal of the EU's trade policy is to create growth and jobs in Europe, promote development around the world and strengthen ties with important trading partners. The EU has a busy agenda of bilateral negotiations, including for a free trade agreement with Japan[7]. It has concluded a number of other agreements, for example the recent one with South Korea[8] that has already brought much benefit to European exporters. The EU currently has a number of agreements pending ratification. The EU is also actively engaged in ongoing multilateral or plurilateral trade initiatives. One of the major ongoing negotiations is the Transatlantic Trade and Investment Partnership (TTIP[9]) with the EU's most important trading partner, the United States. By building this transatlantic economic partnership, the EU also wants to globally help carve new standards and rules, and safeguard existing ones. The EU wants to stay at the forefront in developing rules for the global economic trade, to shape globalisation. It was in the framework of the TTIP negotiations that the European Commission developed and proposed a new, modernised approach on investment protection: the Investment Court System. This approach has been included in recent agreements with Canada[10] and Vietnam[11]. More on the EU's trade policy[12]. Tax transparency Building on the G20 and OECD commitments, G7 leaders are also likely to call for consistent action in the field of tax transparency, in order to restore public trust in tax systems. The role of the EU - a top priority for this European Commission has been to deliver on combating tax avoidance and tax evasion. Significant progress has already been achieved. In 2015, we presented an Action Plan for a fair and efficient corporate tax system in the EU as well as an ambitious tax transparency agenda to tackle corporate tax avoidance and harmful tax competition in the EU. We have seen considerable success on each of these fronts. Late last year we achieved a landmark agreement in the EU on sharing information on tax rulings. This was a major step forward that will provide national authorities with much needed insight on aggressive tax planning. The EU finalised and signed agreements in 2015 on the automatic exchange of financial information of EU residents in Switzerland, Liechtenstein, Andorra and San Marino. Negotiations with Monaco have also been finalised and signature of the related agreement is foreseen in the coming months. Since May 2015, the 4th Anti-Money Laundering Directive requires Member States to put in place central registers on beneficial ownership of all EU companies and other legal arrangements like trusts - this is currently being implemented by Member States. In October 2015, a political agreement on the automatic exchange of information on tax rulings amongst Member States was reached. In January 2016, the Commission presented its Anti Tax Avoidance package[13]. Key features of the new package included legally-binding measures to block the most common methods used by companies to avoid paying tax; a recommendation to Member States on how to prevent tax treaty abuse; a proposal for the sharing of tax-related information on multinationals operating in the EU; actions to promote tax good governance internationally; and a new EU process for listing third countries that refuse to play fair. We have already made a lot of headway on these initiatives. In March 2016, member states came to a speedy agreement after only forty days on the automatic exchange of information on country-by-country reports of multinational companies. The Commission also came forward in April with a new legislative proposal on EU and non-EU multinational groups a yearly public country-by-country reporting on the profit and tax paid and other relevant information. Under this proposal, anyone interested would be able to see how much tax the largest multinationals operating in Europe pay. The scourge of tax avoidance is an issue of global significance. We look forward to pursuing our far-reaching strategy towards fair taxation and greater transparency together with all our partners in the international arena. Refugee crisis At the G7 summit, leaders are expected to call for a global response to a global crisis - the most serious refugee crisis since World War II - including by providing assistance and by helping to resettle refugees. The role of the EU: - The Syrian refugee crisis has become the world's worst humanitarian and security disaster. The European Union was first to see this as an international crisis that required concerted global action. As early as spring 2015, the EU put in place a strategy to address all aspects of the crisis: saving lives at sea and providing humanitarian assistance to all in need; strengthening external EU borders and launching a European Border and Coast Guard; supporting Member States under the most pressure with financial and technical assistance; relocating and resettling people in need of international protection across the EU; returning irregular migrants to their home countries; and creating safe and legal routes for asylum-seekers from outside the EU. In 2015-16, the EU will have devoted more than €10 billion to managing the refugee crisis. For 2016, the EU and its Member States pledged more than €3 billion to assist the Syrian people in Syria as well as refugees and the communities hosting them in neighbouring countries. As a part of its overall strategy to manage the refugee crisis, the EU and Turkey in March 2016 formally agreed to end the irregular migration from Turkey to the EU and replace it instead with legal channels of resettlement of refugees to the European Union, in full compliance with European and international law. This new approach has started to deliver results, with a sharp decrease seen in the number of people irregularly crossing the Aegean from Turkey into Greece.For 2016-17, the EU has already mobilised a total of €3 billion under the Facility for Refugees in Turkey, and another €3 billion may become available thereafter. For the medium and long term, the European Commission has taken up the challenges it is encountering during the refugee crisis, and presented proposals earlier this month to reform the Common European Asylum System by creating a fairer, more efficient and more sustainable system for allocating asylum applications among Member States. Overall, The European Commission's agenda on migration[14], one of the priorities of this Commission, sets out a European response, combining internal and external policies, making best use of EU agencies and tools, and involving all actors: EU countries and institutions, international organisations, civil society, local authorities and national partners outside the EU. The fight against terrorism In line with last year's Schloss Elmau G7 agreement to strengthen and coordinate efforts to address the global threat of terrorism, G7 leaders are expected to step up their efforts to counter terrorist financing, the flow of foreign terrorist fighters, arms and equipment, and to support other countries in their fight against terrorism. The discussions should lead to the adoption of a G7 Action Plan on Countering Terrorism and Violent Extremism. The role of the EU - Building on the 2015 European Agenda on Security, the European Commission in recent monthslaunched the European Counter-Terrorism Centre, presented new laws to better control firearms, and reached agreement on the Passenger-Name Record system for airlines. The EU's Radicalisation Awareness Network shares new ideas between the teachers, youth workers and other public servants who are in daily contact with vulnerable youngsters. In April, the Commission put forward new proposals to achieve an effective and genuine EU Security Union. Aim is to buildthe necessary tools, infrastructure and environment at European level for national authorities to work effectively together to address transnational threats such as terrorism, organised crime and cybercrime. The measures include: addressing the threats posed by returning foreign terrorist fighters; preventing and fighting radicalisation; sanctioning terrorists and their backers; improving information exchange; strengthening the European Counter Terrorism Centre; cutting the access of terrorists to funds, firearms and explosives; and protecting citizens and critical infrastructures. Moreover, in order to ensure greater coherence between internal and external actions in the field of security, and drawing on the work of the EU Counter Terrorism Coordinator, the Commission and the EEAS, the EU will initiate anti-terrorism partnerships with countries around the Mediterranean. More on the European Agenda on Security[15]. Foreign policy During the G7 summit, members will exchange views and seek common ground on the most pressing foreign policy challenges, including Ukraine/Russia, the situation in Syria, Iran and Libya. Also the security situation with regard to North Korea and the East and South China Seas will be addressed. The EU's support to Ukraine - The EU remains a key actor in the ongoing process to bring a solution to the crisis in Ukraine [16]that respects its territorial integrity, sovereignty and independence, as well as international law. The European Commission continues its support for the government of Ukraine's plans for reforms across a broad range of sectors. Faced with economic recession and the ongoing instability in the east of the country, Ukraine last year requested additional financial assistance from the EU and its other partners. The programme proposed, worth €1.8 billion, follows the €1.6 billion that we already delivered in 2014/2015 and is part of an unprecedented package of support. The EU-Ukraine Association Agreement, already approved by 27 EU Member States and the European Parliament, including its Deep and Comprehensive Free-Trade Area, remains provisionally applied, giving both the EU and Ukraine new opportunities for business and trade. In April, the European Commission proposed to lift visa requirements for Ukrainian citizens for short-stay travel to the Schengen area. This will facilitate mobility, but also encourage trade and cooperation and build trust and understanding. The fight against corruption has been an essential condition for visa liberalisation, and it remains an urgent priority for the country as a whole. The independence, integrity and operational capacity of new public institutions will be crucial. Ukraine's political leaders have a responsibility to work together and seek unity by putting their country's future first. In relation to the situation in eastern Ukraine, the EU remains committed to a complete implementation of the Minsk Agreements, starting with a full and proper ceasefire. The EU stands strong and united against aggression and destabilisation, but also believes in the virtues of dialogue and diplomacy. Russia - Economic sanctions against Russia [17]have been in place since July 2014 and were last renewed by the European Council in December 2015. The duration of the sanctions is directly linked to a full implementation of the Minsk Agreements. At the same time, the EU keeps the lines of communication with Russia open, and also engages selectively on foreign policy issues where there is a clear interest. The EU supports Russian civil society and invests in people-to-people contacts. The EU is also strengthening relations with its Eastern partners and other neighbours, including in Central Asia. Iran - The EU, through EU High Representative Federica Mogherini, showed leadership in facilitating last year's nuclear agreement with Iran[18], and is now working with its international partners to implement it. Following reassurance that Iran's intentions are peaceful, economic and financial sanctions related to nuclear programme were lifted. The most recent step in EU-Iran relations was the landmark visit to Tehran on 16 April by High Representative/Vice-President Mogherini and seven other Commissioners. The EU has put in place a regular political dialogue, while cooperation will focus amongst others on human rights, the economy, trade and investment, climate and ***energy***, aviation, nuclear safety, migration, science, research, education and culture. Iraq - In response to the conflicts in Iraq and Syria, and to counter the global Da'esh threat, the EU adopted the EU Regional Strategy for Syria and Iraq as well as the Da'esh threat, on 16 March 2015. For Iraq [19]the strategy foresees a mix of humanitarian and resilience aid, support for the stabilisation of areas liberated form Da'esh, support for rule of law, good governance and improved economic performance, as well as non-military support to the various lines of effort of the Global Coalition to counter Da'esh. It comes with an aid package of €1 billion for Syria and Iraq, which has in the meantime grown to €1.7 billion, for the years 2015 and 2016, out of which more than €200 million are dedicated to Iraq. The implementation of the strategy is in full swing in coordination with the EU Member States and other partners. The EU and Iraq, moreover, signed a Partnership and Cooperation Agreement in 2012 which is already being implemented provisionally, focusing on human rights, trade, economic and ***energy*** issues, pending the treaty's full ratification. Libya - The European Union is working closely with the United Nations in support of the Government of National Accord, which it considers the sole legitimate government of Libya[20]. On 18 April, the Foreign Affairs Council welcomed the arrival of the Presidency Council to Tripoli on 30 March, which paves the way for the effective government of the country by the Government of National Accord. The EU has called for Libyan ownership of a political process that must be as inclusive as possible. It has committed to support the Government of National Accord with a €100 million package of immediate assistance in different areas. Syria - The European Union is actively supporting[21] the efforts to restore peace in the war-ravaged Syria. We are fully behind the Geneva talks led by the UN Special Envoy Staffan de Mistura. The EU is also part of the International Syria Support Group. It calls for an end to the indiscriminate use of weapons and cessation of hostilities, humanitarian access to besieged and hard-to-reach areas, and the launch of a Syrian-led political transition. The EU and its Member States are the leading donors in humanitarian and economic assistance. Last February, at the 'Supporting Syria and the Region' conference held in London, the EU and its Member States pledged more than €3 billion to assist Syrian people inside Syria as refugees and the communities hosting them in the neighbouring countries for the year 2016. This comes on top of the €6 billion that the EU and its Member States had already committed. Climate action and ***energy*** The G7 will discuss how to lead the efforts of the international community, building on the outcome of the climate change Conference of the Parties (COP21) in Paris, in December last year. Leaders will also address ***energy*** policy issues, against the background of decreasing ***energy*** security. The role of the EU: The European Union was the first major economy to table its commitment in the run up to the Paris climate conference COP21 and now looks forward to having the Agreement ratified and entering into force swiftly. The EU has the world's most ambitious commitments on climate change: a ***reduction*** ***target*** of at least 40% in ***greenhouse gas*** (GHG) ***emissions*** by 2030 compared to 1990; to at least 27% of total ***energy*** consumption from renewable ***energy***; and to at least 27% increase in ***energy*** efficiency. The Paris Agreement vindicates the EU's approach. Implementing the 2030 ***energy*** and climate framework as agreed by the European Council is a priority in follow up to the Paris Agreement. Europe has shown that it is possible to act: from 1990 to 2013, EU ***emissions*** declined 19% while GDP grew 45%. The EU is currently the most GHG-efficient major economy in the world, and encourages other nations to follow, to match this ambition. Climate action has been part of the political and legislative agenda for many years and is an integral part of the European ***Energy*** Union strategy[22] - one of the priority policy areas of the Juncker Commission. Other dimensions of the EU's ***Energy*** Union strategy are: supplying security by diversifying Europe's ***energy*** sources; fully integrating the internal ***energy*** market by enabling ***energy*** to flow freely across the EU using interconnectors; increasing ***energy*** efficiency in order to consume less ***energy*** and ***reduce*** pollution; supporting research and innovation in low-carbon technologies. Turning Europe into a highly ***energy***-efficient and low-carbon economy will also boost the economy, create jobs and strengthen Europe's competitiveness: according to Eurostat 2012 data, the EU already has 4.3 million people working in green industries. This is a real success story for European industry even in times of an economic slowdown. It is estimated that the 2030 climate and ***energy*** framework would create up to 700,000 additional jobs in Europe. With more ambitious renewable ***energy*** and ***energy*** efficiency, net employment could increase by up to 1.2 million jobs. More info on EU ***Energy*** Union and Climate policy.[23] Development G7 leaders will discuss the next steps towards the implementation of the 17 Sustainable Development Goals (SDGs), as set out in the United Nations' 2030 Agenda for Sustainable Development, adopted in September 2015. The role of the EU: The EU has played an important role in shaping the 2030 Agendafor Sustainable Development, through public consultations, dialogue with its partners and in-depth research. The EU will continue to play a leading role as it moves into the implementation of this ambitious, transformative and universal Agenda that delivers poverty eradication and sustainable development for all. The European Union, together with its member states, is the world's largest aid donor, providing more than half of the total Official Development Assistance (ODA) reported last year by members of the Development Assistance Committee of the Organisation for Economic Co-Operation and Development (OECD-DAC). EU collective Official Development Assistance has increased to €68 billion in 2015 (up 15% from €59 billion in 2014) - growing for the third year in a row. This is the highest share of Gross National Income ever. EU collective ODA represented 0.47% of EU Gross National Income (GNI) in 2015, an increase from 0.43% in 2014. This is significantly above the non-EU Development Assistance Committee (DAC) country average of 0.21% ODA/GNI. Five EU Member States exceeded the 0.7% ODA/GNI mark: Sweden (1.4%), Luxembourg (0.93%), Denmark (0.85%), and the Netherlands (0.76%) and the United Kingdom (0.71%). 2015 also saw the highest support for development aid amongst EU citizens in 6 years. Almost nine out of ten EU citizens support development (89% - a 4 percentage point increase since 2014), while more than half say that promised levels of aid should be delivered by the EU. EU development policy seeks to eradicate poverty in a context of sustainable development. It is a cornerstone of EU relations with the outside world - alongside foreign, security and trade policy (and international aspects of other policies like environment, ***agriculture*** and fisheries). Over the last decade, thanks to EU funding, almost 14 million pupils could go to primary school, more than 70 million people were linked to improved drinking water, and over 7.5 million births were attended by skilled health workers, saving the lives of mothers and babies. EU development aid goes to around 150 countries in the world. Since 2014, the EU is phasing out direct aid to large countries that have experienced strong economic growth and managed to ***reduce*** poverty, and is focussing on the poorest regions in the world instead. In the period 2014-2020, about 75% of EU support will go to these regions which, in addition, often are hard hit by natural disasters or conflict. EU aid will also focus more on certain sectors such as good governance, human rights, democracy, health, education, but also ***agriculture*** and ***energy***. The EU applies a system of 'Policy coherence for development' in policy areas such as trade and finance, ***agriculture***, security, climate change or migration, in order to foster growth and overcome poverty in development countries, by - for example - opening its large single market to these countries, or setting up standards to fight illegal exploitation of natural resources. The EU is strongly committed to making aid more effective. The European Commission is part of the Steering Committee of the Global Partnership for Effective Development Cooperation. Based on European values, the EU promotes, in its relations with partners countries, democratic values and practises such as human rights, fundamental freedoms, good governance and the rule of law. Gender equality is an important element of the EU approach. More information on EU development aid.[24] Other important issues on the agenda At the Ise-Shima G7 summit, leaders will discuss a series of global health policy issues, including approaches to control infectious diseases, strengthening the response to public health emergencies such as the Ebola or Zika outbreaks, and ensuring the provision of lifelong healthcare services. Building on the progress made at the Schloss Elmau G7 Summit in 2015, several issues with a specific relevance to gender equality and women's rights will also be on the agenda. G7 Outreach meetings Traditionally, a number of third country heads of state and government, as well as chairpersons of international organisations, are invited to participate in parts of the summit. From ASEAN member states, the heads of state and government of Laos, Vietnam, Indonesia, Bangladesh, Sri Lanka, and Papua New Guinea are invited. In addition, the head of state and government of Chad - the current Chairperson of the African Union - and, from the international organisations, the chairpersons of the UN, OECD, ADB, IMF and the World Bank are invited. As the Ise-Shima summit is the first summit held in Asia in eight years, the Japanese hosts have indicated that the topic of one of the outreach meetings will focus on Asia. In another outreach session, participants will address the Sustainable Development Goals, with a focus on Africa. The EU as a G7 member The European Union is a full member in the G7 and takes part in its work at all levels. Since the entry into force of the Lisbon Treaty the EU is represented by both the President of the European Commission and the President of the European Council. The G7 is a forum for discussion where leaders take commitments to achieve common objectives, putting their credibility at stake. In doing so, the G7 provides critical leadership to address global challenges. In 1977, representatives of the then European Community began participating in the London Summit. The first G7 summit was held two years earlier, in 1975 in Rambouillet (France). Originally, the EU's role was limited to those areas in which it had exclusive competences, but this has changed with time. The European Commission was gradually included in all political discussions on the summit agenda and took part in all summit working sessions, as of the Ottawa Summit (1981). Japan will hand over the Presidency to Italy for 2017. The Presidency will continue in its rotation to Canada in 2018, France in 2019, the USA in 2020 and the United Kingdom in 2021. More information G7 summit Japan 2016[25] Council of the European Union G7 background brief[26] [ 1]: [*http://www.japan.go.jp/g7*](http://www.japan.go.jp/g7)/ [ 2]:   [*http://europa.eu/rapid/press-release\_IP-16-1613\_en.htm*](http://europa.eu/rapid/press-release_IP-16-1613_en.htm) [ 3]:   [*http://europa.eu/rapid/press-release\_IP-16-1724\_en.htm*](http://europa.eu/rapid/press-release_IP-16-1724_en.htm) [ 4]:   [*https://ec.europa.eu/priorities/european-investment-project-portal-eipp\_en*](https://ec.europa.eu/priorities/european-investment-project-portal-eipp_en) [ 5]:   [*http://ec.europa.eu/invest-eu*](http://ec.europa.eu/invest-eu) [ 6]:   [*http://trade.ec.europa.eu/doclib/press/index.cfm?id=1381*](http://trade.ec.europa.eu/doclib/press/index.cfm?id=1381) [ 7]:   [*http://ec.europa.eu/trade/policy/countries-and-regions/countries/japan/*](http://ec.europa.eu/trade/policy/countries-and-regions/countries/japan/) [ 8]:   [*http://ec.europa.eu/trade/policy/countries-and-regions/countries/south-korea/*](http://ec.europa.eu/trade/policy/countries-and-regions/countries/south-korea/) [ 9]:   [*http://ec.europa.eu/trade/policy/in-focus/ttip/*](http://ec.europa.eu/trade/policy/in-focus/ttip/) [ 10]:   [*http://ec.europa.eu/trade/policy/in-focus/ceta/*](http://ec.europa.eu/trade/policy/in-focus/ceta/) [ 11]:   [*http://ec.europa.eu/trade/policy/countries-and-regions/countries/vietnam/*](http://ec.europa.eu/trade/policy/countries-and-regions/countries/vietnam/) [ 12]:   [*http://ec.europa.eu/trade/policy/*](http://ec.europa.eu/trade/policy/) [ 13]:   [*http://ec.europa.eu/taxation\_customs/taxation/company\_tax/anti\_tax\_avoidance/index\_en.htm*](http://ec.europa.eu/taxation_customs/taxation/company_tax/anti_tax_avoidance/index_en.htm) [ 14]:   [*http://ec.europa.eu/priorities/migration\_en*](http://ec.europa.eu/priorities/migration_en) [ 15]:   [*http://ec.europa.eu/dgs/home-affairs/what-we-do/policies/european-agenda-security/index\_en.htm*](http://ec.europa.eu/dgs/home-affairs/what-we-do/policies/european-agenda-security/index_en.htm) [ 16]:   [*http://eeas.europa.eu/ukraine/index\_en.htm*](http://eeas.europa.eu/ukraine/index_en.htm) [ 17]:   [*http://eeas.europa.eu/russia/index\_en.htm*](http://eeas.europa.eu/russia/index_en.htm) [ 18]:   [*http://eeas.europa.eu/iran/index\_en.htm*](http://eeas.europa.eu/iran/index_en.htm) [ 19]:   [*http://eeas.europa.eu/iraq/index\_en.htm*](http://eeas.europa.eu/iraq/index_en.htm) [ 20]:   [*http://eeas.europa.eu/libya/index\_en.htm*](http://eeas.europa.eu/libya/index_en.htm) [ 21]:   [*http://eeas.europa.eu/syria/index\_en.htm*](http://eeas.europa.eu/syria/index_en.htm) [ 22]:   [*http://ec.europa.eu/priorities/****energy****-union/index\_en.htm*](http://ec.europa.eu/priorities/energy-union/index_en.htm) [ 23]:   [*http://ec.europa.eu/priorities/****energy****-union-and-climate\_en*](http://ec.europa.eu/priorities/energy-union-and-climate_en) [ 24]:   [*http://ec.europa.eu/europeaid/home\_en*](http://ec.europa.eu/europeaid/home_en) [ 25]:   [*http://www.japan.go.jp/g7*](http://www.japan.go.jp/g7)/ [ 26]:   [*http://www.consilium.europa.eu/en/meetings/international-summit/2016/05/160519-G7-background\_pdf/*](http://www.consilium.europa.eu/en/meetings/international-summit/2016/05/160519-G7-background_pdf/)

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[***Debate on food security and climate change***](https://advance.lexis.com/api/document?collection=news&id=urn:contentItem:5GSF-TKS1-JCW9-2017-00000-00&context=1516831)

Irish Examiner

August 26, 2015 Wednesday

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**Section:** BUSINESS

**Length:** 109 words

**Body**

The Ireland South MEP welcomes new proposals from the European Commission for the reform of the ***Emissions*** Trading System, aimed at ***reducing*** carbon ***emissions*** in the EU.

***Emissions*** trading and carbon pricing will help us to meet our ***Greenhouse gas*** ***emissions*** ***targets***, he said.

We must approach these talks with caution and bear in mind the parallel challenge of food security in Europe. Fertiliser, for example, is one of the sectors most exposed to carbon leakage and at risk of being displaced.

We must ensure that this sector, which is very important to European ***agriculture***, is given due attention so that farmers are not at risk of price hikes, he said.

**Load-Date:** August 26, 2015

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[***-Terra Nitrogen Reports Fourth Quarter 2015 Results***](https://advance.lexis.com/api/document?collection=news&id=urn:contentItem:5J41-4CY1-JD3Y-Y07M-00000-00&context=1516831)

ENP Newswire

February 18, 2016 Thursday

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**Length:** 1428 words

**Body**

DEERFIELD, Ill - Terra Nitrogen Company, L.P. (TNCLP) (NYSE: TNH) today reported net earnings of $ 79.2 million on net sales of $ 151.3 million for the quarter ended December 31, 2015. This compares to net earnings of $ 95.0 million on net sales of $ 168.0 million for the 2014 fourth quarter. Net earnings allocable to common units was $ 46.2 million ($ 2.49 per common unit) and $ 56.5 million ($ 3.05 per common unit) for the 2015 and 2014 fourth quarters, respectively. Results for the fourth quarter of 2015 included an unrealized net mark-to-market loss on natural gas derivatives of $ 12.6 million compared to a loss of $ 5.5 million in the fourth quarter of 2014.

For the full year 2015, TNCLP reported net earnings of $ 306.9 million on net sales of $ 581.7 million. This compares to net earnings of $ 370.0 million on net sales of $ 648.3 million for 2014. Net earnings allocable to common units was $ 186.2 million ($ 10.06 per common unit) and $ 223.3 million ($ 12.07 per common unit) in 2015 and 2014, respectively. Results for the full year 2015 included a $ 23.1 million unrealized net mark-to-market loss on natural gas derivatives compared to a loss of $ 12.6 million for 2014. The derivative portfolio at December 31, 2015 includes natural gas derivatives that hedge a portion of 2016, 2017 and 2018 natural gas purchases.

Analysis of Results

Net sales for the fourth quarter of 2015 totaled $ 151.3 million, compared to $ 168.0 million for the fourth quarter of 2014, with lower realized selling prices in ammonia and UAN and lower sales volumes in UAN being partially offset by increased ammonia sales volumes. Ammonia and UAN selling prices were lower in the fourth quarter due to softer global ammonia demand from industrial users including phosphate production, and increased global supply availability for both products. UAN sales volume decreased 10 percent and ammonia sales volume increased 31 percent in the fourth quarter of 2015 compared to the fourth quarter of 2014. The increase in ammonia sales volumes was driven by greater supply availability resulting from unplanned UAN downtime compared to the prior year period.

Comparing the fourth quarter of 2015 to 2014, TNCLP's:

Ammonia average selling prices decreased by 8 percent and UAN average selling prices decreased by 13 percent;

Ammonia sales volume increased by 31 percent and UAN sales volume decreased by 10 percent; and

Realized natural gas cost per MMBtu decreased by 35 percent.

Cash Distribution

Cash distributions depend on TNCLP's earnings as well as cash requirements for working capital needs and capital expenditures. For the full year 2015, capital expenditures were $ 87.8 million as compared to $ 67.1 million in 2014, with the increase primarily due to plant turnaround activities. For the full year 2016, TNCLP is expected to have capital expenditures in the range of $ 45 million to $ 55 million.

TNCLP reported on February 8, 2016, the declaration of a cash distribution for the quarter ended December 31, 2015, of $ 2.88 per common limited partnership unit payable February 29, 2016 to holders of record as of February 18, 2016.

Cash distributions per limited partnership unit also vary based on increasing amounts allocable to the General Partner when cumulative distributions exceed ***targeted*** levels. With this distribution, TNCLP cumulative distributions continue to exceed ***targeted*** levels.

During the first quarter of 2016, the company experienced an unscheduled outage for maintenance on one of the facility's two ammonia plants, which will result in approximately one-half of the complex being shut down for approximately two months. This will result in lower ammonia and UAN production, lower sales and lower profitability during the period, which will ***reduce*** Available Cash for distributions to unitholders. Additionally, planned maintenance, capital expenditures, and turnarounds are subject to change due to delays in regulatory approvals, and/or permitting, unanticipated increases in cost, changes in scope and completion time, performance of third parties, adverse weather, defects in materials, and workmanship, labor or material shortages, transportation constraints, and other unforeseen difficulties.

This release serves as a qualified notice to nominees and brokers as provided for under Treasury Regulation Section 1.1446-4(b). Please note that 100 percent of the Partnership's distributions to foreign investors are attributable to income that is effectively connected with a United States trade or business. Accordingly, the Partnership's distributions to foreign investors are subject to federal income tax withholding at the highest effective tax rate.

About TNCLP

Terra Nitrogen Company, L.P. is a leading manufacturer of nitrogen fertilizer products.

TNCLP is the sole limited partner of Terra Nitrogen, Limited Partnership (TNLP), owner of the Verdigris, Oklahoma manufacturing facility and related assets. Terra Nitrogen GP Inc., an indirect, wholly-owned subsidiary of CF Industries Holdings, Inc., is the General Partner of TNCLP and exercises full control over all of TNCLP's business affairs.

Forward-Looking Statements

All statements in this communication, other than those relating to historical facts, are forward-looking statements. These forward-looking statements are not guarantees of future performance and are subject to a number of assumptions, risks and uncertainties, many of which are beyond TNCLP's control, which could cause actual results to differ materially from such statements. Important factors that could cause actual results to differ materially from expectations include, among others:

Risks related to TNCLP's reliance on one production facility;

The volatility of natural gas prices in North America;

The cyclical nature of TNCLP's business and the ***agricultural*** sector;

The global commodity nature of TNCLP's fertilizer products, the impact of global supply and demand on TNCLP's selling prices, and the intense global competition from other fertilizer producers;

Conditions in the U.S. ***agricultural*** industry;

Difficulties in securing the supply and delivery of raw materials, increases in their costs or delays or interruptions in their delivery;

Reliance on third party providers of transportation services and equipment;

The significant risks and hazards involved in producing and handling TNCLP's products against which it may not be fully insured;

Risks associated with cyber security;

Weather conditions;

Potential liabilities and expenditures related to environmental, health and safety laws and regulations, and permitting requirements;

Future regulatory restrictions and requirements related to ***greenhouse gas*** ***emissions***;

The seasonality of the fertilizer business;

Risks involving derivatives and the effectiveness of TNCLP's risk measurement and hedging activities;

Limited access to capital;

Acts of terrorism and regulations to combat terrorism;

Risks related to TNCLP's dependence on and relationships with CF Industries;

Deterioration of global market and economic conditions;

Risks related to TNCLP's partnership structure and control of TNCLP's General Partner by CF Industries;

Changes in TNCLP's available cash for distribution to its unitholders, due to, among other things, changes in its earnings, the amount of cash generated by its operations and the amount of cash reserves established by its General Partner for operating, capital and other requirements;

The conflicts of interest that may be faced by the executive officers of TNCLP's General Partner, who operate both TNCLP and CF Industries; and

Tax risks to TNCLP's common unitholders and changes in TNCLP's treatment as a partnership for U.S. or state income tax purposes.

More detailed information about factors that may affect TNCLP's performance may be found in its filings with the Securities and Exchange Commission, including its most recent periodic reports filed on Form 10-K and Form 10-Q, which are available through CF Industries' website. Forward-looking statements are given only as of the date of this release and TNCLP disclaims any obligation to update or revise the forward-looking statements, whether as a result of new information, future events or otherwise, except as required by law.

Terra Nitrogen Company, L.P. news announcements are also available on CF Industries' website, [*www.cfindustries.com*](http://www.cfindustries.com).

TERRA NITROGEN COMPANY, L.P.

CONSOLIDATED BALANCE SHEETS

Please see full release at:

[*http://phx.corporate-ir.net/phoenix.zhtml?c=115908&p=irol-newsArticle&ID=2140243*](http://phx.corporate-ir.net/phoenix.zhtml?c=115908&p=irol-newsArticle&ID=2140243)

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[***-Terra Nitrogen Reports Second Quarter 2015 Results***](https://advance.lexis.com/api/document?collection=news&id=urn:contentItem:5GM5-P6W1-F0K1-N563-00000-00&context=1516831)

ENP Newswire

August 6, 2015 Thursday

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**Length:** 1443 words

**Body**

DEERFIELD, Ill - Terra Nitrogen Company, L.P. (TNCLP) (NYSE: TNH) today reported net earnings of $ 99.3 million on net sales of $ 153.6 million for the quarter ended June 30, 2015. This compares to net earnings of $ 100.1 million on net sales of $ 167.5 million for the 2014 second quarter. Net earnings allocable to common units was $ 61.3 million ($ 3.31 per common unit) and $ 58.4 million ($ 3.16 per common unit) for the 2015 and 2014 second quarters, respectively.

Results for the second quarter of 2015 included an unrealized net mark-to-market gain on natural gas derivatives of $ 2.6 million compared to a loss of $ 4.9 million in the second quarter of 2014.

For the first six months of 2015, TNCLP reported net earnings of $ 158.3 million on net sales of $ 280.2 million. This compares to net earnings of $ 203.0 million on net sales of $ 345.2 million for the first six months of 2014. Net earnings allocable to common units was $ 98.8 million ($ 5.34 per common unit) and $ 118.8 million ($ 6.42 per common unit) for the first six months of 2015 and 2014, respectively. Results for the first six months of 2015 included a $ 6.5 million unrealized net mark-to-market gain on natural gas derivatives compared to a loss of $ 8.9 million for the first six months of 2014.

Analysis of Results

Approximately one-half of the production capacity of the Verdigris nitrogen complex, including the ammonia plant and a UAN plant, underwent a planned turnaround in the first quarter of 2015. The ammonia plant turnaround was completed in the first quarter of 2015 and the UAN plant turnaround, including certain follow-on maintenance, was completed in the second quarter of 2015. These turnarounds ***reduced*** production in the second quarter of 2015. Second quarter 2015 sales of UAN were impacted due to the lower production, which increased the volume of ammonia that was available for sale in the second quarter.

Net sales for the 2015 second quarter totaled $ 153.6 million, compared to $ 167.5 million for the 2014 second quarter, with lower UAN sales partially offset by higher ammonia sales. UAN sales volume in the 2015 second quarter decreased 25 percent compared to the 2014 second quarter. Sales were affected both by limited UAN volumes due to the turnaround, and a weak North American UAN market as certain customers preferred ammonia over UAN during the period. High levels of imports also impacted UAN pricing in the second quarter. The increased available ammonia was sold into a strong spot market driven by an early spring application window that extended the season longer than usual in the Western Cornbelt. Ammonia sales volumes increased 77 percent in the 2015 second quarter compared to the 2014 second quarter.

Net earnings for the 2015 second quarter totaled $ 99.3 million, compared to net earnings of $ 100.1 million for the 2014 second quarter. The decrease in net earnings was primarily driven by lower UAN production volume in 2015 compared to 2014 and light demand for UAN as growers moved toward ammonia and urea in the second quarter.

Comparing the second quarter 2015 to 2014, TNCLP's:

Ammonia average selling prices increased by 3 percent and UAN average selling prices decreased by 11 percent;

Ammonia sales volume increased by 77 percent and UAN sales volume decreased by 25 percent; and

Realized natural gas cost per MMBtu decreased by 34 percent.

Cash Distribution

Cash distributions depend on TNCLP's earnings as well as cash requirements for working capital needs and capital expenditures. In the second quarter of 2015, capital expenditures were $ 67.4 million as compared to $ 27.4 million in 2014, with the increase primarily due to plant turnaround activities. For the full year 2015, TNCLP is expected to have capital expenditures in the range of $ 80 million to $ 90 million.

TNCLP reported on August 5, 2015 the declaration of a cash distribution for the quarter ended June 30, 2015, of $ 2.36 per common limited partnership unit payable August 31, 2015 to holders of record as of August 17, 2015.

Cash distributions per limited partnership unit also vary based on increasing amounts allocable to the General Partner when cumulative distributions exceed ***targeted*** levels. With this distribution, TNCLP cumulative distributions continue to exceed ***targeted*** levels.

This release serves as a qualified notice to nominees and brokers as provided for under Treasury Regulation Section 1.1446-4(b). Please note that 100 percent of the Partnership's distributions to foreign investors are attributable to income that is effectively connected with a United States trade or business. Accordingly, the Partnership's distributions to foreign investors are subject to federal income tax withholding at the highest effective tax rate.

About TNCLP

Terra Nitrogen Company, L.P. is a leading manufacturer of nitrogen fertilizer products.

TNCLP is the sole limited partner of Terra Nitrogen, Limited Partnership (TNLP), owner of the Verdigris, Oklahoma manufacturing facility and related assets. Terra Nitrogen GP Inc., an indirect, wholly-owned subsidiary of CF Industries Holdings, Inc., is the General Partner of TNCLP and exercises full control over all of TNCLP's business affairs.

Forward-Looking Statements

All statements in this communication, other than those relating to historical facts, are forward-looking statements. These forward-looking statements are not guarantees of future performance and are subject to a number of assumptions, risks and uncertainties, many of which are beyond TNCLP's control, which could cause actual results to differ materially from such statements. Important factors that could cause actual results to differ materially from expectations include, among others:

risks related to TNCLP's reliance on one production facility;

the volatility of natural gas prices in North America;

the cyclical nature of TNCLP's business and the ***agricultural*** sector;

the global commodity nature of TNCLP's fertilizer products, the impact of global supply and demand on TNCLP's selling prices, and the intense global competition from other fertilizer producers;

conditions in the U.S. ***agricultural*** industry;

difficulties in securing the delivery, or delays or interruptions in the delivery of raw materials such as natural gas;

reliance on third-party providers of transportation services and equipment;

the significant risks and hazards involved in producing and handling TNCLP's products against which it may not be fully insured;

risks associated with cyber security;

weather conditions;

potential liabilities and expenditures related to environmental and health and safety laws and regulations;

future regulatory restrictions and requirements related to ***greenhouse gas*** ***emissions*** or other environmental items;

TNCLP's inability to predict seasonal demand for its products accurately;

risks involving derivatives and the effectiveness of TNCLP's risk measurement and hedging activities;

limited access to capital;

acts of terrorism and regulations to combat terrorism;

risks related to TNCLP's dependence on and relationships with CF Industries;

deterioration of global market and economic conditions;

risks related to TNCLP's partnership structure and control of TNCLP's General Partner by CF Industries;

changes in TNCLP's available cash for distribution to its unitholders, due to, among other things, changes in its earnings, the amount of cash generated by its operations and the amount of cash reserves established by its General Partner for operating, capital and other requirements;

the conflicts of interest that may be faced by the executive officers of TNCLP's General Partner, who operate both TNCLP and CF Industries; and

tax risks to TNCLP's common unitholders and changes in TNCLP's treatment as a partnership for U.S. or state income tax purposes.

More detailed information about factors that may affect TNCLP's performance may be found in its filings with the Securities and Exchange Commission, including its most recent periodic reports filed on Form 10-K and Form 10-Q, which are available through CF Industries' website. Forward-looking statements are given only as of the date of this release and TNCLP disclaims any obligation to update or revise the forward-looking statements, whether as a result of new information, future events or otherwise, except as required by law.

Terra Nitrogen Company, L.P. news announcements are also available on CF Industries' website, [*www.cfindustries.com*](http://www.cfindustries.com).

TERRA NITROGEN COMPANY, L.P.

CONSOLIDATED BALANCE SHEETS: see full results at:

[*http://phx.corporate-ir.net/phoenix.zhtml?c=115908&p=irol-newsArticle&ID=2076342*](http://phx.corporate-ir.net/phoenix.zhtml?c=115908&p=irol-newsArticle&ID=2076342)

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[***The drip-drip wait for Big Oil to clean up its act; The key to lower-carbon power generation is far removed from simply turning the taps off, say the energy giants, amid little sign of a collapse in demand for fossil fuels. Jillian Ambrose reports***](https://advance.lexis.com/api/document?collection=news&id=urn:contentItem:5K0F-S1V1-JBVM-Y3R5-00000-00&context=1516831)

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**Section:** BUSINESS;FEATURES; Pg. 6,7

**Length:** 1762 words

**Byline:** Jillian Ambrose

**Body**

'The world is going to have to continue using fossil fuels, whether they like it or not." There's little disguising the defiance in the words of Exxonmobil chief Rex Tillerson. In a Dallas concert hall, less than six months after the historic global climate deal in Paris, the long-standing leader of the world's largest listed oil company locked horns with shareholders in an increasingly familiar battle for Big Oil.

For years, placard-wielding green activists have raised warnings that echo the financial collapse: a "carbon bubble" could leave markets reeling as trillions of dollars' worth of existing fossil fuel assets become worthless in a low-carbon world.

The hyperbole is easy to dismiss when it's delivered through a megaphone, but concerns over the future of high-carbon companies have made the leap from the picket line to the boardroom, where the world's largest investors are asking tough questions on what a lower carbon environment would mean for the balance sheets of the largest fossil-fuel producers.

At Exxon's latest AGM, over 38pc of the company's investors rebelled against the board by backing calls for it to publish an annual study of how profits may be affected by climate risk.

The concerns are sector-wide and the stakes are high: Blackrock, the world's largest investment fund, together with insurance giant Axa and Norway's $900bn sovereign wealth fund, are all raising concerns over climate risk and beginning to divest from carbon-exposed investments.

It's a trend that has not gone unnoticed by the international Financial Stability Board (FSB), led by Mark Carney. In 2015, G20 finance ministers and central bank governors asked the FSB how the financial markets could take into account climate-related issues.

Last week, prominent climate economists Dimitri Zenghelis and Nicholas Stern told the FSB's task force on climate-related financial disclosures, chaired by Michael Bloomberg, that there is a growing gap between the stock market valuations of carbon-intensive companies and what their value would be if the commitments made in the Paris Agreement on climate change were taken seriously.

"This gap should alarm policymakers and central bankers: it suggests either asymmetric information or a lack of credibility in policies," the report warns.

The revelation is worrying news for investors, but potentially calamitous for world markets, which would struggle to cope if there was a sudden revaluation of companies exposed to the risks of climate change.

"The speed at which such re-pricing occurs is uncertain and could be decisive for financial stability. If the transition is orderly, then financial markets will likely cope," claim the authors.

The submission adds that "it is becoming increasingly risky for companies to pin all business strategies on the assumption that extensive decarbonisation will not happen" and that "business models reliant on the assumption that governments were not serious in Paris are looking increasingly vulnerable".

Oil companies argue that the bigger obstacle to limiting ***greenhouse gases*** that threaten dangerous levels of global warming is the world's continued reliance on fossil fuels rather than their plans to deliver them.

In BP's annual survey of ***energy*** trends, the company found that oil remains the number one ***energy*** source, making up a third of primary ***energy*** use. For all the noise of the renewables lobby, ***energy*** from wind, solar and biofuels makes up just 2.8pc of global consumption, up from 0.8pc a decade ago.

The words of Exxon's Mr Tillerson may have seemed strident in the face of a shareholder rebellion, but the data backs up his defence: "Just saying 'turn the taps off ' is not acceptable to humanity."

BP economist Spencer Dale is just as clear about the long and uphill road towards a cleaner ***energy*** system. The company can see, clearer than most, just how great the scale of change needs to be to line up political goals with market reality.

Last year, Mr Dale says, the carbon intensity of global GDP fell by 2.8pc, its largest fall since 1992 apart from the financial crisis.

"That's the good news. But how much progress is it? To give you a ballpark estimate, if you look at the [International ***Energy*** Agency] scenario which says what we'd need to do to hit the Paris agreements, you'd need an average decline in the carbon intensity of GDP of 5.5pc sustained each year for the next 20 years," Mr Dale explains.

"Last year's decline was a one-off, and we'd need to have double that, and we'd need to have that every year for the next 15 years. That offers some perspective on the size of the challenge associated with Paris," he adds.

BP accepted shareholder calls last year to report on its plans to address climate concerns in its official financial reporting, and boss Bob Dudley wrote to investors to assure them of the steps being taken.

"We are increasing the proportion of natural gas in our portfolio - gas being a cleaner alternative to coal - everywhere, from the US and Europe to China and India. We are pursuing ***energy*** efficiency in our operations as well as providing advanced fuels and lubricants for customers. We are running renewable ***energy*** businesses in biofuels and wind and we fund research into climate change solutions at leading universities," Mr Dudley's letter reads.

Ten years ago, BP's portfolio consisted of 60pc oil production compared with 40pc gas. Today, the hydrocarbon stakes are split 50:50 and in five to 10 years' time, the share will be 60:40 in favour of gas.

It is a far cry from BP's greener "beyond petroleum" brand overhaul at the turn of the century, when its newly launched alternative-***energy*** division hinted at a new direction for the major. In 2005, BP committed to spending $8bn on solar, carbon capture, wind, and gas-powered power generation, before quietly letting the slogan fall by the wayside.

BP still has arguably the largest renewable ***energy*** portfolio of any of the major oil companies, but from 2013, in the wake of the Deepwater Horizon disaster, the focus has returned to where it can cut carbon from its core interests. The answer, for many oil companies, is gas.

"We see natural gas as playing an absolutely key role as a bridge fuel in transitioning to a lower-carbon economy," Mr Dale explains.

To critics of the industry, an incremental shift from one fossil fuel to another over two decades seems both glacial in pace and unambitious in scale. To oil companies, it represents a rational strategy in line with the outlook for the world's future ***energy*** needs.

By 2035, the global population is expected to reach nearly 8.8 billion, meaning an additional 1.5 billion people will need ***energy***, according to BP's annual world ***energy*** forecasts, and based on current forecasts it won't be sourced from renewables.

BP says fossil fuels will remain the dominant form of ***energy*** until then, meeting 60pc of the projected increase in demand and accounting for almost 80pc of the world's total ***energy*** supplies in that year.

The global dash for gas is a multi-billion-dollar bet that Royal Dutch Shell was happy to take.

Earlier this year, the Anglo-Dutch supermajor defied tumbling oil market prices to snap up BG Group for £40bn.

The former British Gas subsidiary is now a global leader in producing and transporting gas that is compressed into liquid form to be carried on tankers and sold on the international market. After the oil market downturn, Shell says the tie-up will be a springboard to profitability in the near term and will help to "future-proof " the company.

"We have to bear in mind that the world is going to need oil and gas for a long time to come," says Shell boss Ben Van Beurden. "But the more we can invest in the lowest carbon alternatives of that part of the system, the better. Bear in mind our portfolio is not longlife.

We are not a company that is sitting on 200 years' worth of oil or gas for that matter. We are a company that has a reserves life of about 10 to 15 years, so therefore we do have the opportunity - and the need - to adapt as we go along," he adds.

How far and how fast oil companies adapt to a changing world will depend on governments' ability to set a price for carbon, both companies agree.

The EU's carbon ***emissions*** market has failed to offer a meaningful price signal to investors, but an effective market design, adopted globally, could provide the financial incentive for companies to make rational financial decisions.

"What BP says very loudly, very clearly, is that we need governments to lead on this. We need them to set the right incentives and we need a meaningful carbon price," Mr Dale says.

"If we do not put a price on carbon, you can forget about it," Mr Van Beurden adds. "That is not because companies like ourselves would not be making the right choices. We have to make choices that are economically viable, but also our customers and consumers are going to be rational to a very large degree. They are going to act on economic drivers and no matter how green, no matter how progressive, many consumers are - ultimately they act rationally as well."

If oil companies are happy to rely on government to solve the trillion-dollar dilemma of a new ***energy*** order, they'll need to hope that when the time comes for regulatory action, policymakers are willing to act rationally, too.

Going green How oil majors turned to ***agriculture*** for transport fuels

For oil majors, a shift into biofuels has emerged as a low-carbon option which is complementary to their core business of producing transport fuels.

Biofuels are so-called because they use corn, sugar cane or vegetable oils to produce ethanol, which can be blended with petrol and diesel as a lower-cost way of ***reducing*** carbon.

Detractors warn that unsustainable farming methods could damage the environment and raise food prices as the space for ***agriculture*** shrinks.

Sugar cane is by far the most efficient biofuel option and both BP and Shell hold growing business activities in Brazil, where 90pc of vehicles sold have "flex fuel" capabilities, meaning they can run on any combination of gasoline and sugar cane ethanol.

On a global scale, biofuels currently account for 2.5pc of transport fuels and by 2035 this number is expected to increase to 4pc.

BP was the first international ***energy*** company to invest in Brazilian sugarcane ethanol when it started to produce biofuels in Brazil in 2008. It now operates three sugar cane processing units in the country.

'We have to bear in mind that the world is going to need oil and gas for a long time to come'

'We see natural gas as playing a key role in transitioning to a lower carbon economy'

**Graphic**

Standing firm: a North Sea oil platformSitting it out: Greenpeace activists in Warsaw in 2013, slathered in oil, protest at Shell and Gazprom projects in the Arctic. Above, a wind turbine in DenmarkACE STOCK LIMITED / ALAMY STOCK/ EAST NEWS/REX/SHUTTERSTOCK/ CHRIS RATCLIFFE

**Load-Date:** June 12, 2016

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[***Is it time we all gave up eating meat?; Arnold Schwarzenegger is the latest public figure to add his voice to the growing chorus urging us to give up eating animal products. Should we listen, asks Chrissie Russell***](https://advance.lexis.com/api/document?collection=news&id=urn:contentItem:5HM3-B0P1-DY9P-N40V-00000-00&context=1516831)

Irish Independent

December 15, 2015 Tuesday

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**Section:** NEWS; Pg. 38,39

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**Body**

Last week the beefiest action hero of them all made a surprising revelation. Speaking at the UN Climate Change conference in Paris, Arnold Schwarzenegger announced that we all should be thinking about terminating our relationship with meat.

According to the 68-year-old former governor, 28pc of all ***greenhouse gases*** are caused by intensive farming, making vegetarianism the environmentally friendly choice of dining.

"I think it's a good idea," he told the BBC. But he reckons people "won't buy in" to ditching their beef altogether so he's urging us instead to have one or two meat-free days a week.

"You have to start slowly," he says. "It's a very big challenge but it doesn't mean it shouldn't be done."

It's quite a turn around for the bodybuilder who once chowed down some 250g of protein a day (much of it steak, sausages and bacon) and who, not so long ago, mocked Sly Stallone for punching "like a vegetarian" in the 2013 film action plan.

But Arnie's not the only celebrity urging us to save the planet by swapping hamburger patties for pulses. Earlier this year Morrissey declared that "moving toward a vegan diet is necessary to combat climate changes worst effects". Vegetarians Al Gore and Woody Harrelson have likewise been vocal about their beef with intensive farming.

Evidence from the UN shows that ***emissions*** from farming, forestry and fisheries have nearly doubled over the past 50 years, and may increase a further 30pc by 2050. Most of those ***emissions*** come from nitrogen fertilisers and cows releasing methane gas, made worse by deforestation to accommodate grazing.

For the same ***energy*** needed to produce one kilogram of meat, we could be producing up to 10kg of plant protein.

If that's not enough of an incentive to say no to sausages, then what about the risks meat might be posing your own health? Never mind the fact that we don't always know exactly what we're eating (horsemeat lasagne anyone?) there's also that recent report from the WHO suggesting a link between red and processed meat and cancer.

Much research has suggested that our Western diet is far too reliant on meat and could be increasing our risk of heart disease, high cholesterol, higher blood pressure, higher levels of hypertension and diabetes. A high intake of red meat is also one of the main factors behind the prediction that Ireland will be the most obese country in Europe by 2030.

"There is no doubt that a vegetarian diet is a very healthy diet when done properly and protein is replaced with plant sources of protein," agrees consultant dietician Aveen Bannon from the Dublin Nutrition Centre.

"A balanced vegetarian diet can lead to a healthier weight, better glucose control and lower cholesterol levels."

Food for thought surely? And yet there's still something about our meat-loving society that has trouble stomaching the idea of a dinner that's two veg, no meat. Part of it is the worry that we'll all be weary weaklings if we lose our big source of protein.

"Nobody ever asks you about your protein intake, until you tell them you're a vegan," laughed Rosanna Davison in a recent interview with the Irish Independent.

The former Miss World, and qualified nutritionist, reckons part of people's antipathy comes down to semantics. "That word [vegan] can conjure up images of tree-hugging hippies," she explains. "I rather like the phrases 'whole-foods', or 'plant-based' and I think a lot of people find those more acceptable and less intimidating."

A keen athlete, Rosanna is a good example of how the no meat: no ***energy*** fear is ill-founded. The 2014 Mr Universe, Barny du Plessis is vegan, as is Russian World Champion arm wrestler, Alexey Voyevoda. Both beefy: no beef.

Figures show that 12pc of the UK population don't eat meat and the number of vegans has doubled in the last nine years. The Vegetarian Society of Ireland suggests that the figures in Ireland are similar, with anecdotal evidence supporting the trend.

Mick Meaney and his wife Sarah run the Nut Case Food Company in Cobh, Co Cork producing quality meat-free nutroasts and nutburgers.

"We've seen an increase in interest in our products," he reveals. What he's noticed is that if you can change people's misconceptions of 'vegetarian cuisine' then you open them up to a wider, healthier range of foods.

"People are sometimes a bit set in their ways," he explains.

"If we offer a sample, we can often be told 'I'm not vegetarian' and dismissed. But once they try it, they are amazed that our burger is healthy, tasty, high in protein and just happens to be meat free."

From a health point of view, being more open to veggie options as well as more moderate and knowledgeable in our meat consumption could be the smartest approach.

"Meat is not bad for us, particularly if we choose lean cuts," says Aveen. "Meat is a valuable source of protein in the diet and also of zinc, iron and vitamin B12.

"The key factor is to embrace variety - include meat along with fish and vegetarian foods - but ensure you're getting a variety of nutrition and eating the right serving size."

A portion of meat should be roughly the size of your palm and, according to the FSAI, red meat should be eaten just three times a week. Making sure you eat enough dark green vegetables, beans, pulses, nuts, quorn, tofu, nuts, seeds, tempeh and miso should ensure you get enough protein, iron and B12.

"Avoiding red meat is not going to improve your overall health if your diet is still low in fibre, fruits and vegetables," warns Aveen. "Balance is key."

Moreover, particularly with regard to the cancer threat, what type of meat we eat matters more than ditching it altogether.

"There is no need to become vegetarian," explains Dr John McKenna, author of What You Can Do to Prevent Cancer. "The issue is unsafe meat, not meat. Organic meat which is not preserved is perfectly safe. Once commercial meat or meat products are preserved with a nitrite, such as sodium nitrite, there is a danger that this nitrite can combine with the protein in meat to form nitrosamines and these have been linked with liver cancer in experimental animals and with gastrointestinal cancers in humans."

Next month Dr McKenna is hosting a seminar looking at the lifestyle changes - particularly dietary - that can lower our risk of cancer (see [*www.seminars.ie*](http://www.seminars.ie) for details).

He has lived with primitive tribes in Africa, whose diets would be mainly animal products, but who have an almost zero incidence of cancer.

"The issue is not meat but the commercialisation of the meat industry," he adds. "The use of preservatives in meat should be banned as 90pc of nitrosamines are carcinogenic… but that would seriously affect the sale of meat and so is bad for the meat industry."

But there is another worrying angle in the argument against meat. Just last week a UK government paper branded the use of antibiotics in ***agriculture*** "a critical threat to public health" with increasing numbers of drug-resistant strains of bacteria and superbugs that could be passed from animals to humans.

"Certainly there's a lot of data that shows that you can get spread of antibiotic resistance via the food chain," agrees Dr Rob Cunney consultant microbiologist and HSE/ RCPI clinical lead.

"But that's not necessarily all related to meat."

The threat from meat depends on how it is handled and where it comes from. In Ireland there is relatively low use of antibiotics in animals and strict guidelines in place to prevent antibiotic residue making its way into food.

"If you only eat Irish food, the risk of acquiring an infection or resistant bacteria is reasonably low," explains Dr Cunney.

"It's an interesting angle, whether another health advantage to being vegetarian ***reduces*** your risk of antibiotic resistance but I still think that the big driver there is the over-use of antibiotics in humans not animals."

So no need to say 'Hasta la vista baby' to the Christmas ham? "From an overall health point of view, it is a good idea to be predominantly vegetarian," concludes Dr Cunney. "Limit your intake of meat, make meat a treat."

That word 'vegan' can conjure up images of tree-hugging hippies

For the same ***energy*** needed to produce 1kg of meat, we could be producing 10kg of plant protein

**Graphic**

Beefed up: Arnold SchwarzeneggerLean: Nutritionist Rosanna Davison follows a vegan diet

**Load-Date:** December 15, 2015

**End of Document**



[***How companies' responsibilities for supply chain workers are widening***](https://advance.lexis.com/api/document?collection=news&id=urn:contentItem:5JS3-JVM1-F14X-V1WS-00000-00&context=1516831)

just-food global news

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**Length:** 1552 words

**Byline:** Ben Cooper

**Body**

Oxfam's Behind the Brands campaign reflects the increased responsibility global food companies are now expected to assume for working conditions, wages, safety and workers' rights in their ***agricultural*** supply chains. Ben Cooper reports.

In Oxfam's latest Behind the Brands scorecard, which evaluates the ***agricultural*** sourcing policies of the world's ten largest food and beverage companies, the NGO gives credit for progress made over the three years since its campaign began. However, it also underlines how expectations of food companies are changing, not least regarding the wages, rights and working conditions of those working in its supply chains.

Three of the seven issues by which Oxfam rates food companies – women, farmers and workers – reflect directly how company policies affect the people working in their ***agricultural*** supply chains.

The criteria Oxfam is judging – from gender discrimination to child labour and safe working conditions to the living wage – are workplace responsibilities companies have already had to take assume for their own workforce. The expectation now is that they have very similar responsibilities for a far larger constituency of workers, employed by entities and in locations well outside their direct control.

Of the seven social and environmental issues assessed on the Behind the Brands scorecard, Oxfam notes the strongest progress has been on land rights, ***greenhouse gas*** ***emissions*** and gender equality. However, the two areas with most direct relevance to workers and working conditions – farmers and workers – were among the areas of least improvement.

For Erinch Sahan, acting head of the private sector team at Oxfam GB, the lack of progress on issues such as wages and working conditions comes down to the economic power imbalance between the buying companies and farmers. "If the prices that they're paying for commodities don't even allow for living wages to be paid, and there's evidence to say that might be the case in certain commodities, then they're actually making it impossible for people who are working in their supply chains to lift themselves out of poverty," Sahan tells just-food.

In their responses to the Behind the Brands report, the companies stress their commitment to improving working conditions and tackling poverty in their supply chains. No company is going to say it is not interested in doing so. Indeed, there are now international conventions, notably the UN's Guiding Principles on Business and Human Rights, which enshrine these responsibilities. However, the complex structure of global supply chains makes following through on such ideals a far from easy task.

While Unilever, which was the highest performer overall, scored eight out of ten for both farmers and workers, Danone only scored three on both of these issues.

"It's important to acknowledge the complexity of supply chains in general and the difficulties that brands and retailers face in ensuring decent working conditions and wages in the lower levels of their supply chains," says Nick Kightley, food and farming lead at the Ethical Trading Initiative (ETI), the UK multi-stakeholder partnership aimed at improving conditions in ***agricultural*** and manufacturing supply chains. "However, brands have a responsibility for ensuring that workers are well treated in all levels of their supply chain and not just the first tier."

Referring to the "growing appetite" for transparency with regard to supply chains, Kightley sees Oxfam's expectations increasingly reflecting general attitudes. "As an NGO with a campaigning remit, Oxfam will certainly push for the highest possible standards, and from experience, we often know that where NGOs lead, the rest of the world almost inevitably follows."

However, while responsibilities for labour issues among employees can be considered to be a direct responsibility for companies, responsibilities in the broader supply chain, particularly highly complex, global supply chains involving multiple operators, are shared with other entities, as Mondelez International points out. "These challenges are complex and require coordinated action by governments, industry and scientific and environmental experts," the Oreo manufacturer states.

Unilever also stresses working in partnership. It says key areas of focus for the future will include "human rights issues beyond first-tier suppliers, working conditions for migrant labour and continuing collaboration with other organisations in order to influence systemic change". The company adds: "We are proud of our achievements but know that there is more to be done. We aim to work in partnership to create wider movement in our industry and beyond."

General Mills, meanwhile, says "respect for human rights is core to our commitment to conduct business in an ethical manner", but the company also stresses the responsibilities of other actors. "We recognise that governments are ultimately responsible for establishing the legal framework to protect human rights within their jurisdictions, but we are part of the broader community wherever we operate.  We work within a large, diverse value chain of business partners and stakeholders. We recognise that each entity in this value chain has its own independent duty to respect human rights. We expect them to adhere to ethical business conduct consistent with our own."

The world's largest food manufacturer, Nestle, which came second after Unilever in the overall Oxfam rating, also stresses it shares these responsibilities with others. "Responsibility for ensuring that farmers receive living incomes for their produce is a shared endeavour, and we continue to work with others, including governments, to bring about positive change."

However, Brooke Barton, senior director of the water and food programmes at sustainability think tank Ceres, believes companies ultimately have to accept a defining responsibility, particularly when it comes to more serious abuses. "Governments play a crucial role in legislating and enforcing decent working conditions, but companies implicated in sourcing from suppliers with dubious practices can only point the finger at themselves and must articulate the role they play in driving these conditions and in helping to remedy them."

It should be noted that campaigners spend plenty of ***energy*** lobbying governments, but the ten companies being monitored through the Behind the Brands campaign represent a highly effective campaigning ***target***. As the name suggests, the campaign is designed specifically to link what is going on in ***agricultural*** supply chains with household names familiar to consumers.

Food companies are both highly visible and extremely powerful. As such, the sort of scrutiny the Behind the Brands campaign represents is a reality of doing business in today's environment.

As Kightley puts it: "Amongst other things, civil society organisations as well as international charities exist to hold the powerful to account on behalf of the poorest. It's their prerogative to choose what and who to ***target*** and why."

A further attribute that makes the ten companies effective ***targets*** for campaigning, Sahan adds, is their global presence. "The thing that made it particularly powerful for us as a campaign on these ten companies is that they operate everywhere. There's no government that operates everywhere in the same way, there's not even a civil society organisation that operates in any significant capacity the way that these ten companies do," Sahan explains.  "I would say we focus more on influencing governments than individual companies throughout our work in the 93 countries we work in. But with these ten companies we saw an opportunity to do something globally here.  We can look at what they're doing at a global level and hold them to account."

That said, what is striking about the Behind the Brands campaign is that it is not fundamentally a name-and-shame initiative. Oxfam quite deliberately highlights where companies have made progress. In their responses, the companies are able to acknowledge and welcome that recognition as well as responding to criticism.

In this sense, the campaign becomes much less the traditional diatribe against corporate greed and instead a driver of improvement. "That was a commitment we made at the beginning," says Sahan. "If we are going to challenge companies to do things, then when they do them we have to celebrate it." Highlighting progress is not only more effective, Sahan continues, but also "helps build a narrative that this is possible".

True to its commitment to acknowledge achievement, Oxfam points out that nine of the ten companies had increased their overall score by at least 10% since 2013. However, the report card also calls for companies to address issues where there has been least progress, the most significant of which is most certainly wage levels and labour conditions among those working in ***agricultural*** supply chains. The question remains whether companies can make good on their commitments to improving the lives of the farmers and farm workers who supply them without the "substantial change" to their business models that Oxfam believes is required.

Click here for just-food's rundown of how Oxfam scored food majors including Unilever, Mars Inc and Associated British Foods - and how the companies reacted.

**Load-Date:** May 13, 2016

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[***-Deere Announces First-Quarter Earnings of $ 254 Million***](https://advance.lexis.com/api/document?collection=news&id=urn:contentItem:5J53-0951-JD3Y-Y1TB-00000-00&context=1516831)

ENP Newswire

February 23, 2016 Tuesday

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**Body**

MOLINE, Illinois - Net income attributable to Deere & Company was $ 254.4 million, or $ 0.80 per share, for the first quarter ended January 31, compared with $ 386.8 million or $ 1.12 per share, for the same period of 2015.

Worldwide net sales and revenues for the first quarter decreased 13 percent, to $ 5.525 billion, compared with $ 6.383 billion last year. Net sales of the equipment operations were $ 4.769 billion for the quarter compared with $ 5.605 billion a year ago.

'John Deere's first-quarter results reflected the continuing impact of the downturn in the global farm economy as well as weakness in construction equipment markets,' said Samuel R. Allen, chairman and chief executive officer. 'At the same time, all of Deere's businesses remained solidly profitable, benefiting from the sound execution of our business plans and the success of actions to develop a more responsive cost structure.'

Summary of Operations

Net sales of the worldwide equipment operations declined 15 percent for the quarter. Sales included price realization of 2 percent and an unfavorable currency-translation effect of 4 percent. Equipment net sales in the United States and Canada decreased 18 percent. Outside the U.S. and Canada, net sales were down 9 percent, with unfavorable currency-translation effects of 11 percent.

Deere's equipment operations reported operating profit of $ 214 million for the quarter, compared with $ 414 million in 2015. The decline for the quarter was due primarily to lower shipment volumes, the unfavorable effects of foreign-currency exchange and the impact of a less favorable product mix. Partially offsetting these factors were price realization, lower selling, administrative and general expenses and lower production costs. Net income of the company's equipment operations was $ 127 million for the quarter, compared with $ 241 million for the same period last year. In addition to the operating factors mentioned above, a lower effective tax rate benefited results.

Financial services reported net income attributable to Deere & Company of $ 129.4 million for the quarter compared with $ 156.8 million last year. Lower results for the quarter were primarily due to the unfavorable effects of foreign-currency exchange translation, higher losses on residual values primarily for construction-equipment operating leases, less favorable financing spreads and a higher provision for credit losses. These factors were partially offset by a ***reduction*** in selling, administrative and general expenses.

Company Outlook & Summary

Company equipment sales are projected to decrease about 10 percent for fiscal 2016 and to be down about 8 percent for the second quarter compared with the same period a year ago. Included in the forecast is a negative foreign-currency translation effect of about 3 percent for the full year and second quarter. For fiscal 2016, net income attributable to Deere & Company is anticipated to be about $ 1.3 billion.

'Although Deere expects another challenging year in 2016, our forecast represents a level of performance much better than we have experienced in previous downturns,' Allen said. 'This illustrates the impact of our efforts to establish a more durable business model and a wider range of revenue sources. As a result, the company's financial condition remains strong and we are well-positioned to continue investing in innovative products, advanced technology and new markets. These actions, we're confident, will provide significant value to our customers and investors in the years ahead.'

Equipment Division Performance

***Agriculture*** & Turf. Sales decreased 12 percent for the quarter due largely to lower shipment volumes and the unfavorable effects of currency translation, partially offset by price realization.

Operating profit was $ 144 million compared with $ 268 million for the period last year. Results were driven primarily by the impact of lower shipment volumes, the unfavorable effects of foreign-currency exchange and a less favorable product mix. These factors were partially offset by price realization, ***reduced*** selling, administrative and general expenses and lower production costs.

Construction & Forestry. Construction and forestry sales decreased 23 percent for the quarter, mainly as a result of lower shipment volumes and the unfavorable effects of currency translation, partially offset by price realization. Operating profit was $ 70 million for the quarter compared with $ 146 million in 2015. The decline in operating profit was mainly due to lower shipment volumes, partially offset by price realization and lower selling, administrative and general expenses.

Market Conditions & Outlook

***Agriculture*** & Turf. Deere's worldwide sales of ***agriculture*** and turf equipment are forecast to decrease by about 10 percent for fiscal-year 2016, including a negative currency-translation effect of about 4 percent. Industry sales for ***agricultural*** equipment in the U.S. and Canada are forecast to be down 15 to 20 percent for 2016. The decline, reflecting the impact of low commodity prices and stagnant farm incomes, is expected to be most pronounced in the sale of higher-horsepower models.

Full-year 2016 industry sales in the EU28 are forecast to be flat to down 5 percent, with the decline attributable to low commodity prices and farm incomes, including further pressure on the dairy sector. In South America, industry sales of tractors and combines are projected to be down 10 to 15 percent mainly as a result of economic concerns and uncertainty about government-sponsored financing in Brazil. Asian sales are projected to be flat to down slightly, due in part to weakness in China.

Industry sales of turf and utility equipment in the U.S. and Canada are expected to be flat to up 5 percent for 2016, benefiting from new products and general economic growth.

Construction & Forestry. Deere's worldwide sales of construction and forestry equipment are forecast to be down about 11 percent for 2016, including a negative currency-translation effect of about 2 percent. The forecast decline in sales reflects the impact of weak conditions in the North American ***energy*** sector as well as lower sales outside the U.S. and Canada. In forestry, global sales are expected to be down 5 to 10 percent from last year's strong levels, primarily as a result of weaker demand in the U.S. and Canada.

Financial Services. Fiscal-year 2016 net income attributable to Deere & Company for the financial services operations is expected to be approximately $ 525 million. The outlook reflects less favorable financing spreads, an increased provision for credit losses and the unfavorable effects of foreign-currency exchange translation. Additionally, 2015 results benefited from a gain on the sale of the crop insurance business.

John Deere Capital Corporation

The following is disclosed on behalf of the company's financial services subsidiary, John Deere Capital Corporation (JDCC), in connection with the disclosure requirements applicable to its periodic issuance of debt securities in the public market.

Net income attributable to John Deere Capital Corporation was $ 99.9 million for the first quarter compared with $ 133.6 million last year. Lower results for the quarter were primarily due to less favorable financing spreads, higher losses on residual values primarily for construction-equipment operating leases and a higher provision for credit losses.

Net receivables and leases financed by JDCC were $ 31.510 billion and $ 31.508 billion at January 31, 2016 and 2015, respectively.

Safe Harbor Statement

Safe Harbor Statement under the Private Securities Litigation Reform Act of 1995: Statements under 'Company Outlook & Summary,' 'Market Conditions & Outlook,' and other forward-looking statements herein that relate to future events, expectations, trends and operating periods involve certain factors that are subject to change, and important risks and uncertainties that could cause actual results to differ materially. Some of these risks and uncertainties could affect particular lines of business, while others could affect all of the company's businesses.

The company's ***agricultural*** equipment business is subject to a number of uncertainties including the many interrelated factors that affect farmers' confidence and financial condition.

These factors include demand for ***agricultural*** products, world grain stocks, weather conditions (including its effects on timely planting and harvesting), soil conditions (including low subsoil moisture), harvest yields, prices for commodities and livestock, crop and livestock production expenses, availability of transport for crops, the growth and sustainability of non-food uses for some crops (including ethanol and biodiesel production), real estate values, available acreage for farming, the land ownership policies of various governments, changes in government farm programs and policies (including those in Argentina, Brazil, China, the European Union, India, Russia and the U.S.), international reaction to such programs, changes in environmental regulations and their impact on farming practices; changes in and effects of crop insurance programs, global trade agreements, animal diseases and their effects on poultry, beef and pork consumption and prices, crop pests and diseases, and the level of farm product exports (including concerns about genetically modified organisms).

Factors affecting the outlook for the company's turf and utility equipment include consumer confidence, weather conditions, customer profitability, consumer borrowing patterns, consumer purchasing preferences, housing starts, infrastructure investment, spending by municipalities and golf courses, and consumable input costs.

Consumer spending patterns, real estate and housing prices, the number of housing starts and interest rates are especially important to sales of the company's construction and forestry equipment. The levels of public and non-residential construction also impact the results of the company's construction and forestry segment. Prices for pulp, paper, lumber and structural panels are important to sales of forestry equipment.

All of the company's businesses and its reported results are affected by general economic conditions in the global markets and industries in which the company operates, especially material changes in economic activity in these markets and industries; customer confidence in general economic conditions; foreign currency exchange rates and their volatility, especially fluctuations in the value of the U.S. dollar; interest rates and inflation and deflation rates. Government spending and taxing could adversely affect the economy, employment, consumer and corporate spending, and company results.

Customer and company operations and results could be affected by changes in weather patterns; the political and social stability of the global markets in which the company operates; the effects of, or response to, terrorism and security threats; wars and other conflicts and the threat thereof and the response thereto; natural disasters and the spread of major epidemics.

Significant changes in market liquidity conditions and any failure to comply with financial covenants in credit agreements could impact access to funding and funding costs, which could ***reduce*** the company's earnings and cash flows. Financial market conditions could also negatively impact customer access to capital for purchases of the company's products and customer confidence and purchase decisions, borrowing and repayment practices, and the number and size of customer loan delinquencies and defaults. A debt crisis, in Europe or elsewhere, could negatively impact currencies, global financial markets, social and political stability, funding sources and costs, asset and obligation values, customers, suppliers, demand for equipment, and company operations and results. The company's investment management activities could be impaired by changes in the equity, bond and other financial markets, which would negatively affect earnings.

Additional factors that could materially affect the company's operations, access to capital, expenses and results include changes in and the impact of governmental trade, banking, monetary and fiscal policies, including financial regulatory reform and its effects on the consumer finance industry, derivatives, funding costs and other areas, and governmental programs, policies, tariffs and sanctions in particular jurisdictions or for the benefit of certain industries or sectors (including protectionist, economic, punitive and expropriation policies and trade and licensing restrictions that could disrupt international commerce); actions by the U.S. Federal Reserve Board and other central banks; actions by the U.S. Securities and Exchange Commission (SEC), the U.S. Commodity Futures Trading Commission and other financial regulators; actions by environmental, health and safety regulatory agencies, including those related to engine ***emissions***, carbon and other ***greenhouse gas*** ***emissions***, noise and the effects of climate change; changes in labor regulations; changes to accounting standards; changes in tax rates, estimates, and regulations and company actions related thereto; compliance with U.S. and foreign laws when expanding to new markets and otherwise and actions by other regulatory bodies including changes in laws and regulations affecting the sectors in which the company operates.

Trade, financial and other sanctions imposed by the U.S., the European Union, Russia and other countries could negatively impact company assets, operations, sales, forecasts and results. Customer and company operations and results also could be affected by changes to GPS radio frequency bands or their permitted uses.

Other factors that could materially affect results include production, design and technological innovations and difficulties, including capacity and supply constraints and prices; the availability and prices of strategically sourced materials, components and whole goods; delays or disruptions in the company's supply chain or the loss of liquidity by suppliers; disruptions of infrastructures that support communications, operations or distribution; the failure of suppliers to comply with laws, regulations and company policy pertaining to employment, human rights, health, safety, the environment and other ethical business practices; events that damage the company's reputation or brand; significant investigations, claims, lawsuits or other legal proceedings; start-up of new plants and new products; the success of new product initiatives and customer acceptance of new products; changes in customer product preferences and sales mix whether as a result of changes in equipment design to meet government regulations or for other reasons; gaps or limitations in rural broadband coverage, capacity and speed needed to support technology solutions; oil and ***energy*** prices, supplies and volatility; the availability and cost of freight; actions of competitors in the various industries in which the company competes, particularly price discounting; dealer practices especially as to levels of new and used field inventories; changes in demand and pricing for used equipment; labor relations and contracts; acquisitions and divestitures of businesses; the integration of new businesses; the implementation of organizational changes; difficulties related to the conversion and implementation of enterprise resource planning systems that disrupt business, negatively impact supply or distribution relationships or create higher than expected costs; security breaches and other disruptions to the company's and suppliers' information technology infrastructure and changes in company declared dividends and common stock issuances and repurchases.

Company results are also affected by changes in the level and funding of employee retirement benefits, changes in market values of investment assets, the level of interest and discount rates, and compensation, retirement and mortality rates which impact retirement benefit costs, and significant changes in health care costs including those which may result from governmental action.

The liquidity and ongoing profitability of John Deere Capital Corporation and other credit subsidiaries depend largely on timely access to capital in order to meet future cash flow requirements, to fund operations and costs associated with engaging in diversified funding activities, and to fund purchases of the company's products. If general economic conditions deteriorate or capital markets become more volatile, funding could be unavailable or insufficient. Additionally, customer confidence levels may result in declines in credit applications and increases in delinquencies and default rates, which could materially impact write-offs and provisions for credit losses.

The company's outlook is based upon assumptions relating to the factors described above, which are sometimes based upon estimates and data prepared by government agencies. Such estimates and data are often revised. The company, except as required by law, undertakes no obligation to update or revise its outlook, whether as a result of new developments or otherwise. Further information concerning the company and its businesses, including factors that potentially could materially affect the company's financial results, is included in the company's other filings with the SEC.

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[***Nitrogen Fertilisers: A Primer***](https://advance.lexis.com/api/document?collection=news&id=urn:contentItem:5JYX-1HR1-F0J5-81J4-00000-00&context=1516831)

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**Length:** 2742 words

**Highlight:** China will increase its dominance over the world's nitrogen supply over the next five years and it will also see the strongest consumption growth over the period along with India. Nitrogen fertiliser companies will face continued headwinds out to 2020 as sustained growth in production capacity will keep prices subdued.

**Body**

*BMI View: China will increase its dominance over the world's nitrogen supply over the next five yearsand it will also seethe strongest consumption growth over the periodalong with India. Nitrogen fertiliser companies will face continued headwindsout to 2020as sustained growth in production capacity will keep prices subdued.*Building on our primer on phosphate fertilisers ( *see 'Phosphate Fertilisers: A Primer', January 26*), we now turn to nitrogen fertilisers. **WhatAre Nitrogen FertilisersUsed For?**Nitrogen fertilisers are essential for crop production, more so than phosphate and potash as nitrogen determines a plant's yield and thus output growth. This yield-determining feature makes nitrogen fertilisers particularly important for large-scale commercial ***agriculture***.For most crops, nitrogen needs to be applied more frequently and in larger quantities than phosphate and potash, which makes nitrogen the main component of fertiliser costs. Moreover, fertilisers are themselves the main component of a farmer's costs, indicating the importance of nitrogen fertilisers in both revenues and costs for farmers. Consequently, the price ratio of urea (a type of nitrogen fertiliser) over corn is one of the key indicators followed by farmers when making planting and input purchasing decisions.

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| Nitrogen Fertilisers: A Key Input To Track For Farmers |
| Green Market Urea Cornbelt Granular Spot Price/Generic Front-Month CBOT Corn Futures Price Ratio (Weekly Data) |
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| *Note: Green Market Urea Cornbelt Granular Spot Price trades in USD/short tonne, while CBOT Corn Futures trade in USc/bushel. A n increase in the ratio indicates urea price outperformance over corn. Source: Green Market, Bloomberg , BMI* |

**How Are Nitrogen Fertilisers Made?** The source of nitrogen fertilisers is natural gas, which is produced by drilling underground deposits, in contrast to the mined minerals that are the sources of phosphate and potash fertilisers. The basis of all nitrogen fertiliser production is the conversion of natural gas into anhydrous ammonia, a gaseous compound with high nitrogen concentration. This conversion occurs through a chemical process called the Haber-Bosch process, which requires elevated quantities of ***energy***. Although ammonia can be used directly as a fertiliser, it is mostly used as an ingredient in the manufacturing of products that are easier to handle and apply as fertilisers. These products can be straight fertilisers, which contain only one nutrient (in this case, nitrogen), or compound fertilisers, which contain nitrogen and one or more additional nutrients.Straight fertilisers account for the bulk of nitrogen fertilisers, in contrast to phosphate where compound products dominate the industry. We separate nitrogen fertilisers into two groups depending on the way they provide nitrogen to the plant. **First**, we identify fertilisers that provide nitrogen in the non-nitrate form, being either the ammonium or ureic form. **Second**, we identify fertilisers that provide nitrogen in the form of nitrate as well as ammonium or ureic. This distinction is the key feature that differentiates various types of nitrogen fertilisers.Nitrate-based nitrogen in dissolves in soil water and is available to the plant as soon as it takes water from the ground. In contrast, ammonium-based nitrogen will attach onto soil minerals and requires the plant's roots to grow towards it, with most of this ammonium being converted into nitrate by soil bacteria in a process called nitrification. Finally, ureic nitrogen will first be converted into the ammonium form by soil enzymes in a process called hydrolysis, and only then is it available for plant nutrition. The choice of a fertiliser primarily follows the requirements of the soil and crops considered, as well as a farmer's budget and associated machinery for application. From an agronomic perspective, nitrate-based fertilisers are more efficient at providing nitrogen to the plant than urea, while ammonium nitrate is more environmentally friendly than urea as the latter releases more ***greenhouse gases*** upon application.

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| From Natural Gas To Straight & Compound Fertilisers |
| Nitrogen Fertilisers - Production Process |
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| *Note: \* Nitric acid is made from a reaction of anhydrous ammonia and air. T he numbers in parentheses refer to the percentages of respective nutrients available in a unit of fertiliser. For instance, AN ( 34 - 0 -0) means that 100kg of AN contain 34 kg of nitrogen and none of phosphorus and potassium . 'CN' = calcium nitrate; 'AN' = ammonium nitrate; 'CAN' = calcium ammonium nitrate; 'UAN' = urea ammonium nitrate; 'AS' = ammonium sulphate; 'NPK' = fertilisers including nitrogen, phosphate and potash. Source: Yara, BMI* |

**Non-nitrate N fertilisers -** The most important product of this group is urea, which is made by mixing ammonia with carbon dioxide, as it is the largest nitrogen fertiliser in terms of production volume. Urea contains 46% nitrogen, the highest concentration among straight fertilisers. Another product from this group is ammonium sulphate (AS), which is made by mixing ammonia and sulphuric acid. AS is rarely used nowadays as it contains only 21% nitrogen. **Nitrate-containing N fertilisers -** Once ammonia is produced, an additional intermediary step is required to obtain these fertilisers, as ammonia is first converted into nitric acid, which is then mixed with other products, including ammonia. Mixing nitric acid with ammonia will yield ammonium nitrate (AN), which contains about 34% nitrogen split equally between the ammonium form and the nitrate form. Mixing nitric acid with ammonia and limestone will yield calcium nitrate (CN), which contains about 15.5% nitrogen. Furthermore, mixing AN and CN will yield calcium ammonium nitrate (CAN), which contains 27% nitrogen. Finally, mixing AN and urea will yield urea ammonium nitrate (UAN), which contains between 28% and 32% nitrogen, depending on the share of water in the solution, split almost equally between the ammonium form and the ureic form.Compound fertilisers containing nitrogen are made by mixing nitrogen with one or both of phosphorus and potassium. The nitrogen often comes in the form of ammonia, although nitric acid and AN are also used depending on availability, as well as the specifications of the desired blend. The most common nitrogen-containing compound fertilisers include: monoammonium phosphate (MAP), diammonium phosphate (DAP) and potassium nitrate.

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| China: Uncontested World Nitrogen Leader |
| LHC: 2013 Nitrogen Fertilisers Production (RHC: 2012 Ammonia And Urea Production (mn nutrient tonnes) |
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| *Note: ammonia is an input for urea production, and a share of urea production is used as nitrogen fertiliser while the remainder serves as an input in the production of other fertilisers. Source: IFA* |

**China On Track To Increase Its Supply Dominance** The leading global producers of nitrogen fertilisers will remain in the top spots out to 2020 as they will account for most of the growth in capacity over the period, according to the International Fertilizer Industry Association (IFA). Namely, China, Indonesia, Russia, the US and the Middle East and North Africa (MENA) region will contribute to most of the world's additional ammonia production capacity over the period, with more than 70% of that ammonia capacity being directed to urea production. Regarding urea, China will contribute to a third of the growth in new production units between 2014 and 2019. In contrast, the EU and India will underperform in terms of fertiliser production as both regions are less endowed in natural gas compared to other major producers. Indeed, EU nitrogen fertiliser production has one of the highest costs in the world, largely due to elevated natural gas prices.

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| Price Linkages Between Nitrogen Fertilisers And Natural Gas |
| Select Prices - Green Market US Gulf NOLA Fertiliser Prices (USD/short tonne) & Generic Front-Month Henry Hub Natural Gas Futures Price (USD/mnBTU), Weekly Data |
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| *'AN' = ammonium nitrate; 'UAN' = urea ammonium nitrate . Source : Green Market, Bloomberg* |

**Natural Gas: Primary Input For Nitrogen Fertilisers** The prices of natural gas and ***energy*** are the drivers of nitrogen fertiliser production, as natural gas and ***energy*** are the key inputs to the production process. These prices determine the cost of production for ammonia and urea, as well as the optimal location for investment in additional production capacity. According to industry estimates, gas costs account for more than 90% of ammonia production costs at a typical plant. Moreover, gas and ***energy*** costs make up almost 85% of urea production costs through two channels: the cost of ammonia and the cost of ***energy*** required to produce urea. The price of natural gas is generally cheapest in the MENA region, followed by the US and Russia, and finally Europe and Asia, although prices can differ widely between countries that are part of the same region. A large share of Chinese urea production facilities rely on coal as a source of ***energy*** rather than gas, which ***reduces*** the sensitivity of Chinese output to gas prices and increases its competitiveness.

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| Nitrogen Dominates Fertiliser Consumption Volume |
| Select Fertilisers - Global Consumption (mn nutrient tonnes) |
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| *Source: IFA, BMI* |

**China & India To See Strongest Consumption Growth** In line with the trends we highlighted in our phosphate primer, we expect China and India, currently the world's first and second largest consumers respectively, to see the strongest volume growth in nitrogen fertiliser consumption out to 2020. This is due to China and India outperforming other large ***agricultural*** producers in terms of output growth over the next five years. A key implication of our views on phosphate and nitrogen is that consumption will be increasingly concentrated as China and India are already the world's largest consumers of nitrogen and phosphate fertilisers.Looking at specific products within the nitrogen complex, it appears that urea dominates the world market with more than 50% of total nitrogen-based fertiliser demand as of 2011. We expect this to remain the case out to 2020 as the dominance of urea is due to the preference of farmers in emerging markets for urea over other alternatives. As of 2011, urea made up about 51% of Brazil's nitrogen fertiliser consumption, a share which rose to 67% in China and 78% in India. In contrast, UAN and ammonia were the most favoured by US farmers, while nitrates accounted for about 43% of European nitrogen consumption.This outperformance of urea in emerging markets is due to the following reasons. **First**, urea is generally cheaper than other nitrogen fertilisers on a per nutrient basis as it contains 46% nitrogen, second only behind ammonia itself. **Second**, urea is easier to distribute and apply than anhydrous ammonia. This is because urea comes in dry solid form, prilled or granular, while ammonia comes as a pressured liquid that is flammable and turns into gas when applied. **Third**, urea is relatively easy to blend with other types of fertilisers for application and it dissolves well in water.

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| Emerging Countries' Favour For Urea Drives Global Nitrogen Market |
| LHC: 2013 Nitrogen Fertiliser Consumption (mn nutrient tonnes); RHC: Global Nitrogen Consumption, 2011 Product Breakdown (%) |
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| *'AN' = ammonium nitrate; 'CAN' = calcium ammonium nitrate; 'UAN' = urea ammonium nitrate; 'NPK' = fertilisers including nitrogen, phosphate and potash; 'MAP' = monoammonium phosphate; 'DAP' = diammonium phosphate . Source : IFA* |

Regarding crops, given that nitrogen is a key nutrient required by most plants for growth, the trends we highlighted in our phosphate primer remain largely valid. Grains and oilseeds hold the largest share of the world's nitrogen consumption as they are the most cultivated crops at the global level. The notable exception is soybean. While soybean has similar phosphate and potash requirements as grains and other oilseeds, the crop requires very little nitrogen. This is because soybean has a nitrogen-fixing ability, as it is able to get its nitrogen requirements through a symbiotic relationship with soil bacteria, a trait similar to legumes but unlike grains and other oilseeds.Additionally, we highlight a side-trend in nitrogen consumption: the growth differential between industrial and fertiliser use of nitrogen. Industrial use accounts for about 20% of total nitrogen consumption according to estimates by **Yara**, and the IFA forecasts this segment to grow by almost 30% between 2014 and 2019. In contrast, fertiliser, the main user of nitrogen, will only grow by about 6% over the same period. Examples of industrial use of nitrogen include specialty chemicals, explosives and ***emission*** filters. We will monitor the evolution of this trend in the coming years and determine whether it represents a risk for the nitrogen fertiliser market. **India's Import Demand To Outperform** Regarding trade, we expect India to outperform in terms of import demand over the next five years as the country is already a large importer and we expect strong growth in consumption while domestic output will struggle to keep up. On the export side, China, Russia and the MENA region will strengthen their positions on the global market in line with our view on their production outperformance over the period.In terms of specific products, urea accounts for most of the global trade in nitrogen products, with a share of almost 60% in 2015, followed by ammonium nitrate, which makes up almost 20%. We believe urea will maintain its lead on global trade given that it is the favourite nitrogen fertiliser of farmers in emerging markets, where most of the future growth in fertiliser consumption will take place.

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| Limited Concentration In Global Nitrogen Trade |
| Select Regions - Nitrogen Fertiliser Exports (LHC) & Imports (RHC), mn nutrient tonnes |
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| *Source: IFA* |

**Nitrogen Companies: Challenging Environment Remains** Nitrogen fertiliser companies will continue to operate in a challenging environment over the coming years as sustained growth in production capacity will keep prices subdued. Unlike in the phosphate market, nitrogen companies do not intend to cut output, which will result in growing overcapacity out to 2020 as additional production units come online. According to the IFA, the nitrogen fertiliser market will record stable-to-growing surpluses out to 2019, while the urea market will tighten, albeit remaining in surplus, due to strong demand over the period.

**Main Nitrogen Companies**

| **Company** | **Country Of Domicile** | **Main Products** | **2014 Sales (USDmn)** |
| --- | --- | --- | --- |
| Yara | Norway | NPK, urea, nitrates, ammonia, CN, UAN | 11,375 |
| CF Industries | USA | UAN, ammonia, urea, AN | 4,575 |
| PotashCorp | Canada | Urea, UAN, ammonia, AN, NPK | 2,425 |
| EuroChem | Russia | Urea, AN, UAN, CAN | 2,255 |
| Acron | Russia | Urea, AN, UAN | 1,933 |
| Agrium | Canada | Ammonia, urea, UAN, AN | 1,482 |
| National Fertilizers | India | Urea | 1,374 |
| Sinofert | China | Urea, ammonia | 1,258 |
| OSTCHEM | Ukraine | AN, urea, ammonia, UAN | na |

na = not available; 'CN' = calcium nitrate; 'AN' = ammonium nitrate; 'CAN' = calcium ammonium nitrate; 'UAN' = urea ammonium nitrate; 'AS' = ammonium sulphate; 'NPK' = fertilisers including nitrogen, phosphate and potash. Source: Bloomberg, company reports, BMI **Potential Disrupters: Precision Farming AndRenewable Ammonia**We now highlight two trends related to technological innovation that have the potential to impact the nitrogen fertiliser industry. **First**, the growth of 'precision farming', which relies on digital technology to monitor and guide farming activity, has the potential to lower the input needs of farmers in the US and Europe ( *see 'Big Potential For Big Data, But Questions Remain', November 6 2013*). Tools such as connected tractors, drones and sensors could enable farmers to tailor their field application of fertilisers to a granular level. These gains in precision could translate into lower demand for fertilisers, with nitrogen fertilisers being the most exposed to a ***reduction*** in volume. **Second**, scientific research is looking for ways to manufacture ammonia without natural gas and other fossil fuels, bypassing the Haber-Bosch process. Experimental ways include using renewable ***energies*** such as solar and wind, which would enable farmers to have on-site production of ammonia. Although these production techniques are currently not scalable at an industrial level, they have the potential to disrupt the nitrogen fertiliser industry if they do become available to farmers.

**Load-Date:** June 9, 2016

**End of Document**



[***Wealth Management: Asian SRI's green shoots***](https://advance.lexis.com/api/document?collection=news&id=urn:contentItem:5H4F-5071-JD1P-T2G8-00000-00&context=1516831)

Global Capital Euroweek

September 23, 2015

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**Byline:** Asiamoney

**Highlight:** Socially responsible investment is not yet moving the needle in Asian wealth management, but the time when it could do so is getting closer. SRI assets might still be low, but interest is rising. Generational change could be the driver, as Ellen Sheng reports.

**Body**

When Norway's $870bn sovereign wealth fund made headlines in August for excluding four Asian companies because of environmental concerns over their involvement in Indonesian palm oil production, it sparked talk that green or socially responsible investing might finally be getting its time in the limelight.

Decisions made by the fund, which also excludes 50 other companies such as Rio Tinto, Walmart and British American Tobacco, are closely watched by other participants in socially responsible or sustainable investing. The asset class has been slowly gaining traction worldwide. Assets invested based on sustainable principles have increased to $21.4tr in 2014, up from $13.3tr in 2012, according to the Global Sustainable Investment Alliance, although there is no single definition of what constitutes sustainable investing.

The Global Sustainable Investment Alliance is made up of several sustainable investment organisations around the world, including Eurosif, a leading European group. But while sustainable investing is gaining steam in Europe and North America, it is notably lagging in Asia, where only 0.8% of total invested assets are managed according to sustainable criteria, the Alliance found. That contrasts with nearly 60% in Europe.

Despite the tiny base, interest in sustainable investing is nonetheless growing in Asia. The Association for Sustainable &amp; Responsible Investment in Asia (ASrIA), in its 2014 Asia Sustainable Investment Review, found that sustainable investments in Asia, excluding Japan, totalled $44.9bn in 2013, representing a 22% compound annual growth rate since 2011 (see table below).

Focus on returns

There are plenty of sceptics who say that green investing has too many hurdles to overcome to really become popular in Asia. That feedback is heard in the area of wealth management. Private bankers say investors in the region are singularly focused on achieving strong returns.

"People are just so focused on getting a good return. It's not that they're disinterested in the environment but if someone said you can invest in a regular way or in a sustainable way but with a little less return, they won't sacrifice that return," says Stuart Leckie of Stirling Finance in Hong Kong, an independent research and consulting firm focused on the pension fund and asset management industries.

Leckie estimates that about 50% of private banking clients in Europe invest, at least in part, in a sustainable way. He puts that level in Asia at perhaps 10%-20%.

Federico Burgoni, Boston Consulting GroupOthers agree with that broad theory. "Investors in Asia are really pragmatic. They don't care if it's green or yellow or orange, they just care about the returns from their funds," says Federico Burgoni, partner and managing director at consulting firm Boston Consulting Group in Singapore.

"The reality is I've seen all these products fail miserably," he adds, likening green or sustainable investing to other specialty products such as Islamic or Shariah funds. Shariah funds, which cannot invest in gambling and alcohol-related businesses, for example, have failed to take off in a big way even in Muslim countries, says Burgoni. He adds that they are most popular in Bangladesh and Malaysia, where institutional investors buy into them to satisfy government requirements.

"The moment you put boundaries up you're lowering the return, by definition. This is why I'm not so sure [green investing] will make a dent," he says.

Baby steps

Private banking client interest in sustainable investment varies widely across Asia, however. Bankers say most of the interest is in developed economies such as Japan, Hong Kong or Singapore. Investors in developing economies are far less interested.

This seems fairly predictable; environmental concerns are frequently considered to be a luxury that not everyone can afford. "These are topics that you start to care about when you reach a certain level of wealth," says Burgoni.

The biggest markets for sustainable investments are Malaysia, Hong Kong, South Korea and Singapore, according to surveys conducted by ASrIA. The fastest growing are Indonesia, Singapore and Hong Kong.

In Indonesia and Singapore, interest is driven in part by government policy. In Indonesia, it is in fact a push towards Islamic funds that is backing a trend for socially responsible investing.

Singapore, meanwhile, is positioning itself as a centre for technology and sustainable investing. The city-state has good reason to put the environment top of its agenda. The annual smog that envelops the city every August and September caused by the burning of farmland in Indonesia to clear land for palm oil production has been worse than usual in 2015 because of the El Nino weather effect, which has created drier conditions and bigger conflagrations.

Enid Yip, chief executive of Bank J Safra Sarasin in Hong Kong, a Swiss private bank owned by the Brazilian Safra Group, says that although interest and awareness of socially responsible investing is more prevalent in developed markets, there has nonetheless been some growth in sustainable strategies worldwide, with the scope expanding dramatically.

"SRI investments now extend coverage to include not just resource-related themes but also companies that are actively involved in protecting/preserving the environment," she says. "It also used to be quite rare to see emerging-market names in these investments, but that investible universe is expanding. The concept is more globally embraced than it used to be."

50 shades of green

Socially responsible investing can take numerous forms. One of the most basic methods is simply to screen certain industries or companies, as the Norwegian Oil Fund has done by excluding companies involved in palm oil production. Another form is "ESG integration", in which investment managers combine environmental, social and governance factors with financial analysis.

Exclusionary screening is the most common method in Europe and North America, but in Asia ESG integration is more popular, according to ASrIA, which also set up the Asia Investor Group on Climate Change. ESG integration accounts for 44% of sustainable investment assets in the region, or $23.4bn, says ASrIA. By comparison, exclusion/negative screening makes up 31%, or $16.6bn. But exclusion and negative screening, which has increased 53% since the start of 2012, is the fastest-growing strategy in Asia, followed by ESG integration, which grew 42%.

ESG screening more often than not focuses more on labour conditions. More than 70% of institutional investors surveyed by Oxfam, an international confederation of 17 organisations focused on alleviating poverty, said they were concerned about labour protection, labour and human rights in purchasing and supply management. That's not surprising, given headlines about factory fires in Bangladesh or suicides in Chinese tech factories.

The popularity of ESG screening in Asia is leading to demand for better disclosure. Oxfam's study, which was released this month, found that 64.2% of investors felt that the Hong Kong Stock Exchange should make ESG disclosure mandatory "" by making it compulsory for companies to fully disclose information on their ESG performance, for example.

The exchange's standards are much laxer than those in Europe or New York, as it only requires companies to report on six environmental aspects and 12 social aspects "" and also does not require listed companies to make disclosures related to human and labour rights in corporate supply chains. The Hong Kong Exchange is currently conducting a consultation exercise to beef this up, however.

India's Ministry of Corporate Affairs, the Philippines Securities Exchange Commission, the Vietnam State Securities Commission and the Singapore Exchange have imposed more stringent reporting requirements on companies relating to sustainable practices over the past couple of years. South Korea passed several new bills requiring listed companies to disclose ESG information.

Green bond growth

In addition to screening companies, another method of sustainable investing is actively putting money into renewable or green ***energy*** companies such as solar or wind power. "Sustainability themed investing" is the fastest growing strategy, says ASrIA, growing at CAGR of 56%.

Green bonds fall into this category, and this is one area where Asia has seen notable progress in 2015, not least because of the emergence of India and China as new markets. India saw its debut green bonds, which included a Rp3.15bn ($50m) bond from Yes Bank that was issued privately to the International Finance Corporation (IFC), which then issued the first green masala bond to back its investment.

And in September, CLP Wind Farms issued India's first corporate green bond, a Rs6bn issue that comprised three, four and five year notes.

Meanwhile, Xinjiang Goldwind Science &amp; Technology in July issued China's first green bond, accredited by DNV, a Norwegian-German appraiser. Regulators in China are preparing official green bond issuance regulations and guidelines.

In March of this year, The Asian Development Bank (ADB) sold its first green bond, raising $500m, saying that more than 30% of the notes were sold to Asian buyers. The World Bank, meanwhile, which has issued more than 100 green bonds totalling $8.4bn since 2008, also says it has diversified its Green Growth Bonds programme to ***target*** investors in Asia this year.

The World Bank's green bonds finance projects in member countries that meet specific criteria for low carbon and climate resilient growth through projects such as renewable ***energy*** installations, ***energy*** efficiency projects, new technologies in waste management and ***agriculture*** that ***reduce*** ***greenhouse gas*** ***emissions*** as well as financing for forest and watershed management and infrastructure.

Total issuance of green bonds worldwide reached $30.5bn in 2014, according to the ADB, double the amount in 2013. The ADB also estimated that, since 2010, total bonds issued by renewable ***energy*** companies (not necessarily green-labelled bonds) increased to $18.3bn from $5.2bn, most coming from mainland China.

Given the growing number of local issuers, it's not surprising that some local investors are starting to take notice. Sustainable investment funds are becoming more popular. There are now more than 500 such funds in Asia, up from 404 in 2011, according to ASrIA. Hurdles still exist, though. Despite repeated talk of making more such funds available through Hong Kong's Mandatory Provident Fund, there is only one sustainable fund there, offered by AIA, out of all the 450 funds on the MPF platform.

Untapped potential

Back to private banking, and the picture is less rosy. Many private bankers say they have seen little or no interest in socially responsible investing from their clients, but research suggests a very different picture "" and that there is a lot of untapped potential.

According to the 2015 Asia-Pacific Wealth Report from CapGemini and RBC Wealth Management, Asia's wealthy investors put more emphasis on having a more positive influence on society than wealthy investors elsewhere. Nearly a quarter, or 24.3%, of respondents throughout the region said they were seeking advice on how to achieve social impact goals, the report found.

Moreover, wealthy investors are leaning heavily on their wealth managers for advice on the topic. Of those investors getting advice on social impact, about half said they were considering their wealth managers to be their primary source of advice. There does appear to be much room for improvement, however, as 66.5% of respondents said they want more social impact support from wealth managers.

CapGemini suggests that private banks are in a good position to tap this demand. High net worth individuals are seeking ways to measure the outcomes of their investing. They are also seeking help in identifying opportunities. There could be opportunities for collaboration "" the Singapore-based Impact investment Exchange Asia, for example, offers platforms for social enterprises to raise capital as well as advisory services.

Private banks are stepping up their socially responsible investing and philanthropy departments. Banks such as UBS Wealth Management and Credit Suisse Private Bank have dedicated philanthropy advisory teams.

A big part of what's driving interest in socially responsible investing is the upcoming wealth transfer. Though many of Asia's wealthy are still amassing their fortunes, aging entrepreneurs are starting to look to the next generation to pass on their businesses and wealth. Almost two thirds of Asia's billionaires are now over 60 years old. Hong Kong's ultra-wealthy are expected to transfer $375bn over the next 30 years, while in Singapore the ultra-wealthy are expected to pass on $110bn, according to a research report in January by Wealth-X and US wealth adviser National Financial Partners Corp.

That generational change could be the driver that Asian socially responsible investment needs, according to figures from CapGemini. Only 55% of high net worth individuals over 40 years old expressed an interest in social impact. For those below 40, the figure was 67%.

**Load-Date:** October 12, 2015

**End of Document**



[***Cellular agriculture shows future potential; Post-animal food is going forward to assure every day's food consumption***](https://advance.lexis.com/api/document?collection=news&id=urn:contentItem:5N8W-X6F1-DYG1-P3V7-00000-00&context=1516831)

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**Section:** TECHNOLOGY; Pg. 46;; No. 3

**Length:** 2902 words

**Body**

**ABSTRACT:**

By Henk Hoogenkamp

**FULL TEXT:**

Biotechnology is presently in the Stone Age, comparatively speaking. Its application to food production has only scratched the surface. Biotechnology and in particular cellular ***agriculture*** will eventually be able to utilize renewable ***energy*** sources and address consumer needs with wholesome food and other every day's products, as well as provide the world's rapidly growing population with ecological sustainability. The technology is also termed post-***agriculture*** food production has the potential to make cleaner, cheaper as well as more flexible food production, while leaving fewer "fingerprints" in the areas of waste, animal health support and chain management.

History has shown that people are skeptical or even hostile when confronted with breakthrough technologies, especially when it comes to food. For example, early in the introduction of genetically modified organisms (GMOs), American companies raised false and misleading expectations, including making predictions that were self-beneficial and self-centered. As a result, consumers became confused by the extreme complexity of the issue. Cellular ***agriculture*** is far removed from the GMO controversy and its clean and pure technology should be communicated in an open and honest dialogue with all stakeholders.

Throughout history, people have selected animals, plants, and microorganisms to enrich the wholesomeness of the food supply by intentionally crossbreeding to improve hereditary makeup. From this perspective, there is nothing new about cellular and gene technology. People have always used technology to make life easier and safer, and change is accelerating worldwide in the 21st century. There is "classic" or ***agriculture***-driven change like cultivating seeds and domesticating animals, as well as technology-driven change like developing innovative renewable ***energy*** sources and sustainable cellular ***agricultural*** food production.

***Agricultural*** civilization came before the technology-driven

era by several millennia, but technology-driven inventions have since overpowered ***agricultural*** domination.

Cellular ***agriculture*** is a true groundbreaking entrepreneurial field that is still in its early conceptual phases and in need of additional funding.

The only constant

is change

The world of food science is quickly marching into new territories using post-animal biotechnology and bioeconomy models to provide sustainable and healthy food security and nourishment for a rapidly growing world population.

In basic terms, animal products are "harvested" from cell cultures, not animals. By teaming up the groundwork of medical tissue engineering and cell cultures, food production can be truly revolutionized. It is likely that these new products will first be made available in a limited scale and rolled out commercially by 2020.

Advancing the pioneering work, animal products such as - for example - egg white, dairy milk (including micelles casein) and meat are made by bioreactors instead of using animals.

Cellular ***agriculture*** is the "farming" of ***agricultural*** products from cell cultures. The cultivated animal cells are exactly the same as the traditional harvested products. There is little doubt that these new technologies, also known as cellular ***agriculture*** will ultimately emerge as the premier model to produce "meatless meat" or "kill-free meat". These products are exactly the same as the meat harvested from slaughtered animals.

In principle cellular ***agriculture*** (Fig.1) can be divided into:

- Acellular products made of organic molecules like proteins and fats containing no cellular or living material.

Examples of acellular products are : gelatin, casein, omega-3 fatty acids, oval albumin, vanillin.

- Cellular products made of living or once-living cells.

Examples of cellular products are: leather, meat, fur, offal, wood.

The acellular animal products are synthesized without animals by using microbes like yeast and bacteria.

Typically a protein gene is inserted into a starter culture microbe (Fig.2). The newly created recombinant DNA produces identical original products such as cows' casein - a milk protein derivative. Post-animal biotechnology will by-pass the udder and use bioreactors to do just the same. After DNA sequences from dairy cows are inserted into yeast cells, the cultures are grown at preset controlled temperatures and concentrations.

Once the starter culture is created, the inserted protein gene into the microbe will be able to multiply and grow. An example of a traditional product converted to an acellular food is milk. This technology allows cow-free milk using a culture that uses simple sugars to produce milk protein such as casein(ate).

Come to think of it, acellular animal products using cell cultures is nothing new really. Human-identical insulin - to treat diabetic patients - is made using engineered microbes (yeasts or bacteria). Vanillin and rennet are other examples of modified bacteria, fungi or yeast.

Rennet is an essential ingredient for cheese making (FDA, March 1990). In the past, rennet was extracted from the lining of the fourth stomach of young calves. Since the FDA approval in 1990, rennet enzymes are considered the first genetically altered product for food and now is worldwide used by nearly all cheese making companies. Cell cultured rennet is more reliable, performance predictable, purer, and significantly less expensive than animal-harvested (traditional) rennet for cheese production.

The science of tissue engineering (Fig.3) - like growing functional organs for people - is similar to growing muscle tissue for food. Perhaps the only difference is scale and magnitude of production. Tissue engineering is a relatively new science with most interest generated on clinical usage such as reengineering organs, tubes, and skin for transplantation. These applications need to perform and maintain a biological function as they are used in a living person i.e. without being rejected by the immuno-system of this person.

The technology of regenerated biological material for medical applications is strikingly similar than used for the creation of cultured meat (Fig.4). Actually, the only difference is that synthesized cell cultured meat needs to duplicate or simulate traditional organoleptic quality such as color, taste and texture, as well as nutritional parameters like protein and minerals.

There is no question that cellular ***agriculture*** has less ecological and environmental negative side effects compared to traditional farming and animal healthcare.

Impact score overview:

- About 25% of Earth's ice-free surface is taken for livestock farming. This surface area is about 70% of all land used for ***agriculture***.

- About 30% of the fresh water footprint is used for the production of animal-derived products, including meat, dairy, and eggs.

- ***Greenhouse gas*** ***emissions*** generated by livestock farming (18%) is higher than global transportation (12%).

- The huge amounts of antibiotics given to livestock cause major implications to human antibiotic resistance.

- Most - if not all - of bacterial contamination induced foodborne illnesses such as E. coli and salmonella arise from livestock farming, including waste dispersion to grow plants, including organic ***agriculture***.

- The huge increase in global demand for animal-based food - 60bn. animals slaughtered in 2016 and growing to 100bn. in 2050 - will put major strain on animal welfare, including challenges at factory farms, intense confinement and imperfect slaughter conditions.

Food for today's future

Typically cells from a certain starter culture are brought together on a scaffold to grow in conjunction with serum in an environment (=bioreactor) that promotes growth. In living bodies, blood vessels assure transport of nutrients to and remove waste from tissues. Because of the lack of vessels in cultured meat, the tissues can only reach a length of about 0.5mm thickness (Fig.5). This feature explains why all initial groundbreaking research focuses on ground meat appearance such as used in hamburger patties and meatballs, rather than a whole-muscle steak or other whole-muscle products.

The future is approaching faster than many people like to think. Cellular ***agriculture*** products like cultured meat, dairy and eggs have significant less environmental and ecological stress factors, not to mention that the foods can be enhanced by stripping unwanted compounds such as - for example - saturated fat or lactose and create lactose-free milk or cholesterol-free eggs.

Then, there is also the public health impact to consider. A great many risks such as antibiotic resistance, disease and viral outbreaks and microbial food contamination, can be managed by ***reduction*** or elimination.

A new normal?

The commercial production of "cultured" meat is only years away and world's first large scale (25,000 Liters) bioreactor could be a reality in 2020. Although a number of projects are ongoing for fish and poultry, replicating beef is most advanced, and the introduction of a cultured hamburger is now within reach.

The "meat" that is essentially "meatless" in the traditional sense, isolates animal cells that have the ability to regenerate and provide them with oxygen, nutrients and minerals. Besides the fact that cultured meat is healthier, safer and more sustainable, the environmental benefits such as water use, land footprint, feed conversion, animal health services, and labor is hugely less than conventional raised animals.

Advantages of cultivated cellular meat:

- Free from bacterial contamination

- Option to modify amount of saturated fat

- No feed/growth conversion

- No need of animal healthcare specialists

- No need of pasture land

- No outgrow cycle.

The method of creating cultured (or artificial) beef is based on taking muscle cells from the animal, or bovine serum from unborn calves, which are subsequently grown in a nutrient serum solution within the bioreactor to create strands of small muscle skeletal tissue. It is estimated that about 12,000 of such strands are needed to produce a 100g burger, not counting the fat added later in the formulation process. Hamburger fat levels typically vary between 18 and 26%.

Not only cultured strands of meat fibers need to be manufactured. Equally important is the development of cultured fat. After all, fat will provide the much-needed flavor sensations consumers expect. Cultured meat is still at its early conceptualization stage and ultimately manufacturing efficiencies and economics will kick in, lowering the cost of the product to a level that is competitive with conventional beef. However, these products made from cultivated animal cell can also be blended with traditional animal fat sources and/or enhanced with vegetable oil emulsions.

To further enhance economics and improve the sustainability of cultured meat, it is likely that products will be infused with structured plant protein ingredients that are uniquely able to simulate meat texture and all other organoleptic expectations. To simulate hemoglobin red meat juices and color, modified plant derived extracts such as saffron and red beets and cherries can be used.

The new reality

It is clear that the world cannot rely solely on increases in arable land. Instead, new technologies need to be implemented to meet the food demands of the future. In the last few decennia, major strides have been made to increase both animal and plant protein production. However, more innovation is needed in order to significantly increase the current food production by 2050.

Post-***agriculture*** biology will be the next frontier of food science and technology. Cellular biology involves a technology in which genes from a plant are treated in a yeast environment, creating new compounds through fermentation. Ultimately, cellular biotechnology will evolve to become a cost-effective and eco-sustainable model platforms.

This next stage

of genetic engineering can produce more efficiently than nature, using no land, and is not dependent on weather conditions.

Computer algorithms are now often used to analyze plant species and once identified, are recombined to create design-specific protein properties including nutritive value, taste, flavor and functional performance. Stripping and recombining a food's constituent parts will further push the boundaries of food science as it is known today.

In principle, cell cultured ingredients - mainly obtained by using DNA sequencing - are chemically identical to their natural examples. The future of cell cultured ingredients and food is only limited by our imagination. These new forms of biology can potentially manufacture both plant and animal protein. For example, cows can be by-passed using fermentation to engineer animal-free milk.

Animal-based dairy farming could very well develop into a historical curiosity. Animal-free milk (or cow-free milk) uses basically the same principles of biotechnology: fermenting sugar into alcohol before being further refined by modulating yeast and enzymes, can create design-milk or cheese in which its components, including protein, fatty acids, flavor and viscosity, can be varied to obtain the desired organoleptic and nutritive characteristics. For a growing number of future driven scientists, livestock is an antiquated technology.

Although these new-age hyper-entrepreneurial driven companies like to portray the "all-natural" status of this innovative technology, ultimately it will be the consumers who will decide whether or not they are ready to accept these modulated foods. In the meantime - like the "traditional" GMOs - the regulatory agencies are confronted with the formidable task of agreeing on the adequate assessment and rulemaking of health and environmental safety, as well as labeling.

Post-animal

cellular ***agriculture***

The finite amount of ***agricultural*** land and the availability of clean water combined with resource depletion will force policy makers to rebalance diets towards more plant-based foods. In other words, they will accept the need to ***reduce*** the consumption of foods with a higher environmental impact such as meat and dairy, and increase lower-impact foods such as plant proteins derived from cereal grains, legumes, potatoes, vegetables, and fruits, as well as considering emerging animal protein sources such as cultured meat, insects and other post-animal biotechnology and bioeconomy.

By relying less on an inefficient meat protein-delivery systems, people should instead utilize the nutritive value of the world's five major commodity crops - rice, corn, wheat, soy, and potatoes as well as cellular ***agriculture*** which can be further explored for the production of meat alternatives that could fundamentally reshape our food supply.

Capital venture push

More lifestyle choices (vegetarianism or flexitarianism) and livestock welfare are fueling increased demands for meatfree or meat-hybrid foods. New generations of the food-tech ventures aim to change the way people eat. Venture capital firms as well as social media billionaires such as Google co-founder Sergei Brin, and Microsoft's Bill Gates fund start-up food related companies that try to find plant-based alternatives to meat, poultry, and eggs. This trend is now widening and has attracted other major name "investors" including the Twitter founders Biz Stone and Evan Williams, not to mention Kleiner Perkins Caufield & Byers, the venture capital firm that backed Google and Amazon. These individuals and companies look at meatfree with a somewhat different perspective: coupling the ecological wellbeing of the world with strong opportunities for great financial returns. In March 2013 Bill Gates said: "Global health is the cornerstone of global prosperity. With billions of people adding more animal protein to their diets - meat consumption is expected to double by 2050. It seems clear that arable land for raising livestock won't be able to keep up." (

[*www.gatesnotes.com*](http://www.gatesnotes.com)

)

(Partly) replacing these animal-based protein sources can significantly ***reduce*** land, water, and crops needed to feed animals, while at the same time benefitting people's health and ***reducing*** outbreaks of diseases. For the next generation, sustainability of food security will be a major challenge. Besides the fundamental economic and technological challenges, the biggest hurdle is how to convince consumers to try the plant-based equivalent and the food "harvested" from cell cultures of the "real or original" food. When exponential technologies strides forward are made, consumers have the tendency to become suspicious. The question is if consumers will embrace foods made via post-***agriculture*** processing? This question is difficult to answer, but the fact remains that the world population is growing with unprecedented pace and innovation will be the essential key to allow everyone great tasting healthy foods, now and in the future.

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**Graphic**

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[***UN drops plan to help move climate-change affected people; Australia opposed the plan for a group to assist migration, and it has been left off the draft agreement for UN climate talks in Paris***](https://advance.lexis.com/api/document?collection=news&id=urn:contentItem:5HGW-RG91-F021-64XX-00000-00&context=1516831)

The Guardian

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**Section:** ENVIRONMENT

**Length:** 1330 words

**Byline:** Oliver Milman

**Body**

Australia's opposition to the creation of a body to help people escaping the ravages of climate change appears to have paid off, with the idea dropped from the draft agreement for the crucial UN climate talks in Paris.

A previous draft of the deal to be thrashed out by nations included a "climate change displacement coordination facility" that would provide "organised migration and planned relocation", as well as compensation, to people fleeing rising sea levels, extreme weather and ruined ***agriculture***.

Related: Pacific leaders voice frustration over Australia's position on climate change

However, this reference has been removed in a revised text ahead of the December climate conference negotiations. Australia opposed the facility, although Guardian Australia understands the prime minister, Malcolm Turnbull, has shown interest in the issue of displacement.

"Australia does not see the creation of the climate change displacement coordination facility as the most effective or efficient way to progress meaningful international action to address the impacts of climate change," a Department of Foreign Affairs and Trade spokesman said. "Australia is already working closely with our Pacific partners on these important issues."

Australia had spent more than $50m in climate resilience projects in the Pacific and contributed another $200m to the Green Climate Fund.

Opposition to the coordination facility is not shared by Australia's traditional allies, with representatives from the US, British and French governments indicating they were open to the idea.

"Climate change is one of the most serious threats we face, not just to the environment, but to our economic prosperity, poverty eradication and global security, hitting developing countries the hardest," said a spokeswoman for Britain's Department of ***Energy*** and Climate Change.

The impact of climate change is anticipated to displace up to 250 million people worldwide by 2050, including many in low-lying Pacific islands such as Tuvalu, the Solomon Islands and Kiribati.

In areas of the Pacific, sea level is rising by 1.2cm a year, four times faster than the global average. For coral-based islands two to three metres above sea level this has resulted in communities being relocated, and drinking water and crops are threatened by salt water inundation. Recent research suggests islands will not be submerged but will change shape and height, posing difficulties for fixed infrastructure.

Related: Pacific island leaders fail to shift Australia and NZ on climate ***target***

"Why on earth would Australia not support a coordination facility?" said Phil Glendenning, president of the Refugee Council. "We are talking about the most vulnerable people on the planet who are facing threats to their food security, seeing their water supplies diminish and their entire cultures at risk.

"The world is going to have to deal with this displacement. We need to get on the front foot. Australia can't say we are doing enough. People in Kiribati and Tuvalu are the canaries in the coalmine and they are looking to Australia."

Last year the Kiribati government bought 20 sq km of land on Vanua Levu, one of the Fiji islands, in case its people cannot be moved internally. It has a policy called " migration with dignity " if its cluster of 33 coral atolls becomes inhabitable.

Maria Tiimon, who moved to Australia from Kiribati in 2006, said people in her homeland were scared but did not want to become climate migrants.

"I speak to the young people there and they say they don't want to move. This is where our ancestors came from," said Tiimon, who is a Pacific outreach officer at the Edmund Rice Centre in Sydney. "Displacement really has to be the last resort. Pacific islands need help to adapt and the rich countries need to cut their ***greenhouse gas*** ***emissions***.

"People in Kiribati are now very worried about climate change. They say, 'No wonder it's getting hotter, that it's hard to find fish.' The young ones are worried about the future. One said he wanted to be a doctor but that he'll be unable to do so because of climate change.

"That's not right. This has become a human rights and justice issue. These people haven't contributed to climate change but they feel they have no future because of it."

Tiimon said homes on the island where her family lives had been shifted inland, although there is little space for people to move to.

"People rely on well water dug from the ground because Kiribati is so flat. The water is becoming brackish because of the salt water," she said.

"I tell Australians where I'm from and people don't know where Kiribati is. But in Kiribati all the children know a bit about Australia. We look at the country as a big brother because we are almost in your back yard.

"I hope and pray Australia will do more. Australia is a wealthy country. It should take the lead on climate change and help the Pacific islands."

Related: The Pacific islands losing a way of life to climate change - in pictures

Relocation of people is occurring across the Pacific region. Dozens of villages in Fiji will be moved, and 2,000 people from the Carteret atoll of Papua New Guinea will be transferred to mainland Bougainville, a three-hour trip on a wooden boat, because of salt intrusion and destructive tides.

Last year engineers from Australia and Britain helped plan the relocation of Taro, a town in the Solomon Islands, to the adjacent mainland. The move will mark the first time a regional capital in the Pacific has been displaced for environmental reasons.

Pacific island leaders have appealed to the international community in increasingly stark terms, with a succession of governments calling for action at a UN gathering in New York last week.

"I speak as an islander who has walked the shores of many atoll islands, where there was once sandy beaches and coconut trees," Peter Christian, president of Micronesia, told the UN assembly. "Now there are none. I am told this will continue.

"We must become more cohesive in our actions to bring a useful conclusion to help mitigate the threat of sinking islands and prevent the potential genocide of Oceanic peoples and cultures."

Advocates for displaced people argue that a new international framework needs to be created to help them, given that the UN refugee convention does not cover them because they are not fleeing persecution.

"I'd hope the UN would put a new apparatus in place. At the moment this is being dabbled in - there's nothing systemic," said academic Scott Leckie, founder of Displacement Solutions, an NGO that facilitates moving people displaced by climate change within their countries.

Leckie's organisation focuses its work in five countries - Bangladesh, Colombia, Fiji, Panama and the Solomon Islands - but said climate displacement was a global problem, even in wealthy nations such as the US where people in Alaska have had to move and Boston faces a future of being a "city of canals" because of sea level rises.

"Successful relocation is very complicated and there's a real gap in how governments do this internally," he said. "It may seem simple to move 30,000 people within Panama, for example, but when you get into it there is a variety of land and ethnic tensions.

"The question for people on small islands is whether to stay or go, which is almost impossible to answer because the stakes are so high. Once you have people leave, you get a brain drain, investment dries up and you get into a vicious cycle of despair and poverty.

"This is solvable with political will and resources. There needs to be a coordinated human rights approach. Just as Australia takes in 12,000 Syrian refugees, there's nothing stopping a further 1,000 places earmarked for people who have nowhere else to go in the Pacific islands.

"I think every country in the world responsible for CO 2 ***emissions*** have some measure of responsibility for the predicament they've caused. Top of that list is Australia, given it is the worst per capita emitter in the world."

**Load-Date:** November 30, 2015

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[***What price Indonesia's forests?; Cover Story***](https://advance.lexis.com/api/document?collection=news&id=urn:contentItem:5J7B-8GR1-JBFS-D031-00000-00&context=1516831)

Financial Times (London, England)

March 5, 2016 Saturday

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**Section:** FT MAGAZINE; Pg. 12

**Length:** 3781 words

**Byline:** Pilita Clark

**Highlight:** In 2010, Norway did something incredible to help the planet: it offered to pay Indonesia - one of the world's biggest deforesters - $1bn if it agreed to chop down fewer trees. But progress has been slow. Pilita Clark joined Norway's environment minister on a journey to Jakarta to find out why.

**Body**

It is just after 8.30am on a snowy February morning when Vidar Helgesen, Norway's climate and environment minister, steps out of his home in Oslo, dodging frozen puddles to reach his waiting ministerial car.

It seems improbable but in less than 24 hours Helgesen will have flown across the world to Indonesia's sweltering capital, Jakarta, on a trip that will take him to a remote patch of Borneo rainforest to meet Dayak tribal villagers, who still hunt with spears and blowpipes.

He will have driven through a landscape pockmarked with coal mines and oil-palm plantations that have spread so far that they have made Indonesia one of the world's biggest deforesters, losing an area as big as 100,000 soccer pitches in one year. And he will have found villagers who took three bulldozers hostage after discovering they had been used to raze nearby forests for yet another oil-palm plantation. Even for Helgesen, an experienced diplomat who once led Norway's efforts to broker peace in Sri Lanka, this will be an unusual journey - and a fraught one.

He may not be well known in much of the world, but in Indonesia he is the billion-dollar man, responsible for one of the world's most lavish attempts to conquer one of the planet's most pernicious environmental problems - the steady destruction of its tropical forests. As Helgesen heads to Indonesia, I join him to see if he can convince Jakarta to do more to limit deforestation and cut the ***greenhouse gas*** ***emissions*** it causes. Those ***greenhouse gases*** are the same, of course, as those emitted by burning fossil fuels such as the oil and gas in the North Sea that have helped make Norway one of the world's most prosperous nations.

Waves of deforestation have occurred throughout human history as people cleared land to make way for farms and towns or harvested trees to fuel fires and build ships.

Tree loss has generally followed population growth but since 1950 - in the space of a single lifetime - the number of people in the world has exploded from 2.5 billion to more than seven -billion, driving unparalleled demand for wood and, above all, land. The precise rate at which the world's forests are disappearing is the subject of considerable debate. But the problem is worst in the tropics, where population growth has been fast and forests teem with so many species of animals and plants that scientists have yet to count them all. Deforestation has been especially acute in two countries: Brazil, home to much of the Amazon, the world's biggest rainforest; and Indonesia, the 16th-biggest economy in the world and one of the top six emitters of ***greenhouse gases***.

In 2008, amid mounting calls for action and little sign of a solution, Norway did something unprecedented. The Oslo government declared it would give Brazil $1bn if it could stop chopping down so many of its trees. In 2010, it also offered $1bn to Indonesia.

Brazil's deforestation rates have declined so impressively that it has just been paid the last of the promised $1bn. But progress in Indonesia has been so woeful that Oslo has only handed over $60m, prompting questions about whether even the most magnanimous efforts at stopping deforestation can succeed - and raising equally pressing -concerns about climate change.

Before I met Helgesen, I visited Lars Løvold, director of Rainforest Foundation Norway, one of the groups credited with turning Oslo's attention to trees. I asked him to explain Oslo's largesse. He said it came after the 2006 publication of an influential study on the economics of climate change by Nicholas Stern, a British economist who argued that paying developing countries to halt tropical deforestation could be one of the most cost-effective ways to tackle global warming.

Løvold's group seized on the finding to lobby Norway's government, led by the then prime minister Jens Stoltenberg, a trained economist. "He understood the arguments," said Løvold.

In 2007, Stoltenberg told a UN climate summit in Bali that Norway would provide up to $500m a year to help cut ***greenhouse gas*** ***emissions*** from deforestation in developing countries. It was such a big sum that Løvold said he had trouble getting the summit newsletter to report on it, "because no one believed it was true".

But it was. Which was why Helgesen was setting off on his exotic journey.

A few hours later, as we flew through the night towards Jakarta, he took a break from his thick wad of briefing notes to discuss what lay ahead. "The stakes are incredibly high in Indonesia," he said. "If Indonesia can save its -forests, it will massively increase the chance of saving the world's climate."

There had been signs of progress, he acknowledged, referring to measures such as the suspension in 2011 of new licences allowing companies to clear natural forests - one of several preparatory steps that Jakarta agreed to take under the $1bn deal with Oslo. "But we would obviously have hoped things would have progressed more quickly," he said. "We haven't seen actual progress in ***reducing*** deforestation."

And, as Helgesen was about to see for himself, there are some colossal hurdles on the path to achieving that progress.

It was midday in Jakarta by the time the minister's 17-hour flight touched down at the city's sprawling international airport, where he and his small group of advisers were greeted by a team from Indonesia's Norwegian embassy. It included the ambassador, Stig Traavik, who represented Norway in judo at the 1992 Olympics in Barcelona and likes to stay in shape by braving Jakarta's hectic streets on his bicycle. Not long after taking up his post in 2012, he introduced the then governor of Jakarta to cycling, a man now better known as President Joko Widodo. That put Traavik in good company, athletically speaking, with at least one member of the Oslo entourage, Per Pharo, the head of Norway's international climate and forestry initiative. Pharo is a wiry former McKinsey consultant who, according to his government biography, runs the occasional marathon "mainly because he likes it but also because it keeps him (partly) sane".

Helgesen, it turned out, enjoys cross-country skiing, which was just as well because all three were going to need as much stamina as they could muster to cope with the schedule prepared for their 31-hour stay in the capital. At least a dozen meetings had been arranged with ministers, company executives, journalists and conservation groups, and that did not include a yet-to-be-confirmed session with President Widodo himself.

There are at least two important things a country needs to do to stop forest loss: pass the necessary laws to protect the relevant trees; and then make sure those laws are rigorously enforced. Brazil was well on the path to doing both some years before Norway's $1bn offer materialised. Large swathes of land were put under state protection or declared indigenous people's territory, and dozens of illegal loggers and land grabbers were nabbed and jailed.

Importantly, Brazil also had BNDES, the huge Brazilian development bank that manages the Amazon Fund, which raises money to help the country protect its forests; Oslo was happy to put its money there.

A similar fund was envisaged for Indonesia in 2010, and the finance ministry has been working on its design. But the fund has yet to be established and the reason for the hold-up is revealing.

Indonesia is no longer the country it was in 1998, when President Suharto finally stepped down after more than 30 years of authoritarian rule. Sitting in Helgesen's ministerial motorcade as it zipped past the familiar signposts of modern urban life in Jakarta - the Marriott hotel, Starbucks cafes, a silver sea of towering office blocks - it was easy to forget that less than 20 years ago Indonesia faced a fragile economy, secessionist rebellions and a gaping leadership vacuum. Since then, economic growth, free and fair elections and sweeping decentralisation measures that helped quell restive provinces have made Indonesia one of the biggest post-authoritarian success stories.

But there is still a lingering taint from the time of Suharto, a man the Transparency International governance watchdog group once named one of the world's most corrupt leaders. Despite years of effort to root out corruption and strengthen the country's political institutions, the influence of wealthy business elites remains a source of concern - and some have considerable sums invested in the country's forestry sector.

This came to mind as I listened to Kuntoro Mangkusubroto explain why there is still no permanent fund for Norway's $1bn. He was a senior official in the office of former President Susilo Bambang Yudhoyono and led a task force to bring the Norwegian forestry plan to life.

"That is not Norway's fault - it's ours," he said, when we met in one of Jakarta's plush hotels. "I know this country well and enemy number one is corruption. The second I became head of the task force, I told the Norwegian ambassador here, 'Please allow me not to take your money before I can assure myself it will not be misused.'"

The problem, Mangkusubroto said, was that if the money ended up being treated as part of the national budget, politicians in Indonesia's parliament could have insisted it went to consultancies or companies in which they had an interest: "That's the game they play. I wasn't going to allow that."

Worse, he said, the forestry ministry - for decades a virtually unchallenged power in the supervision of the country's forests - also wanted to manage the money. "I said: 'No. That ministry is the crux of the problem.'"

Brazil had corruption problems too, but as Per Pharo explained, it also had institutions such as independent public prosecutors, which did a considerable amount to ensure forest protection laws were obeyed - and a conscious decision by the federal government to deal with the problem.

"That made a substantial difference," said Pharo. "Illegal deforestation is still recognised by the government of Brazil as a key problem. But, generally, if you break the law the risk of being punished is very real. Impunity can no longer be taken for granted. In Indonesia, this process is just starting to happen."

There was a long list of issues on the Norwegian team's agenda at each Jakarta meeting, but one of the thorniest concerned the reform of Indo-nesia's -chaotic system of land-use management.

Because different government ministries and agencies have each developed their own land-use maps, the country is littered with examples of overlapping permits for different activities.

Adding to the confusion, provincial and district governments gained more control over land use post-Suharto, and sometimes issued permits that were in conflict with what Jakarta had approved. "That mess has helped to allow deforestation," said Frances Seymour, a US forestry policy expert who from 2006 to 2012 ran the Center for International Forestry Research, which has its headquarters in Indonesia.

One obvious solution to the tree loss problem, for example, is for plantation companies to use land that has already been cleared. But Seymour said companies often say they prefer uncleared forest because they can be more certain no one else has a prior claim to the land.

Efforts to address the issue and develop a common "one map" system began not long after the Norwegian forestry deal was agreed. But progress has been slow, as have allied attempts to advance indigenous groups' rights to land, a move many conservationists believe would be likely to strengthen forest protection.

After Mangkusubroto's task force encouraged these groups to submit maps of their territories for the national mapping effort, activists won an important constitutional court ruling in 2013, opening the door to recognition of indigenous people's right to forest land previously claimed by the state.

"It's kind of breathtaking that that would be possible," said Seymour, explaining that talk of indigenous rights in Indonesia was once considered subversive, and this is just one example of how Norway's $1bn initiative has changed the debate. "It caused a tectonic shift in the politics of forests in Indonesia, which the ministry of forestry had had a pretty iron-clad grip on for the previous 30 years. It really shook things up." However, it is still far from clear when or if this will translate into a significant cut in deforestation.

Nearly halfway through Helgesen's Jakarta trip, his motorcade pulled up outside the imposing environment and forestry building, where he met the minister in charge: a short, bespectacled woman named Siti Nurbaya Bakar.

After the -meeting wound up, I asked her why she thought progress has been so slow. She said she and the president were both well versed in environmental and -forestry issues and committed to making the Norwegian-backed plan a success. "But still, as a developing country, we have a very big challenge," she said, pointing out that the country faces serious levels of poverty and economic infrastructure demands.

Before the Norwegians left for Borneo, the news came through that Helgesen had indeed been invited to meet President Widodo, sending a ripple of nervous excitement through the delegation. In fact, the meeting focused on another part of Norway's $1bn deal with Indonesia - peat bogs, a factor in the massive fires that swept through parts of the country last year.

Much of Indonesia's soil is carbon-rich peatland. Peat is a fuel that is quick to burn and hard to put out, a menace in a country where fire is still used to clear land. Burning peat also produces ***greenhouse gases*** - a fact that took on new urgency as fires burned through 2.6 million hectares of Indonesia last year, blanketing parts of Southeast Asia in a noxious haze that closed schools and disrupted flights. The fires were so big that some researchers said Indonesia's ***emissions*** on certain days rivalled those of the US. The World Bank estimated the fires cost Indonesia at least $16bn.

Following the disaster, President Widodo took the unusual step of appointing Nazir Foead, a former World Wildlife Fund director, to head a new Peatland Restoration Agency. Now, Widodo told the Norwegians, he will ban the clearing and draining of -undisturbed peatland from June 1, a move Helgesen described as a potentially "monumental" contribution, if it is implemented.

Finally, it was time to leave Jakarta to see the forest and what was happening on the ground. It takes two flights and a spine-jangling four-hour drive to reach the remote village of Merabu on the eastern side of Kalimantan, Indonesia's part of the island of Borneo.

The island is home to some of Indonesia's last untouched wilderness areas and one of the world's most endangered great apes, the orangutan. It is also oil-palm country, the crop that has come to symbolise the destruction of Indonesia's forests. Plantations spread out beyond the roadside and towards the horizon. In one 20km stretch of highway, we passed 11 trucks carrying the bright orange raw palm fruit, 19 of the pale green tankers that carry the oil itself, four motorcycles and just one other -passenger car.

The popularity of oil palm is understandable. It is hardy, cheap to grow and has a phenomenally high yield compared with other oil-seed crops. Indonesia has grown it for generations. Now, as global demand has soared for an oil used in hundreds of household products, from shampoo and soap to doughnuts and chocolate, the country has become the world's biggest producer. The amount of land used to grow oil palms has more than doubled since 2001 to about 10.8 million hectares, creating a vital export earner and an industry providing an estimated four million jobs.

But the amount of forest already razed to grow the crop has made palm-oil companies the ***target*** of damaging criticism from Greenpeace and other environmental campaigners.

Our first stop was the Yudha Wahana Abadi -oil-palm plantation run by a subsidiary of the Jakarta-based Triputra Agro Persada group. As the Norwegians were led around the mill processing building, I asked one senior manager, Sutedjo Halim, what he thought of environmentalists' criticisms.

His view was that campaigners' attacks ignore the industry's efforts to boost productivity, ensuring less land is needed for the crop. "We need to educate people," he said, singling out recent efforts by legislators in France to boost taxes on palm oil. "I think this is 110 per cent not fair."

But conversations with other palm-oil companies operating in Indonesia reveal a more complicated picture. Over the past four years, some of the largest companies have pledged to ***reduce*** deforestation not just in their own operations but also through their supply chains. They include Cargill, the world's biggest ***agricultural*** trader, and Wilmar, one of the largest palm-oil processors. However, both say they need the Indonesian authorities to help their efforts.

"It has been quite challenging," Jeremy Goon, Wilmar's chief sustainability officer, told me over the phone. "We've got a regulatory environment which isn't that conducive to a proper and thorough implementation of such pledges."

Authorities can, for example, revoke land-use licences if companies decide not to clear high-conservation-value forests, and can then hand the land over to other groups who will, he said. "It's a bit perverse, because that kind of puts the most biodiverse, precious, most high-carbon stock into the hands of the people who are willing to clear it tomorrow. Because if we don't clear it, they could."

On top of that, a number of senior Indonesian government figures have begun to complain publicly about the companies' pledges, claiming they threaten the livelihoods of smaller palm-oil producers unable to meet such standards.

The villagers of Merabu turned out to have an even more curious set of palm-oil problems. About 250 people live here, and, as Helgesen's four-wheel drive forded the river that has to be crossed to reach the village, it seemed that practically all of them had come out of their modest homes to greet him. As he and his team climbed up the riverbank, each was adorned with a chunky handmade necklace and led towards a table of freshly cut coconuts and a vibrant display of traditional dancing.

Although Norway's $1bn plan is aimed at Jakarta's national government, Oslo also funds non-government organisations that encourage villages to use the forest more sustainably. They include the US-based The Nature Conservancy, which has been working in Merabu to help the villagers on to a greener growth path, and Helgesen is promptly taken on a tour to see the fruits of this work.

There was a small cattle ranch, vegetable gardens and some ambitious plans to make Merabu an eco-tourism destination. A boat trip up the river the next morning revealed plenty of stunning rain-forest to attract the adventurous tourist.

Helgesen and Ambassador Traavik were each presented with a towering tree that had been designated for their "adoption"."I already have four children. I had no idea I would adopt a tree," said Traavik. With that, they headed back to their cars to return to the airport and the long trip home.

I stayed on a bit longer, having been promised a trip to a cave on the villagers' land containing what are said to be 10,000-year-old hand-print paintings, and the chance to see a Dayak hunter use his blowpipe.

Both turned out to be worth the effort. Cai, the hunter, even let me blow one of his poison-tipped darts, which turned out to be surprisingly easy. A light puff sent it shooting off into the treetops, although I would not want that to be my only defence against the wild boar we saw crashing about the next day.

As we headed back to the village from the cave, I spotted a big yellow bulldozer tucked away behind some large bushes. Surely that couldn't be part of any green growth plan?

That evening, I tracked down the village head, 26-year-old Franly Oley, who explained it was one of three bulldozers that he and a group of villagers had taken hostage some weeks ago, after discovering they were being used to clear nearby forest for an oil-palm plantation.

The forest is in an area that both Merabu and a neighbouring village believe to be their land, he said, and although the company clearing the land, Anugerah Agung Prima Abadi, had a legal permit to carry out the work, the villagers of Merabu did not think it should have razed trees on contested forest. "We told the bulldozer drivers, 'This is conflict land. Just leave the keys and we will take it from here,'" Oley said. The villagers then drove the machines home, causing a bit of inadvertent deforestation on the way by hitting a tree in the dark when they could not find a switch for headlights.

"We're demanding compensation of $100,000 for the trees they've already cut down," Oley said, explaining two bulldozers had now been returned after a series of negotiations but the third was staying in Merabu pending a satisfactory conclusion to the talks. Anugerah Agung Prima Abadi had offered the rival villagers the use of some of the land to grow their own oil-palm crops, under a longstanding government-backed scheme aimed at encouraging local community development.

Oley said Merabu was considering a similar offer but there was concern this would change the village culture and, either way, "the compensation must go ahead".

A spokesman for Anugerah Agung Prima Abadi said it had complied with all the appropriate government regulations but it understood there was a difference of view about where the border between Merabu and the neighbouring village lay. It has asked the district authorities to find "a solution which will benefit all stakeholders".

Before I left Merabu, I asked Oley if he could imagine a time when Indonesia would stop cutting down so much of its forests. "I think that's impossible," he said, laughing at the question.

I put the same question to Vidar Helgesen, the man trying his best to make that happen. While there have been many encouraging signs of change since Norway made its $1bn offer, it is clear that even a sum this large is not going to stop deforestation any time soon.

To my surprise, he turned out to be an optimist. He talked about the "immense complexity of Indonesia" and the fact that "politics in Jakarta are messy". But he still senses opportunity. The Norwegian effort has gained ground. It is just a matter of a few more years, he said.

"We've spent six years in this partnership not getting there," he said. "In another two years we really should be there. It's a critical matter for Indonesia but also for the world's climate."

*Pilita Clark is the FT's environment correspondent. To comment on this article, please email*

*magazineletters@ft.com*

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[***-CORRECTING and REPLACING Terra Nitrogen Company Reports Second Quarter 2015 Results***](https://advance.lexis.com/api/document?collection=news&id=urn:contentItem:5GM5-P6W1-F0K1-N562-00000-00&context=1516831)

ENP Newswire

August 6, 2015 Thursday

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**Body**

CORRECTING and REPLACING Terra Nitrogen Company Reports Second Quarter 2015 Results.

DEERFIELD, Ill - First paragraph, second sentence under Cash Distribution header should read: In the first half of 2015, capital expenditures were $ 67.4 million as compared to $ 27.4 million in 2014, with the increase primarily due to plant turnaround activities (instead of In the second quarter of 2015, capital expenditures were $ 67.4 million as compared to $ 27.4 million in 2014, with the increase primarily due to plant turnaround activities).

The corrected release reads:

TERRA NITROGEN COMPANY, L.P. REPORTS SECOND QUARTER 2015 RESULTS

Terra Nitrogen Company, L.P. (TNCLP) (NYSE: TNH) today reported net earnings of $ 99.3 million on net sales of $ 153.6 million for the quarter ended June 30, 2015. This compares to net earnings of $ 100.1 million on net sales of $ 167.5 million for the 2014 second quarter. Net earnings allocable to common units was $ 61.3 million ($ 3.31 per common unit) and $ 58.4 million ($ 3.16 per common unit) for the 2015 and 2014 second quarters, respectively.

Results for the second quarter of 2015 included an unrealized net mark-to-market gain on natural gas derivatives of $ 2.6 million compared to a loss of $ 4.9 million in the second quarter of 2014.

For the first six months of 2015, TNCLP reported net earnings of $ 158.3 million on net sales of $ 280.2 million. This compares to net earnings of $ 203.0 million on net sales of $ 345.2 million for the first six months of 2014. Net earnings allocable to common units was $ 98.8 million ($ 5.34 per common unit) and $ 118.8 million ($ 6.42 per common unit) for the first six months of 2015 and 2014, respectively. Results for the first six months of 2015 included a $ 6.5 million unrealized net mark-to-market gain on natural gas derivatives compared to a loss of $ 8.9 million for the first six months of 2014.

Analysis of Results

Approximately one-half of the production capacity of the Verdigris nitrogen complex, including the ammonia plant and a UAN plant, underwent a planned turnaround in the first quarter of 2015. The ammonia plant turnaround was completed in the first quarter of 2015 and the UAN plant turnaround, including certain follow-on maintenance, was completed in the second quarter of 2015. These turnarounds ***reduced*** production in the second quarter of 2015. Second quarter 2015 sales of UAN were impacted due to the lower production, which increased the volume of ammonia that was available for sale in the second quarter.

Net sales for the 2015 second quarter totaled $ 153.6 million, compared to $ 167.5 million for the 2014 second quarter, with lower UAN sales partially offset by higher ammonia sales. UAN sales volume in the 2015 second quarter decreased 25 percent compared to the 2014 second quarter. Sales were affected both by limited UAN volumes due to the turnaround, and a weak North American UAN market as certain customers preferred ammonia over UAN during the period. High levels of imports also impacted UAN pricing in the second quarter. The increased available ammonia was sold into a strong spot market driven by an early spring application window that extended the season longer than usual in the Western Cornbelt. Ammonia sales volumes increased 77 percent in the 2015 second quarter compared to the 2014 second quarter.

Net earnings for the 2015 second quarter totaled $ 99.3 million, compared to net earnings of $ 100.1 million for the 2014 second quarter. The decrease in net earnings was primarily driven by lower UAN production volume in 2015 compared to 2014 and light demand for UAN as growers moved toward ammonia and urea in the second quarter.

Comparing the second quarter 2015 to 2014, TNCLP's:

Ammonia average selling prices increased by 3 percent and UAN average selling prices decreased by 11 percent;

Ammonia sales volume increased by 77 percent and UAN sales volume decreased by 25 percent; and

Realized natural gas cost per MMBtu decreased by 34 percent.

Cash Distribution

Cash distributions depend on TNCLP's earnings as well as cash requirements for working capital needs and capital expenditures. In the first half of 2015, capital expenditures were $ 67.4 million as compared to $ 27.4 million in 2014, with the increase primarily due to plant turnaround activities. For the full year 2015, TNCLP is expected to have capital expenditures in the range of $ 80 million to $ 90 million.

TNCLP reported on August 5, 2015 the declaration of a cash distribution for the quarter ended June 30, 2015, of $ 2.36 per common limited partnership unit payable August 31, 2015 to holders of record as of August 17, 2015.

Cash distributions per limited partnership unit also vary based on increasing amounts allocable to the General Partner when cumulative distributions exceed ***targeted*** levels. With this distribution, TNCLP cumulative distributions continue to exceed ***targeted*** levels.

This release serves as a qualified notice to nominees and brokers as provided for under Treasury Regulation Section 1.1446-4(b). Please note that 100 percent of the Partnership's distributions to foreign investors are attributable to income that is effectively connected with a United States trade or business. Accordingly, the Partnership's distributions to foreign investors are subject to federal income tax withholding at the highest effective tax rate.

About TNCLP

Terra Nitrogen Company, L.P. is a leading manufacturer of nitrogen fertilizer products.

TNCLP is the sole limited partner of Terra Nitrogen, Limited Partnership (TNLP), owner of the Verdigris, Oklahoma manufacturing facility and related assets. Terra Nitrogen GP Inc., an indirect, wholly-owned subsidiary of CF Industries Holdings, Inc., is the General Partner of TNCLP and exercises full control over all of TNCLP's business affairs.

Forward-Looking Statements

All statements in this communication, other than those relating to historical facts, are forward-looking statements. These forward-looking statements are not guarantees of future performance and are subject to a number of assumptions, risks and uncertainties, many of which are beyond TNCLP's control, which could cause actual results to differ materially from such statements. Important factors that could cause actual results to differ materially from expectations include, among others:

risks related to TNCLP's reliance on one production facility;

the volatility of natural gas prices in North America;

the cyclical nature of TNCLP's business and the ***agricultural*** sector;

the global commodity nature of TNCLP's fertilizer products, the impact of global supply and demand on TNCLP's selling prices, and the intense global competition from other fertilizer producers;

conditions in the U.S. ***agricultural*** industry;

difficulties in securing the delivery, or delays or interruptions in the delivery of raw materials such as natural gas;

reliance on third-party providers of transportation services and equipment;

the significant risks and hazards involved in producing and handling TNCLP's products against which it may not be fully insured;

risks associated with cyber security;

weather conditions;

potential liabilities and expenditures related to environmental and health and safety laws and regulations;

future regulatory restrictions and requirements related to ***greenhouse gas*** ***emissions*** or other environmental items;

TNCLP's inability to predict seasonal demand for its products accurately;

risks involving derivatives and the effectiveness of TNCLP's risk measurement and hedging activities;

limited access to capital;

acts of terrorism and regulations to combat terrorism;

risks related to TNCLP's dependence on and relationships with CF Industries;

deterioration of global market and economic conditions;

risks related to TNCLP's partnership structure and control of TNCLP's General Partner by CF Industries;

changes in TNCLP's available cash for distribution to its unitholders, due to, among other things, changes in its earnings, the amount of cash generated by its operations and the amount of cash reserves established by its General Partner for operating, capital and other requirements;

the conflicts of interest that may be faced by the executive officers of TNCLP's General Partner, who operate both TNCLP and CF Industries; and

tax risks to TNCLP's common unitholders and changes in TNCLP's treatment as a partnership for U.S. or state income tax purposes.

More detailed information about factors that may affect TNCLP's performance may be found in its filings with the Securities and Exchange Commission, including its most recent periodic reports filed on Form 10-K and Form 10-Q, which are available through CF Industries' website. Forward-looking statements are given only as of the date of this release and TNCLP disclaims any obligation to update or revise the forward-looking statements, whether as a result of new information, future events or otherwise, except as required by law.

Terra Nitrogen Company, L.P. news announcements are also available on CF Industries' website, [*www.cfindustries.com*](http://www.cfindustries.com).

TERRA NITROGEN COMPANY, L.P.

CONSOLIDATED BALANCE SHEETS: see full results at:

[*http://phx.corporate-ir.net/phoenix.zhtml?c=115908&p=irol-newsArticle&ID=2076373*](http://phx.corporate-ir.net/phoenix.zhtml?c=115908&p=irol-newsArticle&ID=2076373)

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[***Bio-based projects make more headway; Commercial activity in the bio-based chemicals sector is proceeding rapidly, despite the decline in oil prices making economics less favourable***](https://advance.lexis.com/api/document?collection=news&id=urn:contentItem:5J82-0N81-DYX4-7383-00000-00&context=1516831)

ICIS Chemical Business

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Biotechnologies are making it possible to use sugars from corn as well as cellulose from stover and crop waste

The bio-based chemicals and polymers sector continues to progress, with companies now moving developments through to commercial scale in many instances. In the following pages of this week’s issue we look, for instance, at the latest developments at Versalis (page 30), AVA Biochem (p32) and BioAmber (after p33).

But before these feature articles we bring you a round-up of the latest developments in the business, starting with the latest announcement from Italy’s Versalis and US-based Genomatica that they have successfully advanced to pilot-scale the production of bio-butadiene (bio-BDE) from fully renewable feedstock. Versalis has then used the bio-BDE to create bio-rubber, specifically bio-polybutadiene (bio-BR).

This accomplishment, say the companies, marks continued progress toward commercial plants and will enable the rubber industry, as well as the broader industry for butadiene, to improve its sustainability footprint. Butadiene is one of the most widely used chemicals, with over 10m tonnes/year produced.

The project started with the establishment of a technology joint venture between Versalis and Genomatica in early 2013. The joint venture – with Versalis holding the majority stake – has developed a complete process to make bio-BDE and plans to license the resulting technology.

Genomatica’s bioengineering and fermentation technology is used to produce bio-1,3-butanediol by fermentation of sugars. Versalis technology is then used to purify the product and hydrate it to bio-butadiene, which is further purified.

To date, Versalis has produced several kilograms of butadiene from 1,3-BDO made in 200 litre fermenters at its research centres at Novara and Mantova in Italy, and then made bio-polybutadiene, at the Ravenna R&D centre, using both anionic and Ziegler-Natta catalysis.

Initial testing of the bio-BDE and bio-BR demonstrates good compatibility with industry standards. Versalis is continuing to test the bio-BDE within its other proprietary rubber and plastics downstream technologies such as SBR (styrene-butadiene-rubber), SBS (styrene-butadiene-styrene rubber) and ABS (acrylonitrile-butadiene-styrene).

Comet sugar production

In Canada, currently home to a number of bio-based renewable ventures, Comet Biorefining has announced that it will build what it claims is the first commercial-scale plant for converting cellulosic wastes into sugars that can then be used in bio-processing.

The plant is to be built in Sarnia, already home to BioAmber’s new 30,000 tonnes/year bio-succinic acid plant. More specifically, the facility will be located on the TransAlta ***Energy*** Park in Sarnia, Ontario.

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Using its proprietary patented process, Comet converts these non-food ***agricultural*** and forest residues into high-purity dextrose sugars that will can transformed into bio-based products including organic acids, amino acids and bioplastics.

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progress seen in brazil, poland and finland

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[***Bio-based projects make more headway; Commercial activity in the bio-based chemicals sector is proceeding rapidly, despite the decline in oil prices making economics less favourable***](https://advance.lexis.com/api/document?collection=news&id=urn:contentItem:5J8V-0KH1-JCF2-H26C-00000-00&context=1516831)

ICIS Chemical Business

March 7, 2016

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**Section:** FEATURES

**Length:** 2701 words

**Byline:** John Baker

**Body**

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Biotechnologies are making it possible to use sugars from corn as well as cellulose from stover and crop waste

The bio-based chemicals and polymers sector continues to progress, with companies now moving developments through to commercial scale in many instances. In the following pages of this week’s issue we look, for instance, at the latest developments at Versalis (page 30), AVA Biochem (p32) and BioAmber (after p33).

But before these feature articles we bring you a round-up of the latest developments in the business, starting with the latest announcement from Italy’s Versalis and US-based Genomatica that they have successfully advanced to pilot-scale the production of bio-butadiene (bio-BDE) from fully renewable feedstock. Versalis has then used the bio-BDE to create bio-rubber, specifically bio-polybutadiene (bio-BR).

This accomplishment, say the companies, marks continued progress toward commercial plants and will enable the rubber industry, as well as the broader industry for butadiene, to improve its sustainability footprint. Butadiene is one of the most widely used chemicals, with over 10m tonnes/year produced.

The project started with the establishment of a technology joint venture between Versalis and Genomatica in early 2013. The joint venture – with Versalis holding the majority stake – has developed a complete process to make bio-BDE and plans to license the resulting technology.

Genomatica’s bioengineering and fermentation technology is used to produce bio-1,3-butanediol by fermentation of sugars. Versalis technology is then used to purify the product and hydrate it to bio-butadiene, which is further purified.

To date, Versalis has produced several kilograms of butadiene from 1,3-BDO made in 200 litre fermenters at its research centres at Novara and Mantova in Italy, and then made bio-polybutadiene, at the Ravenna R&D centre, using both anionic and Ziegler-Natta catalysis.

Initial testing of the bio-BDE and bio-BR demonstrates good compatibility with industry standards. Versalis is continuing to test the bio-BDE within its other proprietary rubber and plastics downstream technologies such as SBR (styrene-butadiene-rubber), SBS (styrene-butadiene-styrene rubber) and ABS (acrylonitrile-butadiene-styrene).

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[***How to feed 9.7bn people? Startups take on the global food problem; In the hunt for a sustainable solution to a rapidly rising population, agriculture has begun to adopt a venture capital mindset***](https://advance.lexis.com/api/document?collection=news&id=urn:contentItem:5JX5-WM11-F021-64W2-00000-00&context=1516831)

The Guardian

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**Section:** WORLD NEWS

**Length:** 1632 words

**Byline:** Nic Fleming in Wageningen

**Body**

The raw numbers make for daunting reading. One in 10 people out of the current global population of 7.4 billion already goes hungry. Crop yields that soared in the decades after the second world war are flatlining, and the UN predicts there will be 2.3 billion more mouths to feed by 2050.

So how to keep people fed without trashing the planet? Some estimates put the contribution of the global food system to manmade ***greenhouse gas*** ***emissions*** as high as a third. Unsustainable farming methods are depleting soil nutrients significantly faster than they can be replenished. Rising demand for meat is driving deforestation as land is cleared to grow feed for livestock.

Related: And now for something completely different: some positive news

Green shoots of change, however, are starting to emerge, with researchers seeking out possible solutions on the borders between disciplines. The startup and venture capital culture, driving rapid change in other spheres, is gaining a foothold in food and ***agriculture***, and spreading from its stronghold on the US west coast.

The root of the problem

One idea gaining traction, particularly in hotter climates, is a new way to keep crop roots at optimum temperatures regardless of the weather.

Farmers have made increasing use of greenhouses and technologies that can heat and cool both the air around plants and the soil beneath them, but Roots Sustainable ***Agricultural*** Technologies, based near the Israeli city of Netanya, claims its system is smarter, cheaper and greener than existing technologies.

"If the temperature difference above and below the surface is too big, plants are unable to efficiently transport nutrients from their roots to the canopy," says Sharon Devir, an ***agricultural*** engineer and co-founder of the company.

Soil close to the surface is heated and cooled by the warmth of the sun or lack of it. Roots SAT's system uses coils of water-filled pipes installed at depths of up to 7 metres to either heat or cool the soil around crop roots. It uses alternately isolated and non-isolated pipes around roots to do so without wasting ***energy***, and can also discharge water, fertiliser and pesticides into root zones.

The technology is unique in being able to both heat and cool roots, and in using ground source heat exchange. Many existing greenhouse systems heat the air rather than soil, and use expensive boilers to heat water that is circulated in pipes.

Roots SAT claims to have achieved increased yields of 10% for lettuces, 25% for strawberries and 30% for basil, and earlier cropping and ***energy*** savings of up to 80% compared to conventional heating systems in pilot studies in Israel. It has installed its system to test and demonstrate it at two farms in Spain growing cucumbers and strawberries, and is seeking $4m (£2.7m) in funding to expand its operations.

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Louise O? Fresco, academic

In the same way major pharmaceutical companies have struggled to innovate internally in recent years, big ***agricultural*** players have also stuck in large part to what they know.

"There hasn't been a great deal of disruption in the food and agro-technology sector in recent decades, much less so than in other sectors," says Jan Meiling, the director of StartLife, an incubator for mainly food and ***agricultural*** startups based at Wageningen University and Research Centre in the Netherlands. "It's traditionally been a very conservative industry that is set up in a way that does not facilitate radical innovation."

At a recent conference, Louise O Fresco, the president of the university, said: "The game has changed. It wasn't the big taxi companies that developed Uber, or Hilton that developed Airbnb. What we need is radical innovation."

Waste not, want not

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Related: ***Reducing*** food waste would mitigate climate change, study shows

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Related: We must rebuild farmers' resilience after Ethiopia's catastrophic El Niño

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[***Deere Announces Second-Quarter Earnings of $ 495 Million***](https://advance.lexis.com/api/document?collection=news&id=urn:contentItem:5JTM-8PC1-JD3Y-Y04H-00000-00&context=1516831)

M2 PressWIRE

May 20, 2016 Friday

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**Length:** 1814 words

**Body**

May 20, 2016

John Deere Capital Corporation

The following is disclosed on behalf of the company's financial services subsidiary, John Deere Capital Corporation (JDCC), in connection with the disclosure requirements applicable to its periodic issuance of debt securities in the public market.

Net income attributable to John Deere Capital Corporation was $ 69.6 million for the second quarter and $ 169.4 million year to date, compared with $ 115.9 million and $ 249.5 million for the respective periods last year. The decline for both periods was primarily due to higher losses on lease residual values, less-favorable financing spreads and a higher provision for credit losses.

Net receivables and leases financed by JDCC were $ 33.208 billion at April 30, 2016, compared with $ 32.877 billion last year.

Safe Harbor Statement

Safe Harbor Statement under the Private Securities Litigation Reform Act of 1995: Statements under "Company Outlook & Summary," "Market Conditions & Outlook," and other forward-looking statements herein that relate to future events, expectations, trends and operating periods involve certain factors that are subject to change, and important risks and uncertainties that could cause actual results to differ materially. Some of these risks and uncertainties could affect particular lines of business, while others could affect all of the company's businesses.

The company's ***agricultural*** equipment business is subject to a number of uncertainties including the many interrelated factors that affect farmers' confidence and financial condition. These factors include demand for ***agricultural*** products, world grain stocks, weather conditions (including its effects on timely planting and harvesting), soil conditions (including low subsoil moisture), harvest yields, prices for commodities and livestock, crop and livestock production expenses, availability of transport for crops, the growth and sustainability of non-food uses for some crops (including ethanol and biodiesel production), real estate values, available acreage for farming, the land ownership policies of various governments, changes in government farm programs and policies (including those in Argentina, Brazil, China, the European Union, India, Russia and the U.S.), international reaction to such programs, changes in environmental regulations and their impact on farming practices; changes in and effects of crop insurance programs, global trade agreements, animal diseases and their effects on poultry, beef and pork consumption and prices, crop pests and diseases, and the level of farm product exports (including concerns about genetically modified organisms).

Factors affecting the outlook for the company's turf and utility equipment include consumer confidence, weather conditions, customer profitability, consumer borrowing patterns, consumer purchasing preferences, housing starts, infrastructure investment, spending by municipalities and golf courses, and consumable input costs.

Consumer spending patterns, real estate and housing prices, the number of housing starts and interest rates are especially important to sales of the company's construction and forestry equipment. The levels of public and non-residential construction also impact the results of the company's construction and forestry segment. Prices for pulp, paper, lumber and structural panels are important to sales of forestry equipment.

All of the company's businesses and its reported results are affected by general economic conditions in the global markets and industries in which the company operates, especially material changes in economic activity in these markets and industries; customer confidence in general economic conditions; foreign currency exchange rates and their volatility, especially fluctuations in the value of the U.S. dollar; interest rates; and inflation and deflation rates. Government spending and taxing could adversely affect the economy, employment, consumer and corporate spending, and company results.

Customer and company operations and results could be affected by changes in weather patterns; the political and social stability of the global markets in which the company operates; the effects of, or response to, terrorism and security threats; wars and other conflicts and the threat thereof and the response thereto; natural disasters; and the spread of major epidemics.

Significant changes in market liquidity conditions and any failure to comply with financial covenants in credit agreements could impact access to funding and funding costs, which could ***reduce*** the company's earnings and cash flows. Financial market conditions could also negatively impact customer access to capital for purchases of the company's products and customer confidence and purchase decisions, borrowing and repayment practices, and the number and size of customer loan delinquencies and defaults. A debt crisis, in Europe or elsewhere, could negatively impact currencies, global financial markets, social and political stability, funding sources and costs, asset and obligation values, customers, suppliers, demand for equipment, and company operations and results. The company's investment management activities could be impaired by changes in the equity, bond and other financial markets, which would negatively affect earnings.

Additional factors that could materially affect the company's operations, access to capital, expenses and results include changes in and the impact of governmental trade, banking, monetary and fiscal policies, including financial regulatory reform and its effects on the consumer finance industry, derivatives, funding costs and other areas, and governmental programs, policies, tariffs and sanctions in particular jurisdictions or for the benefit of certain industries or sectors (including protectionist, economic, punitive and expropriation policies and trade and licensing restrictions that could disrupt international commerce); actions by the U.S. Federal Reserve Board and other central banks; actions by the U.S. Securities and Exchange Commission (SEC), the U.S. Commodity Futures Trading Commission and other financial regulators; actions by environmental, health and safety regulatory agencies, including those related to engine ***emissions***, carbon and other ***greenhouse gas*** ***emissions***, noise and the effects of climate change; changes in labor regulations; changes to accounting standards; changes in tax rates, estimates, and regulations and company actions related thereto; compliance with U.S. and foreign laws when expanding to new markets and otherwise; and actions by other regulatory bodies including changes in laws and regulations affecting the sectors in which the company operates. Trade, financial and other sanctions imposed by the U.S., the European Union, Russia and other countries could negatively impact company assets, operations, sales, forecasts and results. Customer and company operations and results also could be affected by changes to GPS radio frequency bands or their permitted uses.

Other factors that could materially affect results include production, design and technological innovations and difficulties, including capacity and supply constraints and prices; the availability and prices of strategically sourced materials, components and whole goods; delays or disruptions in the company's supply chain or the loss of liquidity by suppliers; disruptions of infrastructures that support communications, operations or distribution; the failure of suppliers to comply with laws, regulations and company policy pertaining to employment, human rights, health, safety, the environment and other ethical business practices; events that damage the company's reputation or brand; significant investigations, claims, lawsuits or other legal proceedings; start-up of new plants and new products; the success of new product initiatives and customer acceptance of new products; changes in customer product preferences and sales mix whether as a result of changes in equipment design to meet government regulations or for other reasons; gaps or limitations in rural broadband coverage, capacity and speed needed to support technology solutions; oil and ***energy*** prices, supplies and volatility; the availability and cost of freight; actions of competitors in the various industries in which the company competes, particularly price discounting; dealer practices especially as to levels of new and used field inventories; changes in demand and pricing for used equipment; labor relations and contracts; acquisitions and divestitures of businesses; the integration of new businesses; the implementation of organizational changes; difficulties related to the conversion and implementation of enterprise resource planning systems that disrupt business, negatively impact supply or distribution relationships or create higher than expected costs; security breaches and other disruptions to the company's and suppliers' information technology infrastructure; and changes in company declared dividends and common stock issuances and repurchases.

Company results are also affected by changes in the level and funding of employee retirement benefits, changes in market values of investment assets, the level of interest and discount rates, and compensation, retirement and mortality rates which impact retirement benefit costs, and significant changes in health care costs including those which may result from governmental action.

The liquidity and ongoing profitability of John Deere Capital Corporation and other credit subsidiaries depend largely on timely access to capital in order to meet future cash flow requirements, to fund operations and costs associated with engaging in diversified funding activities, and to fund purchases of the company's products. If general economic conditions deteriorate or capital markets become more volatile, funding could be unavailable or insufficient. Additionally, customer confidence levels may result in declines in credit applications and increases in delinquencies and default rates, which could materially impact write-offs and provisions for credit losses.

The company's outlook is based upon assumptions relating to the factors described above, which are sometimes based upon estimates and data prepared by government agencies. Such estimates and data are often revised. The company, except as required by law, undertakes no obligation to update or revise its outlook, whether as a result of new developments or otherwise. Further information concerning the company and its businesses, including factors that potentially could materially affect the company's financial results, is included in the company's other filings with the SEC (including, but not limited to, the factors discussed in Item 1A. Risk Factors of the company's most recent annual report on Form 10-K and quarterly reports on Form 10-Q).

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[***How to feed 9.7bn people? Startups take on the global food problem; In the hunt for a sustainable solution to a rapidly rising population, agriculture has begun to adopt a venture capital mindset***](https://advance.lexis.com/api/document?collection=news&id=urn:contentItem:5JXC-B9F1-JCJY-G4VR-00000-00&context=1516831)

The Guardian

June 2, 2016 Thursday 12:35 PM GMT

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**Section:** WORLD NEWS

**Length:** 1631 words

**Byline:** Nic Fleming in Wageningen

**Body**

The raw numbers make for daunting reading. One in 10 people out of the current global population of 7.4 billion already goes hungry. Crop yields that soared in the decades after the second world war are flatlining, and the UN predicts there will be 2.3 billion more mouths to feed by 2050.

So how to keep people fed without trashing the planet? Some estimates put the contribution of the global food system to manmade ***greenhouse gas*** ***emissions*** as high as a third. Unsustainable farming methods are depleting soil nutrients significantly faster than they can be replenished. Rising demand for meat is driving deforestation as land is cleared to grow feed for livestock.

Related: And now for something completely different: some positive news

Green shoots of change, however, are starting to emerge, with researchers seeking out possible solutions on the borders between disciplines. The startup and venture capital culture, driving rapid change in other spheres, is gaining a foothold in food and ***agriculture***, and spreading from its stronghold on the US west coast.

The root of the problem

One idea gaining traction, particularly in hotter climates, is a new way to keep crop roots at optimum temperatures regardless of the weather.

Farmers have made increasing use of greenhouses and technologies that can heat and cool both the air around plants and the soil beneath them, but Roots Sustainable ***Agricultural*** Technologies, based near the Israeli city of Netanya, claims its system is smarter, cheaper and greener than existing technologies.

"If the temperature difference above and below the surface is too big, plants are unable to efficiently transport nutrients from their roots to the canopy," says Sharon Devir, an ***agricultural*** engineer and co-founder of the company.

Soil close to the surface is heated and cooled by the warmth of the sun or lack of it. Roots SAT's system uses coils of water-filled pipes installed at depths of up to 7 metres to either heat or cool the soil around crop roots. It uses alternately isolated and non-isolated pipes around roots to do so without wasting ***energy***, and can also discharge water, fertiliser and pesticides into root zones.

The technology is unique in being able to both heat and cool roots, and in using ground source heat exchange. Many existing greenhouse systems heat the air rather than soil, and use expensive boilers to heat water that is circulated in pipes.

Roots SAT claims to have achieved increased yields of 10% for lettuces, 25% for strawberries and 30% for basil, and earlier cropping and ***energy*** savings of up to 80% compared to conventional heating systems in pilot studies in Israel. It has installed its system to test and demonstrate it at two farms in Spain growing cucumbers and strawberries, and is seeking $4m (£2.7m) in funding to expand its operations.

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Louise O? Fresco, academic

In the same way major pharmaceutical companies have struggled to innovate internally in recent years, big ***agricultural*** players have also stuck in large part to what they know.

"There hasn't been a great deal of disruption in the food and agro-technology sector in recent decades, much less so than in other sectors," says Jan Meiling, the director of StartLife, an incubator for mainly food and ***agricultural*** startups based at Wageningen University and Research Centre in the Netherlands. "It's traditionally been a very conservative industry that is set up in a way that does not facilitate radical innovation."

At a recent conference, Louise O Fresco, the president of the university, said: "The game has changed. It wasn't the big taxi companies that developed Uber, or Hilton that developed Airbnb. What we need is radical innovation."

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