

Shades of climate risk – Categorizing climate risk for investors

Policy Risk


Top policy risks (by region)		Examples of sectors most impacted ¹	Potential impacts within next 5 years	Potential impacts towards 2050
Carbon pricing policy developments are highly country-specific 	US: Court cases and bipartisanship threaten national policy	Energy, Utilities, Transportation, Industrials	Turnover of Coal Power Plan likely within next 4 years (although first compliance year is 2020, and some states may continue renewables push regardless)	Highly uncertain long term outcome depending on future administrations
	China: Some enforcement uncertainty over long term	Energy, Utilities, Industrials, Materials	5 year planning periods provide strong indication of short term trends	Some uncertainty on implementation in the long term
	EU: Targets agreed but policy uncertainty	Energy, Utilities, Industrials	Uncertain impacts of Brexit	Carbon price expected to increase to 20 EUR/ton by 2030 ²

Table 1: Top Policy Risks

United States: US pledges in Paris³ are grounded in the Clean Power Plan (CPP) to reduce the sector's GHG emissions by at least 32% by 2030, mainly through cutting coal use⁴. However, President Trump has pledged to remove the CPP. CPP is also threatened by a lawsuit brought by 27 states to stop it on grounds that it would have dire economic consequences for their state⁵. The US Court of Appeals - DC Circuit will present a ruling in coming months, which is expected to be appealed to the Supreme Court (likely in 2018-19). In addition, deep political polarization in Congress over climate change has prevented federal legislative climate action over the past two decades, and is expected to continue which would hinder any new bills aiming to strengthen federal climate action⁶.

Regardless of federal political action, energy market developments push in the direction of a low-carbon economy. The 114th Congress extended production tax credits for renewable energy facilities to the end of this decade⁷, and this agreement is likely to be upheld by the new Congress. Moreover, states like California are pursuing their own climate policy. For instance, incentive structures to support renewable energy development exist in more than half of the states, and renewable energy is becoming more competitive due to lower costs. At the same time, renewables face strong and increasing competition from shale gas. Natural gas prices are low, and abundant reserves of shale gas secure natural gas availability for the foreseeable future⁸. The future of fracking is bright under the Trump Administration, even given concerns about fracking impacting the quality of groundwater⁹, drinking water, rights of native Americans,¹⁰ and the fact that some countries in Europe have banned fracking¹¹. Oil and gas pipelines will likely continue to face public protests, but two major pipelines (Keystone XL and Dakota Access) have been revived by the Trump Administration.

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China: China's 13th Five Year Plan up to 2020 targets reduced energy intensity by 15% and carbon intensity by 18% compared with 2015 levels, and, for the first time, introduced an energy consumption cap of 5 billion tons of coal equivalent. By 2030, China aims for peak emissions along with a target of 20% renewable energy sources and carbon intensity reductions of 60-65% below 2005 levels¹². Despite the national reduction targets and bans on new coal power plants in three regions, China continues to invest in coal abroad building new power plants in India and Southeast Asia, and continues to be the largest exporter of coal equipment¹³. Fuel-efficient transportation is also targeted, and taxes have been eliminated on electric vehicles¹⁴. China has piloted seven carbon trading systems and plans to launch a nation-wide cap-and-trade program in 2017 covering power generation, iron and steel, chemicals, building materials including cement, paper-making and nonferrous metals sectors. One of the key questions will be to what extent the national program can be enforced and impact businesses behavior¹⁵.

EU: The EU's climate and energy policy framework aims at achieving a 40% emission reduction by 2030 (also submitted as the EU target under the Paris Agreement), along with 27% in energy efficiency savings and a 27% renewable energy target. While the targets for 2030 are agreed, policies to achieve these targets remain uncertain. In the coming months, the EU will draft implementing legislation, while also deciding on an internal division of mitigation efforts among the 27/28 member states plus Norway and Iceland¹⁶. This process also includes a reform of the EU's emission trading system - the centerpiece of EU climate legislation which represents approximately 80 percent of world carbon trading. The ETS review attempts to reduce the vast amount of surplus emissions in order to push up the carbon price, which has been around or below 5 euro/tonne CO₂ in recent years.¹⁷ Point Carbon¹⁸ expects the carbon price to increase slowly to 20 euro/tonne by 2030. While it remains uncertain whether the UK will remain a part of the EU climate and energy policy, including the EU ETS, Brexit casts uncertainty over the British and European climate and energy policy in the next decade. It might influence the EU carbon market as well as investments in climate-friendly technologies negatively; especially should the UK decide to leave the EU ETS. If the UK cuts all policy ties to the EU, the remaining member states will have to redistribute mitigation and renewable energy targets. With the UK, the EU is losing an important voice pushing for more ambitious and market-based climate policy, possibly giving climate-sceptic countries, such as Poland and other Central-Eastern European countries, as well as energy-intensive industries, a bigger say and adding to the political tension over the EU's climate and energy policies.¹⁹ In London, climate change is emerging as a lower priority for Theresa May's cabinet than for any UK government since 1997.²⁰

Other Emerging Economies

Given the abundant reserves in the BRICS²¹ and growing demand for energy, coal is expected to remain a significant input into energy production for the near future²². Russia, with the second largest global coal reserves, has committed to increase coal production to 30% by 2030, in response to increased demand from China²³. How development and climate change agendas will play out in other key emerging economies is unknown:

- **India:** India may push back the December 2017 deadline to cut pollution from coal-fired power plants amid pressure from generators. Despite very bad air pollution in India's cities (driven in part by coal-fired power accounting for 75% of electricity), the development agenda dominates emission reductions. Almost one-fourth of Indians do not have access to electricity. Bloomberg New Energy Finance forecasts India's electricity demand to grow 3.8 times between 2016 and 2040, resulting in a trebling of its annual power sector emissions by 2040. Despite investing \$611 billion in renewables in the next 24 years, and \$115 billion in nuclear, it will continue to rely

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heavily on coal power stations and imports to meet rising demand²⁴. The Indian government has announced an ambitious and demanding goal of achieving 100GW of solar capacity by 2022. To meet its goals India will need to increase its pace of renewable energy capacity addition seven times, from an average 3GW/year to 20+GW/year. Although large photovoltaic systems could be more economical than plants powered by imported coal by 2020²⁵, analysts warn this will require a serious overhaul of the power infrastructure as well as new incentives to drive investment²⁶.

- **Brazil:** Brazil is already close to fulfilling its INDC goal of reducing absolute emissions by 37% by 2025 (from 2005 emission levels). The main climate uncertainty will continue to be deforestation, in part because most of the low-hanging fruit has already been picked, and in part due to the shift in government in 2016 (previous shifts have caused peaks in deforestation because of managerial instability)²⁷. Because of the low oil price, the use of gasoline is increasing and the sale of biofuels is stagnating. Except for a small decrease in coal use, all energy sources, including renewables, are expected to increase until 2035 to meet increasing energy demand²⁸. New renewables (wind and solar) will increase if they can compete on price, as governmental subsidies are not likely²⁹. Changing rain patterns due to climate change make hydropower a more uncertain source than before³⁰. The petroleum reserves found in ‘pre-salt’ geological formations off Brazil’s east coast are expected to make Brazil a net-exporter of oil in 2023³¹. The volatile oil prices, the change of government, and the corruption scandal originating in Petrobras, are factors of uncertainty for the development in the Brazilian oil sector. According to a recent change in the petroleum concession law, however, Petrobras is no longer required to have a 30% share in concessions, which may help Petrobras to recover economically.

Shades of climate risk – Categorizing climate risk for investors

¹ Using MSCI Global Industry Classification Standard.

² [Point Carbon](#)

³ To cut emissions 26-28% from 2005 levels by 2025

⁴ On the Clean Power Plan: [EPA website](#)

⁵ The states aim to strip the EPA of its authority to regulate CO₂ through the Clean Air Act (On the lawsuit: www.vox.com/energy-and-environment/2016/9/27/13063282/clean-power-plan-dc-circuit-court).

⁶ Dunlap et al. (2016) <http://www.tandfonline.com/doi/full/10.1080/00139157.2016.1208995>

⁷ [DOE](#)

⁸ [EIA](#)

⁹ The Washington Post, [EPA's science advisers challenge agency report on the safety of fracking](#), 12 Aug. 2016.

¹⁰ Politico, [Obama halts new pipeline that protesters see as Keystone sequel](#), 9 Sept. 2016.

¹¹ The Guardian, [The rise and fall of fracking in Europe](#), 29 Sept. 2016.

¹² UNFCCC (2015). "China's intended nationally determined contribution: Enhanced Actions on Climate Change," Retrieved 19 August, 2015, from <http://www4.unfccc.int/submissions/INDC/Submission%20Pages/Submissions.aspx>.

¹³ Walker, B (2016). "China Stokes Global Coal Growth", China Dialogue, 23 September 2016.

¹⁴ C2ES (2015). "China and Climate Change", Fact Sheet, Center for Climate and Energy Solutions.

¹⁵ White, N., and G. Hearty (2016). "China's 13th Five-Year Plan: Expanding Attention to the Green Economy", CSIS Asia Program Blog, Center for Strategic and International Studies, 18 July 2016.

¹⁶ EC (2016). Proposal for a regulation of the European Parliament and of the Council on binding annual greenhouse gas emission reductions by Member States from 2021 to 2030 (...). COM(2016) 482 final. Brussels: European Commission.

¹⁷ Birger Skjærseth, Torbjørn Jevnaker, Jørgen Wettestad. [The Paris Agreement: Consequences for the EU and Carbon Markets?](#) Politics and Governance, Vol 4, No 3 (2016).

¹⁸ [Point Carbon](#)

¹⁹ Elin L. Boasson, [Brexit will influence climate policy at all scales](#). KLIMA, 24 June 2016

²⁰ Financial Times [Brexit briefing](#).

²¹ Brazil, Russian, India, China, South Africa

²² BRICS Research Centre, (2016). Personal Communication with BRC Researchers. 2 November 2016

²³ Josie, J., (2016). Mitigating Effects of Climate Change: Action for Financing Clean Energy Technologies in Coal Rich Countries in BRICS. Presentation at the ORF and Economic Policy Forum

²⁴ Bloomberg New Energy Finance

BP Energy Outlook 2016

²⁵ Bloomberg New Energy Finance

²⁶ Bang, G. et al. The Domestic Policies of Global Climate Change. Elgar, 2015.

²⁷ Rodriguez-Filho, S. et al. (2014). Election-driven weakening of deforestation control in the Brazilian Amazon. Land Use Policy, 43, 111-118.

²⁸ BP (2016). BP Energy Outlook, [Country and regional insights – Brazil](#).

²⁹ Aamodt, Solveig 2015. "To be – or not to be – a low-carbon economy: A decade of climate politics in Brazil." In: G. Bang et al. *The Domestic Politics of Global Climate Change - Key Actors in International Climate Cooperation*. Cheltenham: Edward Elgar Publishing

³⁰ Lucon, O. et al. (2015). Bridging the gap between energy and climate policies in Brazil. [WRI Brasil report](#).

³¹ EPE, 2014