

SE Views From The Top

HD **More green, less waste**

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THIS WEEK'S TOPIC: How green are your organisation's business practices? What can be done to make Singapore a 'car-lite' and zero-waste nation?

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Hans Hanegraaf

Country Executive, ABN AMRO Bank NV Singapore and CEO, ABN AMRO Private Banking Asia & Middle East

IN Singapore, ABN AMRO launched its Sustainability Campaign in March 2014 to engage and inspire our people to continuously improve the sustainability of our **operations**, and to place our clients' interests on centre stage and build long-term sustainable relationships. Besides encouraging electronic statements and digital resources to reduce paper consumption, we also used our financial expertise to incorporate sustainability at the core of our **operations**. In addition, we incorporated sustainability beyond our **operations**. As a member of the global Roundtable on Sustainable Palm **Oil** (RSPO) and through our Agri-Commodities Policy, we strive to promote the growth and use of sustainable palm **oil** through cooperation within the supply chain and open dialogue between stakeholders. Similarly, we expect our partners to conduct business in a sustainable manner too. Businesses have to go above and beyond imbuing sustainability in the products and services they sell, and extend sustainability outside their internal **operations** to encourage their partners to contribute to a better world.

Singapore's excellent public transportation infrastructure certainly supports a "car-lite" lifestyle. As a cycling enthusiast, I certainly would welcome more cyclist-friendly initiatives - for example, to build a pro-cycling culture for a greener lifestyle in our community here. In working towards becoming a zero-waste nation, while the government and private sectors play their part in education and action initiatives, each of us individually has to take responsibility within ourselves, in our families and at work to adopt the "waste not, want not" credo in every aspect of our lives towards achieving this vision.

Mike Muller

President, Asia Pacific

Avaya

AS citizens, we all applaud the government's initiatives to create a healthier, greener and more engaging environment for us all. As companies, we have that same responsibility to reduce wastage and pollution, and create a more livable environment and a better work/life balance for our employees. One way we can do that is by reducing our need to travel. Previously in this page, I have talked about the benefits of using video collaboration tools, especially for internal meetings, to avoid people having to travel. It just makes sense - saving time away from the office, lowering costs, enhancing productivity and reducing traffic. And it's mobile too - available with a single click, wherever you are and on whatever device. As a **company**, Avaya continues to reap the benefits of the switch to video - saving **millions** of dollars, man hours and travel kilometres each year, slashing our CO2 emissions by 46 per cent - and giving our employees time back to spend with their families and friends. What's more, we are working with companies in Singapore

and around the region - notably in banking, education, healthcare, hospitality, manufacturing and government - to help them do just the same thing.

Chong Kee Sen

President

The Institution of Engineers Singapore (IES)

AS the Institution of Engineers Singapore is the country's national society of engineers, sustainable practices feature high in our agenda, from using the latest sustainable design and construction technology for the new IES building to establishing initiatives such as a handbook and a professional registry for effective stormwater management systems. To make Singapore "car-lite", engineers must continue to develop an efficient public transport network system and developments integrating offices, housing and services.

To achieve zero waste, two things are essential: a widespread, long-term commitment to reducing waste by segregating **commercial**, industrial and **residential** waste at source to facilitate collection and separate treatment; and the availability of technological and engineering innovations to recycle waste to generate electricity or reuse as raw materials for manufacturing. One cannot work without the other. As land-filling and incineration are costly multi-**million** dollar exercises, zero waste is not an option but a necessity for Singapore.

Andrew Wildblood

Head of Asia Pacific

Telstra Global Enterprise & Services

WE'RE determined to reduce our environmental impact and believe new technology and ways of working will help us create environmental solutions that are truly inspired. Our people are digitally connected like never before, which means flexibility is a value they expect from us. This year we introduced a new initiative called "All Roles Flex", which means all current and advertised jobs at Telstra are flexible. There are people on my team who have a pretty intense commute into the office. So, if once or twice a week they can get that time back by working from home, we can certainly make sure we're equipping them to do that by staying connected and, hopefully, make a difference to a sustainable Singapore too.

Nick Foley

President, SE Asia Pacific & Japan

Landor Associates

THERE are now more than one **billion** bicycles in the world. The Netherlands still has the highest usage of bikes per capita, followed by Denmark and then Germany. In Singapore, recreational cycling is growing in popularity; however, cycling for the commute is low. Cycling lanes, and making Singapore more "bike-friendly" is a positive way to reduce our reliance on cars.

When Landor worked with the City of Melbourne on a new brand blueprint, one of the key focal areas was sustainability. Whether it be recycling waste or extending bike paths, there was a clear intent to reduce carbon emissions and make Melbourne a healthier city to reside in.

While Singapore could be doing more with regard to recycling and lower car usage, the MRT has been an outright success. More than 110 stations are now in use and a number of new lines will open in the near future. The ongoing development of the MRT will only further encourage Singaporeans to leave the car at home.

Shinji Tada

Managing Director, Asean

Brother International Singapore

GLOBALLY, Brother is constantly taking positive steps to protect the environment in all aspects of our business **operations** and to be a responsible corporate citizen. Locally, not only is Brother Singapore a proud member of Project Homecoming, an initiative to collect and recycle old ink cartridges, we believe that working with the community and educating at a grassroots level can also effect a greater change - which is why we have pledged to be part of the PUB "Friends of Water" programme with the adoption of Punggol Reservoir.

Through this adoption, Brother aims to help educate and build awareness of water conservation in Singapore by contributing our time and resources to initiate activities on **site** to highlight the importance of caring for our water resources and reach out to a larger community in future. On World Water Day this year, together with Anchor Green Primary School, we held educational activities at the Sengkang Floating Wetland for our staff and the students. Through these ways, we feel we can help to make a greater change beyond recycling, reusing and reducing.

Ispran Kandasamy

Vice-President of Sales, Asia Pacific

CommScope

COMMScope looks at "green" initiatives from an internal and external perspective. We continually review how we operate our own facility here in Singapore so that we can optimise the use of **energy** and space - the primary approach we use is to deploy smart light and sensor technology in our facility - this is relatively easy to do and it delivers quick results. At the same time, we offer solutions and services to customers in Singapore that deliver agile, innovative, high-calibre network infrastructure that first collects data about the environment within a building and then helps monitor and manage power and space consumption.

By the end of 2020, CommScope's stated goal is a 25 per cent reduction in carbon emissions globally. I have no doubt that countries like Singapore, which have a relatively high population density, will see more intelligent or smart buildings. These buildings have sensors within the fabric of the build, all feeding back over a common infrastructure. Analysis of this data helps determine how effective **energy** management schemes are and how well space is being used.

Singapore is ahead of the game with policies and incentives in place to drive the green agenda. Small, incremental, positive changes around the best use of resources, power and space, among individuals and enterprises, will all help to make Singapore a zero-waste nation.

Eu Pui Sun

Senior Vice-President (Sales & Business Development)

Senoko **Energy** Pte Ltd

AS Singapore's largest genco, Senoko **Energy** is consistently an early adopter of green and sustainable business practices. We were the first genco in Singapore to adopt the gas-fired Combined Cycle technology, a lower-emission and environmentally friendlier way to generate electricity. This and other measures have helped to reduce our carbon footprint by 40 per cent compared with year 2000.

We also recognise that, while **energy** is a key component in powering up our industries and businesses, better **energy** efficiency can help further reduce our **energy** usage and carbon footprint. So we work with our retail customers to help them tap assistance schemes to finance **energy** audits. This will help them identify areas where **energy** efficiency can be improved, leading to lower **energy** usage and, hence, costs.

We also see potential in efficiency improvements in transport through greater use of electric vehicles in Singapore. Such vehicles have zero tailpipe emissions and are highly **energy**-efficient. We were one of the first to take part in the Electric Vehicle Test-Bedding Programme, so we are pleased to see that electric car sharing trials will be conducted with the aim of a "car-lite" Singapore. We hope that greater adoption of electric vehicles in future will **lead** to fresher air and a greener commute for all.

We feel that a fundamental success factor to sustainable green living is our mindset - how can all of us take personal ownership for a greener Singapore? To that end, we have spent more than a **million** dollars to generate greater awareness among school-going children in Singapore about environmental sustainability, resource conservation, saving **energy** and saving water. We feel such educational outreach is important and worthwhile to cultivate an environmental-conscious mindset in our young students today for a greener tomorrow.

Michael Anderton

General Manager & Managing Director, Building Efficiency Singapore

Johnson Controls (S) Pte Ltd

At Johnson Controls, we believe in environmental, social and economic sustainability. At the global level, we have committed to spending US\$50 **million** over the next three years to develop new products and technologies in the fight against climate change. In that regard, I am pleased to say that the Carbon

Disclosure Project (CDP), the world's only global environmental disclosure system, has recognised Johnson Controls as a leader among S&P 500 companies for its actions to reduce carbon emissions. In Singapore, buildings account for about 40 per cent of total **energy** consumption and represent our best chance to reduce our ecological footprint. As a global leader in building efficiency and integrated smart green building systems, we will continue to play our part in the transformation of the city-state by delivering innovative solutions to our clients to help them realise their sustainability goals.

Tan Tong Hai

CEO

StarHub Ltd

AS a homegrown **company** that firmly believes in environmental sustainability, StarHub constantly finds ways to lighten Singapore's environmental footprint.

For instance, when we progressively upgraded our mobile network, including 4G, we managed an overall 12 per cent **energy** savings in 2013 because of the use of **energy**-efficient technology.

To conserve resources and minimise waste, StarHub provides several opportunities for customers to go green. RENEW, StarHub's consumer-centric electronic waste recycling programme in partnership with DHL and TES-AMM, has recycled more than 16 tonnes of e-waste. It was an initiative started by StarHub and remains Singapore's most inclusive and extensive e-waste recycling programme.

StarHub has implemented a paperless billing system at our shops, and replaced the Business Reply Envelope with an online version for customers to print only if necessary. Our customers are also encouraged to opt for MyStarHub e-bill instead of paper bills. These measures saved more than 42 tonnes of paper in 2013.

Wong Heng Chew

President

Fujitsu Singapore

FUJITSU recognises that going green is not only good for the environment, but also good for business. Our sustainability strategy utilises the latest technology and creative talents to promote sustainable development on all levels - from research and development, to the preferential procurement of eco-friendly parts, to building **energy** efficient data centres as a way to lower carbon emissions.

In addition to being ISO14001-certified, Fujitsu actively participates in environmental protection activities **company**-wide. These include providing employees with Fujitsu mugs to reduce the use of paper cups, placing recycling bins around the office and encouraging staff to switch off the lights during the lunch hour. A recent joint research with The Australian National University of Canberra using our Life Cycle Assessment technology found innovative methods of managing native forests to maximise carbon storage and the benefits of other ecosystem services.

As a global tech hub, Singapore is well positioned to use the latest technologies to reduce the environmental burden of society. By deploying ICT towards this cause, we will come one step closer to solving environmental challenges.

Kim Chan

Chairman and CEO

Veolia Transport RATP Asia (VTRA)

SINGAPORE'S public transport system has been a key factor in its development into one of the world's most liveable cities, and it will play an increasingly crucial role in its future. To take the next step and become a truly "car-lite" nation, Singapore will need to encourage even more travel on public transport. This will require a dual approach - delivering a level of comfort and convenience that can rival car use, as well as making environmental concerns more of a priority in everyday decisions. It's all well and good telling passengers that taking the bus will use nine times less **energy** than their car, but they need to see this as a positive decision, not a sacrifice.

In its commitment to ensuring the highest standards, the government recently introduced a new contracting model for public bus services. This liberalisation opens the door for new service providers to introduce innovative public transport solutions. As one of the companies preparing a bid to operate the first batch of routes, VTRA's priority is ensuring that we can deliver the quality and reliability that

passengers demand throughout their journey. But we also recognise that operators must **lead** by example when it comes to the environment, so we are working at identifying new environmentally friendly initiatives to help contribute to Singapore's clean and green vision.

Yu Tat Ming

CEO

PacificLight

PACIFICLIGHT shares the government's view that to make Singapore a model city for green living requires our collective contribution and commitment. Initiatives taken by individuals and industries can take many forms. As an **energy company**, we are focused on initiatives which maximise efficiency, thereby reducing our impact on the environment while also reducing costs for our customers. We are the largest registered Clean Development Mechanism (CDM) project in Singapore under the United Nations Framework Convention on Climate Change, a scheme recognising projects that contribute to sustainable development and emissions reduction. We were also awarded Greenmark status by the BCA for the implementation of high quality equipment and sustainable practices at our Jurong **Island** power plant. Recycling is promoted and we provide free transfers for staff from strategically located MRT stations to work to minimise driving - practices which could be encouraged by providing some form of incentive to companies. These reflect our commitment to the environment and contribution to a cleaner Singapore.

Nadeem K Sheikh

Managing Director, Asia Pacific & Japan

Opower

AT Opower, we're in the **business** of making businesses greener. We help utilities and countries around the world to reduce their **energy** consumption while achieving greater efficiency and lowering their costs. We practise what we preach because we know that together with our clients and their customers, we can save **energy**. We believe that Singapore can become a "car-lite" and zero-waste nation through focused education and information campaigns.

We recently ran a study with one of our largest clients and saw that peak power usage was reduced by about 3 per cent on the days that customers received an e-mail with details on the cost savings incurred by powering down. We have seen through our pilot programmes that, even without extra economic incentives, many people will turn it down when asked. Waste, the roads, electricity - powering change is all about initiating and engaging the consumer in an on-going conversation.

Ronald Lee

Managing Director

PrimeStaff Management Services Pte Ltd

AT PrimeStaff, we are proactive in seeking ways to reduce our carbon footprint as much as possible. Our commitment to environmentally responsible **operations** has resulted in the following green initiatives: use of multi-function and **energy**-efficient devices bearing the "**Energy** Star" seal, a target to recycle 85 per cent of all office waste via co-mingled recycling, switching to duplex printers to save paper, resetting all shutdown and sleep functions on our printers to save **energy**, and investing in fully integrated video-audio-Web conferencing facilities to reduce our business-related travel.

The government has already taken the **lead** in trying to make Singapore a "car-lite" nation. This is clear from the change in car-loan rules that now require a 40-50 per cent cash downpayment on **purchases** coupled with the continued tightening of the COE quota. Combined, these measures put cars further out of reach for the masses. The writing is clearly on the wall that Singapore is headed towards this "car-lite" status, in line with the world's most populous cities. To make this work, however, the public transport system needs to be vastly improved to ease the dreadful peak-hour human traffic crunch. While there are many plans underway to expand the MRT network, they will take time to materialise and the problem requires urgent attention. Aside from public transport, I think Singapore is on its way towards being a more "green" city, both literally and figuratively. While I don't think we can ever be a "zero-waste nation", I welcome the growing initiatives to encourage recycling. But we need to build the right foundation through a collective mindset shift and make ours less of a "throwaway society". One area that I feel is currently lacking is the recycling of electronic waste. We need more public education and infrastructure to collect electronic waste such as old computers and devices, especially given Singaporeans' love for new gadgets.

Paul Lim

Chief Executive Officer

Soverus **Group** Pte Ltd

SOVERUS is a **firm** believer in adopting sustainable eco-friendly practices even if it means higher costs. Two of our key initiatives that have resulted in significant green savings is to use electronic Visitor Management Systems (VMS) in place of paper record books in more than 50 operational sites across the country, and to allocate **company** e-mail to all our 500 security officers so that they can take part in the **company's** e-payslip scheme which comes with a S\$10 NTUC voucher upon signing up. Go-green is something that we regularly advocate to all employees and partners.

At a national level, to achieve the targets of the Sustainable Singapore Blueprint, two key mindsets have to change. The first mindset to challenge is that of "my small little green acts of saving the earth such as riding public transport over individual car usage will not contribute much". Many Singaporeans are still not convinced that small individual acts such as recycling paper, cans and plastics are important. However, it is encouraging that, anecdotally, the younger generation is picking up good green habits from an early age, even while working adults and retirees adapt at a slower pace. As in all major mindset changes where the impact is not immediate and visibly obvious, this transformation will probably require a decade or two to materialise.

The second mindset is at a business or corporate level. MNCs are increasingly embarking on major "clean and green" efforts and these are often featured in various media, such as building designs winning "green awards", eco-friendly machinery, etc. As a result, SME owners tend to feel that there is no point for them to make adjustments towards green efforts as their contributions will pale in comparison with those of MNCs. This is, of course, flawed thinking as SMEs in Singapore contribute roughly half of GDP and, as a rough proxy, probably contribute also 50 per cent of waste. To spur SMEs towards becoming more eco-friendly, more education and publicity should be focused on SMEs in this area. The government can also help in incentivising SMEs who are embarking on the green journey through upfront cash incentives for process re-engineering or **purchase** of eco-friendly machinery.

Tham Sai Choy

Managing Partner

KPMG in Singapore and Chairman of KPMG Asia Pacific

ENVIRONMENTAL conservation is a subject close to the heart of our people. Having environmentally friendly work practices is the most natural thing to do, especially with the emergence of a more socially aware generation with no shortage of career choices.

We measure our net carbon emissions and have established specific targets to reduce emission levels. Supporting this, we conduct awareness programmes for staff to share and encourage business practices that conserve **energy**, water and paper. We communicate progress and priorities with an annual sustainability report prepared in accordance with the Global Reporting Initiative framework. With those initiatives, we have cut our net emissions per person in Singapore by 7.1 per cent between 2010 and 2013. Initiatives being rolled out to further expand arrangements to work from home will accelerate this.

Singapore is a model city for resource conservation and optimisation. Its compact dimensions and smart city-design capabilities give us room to be at the cutting edge of environmental conservation, while sustaining a responsible rate of economic growth. Increasingly, other countries also look to Singapore to **lead** the way in this area, and it is easy to see that we cannot be a key beneficiary of global environmental protection without playing our part responsibly.

Valery Muiyard

General Manager

Volvo Trucks Singapore

THERE are plenty of reasons to take sustainability seriously. It is also by far the most important environmental issue for those in the transport sector. As one of the world's biggest manufacturers of heavy **commercial** vehicles, we recognise that we have a part to play. Volvo Trucks is working towards reducing the environmental impact of its products throughout its entire lifecycle - from the first sketches on the drawing **board**, throughout its service life until it is recycled. We take this further through driver development programmes to maximise fuel efficiency, leading to reduced carbon emissions and overall operating cost for our customers. Our aim is to ensure that every new product has a lower environmental

impact than the one it replaces. **Energy**-efficient and fuel-efficient products and solutions are no doubt beneficial to everyone.

Jean-Michel Dumont

Chairman

Ruder Finn Asia

THE report from the United Nations Intergovernmental Panel on Climate Change that there is a clear and growing influence of human activity on the world's climate, followed by the Apec announcement on the US-**China** partnership to fight climate change, will add to the growing awareness of environmental issues.

But, unfortunately, the necessary behavioural changes have not yet reached the tipping point in many of those countries most able to effect change. The key to successful behavioural change is implementing the right strategy at the right time and finding the "what's in it for me?" factor that motivates sustainable action.

This is not an issue that can be resolved by community action alone - it will require a **buy**-in by the government, the people and the private sector. It will be important to identify that sweet spot for each stakeholder **group**. Singapore, with its track record of successes, is uniquely positioned to play a leading role in this region to ensure a high quality living environment for this and future generations.

Goh Swee Chen

Chairperson

Shell Companies in Singapore

MEANINGFUL conversations around **energy** and environmental issues need to take account of initiatives and momentum from the ground. The actions and passion of the staff of Shell in Singapore have allowed us to contribute proactively through various community initiatives, stimulate discussions and ideas around **energy** conservation and deepen their knowledge of the issues involved.

Singapore's focus and strength in Science, Technology, Engineering and Mathematics (STEM) education, not only creates a breeding ground for new innovations, but also allows us to connect students with the current realities - and future possibilities - of global **energy**. Platforms such as the Shell Eco-marathon and Shell Singapore Youth Science Festival Camp can inspire students by showing them that they can make a difference in solving the challenges around climate change and emissions.

Tony Ang

Global **Board** Director

Aedas

AEDAS takes a comprehensive design approach towards environmental sustainability where we go beyond the tangible considerations of building performance and **energy** use to maximise sustainable value to the communities we design for. Using our in-house analysis tools, our global design teams have been able to assess lifecycle impacts of our design solutions, construction techniques and material choice. This has allowed us to achieve green building certifications for a number of our designs.

Aedas has been pushing for transit-oriented developments as the way forward for sustainable urban cities. These focused urban hubs placed over transportation nodes will be crucial in creating a "car-lite" Singapore where easy access to transport networks will encourage the use of public transport. We have successfully designed many such developments around the world and will continue to advocate their implementation.

Joshua Yim

CEO

Achieve **Group**

BEING in the professional services industry, our green efforts extend to finding ways to minimise office waste. These include recycling of paper and printing documents only when absolutely necessary. We will also implement a new system that will digitise more of our day-to-day work activities. This will help eliminate the need to print resumes for the purpose of interviewing job candidates, for instance, as we are a recruitment agency. Singapore should look into enhancing the adoption of electric cars. While electric cars enjoy lower registration taxes and tax breaks on low emissions, these discounts are not significant

enough to sway motorists. The government should provide greater tax rebates and other incentives to reduce the costs to buyers, as electric and hybrid cars tend to be pricier than average. Singapore should also look into building more charging stations for greater convenience. If we are able to implement this successfully, Singapore, being a small country with limited landmass, could become a "model city" for others to follow. The authorities could also explore providing subsidies or rebates for **energy**-saving appliances and equipment. This would incentivise businesses to import or invent **energy**-saving products. Waiving GST for such items would be good.

Toby Koh

Group Managing Director

Ademco Security **Group** Pte Ltd

A MAJOR financial institution in Singapore worked hand-in-hand with us in improving its security strategy, increasing efficiencies, reducing risks on a real-time basis and yet we were still able to cut carbon emissions. Traditionally and still widely practised today, upon an alarm trigger, security guards are dispatched to respond in their motor vehicles. It would be safe to say that such security response at financial institutions in Singapore numbers into the thousands a year, contributing greatly to carbon emissions levels here. We reviewed and revamped the norms with our client, and designed and deployed a real-time live feed security management platform and implemented across hundreds of their sites across the **island**. Now, upon an alarm trigger, both recorded and live feeds of the **property** would be transmitted to Ademco's integrated monitoring platform. An immediate risk assessment is conducted to filter out possible false alarms, hence cutting down sharply on trips by guards to **site**. Risk is reduced. Carbon emission and costs are reduced.

John Keung Kam Yin

CEO

Building and Construction Authority

OCCUPANTS contribute 50 per cent of a building's total electricity consumption. This means that they have a crucial role to play in reducing a building's electricity usage and carbon footprint. The Building and Construction Authority's (BCA)'s 3rd Green Building Masterplan thus places greater emphasis on end-users and is supported by various user-centric Green Mark schemes, such as the Green Mark for Retail, Supermarkets and Office Interior. BCA's user-centric Green Mark schemes were designed to encourage tenants to proactively adopt environmentally friendly practices and implement green fit-outs to cut down on electricity consumption and waste. Landlords can also do their part to encourage tenants to embark on the sustainability journey through initiatives such as green leases, which are agreements between landlords and tenants on how buildings are to be improved, managed or occupied in a sustainable manner. BCA's Green Mark scheme credits the provision of bicycle lots and electric car charging lots within buildings, as well as projects with good connectivity to public transportation points. These aim to encourage building users to adopt a "car-lite" lifestyle in their day-to-day activities.

Pauline Goh

CEO, Singapore and South East Asia

CBRE Pte Ltd

IN response to ongoing global discussions about climate change and its impact on the environment, CBRE has committed to minimising that impact for our **company**, clients and communities. In Singapore, we recognised very early that it is crucial to put in place a programme to demonstrate our commitment to protecting the environment, particularly given the country's limits to resources and desire to take a regional leadership role on this matter, and the impact that real **estate** has in this regard. We set up a Green Office Committee in 2008 to educate staff and monitor performance on sustainable practices such as waste recycling, reducing paper usage and turning off equipment when not in use. The committee also coordinates Singapore's participation in CBRE's global annual Green Week programme - five full days of activities that promote sustainability education and activities such as visits to recycling plants, beach clean-ups, opting for the stairs over taking lifts and lunch-and-learn sessions, through which staff learn more about environmental issues. CBRE Singapore has maintained a Singapore Environment Council Eco-Office certification for the past four years and we are in the process of obtaining a Green Mark Interiors certification for the recent refurbishment of our offices in the Green Mark Platinum-certified Six Battery Road. CBRE has both a responsibility and an opportunity to influence the way buildings are built, sourced, managed, occupied and **sold**. Three of the buildings CBRE Singapore managed were listed as the Top 10 Most **Energy** Efficient Buildings by The Building & Construction Authority in 2014.

Yeoh Oon Jin

Executive Chairman

PwC Singapore

PwC is committed to respecting the environment, by raising awareness of our carbon footprint and taking measurable steps to reduce the environmental impact of our business **operations**. We measure and review our carbon footprint computation regularly. Over the recent months, our employees have joined hands with several local beneficiaries through the Nature Cares Programme as well as planted a rooftop garden for the elderly through our Corporate Responsibility project, Banda Street.

We believe that every citizen or organisation has a responsibility towards keeping Singapore green. At PwC, we have already taken the first step towards being "car-lite" by having cycling groups made up of enthusiasts who are comfortable with this mode of transport. To inculcate this habit, it must complement Singapore's National Cycling Plan to improve the education and infrastructure to support cycling as a mode of transport. To reduce waste at the corporate level, PwC has been controlling the level of printing by increasing the use of digital publications. Additionally, we continue to invest in new technology such as mobile apps and video conferencing which we believe will reduce unnecessary travel.

VR Srivatsan

Managing Director

Autodesk Asean

DIGITAL city models are a crucial tool in shaping cities of the future. These large-scale 3D models integrate big or meta data such as air flows, **energy** consumption, carbon emissions, **solar energy** potential, storm water flows, and pedestrian traffic. Urban planners can then create proposals for designs within existing surroundings and conduct time-based simulations for population growth, weather impact, traffic patterns and many other factors.

Adopting these models, we could design adaptive traffic light systems to give rapid transit buses green lights if they're running late so that they can catch up - resulting in more reliable bus services and encouraging ridership. Active traffic management systems - implemented in several countries including Germany and the UK - can also control the speed dynamic and help prevent start-stop traffic, increasing capacity of a fixed stretch of road. Design and construction, powered by BIM-enabled advanced design technologies, will make future cities more sustainable, resilient, economically vital and liveable.

Kimball Hall

Site Head and Vice-President, Manufacturing

Amgen Singapore

AS a biotechnology **company**, our main aim is developing and producing medicines that can reach patients around the world. With the launch of Amgen's Next-Generation Biomanufacturing in Singapore this week, we are taking a revolutionary approach to biomanufacturing. In line with the Sustainable Singapore Blueprint, our new facility will have the same annual output as a conventional facility but in a smaller building that has a significantly reduced impact on the environment.

Through the use of flexible, modular technologies, we estimate the facility will produce the same amount of product with more than 75 per cent reductions in the usage of **energy** and water and in carbon dioxide emissions, as well as reductions in solid waste and chemical usage.

Capitalising on major technological advances allows us to more quickly - and more sustainably - bring to patients innovative therapies that treat conditions such as diabetes, anaemia and cancer.

Saulo Spaolense

Country President

Schneider Electric Singapore and Brunei

BE it individuals or industries - one of the easiest ways to start reducing your carbon footprint is to understand how you use **energy**. Technology available today - such as **energy** meters and building management systems - enable the aggregation of data from multiple systems and building components, thus allowing **energy** managers to measure and manage **energy** usage across an entire building's portfolio. Closer to home, home automation systems allow owners to track **energy** use of individual

appliances or systems and, from there, they can adjust their lifestyles to consume less **energy** without sacrificing comfort.

As a leader in **energy** management, Schneider Electric enables our clients to make the most of their **energy**. For the past 41 years in Singapore, we've been helping customers improve **energy** efficiency and reduce their carbon footprint. As an example, most of our building clients are now Green Mark certified or on the way to obtaining certification. We have also been collaborating with the government in turning Singapore into a smarter, more efficient world city.

Herbert Vongpusanachai

Senior Vice-President and Managing Director

DHL Express Singapore

AS the world's largest logistics service provider, DHL has a responsibility to reduce our carbon footprint globally by cutting down and offsetting greenhouse gas emissions, and giving our customers the chance to do the same. These ideas underlie our GoGreen programme, which introduced the industry's first climate-neutral shipping services and saw the expansion of green vehicles in our fleet to 10,500 globally. These initiatives, together with more efficient ground **operations**, **energy** management in our real **estate** and greening of our IT equipment, have helped DHL offset more than 180,000 tonnes of CO2 globally. In Singapore, DHL's CO2 efficiency improved by 11 per cent in 2013, making us a more sustainable business locally.

Besides carbon emission, e-waste generation is also a growing issue in Singapore, with 60,000 tonnes of e-waste produced every year. That is why we partnered StarHub and TES-AMM to launch the REcycling Nation's Electronic Waste (RENEW) programme, which enables Singaporeans to safely dispose of unwanted electronic devices and equipment for free. This will alleviate our impact on the environment and improve Singapore's liveability.

Lee Meng Tat

CEO

Wildlife Reserves Singapore

WE believe conservation goes beyond the preservation of animals and their habitats, into areas such as the efficient use of natural resources and a reduction in waste production and carbon emissions. In the past four decades, we did our best to embed concepts of environmental sustainability into the development and **operations** of Jurong Bird **Park**, Night Safari and Singapore Zoo.

We took such efforts further when designing River Safari and included green features such as bioswales and a water and **energy** efficient management system. In addition, we did what we could to preserve existing wildlife habitats and also created new ones to support a greater biodiversity of flora and fauna. These efforts found endorsement and Wildlife Reserves Singapore is proud to receive the BCA Green Mark Platinum Award.

As an organisation that champions nature conservation, we applaud the Sustainable Singapore Blueprint, and hope it will spur the nation to do more for our living environment.

Karen Reddington

Regional Vice-President, South Pacific

FedEx Express

AT FedEx, transportation is the core of our business and there is no single solution for reducing our environmental footprint. We are committed to operating and innovating in new, more environmentally friendly ways. To do this, FedEx has set emissions goals including reducing aircraft emissions intensity by 30 per cent by 2020. Most of this reduction is due to replacement of older, less-efficient aircraft with Boeing 777-F planes which deliver 24 per cent better fuel economy. We are also increasing our vehicle efficiency with the support of new technology by teaming up with Nissan Motor to conduct the field test of its electric "zero-emission" e-NV200 EV prototype in Singapore in 2013. FedEx also has the EarthSmart® programme, which is our way of recognising and encouraging innovative initiatives to seek to improve our environmental performance. We have implemented a series of green initiatives and introduced a number of green solutions such as the introduction of carbon-neutral envelopes shipping and rollout of an Eco-Driving programme.

ART The world's first **solar** bike path - cyclists are seen here using the SolaRoad, the first road in the world made of **solar** panels, in Krommenie in the Netherlands.

CO abnamh : ABN AMRO Bank N.V. | abnagn : ABN AMRO Group N.V.

IN i35104 : Electric/Gas/Biofuel Vehicles | i351 : Motor Vehicles | iaut : Automotive | i814 : Banking | i831 : Financial Investments | i83101 : Investment Banking | ibnk : Banking/Credit | ifinal : Financial Services | iinv : Investing/Securities

NS gsust : Sustainable Development | gcat : Political/General News | genv : Environmental News | gpir : Politics/International Relations | gplan : Urban Planning/Development | gpol : Domestic Politics

RE singp : Singapore | austr : Australia | apacz : Asia Pacific | asiaz : Asia | ausnz : Australia/Oceania | seasia : Southeast Asia

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