

Beyond Green to Blue: Changing Behaviour to Cut Energy, Water and Waste for the Health of People and the Planet



**By Ken Hickson
Sustainable Built Environment Conference
Singapore
6 September 2016**



Beyond Green to Blue:

Changing Behaviour to Cut Energy, Water and Waste for the Health of People and the Planet

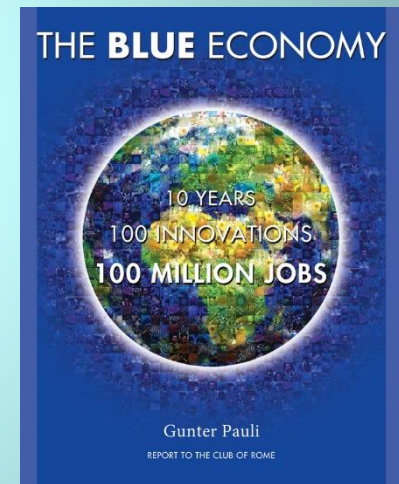
- We have the technology, the systems and the materials needed to cut emissions of greenhouse gases in our cities and our buildings, but we need to change our behaviour and habits.
- We must make the most efficient and sustainable use of all resources – energy, water, waste and people – for the health and well-being of people and the planet.
- How can we do this? Case studies/best practices from Singapore, Southeast Asia and further afield.





Beyond Green to Blue

“The Blue Economy respond to basic needs of all with what you have, introducing innovations inspired by nature, generating multiple benefits, including jobs and social capital, offering more with less.”



Beyond Green to Blue:



Make the most efficient use of all resources:
Energy, Water, Waste & Human Resources

- Low carbon to zero carbon
- Zero waste – waste as a resource
- Clean energy – renewable
- Water management – desalination
- Innovation & productivity

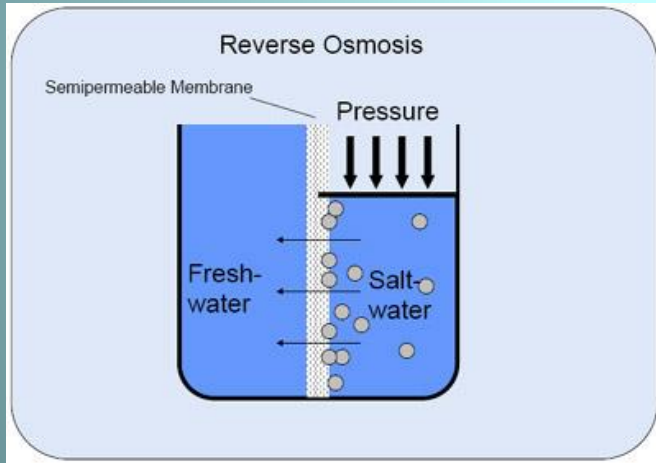




Beyond Green to Blue:



Blue Economy & ZERI:
First of 100 innovations: Water production and management. Vortex machine results in reduced running costs, energy saved, chemicals eliminated and existing investments generating higher return. The challenge for mainstream industries is that the successful integration of the vortex into existing facilities requires a new core competence: fluid dynamics.





Beyond Green to Blue:



Coffee, whiskey, mushrooms and trees
Aurora Sustainability project in Scotland



Waste is not wasted. Waste generates quality food at lower cost, eliminating transportation, offering fresh produce locally, while reducing the load on the landfill.

Cafes and restaurants may be delighted to have their image extended to the quality of the mushrooms farmed on their waste while generating jobs.

The model is based on recovering coffee waste and whisky distilleries heat, producing and supplying dry and fresh mushrooms to increase Scottish biodiversity, food resilience, water quality, flood alleviation, carbon storage, animal welfare, land restoration.



Beyond Green to Blue:



Data-Driven Solutions. People-Powered Results
Products: Our urban innovation software & programs

D4SC helps people create smarter cities, using technology to create a 'citizen-centric' approach to urban design.



We are Design for Social Change (D4SC), a company that applies data and human action to transform cities



Local commitment:

Sustainable Singapore Blueprint

A Vibrant and Sustainable City

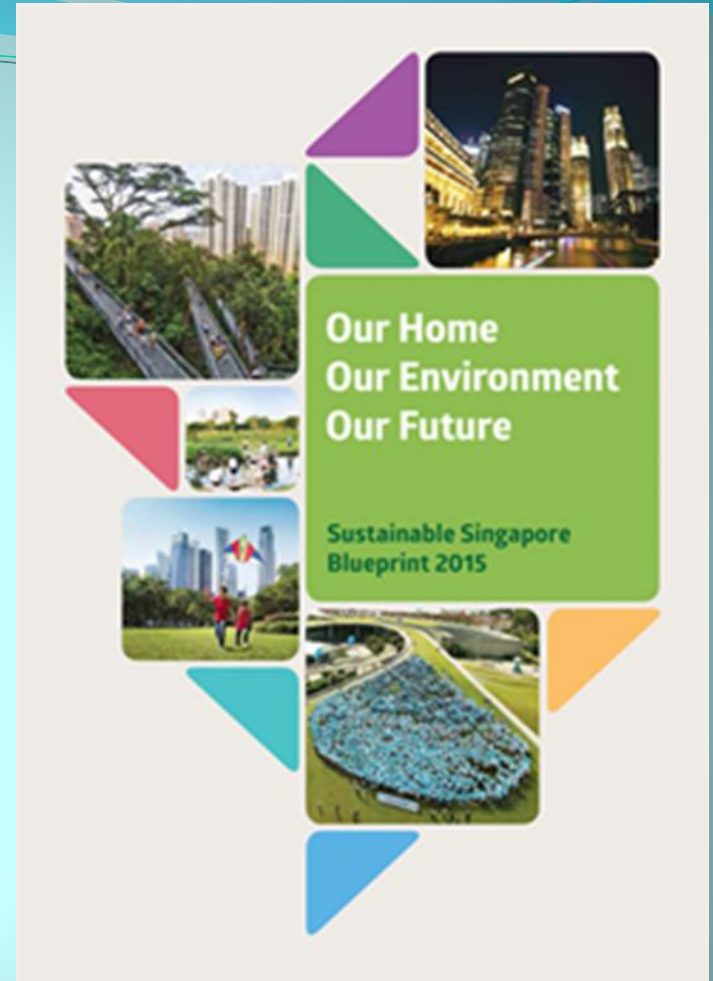
“Eco-Smart” Endearing Towns

A “Car-Lite” Singapore

Towards a Zero Waste Nation

A Leading Green Economy

Resource Sustainability



blue
by design

abc
carbon

SASA
Sustain Ability Showcase Asia

Singapore

Now most of its energy from gas and oil.

Could 20% of electricity come from solar?

80% of energy consumed by industry

Energy Efficiency

Electric Vehicles

Green Buildings

Waste to energy

Solar – SERIS

Future Cities Laboratory







- Little Red DOT



International Green Building Conference

30% of global emissions of green house gases come from buildings



<h3>COST TO EMPLOYERS</h3>  <p>£30 billion Poor mental health costs UK employers £30 billion a year¹</p>	<h3>LIGHTING</h3>  <p>46 minutes Office workers with windows sleep an average of 46 minutes more per night⁴</p>
<h3>AIR QUALITY</h3>  <p>8-11% Better air quality can improve employee productivity by 8-11%²</p>	<h3>NOISE</h3>  <p>66% Office workers' performances drops by 66% when exposed to distracting noise⁵</p>
<h3>THERMAL COMFORT</h3>  <p>4 and 6% Employees experience 4% reduction in performance at cooler temperatures & 6% at warmer temperatures³</p>	<h3>INTERIOR LAYOUT</h3>  <p>69% Over two thirds of Generation Y workers report an increase in productivity from 'funky' office fit-outs⁶</p>

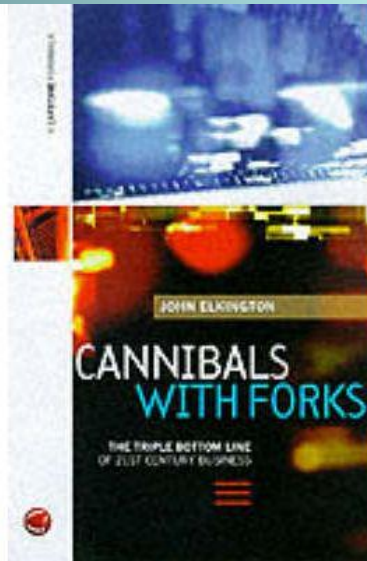
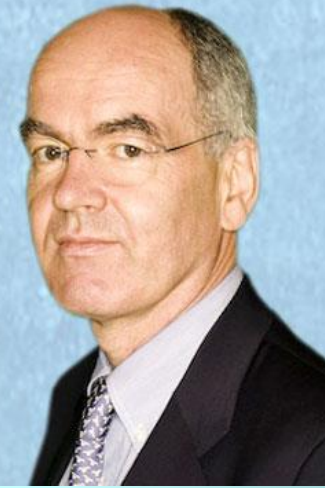
Local commitment

CSR – what it means for you

Formerly known as Singapore Compact for Corporate Social Responsibility, Global Compact Network Singapore (the Compact) encourages and facilitates the progress of companies that are committed to aligning their operations and strategies with the United Nations Global Compact's (UNGC) 10 universally accepted principles in the areas of human rights, labour, environment and anti-corruption.



In conversation with
JOHN ELKINGTON
The father of Triple Bottom Line

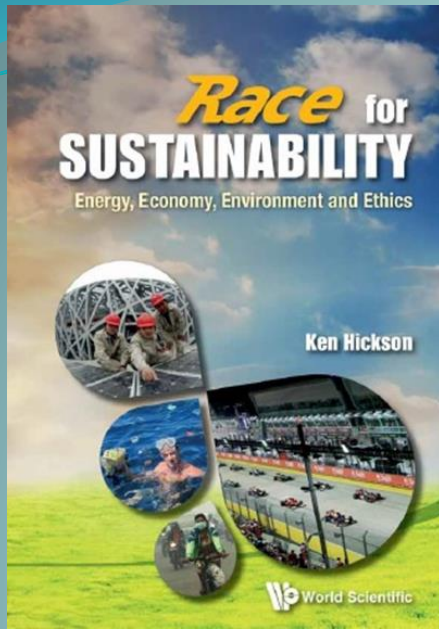


The Triple Bottom Line –

People

Planet

Profit



The Four E's of Sustainability:

- Environment
- Economy
- Energy
- Ethics

Effectively managing all resources – people, power, waste, water

Nothing goes to waste

Sustainability – Innovation - Productivity





Handwashing for health in India





Net Effect:
Turning
discarded fishing
nets to Carpet
tiles

Interface[®]



Mission Zero: Towards a more sustainable way of Business

In 1994, Interface Founder Ray Anderson challenged us to pursue a bold new vision: "Be the first company that, by its deeds, shows the entire world what sustainability is in all its dimensions: people, process, product, place and profits – and in doing so, become restorative through the power of influence". The Interface journey toward sustainability has been a momentous shift in the way we operate our business and see the world. Move through these pages for a closer look at our progress, and find out how to get involved in our Mission Zero[®] journey.



- TWO homegrown companies have made it to the list of top 10 most sustainable corporations in the world.

This makes Singapore the only Asian city to have representation in the top ranks alongside the Western regulars.

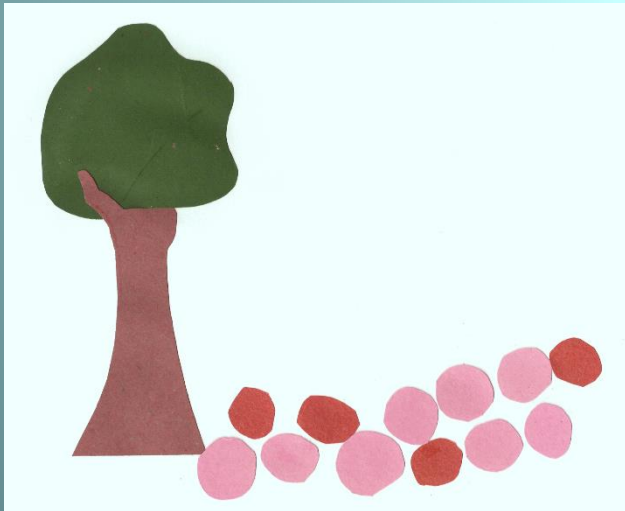
Telco StarHub has clinched eighth position, while property developer City Developments Ltd (CDL) came in 10th.

The results were announced on Thursday during the World Economic Forum in Davos, Switzerland by Corporate Knights, a Toronto-based media and investment advisory company.

Business Times, Singapore January 2016

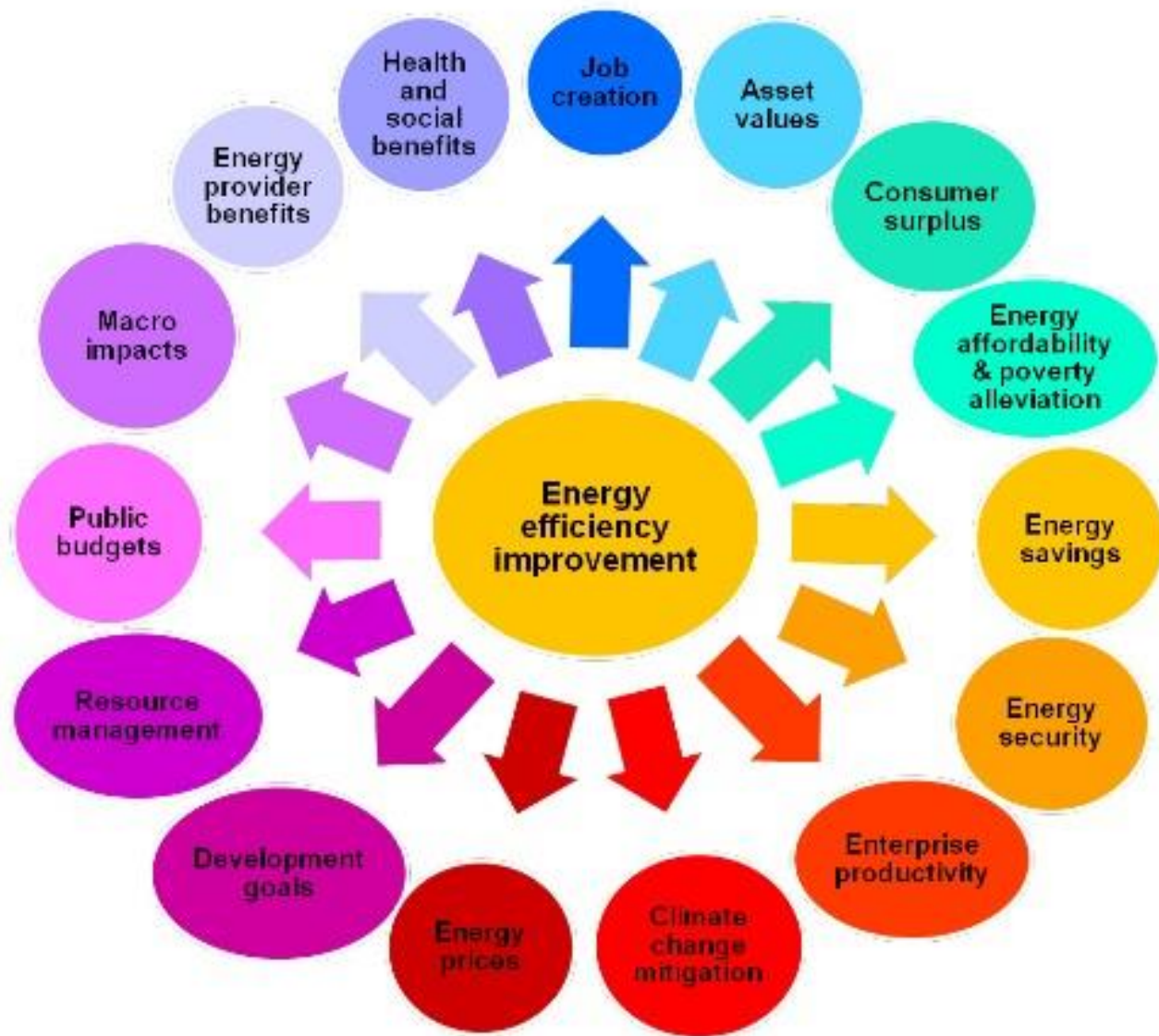


12 Steps to Sustainability for Business



1. **Commit to the sustainability journey** — this must come from the top. Set targets and appoint teams.
2. **Get good advice** — there are good consultants around to advise and assist.
3. **Get certified** — Green Biz Check, Eco Office, Green Mark, CRI, Green Label, Eco specifier, ISO 14001, 20121, 50001. GRI or Dow Jones Sustainability Index.
4. **Engage an energy auditor** — call on ESCO, or consultant to advise you.
5. **Become energy efficient** — look into all the ways you could become more resource efficient.
6. **Bottom line benefits** — becoming sustainable can save and make money. the business.

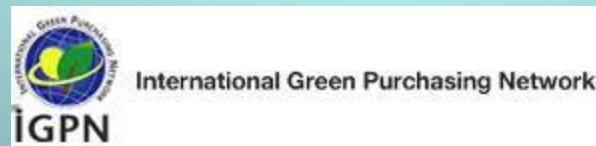
Multiple benefits of energy efficiency





Top Ten Tips for Sustainable Events

1. Access for everyone
2. Look after local area
3. Energy & Water
4. Public transport – cycling, walking
5. Reduce & Reuse
6. Responsible sourcing
7. Food & Beverage
8. Giveaways – useful, sustainable
9. Make it easy to recycle
10. Health, safety, security



Making Events Sustainable



SWITCH OFF,
TURN UP

Having Fun
Appreciating art
Saving 247,000 kWh of energy over
3 weeks
Sustainability in action



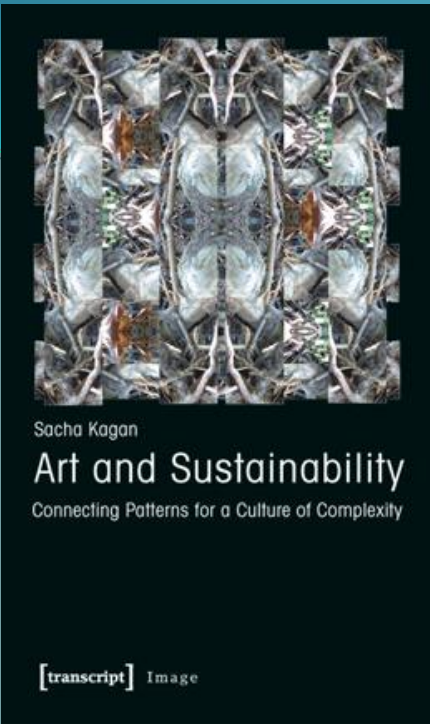
How do we Communicate Sustainability?



**80% of sustainability
measures in an
organization are
dependent on
effective
communication**

- Media – articles, videos
- Social media
- Case studies
- Content for websites
- Newsletters
- Networking
- Talks
- Through NGOs
- Community groups
- Events
- Best practices - business
- Country & city cases





vous invitent au **Midi de la Recherche**

**"Aesthetics of Sustainability:
 Fostering a sensibility to complexity"**
 By Dr. Sacha Kagan

Wednesday, 8th June 2011 | 13:00 to 15:00 | Room 342 (PLG)

ABOUT THE TOPIC...

Away from mainstream understandings of the modern individual artist and of aesthetics, the emergence of cultures of sustainability may be facilitated by artistic thinking and practices based on a sensibility to complexity, combining insights from John Dewey's aesthetics, Gregory Bateson's "sensibility to the pattern which connects", David Abram's "animistic phenomenology" and Edgar Morin and Basarab Nicolescu's transdisciplinary perspectives on complexity. The relevance of these theoretical insights will also be illustrated with an example from the field of ecological art.

This presentation will be summarizing a few of the topics analyzed in Sacha Kagan's upcoming book: *"Art and Sustainability: Connecting Patterns for a Culture of Complexity"*, transcript Verlag, 2011.

Following the presentation, a systems thinking game called "triangles" (designed by Linda Booth-Sweeney and Dennis Meadows) will be played with the participants. The game will allow us to glimpse at an embodied cognition of complex systems.

ABOUT DR. DES. SACHA KAGAN...

Research Associate at the Institute of Cultural Theory, Research and the Arts (ICRA/IKK), Leuphana University Lüneburg, Sacha Kagan founded the International level of Cultura21, Network for Cultures of Sustainability, as well as the International Summer School of Arts and Sciences for Sustainability in Social Transformation (ASSIST). The focus of his research and cultural work lies in the trans-disciplinary field of arts and (un-)sustainability. M.A. in Cultural Economics (Erasmus University Rotterdam). Graduate of Sciences Po Bordeaux, teaching sociology of culture and the arts, he completed in 2011 his PhD defense with summa cum laude at the Leuphana University Lüneburg, with a thesis on the subject of culture, the arts and sustainability under the perspective of complexity. Personal website at: <http://sachakagan.wordpress.com>

Entrée libre et gratuite

Inscriptions via ce lien : <http://aphinx.icn-groupe.fr/recherche/inscription/midi/rechskagan/questionnaire.htm>



Let artists shape a resilient city

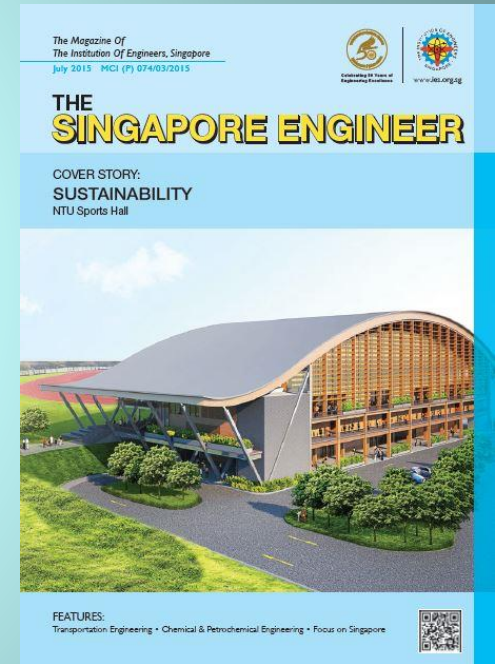
March 2016, the Marina Bay waterfront will be illuminated again into a spectacular showcase of light and colour.



Sustainable Cities go Beyond Green to Blue

Talk in Taipei

Articles around the world





Royal Mail

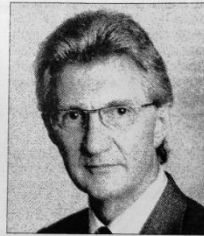
Companies could slash a third from energy bills

Sophie Foster

AUSTRALIAN companies are spending 25-35 per cent more than they need to on energy bills, according to the sustainability strategist who helped Britain's Royal Mail trim more than \$44 million from its carbon-based costs.

"We've been doing this quite well for many years without the political debate that you guys have been going through," said Dr Martin Blake, a guest speaker at next Tuesday's International Green Awards Summit in Brisbane.

"If you actually consider how much low-hanging fruit there is within Australian industry and business, it's quite a



SAVINGS: British energy expert Dr Martin Blake.

large amount. I would say that most businesses which have not done a fairly aggressive energy reduction program are

almost certainly sitting on anywhere between 25-35 per cent of waste in terms of energy that could be removed at a profit."

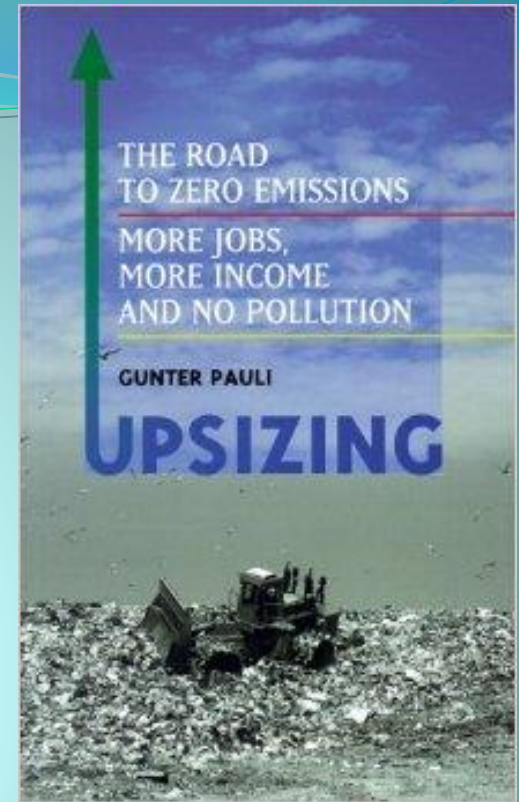
Dr Blake was with the Royal Mail for about eight years, during which time a carbon reduction program eliminated £30 million (\$44 million) worth of energy, using measures with payback periods normally focused on a six-week to six-month period.

"We only did things that had payback periods within a two-year time span," said Dr Blake, who travels to Australia regularly to help companies with energy reduction programs.

"There are quite a few on the journey (in Australia)," he said.

Continued P42 >>

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THE ROAD TO ZERO EMISSIONS
MORE JOBS,
MORE INCOME
AND NO POLLUTION

GUNTER PAULI

UPSIZING



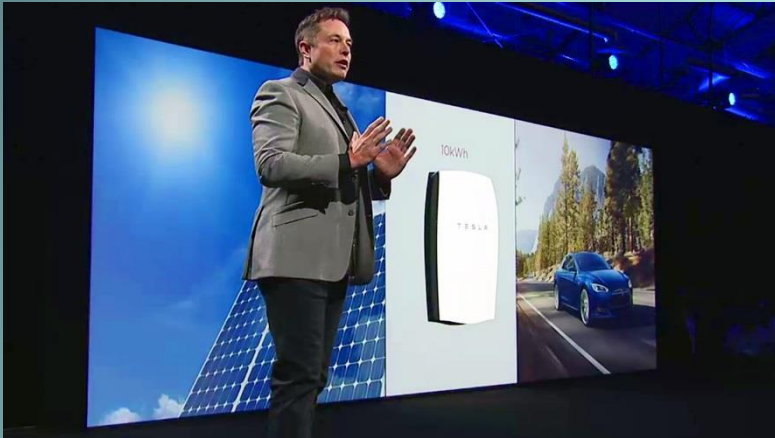
International Green Purchasing Network



Sustain Ability Showcase Asia



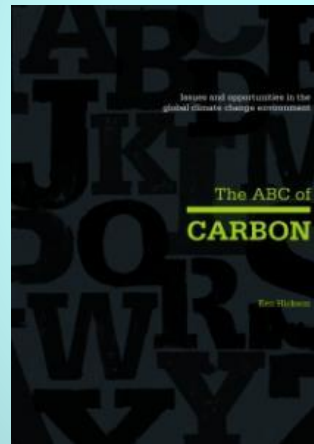
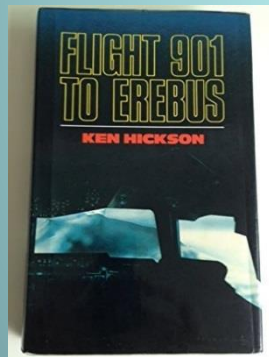
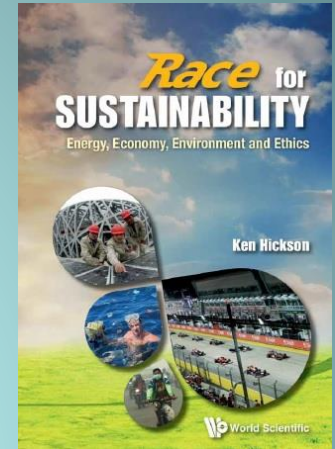
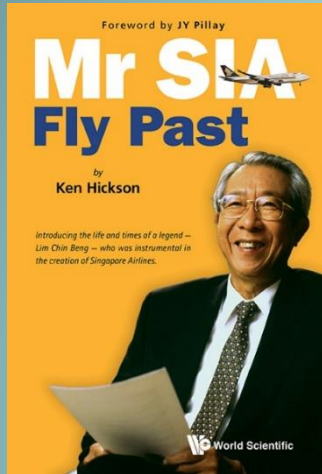
Transformational



Electric vehicles that perform
Solar energy
Energy Storage



Communicating through Words and Deeds



Kenhickson@sustain-ability-showcase.com

