What motivates environmental behaviour change

RPS
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BACKGROUND

Environmental requirements for infrastructure planners, designers, builders, operators and maintainers to actively engage with environment practitioners to determine environmental best practice and innovation are largely in place through project planning approvals, but can this be taken further? The publication of case studies is sometimes limited to environment practitioners and this knowledge sharing could be further enhanced by wider industry forums, publication on company websites, incorporation into training programs and further internal communication. Industry benchmarks such as the Australian Large-scale Renewable Energy Target and Small-scale Renewable Energy Scheme will continue as they are currently legislated out to 2030. In the meantime, enhanced technology transformation is ultimately driving down the cost of renewables in Australia and not regulation, through an ever-changing political agenda.

Over the last 30 years many psychologists and sociologists have explored the roots of direct and indirect environmental action. The answer to the question 'what motivates environmental behaviour?' is extremely complex. Many conflicting and competing factors shape daily environmental decisions and actions. There are several factors that influence our decisions towards pro-environmental behaviour, including behaviour change interventions, social media and awareness campaigns. Consumers could be called to action by tackling the national consciousness.

MODEL OF RESPONSIBLE ENVIRONMENTAL BEHAVIOUR

In 1986, *Hines, Hungerford and Tomera* published their Model of Responsible Environmental Behaviour. They did a meta-analysis of 128 pro-environmental behaviour research studies and found the following variables associated with responsible pro-environmental behaviour:

Knowledge of issues: The person must be familiar with the environmental problem and its causes.

Knowledge of strategies: The person must know how they should act to lower their impact on the environmental problem.

Locus of control: This represents an individual's perception of whether they have the ability to bring about change through their own behaviour. People with a strong locus of control believe that their actions can bring about change, while others feel their actions are insignificant and feel that change can only be brought about by others.

Attitudes: People with strong pro-environmental attitudes were found to be more likely to engage in pro-environmental behaviour, yet the attitudes and actions proved to be weak.

Verbal Commitment: The communicated willingness to take action also gave some indication about the person's willingness to engage in pro-environmental behaviour.

Individual sense of responsibility: People with a greater sense of personal responsibility are more likely to have engaged in environmentally responsible behaviour.

Behavioural incentives: Incentives can reinforce and support pro-environmental behaviour (e.g. Key Performance Indicators determined from monetary savings, meeting environment or sustainability technical standards of accreditation, social desirability, or quality of life).

ACTION REQUIRED

Regulators could more widely enforce the application of national rating systems such as the Infrastructure Sustainability Council of Australia, Green Star and NABERS in planning approvals. The ANZECC guideline requirements could be tailored to each relevant waterway in project planning approvals, however additional resources to implement this may be required. Improving the implementation of evidence-based practice depends on behaviour change, potentially through enforcement. Behaviour change interventions are fundamental to the effective implementation of environmental controls. Economic advantages and cultural values can motivate people to act pro-environmental without doing it out of environmental concern. Convenience and comfort is another factor that can unfortunately hinder or act as a barrier, e.g. cycling to work in the rain, versus the comfort of driving to work. A person's values are influenced by the microsystem which is comprised of the immediate social net – family, neighbours, peer-groups. *Diekmann and Preisendoerfer (1992)* explain the discrepancy between environmental attitude and pro-environmental behaviour by using a low-cost/high cost model. They propose that people chose the pro-environmental behaviour that demands the least cost (e.g. recycling), but do not necessarily engage in activities that are more inconvenient car-pooling and flying less (hence airline carbon offsets). They found that bigger lifestyle sacrifices are less favourable then more stringent building codes that didn't directly impact the individual. The need for emotional involvement also explains why many environmental campaigns have been so successful. Humans are very good at perceiving sudden drastic changes but are often unable to perceive slow, incremental changes.

Industry partnerships with educational institutions are becoming a necessary need for environmental progress. For example the Monash Energy Materials and Systems Institute (MEMSI) is calling for energy companies to partner in the creation of an Industrial Transformation Training Centre (ITTC). The Australian Research Council (ARC)-funded ITTC scheme aims to develop industry-focused Masters and PhD level graduates while addressing industry partners' interests. MEMSI's proposal will involve the establishment of an ITTC focusing on remote grids and renewable energy deployment.

ENVIRONMENTAL KEY PERFORMANCE INDICATORS

There are a plethora of environmental and sustainability guidelines available across Australia and New Zealand in various industries. It's possible to use Environmental Key Performance Indicators (KPIs) to provide businesses with a tool for measurement. They are quantifiable metrics that reflect the environmental performance of a business in the context of achieving its wider goals and objectives. KPIs help businesses to implement strategies by linking various levels of an organisation (business units, departments and individuals) with clearly defined targets and benchmarks.

The impact of environmental matters on business performance is increasing and will continue to do so. For example, poor management of energy, natural resources or waste can affect current performance; failure to plan for a future in which environmental factors are likely to be significant may risk the long-term value and future of a business. Government environmental reporting

guidelines could be further developed to enforce and assist businesses to utilise environmental KPIs to adequately capture the link between environmental and financial performance.

CONCLUSION

Many conflicting and competing factors shape our daily decisions and actions. Developing a model that incorporates all the factions behind pro-environmental behaviour might not be feasible, however fostering a *'pro-environmental consciousness'* in infrastructure development, consumer behaviour and general societal values is possible. Interventions and policies to change environmental behaviour can be implemented from the grass roots level upwards through emotional campaigns, right through to the development of quantifiable metrics that reflect the environmental performance of a business that could be further driven and benchmarked by government.

REFERENCES

Anja Kollmuss & Julian Agyeman (2002) Mind the Gap: Why do people act environmentally and what are the barriers to pro-environmental behaviour? Environmental Education Research, 8.3, 239-260. Diekmann and Preisendoerfer, P. (1992), as translated in Anja Kollmus & Julian Agyeman (2002).

Hines, J.M, Hungerford, H.R & tOMERA, A.N. (1986-87). Analysis and synthesis of research on responsible pro-environmental behaviour: a meta-analysis, *The Journal of Environmental Education, 18(2), pp.1-8.*

Michie et al. Implementation Science 2011, 6.42 The behaviour change wheel: A new method for characterising and designing behaviour change interventions.

Environmental Key Performance Indicators Reporting Guidelines for UK Business (2006), Department for Environment, Food and Rural Affairs.

WHAT MOTIVATES ENVIRONMENTAL BEHAVIOUR CHANGE?

PRESENTED BY LANA ASSAF - MEIANZ

Hines, Hungerford and Tomera - Model of Responsible Environmental Behaviour

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Verbal Commitment: The communicated willingness to take action also gave some indication about the person's willingness.

Individual sense of responsibility: Greater personal responsibility.

Altruism, Empathy and Prosocial Behaviour Models

- Attitude and values - motivation
- Possibilities to act ecologically - infrastructure and economic factors
- Perceived feedback about ecological behaviour - Intrinsic or extrinsic
- Knowledge – modifier of attitudes and values

Underpinned by Maslow's hierarchy of human needs.

If people are asked to rate (rather than rank) the severity of a variety of local and global problems, pro-environmental issues always rank high no matter if the country is affluent or not.

Reference: Anja Kollmuss & Julian Agyeman (2002) Mind the Gap: Why do people act environmentally and what are the barriers to pro-environmental behaviour?, Environmental Education Research, 8.3, 239-260.

Image Source: https://en.wikipedia.org/wiki/Maslow%27s_hierarchy_of_needs

Factors that may influence environmental sensitivity

- Childhood experiences in nature
- Experiences of environmental destruction
- Pro-environmental values held by the family
- Pro-environmental organisations
- Role models (Teachers, Environment Practioners)
- Education (Social Media Campaigns, Ecotourism)
- Industry guidelines, legislation, contractual requirements (KPIs: ISCA, Green Star, NABERS)

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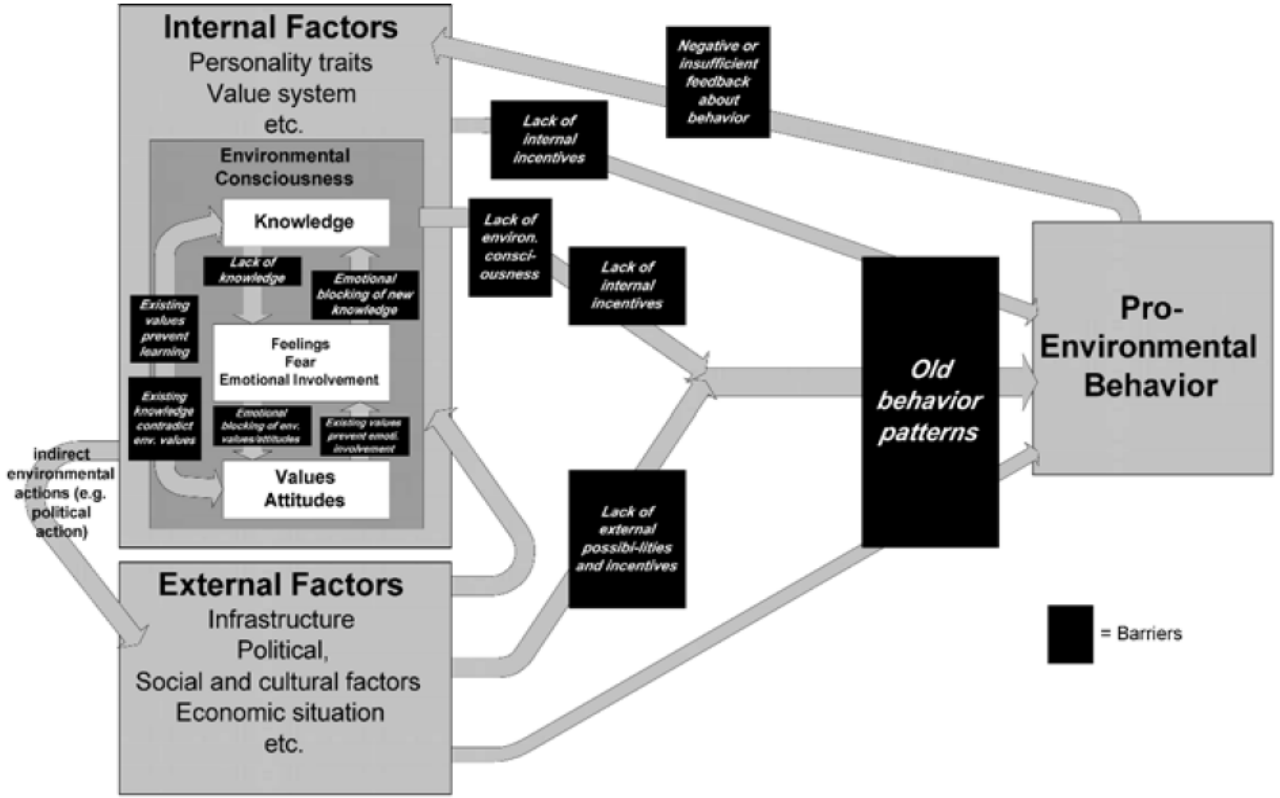
Attitudes – Low cost versus high cost

- People choose pro-environmental behaviours that demand the least cost, time and effort – infrastructure for recycling versus bigger lifestyle changes: driving or flying less. Construction time and cost restraints.
- Political changes are more widely accepted if enforced through stringent building codes or fuel taxes.
- Non-immediacy of many ecological problems. The need for emotional involvement in immediate campaigns for ‘charismatic mega-fauna’ versus climate change.
- Slow and gradual destruction - Complex systems.

Image Source: http://asia-backpackers.com/about-us-2/carbon-offsetting/

Model of pro-environmental behaviour (*Kollmuss & Agyeman*)

Reference: Anja Kollmuss & Julian Agyeman (2002) Mind the Gap: Why do people act environmentally and what are the barriers to pro-environmental behaviour?, Environmental Education Research, 8.3, 239-260.



Fostering Innovation for Green Growth

- Investing in energy and environmental R&D is not enough.
- Carbon taxes are not enough to stimulate green innovation.
- Not all policies for green innovation are expensive. Removing regulatory barriers to the growth of new firms can help spur entrepreneurship and generate new business models that challenge incumbent firms
- Changing consumer behaviour is important, and it works. Households charged for their water consumed 20% less water than those who are not charged.
- Environmental regulations and taxes have thus far driven firms' environmental innovation more than market demand.

http://www.oecd.org/australia/fosteringinnovationforgreengrowth.htm

Australia – The Good

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Environment Institute of Australia and New Zealand Inc.

Nature Conservation Council
The voice for nature in NSW

ISCA
2017
Annual Infrastructure Sustainability Conference & Awards
17th-19th October
It's infrastructure, but not as we know it.

NABERS

Green Star
Design & As Built v1.2
Submission Guidelines

sba
Sustainable Business Australia

NSW EDO
DEFENDING THE ENVIRONMENT
ADVANCING THE LAW

EPF

UNITED NATIONS PARIS CLIMATE AGREEMENT SIGNING CEREMONY 22 APRIL 2016

AUSTRALIAN CONSERVATION FOUNDATION

GECA

CONVENIENCE AND IMPULSE RETAILING

Woolies to partner with container deposit scheme

By Lucy Marrett on October 12, 2017 in Beverages, Insights, News

Woolworths will partner with the NSW government to offer the first can and container refund scheme in NSW.

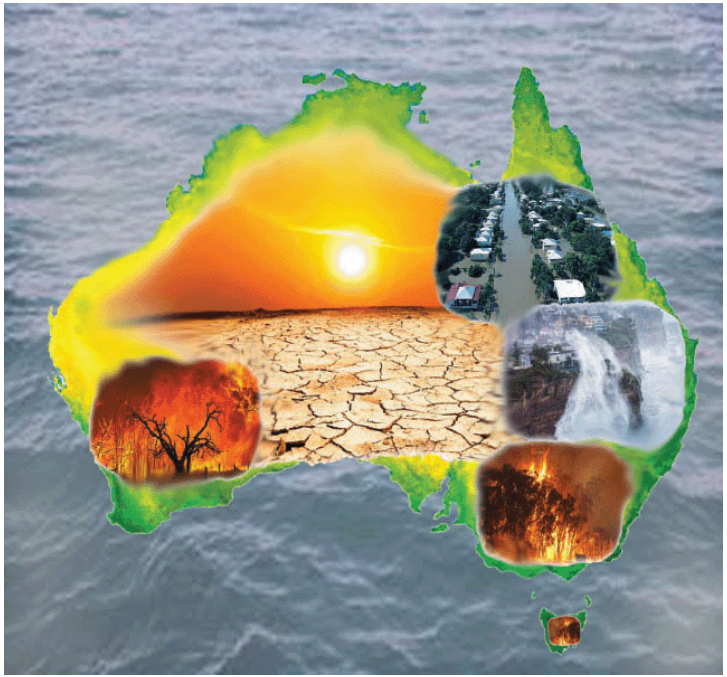
The 'Return and Earn' scheme is being introduced as a way to clean up the beaches and parks across the state.

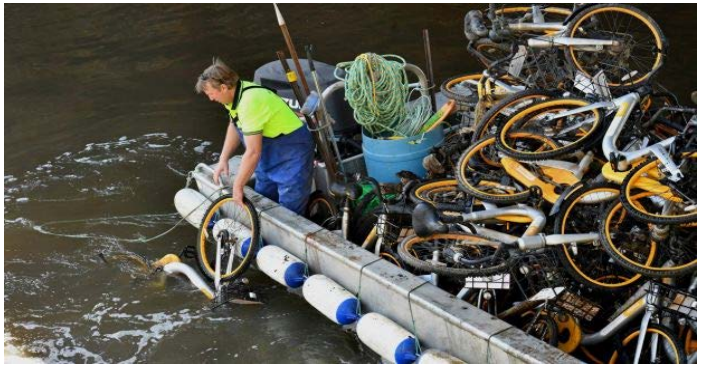
The scheme will be launched on December 1 and provide consumers with 10 cents for every eligible beverage container that is returned to be recycled.

energy efficiency COUNCIL

CLEAN ENERGY COUNCIL

Australia – The Bad





Sources: https://www.acf.org.au/stop_adani
http://www.theage.com.au/victoria/strict-new-rules-slapped-on-obikes-after-councils-lose-patience-with-dumping-20171016-gz2adi.html

Australia – The Ugly *(Wicked Problem v Wicked Solution)*

Could Turnbull succeed where Abbott failed, and kill large scale wind and solar?

reneweconomy.com.au /could-turnbull-succeed-where-abbott-failed-and-kill-large-scale-wind-and-solar-94142/

By Giles Parkinson

13/09/2017

More reports that the federal Coalition government is seeking to take the "clean" out of the proposed clean energy target and try to find a way to structure it to support new coal-fired generators confirms the renewable energy industry's worst fears.

Namely, that Prime minister Malcolm Turnbull is seeking to achieve what his predecessor Tony Abbott only managed to do for a few years: bring an effective stop to large-scale wind and solar projects in Australia.

20 Oct 2017
Australian Financial Review, Australia

Author: Ben Potter • Section: General News • Article type : News Item
Audience : 47,179 • Page: 4 • Printed Size: 264.00cm² • Market: National
Country: Australia • ASR: AUD 5,340 • Words: 556 • Item ID: 861831706

NEG won't stop us: wind farm boss

Ben Potter

The National Energy Guarantee won't stop the march of low-cost renewable energy, but it could squeeze out innovation and make the shift a bit more tumultuous if the states don't get on board, the developer of a giant wind and solar project in north Queensland says.

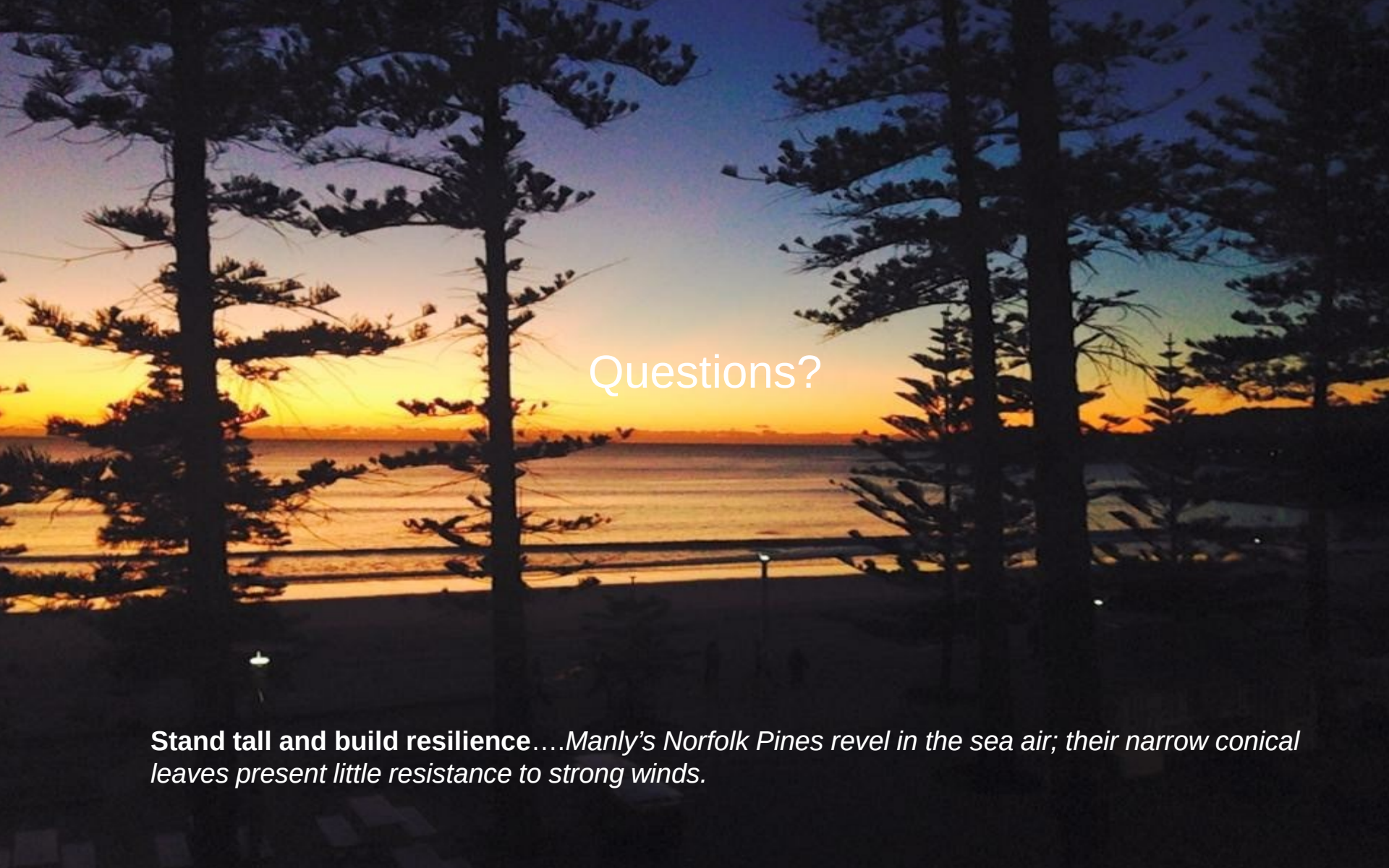
Roger Price – chairman of Windlab, an ASX-listed developer of wind farms that financially committed to a $160 million wind, solar and battery farm in north Queensland the day after the Turnbull government announced the NEG – said renewable energy projects would continue to be driven by state-based renewable energy schemes, the retirement of older coal plant and the rapidly falling cost of the technology.

Roger Price says it is uneconomic to retrofit retiring coal plants. PHOTO: LOUIE DOUVIS

power grid. It is part of a giant 1200-megawatt project at Kennedy Energy Park. The Clean Energy Finance Corporation and the Australian Renewable Energy Agency are helping to fund the initial 43MW of wind, 15MW of

He said the agreement of the states was needed to rewrite the rules of the National Electricity Market and it was hard to see that happening given the big differences between them and the Turnbull government on renewable energy targets and emissions reduc-

Photo Source: http://www.abc.net.au/news/2015-07-23/bayswater-power-station.jpg/6641472



Stand tall and build resilience….*Manly's Norfolk Pines revel in the sea air; their narrow conical leaves present little resistance to strong winds.*