

Sustainable development

How does Australian business reconcile environmental obligations with competitive advantage?

MICHAEL SMITH AND KARLSON HARGRAVES BELIEVE THE KEY IS EFFECTIVE ENVIRONMENTAL MANAGEMENT THROUGH PROCESS INNOVATION (ECO-EFFICIENCIES) AND PRODUCT DIFFERENTIATION (ECO-INNOVATION). DON HENRY REGARDS CEOs' COMMITMENT TO THE ENVIRONMENT AS THE MOST IMPORTANT DRIVER OF SUSTAINABLE BUSINESS AND SAYS THAT COMMITMENT IS A REFLECTION OF THE CEO COMPENSATION PACKAGE. JACK PEZZEY MAINTAINS THAT POLLUTION CONTROL REQUIRES THE USE OF MARKET MECHANISMS SUCH AS TAXES OR TRADEABLE PERMITS. THE FOLLOWING THREE POSITIONS REPRESENT THE MAINSTREAM OF DIVIDED OPINION ON MANAGING THE ENVIRONMENT. WHAT DO YOU THINK?

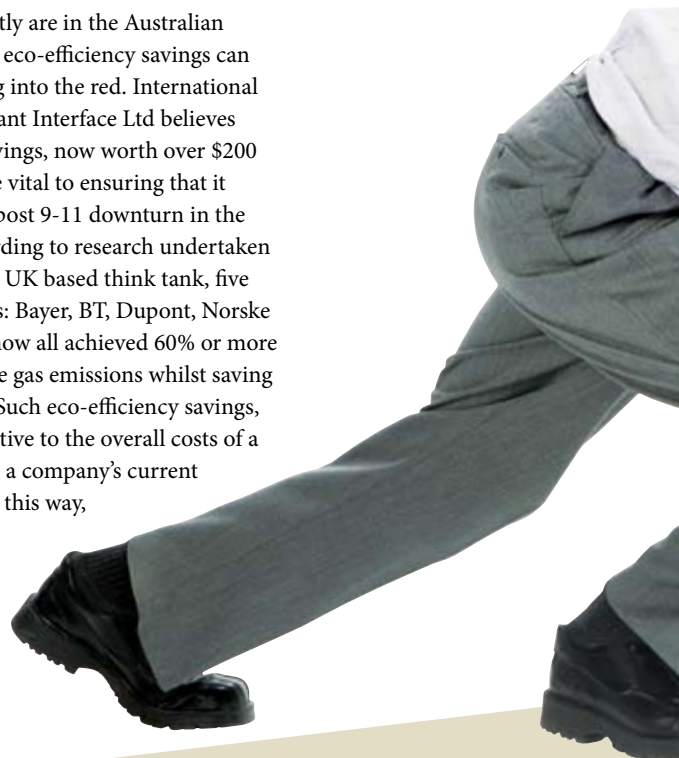
Improving competitiveness through effective environmental management

MICHAEL SMITH AND KARLSON HARGROVES
The Natural Edge Project

In 2006 Australia's manufacturers face increasingly tough global competition. Since the fall of the iron and bamboo curtains, hundreds of millions of low-paid workers have been added to the world's workforce. Hence, competing on low wages is a race that no Australian company can win. This together with a growing number of directives and regulations associated with minimising environmental impact are becoming leading proponents to drive industry to innovate creative solutions.

Companies need to find new ways to improve their competitive advantage, this can be done through activities that both reduce operational costs through greater efficiency and create innovative ways to deliver higher quality 'greener' products that command premium prices. There are many ways that effective environmental management can help companies realise this through process innovation (eco-efficiencies) and product differentiation through greener manufactured products (eco-innovation) (See Table 1). When profit margins are being

squeezed, as they currently are in the Australian manufacturing industry, eco-efficiency savings can prevent companies going into the red. International carpet manufacturing giant Interface Ltd believes that its eco-efficiency savings, now worth over \$200 million per annum, were vital to ensuring that it survived the significant post 9-11 downturn in the US carpet market. According to research undertaken by The Climate Group, a UK based think tank, five multinational companies: Bayer, BT, Dupont, Norske Canada and IBM, have now all achieved 60% or more reductions in greenhouse gas emissions whilst saving in total over \$5 billion¹. Such eco-efficiency savings, while seeming small relative to the overall costs of a business, can be equal to a company's current profit margin. Looked at this way, the value of such savings suddenly make sense to pursue to busy CEOs.



1 Carbon Down, Profits Up (2005) The Climate Group (www.theclimategroup.org/)

innovation

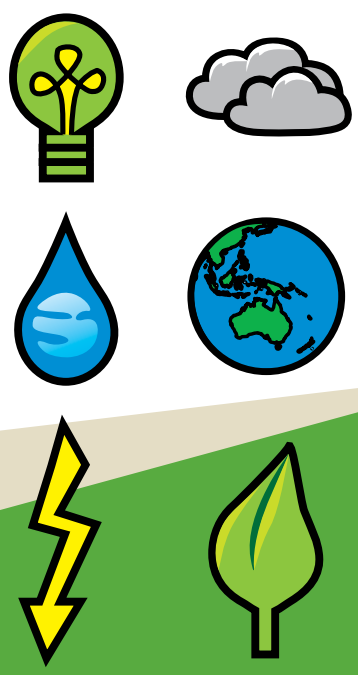
Also effective environmental management can help companies to eco-innovate to create better quality and 'greener' products that differentiate them in the global marketplace. Companies that do this are succeeding. For instance, innovation in lighter car parts to help cars become more fuel efficient had boosted Australian exports in car components to almost \$1.7 billion per annum by 2004 – an increase of one third since 1998. Australian owned Caroma manufactures and exports products – including the 6/3 litre dual flush toilet system, which it developed – to over 30 countries. Australian company Reln Pty Ltd has been one of Australia's fastest growing manufacturing companies in recent years partly because they have led the use of recycled plastics in their products. In addition, now many large international manufacturing companies are taking a strong lead on environmental management from the CEO level down and this is helping to support efforts from Australian affiliates. Leading global manufacturers including Toyota, General Electric, Interface Ltd, have made strong environmental commitments for their international operations.

Some companies however are not investing in eco-efficiencies or 'greener' products because the payback on these investments is not quick enough to satisfy markets demands for constantly increasing quarterly profits. ANU academic, Jack Pezzey, points

out the development of emissions trading mechanisms can provide effective ways to control pollution and provide additional rewards to companies for improved environmental performance. This coupled with eco-efficiency can provide a double dividend. On the one hand the more efficient use of water, energy and materials will reduce operational costs and reduce pollution. On the other hand, such reductions in consumption and pollution result in reduced emissions of gases such as CO₂ that can be verified and rewarded by issuing tradeable permits

or credits. Australian Conservation Foundation's Executive Director, Don Henry, points out that with current practices in CEO remuneration packages focused on short term financial gains it is difficult to mount a case to implement eco-efficiencies or eco-innovations which have a longer term payback. In his article (see p13) he points out a number of ways to address this, and these together with emissions markets, will help to encourage businesses to improve their environmental and longer term financial performance.

But for many industries and companies they simply must change to meet new tighter environmental regulations around the world and thus ensure their products can be sold in lucrative markets such as Europe. In the case of the electrical and electronics industry the European Union is setting strict directives on allowable levels of waste and hazardous substances. These directives will have a direct and immediate impact on the ability of the Australian manufacturing industry to export to the European Union. *The Waste Electrical and Electronic Equipment (WEEE) Directive*, enforced as of August 31st 2005, imposes 'take back' obligations on producers and distributors of a wide range of products such as appliances, IT, lighting and telecommunications equipment, tools, medical devices and motor vehicles. *The Restriction of Hazardous Substances (RoHS) Directive*; to be enforced as of July 1st 2006, will enforce the reduction or elimination of hazardous substances within products (such as lead, mercury and hexavalent chromium).



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Table 1: Benefits of eco-efficiencies and eco-innovation to a company's competitive advantage²

Process benefits to reduce costs through eco-efficiencies	Product benefits to reduce costs and create product differentiation through eco-innovation
<ul style="list-style-type: none"> ■ material savings from better whole-system-design ■ increases in process yields and less downtime through designing-out waste and designing the plant and process to minimise maintenance and parts ■ better design to ensure that by-products and waste can be converted into valuable forms ■ greater resource productivity of inputs, energy, water and raw materials to reduce costs ■ reduced material storage and handling costs through 'just in time' management ■ improved OHS ■ improvements in the quality of product or service 	<ul style="list-style-type: none"> ■ higher quality, more consistent products ■ lower product costs (for instance, from material substitution, new improved plant efficiencies) ■ lower packaging costs ■ more efficient resource use by-products ■ safer products ■ lower net costs to customers of product disposal ■ higher product resale and scrap value ■ products that meet new consumer demands for environmental benefits

Some experts are now arguing that the next waves of innovation will be driven by the fact that companies can improve profits through eco-efficiencies and product differentiation benefits through having greener and higher quality products. As the new publication *The Natural Advantage of Nations*³ states: "We now possess both the technological innovations and design know-how to tackle many environmental problems cost effectively and in some areas very profitably. Specifically, this involves everything from new greener materials, recycling, hybrid cars, renewable energy, sustainable resource processing and other enabling technologies. However this is just the start, still more innovations are emerging from the fields of materials science, green chemistry, green nanotechnology and from simply having the humility to learn from nature. From these fields new manufacturing processes are being developed."

One of the best books on this is written by science writer Janine Benyus. Her book, *Biomimicry*, asks "how does nature do business? How does nature work?" Nature manufactures an amazing array of

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products and yet it does it very differently from our present industrial manufacturing system. Nature manufactures with low energy flows, near body conditions, no persistent toxins. Everything that is an output of a process is food for some other process. The loops are closed. If you look at our manufacturing it's very different. Benyus uses the example of an abalone. It manufactures in seawater at ambient temperature, immediately next to the creature's body, an inner lining, stronger than our best ceramic. How does it do it? Scientists at Sandia Laboratory in New Mexico realised the abalone was inducing calcium ions from surrounding seawater to fit exactly into its ionic blueprint. Research found that if they take silicon wafers and electrically charge them and dip them into alternating baths of calcium carbonate and polymer, they too can create a similar material as it self-assembles at the molecular level. The same way nature does it. So you can make scratchless eyeglasses and break-proof windshields and even a nose cone for space shuttles. Nature has evolved over billions of years. Hence many of the significant future innovations in manufacturing will come from learning from the way nature designs and makes things.

Nations and companies that understand this and address the barriers to better environmental management and environmental design of products will lead the next waves of innovation. Whenever Australia has led the world on environmental issues; the Green Sydney Olympics, the creation of World Heritage Areas, LandCare, the flow-on benefits have been immense to Australia and Australian business. With increasing international competition and the squeezing of profits in Australian manufacturing, it is vital that business and government work together to create fair incentives, market based mechanisms to overcome barriers to better environmental management and eco-innovation in manufacturing. This would complement existing programs and strategies to assist Australia's manufacturers to compete using innovation with manufacturers in low wage countries. Australia already invests over 23% of our R&D in eco-innovation and environmental management know-how. What is needed is political will from governments at all levels to work more effectively with the manufacturing sector and industry clusters to maximise the benefits of this research to Australian manufacturers.

² Porter, M. and van der Linde, C. (1995) 'Green and Competitive: Ending the Stalemate', Harvard Business Review, September–October, pp121–134 Porter, M. and van der Linde, C. (1995) 'Toward a New Conception of the Environment–Competitiveness Relationship', Journal of Economic Perspectives, vol IX-4, Fall, pp97–118

³ Hargroves, K. Smith, M (2005) *The Natural Advantage of Nations: Business Opportunities, Innovation and Governance in the 21st Century*.

