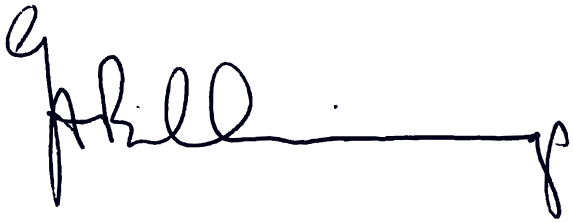
industrial products outlook

Climate change – Get set for the new industrial revolution

When Kevin Rudd signed the Kyoto Protocol in his first act as prime minister, he signalled he was serious about climate change – and asked business to take the lead in addressing the challenge of our time. Australian companies must now prepare to join a global market that puts a price on greenhouse gas emissions. For the industrial products sector, which is one of the nation's biggest energy users, the challenge is great indeed.

A new regulatory framework for carbon trading is quickly taking shape. Under legislation that will take effect in July, many industrial products companies will have to report their greenhouse gas emissions and energy production and consumption. Professor Ross Garnaut has already begun the economic modelling that will underpin the carbon trading scheme that will commence in 2010.

Industrial products companies have work to do. With just two years until carbon trading begins, they are ill prepared. They must act with urgency to assess the risks they face and set up robust systems to manage their carbon costs. This is the first step towards building revenue, brand value and reputation. Companies that move first will have an advantage over competitors: risk and reward have increased in equal measure in the new carbon-constrained economy.



Graeme Billings
Industrial Products Leader
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May 2008

Get set for the new industrial revolution

The climate change agenda is moving quickly in Australia after more than 10 years of stasis. The new Federal Government has ratified the Kyoto Protocol and opened the way for the country to participate in a global economy that acknowledges, and accounts for, the pollution that causes global warming. In this new business climate, the risks are many but the opportunities great.

Industrial products companies have been slow to respond to the challenges of climate change compared to their international peers and companies in other industry sectors. Australia's resources sector is a leader in its awareness of the problem and preparedness for the new carbon-constrained economy. In contrast, the industrial products sector appears a weak link in the chain that supplies a range of markets.

Industrial products companies must act if they are to survive in the new business climate. Failure to comply with new regulations will bring stiff penalties. Further pressure to change will come from shareholders and financiers, companies down the supply chain, staff, consumers and competitors. Companies that do not adapt risk damage to their reputation and brand. Those that do could tap into new markets and enjoy increased profits.

The Outlook

- Australia's entry to the global carbon trading system will mean a revolution in business.
- Companies face higher costs and a greater burden of regulatory compliance under new laws that commence this year.
- Opportunities will also increase under the new system, as noted in the interim Garnaut report on climate change.
- Australian companies are ill-prepared for the start of carbon trading in 2010.
- Industrial products companies are an important part of the supply chain but could be its weak link.
- Companies should see carbon trading as an opportunity to seize a strategic advantage rather than as a compliance issue.
- Those that act now and prepare for the new carbon-constrained economy will have an advantage over competitors.

A sea change: Australia embraces Kyoto

The Labor Government's sweeping victory at the polls in November 2007 reflected, in part, the strength of public concern about climate change. John Howard had steadfastly refused to ratify the Kyoto Protocol, under which signatories agree to meet binding targets for cutting the greenhouse gas emissions that cause global warming. Kevin Rudd, in contrast, had campaigned strongly on the issue and it is clear it helped him to victory.

Mr Rudd left no doubt that he sees mitigating climate change as a top priority: he signed the Kyoto Protocol in his first official act as prime minister, on 3 December 2007. The stage is now set for a revolution in how Australian companies do business. They can expect a significant increase in costs as they will have to account for emissions associated with production. They can also expect to benefit from new opportunities as demand for clean technology increases and through participation in the global trade in carbon credits.

Australia is expected to meet its Kyoto target of capping emissions at 599 million tonnes annually between 2008-12, which is a 108 per cent increase over the 1990 level[1]. To this end, the Government has committed to decreasing Australia's dependence on electricity derived from coal-burning power stations, a major source of emissions. It has targeted a significant increase in renewable energy, which will comprise 20 per cent of electricity generation by 2020[2]. This will stimulate investment in solar, wind and geothermal power (among others). The Government has also promised to invest in the development of 'clean' car and coal technologies.

A key enabler for clean coal will be the development of commercial-scale carbon capture and storage technology. This technology is still in its infancy. The first Australian demonstration plant was opened in Victoria in April 2008. The Otway Project, run by a consortium of public and private interests including the Federal Government, CSIRO, universities and energy companies, hopes to show that carbon dioxide can be captured, shipped by pipe and stored in geological formations underground without leakage.

Prime Minister Rudd has commissioned a report from Ross Garnaut, a professor of economics based at the Australian National University, to guide development of policy to minimise the environmental and economic impacts of climate change. Professor Garnaut's final report is due in September but an interim report released in February warned that the challenge ahead is greater than first thought. It urged Labor to cut greenhouse emissions by 90 per cent by 2050, rather than its already stated target of 60 per cent.

Professor Garnaut noted that, contrary to conventional wisdom, cutting emissions could play to Australia's strengths. "We have many resources and skills that will allow us to convert strong global action into an economic opportunity," he said. "We have a first-rate skills base in areas related to innovation, management and financial services. We have rich renewable energy resources. We are among the world's largest exporters of uranium and natural gas which can benefit from the low-emissions efforts of other nations[3]."

The Labor Government is moving swiftly to establish the legal framework for the new carbon-constrained economy. Reporting of greenhouse gas emissions and energy production and consumption will be mandatory for major emitters and energy users from July 2008. The *National Greenhouse and Energy Reporting Act* 2007 is expected to affect some 700 Australian companies including electricity generators, coal mining companies and large manufacturers.

Data reported under the Act will underpin the design of the Australian Emissions Trading Scheme, which is due to be introduced in 2010. Work is already beginning to determine rules for individual sectors in emissions trading, as well as those governing permits, credits and offsets, and accounting and tax treatments.

Professor Garnaut released a discussion paper on the design of the scheme on 20 March, outlining key features including:

- an Independent Carbon Bank to monitor and enforce compliance
- auctioning of permits to make the scheme simple, credible and transparent
- unlimited banking and lending of permits by the Independent Carbon Bank
- no price controls for permits, such as price caps or floors
- penalties for non-compliance including a make-good provision
- broad coverage, including agriculture and forestry industries
- assistance for households, communities and emissions-intensive firms.

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1 *Tracking to the Kyoto Target 2007*, Department of Climate Change 2008

2 www.greenhouse.gov.au/renewabletarget/index.html

3 www.garnautreview.org.au, media release, 21 February 2008.

Counting down to carbon trading

With just two years to go before carbon trading is due to begin, industrial products companies are under-prepared, PricewaterhouseCoopers' research has found. While 80 per cent of business executives surveyed in November 2007 for the firm's *Carbon Countdown*[4] report agreed business should play a role in combating climate change, industrial products companies are among the large majority which is unsure of the challenge ahead and how to respond.

Just over half of survey respondents were unsure of the business risks arising from climate change, and only eight per cent considered it an immediate risk, although 29 per cent said it would be a risk by 2012. Seventy-six per cent of executives from manufacturing companies, one of the biggest industrial products sector groups, were unsure of the risks, highlighting the sector's uncertainty. By contrast, all resources sector executives surveyed said climate change was a risk, and 80 per cent said it posed a risk in the next 12 months.

Industrial products companies acknowledge that they have work to do: 81 per cent of manufacturing executives surveyed were aware climate change would have an impact on their business and were keen to understand more about it. And on one point they seemed more certain – 41 per cent had identified it posed a very real risk to their reputations.

The sector's uncertainty, which was perhaps related to the political climate, has made it slow to act.

Seventy-three per cent of manufacturing leaders said they had taken no action on climate change and only 1.6 per cent had budgeted for their response. Again, the picture was different among resources companies: 95 per cent had taken action such as introducing new policies or procedures, changing their strategy, or hiring consultants to identify risks and opportunities arising from climate change, and 28 per cent of resources companies had budgeted to fund their response.

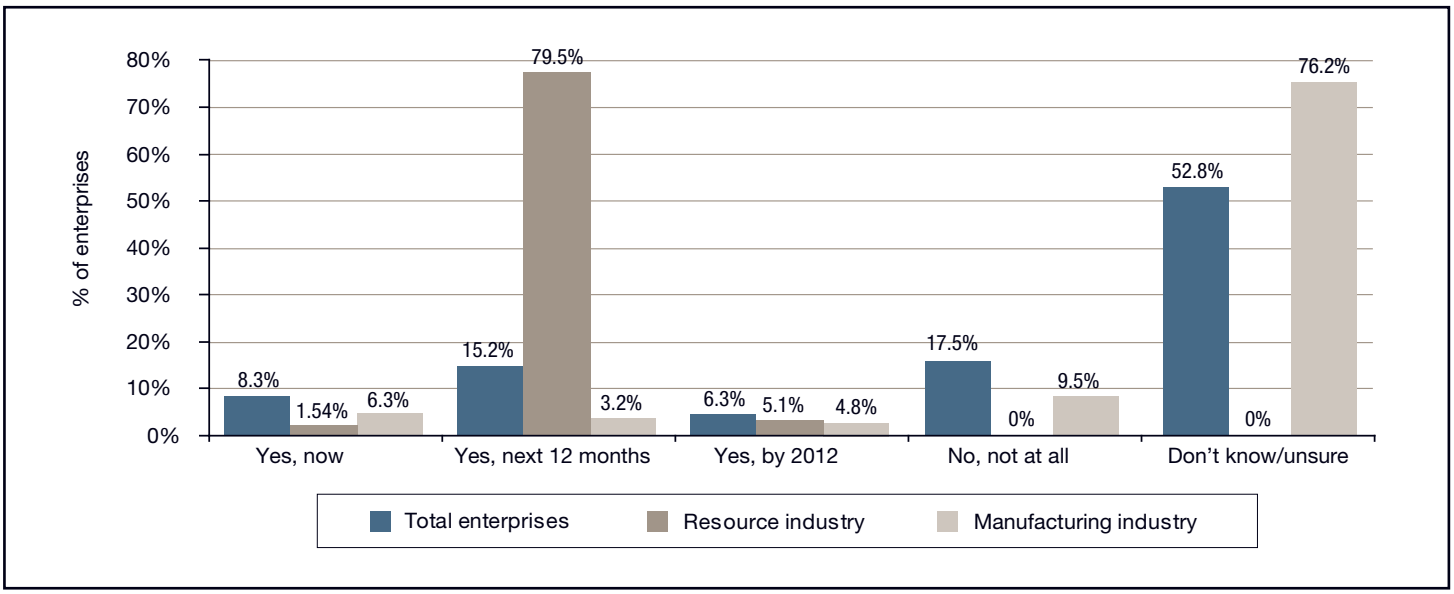
The industrial products sector sits in the middle of the supply chain between the resources and retail and consumer goods sectors, producing materials from steel to glass, plastics and chemicals. PwC's research suggests the sector could be a weak link in the chain. Data from the Department of Climate Change shows it is one of the nation's big emitters and will pay a high price if it fails to adapt.

As the following table shows, manufacturers, which are one of the industrial products sector's main groups, produced about 69 million tonnes of emissions out of the national 2005 total of 559 million tonnes, or 12 per cent. Services, transport and construction contributed about 61 million tonnes or 11 per cent[5]. The figure below underscores the point, showing that the manufacturing sector is the nation's third largest emitter, after the electricity, gas and water, and agriculture, forestry and fisheries sectors.

[4] *Carbon Countdown: A survey of executive opinion on climate change in the countdown to the carbon economy,* PwC, January 2008.

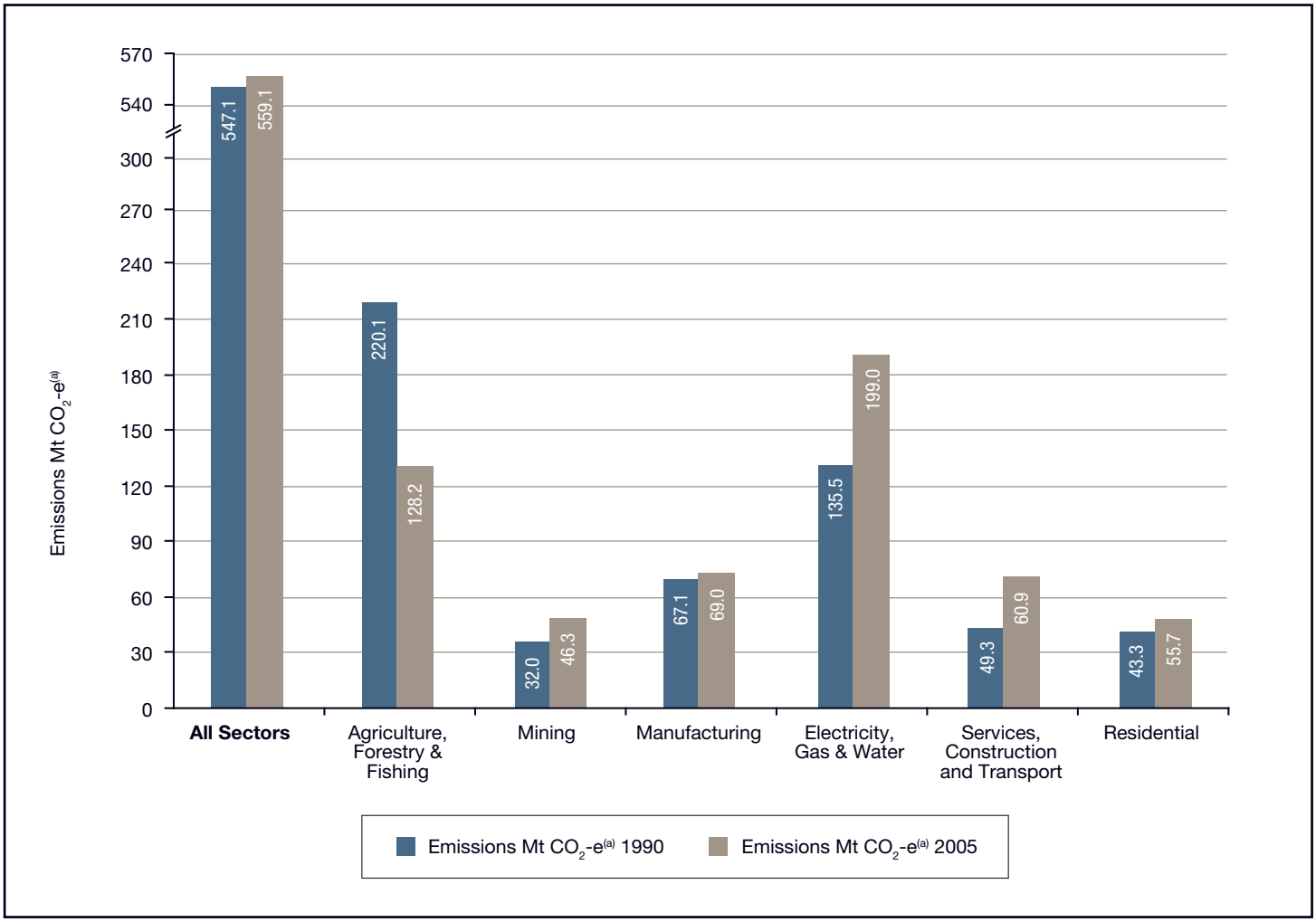
[5] www.greenhouse.gov.au/inventory/2005/economic-sector.html

Figure 1 – Consideration of climate change as a business risk



Source: Carbon Countdown, PricewaterhouseCoopers

Figure 2 – Australia's direct greenhouse gas emissions by economic sector 1990, 2005



Source: www.greenhouse.gov.au/inventory/2005/economic-sector.html

Note:
a) Carbon dioxide equivalent, CO2-e.
b) Estimated under the Kyoto Protocol reporting provisions.

Regulation raises the stakes

With the advent of carbon trading, the energy used in production will come at a much higher cost. Demands for energy efficiency – from regulators, the investment community, corporate customers and the broader public – will spur change among industrial products companies. How companies respond will influence how shareholders and the public perceive them, which will in turn affect their share prices and brands.

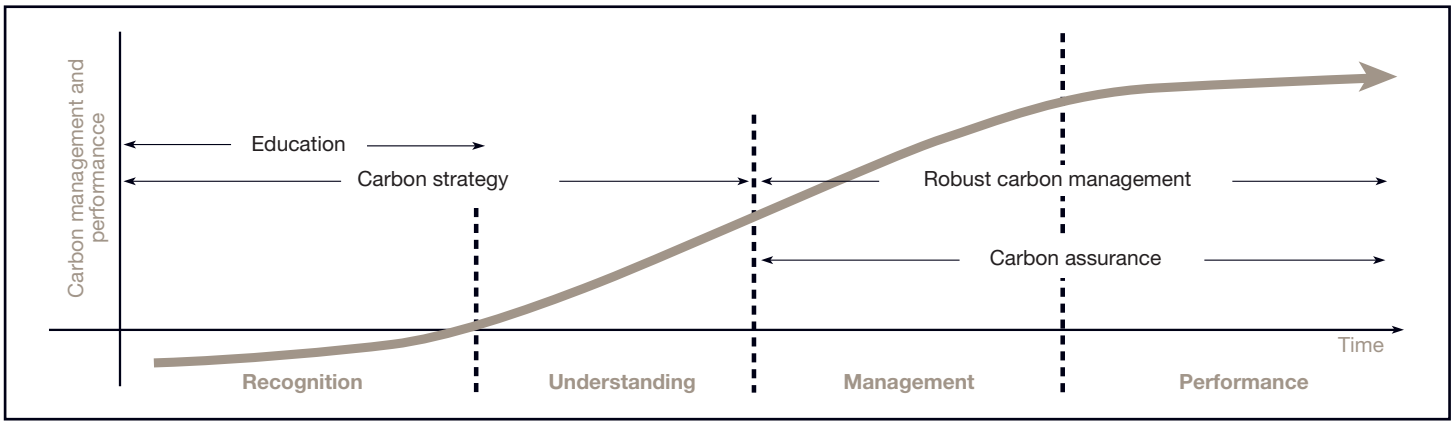
Under the *Energy Efficiency Opportunities Act* 2006[6], companies that use more than 500 terajoules (TJ) of energy a year must register with the Department of Industry and publicly report their energy use. (As a guide to businesses, those using more than 500 TJ of energy a year may typically have an annual energy bill of more than $1.5 million for gas, $5 million for electricity, $11 million for diesel fuel or $13 million for unleaded petrol (depending on prices).) While the Government has said fines would be a last resort, penalties of up to $110,000 per offence apply for inaccurate reporting.

Big energy users will face cost increases in 2010, and the market will penalise companies which do not have strategies to manage these costs once carbon trading begins[7]. From 1 July 2008, companies will have to register and report if their emissions are 25,000 tonnes or more or if they use 100 TJ or more of energy. Corporate groups that emit 125,000 tonnes or more of greenhouse gases or produce or consume 500 TJ or more of energy must also report.

[6] www.energyefficiencyopportunities.gov.au

[7] www.greenhouse.gov.au/reporting/publications/pubs/nger-fs.pdf

Figure 3 – The evolution of the business response to climate change



Source: Carbon Value, PricewaterhouseCoopers

Financiers and shareholders will demand investment-quality data on emissions and energy costs. Companies that do not provide it might face difficulty in securing funding or lose shareholder support and see their share price decline. Yet the *Carbon Countdown* report found that most Australia companies are a long way from being able to provide this data. Seventy-one per cent of respondents – and 96 per cent of manufacturers – did not fully understand their reporting obligations. And while accurate information on emissions will be vital in reporting, only 1.6 per cent of manufacturer respondents had a high level of confidence in their data.

Consumers are a driving force in the push for greater carbon-efficiency. A quarter of business leaders surveyed for the *Carbon Countdown* report said customers had expressed interest in environmentally friendly or 'carbon-neutral' products. While little firm data is available on consumer trends, a recent survey has suggested that the Australian market for sustainable products and services could be worth $21 billion a year by 2010[8]. As a result, industrial products companies can expect greater demand from corporate customers for environmentally friendly or carbon-efficient source materials. This represents the sector's great challenge – and opportunity.

From compliance to competitive advantage

The task ahead is great indeed: climate change and carbon trading herald a revolution in doing business on par with the advent of the steam engine, the telephone and the internet. It is a mistake to see this as simply a compliance issue, or to think that 'green' branding will be enough. Companies urgently need to become educated about climate change and how it will affect their business, and to develop a robust strategy and plan to account for and reduce their carbon costs. Only then will they be able to gain a competitive advantage.

PwC's research indicates organisations move through several phases in addressing climate change. Companies focus first on recognition and understanding while finding ways to cut costs by using less energy and reducing waste. As they move into the management phase, they start to see benefits in cost efficiencies and brand differentiation. In the performance phase, the company starts to generate long-term value and create a strategic advantage.

But while global industrial products leaders such as 3M, Lafarge and Toyota are into management and performance, PwC's research indicates most Australian companies are still in the recognition and understanding phases. Notable exceptions include transport and logistics company Brambles, which began accounting for its emissions and energy use years ago, packaging company Amcor, which is leading in product lifecycle assessment, and building products maker CSR.

CSR saw an opportunity to gain a competitive advantage through the market's new focus on energy efficiency and last June bought out leading glass maker Pilkington, which it has since merged with DMS Glass to form Viridian. CSR noted that Pilkington was ideally positioned to capitalise on the increasing use of architectural glass, which has greater insulating properties than standard glass[9].

The benefits of being a first mover are real and increasingly measurable: diversified industrial products company 3M has saved many millions through eco-efficiency over 30 years, while global building products maker Lafarge is winning recognition for its public commitment to cutting pollution in the cement industry and Toyota has enviable brand recognition and reputation through its hybrid petrol-electric car, the Prius. Toyota, which is now recognised as the world's number one car maker, gained a market advantage with the Prius and has left competitors far behind: Holden's vice-president of global product development has acknowledged that its new hybrid vehicle, the Volt, is an effort to win back lost market share – but the car reportedly will not be released until 2010[10].

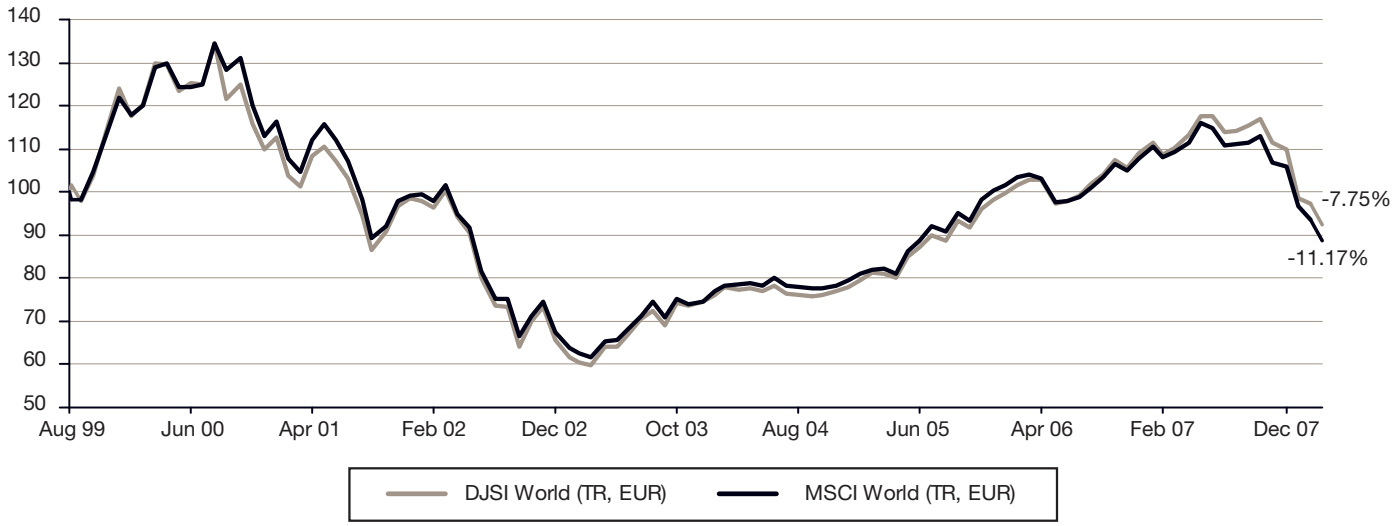
[8] "Living LOHAS – Lifestyle of Health and Sustainability in Australia", *Consumer Trends Report*, Mobium Group, August 2007.

[9] www.csr.com.au/investorcentre/news_releases

[10] www.wired.com/cars/futuretransport/news/2008/01/lutz_volt_qa

Figure 4 – The Dow Jones Sustainability World Index (DJSI World) March 2008

The DJSI World[11] comprises the leading 10 per cent of the world's largest 2,500 companies from 59 industry groups. DJSI analysts assess companies on general and industry-specific trends based on criteria including climate change strategies, energy consumption, human resources development, knowledge management, stakeholder relations and corporate governance.



Source: http://www.sustainability-indexes.com/djsi_pdf/publications/Factsheets/SAM_IndexesMonthly_DJSIWorld.pdf

Eco-efficiency: the first step

United-States based 3M, which makes everything from health care and highway safety products to office products and optical films, has been a world leader in eco-efficiency since 1975, when it started its Pollution Prevention Pays program. 3M says the program has stopped more than 1 billion kilograms of pollutants entering the atmosphere and saved it over US$1 billion[12].

3M tracks its emissions through an independently audited system[13] and has halved its worldwide output to about 10 million tonnes in 2006 (from 1990 levels), largely through energy efficiency. It claims a 37 per cent improvement in energy efficiency worldwide since 1998, and has won awards for excellence from the US Environmental Protection Agency. In 2006 alone, 3M says it reduced energy use by 11 per cent from 2005 levels and saved US$25.6 million[14].These steps have helped make the company a leader on the Dow Jones Sustainability World Index.

Like 3M, French building materials company Lafarge is highly regarded for taking action to reduce its environmental footprint. Lafarge makes cement, which accounts for roughly five per cent of global industry emissions. Lafarge has committed to a 20 per cent cut in net emissions per tonne of cement worldwide by 2010[15] and is cutting its energy use by using waste such as rice husks, bone meal and scrap car tyres to heat its kilns. In China, the world's biggest and most polluting cement market, the company says it is using 100 per cent recycled gypsum as raw material and has committed to recycling all waste products[16].

Transport and logistics company Brambles has earned a DJSI World listing as one of the few Australian companies that tracks its greenhouse emissions, along with its energy and fuel use. Since 2003, the company says it has cut the energy used to produce each US dollar of revenue – it now uses about 1 megajoule to earn a dollar rather than 1.7 megajoules. It installed sensor systems to automatically shut off unneeded lights at its Melbourne and Adelaide service centres and estimates as a result that the Melbourne centre has cut its emissions by 65 per cent, or 270,000 equivalent kilograms of carbon dioxide each year[17].

As their response to climate change evolves, Australian diversified industrial companies' main challenges relate to products: those that make innovative, energy efficient products will be highly rewarded, as will those using clean technology and considering end-of-life options in production. Those that do best in the first two areas will build brand value and minimise risks to their reputations. Those that fail face marginalisation.

[11] www.sustainability-indexes.com/djsi_pdf/publications/Factsheets/SAM_IndexesMonthly_DJSIWorld.pdf

[12] solutions.3m.com/wps/portal/3M/en_US/global/sustainability/management/pollution-prevention-pays/

[13] solutions.3m.com/wps/portal/3M/en_US/global/sustainability/management/climate-change-energy/

[14] solutions.3m.com/wps/portal/3M/en_US/global/sustainability/management/climate-change-energy/energy-efficiency/

[15] www.lafarge.com/wps/portal/6_2_1-CADet?WCM_GLOBAL_CONTEXT=/wps/wcm/connect/Lafarge.com/AllPR/2007/PR0524/PRH(en)

[16] www.lafarge.com/05032007-publication_sustainable_development-report2006-uk.pdf

[17] www.brambles.com/BXB/content/corpsocial_environmental_environperformance.html

Innovations in product development

It is a given in the new economy that products should be as environmentally lean – as cost-efficient and 'clean' – as possible.

US-based 3M is a pioneer in the use of life-cycle assessment in product development. From 2001, 3M has required all business units to conduct life-cycle reviews for all products[18], which look at the environmental, health, safety and energy effects of products from manufacturing through to customer use and disposal. Recent clean technology innovations include fire protection fluids with minimal environmental impact and low-emission solvents, and solventless technologies for adhesive applications.

Lafarge has also committed to measuring the environmental impact of its products throughout their life cycle[19]. Its Extensia brand is an example of a 'greener' concrete technology: it does not need steel reinforcement, consumes less energy during the pour and requires limited maintenance.

Cleaner fuel is an important consideration in reducing the cost of production. Canadian fuel technology company Westport Innovations has developed a mechanism which runs diesel engines on directly injected hydrogen-enriched natural gas[20]. Westport's products offer significant reductions in emissions and pollution compared to conventional engines and are being used in heavy-duty and light trucks to cut transport costs.

Another company advancing mechanisation is Swedish engineering outfit SKF, the world's largest maker of rolling bearings, which reduce the friction involved with rotation and movement and therefore cut energy consumption[21]. They are found in everything from oil refineries to in-line skates to the A-380, the world's largest airline, and in the renewable energy industry – in solar panels and wind turbines.

Australian packaging company Amcor reports the environmental footprint of 45 per cent[22] of sites across its global operations, and is preparing to report on the remainder. As well as setting targets to reduce energy consumption and waste, it is reducing water use, an important consideration in Australia, and has a target of 20 per cent less water use per unit of production by 2012. It has been using lifecycle assessment to shrink its environmental footprint for four or five years, with the twin aims of reducing packaging while keeping produce fresh and preventing leaks or spills. Examples of its innovations include compostable films made of cornstarch and cellulose for packing dry and fresh goods.

Profiting from carbon trading

Many Australian industrial products business leaders seem unsure of the new opportunities that will open up in a carbon-constrained economy. Only 20 per cent of those surveyed for the *Carbon Countdown* report said they understood how their company could profit from emission reduction and offset opportunities. The links between eco-efficiency and cleaner production, brand value and reputation are real. Companies that offer low-carbon or carbon-neutral products will increase revenue, win new customers, build customer loyalty and market share.

Brambles, for example, stands to benefit as a reputable low-carbon or lower-cost company, including through its reuse and recycling of pallets. In the US alone, the company estimates this saves seven million tonnes of waste going into landfill a year, or the equivalent of 2.85 million Radiata pine trees, while its pool of 60 million reusable plastic containers saves thousands of tonnes of cardboard boxes going to waste[23]. Brambles says a life cycle inventory study of CHEP US showed other pallet systems produce seven times more waste, use 30 per cent more energy and emit 33 per cent more greenhouse gases[24].

The example of light bulb maker Osram, meanwhile, shows how clean technology companies can profit through global emissions trading. Osram, a division of the German company Siemens, has won a contract from RWE, Germany's biggest operator of coal-fired power plants, to supply two million energy efficient compact fluorescent light bulbs in India. RWE is obliged under European law to either cut its emissions or offset them by investing in clean energy programs[25]. Australian companies will soon operate under a similar regime. Those that are most proactive in developing their carbon trading strategies are likely to gain a first-mover advantage.

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[18] solutions.3m.com/wps/portal/3M/en_US/global/sustainability/policies-standards/life-cycle-management/

[19] www.lafarge.com/05032007-publication_sustainable_development-report2006-uk.pdf

[20] www.westport.com/

[21] www.skf.com/portal/skf/home/about

[22] http://media.amcor.com/documents/amcor_2007_sustainability_report.pdf

[23] www.brambles.com/BXB/content/corpsocial_environmental_environperformance.html

[24] www.brambles.com/bxb/Company/ShowPage.aspx?CPID=3466

[25] Reuters, 25 February 2008 and The Financial Express, 3 March 2008

The way I see it

Mick Blake
Group Sustainability Manager
Amcor

At Amcor, we see climate change and the growing focus on sustainability as a real opportunity for our business. Benchmarking studies indicate that we are strongest in the social and economic components of sustainability and that the environment is by far our greatest growth opportunity. For this reason, we have taken quite a strong stance on it.

Our strategy to capture this opportunity has three components – improving operational performance, developing products and services and 'white space' initiatives. These components fit together in a pyramid.

The foundation of the pyramid is our operational performance – if we aren't strong on this, our higher order initiatives will not succeed. At this level, we've appointed business group sustainability champions across the globe to set aggressive targets to reduce our environmental footprint. We're reducing our energy use and waste generation, while using greener energy and less water. We're also rolling out communications plans to instil a culture of sustainability.

The next layer up is all about our products and services. Here we are using life cycle assessment to help us better understand packaging's role in the supply chain, and how Amcor can best contribute to a net improvement in environmental performance. The life cycle assessment tool we have developed provides us with insights that shape our approach to new products and services, which are developed through our sales and marketing teams. We've assessed packaging options for dry, wet and fresh goods and beverages and presented the results to customers to enable customers to make informed choices.

Sometimes this work produces surprising results. For instance, in the liquid packaging arena we have found that for milk, the environmental impacts of the pack is less than one per cent of the total footprint of the product itself. This kind of information needs to be carefully considered when designing new products or services so that our effort can be directed towards achieving the biggest environmental benefits across the supply chain.

Finally, the top of the pyramid is where Amcor's leadership oversee our 'white space' opportunities – aspects of sustainability that could reshape Amcor's structure and business fundamentals. We have also been exerting significant effort in this area. Amcor sees a number of major macro drivers that have the potential to change the game going forward. Not the least of these will be the changing expectations of our customers and investors.

In the customer space, we have found increasing numbers of our customers are keen to understand the environmental impacts associated with our products in a very granular way. Our ability to provide robust data on this is already providing us with a huge competitive advantage. We know it's giving us an edge because we get constant feedback from our customers that they're not getting the data elsewhere.

Carbon labelling will only make this area more important to customers, but it will also force our competitors to invest in similar systems and processes to ours. So the challenge for Amcor will be to use our information advantage to create a new generation of products and services that our competitors will struggle to match.

On the investor side data is also important. We are getting a lot more questions from the investment community about our energy and water use, waste generation and greenhouse gas emissions. Most of the investor effort is coming through structured, questionnaire based programs, such as the Carbon Disclosure Project. We find that responding to these initiatives can take a significant amount of resources, so we do have to be selective.

The systems and tools we have developed to support our life cycle analysis activities are helping in this regard. The ability to provide robust environmental data to the investment community relatively quickly is an advantage for us. However, we expect that our competitors will be working hard to catch up, so we have to work to improve also.

A particular challenge for us is how our business is perceived in the broader community. We have spent a lot of time talking with our customers about our position on sustainability, but this message has not been heard more widely. There are a whole lot of things that Amcor is leading on but not communicating to the broader public. That's likely to change. Packaging tends to get a bad rap – it's often seen as something you throw in the bin rather than something that protects the product and ensures the resources used in making that product are maximised. If we can turn that perception around, it will be easier for all of us to make progress on sustainability.

Conclusion

Australia's entry into the global carbon-trading market presents significant challenges and opportunities for business and industrial products companies in particular, as they are among the nation's most energy intensive.

Industrial products companies are an important part of the supply chain but at the moment could be its weakest link. They have been slow to act on the issue of climate change and are ill-prepared for the start of carbon trading in 2010, and for new laws that take effect in July 2008.

Companies should act immediately to review their operations and identify the risks and opportunities they face. They must begin tracking energy consumption and emission levels to account for them under new laws and to earn the confidence of investors and the broader community. This is the first step towards building revenue, brand value and reputation in a carbon-constrained economy.

This new economy will present opportunities for product and service innovation and the potential to increase profits and shareholder value. Australian industrial products companies that move first will gain a strategic advantage over their industry rivals.

Take action

- **Make addressing climate change a priority** at board level and empower executives to oversee your carbon management strategy.
- **Establish a budget** to fund your response.
- **Review your operations** to assess the true cost of carbon to the organisation and its risks in the new economy.
- **Set up independently audited systems for tracking and reporting** energy consumption and greenhouse emissions.
- **Forecast emissions and set reduction targets.**
- **Report on emissions internally and externally** to meet expectations of regulators, shareholders, customers and staff.
- **Investigate new markets:** how can you benefit from carbon trading?
- **Benchmark your progress against competitors**.

Contacts

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Graeme Billings leads the Industrial Products practice for PricewaterhouseCoopers in Australia. He has over 25 years experience providing assurance, transaction and consulting services with multinational and national clients in the automotive, construction and general manufacturing industries.

Graeme draws on his extensive experience with acquisitions and mergers and other business investigation areas such as due diligence, investigating accountants' reports, fraud investigations and internal control reports.

As a regular media commentator on the Ai Group/PwC Performance of Manufacturing Index, Graeme provides insight into the direction and challenges of the manufacturing sector.

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Sean Lucy is a climate change and sustainability specialist at PricewaterhouseCoopers. Coming from a legal background, he has particular expertise in the design and operation of carbon markets, and the governance issues created by climate change. Sean works regularly with clients in the public and private sector on these issues.

In addition to his client work, Sean contributes to the ongoing public debate on sustainability through his work on boards and public committees. He has previously served as the Chair of the Law Institute of Victoria's Environmental Issues Committee and on the Board of the Australian Business Council of Sustainable Energy, and was recently appointed to the Victorian Government's Ministerial Reference Council for Climate Change Adaptation.

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