

ACCOUNTING FOR THE COST OF CARBON

Price for small and medium business not sky high



Executive Summary

This report summarises the findings of industry research conducted by the National Centre for Sustainability (NCS) at Swinburne University of Technology from May to December 2009. The research program's primary aim was to quantify the impact of a carbon price on small-medium enterprises (SME) and map the responses of different industries to the challenges of operating in and adapting to a carbon constrained economy.

Our approach to the research project focused on capturing the unique insight and experiences of the country's newest workforce – the Carbon Accountants. Detailed accounts of their work informed the economic modelling and cost forecasting presented in this report. This work was contextualized through interviews and focus groups and complemented by a

nation-wide industry survey. Key findings to emerge from research program were:

- Under a Carbon Pollution Reduction Scheme (CPRS), the likely cost increase for SMEs is small and not significant enough to be a strong driver for industry to implement changes beyond business as usual
- Less than one third of the surveyed businesses have quantified their annual production of greenhouse gases through a greenhouse gas emissions inventory
- Organisational culture is the primary driver for businesses to quantify their carbon footprint
- 71% of businesses who developed an emissions inventory identified opportunities for cost savings

FOREWORD BY

Adjunct Professor Alan Pears AM

Most people who read media coverage of the Carbon Pollution Reduction Scheme, Australia's emissions trading scheme, would be forgiven for thinking it will have a dramatic negative impact on their business costs. This may be the case for a few high greenhouse intensity industries, but the situation is very different for most Australian business.

This important research by the National Centre for Sustainability restores the balance. It shows that, for most SMEs, carbon costs will be a relatively small cost in comparison with other factors affecting input costs and sales revenue.

But, looking beyond the short-term and direct carbon costs, there are good reasons for SMEs to act to cut their greenhouse gas emissions.

First, the nature of emissions trading is that, as permit caps tighten over time, prices will be driven up by competition for increasingly scarce permits. If few act to cut emissions early, the price will be driven higher.

Second, saving energy, cutting waste and reducing refrigerant losses can cut business costs, improve productivity and enhance product quality. And with energy prices rising rapidly for reasons other than climate change, abatement action can insulate a business from other cost increases.

Lastly, taking action looks good to your customers, staff and family.

TABLE 1: Forecast carbon price impacts on SMEs in Australia, by sector

SMEs modelled (1-200 staff) ANZSIC Classification	Average number of employees	Average footprint (tonnes CO ² -e)	Potential cost increase at \$10/tonneCO ² -e
Manufacturing	68	5990.4	\$59,904
Accommodation and Food Services	27	2091.6	\$20,916
Transport, Postal and Warehousing	10	1576.9	\$15,769
Information Media and Telecommunications	22	1039.5	\$10,395
Public Administration and Safety	127	855.3	\$8,553
Health Care and Social Assistance	33	509.2	\$5,092
Construction	156	491.4	\$4,914
Education and Training	52	428.7	\$4,287
Arts and Recreation Services	29	405.6	\$4,056
Wholesale Trade	30	274.4	\$2,744
Retail Trade	25	248.5	\$2,485
Property and Business Services	27	178.4	\$1,784
Other Services	20	73.9	\$739
Financial and Insurance Services	15	59.1	\$591

This modelling is based on a fixed permit price of \$10/t-CO²-e in year one of the Scheme. These prices are likely to change in subsequent years.

¹ For non-liable entities, based on fixed carbon price of \$10 per tonne greenhouse gas emissions



A carbon footprint is a greenhouse gas emissions inventory which captures all business activities resulting in emissions. It can assist organisations to identify and target resource inefficiencies and be used to report the impact of products and services on clients and stakeholders.

Key findings for Australian SME's

Public debate about the cost of the Federal Government's CPRS to industry is typically divided and ill informed by the lack of quality information and robust data. Most attempts to quantify the economic impacts of the CPRS have focused on large, emissions intensive, trade exposed industries, with uncertainty on government policy clouding the flow-on implications for smaller business.

As policy has evolved, more attempts have been made to quantify the cost impacts for SMEs. Until now, this has typically been achieved through macro economic analysis of particular sectors². Such approaches differ to the cost modelling impacts presented within this report (see Table 1). Forecast figures are derived from averaged carbon footprint data for SMEs in a range of sectors, and thus directly illustrate how CPRS effects will feed into the balance sheets of small to medium sized businesses.

So, will a CPRS carbon price alter investor and consumer behaviour and change the way we do business?

In short, the answer is 'no'. Research findings indicate that the effects of a carbon price will actually be lost against a background 'noise' of other cost increases over the first years of the scheme. Other financial factors (such as inflation and the strong Australian dollar) are likely to have a far greater impact on the bottom line of Australian SMEs.

Traditionally, industry has used Return on Investment (ROI) to inform business decisions. Establishing a price on carbon changes the variables within the ROI equation, and introduces accountability to non-financial metrics. Therefore, ROI strategies should consider the 'return' in terms of carbon cost savings. Theoretically, this should introduce a price incentive for lower emissions goods and services. However, findings demonstrate that the carbon cost alone will not be a significant driver for SMEs to make changes to emission intensive business activities and take a proactive response to the carbon constrained economy.

Objectives

The key aims of the research program were to:

- Identify the average carbon footprints of SMEs (all sector classifications excluding electricity, gas water and waste) and forecast their potential cost exposure under the proposed CPRS
- Examine current levels of engagement with greenhouse gas quantification and carbon management strategies within various industry sectors.
- Examine outcomes from undertaking carbon accounting in the workplace.
- Identify barriers to the implementation of carbon reduction initiatives.

Methodology

The research project was undertaken with support from Sensis. Research activities included:

- Random online surveys distributed to industry across Australia (369 responses)
- Surveys of participants within Swinburne University of Technology's accredited Course in Carbon Accounting (63 responses)
- Focus groups and interviews with the Carbon Accountants on their experiences working in industry.
- Aggregate (anonymous) analysis of detailed carbon footprints of over 170 businesses (across all sector classifications excluding the Electricity, Gas, Water and Waste sector)
- Economic modelling of CPRS cost impacts to businesses of less than 200 employees

What's counted in the carbon footprint data informing the cost forecasts?

- ✓ Electricity consumption
- ✓ Natural gas and LPG consumption
- ✓ Transport fuels
- ✓ Waste to landfill
- ✓ Flights
- ✓ Refrigerant consumption

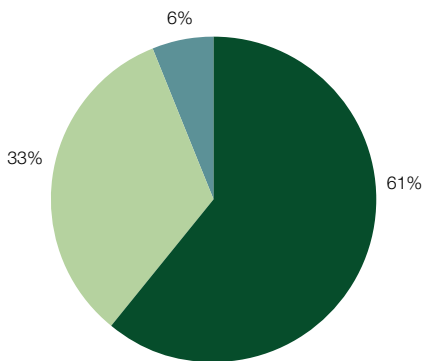
What's not counted?

- ✗ Emissions embodied into materials, goods and services³

² www.acci.asn.au/text_files/submissions/2009/Securing SMEs in Australia's CPRS 090622 (Exec Summary Only).pdf

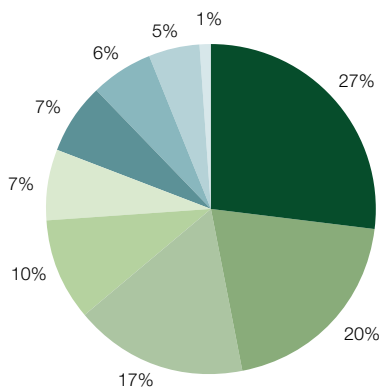
³ A Life Cycle Assessment (LCA) should be undertaken to determine this properly. An LCA is the evaluation of the inputs, outputs and environmental impacts of a product system over its lifecycle

ONE THIRD OF THE BUSINESSES SURVEYED HAVE MEASURED THEIR CARBON FOOTPRINT. THOSE TAKING NO ACTION IDENTIFIED THE LACK OF SKILLS AND KNOWLEDGE AS THE PRIMARY REASON FOR NOT MEASURING EMISSIONS.



Has your organisation attempted to measure its annual greenhouse gases emissions?

- No
- Yes
- Unsure



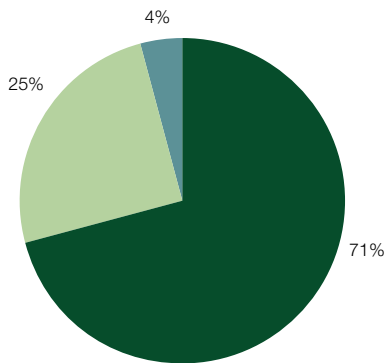
Which one of the following best describes your reason for not measuring your greenhouse gas emissions?

- Lack of skills and knowledge on how to identify and measure green house gas emissions
- Lack of time and resources
- No perceived benefit to the organisation
- Lack of interest
- Not knowing where to source appropriate advice or expertise
- Not knowing where to source appropriate advice or expertise
- Lack of support from colleagues and/or management
- Uncertainty regarding future government policy and regulation
- Inadequate access to required and supporting data



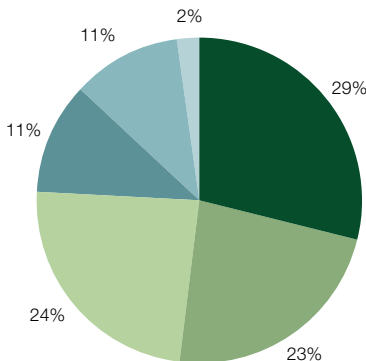
Survey results support findings from research published by CSIRO indicating that a massive mobilisation of skills is required for industry to respond to the challenges of a low carbon economy⁴. SMEs are typically time-poor and deeply involved in the day-to-day business operations. Lack of time and resources are significant barriers to a typical SME's ability to up-skill, think strategically about their business and undertake sustainability initiatives.

ALTHOUGH 71% OF BUSINESSES IDENTIFIED COST SAVINGS THROUGH DEVELOPING AN EMISSIONS INVENTORY, ONLY 11% OF BUSINESSES HAVE SUBSEQUENTLY IMPLEMENTED EMISSION REDUCTION INITIATIVES.



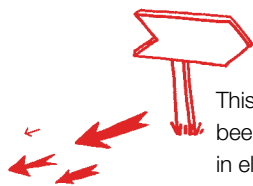
Did the process of quantifying your annual production of greenhouse gases identify opportunities for cost savings?

- Yes
- No
- Unsure



Since developing the emission inventory, the organisation has...

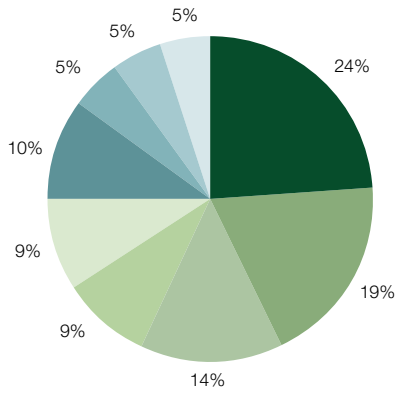
- Undertaken further work to better quantify its greenhouse emissions
- Expressed interest in implementing emission reduction initiatives in the future
- Not used the inventory and report to any effect
- Begun to implement emission reduction initiatives
- Other
- No intentions to implement emission reduction opportunities



This elastic nature of the relationships between costs of resources and business activities has been continually demonstrated through lack of industry response to the observed increases in electricity tariffs over the last two years⁵. Similarly, many businesses who have identified cost savings through developing an emissions inventory are yet to implement emission saving initiatives. Focus group findings indicate that carbon reduction initiatives are not immediate and often take a couple of years to get 'off the ground'. "Because we're asking business for new information, further work (in year two) is often required to develop the information systems necessary to support the development of robust emission inventories and inform business decisions".

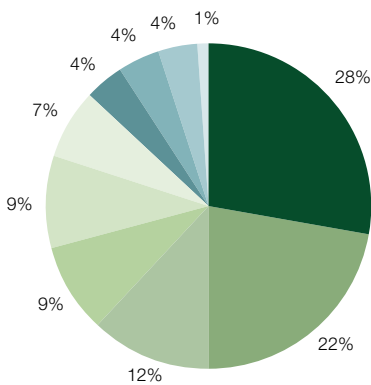
⁵ www.esc.vic.gov.au/public/Energy/Regulation+and+Compliance/

WHICH SECTORS ARE MEASURING THEIR CARBON EMISSIONS, AND WHY? THE DATA INDICATES THAT THERE IS LITTLE RELATIONSHIP BETWEEN THE POTENTIALLY COST 'EXPOSED' SECTORS AND THOSE TAKING MEASURES TO ASSESS THEIR RISK.



Which sectors are currently taking steps to quantify their greenhouse gas emissions

- Manufacturing
- Retail Trade
- Construction
- Information Media and Telecommunications
- Education and Training
- Health Care and Social Assistance
- Accommodation and Food Services
- Transport, Postal and Warehousing
- Agriculture, Forestry and Fishing



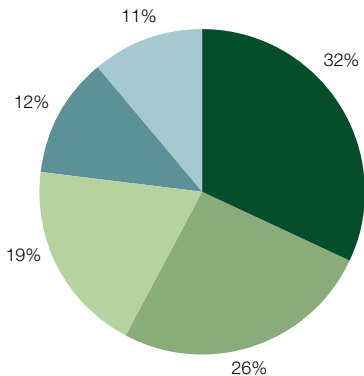
Which of the following best describes the organisation's motive for measuring its production of greenhouse gases?

- Voluntarily reduce emissions and environmental impacts
- Part of business strategy
- Compliance requirements
- Cost saving opportunities
- Corporate image/respectability
- Assess and minimise risks
- Staff driven initiative
- Competitive advantage
- Green marketing
- Other



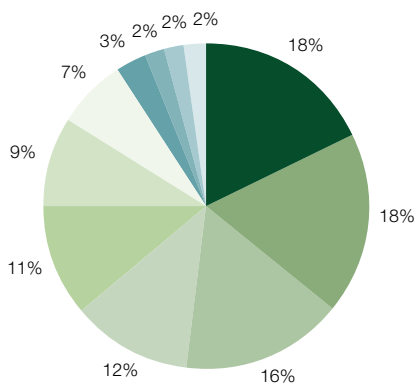
Increasingly, large businesses are requiring SMEs in their supply chains to provide non-financial disclosures around their 'carbon footprints' and their emissions reduction measures. Similarly, industry is faced with an increasingly aware workforce who are looking to work for environmentally responsible organisations. Some businesses see action on climate change as important to their clients, so it is a reputation issue. We are now observing that these externalities are driving shifts in organisational culture to incorporate voluntary action on climate change and to make businesses strategies 'carbon accountable'.

WHO ARE THE CARBON ACCOUNTANTS?



Which one of the following best describes your role within your organisation?

- Staff level professional
- Organisational leader
- Senior level professional
- Mid-management
- Entry level professional



Which of the following best describes your working background?

- Business
- Environmental Science
- Engineering
- Accounting/Finance
- Other
- Economics
- Other Sciences
- Computer Science/Modelling
- Planning
- Policy/Administration
- Natural Resources



The most difficult step in developing a carbon footprint is getting the right data and information. Before public disclosure, emissions inventories should be accurate, complete, relevant, transparent and auditable.

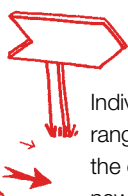
Opportunities

in a carbon economy

The money generated through the CPRS is not lost from the economy. It will flow back to SMEs and households through compensation and assistance schemes, as well as through incentives for emission reduction initiatives. Consequently, every SME should be examining how they can re-position their business so their products and services can capture some of these additional funds. Further cost saving opportunities exist through using less energy, managing wastes and refrigerants better, and buying low greenhouse intensity materials, goods and services.

A Course in Carbon Accounting at Swinburne University of Technology

Australia's first short course in Carbon Accounting was developed by the National Centre for Sustainability (NCS) at Swinburne University of Technology. The course has been accredited by the Victorian Registration and Qualifications Authority (VRQA) within the Australian Qualifications Framework (AQF). To learn more about the course visit here: www.swinburne.edu.au/ncs/Education



Individuals undertaking a qualification in Carbon Accounting represent a broad range of professional disciplines and roles in industry. 35% of students attended the course in a personal capacity because they wanted to switch careers into the new 'green collar economy'. Another third attended training for their current role in industry. Interestingly, the profile of the Carbon Accountant aligns closely to similarly qualified professionals in other workforce assessment surveys conducted overseas⁶. Common challenges have emerged around their work in industry – 33% of all Carbon Accountants claim inadequate access to the required supporting data as the primary barrier to reporting carbon emissions. Focus group recommendations suggest that integrating data collection procedures into business planning process is an effective strategy for developing reporting capacity.

⁶ GHG Management Institute (2009), *The 2009 Greenhouse Gas and Climate Change Workforce Needs Assessment Survey Report*.

Case Study

The Carbon Association Australasia Ltd (CAA) operates offices in Melbourne within the Central City district. The directors of the CAA decided to attend Australia's first short course in Carbon Accounting which was developed by the National Centre for Sustainability (NCS) at Swinburne University of Technology.

The course highlighted that SME companies and organisations can achieve significant results if they are informed and interested in energy efficiencies and productivity of the organisation. We identified through the course materials, energy savings within our lighting, computer hardware and ancillary office equipment. Further savings which encompasses better utilisation of waste, improved productivity and staff morale made the exercise very beneficial to the CAA.

The CAA decided that the savings made can be readily applied to all companies, and placed the results on our CAA website. We have received many enquiries on our initiatives, and recommend all companies to attend a carbon accounting course. The CAA was presented with the UNEP 2009 CN-NET Centurion award for efforts in energy efficiency.

CAA Secretariat

This report was
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The National Centre for Sustainability Swinburne University of Technology

The National Centre for Sustainability (NCS) is a collaboration of six educational institutions across Australia. We provide educational leadership and work in partnership with industry, government and the community to undertake program delivery, resource development, project work and applied research to support the development of sustainable practices.

The NCS believes that greenhouse gas emissions must be reduced significantly to limit the impacts of dangerous climate change. We support the overarching objectives of the Carbon Pollution Reduction Scheme (CPRS) in reducing Australia's greenhouse gas emissions. However, we believe that the current design of the CPRS is incomplete in a number of areas and requires modification in order to achieve effective environmental outcomes that involve all sectors of the community and the economy.

Through our research and collaboration with industry and government, the NCS will continue to monitor and evaluate changes in CPRS legislation and Carbon Accounting to inform best practices for SMEs and industry. Organisations wanting learn how to obtain Carbon Accounting capabilities through accredited courses offered at Swinburne are encouraged to contact the Centre.

How to contact us

The National Centre for Sustainability

John & Wakefield Streets
Mail H91
Hawthorn 3122

T : (03) 9210 1903
F : (03) 9210 1913
E : ncs@swin.edu.au

www.swinburne.edu.au/ncs



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Author: Scott McKenry (Team Leader, National Centre for Sustainability at Swinburne),
Contributors: Melissa Sargent (NCS), Martin Pritchard (NCS)

Content peer reviewed by: Adjunct Professor Alan Pears AM (Sustainable Solutions, RMIT)
and Peter Shuey (Ark Climate) and Andrew Rothberg (VECCI)

Research Partnerships: The NCS is pleased to share the information and data collected through its research activities. If your organisation is able to assist or contribute to the ongoing analysis and validation of the information presented in this report (as well as other relevant research) we would like to hear from you.