



Business briefing series

20 issues on the business implications
of a carbon cost

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Business briefings series



20 issues on the business implications of a carbon cost

Businesses have been expecting new climate change legislation to underpin the transition of Australia to a low carbon economy. Both the Rudd and previous Howard governments identified a greenhouse gas (GHG) Emissions Trading Scheme (ETS) as the preferred policy response to drive a reduction in Australia's GHG emissions and introduce a carbon cost. However, the proposed ETS has not been approved, and indeed the Opposition, although confirming a commitment to a 5 per cent reduction in GHG by 2020, is promoting alternate solutions. What is inevitable is that whatever policy decision is finally agreed and legislated, there will be either a direct or indirect cost of carbon on business. For this reason, the Institute has teamed up with PricewaterhouseCoopers, to produce this leadership paper entitled *Business briefing: 20 issues on the business implications of a carbon cost*.

The paper explains the new business landscape of a low carbon economy and examines the key impacts on the introduction of a proposed ETS. The paper is divided into five areas:

- Governance
- Quantifying the impact
- Strategy, risks and opportunities
- Getting the data right
- Communication.

Business briefing series: 20 issues on the business implications of a carbon cost has been written and presented in such a way as to maximise the reader's understanding of the issues. They can then assess the impact of these issues on their business and incorporate the significant issues into their future planning to help their business remain competitive in a low carbon economy. The paper also provides a checklist detailing the 20 issues in an easy to use format, which can be used by the reader according to their own business needs and requirements.

A cost of carbon is inevitable and smart businesses are preparing now to ensure they have the processes in place to take advantage of the potential opportunities and manage the risks which may arise. I trust you will find the guidance contained in this leadership paper helpful in achieving this.

This leadership paper is an initiative of the Institute's Business Leader Series. A series dedicated to providing guidance and resources to the 'C'-suite and financial professionals in business.

Michael Spinks

President
Institute of Chartered Accountants in Australia

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A new business landscape

The transition to a low-carbon economy has begun. The threat of climate change is now widely acknowledged by governments and business. Strategies to manage the transition from a carbon intensive economy to a low carbon economy are being developed and implemented. These changes, including market based mechanisms, are designed to provide price signals to incentivise new behaviours and encourage the adoption and consumption of low carbon alternatives. In Australia, the Federal Government has proposed an Emissions Trading Scheme (ETS) as the key market based solution to drive this change and reduce Australia's greenhouse gas (GHG) emissions. Whether this ETS or some alternate solution is eventually legislated, there will be a future carbon cost on business. The business landscape will be transformed and new risks and opportunities will emerge which business leaders will need to understand and respond to.

What is an Emissions Trading Scheme?

An ETS is a market-based mechanism designed to reduce economy wide GHG emissions in the most efficient way. The Federal Government's proposed ETS is called The Carbon Pollution Reduction Scheme (CPRS), as detailed below.

Under the proposed CPRS, the Federal Government would set a cap on the total GHG emissions that can be emitted. The cap will be lowered over time in order to reach the Federal Government's medium and long term targets. Certain organisations would be required to purchase permits but the total number of permits available will be restricted to the level of the cap. Liable organisations have the option to invest in technologies to reduce GHG emissions or purchase and retire permits. Permits will be available through Federal Government auctions or secondary markets.

Why is an ETS relevant to us?

An ETS is currently the proposed policy choice by the Federal Government to aid Australia in transitioning to a low carbon economy. The Opposition has also confirmed its commitment to a reduction of 5% in Australia's GHG emissions by 2020. Although promoting an alternate strategy, they would also support legislation resulting in either a direct or indirect carbon cost of business.

It is important to note that regardless of the policy design used by the Federal Government to reduce GHG emissions, the issues outlined in this document will still be applicable to many organisations. Additionally, even if the organisation is not directly liable under the proposed scheme design, there are still risks and opportunities to be considered.

The introduction of an ETS or a carbon tax or any other emission reduction policies would likely result in a current and possibly a forward price for carbon. This means that liable organisations covered by the ETS or other regulation will have a new cost, which will need to be strategically managed and incorporated into existing financial models. All organisations downstream of these liable entities will also be affected through cost pass-through – the question is to what extent will this additional cost impact on shareholder value now and in the future?

Key areas of interest include:

- Impacts on shareholder value
- Impacts on pricing and cost
- Funding and working capital requirements
- Reporting systems, processes and controls.

Significant opportunities to develop low-carbon solutions to support this economy-wide change will soon become apparent. Additionally, all businesses will have the opportunity to improve efficiencies within their business. The identification and strategic development of low-carbon products and services will potentially create new markets thereby increasing shareholder value.

What is the CPRS?

The CPRS is the Federal Government's proposed ETS, and is a key market lever to drive GHG emissions reduction in support of both its environmental and economic policy objectives.

The Federal Government has proposed a minimum target of 5% reduction of 2000 levels by 2020 and a maximum reduction of 25% of 2000 levels by 2020 if global consensus is obtained for the stabilisation of GHG emissions at 450 parts per million (ppm). The Federal Government has stated a long term GHG emissions reduction target of 60 per cent by 2050.

The CPRS is designed to cover around 75% of Australia's total emissions and will result in initially under 1000 organisations being liable for permits due to the level of emissions resulting directly from their operations.

The thresholds for permit liabilities under the proposed CPRS are limited to facilities with Scope 1 GHG emissions greater than 25,000t carbon dioxide equivalent (CO₂-e).

What is the NGERA?

The *National Greenhouse and Energy Reporting Act 2007* (NGERA) enables the Federal Government to collect GHG emissions data (direct GHG emissions and energy usage / production) from large emitting and energy using / producing organisations. The data will support the modelling used by the Federal Government to decide the emissions cap for the ETS, or other emission reducing legislation. The NGERA requires covered organisations to report GHG emissions and energy use annually commencing 30 June 2009. Organisations need to report their GHG emissions if they operate a facility that emits over 25,000 tonnes of carbon dioxide equivalent (tCO₂-e) (or uses / produces 100TJ of energy) or if the consolidated Australian operation emits over 125,000 tCO₂-e (or 500TJ). The threshold for the consolidated Australian operations reduces over time to 87,500 tCO₂-e (or 350TJ) for the year ending 30 June 2010 and to 50,000 tCO₂-e (or 200TJ) for the year ending 30 June 2011 and thereafter.

What can business leaders do?

As a business leader you need to understand the issues and modify your organisation to incorporate the impacts of transitioning to a low carbon economy.

This report provides a framework and 20 key issues for CFOs to brief their board on with respect to the implications of a cost of carbon on their organisation. Change is coming and business needs to get ready now.

The diagram below sets out the key business areas which should be focussed on by business leaders when considering the impacts of emerging climate change policy and legislation across their organisation. The rest of this report assumes that a carbon cost will be introduced under the proposed ETS, although the issues raised will be just as relevant if other policy mechanisms are used to reduce Australia's GHG emissions. What is clear is that there will likely be a carbon cost imposed directly and/or indirectly on business in the near future, and so it makes good business sense to consider and address the impact of a carbon cost on your organisation now.

Climate change legislation impacts framework



Governance

An effective governance framework is central to an organisation's capacity to operate in the changing world. The board of directors and senior management must provide effective leadership to ensure that the organisation's strategy drives sustainable performance and mitigates risks related to carbon exposures whilst evaluating and maximising potential opportunities.

The King III report¹, released in September 2009, has clearly explained the need for improved corporate governance practices. In relation to carbon exposure, there are a number of key questions that the board and senior management should consider in reviewing their organisation's corporate governance frameworks:

Framework, strategy and values

- Has a formal governance framework, which includes climate change risk and carbon exposures, been developed and approved by the board of directors?
- Has the board reviewed the corporate values in light of domestic and global climate change and ETS developments?
- Is there an enterprise-wide, broad-based governance and risk management strategy with policies to address climate change and carbon risks?
- Are all of the organisation's regulatory and legislative obligations understood in relation to addressing compliance risk and also to acting on opportunities presented by changes in legislation?
- Is there a clear understanding at board level of key stakeholders, their needs, and how each one contributes to the organisation's licence to operate?

The board

- Does the board of directors have the right composition, skills and information to make decisions related to climate risk and carbon exposures?
- Is the board of directors aware of any related unexamined risks and their potential impact on organisational strategy?
- Has risk management been effectively delegated by the board of directors to the CEO and CFO, and are there regular risk assessments taking place?

Communication

- How does the organisation explain its risk appetite and risk tolerance, both internally and to external stakeholders?
- Have all material stakeholders been identified, and is there a formal strategic policy for both formal and informal interaction with them?

Role of IT

- Has there been consideration for the strategic role of IT in compliance, risk management, understanding and acting on climate change and carbon opportunities appropriately and providing relevant and reliable data to senior management and the board of directors?

Assurance and reporting

- Does internal audit operate using a risk-based approach to focus on assessing those areas of the business with the greatest potential impact on shareholder value?
- Does the organisation have a reporting obligation under the existing NGERA?
- How does the organisation intend to report its GHG and energy data, and will the data be integrated into either annual sustainability reports or the annual financial report?
- Has the organisation assessed the need for independent assurance over reported GHG and energy data? If so, is this assurance incorporated into the overall assurance plan to maximise the value of the assurance received?

1. Institute of Directors in Southern Africa, 2009

Quantifying the impacts

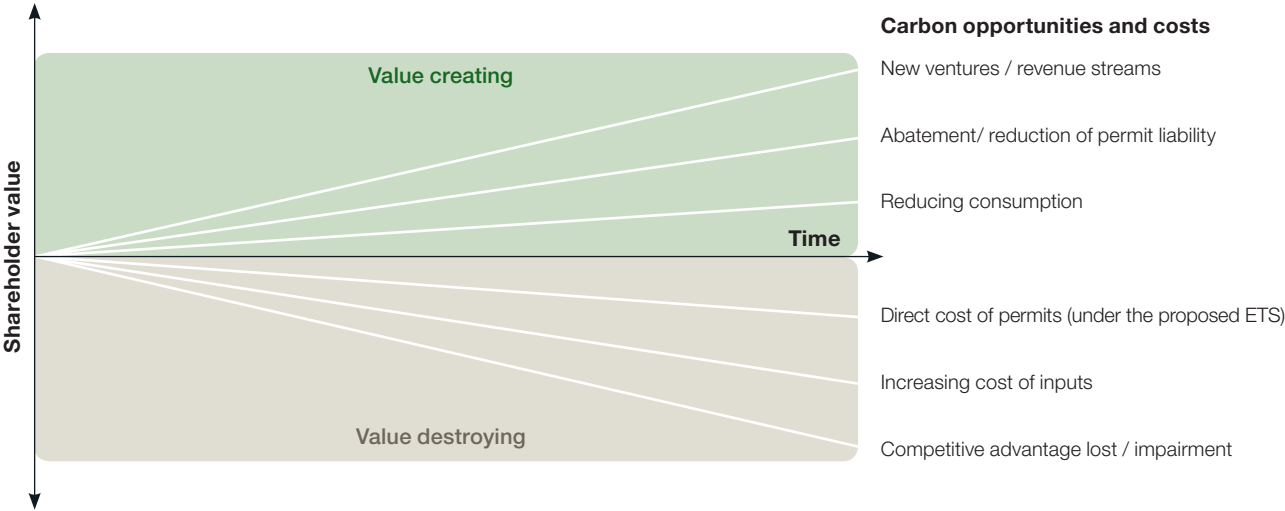
The transition to a low carbon economy presents an opportunity for organisations to unlock shareholder value. But what is that opportunity and how do you quantify it accurately? ‘Business as usual’ is no longer an option and business leaders need to act to ensure the net impact of the transition will create value for the organisation. The key factors to consider in quantifying these impacts:

- Ensuring that the data on which decisions are made is complete, accurate and timely
- Understand the implications of cost pass through onto your business from suppliers and then through to your customers
- Understand and maximise the government assistance available for organisations transitioning to the low carbon economy
- Develop strategies for minimising the risks and maximising the returns of carbon trading
- Understand the opportunities for internal abatement by the reduction of GHG emissions through internal investment

- Appropriately assess the financial impacts of a cost on carbon through a flexible, quality assured model
- Understand the accounting implications of the relevant strategic opportunities, and ensure that this is realistic in terms of future cash flows and other activities.

By understanding the factors mentioned above an organisation has the opportunity to continue to drive increased shareholder value through careful management of the additional carbon cost pressures provided from the proposed ETS or other climate change legislation. The following pages identify the key impacts of the cost of carbon on any business and the key questions that CFOs should be asking teams within their business to ensure that the organisation is both prepared to deal with the additional cost and administration and to proactively identify opportunities presented by the proposed ETS or other climate change legislation.

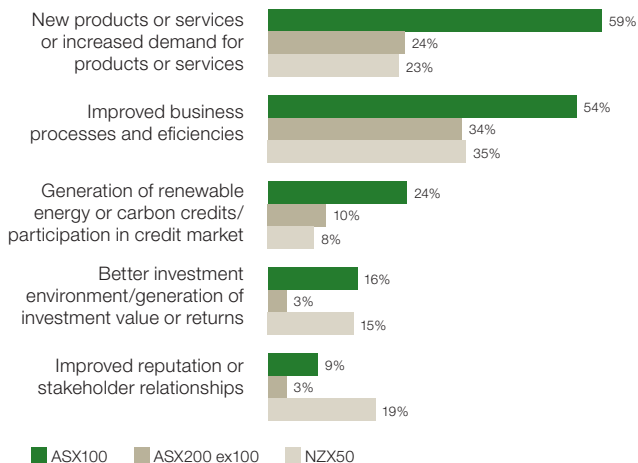
Carbon opportunities and costs



Source: PricewaterhouseCoopers

Quantifying the impacts (continued)

Key opportunities from climate change regulation identified by respondents



Source: Carbon Disclosure Project Report: Australia & New Zealand, 2009

'Pricing emissions drives a structural shift in the economy from emissions-intensive goods, technologies and processes towards low-emission goods, technologies and processes.'

Commonwealth of Australia, 2008 Australia's low pollution future, p28.

1. Compliance obligation

- Do we have any GHG emissions that we will be directly liable for?
- Is there adequate documentation prepared to support the position taken?
- Have we included the resourcing / legal compliance obligations within budgets?

Organisations with direct emissions (Scope 1) (or producing eligible upstream fuels with inherent GHG emissions) of greater than 25,000 tCO₂-e from a facility under its operational control, will be required to surrender one eligible emissions unit for each tonne of CO₂-e GHG Scope one emissions annually under the Federal Government proposed ETS.

In its proposed form, the ETS allows the point of obligation for surrender of permits to be transferred under various CPRS mechanisms. For example, the Obligation Transfer Number (OTN) can, in certain circumstances, be utilised to transfer such an obligation to or from other parties.

Organisations should prepare appropriate documentation to support their position taken, with legal interpretations, where required, of the requirements of the proposed ETS.

Also the value implications associated with moving the point of liability for many organisations is significant. In transactions, assumptions around permit liability of an organisation, facility or asset should be tested.

If an alternate legislative mechanism is adopted to introduce a cost of carbon, it will still be important for business leaders to understand the impacts on their business and their ongoing obligations.

2. Supplier price increases

- What is the impact of the ETS and/or, a carbon cost on our key suppliers?
- Have carbon clauses been added to our existing procurement contracts?
- Have we incorporated direct and indirect carbon cost implications into our mergers and acquisitions, capital expenditure and budgeting / forecasting processes?

Exposure is largely dependent on the legal construction of contracts. Such exposure may or may not also result in an adjustment to permit liability, depending on the mechanism by which pass through is effected. Exposures can be due to:

- Increased supply cost
- Cost reimbursement
- Contractual transfer of responsibility for the supply of eligible emissions units
- Indemnity against costs.

The materiality of such exposure should not be underestimated. Instead it should be calculated based on discussions with suppliers so that realistic expectations of potential cost increases can be factored into budgets.

3. Cost-pass through and point of obligation

- Where are indirect cost increases going to impact our business most?
- Can we pass our liability through to our customers?
- Have we added carbon clauses to every sales contract?
- If we cannot pass on our liability, can we still pass on the cost increase?
- What is the appetite for cost increases with our customers, and how do we know this?

Carbon costs will inevitably be borne by the entity of least resistance within a given value chain. There is potential for increased indirect costs in most locally produced products and services and across all elements of the value chain.

A thorough understanding of the current costs passed through from upstream suppliers together with the legal construction of sales contracts, and the willingness of contractual counterparties to accept cost allocations, will determine the extent to which this new category of cost stops with your business or is passed through.

To assess the carbon value impact of pass throughs, it is necessary to review pass through clauses in contracts and other commercial arrangements.

4. Government assistance

- Do we understand all the potential assistance available from the government?
- Have we started discussing the proposed ETS and the implications of a cost of carbon with our industry association?
- Do we understand the timeframes and requirements for application for assistance?

In its current form, the proposed ETS will provide financial support to emissions intensive trade exposed (EITE) industries. There are also continuing negotiations with other industries to provide varying levels of financial assistance to support organisations with their transition to a low carbon economy.

CPRS current position

Transitional support available from the government includes:

EITE assistance Transitional measures to energy intensive, trade exposed businesses to prevent offshore carbon leakage (ie. businesses relocating their operations overseas to avoid the ETS but not reducing their GHG emissions on a global scale). Application requires extensive data and external assurance prior to submission

ESAS Assistance for the electricity sector to offset certain value loss arising on the introduction of CPRS. The ESAS will assist with transition to lower GHG intensity electricity generation assets

CCAF To provide high carbon organisations with targeted financial support for the transition period through to 2015 –16.

Entities must however lodge applications for such assistance within stipulated time frames, and given the size of contributions of these assistance packages, it will be important that the data presented is complete and accurate, and that it is lodged by the required deadline.

5. Carbon trading

- Do we have a carbon trading strategy?
- Do we plan to purchase eligible emissions units at auction or in a secondary market?
- What investment and financing options have we considered or discussed?

A carbon trading strategy is required to ensure that the risks and opportunities presented from buying and selling permits are adequately addressed. The proposed ETS recognises not only Australian Emissions Units (AEUs) auctioned or traded on secondary markets, but also AEUs issued to forestry sequestration projects, Certified Emissions Reductions (CERs), Emissions Reduction Units, and Removal Units generated by offshore projects registered under the United Nations Framework Convention on Climate Change's Kyoto Protocol.

The acquisition of eligible emissions units from the latter sources may provide a more cost effective option rather than auctioned and traded AEUs. These options may attract additional financial risks. An organisation should therefore assess its risk appetite in considering opportunities for acquiring eligible emissions units at reduced prices.

6. Management accounting

- Have we incorporated the cost of carbon into future cash flow forecasts?
- Does our management have adequate, accurate and timely carbon information to support business decisions?

The proposed ETS will result in a cost of carbon that may be incorporated into the cost of supplies for operating a business. The additional costs from direct liabilities or cost pass-through will also need to be incorporated into the management accounting and internal reporting frameworks to ensure that appropriate cost forecasting has been maintained to support business decisions.

For permit liable organisations, the finance and treasury teams will need to assist in obtaining financing to purchase the permits as well as developing policy to hedge carbon pricing and scarcity risks. They will also need to assess the accounting and tax implications and determine the appropriate methods for presenting the new transactions.

'... there is a need for a quality assured model to assess the carbon impact (costs) allowing for variables on the cost of carbon, decay curves, etc, for 'what if' risk management processes.'

Andrew Poulter, CFO, Adelaide Brighton

Quantifying the impacts (continued)

7. Reducing emissions and improving efficiency

- What are we doing to reduce GHG emissions to avoid direct and indirect costs?
- Can a focus on carbon assist us in being more efficient in overall carbon consumption?
- What can we do to reduce our indirect GHG emissions?

Depending on the cost of carbon, internal abatement may be more cost effective than acquiring permits on the market or meeting other regulatory obligations. The climate change legislation would establish a price signal for GHG emissions, and so creates an incentive for lower cost abatement of GHG emissions. Organisations will be able to assess the marginal cost of abatement against the carbon price. Where the cost of abatement is above the price, there is a clear financial incentive not to invest in the abatement opportunity.

A marginal abatement cost curve is one method used by governments and organisations to understand the cost of proposed projects to reduce GHG emissions. McKinsey has prepared indicative curves for Australia (shown below) and the world. The curve identifies negative and low-cost abatement projects that could be implemented. These projects pay for themselves quickly through the cost savings from reduced energy consumption.

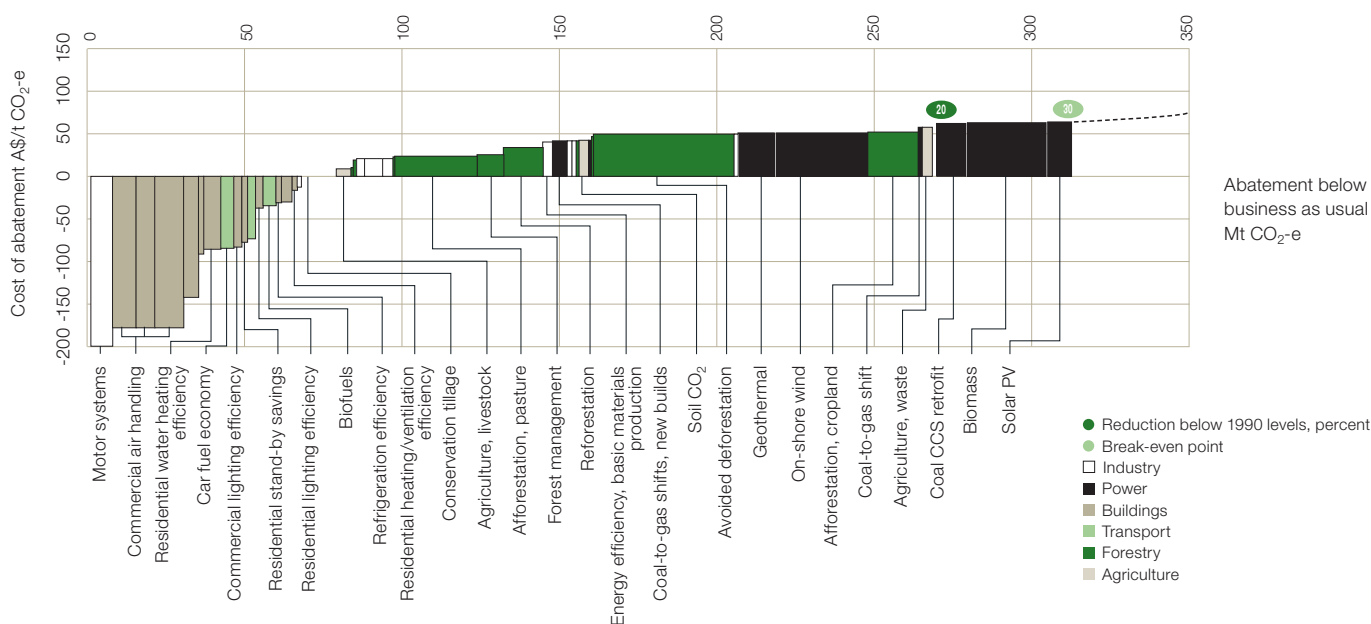
The Federal Government's proposed ETS could result in increased costs for services, which are GHG emissions intensive, such as energy and travel. Business leaders need to look at how they can use these services more efficiently in their organisation to reduce their indirect GHG emissions and hence their organisation's costs.

8. New business ventures / products

- How many products or services do we sell that are 'low carbon' alternatives?
- Is there any potential to identify 'carbon value added' product or service opportunities within our existing products or services?
- Are we considering potential new business opportunities more aligned to a low carbon economy?

Organisations can create shareholder value through the identification of new low-carbon business ventures and products. There are many ways in which an organisation can strategically address its exposure to the cost of carbon. Through understanding the change to a low-carbon economy, and the new potential needs for low carbon products and services, many organisations will identify opportunities for new revenue streams. This may be through the development of new products or services or through the identification of new markets. It may also be through the re-design of existing products and services to provide a low carbon alternative.

Australian 2020 carbon abatement cost curve



Source: McKinsey

Strategy risks and opportunities

Organisations will need to reassess their existing strategies through a carbon lens. The modifications will need to incorporate the impact from the changes to the economy such as the demand for existing products and services once there is a carbon price. For some organisations this may mean that certain products may no longer be profitable and other products may achieve significant increases in revenue through higher demand.

In order to understand the impacts on strategy an organisation must understand its risks and opportunities and prioritise them.

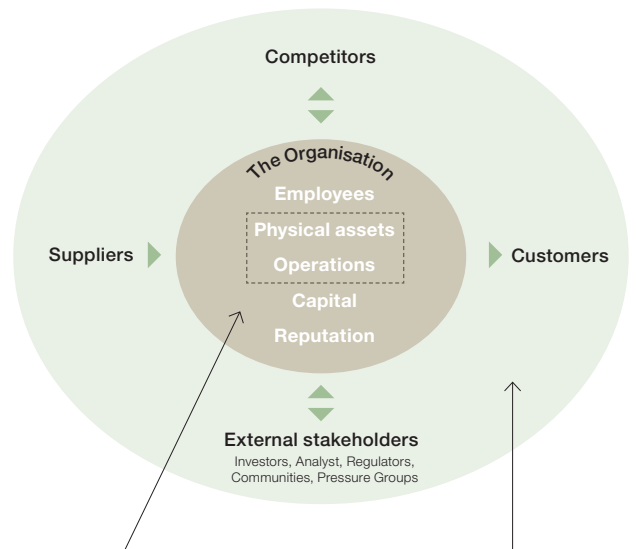
Climate change is a highly complex and multi-faceted issue. It is important for business leaders to have an appreciation of this multi-faceted environment of risks and opportunities.

9. Physical

- What are our physical risks?
- What costs are associated with our physical risks?

Climate change will present increasing physical risks to land, property and other business assets over the long term. Rising sea levels, extreme weather events with greater frequency and intensity, droughts and floods all threaten businesses. These changes will then result in the potential for increased insurance cost, increased maintenance requirement, and increased cost of resources. An indication of this increased cost flowing through to insurance premiums can be seen in the following table.

First- and second-order risks in the business landscape

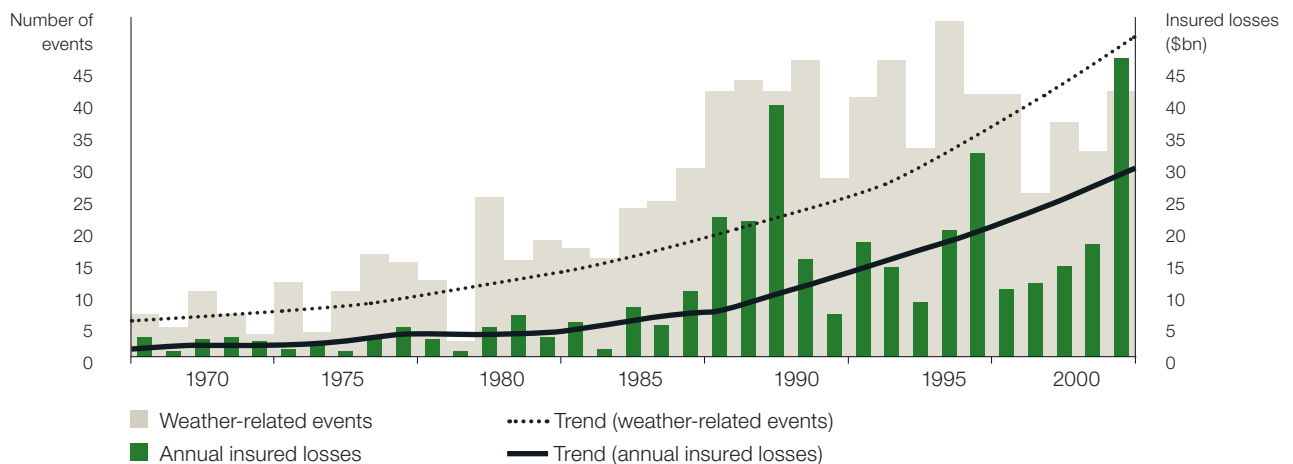


First order carbon risks relate to direct and geophysical impacts on a business. They will most likely effect physical assets and operational activities.

Second order carbon risks relate to indirect impacts and responses by internal and external stakeholders and competitors. These risks have the potential to impact employees, access to capital, and reputation as well as many other external factors.

Source: PricewaterhouseCoopers

Number of weather-related catastrophes and insured losses (2004 prices)



Source: Sigma Database, Swiss Re

Strategy risks and opportunities (continued)

10. Organisation performance and market reputation

- What are the organisational and reputational risks associated with the organisations response to climate change?

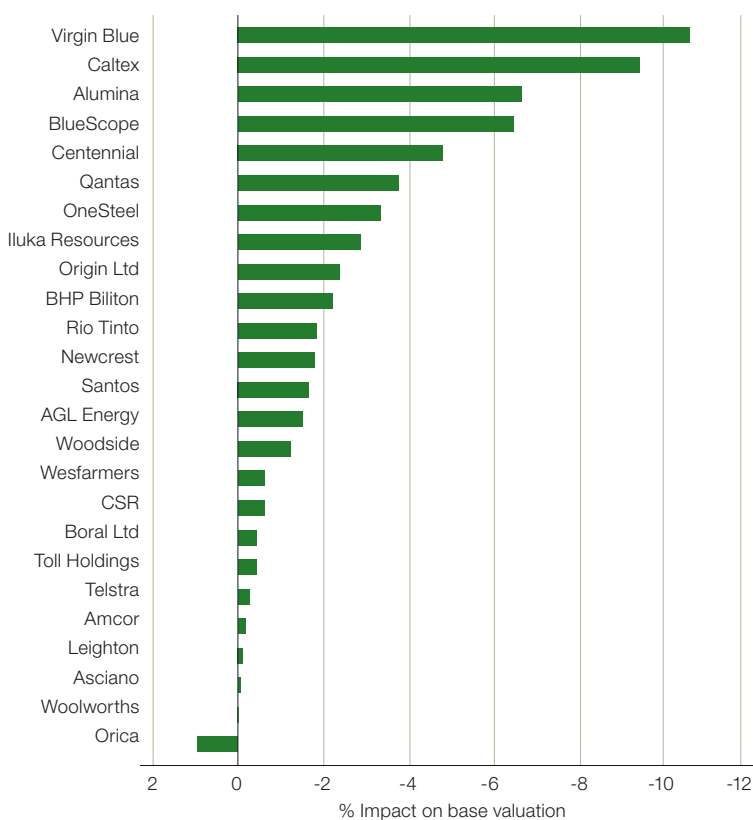
The impact of the proposed ETS, or other potential policy responses, will add costs for most organisations. A direct permit liability or the exposure to Scope 2 and 3 emissions cost pass-through will result in increased costs through the supply chain. It is expected that the most significant cost increases will be for:

- Cost of supplies
- Working capital requirements
- Financing requirements and debt coverage
- Meeting financial reporting and assurance obligations.

The cost of carbon has been increasingly incorporated into the equity research reports for organisations listed on the Australian Stock Exchange. A recent report published by Deutsche Bank highlighted the following discounted cash flow (DCF) valuation impacts of the CPRS on specific organisations.

An organisation's response to the proposed ETS or other climate change legislation will also impact on its market reputation. Organisations that have developed and started to implement climate change strategies will be seen as 'on top' of the issue and valued at a premium, all things being equal, to those with no understanding of their carbon risks or opportunities.

DCF Valuation impacts for the CPRS-5 Scenario



■ Free permits and pass through where applicable

Source: Deutsche Bank Report, 2009

11. External stakeholders

- What are the risks and opportunities relating to external stakeholders associated with the organisations response to climate change?

Regulators

The proposed ETS or other potential policy responses will introduce a market price for GHG emissions. This will mean the imposition of a new cost for emitting businesses. Organisations will need to understand their regulatory obligations and ensure that they comply with their obligations and document their interpretations.

The proposed ETS or a carbon cost will alter the economics of a wide range of businesses. It will also create some complex contractual issues, as counterparties exposed to carbon prices look to pass cost increases through and take credit for reductions achieved.

Law suits will pose an increasing risk to operations that generate significant GHG emissions. Litigation within this sphere could potentially follow recent trends in the tobacco, pharmaceutical and asbestos industries, as plaintiffs initiate actions on the grounds of negligence, trespass, public and private nuisance, and misrepresentation. These risks potentially extend to directors and officers of companies personally.

Investors

Investors are increasingly considering the cost of carbon within an organisation. The Carbon Disclosure Project continues to grow as more organisations come to realise that the investment community is seeking more information to assess an organisations potential exposure to carbon and strategies to mitigate the risk while maximising any opportunities.

Community

Organisations also face significant risks in relation to the community's view of corporate operations. Society expectations are shifting with an increased awareness of environmental and climate change issues and this can affect the value of a corporation's brand, and thus the corporation's overall value.

12. Customers

- What are the risks and opportunities relating to our customers or associated with the organisations response to climate change?

The proposed ETS or other potential policy responses will raise awareness of the risks of climate change and to impact the needs of existing customers. A carbon constrained future will therefore have significant effect on product demand. For example, traditional methods used in energy production, such as pulverisation coal power plants, are likely to experience lowering demand as new technologies with lower GHG emissions (such as integrated gasification combined cycle power plants) gain wider use (if not regulatory enforced).

The reverse applies for organisations involved in industries employing lower carbon footprint technologies. Such organisations have the potential to see significant revenue growth as organisations seek low carbon alternative suppliers. Organisations will need to develop strategies to ensure that potential changes in the needs of customers have been incorporated into broader product and service design processes.

13. Suppliers

- What are the risks and opportunities relating to our suppliers associated with organisations response to climate change?

Market based emissions reduction mechanisms place a price on GHG emissions. Carbon will be embedded into the product physically and into the price. It will be central to the way organisations do business with each other.

Organisations will need to understand the impact of the carbon constrained economy on the security or scarcity of supply of specific products and services. It is expected that the supply chain impact for most organisations of the proposed ETS will be the pass through of increased energy costs.

Strategy risks and opportunities (continued)

14. Industry / competition

- What are the risks and opportunities relating to our competitors associated with the organisations response to climate change?

Changes in the economic environment provide opportunities for organisations to move first. There will be a significant amount of competition in the new low carbon economy. Organisations that can develop and implement their carbon strategies will be able to maximise the benefit from moving first.

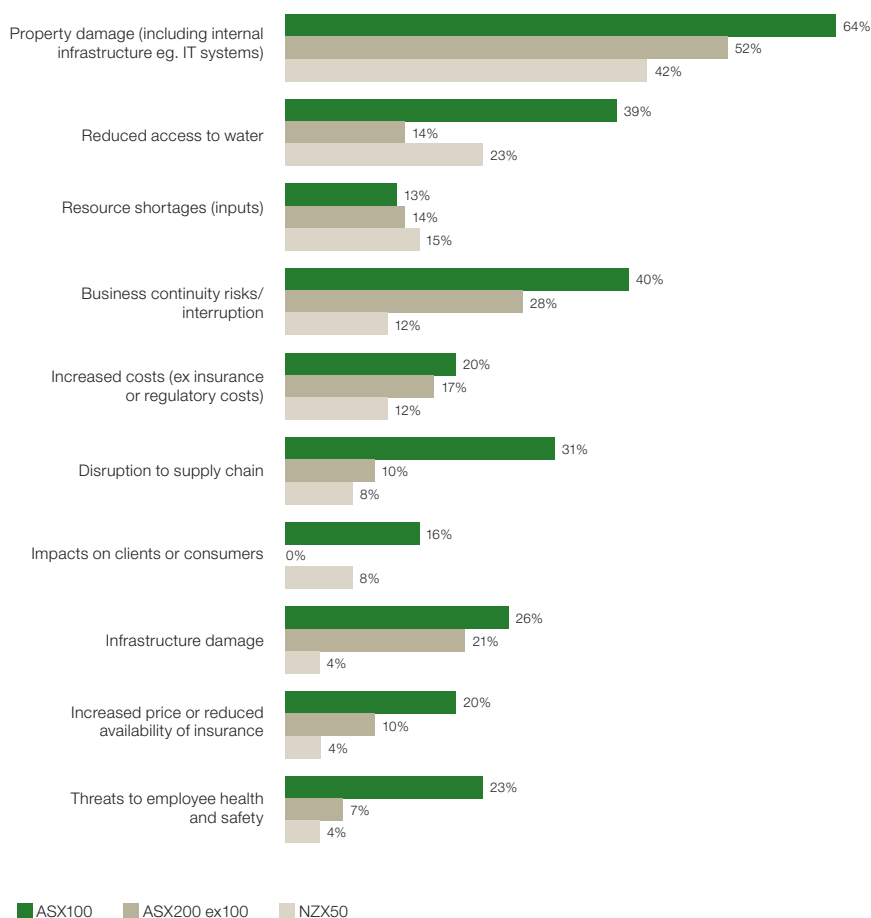
The low-carbon economy will also provide a competitive advantage for organisations with low carbon intensity as less costs are incurred and therefore passed through, resulting in

a lower input cost. This will offer new marketing opportunities and enable organisations to differentiate based on both carbon intensity and cost.

Organisations should also consider the potential impact from new or existing overseas competitors. The overseas competitors are likely to have different (or possibly no) specific compliance costs for an ETS or other climate change legislation.

Industries will also need to work together to understand the potential impact of the proposed ETS or carbon cost on the demand for their products and the risk of substitution. Customers may begin to change preferences to lower carbon alternatives.

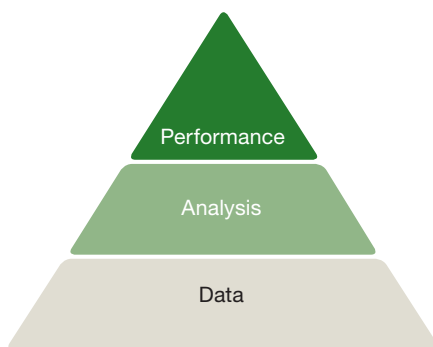
Key exposures identified by respondents



Source: Carbon Disclosure Project Report, 2009

Getting the data right

Complete, accurate and timely data is the cornerstone of effective business decision making. Without data that can be relied upon, organisations may miss potential risks or opportunities. Alternatively, organisations may incorrectly assess their risks and opportunities, which may result in significant risk exposures and lost opportunities, resulting in a reduction of shareholder value. The government has introduced the NGERA amongst other things to ensure that the data reported to the government is reliable for the purposes of setting the emissions cap for the proposed ETS or other carbon costs.



15. Identifying reporting and permit liability

- What GHG emissions are considered to be ours for reporting and permit liabilities?
- What joint ventures, partnerships and business relationships does our business have?

The first step in measuring your GHG emissions inventory is to identify your corporate group, ie. what companies, facilities, assets are within your organisational boundary under the relevant legislation. Once this is understood it is important to work out if your organisation meets the reporting threshold.

Organisations covered by the NGERA will be required to report GHG emissions and energy use from sources over which they have operational control. These are GHG emissions that are generated during activities at operationally controlled facilities in which the organisation introduces and implements the environmental, health and safety or financial policies.

Each organisation should have a clear understanding of its GHG emissions sources, a documented methodology, policies and processes to develop a GHG inventory and as a documentation interpretation and assessment of any compliance or reporting obligations.

Organisations without a reporting obligation under the NGERA may still choose to voluntarily report their GHG emissions and the impact of carbon on their business to their stakeholders, including suppliers, customers and employees.

16. Measurement and accounting

- What is the source of our data?
- Is our data reliable?
- What are the skills needed to prepare our data?

One tonne CO₂-e is the generally accepted unit of measurement for GHG emissions. The dollar value of some organisations carbon liability under the proposed ETS will be material.

Organisations need to understand the key sources of emissions within their operational boundaries. From this they will be able to identify the key sources of information being used to collect the data. For NGERA reporting the direct sources could include:

- Stationary combustion of fossil fuels
- Mobile combustion
- Process emissions
- Fugitive emissions.

The GHG emissions information may come from a range of new sources such as direct measurement through meters and estimation using formulae or sampling analysis. These methods will need to be reviewed, implemented and monitored in order to determine if this data can be relied upon for regular reporting.

With the new information obligations, new skills will be required for an organisation to ensure that the measurement and accounting of GHG emissions and energy is consistent with the requirements of the regulations.

The financial accounting implications can also be complex. Currently there is no specific accounting technical guidance in local or overseas markets for emissions permits. IFRIC 3, Emission Rights was withdrawn (as it causes unacceptable earnings volatility) with no current replacement available. The IASB/AASB has the topic of carbon accounting on their agenda, and an exposure draft is due later in 2010.

When there is no specific guidance available organisations must follow the general IFRS principles, including IFRIC 3 in the interim. The accounting implications could include the creation of assets (permits), expense of the cost of emissions, liabilities (obligation to submit permits), deferred income (government grant) and other assets/liabilities. Due to the lack of specific guidance, there are varied and inconsistent practices which might be applied in the Australian market.

17. Systems, processes and controls

- Is our team collecting the right information and does it understand our record keeping requirements?
- What controls do we have in place around the collation and reporting of emissions data?
- Have we linked carbon source data to our existing financial systems?

Getting the data right (continued)

Controls over systems and processes are risk minimising activities. These provide comfort to management that the data being presented is complete and accurate and can be relied upon when making their decisions.

Most systems used to collect GHG emissions source data are generally immature and separated from existing financial systems. There are few strong controls over the processes used to collect and report the data. GHG emissions source data is generally developed manually on spreadsheets.

These processes need to be automated and incorporate adequate internal controls. Process documentation should be prepared for GHG emissions data collation and reporting.

A strong control environment leveraged from the financial reporting framework will ensure that GHG emissions data being distributed can be relied upon and that errors will be identified as they occur.

18. Quality control

- How do we document our level of comfort over the way the data has been collected and reported?
- Are GHG emissions and climate change risks included in our broader risk management framework?
- Is the GHG emissions data used for performance monitoring and decision making purposes?
- Is the quality of reported non-financial data assessed by our internal audit team?
- Are there synergies between the financial audit and carbon assurance process that can be leveraged?

The quality control mechanisms in place over the GHG emissions data are important to support information being presented. In addition to the development of systems, processes and controls, an organisation must test them regularly to assess how effective they are and seek to continually improve them.

This requires detailed documentation of the framework so that the systems, processes and controls can be easily understood and tested by an independent party.

GHG emissions data should be incorporated into existing corporate risk mitigation processes. The proposed ETS or a carbon cost is a new risk for organisations and should be added into the existing frameworks. If the proposed ETS or a carbon cost is identified as a core risk for an organisation, the systems, processes and controls used to collect and report this data should be incorporated into the internal audit plan.

In addition to internal audit, the government proposes that external 'reasonable assurance' for organisations with facilities with direct GHG emissions greater than 125,000 tCO₂-e will be required. Other organisations should consider the value of obtaining independent assurance over their GHG emissions used for public and regulatory reporting under the NGERA. This data is being used by the capital markets in assessing company valuations and there are significant penalties on the directors for breach of the NGERA for management and external stakeholders.

NGERA Year 1 reported data

Top 5 registered corporations by Scope 1, Scope 2 and energy consumption

Scope 1 GHG emissions	tCO ₂ -e
Macquarie Generation	25,290,141
Delta Electricity	22,232,799
Great Energy Alliance	18,962,761
International Power	17,968,483
C S Energy	16,629,357

Scope 2 GHG emissions	tCO ₂ -e
Alcoa Australia	10,663,159
Rio Tinto	9,369,953
Wesfarmers	2,696,528
Hydro Aluminium Kurri Kurri	2,496,761
Woolworths	2,424,625

Energy consumption	GJ
EXXONMOBIL	664,798,527
Caltex	464,933,427
Shell	416,136,119
Macquarie Generation	286,920,709
BP	267,108,722

Source: Department of Climate Change

Communication

19. Internal communication

- What is our internal communications strategy with respect to our response to climate change and impact of a carbon cost?
- Do the key teams within our organisation understand the potential impacts of a cost of carbon?
- Do we have the most up-to-date GHG emissions information to report?

Effective internal communication can assist in maximising carbon and climate change opportunities and minimising the risks. Communicating the business implication of the proposed ETS or other climate legislation is critical to ensuring that the business implications are understood by the board, management and employees. It will be employees who will identify and realise the potential opportunities and also mitigate any exposures. Cost pass through clauses within contracts are going to be the key area in which the proposed ETS and a cost of carbon may unexpectedly impact operations. Without a core strategy and clear communication plan within the business, new contractual arrangements may result in unintended increased cost and risk exposure.

As climate change regulations are debated and finalised over the coming months and the requirements are formalised in Parliament, organisations will need to stay up to date on the changing issues and the potential impact in the business. The Department of Climate Change will be a key source of the most up to date information available. Relevant updates should be shared with all employees.

20. Communicating with stakeholders

- What information are our external stakeholders asking for in relation to the implications of climate change and a cost of carbon?
- Could we broaden our reporting to better address these requests?

External stakeholders are continuing to request information on the potential impact of climate change, a cost of carbon and the proposed ETS on the business with its current strategy and expectations. For organisations reporting under the NGERA or those permit liable under the proposed ETS, there will be new non-financial information available to external stakeholders. The way in which an organisation incorporates this into the broader external communications strategy is critical. Inconsistent information, errors, and poorly considered responses to carbon risk, will discredit the data, and may result in reputational damage.

GHG emissions data should be incorporated into existing external communications programs. Sharing information about how the organisation is addressing the risks associated with the transition to a low carbon economy and realising the opportunities will be important for both value protection and enhancement.

'As more information about the need to address climate change becomes available, accurate reporting on the corporate carbon footprint has already become the minimum expectation of institutional investors.

Institutional investors also want the corporations they own to address the risks and opportunities arising from a price on emissions over time and from a changing physical environment. Ultimately investors need to assess the future prospects for their investments as they transition their portfolios to a low-emissions and climate change-resilient footing.'

Nathan Fabian, CEO Investor Group on Climate Change, Carbon Disclosure Project 2009, Australia and New Zealand

Resources and further information

Links

Department of Climate Change	www.climatechange.gov.au
The Institute of Chartered Accountants in Australia	www.charteredaccountants.com.au
PricewaterhouseCoopers	www.pwc.com.au/climatechange

References

Institute of Directors in Southern Africa, 2009	<i>King Report on Governance (King III)</i>
Carbon Disclosure Project, 2009	<i>Carbon Disclosure Project Report 2009 Australia and New Zealand</i>
Commonwealth of Australia, 2008	<i>Australia's Low Pollution Future: the economics of climate change mitigation</i>
Deutsche Bank, 2009	<i>Australian Carbon Pollution Reduction Scheme: De-carbonising the CPRS</i>
McKinsey & Company, 2008	<i>An Australian Cost Curve for Greenhouse Gas Reduction</i>
PricewaterhouseCoopers, 2007	<i>Carbon Value: Robust Carbon Management – A Framework to Protect and Enhance Shareholder Value in Response to Climate Change</i>

20 issues checklist

Quantifying the impacts

		Yes	No
1. Compliance obligation	1.1	Do we have any GHG emissions that we will be directly liable for?	
	1.2	Is there adequate documentation prepared to support the position taken?	
	1.3	Have we included the resourcing / legal compliance obligations within budgets?	
2. Supplier price increases	2.1	What is the impact of the ETS and / or, a carbon cost on our key suppliers?	
	2.2	Have carbon clauses been added to our existing procurement contracts?	
	2.3	Have we incorporated direct and indirect carbon cost implications into our mergers and acquisitions, capital expenditure and budgeting / forecasting processes?	
3. Cost pass-through and point of obligation	3.1	Where are indirect cost increases going to impact our business most?	
	3.2	Can we pass our liability through to our customers?	
	3.3	Have we added carbon clauses to every sales contract?	
	3.4	If we cannot pass on our liability, can we still pass on the cost increase?	
	3.5	What is the appetite for cost increases with our customers, and how do we know this?	
4. Government assistance	4.1	Do we understand all the potential assistance available from the government?	
	4.2	Have we started discussing the proposed ETS and the implications of a cost of carbon with our industry association?	
	4.3	Do we understand the timeframes and requirements for application for assistance?	
5. Carbon trading	5.1	Do we have a carbon trading strategy?	
	5.2	Do we plan to purchase eligible emissions units at auction or in a secondary market?	
	5.3	What investment and financing options have we considered or discussed?	
6. Management accounting	6.1	Have we incorporated the cost of carbon into future cash flow forecasts?	
	6.2	Does our management have adequate, accurate and timely carbon information to support business decisions?	
7. Reducing emissions and improving efficiency	7.1	What are we doing to reduce GHG emissions to avoid direct and indirect costs?	
	7.2	Can a focus on carbon assist us in being more efficient in our overall carbon consumption?	
	7.3	What can we do to reduce our indirect GHG emissions?	
8. New business ventures / products	8.1	How many products or services do we sell that are 'low carbon' alternatives?	
	8.2	Is there any potential to identify 'carbon value added' product or service opportunities within our existing products or services?	
	8.3	Are we considering potential new business opportunities more aligned to a low carbon economy?	

Strategy: risks and opportunities

		Comment
9. Physical	9.1	What are our physical risks?
	9.2	What costs are associated with our physical risks?
10. Organisation performance and market reputation	What are the organisational and reputational risks associated with the organisations response to climate change?	
11. External stakeholders	What are the risks and opportunities relating to external stakeholders associated with the organisations response to climate change?	
12. Customers	What are the risks and opportunities relating to our customers or associated with the organisations response to climate change?	
13. Suppliers	What are the risks and opportunities relating to our suppliers associated with organisations response to climate change?	
14. Industry / competition	What are the risks and opportunities relating to our competitors associated with the organisations response to climate change?	

Getting the data right

15. Identifying your reporting and permit liability	15.1	What GHG emissions are considered to be ours for reporting and permit liabilities?
	15.2	What joint ventures, partnerships and business relationships does our business have?
16. Measurement and accounting	16.1	What is the source of our data?
	16.2	Is our data reliable?
	16.3	What are the skills needed to prepare our data?
17. Systems and processes	17.1	Is our team collecting the right information and does it understand our record keeping requirements?
	17.2	What controls do we have in place around the collation and reporting of emissions data?
	17.3	Have we linked carbon source data to our existing financial systems?
18. Quality control	18.1	How do we document our level of comfort over the way the data has been collected and reported?
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	18.4	Is the quality of reported non-financial data assessed by our internal audit team?
	18.5	Are there synergies between the financial audit and carbon assurance process that can be leveraged?

Communication

19. Internal communication	19.1	What is our internal communications strategy with respect to our response to climate change and impact of a carbon cost?
	19.2	Do the key teams within our organisation understand the potential impacts of a cost of carbon?
	19.3	Do we have the most up-to-date GHG emissions information to report?
20. Communicating with stakeholders	20.1	What information are our external stakeholders asking for in relation to the implications of climate change and a cost of carbon?
	20.2	Could we broaden our reporting to better address these requests?

Glossary

Abatement

A reduction in the degree or intensity of GHG emissions. A project or activity that reduces or otherwise prevents emissions of GHG from entering into the atmosphere.

Allocation

The allocation of emissions permits or allowances among GHG emitters to establish an emission trading market. The division of permits/allowances can be done through free allocations and permit auctioning.

Allowances

A government issued instrument giving the bearer the right to emit a fixed amount of GHG emissions into the atmosphere (tonnes of CO₂-e). Also see permits.

Business As Usual Scenario (BAU)

An estimate of the future pattern of GHG emissions, which assumes that there will be no major changes in attitudes and priorities of governments, business and the community.

Carbon dioxide equivalent (CO₂-e)

A standard measure that takes account of the global warming potential of different GHG and expresses the cumulative effect in a common unit, relative to carbon dioxide.

Carbon Footprint

An organisation's carbon footprint is generally referred to as a measure of the impact its activities have on the environment in terms of the amount of GHG produced, measured in units of carbon dioxide equivalent. It is also known as a GHG inventory.

Carbon Intensity

CO₂-e emissions per unit of economic output (such as tonnes of CO₂-e per dollar of GDP).

Clean Development Mechanism (CDM)

One of the three Kyoto mechanisms, the CDM aims to promote sustainable development in developing countries as well as to help Annex I Parties achieve compliance with their QELRCS. It allows Annex I which includes Australia to invest in emission – saving projects in developing countries and gain credit for the savings achieved through the generation of CERs that they can use to contribute to compliance with their commitment. The CERs will be added to Annex I Parties' assigned amounts.

Certified Emissions Reduction (CER)

A Kyoto Protocol unit equal to 1 metric tonne of CO₂-e. CERs are issued for emission reductions from CDM project activities. Two special types of CERs called temporary certified emission reduction (tCERs) and long-term certified emission reductions (lCERs) are issues for emission removals from afforestation and reforestation CDM projects.

Greenhouse gas (GHG)

A gas that contributes to the natural 'greenhouse effect.' Gaseous constituents of the atmosphere, both natural and anthropogenic, that absorb and emit radiation at specific wavelengths within the spectrum of infrared radiation emitted by the Earth's surface, the atmosphere, and clouds. The Kyoto Protocol covers a basket of six GHGs produced by human activities: carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs) and sulphur hexafluoride (SF₆). Annex I Parties' emissions of these gases taken together are to be measured in terms of carbon dioxide equivalents (CO₂-e) on the basis of the gases' Global Warming Potentials (GWPs). An important natural GHG that is not covered by the Kyoto Protocol is water vapour.

Kyoto Protocol

A protocol to the UNFCCC that includes emissions limitation or reduction commitments for ratifying countries.

Life Cycle

The consecutive and interlinked stages of a product system, from raw material acquisition or generation of natural resources to end of life, inclusive of any recycling or recovery activity.

Life Cycle Assessment (LCA)

The compilation and evaluation of inputs, outputs and potential environmental impacts of a product system throughout its life cycle.

Life Cycle GHG Emissions

The sum of GHG emissions resulting from all stages of the life cycle of a product and within the specified system boundaries of the product. This includes all emissions that are released as part of the processes within the boundary of the life cycle of the product, including obtaining, creating, modifying, transporting, storing, operating, using and end of life disposal of the product.

Mitigation

In the context of climate change, a human intervention to reduce the sources or enhance the sinks of GHGs. Examples include using fossil fuels more efficiently for industrial processes or electricity generation, switching to solar energy or wind power, improving the insulation of buildings, and expanding forests and other 'sinks' to remove greater amounts of carbon dioxide from the atmosphere.

National Greenhouse and Energy Reporting Act 2007 (NGERA)

An Act that establishes a national framework for Australian corporations to report greenhouse gas emissions, reductions, removals and offsets and energy consumption and production, from 1 July 2008.

Offset

An activity that compensates all or part of the CO₂-e emissions of an emitting entity, by reducing the emissions, or increasing the CO₂ absorption of another entity.

Permit

Permits are often used for denoting the tradable units under the Kyoto Protocol, such as CERs. Emissions permits are treated as a commodity giving its holder the right to emit a certain quantity of GHGs. Emissions permits are designed to be tradable between countries and other legal entities.

Renewable Energy

Energy derived from non-fossil energy sources that is continuously renewed by natural processes. These include wind, solar, geothermal, wave, tidal, hydropower, biomass, landfill gas, and sewage treatment plant gas, as well as technologies based on biomass.

Scope 1 Emissions

Described in the GHG Protocol as the direct GHG emissions from sources that are owned or controlled by an organisation (such as emissions resulting from on-site combustion of fossil fuels, or PFC emissions from aluminium smelting).

Scope 2 Emissions

Described in the GHG Protocol as the indirect GHG emissions from consumption of purchased electricity, heat or steam which is purchased by an organisation.

Scope 3 Emissions

Described in the GHG Protocol as the other indirect emissions, such as the extraction and production of purchased materials and fuels, transport-related activities in vehicles not owned or controlled by the reporting entity, electricity-related activities (such as Transmission and Distribution losses) not covered in Scope 2, outsourced activities, and waste disposal.

Secondary markets

Carbon markets where previously issued permits such as CERs are bought and sold. The establishment of secondary markets is vital to an efficient carbon market. In the secondary market, permits are sold by and transferred from one liable entity or investor to another by way of a private contract of sale rather than through regulated government auctions of permits.

United Nations Framework Convention on Climate Change (UNFCCC)

Adopted at the June 1992 'Earth Summit' in Rio de Janeiro and in force since March 1994. The Convention's ultimate objective, and that of the Kyoto Protocol and any other instruments attached to the UNFCCC, is 'to achieve ... stabilisation of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic (man-made) interference with the climate system'.

Upstream Emissions

Life cycle assessment for GHG emissions associated with processes that occur in the life cycle of a product prior to the processes owned, operated or controlled by an organisation.



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