



BUSINESS COUNCIL OF AUSTRALIA

SETTING ACHIEVABLE EMISSIONS TARGETS FOR AUSTRALIA

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Introduction

Australia has sustained a significant period of economic growth and prosperity. Looking forward, however, there are a series of important challenges, including managing the potential impacts of climate change, which will require a renewed national effort in economic reform so as to ensure that Australia can continue to prosper.

In its previous publication *Strategic Framework for Emissions Reduction* released in April 2007, the Business Council of Australia (BCA) detailed its position on climate change and emissions trading recognising that it will be the strength of the Australian economy in the future – not its diminution – which will ensure Australia is able to address the potential risks associated with climate change.

A strong economy is the key to funding the low-emission technology necessary to support what will continue to be an energy-intensive world, while at the same time reducing greenhouse gas emissions.

A strong economy will also provide the resources to fund other transition strategies that will be required as we move away from a high-emission economy.

The BCA recommended that as part of Australia's risk management policy it should develop a domestic emissions trading scheme which can be linked globally and increase business certainty. The Council described the essential features of a domestic emissions trading scheme which would support ongoing economic growth while reducing greenhouse gases over the long term.

Specifically, Australia's approach to an emissions trading scheme should:

- make the scheme a long-term one (at least 30 years) to increase greenhouse gas emission reduction certainty and investor certainty;
- have both a long-term emissions reduction target and yearly targets to provide the incentive for emissions reduction;
- include a first phase which involves the establishment of information collection and measurement and verification mechanisms for businesses and the secondary market;
- include as many greenhouse gases as possible;
- maximise the number of sectors that are included in the scheme. If it is not possible to include a particular sector introduce policies which ensure commensurate emissions reductions in that sector;
- allow maximum offsets (national and international) to meet abatement targets;

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- issue free permits to compensate enterprises for the economic loss from the change in the 'rules of the game';
 - offset the competitiveness impact of the scheme on 'trade-exposed' industries for as long as necessary providing transitional arrangements through the permit issue process;
 - cap the price of permits and consider other relevant 'safety valve' mechanisms;
 - establish an 'RBA-like' permit issue authority;
 - ensure the scheme facilitates an active secondary market to provide a rising but reasonably stable forward permit price curve; and
 - ensure effective governance structures that enable confidence in the market.

Setting emissions reduction targets for Australia

This paper identifies how best to approach the setting of achievable emissions reduction targets for Australia and the critical issues that will need to be taken into consideration.

The BCA commissioned Rod Sims of Port Jackson Partners Limited (PJPL) to undertake research on establishing credible greenhouse gas reduction targets for Australia.

The report highlights the need for the Australian Government to establish a rigorous and transparent process which ensures emissions reduction targets which are credible and achievable for Australia.

Establishing credible targets will require extensive national economic modelling, data collection and analysis and an appreciation of the likely climate change policies and targets of other countries, particularly those with whom we trade and compete.

The report acknowledges that should Australia seek to establish long-term emissions reduction targets ahead of most nations there will need to be careful consideration of the impact on the Australian economy. Account will also need to be taken of the targets, actions and measurable achievement in emissions reduction in other countries. Australia's emission reduction efforts alone will, of course, not resolve this issue: only global action will have an effect.

Australia can establish credible targets that provide the basis for a smooth, long-term transition to a low-emissions economy and which recognise the unique features of the Australian economy, international progress in emissions reduction and our contribution to global emissions.

Success in such a process will require an approach based on rigorous and transparent analysis, which gains community support for the targets and a recognition of the likely costs that will be incurred by all Australians.

Linking these targets to a long-term, well designed emissions trading scheme will allow Australia to break new ground and demonstrate to other nations a sensible, economically sustainable way forward on this complex issue that other countries can be encouraged to join.

Establishing credible targets for greenhouse gas reduction

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Report prepared for the
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EXECUTIVE SUMMARY

The Australian Government is currently examining the role of emissions trading as part of a global response to the greenhouse challenge. If in this context Australia announces that it will introduce an emissions trading scheme the Government must then fairly quickly begin a rigorous and transparent process to establish the caps on emissions and targets that will underpin such a scheme.

The key point of course is that any targets that are set must be credible in the eyes of the community and investors if they are to achieve their environmental objectives. That is, they must be targets that the Australian community can “buy into”: Australians must see that any targets need to be met, that they can be met, and they must believe that they will be met. Otherwise targets will simply provide “warm feelings” and raise expectations, but with the test of time they may be seen to have contributed little.

While establishing credible targets will require at least a 12 month process, where the costs and benefits of possible reduction levels and trajectories are assessed, this time period should not represent any delay in establishing a domestic emissions trading scheme. Establishing credible targets will require considerable data collection and analysis, all of which is required and therefore on the critical path for establishing an Australian emissions trading scheme.

Any targets will, of course, be set by the Government of the day after taking advice. To achieve the community’s “buy in” to the targets this advice should be formulated in a transparent and rigorous manner. The community will need to be informed on the economic, social and environmental impacts of the proposed path to emissions reduction. This advice could be provided by an existing body such as the Productivity Commission supplemented by other relevant agencies (such as the CSIRO), or by the new RBA-type body that will need to be established to administer the emissions trading scheme.

Whoever undertakes the advisory work they will need to, amongst other things, compile a detailed cost curve for Australia of emission reduction options and feed this into a general equilibrium model of the Australian economy to determine the effects of the targets on each industry and community segment. Currently available economic modelling will need to be expanded to provide a better understanding of the impact of emissions trading in the short and longer term on different sectors of the economy. They will also have to consider what is happening to the global cost of carbon and the state of technology development and deployment.

There is not currently an agreement among all or most nations to reduce long term emissions by set amounts in future decades. Without this underpinning any targets that Australia sets must therefore weigh a range of factors.

- Any targets should be credible environmentally in that Australia should seek to take its appropriate share of the burden to reduce emissions to provide the reductions that the now prevailing science suggests the world requires.

- The Australian targets need to take account of what other countries are actually doing, as distinct from any stated “political” aspirations that are not backed by concrete steps. Australia’s emission reduction efforts alone are not relevant to addressing this issue: only global action will have an effect.
- Any targets must be technically feasible.
- The community needs to know the broadly expected cost to the economy of meeting the targets, and needs to see these costs as acceptable. The Australian economy, and in particular our export industries, has been built on a rich supply of natural resources and a relatively inexpensive supply of energy.
- In addition, if Australia establishes an emissions trading scheme before its competitors the cost of the scheme in the initial years at least will need to be kept to modest levels.
- Most important, any set of targets must create a “virtuous circle of achievement” in that we can sensibly meet the targets in the initial years (with effort), which will bring credibility to the whole process in general and the harder to meet later year targets in particular.

Australia needs three sets of targets.

- A long term (say, 30 to 40 years) target to provide the end point, and establish long term carbon prices to guide investment in new technology. Such a target could be described as “aspirational” in the sense that it will be adjusted up or down as information and circumstances change over time.
- Rolling fixed targets that initially could be set each year for 5 years and then each year for, say, 10 years, as the scheme is established and international directions with regard to emissions reductions are better understood.
- Target “gateways” for a further 10 years (that is, years 5-10 or 10-20) that will provide a band within which later fixed targets will fall.

The initial targets (but not for the first, say, 5 or 10 years) must be reviewed on a regular basis to take account of a number of factors. For example:

- Changes in our knowledge of the climate science.
- Changes in technology or other factors that will affect the cost of emission abatement or adaptation.
- Moves to a global agreement or changes to the approaches being taken by many other countries.
- The economic impact on Australia in absolute terms and relative to the economic impact on our competitors.

Australia should establish credible targets that provide the basis for a smooth eventual transition to a low emissions economy and which recognise the unique features of the Australian economy, international progress in emissions reduction and our contribution to global emissions. Such targets should be based on rigorous and transparent analysis, which gains community “buy in” to the targets and recognition of the likely costs that will be incurred by all Australians. If Australia links these targets to a long term well designed emissions trading scheme, it can break new ground and illustrate a sensible way forward on this complex issue that other countries could be enticed to join.

ESTABLISHING CREDIBLE TARGETS FOR GREENHOUSE GAS REDUCTION

1. The purpose of and background to this paper

In April 2007 the Business Council of Australia (BCA) released its paper - *Strategic Framework for Emissions Reduction*¹ which outlined the key principles which could underpin global action on greenhouse gas abatement, the preferred features of emissions trading schemes and the objectives or criteria for the assessment of any national policies. In particular, it discussed the role of a domestic emissions trading scheme as a step towards a global scheme.

In recent weeks there has been strong public debate on a range of aspects in relation to target setting:

- Should we set targets?
- If so, at what level, and for which years?
- When should we set them?
- What process should be followed in establishing them?
- What principles should guide their establishment?

Given this debate the BCA has considered, what is the appropriate approach to establishing credible greenhouse gas reduction targets, and what principles should guide that target setting. This paper addresses these matters. While this paper has been written largely as a stand alone document it has been kept short; it is best read in conjunction with the earlier main paper.

2. The importance of setting targets

The considerable uncertainty surrounding greenhouse issues requires us to follow a risk management approach. Such an approach requires reduced emissions to minimise the chances of exposure to the more alarming consequences of greenhouse gas accumulation that, whatever views people have on their likelihood, cannot be ruled out.

The only way to be sure of reducing emissions is for governments to place limits on them or cap them. That is, to make the right to emit a property right that is monitored and limited.

¹ Incorporating: Rod Sims, Determining the appropriate policy principles to guide the response to the greenhouse challenge, report prepared for the Business Council of Australia, 2 April 2007 (available on the BCA website)

Such caps or limits are the basis for an emissions trading scheme. Not only can such a scheme ensure a given level of emission reduction, but caps on emissions are required for such a scheme to operate.

Carbon taxes and partial approaches such as renewable energy targets, of course, do not require overall caps on emissions, and so cannot provide any certainty on the level of emission reduction.

To facilitate appropriate investment and other decision making people need to know the level at which emissions will be capped in the immediate year, and for many years ahead. Such future caps will necessarily represent emission reduction targets.

3. Learning from international approaches to target setting

It is always instructive to examine what others have done in relation to target setting. What follows is a very brief description of some of the key steps that have been taken, and some observations.

3.1 Targets set by some other countries

Developed nations agreed to targets under the **Kyoto Protocol**. Most nations had to achieve an 8% reduction in emissions from 1990 levels by 2012, but some countries (such as Australia - 108%) negotiated agreement to different targets reflecting a range of national factors. The Kyoto Protocol outlined some policy mechanisms by which countries could meet their targets, but the precise policy steps to be taken were left to the discretion of individual countries. It is worth noting four features of these Kyoto targets:

- No targets were set beyond 2012.
- Most countries will not meet their targets.²
- Many countries did not support their target with policy steps that would allow them to be met (e.g. Canada, Japan).
- Some countries resented having to accept targets when other countries did not.

The **European Union (EU)** has now set a target of a 20% reduction in emissions from 1990 levels by 2020.

² For example:	Country	Kyoto Target*	Actual Change 1990-2004 (UNFCCC, 2006)
	Canada	-6	+62.2
	Japan	-6	+5.2
	Germany	-21**	-17.5
	Spain	+15 **	+47.9

* Percentage reduction on 1990 greenhouse gas emissions

** Both Germany and Spain are members of the EU15 which has an overall Kyoto target of -8 but individual EU countries had different targets

- The EU has said it would accept a 30% target if other countries also committed to such a target.
 - That is, their target was set at a lower level than otherwise because other countries were not setting equivalent targets.
- They have also set partial targets.
 - Renewable energy is to have a 20% share of energy supply by 2020.
 - Biofuels are to make up 10% of EU petrol and diesel consumption for transport by 2020.
- The already established EU emissions trading scheme (EU ETS) will be the main mechanism for achieving their target, but a number of other mechanisms have been put in place.

The United Kingdom (UK) is legislating for a 60% reduction in emissions from 1990 levels by 2050, and reductions of between 26-32% from 1990 levels must be made by 2020.

- A Climate Change Committee is to set 5 yearly targets for 3 periods ahead, and is to report to Parliament on progress with achieving the targets.
- A range of policy mechanisms have been established to meet the target including purchasing credits from the EU ETS.

Germany has set a policy target of a 40% reduction in emissions from 1990 levels by 2020.

- It has also set a target of a 27% share by renewables in energy supply, and a 10% share of renewables in Germany's primary energy consumption.
- A range of measures have been announced to meet the target in addition to relying on the EU ETS.

While not well known the **USA** has set an overall objective of a reduction in greenhouse gas intensity by 18% from 2002 to 2012. They have not however, set a specific emission reduction target, but some States have.

California has established legally binding targets to reduce emissions by 80% from 1990 levels by 2050, and to have emissions at 2000 levels by 2010 and at 1990 levels by 2020.

- California is also seeking 33% of all power to be generated by renewables by 2020.
- Under the Global Warming Solutions Act of 2006 the California Air Resources Board (CARB) is to implement market and regulatory mechanisms and determine how to achieve the targets.

Also in the USA **seven north eastern and mid Atlantic States have formed the Regional Greenhouse Gas Initiative (RGGI) with a further two states as**

observers. They have set a target for emissions to be 10% below 1990 levels by 2018 under a Memorandum of Understanding, which will be backed by individual state legislation by 2009.

- The reduction shall be achieved by a cap and trade system, and with assistance to renewable technologies.

Canada has set a target of a 20% reduction in its emission intensity of GDP by 2020. That is, rather than set an absolute cap on emissions Canada will cap the level of emissions as a proportion of GDP; thus the level of emissions can increase, or decrease with the level of GDP.

- There will be mandatory reduction targets placed on industry and trading will be allowed to meet commitments.

3.2 Some observations on these approaches

A number of observations can be made.

First, we must remember that most countries have not met the targets that they have so far set themselves. Perhaps understandably, many countries find it easier to set targets than they do to put in place the mechanisms to meet them.

While it is still early days, this does not assist the credibility of policy in this area.

Second, a wide range of future targets have been adopted, with varying end points (mainly 2020). Of course, it must be remembered that many developed countries only have their 2012 Kyoto target, and developing countries have essentially not set any targets.

Third, the Kyoto targets provide little effective guidance for investment since they send no commercial signals beyond 2012. These, of course, were initial and interim arrangements. In addition, it would appear that the targets set by the EU, Canada and the RGGI States in the USA also do not provide sufficient long term guidance as they have no targets beyond 2020.

Fourth, some countries (e.g. the EU) have made the level of their targets conditional on what other countries do because they do not wish to be too far in front of others who are yet to establish targets.

Finally, some countries (like Australia) have opted for targets that focus on particular technologies, such as mandating how much electricity should come from renewables, or how much petrol should come from bio fuels. Such approaches increase the cost of meeting any cap on emissions, and can have very unfortunate side effects (to provide bio fuels means more destruction of forests).

4. The criteria that should be used in establishing targets and in adjusting them over time (or, the need for credible targets)

4.1 Criteria for establishing the initial targets

Targets must be seen as credible by the community and investors. That is, they must be:

- Ones that the Australian population can see need to be met for sensible reasons
- Ones that have been set following a rigorous assessment of the costs and benefits
- Capable of being met through broadly understood actions at acceptable cost, and
- Supported by appropriate policies that will drive the actions to meet the targets at least cost.

In concept any target should be such that the marginal cost of reducing emissions is equal to the marginal cost of adaptation (or what must be done to deal with the cost of rising temperatures). In practice this is difficult to determine.

What makes the issue complicated, however, is that without a comprehensive global agreement to reduce long term emissions any target that Australia sets must be the result of weighing a range of factors. There are likely five.

First, what the prevailing science is saying about the target that should be set globally. Australia should seek to make credible moves from a global environment point of view and so should take its appropriate share of the burden. In addition, there needs to be a good understanding of the effects on Australia of different world emission levels. The community will need to be able to relate to the challenge.

Second, what real targets (as distinct from “political” aspirations) other countries are pursuing. Real targets are those backed by policies and programs that will see them met, not missed. We must remember that only global action will have an effect: if only a few countries reduce emissions it will have little or no effect on global warming.

Third, what targets are technically achievable? Many emission reduction possibilities will take time to test and to put in place.

Fourth, we need to know the economic impact of our abatement efforts. This will require careful analysis and transparency. The cost to individuals and our economy must be seen as acceptable by the community at least in broad terms so that Australia’s greenhouse policies have broad support. In addition, if Australia establishes an emissions trading scheme before others, particularly its trading partners, the cost of the scheme in the initial years at least will need to be kept to modest levels.

Finally, and perhaps most important, any set of targets must create a reinforcing “virtuous circle of achievement”. The early year targets need to be below business-as-usual, but they need to be ones we have confidence we can meet (with effort). Early success will bring credibility to the whole process: early failure will do the reverse.

The objective is to start the process, and gain early wins and increase our confidence, with the knowledge that the deep emission cuts will take time. If the initial targets are met then those making long term investment decisions will believe that the longer term targets are credible; otherwise they will not.

4.2 Adjusting targets over time

Any initial targets, of course, will need to be constantly reviewed as discussed in Section 5. Such reviews will need, among other things, to consider:

- Changes in our knowledge of the climate science, particularly in regard to the implications of climate change.
- Changes in technology or other factors that affect the cost of emission abatement.
- Moves to a global agreement or changes to the approaches being taken by many other countries.
- The economic impact on Australia in absolute terms and relative to the economic impact on our competitors.

5. The types of targets Australia should and should not set

There are a number of important points to make.

5.1 Establish an initial long term (say, 30 to 40 years) goal for emissions reduction

Such a goal should provide guidance by being the currently targeted end point. It should both:

- Be the end point that the trajectory of yearly targets should aim for; but
- Not be “set in stone” in that it can be adjusted as we learn more.

On the one hand investors and other decision makers need to know their government’s best view of where Australia is heading with emissions. This will help provide a long term carbon price to drive new technology. On the other hand this target must be capable of adjustment; there is simply too much we are unsure of at this stage.

Such a long term goal could, therefore, be described as “aspirational” in the sense that it represents an objective that Australia currently intends to meet, given the prevailing climate science and our understanding of the economic impacts of reaching

such a goal. As new information is gathered on these issues, or as other countries adjust their targets, this goal could be adjusted.

5.2 Establish 5-10 year fixed annual targets

Investors and other decision makers need as much certainty as possible. Fixed targets set each year for the first, say, 5-10 years of a scheme and then on a rolling basis may provide the appropriate balance, particularly in the early years of the scheme. These targets would be fixed in the sense that they would be unchangeable subject only to some unpredictable “force majeure” event.

The period for which fixed yearly targets are set should probably be 5 years until the system settles down, but then the period could be moved to 10 years as the scheme becomes accepted and familiar.

- On the one hand the period needs to be long enough to enable new projects to be bankable.
- On the other hand not so long that Australia cannot adapt its targets as our knowledge increases.

Fixed targets set for 5-10 years out would establish a vibrant secondary market with a transparent forward curve of prices.

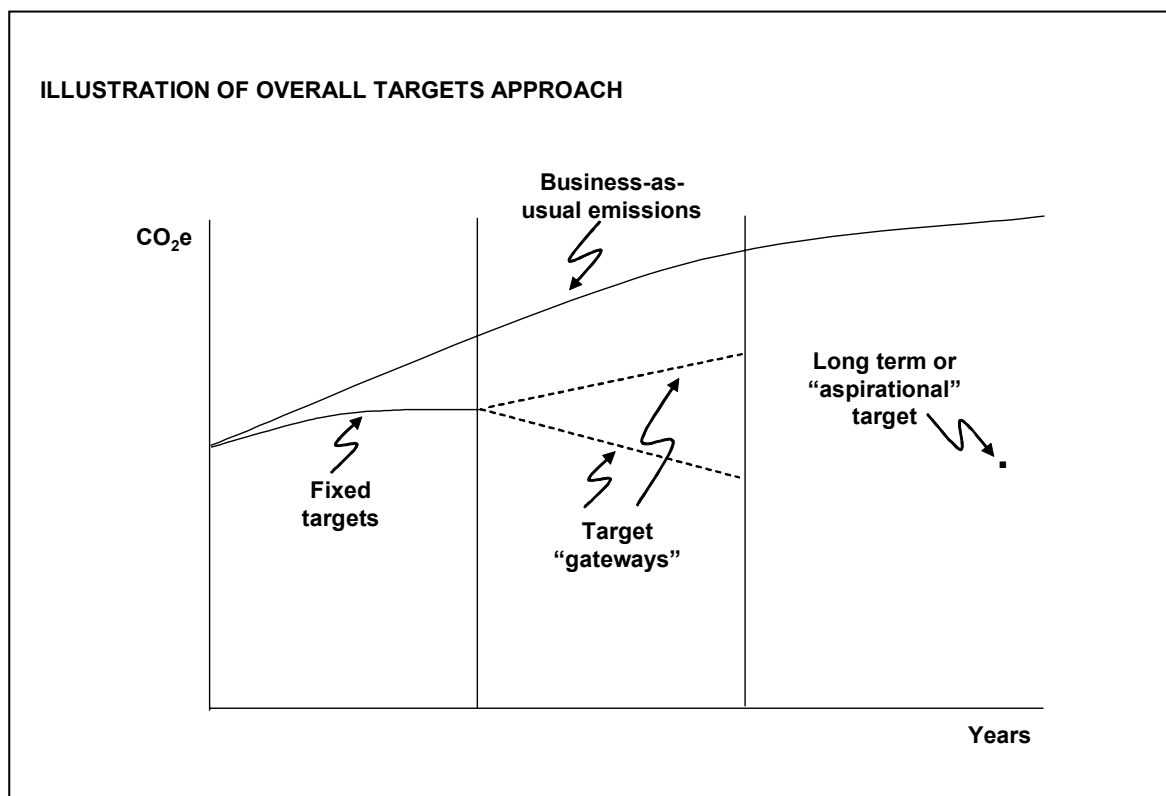
5.3 Establish target “gateways” beyond the immediate 5-10 year targets

The National Emissions Trading Taskforce established by the States and Territories advocated bands of yearly targets beyond any initial period of fixed targets. They called these bands “gateways”.³

The idea is that while fixed targets are set for a first period (5-10 years in 5.2 above), investors and other decision makers will only know that future fixed targets beyond 5-10 years will lie within a certain band. This concept is illustrated in Exhibit 1 below.

³ See p 40-41, “Possible design for a national greenhouse gas emission trading scheme”, August 2006

Exhibit 1



5.4 Balance investment certainty with the need for flexibility

The above target setting approach should provide a good balance between investment certainty and the need for flexibility, particularly in the early years as the scheme is bedded down and understanding increases.

In relation to emissions, this approach will likely see investors with as much certainty as they have with other variables relevant to their investment decisions. They will know the level of emissions allowed and the likely price of them for, say, 5-10 years; they will know the band of allowable emissions for a further 10 year period; and they will know the Government's best estimate of what the level of emissions may need to be at a date at the outer limit of their investment horizon. This may be more information than they have on other important decision-making variables such as consumer preferences or demand for their product, and the emergence of substitute products to the one they are investing in.

Alongside this, however, governments have the ability to adjust the targets, perhaps considerably, beyond years 5-10. They should do so as the facts relevant to the initial criteria used in setting them change over time (see Section 4 above).

5.5 Set greenhouse gas emission targets only, not technology specific targets

The only objective should be to reduce emissions. The challenge is to avoid pleasing special interest groups who have an understandable self interest in targets that promote their specific technology.

When Australia sets targets on emissions it must, for example, abolish the current sub-targets that support renewable energy. By definition of their nature, sub targets for particular technologies cannot yield lowest cost abatement; or, if they did, it would be based on a “one in a million” coincidence where the government chosen target coincided with the market determined outcome.

6. The desired process for establishing the targets

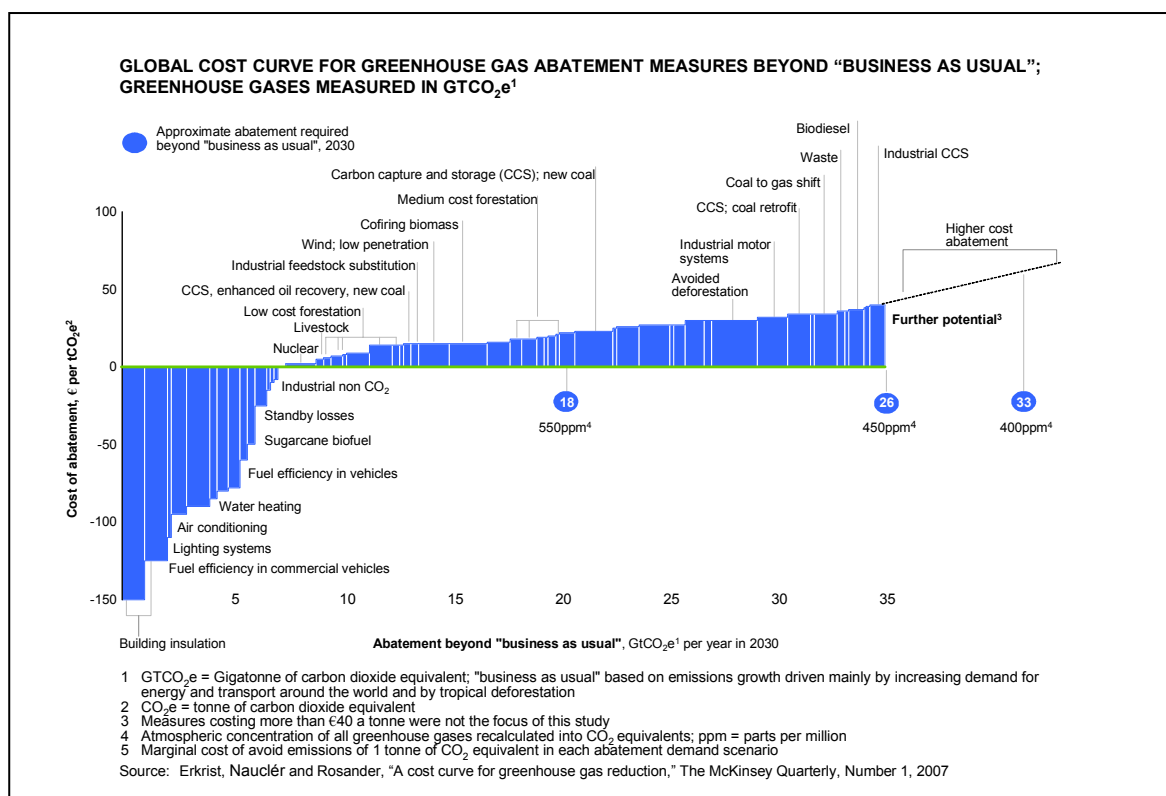
To gain credibility in the eyes of the community and investors a rigorous and open process needs to be followed to establish the targets. Credibility is vital, but it must be based on sound foundations. It will be important that those undertaking the work to determine appropriate targets for Australia are informed by an understanding of the costs and benefits of the target.

Rigor will come from a number of investigations that will need to be undertaken to inform government decisions on the level of targets. One task, for example, will be to bring together and probably extend the available research on the effects of climate change in Australia.

The key task, however, will be to understand the economic implications for Australia and individual sectors of the economy of the likely targets. This is where our information is most lacking.

A first step should be to compile a likely Australian cost curve of abatement options based on the prevailing views of the likely evolution of technology. Such a curve will provide a sound basis for assessing the cost effective ways to move forward over the longer term. Exhibit 2 comes from my earlier report and represents an attempt at a world cost curve.

Exhibit 2



This information would then need to be fed into a detailed sector-by-sector general equilibrium model to determine the effects on the economy as a whole, and each industry and community segment. Such a model can also illustrate the effects of excluding certain sectors or abatement opportunities from any emissions trading scheme. This should help gain community acceptance for a broadly based scheme, albeit one that insulates our trade exposed energy intensive sector.

The Australian cost curve of abatement options also provides the basis for including an assessment of emerging and immature technologies, their likely deployment and availability over time.

Advances in technology will be a critical contribution to a smooth transition to a low emissions economy over the longer term and will need to be a key consideration in setting targets.

The economic, scientific and technological information outlined above will also need to be balanced with an understanding of the likely progress globally in emissions reduction and the policies implemented in other countries.

The advisory work that will lay the basis for decisions by governments on the targets should be conducted by a credible government institution with the relevant expertise and processes to ensure rigorous analysis and sound advice. There seem at least two options.

- A current institution such as the Productivity Commission could undertake the work assisted by other agencies (such as the CSIRO) as appropriate.
- The new RBA-type body that will need to be established to run the emission trading scheme (see Section 3.5.6 of my earlier paper).

It is important to note that the work required to establish the targets should not cause any delay to the implementation of an emission trading scheme. Not only could the work begin reasonably quickly if any decision on an emissions trading scheme is made, but all of the work will lay the necessary framework and information base to, for example, enable sensible permit issue and the future adjustment of the targets as appropriate.

7. A model others can follow

If Australia can establish credible targets based on rigorous and transparent analysis, which gains community “buy in” to them, and if it links these targets to a long term emissions trading scheme, it may break new ground and illustrate a sensible way forward on this complex issue that others will want to join.