

COST OF DELAYING A CARBON PRICE IN AUSTRALIA

A research report conducted for the
Investor Group on Climate Change and
Catholic Super, by SKM / MMA

An Introductory Report
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Investor Group on
Climate Change



Cost of delaying a carbon price in Australia

An introductory report by the Investor Group on Climate Change and Catholic Super on research performed by SKM / MMA

Delaying the introduction of a carbon price only four years from 2012 to 2016 would:

- **Delay the switch from coal to gas**
- **Lock in \$2.5bn of additional costs to 2030**
- **Cause wholesale electricity prices to average \$6/MWh higher from 2016 to 2030**

EXECUTIVE SUMMARY

Research conducted for the Investor Group on Climate Change and Catholic Super by economic modelling firm SKM / MMA has found that delaying the start of a carbon price in Australia to 2016 would cost investors and electricity users more than under a 2012 start.

The research, which focussed on one sector of the economy, electricity markets, showed that delaying the start of a carbon price in Australia by only four years from 2012 to 2016 would lock in additional costs of over \$2.5bn¹ in the period to 2030 and specifically:

- delay the switch from coal to gas for base load electricity;
- result in less efficient electricity plant build, locking in additional economic costs of around \$500m to 2030 (\$1bn to 2050)²;
- incur almost \$2bn in additional emissions costs for the economy to 2030 (\$3bn to 2050);
- cause wholesale electricity price increases to reach 19% or \$13/MWh more than necessary and average \$6/MWh per annum higher in the period 2016 to 2030.

Starting a carbon price in 2012, with or without a fixed price period in the first few years, would fully avoid these increased costs to investors and electricity users.

These costs can be avoided regardless of the speed at which other countries formalise their carbon pricing arrangements.

A -5% emissions reduction below 2000 levels by 2020 was assumed in this research. If Australia's 2020 emissions reduction target became deeper than -5%, the economic cost of delay would be higher than the results of this research indicate.

As this research modelled the cost of delay in the electricity market only, it does not include additional costs associated with a delaying the start of carbon price, mainly from higher electricity prices, in other sectors of the economy.

The research does not attempt to capture any costs associated with the physical impacts of climate change or competitiveness impacts for Australia from delayed transition to a lower carbon economy.

¹ All additional costs are Net Present Value costs in 2010 dollars

² Economic cost includes: investment in generation capacity, resources costs such as fuel and operating costs and the cost of meeting emissions reductions commitments under international agreements

The main reasons for the additional economic cost are the building of carbon intensive electricity generation plant which may have slightly lower cost in the short term but lead to much higher costs in the long term, and the higher cost of replacing unprofitable, emissions intensive plant after 2016.

ASSESSING POLICY ALTERNATIVES

The costs of achieving the Government's unconditional emissions reduction target of -5% below 2000 levels by 2020 were assessed using two different policy scenarios:

- a July 2012 start to carbon pricing³;
- a July 2016 start to carbon pricing;

The 2012 start scenario was chosen to reflect the current proposal by the Multi Party Committee on Climate Change (MPCCC) to start a carbon price on July 1, 2012. The 2016 start scenario was chosen because it is the latest that a carbon price could be introduced to still allow some investment decisions to be made in the electricity market that would reduce emissions in 2020.

SKM / MMA examined cost implications for both scenarios to the year 2050 in this research but focused the report on the costs of delay between 2012 and 2030. Focusing on a shorter time period provides a more conservative representation of the economic benefits assessed in relation to early action in the research.

This research showed that delaying until 2016 would result in a range of additional costs to the economy and electricity users.

Higher electricity price increases from delay

If a carbon price were delayed to 2016, wholesale electricity costs would reach 19% or \$13/MW hour higher by 2019 in real terms than if the carbon price started in 2012. These higher wholesale prices would remain higher into the future, with the average additional cost per annum between 2016 and 2030 an additional \$6/MWh. These results are broadly consistent with previous studies by AGL which found additional cost of \$8.60/MWh from delayed carbon price certainty and Deloitte which found an additional cost of around \$5/MWh if policy resolution allowed baseload electricity investment to commence by 2017⁴.

Costs to investors and energy users from delayed carbon price

In the electricity market alone, the additional economic cost, plus additional permit cost to meet the -5% reduction target from introducing a carbon price in 2016 rather than in 2012, is around \$2.50bn in Net Present Value terms over the period to 2030.⁵

The main reasons for the additional economic cost are the building of inefficient electricity generation plant which may have slightly lower cost in the short term but lead to much higher costs in the long term, and the higher cost of replacing unprofitable, emissions intensive plant after 2016 including likely labour shortages that result.

The permit costs are incurred in lieu of even greater economic costs that would be incurred if emissions in the domestic electricity market were reduced by 5%. Forcing the electricity market to achieve a 5% emissions reduction would result in higher economic costs than the permit prices included in the

³ The modeling assumes a carbon price but does not distinguish between a fixed price or flexible, market determined price.

⁴ T. Nelson, S. Kelly, F. Orton and P. Simshauser (2010), "Delayed Carbon Policy Certainty and Electricity Prices in Australia", Economic Papers, Volume 29 (4), pp 446-465. Deloitte Report on Electricity Generation Investment Analysis, April 2011, p 7

⁵ The economic cost of a delayed start from investment implications was \$550m from 2016 to 2030 in NPV terms. The additional permit cost plus externality cost from a delayed start in order to meet the -5% target was \$1.82bn in NPV terms from 2012 to 2030.

Investors consider that a putting price on greenhouse gas emissions, is the type of substantial policy reform required if Australia is to reduce emissions at least in line with the Government's unconditional -5% target by 2020 target.

results. The additional costs result from the fact that emissions would be 90 million tonnes higher under the delayed start scenario than they would be in the 2012 start scenario. The total cost associated with the 90 million tonnes of additional emissions is almost \$2bn. This includes \$1bn of additional emissions permit costs between 2016/17 and 2030/31 and \$0.8bn of emissions externality cost, where the economy is subject to the cost of unpriced emissions in the period 2012/13 to 2016/17.

BACKGROUND

Institutional investors invest in all sectors of the Australian economy. They are exposed to the future costs of reducing or offsetting emissions regardless of the source of those emissions. Investors believe that policy settings should aim to ensure the lowest possible cost for emissions reductions across the economy and therefore ensure the lowest possible cost for their investment portfolios.

Investors consider that a putting price on greenhouse gas emissions, including carbon, is the type of substantial policy reform required if Australia is to reduce emissions at least in line with the Government's unconditional -5% by 2020 target. Such a policy would be required by Australia regardless of the emissions reduction policies chosen by other countries.

Once it is accepted that a substantial policy, such as a carbon price, is required to reduce Australia's emissions by at least -5% below 2000 levels by 2020, a key question becomes – when should a carbon price commence?

To answer this question, investors were interested to examine whether it would cost the economy more to implement a carbon price sooner or later. If the cost associated with waiting were materially lower than the cost of acting now, there may be some argument for delay. However if the costs of acting now were the same or less costly than delay (when added to the other benefits of acting now⁶), there is a strong argument for acting now.

IGCC commissioned economic modelling firm SKM / MMA with funding from Catholic Super to examine the economic costs associated with different emissions reduction policies.

FOCUS ON THE ELECTRICITY MARKET

The research focused on electricity markets as a test case for the wider economy. The electricity market is like other markets in the economy in that it has a range of suppliers, all with different emissions intensities, a range of price elasticity's and a range of emissions reduction options. What makes electricity useful for a modelling exercise is that it has many point sources of emissions and the various costs in the industry are well known. The electricity market is a microcosm of the broader economy and the results in this analysis can be expected to be a representative sample of many of the broader economic impacts of the two policy options considered in the research.

⁶ Other benefits of starting substantial emissions reductions early include greater technological innovation, improved competitive positioning and lower emissions price risk

The additional costs associated with a delayed carbon price in the electricity are real and fully avoidable. A longer delay or deeper reduction target would be likely to increase costs for investors, electricity users and the economy generally.

CONCLUSION

This research shows that a 2012 start for carbon pricing would lead to smaller cost increases for investors, electricity users and the economy generally relative to a delayed start in 2016. These findings support those of earlier studies on electricity prices by AGL, which indicated that electricity price rises would be \$8.60/MWh higher than necessary if policy action were delayed in Australia.⁷

The additional costs associated with a delayed carbon price in the electricity market are real and fully avoidable. Higher costs would result from delay if a deeper target than -5% were pursued or if the 2020 target were extended to a deeper emissions reduction during the decade.

The research indicates that there is no cost advantage from delaying the start of a carbon price. Assuming the need to reduce emissions, arguments citing short term cost increases from a carbon price must be examined in the context of much higher costs if a carbon price is delayed.

When added to the benefits of earlier positioning for a low carbon global economy, low-carbon technology innovation, and avoiding the unforeseen risks associated with a shorter, potentially more volatile emissions reduction trajectory, implementing a carbon price in 2012 and achieving the related cost savings would appear to the most economically prudent policy approach to take for the Australian economy.



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⁷ Nelson, et al.