

TREASURY EXECUTIVE MINUTE

Minute No. 10/2252

16 September 2010

Deputy Prime Minister and Treasurer

IMPLEMENTING CARBON PRICING

Timing: As requested by your office.

Recommendation/Issue:

That you note that our preferred approach for implementing a carbon price is through a broad based, cap-and-trade emissions trading scheme with a fixed-price transition period.

Noted

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Signature: DEPUTY PRIME MINISTER

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Staff 20/9/10

KEY POINTS

- As noted in the incoming government brief on climate change, we consider that a broad based, cap-and-trade emissions trading scheme (ETS) with a fixed-price transition period represents the best approach to implementing a carbon price.
 - All existing international climate change architecture is framed in terms of quantity targets. Consistent with this, an ETS directly sets quantitative limits for emissions.
 - Emissions trading also allows for a more flexible approach to the use of international abatement opportunities.
- A low fixed price start would help smooth the transition to a full trading ETS. Commencing an ETS with a low price and getting the ETS framework in place can help gradually build support for carbon pricing before a move to a 'floating' price determined by the market.
 - We consider a broad-based fixed price preferable to a sector specific approach (see Additional Information).
 - Climate change developments internationally could be used as a trigger for moving from the fixed price to a floating price.
- Alternative methods for implementing a carbon price are likely to gain more prominence in public debate. However, we consider these alternatives to be inferior to a broad based ETS (see Additional Information).



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ADDITIONAL INFORMATION

We are of the view that a broad-based ETS with a fixed price transition period remains the best method for implementing a carbon price and achieving Australia's emissions reduction targets.

However, debate about the most appropriate method for implementing a carbon price is likely to intensify, particularly with the establishment of the Climate Change Committee [S 22]
[S 22]

Transitional mechanisms — a low fixed price at an economy wide or sectoral level

- A low fixed price start to the scheme could smooth the transition to a full trading ETS. It would establish the framework needed for a fully-fledged ETS — giving business more time to adjust and allowing community consensus to build around carbon pricing — before moving to a 'floating' price determined by the market.
 - A low fixed price period must be temporary if the Government's 2020 emissions target is to be met. The longer a low fixed price is in place, the greater the adjustment required to meet the 2020 target.
- We consider a broad-based fixed price preferable to a sector specific approach.
 - Although a sectoral approach could offer a more incremental start, focusing on Australia's largest emitters (the electricity sector), it would be extremely difficult to build on a sectoral approach as there is likely to be significant opposition from new sectors as they are added to the scheme.
 - : The GST may not have had as much success as a consumption tax, if sectors were added in a piecemeal fashion over time, as the arguments would need to be re-prosecuted each time a change was made.
 - Also, under a sectoral approach the carbon price will still flow through to households and businesses, that is, the cost impacts are not contained in the covered sector.
- Climate change developments internationally could be used as a trigger for moving from the fixed price to a floating price.

Carbon tax

- Theoretically, both an emissions trading scheme (ETS) and a carbon tax are equally effective at reducing greenhouse gas emissions. However, the Government faces a trade-off between fixing the quantity of emissions (through an ETS) or setting the price of emissions (through a tax).
 - It is not possible to control both the quantity of emissions and the price of emissions at the same time.

A carbon tax is unlikely to provide more price certainty than an ETS in the longer term.

- Proponents of carbon taxes claim that they avoid the risk of price volatility. Price volatility is likely to be an issue mainly in the early years of an ETS, as the carbon market evolves and international arrangements and frameworks are bedded-down. A carbon tax would

remove the need for businesses to manage permit price risks in the short term by fixing the price of emissions.

- However, a fixed price can only ever be a short-term proposition as long as the Government is committed to a quantitative target — meaning that the Government would likely have to make regular adjustments to the carbon tax rate.
 - Australia's international climate change obligations are all framed in terms of reductions in emissions.
 - Adjusting the tax rate in order to achieve a quantity target largely undermines the price certainty provided by a carbon tax.
 - : Adjustments are particularly likely in the early years, when there is limited data to inform the carbon tax rate.
 - : In effect, the risk of adjustment means that business would likely continue to forecast the carbon price in order to inform their investment decisions.
 - If the Government did not wish to adjust the tax rate, emissions would be either:
 - : above the target, in which case the Government may have to purchase permits internationally in order to meet its international commitment; or
 - : below the target, imposing unnecessarily high costs on the economy.
- By contrast, we consider that the level of price uncertainty under an ETS is often overstated — as there are methods of managing price risk under an ETS.
 - An ETS can be designed with a range of features that promote smoother prices, such as banking and borrowing of permits and international linking.
 - Financial markets have developed (e.g. in the EU scheme) a range of derivative products that allow liable parties to manage price risk — similar to how companies manage their exposure to fluctuations in interest rates, exchange rates and commodity prices through hedging.
 - : This will lead to a forward price signal, which will capture the expected future cost of abatement and enable businesses to make informed investment decisions.

A carbon tax is likely to be less flexible than an ETS.

- A carbon tax would also make it difficult for liable parties to link to international markets, which would limit the ability of liable entities to take advantage of low-cost abatement options in other countries.
 - There is a risk that other countries with ETSs would refuse to link with an Australian carbon tax.
- A carbon tax would not adapt during periods of slower-than-trend economic growth.
 - Under an ETS, lower economic growth will cause the carbon price to be lower and permits to be more affordable for business than otherwise.

- Under a carbon tax, the price of emissions would not change, regardless of the prevailing economic conditions.

Under a carbon tax, potential competitive disadvantages for trade-exposed industries would remain.

- Under an ETS, domestic industries that are exposed to international competition may be placed at a competitive disadvantage in the absence of an international emissions constraint. However, this issue would apply equally under a carbon tax.
 - The competitive disadvantage arises from placing the carbon price obligation at the point of production, and not from the way in which this obligation is imposed. That is, under a broad-based carbon tax, emissions-intensive, trade-exposed industries would still face an emissions price that their international competitors would not.
 - Under a carbon tax, the Government would still come under pressure to assist emissions-intensive, trade-exposed industries, such as through grants, tax concessions or tax exemptions.

A carbon tax is unlikely to be simpler than an ETS.

- The broad idea behind an ETS is simple — to place a cap on emissions and allow trading to provide flexibility in meeting the cap.
- The complexity of the ETS arises from the detailed scheme design — issues which the Government would also need to settle in order to implement a carbon tax.
 - Issues of scheme coverage, point of liability, monitoring and reporting and transitional assistance would still arise under a carbon tax.
 - The Government would still need to decide how to use the revenue raised by a carbon tax. In doing so, it would need to consider the potential for competitive distortions as a result of imposing an emission price in the absence of a global constraint, loss of asset value and the design of compensation packages.

Baseline-and-credit vs cap-and-trade

- There are two main approaches to emissions trading: baseline-and-credit and cap-and-trade.
- Baseline-and-credit schemes require emission reductions below business-as-usual levels (that is, sets a baseline) to be achieved. Participants can achieve their own emission reductions and/or purchase credits from others who have made eligible emission reductions compared to the baseline (see Attachment A for more detail).
 - Baselines can be applied at the firm or sectoral level (or anywhere between) and are usually expressed in terms of 'emissions intensity', which is a measure of carbon emitted for a given amount of production or revenue.
 - An example of a baseline-and-credit approach is the Frontier Economics proposed modifications to the Carbon Pollution Reduction Scheme, which applied a form of baseline-and-credit system to the electricity sector. The Frontier Economics proposal did not eliminate electricity price increases for consumers or loss in asset value for generators.

- However, the key drawback of the baseline-and-credit approach is that the Government does not control the actual quantity of emissions: there is no cap.
 - The sum of all baselines for participants in the scheme is an implicit cap on emissions, however, if total output is higher than expected, then so are emissions. That is, even if entities are improving their emissions intensity this does not ensure a reduction in emissions, making it more difficult to achieve a quantitative target.
- A baseline and credit approach is more complex and difficult to implement. Baselines for a large number of activities would need to be established and constantly revised.
 - Measuring emissions is simpler than measuring emission reductions. As measurement and verification procedures in baseline-and-credit schemes require proof that emissions have been reduced below a hypothetical level, a complex and costly process is required. This process embodies a high risk of inaccuracy and overestimation of emission reductions. It is also likely to lead to the crediting of 'non-additional' abatement, that is, abatement that would have otherwise occurred in the absence of the scheme.

Consumption or production based policy: what is the best national emissions base?

- A consumption-based carbon price focuses on national *consumption* of emissions. That is, only emissions embodied in domestically consumed products are subject to the carbon price.
 - In practice this means that imported goods are taxed at the border, and exported goods do not face a carbon price.
- On the other hand, a production based approach applies a carbon price to all items *produced* domestically, regardless of where they are consumed. As such, imported goods would not be subject to an Australian carbon price (however, they may be subject to a carbon price in the country of origin). This is the approach used in the CPRS and internationally.
- Proponents of the consumption approach argue that it avoids the problem of reduced trade competitiveness by providing a level playing field with international competitors.
 - This is because Australian exports do not face a carbon price (thus, are not disadvantaged relative to their international counterparts); while imports and goods that are produced and consumed domestically are subject to a carbon price, so that domestic prices for all emissions-intensive goods reflect the carbon price.
- While attractive theoretically, a consumption approach would be prohibitively difficult to implement and administer.
 - Similar to the GST, a multi-stage input credit system would be needed to remove the carbon price from all exported goods. However, it would be considerably more complicated than the GST — whereas the amount of the GST can be simply calculated from the final price, attempting to refund the carbon price would involve calculating the emissions embodied in every individual product.
 - Accurately applying a carbon price to all imported goods would require tracking the emissions intensity of every product, as well as the effective carbon price that may have already applied to that product. Using a 'rule of thumb' calculation could overcome this

issue in part; however it would distort incentives, would still be very complex to administer and its World Trade Organisation implications are not clear.

- International negotiations and domestic targets are framed around emissions from domestic production. Going alone on a consumption approach would add unnecessary complexity to meeting Australia's international obligations and negotiating our fair share.

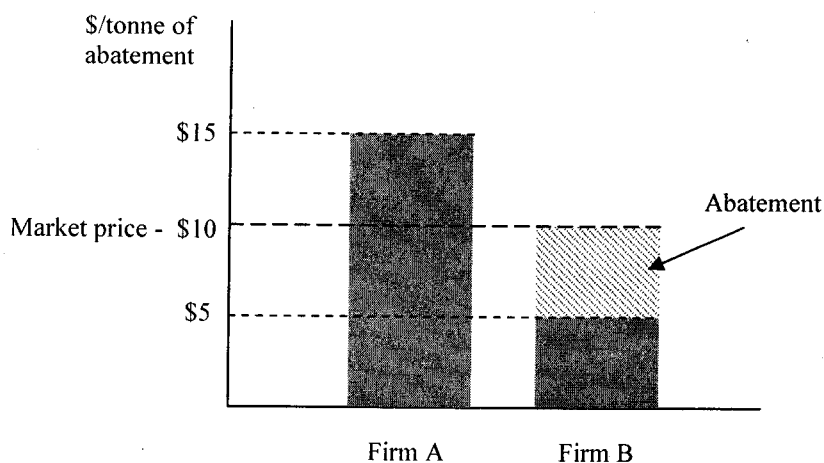
ATTACHMENT A

The following provides a more detailed analysis of how cap-and-trade and baseline-and-credit emission trading schemes work.

Cap and trade

- The Government sets a cap on the total amount of emissions of all sectors covered by the ETS.
- The Government then issues permits up to the cap. The number of permits issued (or the scarcity of permits) is one of the factors that determines the market price of permits. In the below chart the market price is \$10 per tonne of CO₂-e.
- Firms are then required to surrender permits for each tonne of emissions they produce. For some firms, it is cheaper to reduce their emissions than to buy permits:
 - If the market price is higher than the firm's abatement costs (e.g. in the case of Firm B, where its abatement cost is \$5 per tonne of CO₂-e), then the firm will undertake abatement.
 - If the market price is lower than the firm's abatement costs (e.g. in the case of Firm A, where its cost of abatement is \$15 per tonne CO₂-e), then the firm will purchase permits. However, it is worth noting that as the carbon price rises over time the firm would still have an increasing incentive to reduce their emissions.
- This mechanism is the same whether it is applied to one sector or more broadly.

Figure 1 – Abatement under an ETS



Baseline and Credit

- The Government sets an individual level of emissions or emissions-intensity (that is, a baseline) for each sector in the economy. The baselines are likely to be different in each sector and decline over time.
- Firms are then required to meet that baseline.

- If the firm emits less than the baseline, the Government issues them with credits or permits for each tonne of emissions under the baseline, which can be sold or used against a future liability.
- If the firm emits more than the baseline, then they are required to surrender permits for each tonne of emissions over the baseline.
- Firms have an incentive to reduce their emissions when, similar to the above example, their individual abatement costs are lower than the prevailing market price for permits. For example, Firm B abates (at \$5 per tonne of CO₂-e), receives credits and sells them for a higher price (at \$10 per tonne of CO₂-e) to Firm A. Firm A then uses those credits to acquit against their liability.
 - A key factor determining the price of permits will be the stringency of the baselines that are set.