



MARCHMENT HILL

- consulting -

Our Clean Energy Future - identifying the risks

The Commonwealth Government's *Our Clean Energy Future*, while providing a forward plan for de-carbonising Australia's economy, is limited in articulating a comprehensive risk management plan to:

- Mitigate the substantial technology risks associated with base load renewable generation systems and carbon capture storage
- Alleviate the commercial and economic viability risks of having gas fired generation systems as an intermediate fuel
- Understand the likely impacts on affordability and contingent liability risks associated with abatement options
- Assure the market that further regulatory change will not occur as future governments look to adapt legislation to respond to these risks.

Background

We now have a carbon price package, as part of the Commonwealth Government's *Our Clean Energy Future* (OCEF), which also incorporates the Renewable Energy Target (RET - 20 per cent of electricity to be sourced by energy retailers from renewable generation sources by 2020), energy efficiency scheme, land abatement initiatives, and the direct funding for new initiatives and investments in renewable and low emissions' generation assets.

The OCEF is comprehensive, and reflects the careful deliberations and agreement reached by the Multi-Party Committee on Climate Change (MPCCC). The plan includes:

- Requiring the supply side to adjust - a price on carbon emissions
- Subsidising production to renewable supply side - the RET
- Supporting supply and demand side participants - energy efficiency scheme(s)
- Creating carbon property rights to incentivise providing domestic abatement products - land abatement initiatives
- Direct funding to research and development initiatives - renewable and low emissions' technology investments funded directly.

However, the OCEF seemingly lacks a clear and coherent strategy to manage the inherent risks embedded within the plan. These risks are numerous, so our focus here will be on those likely to have the largest impact on Australia's ability to meet its abatement target.

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First, is the ability of the supply side of Australia’s economy to make the investments required to meet the emissions abatement targets. And this reflects the substantial policy strait jackets that have been placed on the supply side, rather than any inherent problems with the capability of the supply side to respond.

The target: is it reasonable?

In FY2000, Australia’s electricity generation sector produced 202mt of CO2 emissions, which represented around 40 per cent of the economy’s total carbon emissions. With transport emissions largely excluded from the carbon price mechanism within the OCEF, the electricity generation sector will need to make substantial reductions in its emissions intensity for Australia to reduce its emissions to the 5 per cent and potential 25 per cent reduction target by 2020, and the long-term target of reducing emissions in 2050 to 20 per cent of their 2000 levels.

Figure 1 shows the reductions required compared to a low emissions’ growth scenario (assuming no response on carbon) for the straight-line reductions to 2050 (80 per cent of 2000 or 113mtpa), and the OCEF 5 per cent reduction by 2020, then achieving the 80 per cent reduction by 2050. The reductions translate to emissions reductions of between 250mtpa up to 760mtpa by 2050 (subject to emissions growth forecasts) on 2000 emissions levels.

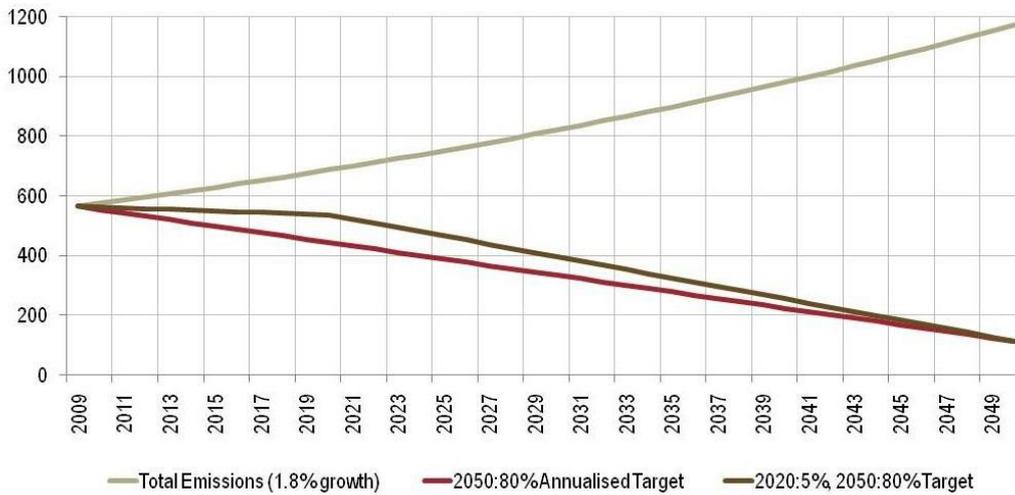


Figure 1: Australia’s total emissions to 2050 with growth; 2050 - 80 per cent reduction; and 2020 - 5 per cent reduction, 80 per cent by 2050

With OCEF excluding agriculture and transport emissions (in aggregate around 30 per cent share of current total emissions), then emission reductions of 760mtpa must come from all other current sources, namely electricity generation (c.40 per cent), and direct fuel consumption (c.15 per cent). However, if electricity generation emissions’ share of growth in emissions remains consistent with its current 37 per cent, then forecast emissions from

electricity would be c.435mtpa by 2050, rather than the c.45mtpa emissions required for Australia to achieve the 2050 target if agriculture and transport remain uncovered.

Put another way, to achieve the emissions reduction targets, with the current OCEF exclusions, electricity generation and direct fuel consumption in Australia would need to be completely driven by renewable power sources or by a generation technology that does not emit carbon emissions.

Acknowledging the risks

With the Australian government banning the use of nuclear power generation systems, if rising energy demand is to be met utilising the current power generation technology suite, achieving the proposed 2020 and 2050 emission targets will prove challenging. The solution lies in broadening the suite of technology options available to generators; however, there are inherent risks, as seen in Figure 2.

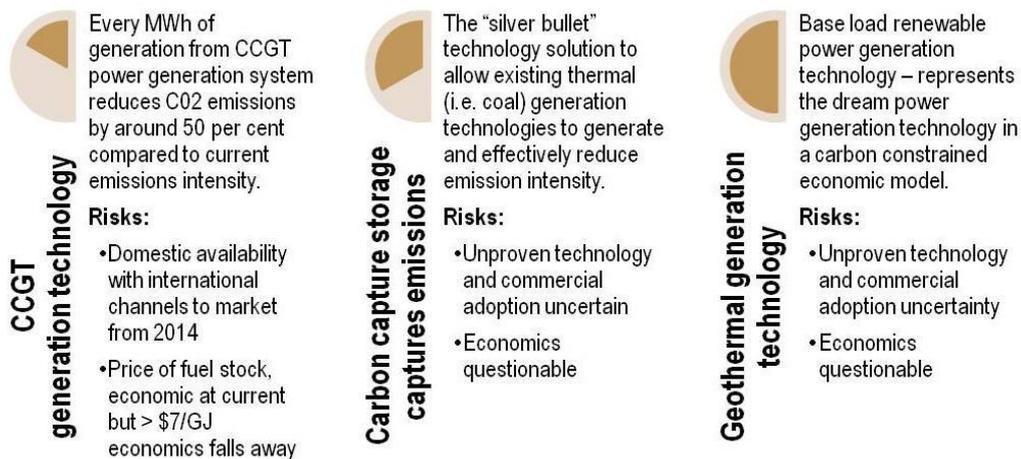


Figure 2: Australia's available generation technology (click diagram to enlarge)

From a risk mitigation perspective, the OCEF seems to overlook the inherent supply-side risks to the emission reduction target(s).

Also discounted within the OCEF is that, to achieve the 20 per cent RET target, there needs to be a commercial investment in a geothermal power generation system of between 500MW and 750MW by 2018/19. Various market modelling shows that in the absence of a sizable renewable generation system operating at base load, the RET target remains unmet at 20 per cent. While recent market analysis suggests that significant competition amongst wind farm manufacturers will lower up-front capital costs for supporting increased rates of investment, there are physical limits to the level of wind farm generation that can be installed on Australia's stringy south to north electricity supply network.

The final inherent risk not identified within the OCEF relates to accessing 'credible' abatement permits. For Australian industry, the greatest risk associated with a carbon price mechanism - particularly introduced in isolation

and ahead of an international agreement - is being able to access affordable abatement. In theory, an Australian carbon permit-trading scheme operating as part of a broader internationally-agreed framework would mean access to:

- An efficient form of carbon abatement
- Deeply liquid carbon permit markets
- Credible sources of abatement certificates underwritten by an internationally, legally-agreed framework.

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The notion of ‘credible’ abatement sources represents a significant risk to Australian domiciled businesses trading carbon permits - likely to manifest in higher costs of abatement (as businesses seek ‘compliant’ abatement sources) and greater contingent risks to businesses that acquire international abatement. While land abatement initiatives represents an internal policy hedge, including it within the OCEF may be a barrier to an international or bi-spoke national agreement, given the inherent challenges to accurately measure abatement from land use arrangements.

Considering the consequences

The inherent risks discussed, reinforces that the OCEF needs to be supported by a detailed risk assessment and mitigation plan. Such a plan would demonstrate that the government has considered the OCEF limitations and addressed, at a minimum, direct and indirect costs. For market participants and heavily affected businesses, the lack of risk assessment and a mitigation plan can only mean one thing: the increased likelihood of more legal and regulatory change.