Centre for Energy and Environmental Markets

Senate Economics Legislation Committee
Inquiry into Renewable Energy (Electricity) Amendment Bill 2009 and a related bill

CEEM Submission to the Inquiry: August, 2009

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The UNSW Centre for Energy and Environmental Markets (CEEM) undertakes interdisciplinary research in the design, analysis and performance monitoring of energy and environmental markets and their associated policy frameworks. It brings together UNSW researchers from the Faculties of Engineering, Business, Science, Law and Arts and Social Sciences. Its work includes analysis of a range of current and possible future sustainable energy policies including renewable energy targets.

The critical role of renewable deployment policies

The Federal Government is to be congratulated on its intention to greatly expand the existing Mandatory Renewable Energy Target (MRET). Such deployment measures play a critical role in renewable technology innovation between R&D and demonstration of emerging technologies, through to potential widespread commercial uptake. Worldwide, market 'pull' measures to drive renewable uptake are now being widely deployed as a key element of climate and energy policy.

Appropriate policies can achieve short-term emissions reductions, build a renewable energy industry and expand the institutional capacity of the wider energy industry in managing the transition to more sustainable energy systems. All three outcomes are key to achieving the longer-term major emissions reductions that appear required to avoid dangerous climate change.

The limitations of emissions trading

The role of renewable energy deployment policies here in Australia is currently being debated given the Government's commitment to introduce a Carbon Pollution Reduction Scheme. In theory, all other policies are second best and should only be used to correct serious market failures. In practice, energy industries exhibit many market failures and such arguments miss a key role that renewable deployment policies can play– relatively affordable, rapid and *assured* emissions reductions that also support the longer-term transition to low-carbon energy systems.

Emissions Trading Schemes to date have had questionable effectiveness, efficiency and equity outcomes. It is unclear whether this is a result of the novel policy challenges involved or, instead, a failure of governance. Regardless, renewable deployment policies should be seen as a means to implement robust and proven emission reduction technologies in a way that also provides *policy insurance* against the possible shortcomings of the CPRS and other policies. In the case of the EU, the renewable energy deployment policies of some member states have been remarkably effective in reducing emissions and driving renewable industry development and energy sector transformation – a result in stark contrast to the performance of their ETS to date.

The limitations of Renewable Energy Targets (RET)

The proposed expanded RET is, however, only part of the comprehensive and coherent policy framework that will be required to achieve a more sustainable energy future. One of the reasons we have the present difficulties with solar hot water, heat pumps, old-hydro, small-scale PV and

emerging technologies within the scheme design is that we do not have this comprehensive and coherent energy and climate policy in place. The scheme is therefore before asked to achieve some policy objectives that it is poorly suited to delivering.

The risks and opportunities of the RET tradeable certificate approach

The Australian Mandatory Renewable Energy Target (MRET) was one of the world's first national Tradeable Green Certificate (TGC) schemes, and therefore a highly innovative policy measure. Such schemes have been adopted by a number of other countries and have considerable theoretical advantages over other approaches including feed-in tariffs and capital subsidies. They offer technology-neutral support to a wide range of potential renewable energy sources, create competitive pressures to reduce costs and may facilitate high renewable energy penetrations.

MRET appears to have performed reasonably well to date in effectively achieving its target at low public costs by international standards. However, it has only had to achieve a very modest target and did demonstrate some significant failings. Quota or Tradeable Green Certificate (TGC) Schemes are widely considered to have been a failure in Europe in comparison with feed-in tariffs with respect to both effectiveness (in driving deployment) and efficiency (due to high public costs).

Suggested reasons for this poor performance include the novelty of the schemes, but also developer demands for a higher internal rate of return (IRR) given the greater investor insecurity than seen with other approaches, a 'single' price for different situations and technologies that leads to windfall profits and the susceptibility of the scheme design process to be captured by incumbents who lobby for regulations that they know they can satisfy but that small non-incumbent competitors will not be able to manage.

The proposed expanded national RET for Australia now includes a far more significant target to be implemented within an increasingly stressed electricity industry infrastructure, including transmission, and a rapidly evolving industry structure with less government ownership and growingly powerful vertically integrated 'gentailers'. The risks of poor outcomes with the proposed RET do not appear to have been fully appreciated in the policy debate.

The governance challenge

Market-based approaches such as Tradeable Green Certificates are sometimes argued to be simpler than regulatory or direct fiscal approaches because governments just have to set the target, and then let the markets work out how best to achieve these objectives. The reality is very different. Markets for tradeable certificates are 'designer' markets – they arise from policy, and design choices can markedly affect their effectiveness, efficiency and equity impacts.

Climate and energy policy is inescapably a risk management exercise. Market based measures can complicate this because they transfer significant risks to market participants – both liable parties and those who participate as project developers. Commitments to creating investor certainty can, however, limit a government's freedom to change a measure's design or introduce other policies at a later date. This is a freedom that governments will require. The original MRET policy process has highlighted potential problems in trying to correct design errors. MRET baseline problems with old hydro did not take long to emerge once MRET had commenced, yet the Tambling MRET review was unwilling to act on the problem except by recommending a sunset clause that would make pre-2005 generation ineligible post 2020. We return to this issue.

Of perhaps greatest concern with Tradeable Green Certificate schemes is the potential for influential stakeholders to manipulate initial design choices to their own advantage. Market participants are always seeking competitive advantage and this can drive valuable innovation that reduces the costs of achieving policy objectives. However, they will also seek advantage during the scheme design process. The inclusion of pre-1997 generators within MRET means that some

plants will earn significant RECs to 2020 without having made any additional investment beyond. The outcome is reduced investment in new renewable energy and hence reduced industry development, as well as windfall profits for these participants.

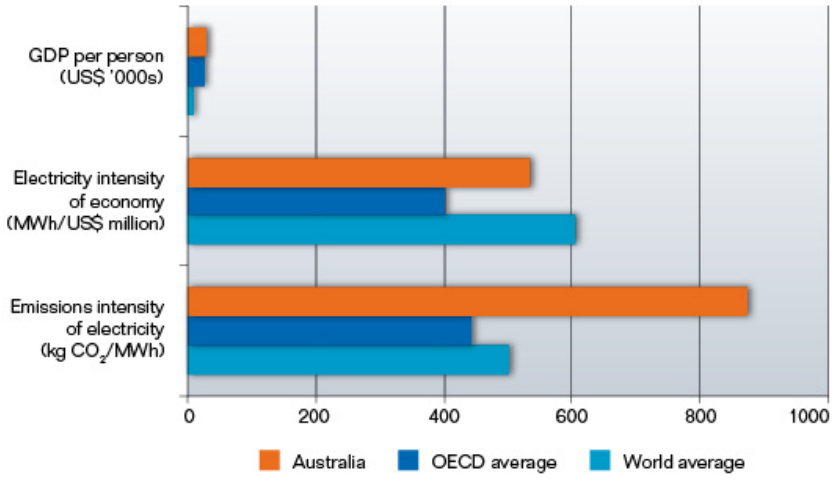
The issue of baselines for old hydro was raised in the original 1998 MRET Issues Paper prepared by the Renewables Target Working Group. However, the policy process was unwilling or unable to resolve it appropriately. In this regard, the failure of proposed eRET scheme design to correct evident failings in the existing MRET such as the continued inclusion of solar hot water and 'old hydro' is concerning. And the proposal that large electricity intensive and trade exposed industries might not be required to contribute to the RET is alarming.

The proposed eRET scheme has not included some of the best design features of the Victorian scheme including it's exclusion of solar hot water and pre-existing projects from participation, and the use of a sunset period to restrict the time period over which projects can earn RECs. It has, however, adopted that scheme's most glaring design failure – the exclusion of some favoured large energy users from contributing their fair share to the scheme's costs. Governance appears to be going backwards and this suggests that the current design process is inadequate for the task. More generally, the evident governance failures in the CPRS design regarding so-called compensation appear to have established a dangerous precedent for future policy efforts.

Particular eRET Design issues

Proposed target.

There are good reasons to support a larger renewable target for Australia in 2020 than currently proposed. As noted in the Garnaut Review (see Figure), the emissions intensity of the Australian electricity industry is significantly higher than that the developed and developing world. Given the damage that climate change is believed to be causing, this effectively represents a subsidy from the rest of the world to Australian electricity consumers.



The revised proposed trajectory of annual REC liabilities that maintains a 45,000GWh target from 2020 through to 2030 is a significant improvement on the earlier proposal but still appears to risk an early boom and bust investment cycle, and potentially highly volatile REC prices. Neither is conducive to effective and efficient investment and industry development.

More generally, effective action on climate change will almost certainly require that renewable energy continues to play an increasing role in electricity supply beyond 20% in 2020. If it is believed that the CPRS will be sufficient to drive such renewable energy deployment in the longer term, then larger longer-term targets for RET should not cause any additional burden – the price of RECs will fall as the costs of fossil-fuel generation options increase and renewable energy

becomes increasingly competitive. If, however, the Government is unable to deliver an effective CPRS then such longer-term RET targets would provide valuable policy 'insurance'.

Treatment of solar water heaters.

Solar Hot Water heaters do not generate electricity and their inclusion in the current MRET was the outcome of poor governance in the original design process. The presence of these systems in the scheme has greatly added to its complexity while reducing its impact on driving renewable electricity generation. Its inclusion appear to be in conflict with the stated goals of the legislation which are to increase renewable energy's contribution to electricity generation. The issue is further clouded by the growing deployment of electric 'heat pump' units under these arrangements. These are an excellent technology in some contexts but their inclusion is causing adverse outcomes for gas hot water that work against cost-effective emissions reductions.

This is not to say that solar hot water should not receive policy support - it is a valuable renewable energy option for Australia. However, it and other renewable thermal energy sources would be better served by separate policy support, as would high-efficiency electrical technologies such as 'heat pump' hot water.

Unrestricted eligibility within RET for existing projects

The proposed scheme design will permit projects that were undertaken in the context of only the original MRET (that is, pre 2007) to continue to earn RECs beyond that scheme's 2020 end date. This will reduce the new investment driven by the expanded RET and creates the potential for significant windfall profits to such projects.

A set eligibility period appears to be the best way to manage these issues and help drive a desirable investment profile over the scheme's life. The fifteen year period of the Victorian scheme appears to have been an appropriate approach and could be implemented.

The problems that have arisen from the decision to include old hydro in the original MRET are significant. The proposal to continue including these projects to 2030 will further reduce scheme effectiveness, efficiency and equity.

More generally, this design choice suggests a potential inability of governments to make even the most self-evident and straightforward corrections to the design of market-based environmental mechanisms – a particular point of concern given the current CPRS design.

Transitional deeming arrangements for small solar PV installations

The proposed multiplier for small PV systems in the first years of the scheme is no substitute for a well thought out, coherent and comprehensive policy framework for supporting this important renewable energy technology, and other distributed energy options. Feed-in tariffs may provide a better basis for promoting industry development and facilitating the role these technologies can play in addressing our energy and climate challenges.

Excluding favored large electricity consumers from appropriately contributing to the costs of eRET

This proposed change to MRET represents a major backward step in governance As noted in the Tambling review, "any (such exclusion would) undermine the basic principle of the scheme, that MRET liabilities accrue to electricity users, in proportion to the quantity of their usage."

More generally, the current low electricity costs enjoyed by electricity intensive industry in Australia come from an industry whose emissions intensity is significantly higher than the world average and, indeed, the developing world average. Paying their fair contribution to eRET does not represent an unreasonable imposition, but a partial reduction in the current climate damages subsidy they receive. Removing such subsidies is an essential part of an effective and equitable global response to climate change.