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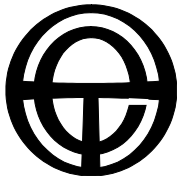

SUBMISSION
to

AEMC

Review of Energy Market Frameworks in light of Climate Change Policies

Scoping Paper

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Review of energy market frameworks in light of climate change policies

Scoping Paper

1. Introduction

1.1 The Review

Total Environment Centre (TEC) welcomes the Ministerial Council on Energy (MCE) direction for the Australian Energy Market Commission (AEMC) to investigate the convergence of energy market frameworks with climate change policies. The National Electricity Law (the NEL) and the National Electricity Rules (the Rules) do not offer substantial impediments to the Carbon Pollution Reduction Scheme (CPRS) or the expansion of the Mandatory Renewable Energy Target (MRET).

However, the terms of reference represent a failure of foresight and resolve by restricting the review to the effects of the CPRS and MRET on the NEM, rather than allowing the AEMC to consider the interaction of the National Energy Market (the NEM) with climate change policy in general and the NEM's barriers to climate change policy in particular.

We are therefore disappointed with the aims and implementation of the Review so far, where the emphasis has been instead on maintaining the status quo of the NEM. The question should be: what can the NEM offer to enhance climate change policies? There has been no consideration of how the NEM blocks climate change policies, reduces efficiency and increases carbon costs for consumers. Similarly, the decision-making framework proposed by the AEMC to deal with concurrent reviews is a useful approach, but does not clarify how precedence will be established. We would urge that where there may be conflict, reduction of greenhouse gas emissions must take priority.

The CPRS represents a major shift in policy and planning that targets, in part, the greenhouse pollution caused by the NEM, currently ignored by NEM policy makers and regulators. However, this review, as currently framed, will certainly not boost "the ability of the energy markets to meet the climate change challenge, through efficient and timely investment …"[1]

Dealing with dangerous climate change is a matter of urgency and the MCE and the AEMC can take a leadership role in addressing the impacts by better understanding one of the fundamental goals of the CPRS – to reduce greenhouse gas emissions. While a partial effort has been made in this review to deal with some of the issues around promoting renewable energy, there is no sign that the MCE or the AEMC have grasped the concept of reducing consumption through energy efficiency and demand management.

[1] Ministerial Council on Energy (2008) *Terms of Reference – AEMC review of energy market framework in light of climate change policies*, p 2

We urge the MCE and the AEMC to broaden the scope of the investigation to include analysis of the ways in which the NEM blocks climate change policies and what can be done to reduce these.

A major oversight is that the review to date has focused on supply and connection (for renewable energy) with virtually no mention of the demand side. There is some discussion of behavioural change in the scoping paper, but limited coverage of demand side opportunities in the list of issues highlighted for review. Although there is a concurrent AEMC review of demand side participation, this part of the equation cannot be quarantined off as it is fundamental to the efficient delivery of climate change policies in the long term interests of consumers and the operation of the market – without demand side participation, there **is** no market.

The review is strangely blind to a major goal of a CPRS: to encourage the more efficient use of electricity. Any reduction in consumption will also provide a buffer against increased carbon costs as the economy shifts to less intensive forms of generation.

There is an underlying assumption that the status quo is more stable, cheaper and more efficient than the alternatives. No evidence is offered to support this assumption, which includes a denial of the costs of climate change. There is continued resistance to change in the NEM; climate change policies offer the opportunity to review prevailing inbuilt assumptions but this has not been grasped. This is a wasted opportunity that will only impede efforts to reduce greenhouse gas emissions while increasing unnecessary costs for consumers.

1.2 Scope of this submission

We have structured this submission to address the issues that we identify are of greatest significance within the review of the NEM in light of climate change policies, with cross-referencing where necessary to the numbered issues identified in the Scoping Paper. We have attempted to take an overview approach and we begin from the top down. The sections are:

- NEL Objectives
- Demand-side issues
- Renewable energy
- Behavioural change

2. NEL Objectives

There are clear efficiency benefits to be gained from the implementation of demand side and DG mechanisms, but they also can provide environmental and social benefits in the long-term interests of consumers. It is not efficient to concentrate solely on monetary prices and costs, which ignore the external costs to consumers from the generation of electricity from fossil fuels. A focus on supply-side and network-driven solutions is archaic in light of the exposure of the impacts of climate change. For instance, governments are now realising that energy efficiency is the most cost-effective and quickest option for reducing greenhouse gas emissions, and are adopting various energy efficiency policies

and regulations. Unfortunately, these are dampened, if not blocked, at the NEM, for example, by regulation that rewards networks for encouraging inefficient consumption.[2]

The CPRS and MRET are being designed to alleviate environmental impacts, which gives rise to potential conflict with the NEL which has its emphasis on narrow economic efficiency, usually to the exclusion of energy efficiency. To assist the development of policy, the MCE needs to investigate adding a new objective that is directed at environmental goals. Our recommended environmental objective is:

> The Market Environmental Objective is to contribute to achieving ecologically sustainable development and is to have regard to the effect on the environment of the generation, transmission, distribution, supply and use of electricity and related activities including achieving a reduction in emissions of greenhouse gases.

There will be inevitable price impacts on consumers as a result of the schemes and vulnerable consumers are most at risk of bearing adverse impacts. Therefore, in tandem with the environmental objective, the MCE should investigate a complementary social objective:

> The Market Social Objective is to promote the long term interests of consumers with respect to the supply of electricity as an essential service including addressing the particular vulnerabilities that particular classes of consumers may have such as customers who are: disabled or chronically sick; of pensionable age; of low income; and/or residing in rural areas.

TEC strongly urges the insertion of environmental and social in the National Electricity Law to complement the overarching market objective. If these were in place, regulators would be more inclined to investigate DSR and DG regulatory options as a first option, and incentives to bring balance into the demand-supply equation would be a focus. Without making environmental, social and demand management objectives core to the NEM, DSR and DG investigations will always remain marginal and be forced to swim against the stream of an excessively supply-focused regulatory system.

3. Demand-side issues

3.1 Networks and DM

Demand management (DM) will be a critical tool for meeting carbon reduction targets. The term encompasses a range of actions, including energy efficiency techniques, embedded generation, and demand side response (such as contracts to curtail load).

There are a variety of regulatory approaches that could assist with the promotion of DM:

- Non-network solutions must be the first option for any network decisions (including for both replacement and augmentation); these must be implemented if they prove to be equal to or more cost effective than network solutions. Network augmentation alternatives should only be considered as a last resort.

[2] Headberry Lim for Total Environment Centre, *Does Current Electricity Network Regulation Actively Minimise Demand-side Responsiveness in the NEM?, June 2008 at:* http://www.tec.org.au/index.php?option=com_content&task=view&id=393&Itemid=325

- DM targets for each network business would assist with not only increasing the implementation of DM but give the networks wider experience in the range of possible alternatives.
- The Australian Energy Regulator (AER) is developing a DM incentive scheme (DMIS) for distribution businesses – there must be a similar development for transmission businesses.
- The DMIS must be enhanced – this is an excellent initiative but is much too limited and overly modest.
- Revenue caps are preferable for reducing incentives for inefficiency. A "D" factor-type system should be applied where a price cap is in place for distribution businesses.
- A DM Code of Practice is essential for both distribution and transmission networks, with the NSW model to be adopted as a minimum (including the protocol for disclosure of information).

(Issue 6. Augmenting networks and managing congestion)

3.2 Demand-side bidding

Demand-side bidding is being considered as part of the AEMC's Demand Side Participation Review and the TEC Rule Change so we will not address it in detail here. It essentially elevates DM to a commodity that can be traded in the market. We would emphasise that the urgency of climate change management makes this technique all the more significant.

(Issue 8. Financing new energy investments)

3.3 Demand-side reserve

A similar situation exists for the treatment of DM as a reserve. There are other market models overseas where DM is inserted into the market and/or used as reserve. There are various ways that DM as reserve can be treated, including within the requirements for the Reserve Trader mechanism; or through scheduled load arrangements; or as standing reserve; and potentially as various forms of reserve. Again, DM as reserve has been treated on the basis of why it will not work, rather than in terms of what changes need to be made so it can be incorporated.

We wrote to the AEMC on 21.10.08 on this subject, and we reiterate from that letter:

> *The current version of a reserve trader within the NEM is rarely used and overly cumbersome, providing limited potential for rapid response (or reduction of greenhouse gas emissions). Replacing the same mechanism with a permanent program that awards contracts for demand side reserve capacity could be made to work within the NEM model. It would provide a range of functions: to provide reserve; enhance security and reliability; and deliver significant co-benefits of reduced carbon pollution and carbon costs. …*

We therefore strongly urge the AEMC to investigate the potential for load curtailment programs within the NEM in the form of permanent programs to provide standing reserve. There are models in existence which provide the basis for a design for the NEM, possibly using a staged approach to be established in the interim. Development of load curtailment programs is a way in which the NEM could provide the sorely needed boost to DSR as well as a significant contribution to reducing carbon costs and greenhouse emissions.

(Issue 8. Financing new energy investments)

4. Renewable energy

4.1 Embedded generation

The issue of connections for small generators is conspicuously lacking in the discussions of renewable energy generators. The focus in the scoping paper is on large, commercial-scale renewable energy generators – such as wind farms – and there clearly is an intent to address barriers to their full participation in the market. The issues for small and large are not necessarily identical, however, and previous amendments to the Rules for embedded generation (although beneficial) have not removed all difficulties for connection of embedded generators.

TEC, the Alternative Technology Association (ATA) and the Ethnic Communities Council of NSW (ECC) have written previous submissions on the treatment of embedded generation in the Rules during the Rule reform processes for regulation of distribution networks. In particular, we refer to our submission of 5 October 2007 on *Network Planning and Connection Arrangements – National Frameworks for Distribution Networks*.[3] This submission raises a number of questions about the treatment of embedded generation, particularly at the micro level. Failings apparent at that stage still have not been addressed, and therefore represent a barrier to adequate implementation of the MRET.

We urge the AEMC to ensure that remaining barriers for embedded generation will be rectified.

(Issue 2. Generation capacity in the short term)
(Issue 5. Connecting new generators to energy networks)

4.2 Renewable energy policies

Removing barriers to embedded generation is also critical to realising the potential of the suite of policies in progress to promote the uptake of small, localised generation of renewable energy. For instance, the development of feed-in tariffs for renewable energy generation at a household level represent a major shift in policy. Currently only some jurisdictions have legislated for their adoption, but other jurisdictions are likely to follow suit and the initiative is being mooted for the national level. By offering compensation, such tariffs will increase the speed of uptake and it is reasonable that such generation be rewarded for the wider benefits, such as deferred network augmentation and peak demand reduction. Gross tariffs (rather than tariffs based on net measurement) should be developed Australia-wide.

[3] Attached as an Appendix to this submission

The Federal Government solar rebate for households and schools is another policy that will have an influence on the uptake of embedded generation. In response to community interest alongside government support, there has been an enormous increase in the number of companies offering PV systems as well as agents for purchase and installation. Some of the solar systems are being connected off-grid in remote areas, but the majority are connecting into the grid (nearly 16,000 households had been connected under the program at September 2008[4]).

4.3 Intermittency

Intermittency of renewable energy generation features heavily in the scoping paper, but it is not relevant to the content of the Rules or other mechanisms. The presentation of renewable energy as intermittent is a dubious argument in itself – there are forms which are not intermittent, and the establishment of a diversity of renewable generation types is the key issue. There are new technologies constantly being developed, and wind energy will only be a part of the overall mix.

Moreover, for wind energy from large generators (≥30MW), NEMMCO has been doing extensive work on developing a wind forecasting system and database (the Australian Wind Energy Forecasting System – AWEFS) and it appears the design will be substantially complete by the end of this year, with implementation to follow[5]. The AWEFS will eliminate much of the uncertainty around this form of renewable generation.

(Issue 3. Investing to meet reliability standards with increased use of renewables)
(Issue 4. Operating the system with increased intermittent generation)

5. Behavioural change

5.1 GreenPower

The power of social conscience has been neglected in the review – the scoping paper only refers to reactions to price impacts – even though it will be a key to positive behavioural change in response to the CPRS and MRET. As at September 2008[6], there are now over 817,000 GreenPower residential customers and 32,000 commercial customers. Each quarter the figures climb for both residential and commercial customers yet the motivation of these consumers is never factored into discussions of the energy market. Any discussion about price impacts is irrelevant in these cases, since GreenPower consumers often pay significantly more than the standard rate for their electricity supply. These figures now represent a significant proportion of the Australian population and of electricity consumers.

Householders and commercial entities are also grasping opportunities to install their own renewable generation, again in increasing numbers. The prime incentive is the desire to reduce carbon footprints.

[4] Solar Homes and Communities Plan (2008) *Installed by State – Sept08*, accessed at http://www.environment.gov.au/settlements/renewable/pv/pubs/installedbystate-sept08.xls
[5] NEMMCO (2008) *AWEFS Project summary*, accessed at http://www.nemmco.com.au/psplanning/awefs.html
[6] GreenPower (2008) *Quarterly status of National GreenPower Accreditation Program July-Sept 08*, http://www.greenpower.gov.au/admin/file/content13/c6/GreenPower%20Q3%202008.pdf

In redesigning the NEM to incorporate climate change policies, it is imperative that the concern of many consumers is matched by the initiatives of policy makers. The MCE and the AEMC must harness this potential through optimising opportunities for DM and energy efficiency across the NEM.

5.2 Elasticity

There are many pieces of research and references on elasticity in electricity prices; it is frequently stated that electricity is inelastic in regards to price, and the scoping paper is no exception. If that is the case, it reveals a fundamental flaw in having a CPRS at all; and there are just as many pieces of research which argue the opposite. A report for the AEMC (the Brattle report[7]) highlighted that probably the most accurate description would be that elasticity is highly variable and depends on a range of factors. The authors noted that:

> *A recent RAND study found that the short-run price elasticities of residential, commercial, and industrial customers could range from -0.05 to -0.32, depending on the region in which they were located. In other words, this suggests that a 100 percent increase in price could result in a decrease in consumption ranging from five percent to 32 percent. … Customer price responsiveness has also been measured and found to be significant in several recent dynamic pricing pilots.*

[7] Earle, R. & Faruqui, A. (2008) *Demand-side bidding the wholesale electricity markets*, Prepared for the Australian Energy Market Commission, The Brattle Group, pp 42-43