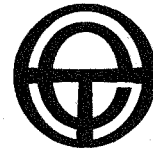


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29 June 2007

The Committee Secretary
House of Representatives Standing Committee on Industry and Resources
PO Box 6021
Parliament House
Canberra 2600
Email ir.reps@aph.gov.au

Dear Committee Secretary,

Re: Case study into selected renewable energy sectors

Total Environment Centre (TEC) welcomes the opportunity to make a submission to the Standing Committee about the Case study into selected renewable energy sectors. The Terms of Reference for the Case study are:

"The House of Representatives Standing Committee on Industry and Resources shall inquire into and report on the development of the non-fossil fuel energy industry in Australia.

The Committee shall undertake a comparative study of the following renewable energy sectors: solar, wave, tidal, geothermal, wind, bioenergy and hydrogen. The case study will examine the relative state of development of these sectors and their prospects for economically viable electricity generation, storage and transmission."

Rather than addressing differences between the types of renewable energy, in this submission we highlight the difficulties faced by all types of renewable energy in successful participation in the National Electricity Market (the NEM). We discuss problems within the National Electricity Rules (regarding the Objective of the Rules; and regulatory barriers); the potential offered by a national rollout of advanced metering; and further, minor recommendations.

We are also sending the Standing Committee four other documents – by TEC and others – as part of this submission (listed at the end).

1 Introduction

TEC has been making representation for a number of years to state and national government bodies (such as the Ministerial Council on Energy and the Australian Energy Market Commission) on the benefits of all types of renewable energy, as well as barriers to their full participation within the NEM. In this submission we will focus on the impediments to the uptake of renewable energy within the NEM, which are proving to be a significant limitation to their economic viability. We have addressed the problem in terms of barriers to the viability of distributed generation (DG – also known as embedded generation) overall, since most forms of renewable energy are generally connected to the electricity grid via the distribution system.

TEC previously contributed to a submission in conjunction with other members of the Climate Action Network of Australia (CANA)¹, in response to papers produced for the Renewable and Distributed Generation Working Group (RDGWG) on the Draft National Code of Practice for Embedded Generation. TEC also sent a submission to the RDGWG, as part of the same process of investigating embedded generation, on the "Discussion Paper on Impediments to the Uptake of Renewable and Distributed Energy"². (We are submitting both these reports for this Case study.) Many of the issues canvassed in those submissions are relevant here, and we quote from the joint CANA submission:

"Embedded generation has a critical role to play in supplying Australia's electricity demand with significant economic, environmental and social benefits in contrast to large, centralised forms of generation. The potential benefits and advantages of embedded generation include:

- improved supply reliability through generation diversity;
- greater individual and community control over energy sources;
- reduced dependence on a small number of large remotely located generators;
- generation closer to customers resulting in improved power quality and reduced power losses;
- reduced greenhouse gas emissions resulting from reduced transmission losses;
- reduced greenhouse gas emissions due to the potential for greater output from renewable energy sources;
- avoided network augmentation costs;
- more efficient network tariffs;

¹ Climate Action Network Australia, Total Environment Centre, Alternative Technology Association et al. (2006) *Submission on the Draft Code of Practice for Embedded Generation*, Submission to the Renewable and Distributed Generation Working Group, March 2006.

² Total Environment Centre, *Submission on the Discussion Paper – Impediments to the Uptake of Renewable and Distributed Energy*, Submission to the Renewable and Distributed Generation Working Group, March 2006.

- improved employment opportunities, with small-scale renewable projects providing more jobs per MWh of electricity produced than conventional energy sources; and
- the ability to more efficiently provide electricity at times of peak demand (in the case of solar photovoltaics, due to localised generation output matching times of peak demand)."

2 The need for environmental and social objectives

The first hurdle for the renewable energy sector is the Objective of the National Electricity Law, which has an inappropriate emphasis on economic efficiency and is being interpreted in such a narrow sense as to entrench significant barriers to investment in renewable energy generation. The Objective notes that the NEM should function "for the long term interests of consumers" and the Rules in theory provide entry for all energy generation regardless of type, but nonetheless significant barriers remain (discussed in more detail in section 3 below).

We are particularly concerned that the transfer of regulation to the Australian Energy Regulator and the Australian Energy Market Commission will prevent the new regulators from taking social or environmental goals into account. While the environmental benefits of renewable energy remain external to the NEM, they will continue to be excluded.

To redress this problem, it is essential that environmental and social goals be incorporated into the NEM. We attach a report prepared by TEC in consultation with Gilbert + Tobin on the need for supporting objectives: *How Should Environmental and Social Policies be Catered for as the Regulatory Framework for Electricity Becomes Increasingly National?*

TEC, with other non-government organisations, strongly urges the insertion of environmental and social objectives in the National Electricity Law to complement the overarching market objective³ (we have attached the joint statement noted below). If these were in place, regulators would be more inclined to investigate demand management (DM) and distributed generation (which is usually based on renewable energy) regulatory options as a first step, 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, investigations into renewable energy alternatives will always remain marginal.

³ Australian Conservation Foundation, Australian Council of Social Services, Business Council for Sustainable Energy, Consumer Utilities Advocacy Centre, St Vincent de Paul Society, Total Environment Centre and WWF Australia, *Power for the People Declaration*, May 2007, at www.tec.org.au

3 Barriers within the NEM

The viability of renewable energy depends on a raft of approaches, both from government programs and within the electricity market itself. No matter how far any government goes to develop renewable energy targets, emissions trading schemes and/or other incentives, barriers inherent within the Rules will always limit economic incentives for renewable energy to truly compete against the entrenched fossil fuel generators. We believe that the development and implementation of a Code of Practice for Embedded Generators would go some way to addressing the concerns around the impracticalities of negotiating grid connection terms and conditions for all small-scale DG, as well as overcoming a number of additional barriers faced by proponents of these technologies. We would encourage the completion of the RDGWG process and the timely implementation of a code of practice addressing the many and varied additional impediments.

Particular barriers within the NEM include:

- The connection costs paid by embedded generators. The accepted standard is for major generators to pay shallow connection costs, but embedded generators may be expected to pay deep connection costs (that is, for upgrades to the system overall) even when they may be making only a minor contribution to the total load. This situation is being partially addressed in relation to distribution by recent changes to the National Electricity Rules, but the problem still needs further resolution.
- Connection obligations placed on renewable generators have proven to be problematic, and there is an over-reliance on negotiation in each case. Network service providers (both transmission and distribution) should be required to justify each technical requirement they impose, that is, they should present a cogent argument for every requirement. These could be based on a minimum set approved by the regulator, with additional conditions set out in detail.
- Avoided transmission and distribution use of system charges must be accurately awarded to embedded generators on the basis of reduction of the load on both systems. Although provision has been made for these charges within the Rules, in practice the principle is implemented haphazardly.
- To date, lack of information has proved a significant barrier within the NEM, both in terms of accountability of the regulator and restriction of entry by competitors (such as demand management providers and renewable energy generators). For instance, standard connection agreements should be developed by each distributor, and all standardised documents should be made publicly and readily available.

- There is a general perception by market participants that renewable energy is unreliable. It is clear that part of the problem is establishment of reliability standards for alternative forms of energy, and the National Electricity Market Management Company (NEMMCO) is investigating improvements in the case of wind energy. It appears that this is not occurring for the other forms and we would see it as a matter of urgency to properly assess both the reliability of all forms of renewable energy generation and their potential for addressing base load and peak demand. This Case study has the potential to contribute to this assessment, but more work needs to be done in this area.

4 Rollout of smart meters

The national rollout of advanced metering mandated by the Council of Australian Governments (COAG) also offers opportunities for increased uptake of renewable energy generation. This is proceeding subject to a cost benefit analysis and TEC urges the facilitation of appropriate platforms for the feed-in of micro, on-site generation in tandem with the rollout. The types of meters installed and the range of tariffs offered will both have an impact, for instance it is essential that the meters can accommodate two-way flows. It is also critical that an appropriate set of tariffs are developed for small generators to feed in to the grid.

The implementation of mandated feed-in tariffs for electricity from embedded generators is the most efficient, just and effective way of capturing the network benefits from such investment. Feed-in tariffs calculated on the full range of benefits afforded – from network and wholesale price benefits to benefits from avoided greenhouse gas emissions, and including the range of industry development and job-creation benefits – are an essential way of stimulating growth in the renewable energy sector.

5 Further recommendations

There are other measures that could assist the viability of the renewable energy sector, including:

- Where a renewable energy source/generator is being proposed and substantial network augmentation is necessary, alternative arrangements should be made at a national level or NEM-wide for funding the augmentation rather than the network service provider or the generator footing the bill.
- A balance needs to be struck to allow smaller generators involving renewable energy sources easy access to the system, while ensuring that fossil fuel generators remote from the load points contribute to the true costs of providing network services.

If you have any queries, please contact myself or Glyn Mather.

Yours faithfully,



Jeff Angel
Executive Director

Attachments

1. Climate Action Network Australia, Total Environment Centre, Alternative Technology Association et al. (2006) *Submission on the Draft Code of Practice for Embedded Generation*, Submission to the Renewable and Distributed Generation Working Group, March 2006.
2. Total Environment Centre, *Submission on the Discussion Paper – Impediments to the Uptake of Renewable and Distributed Energy*, Submission to the Renewable and Distributed Generation Working Group, March 2006.
3. Total Environment Centre, *How Should Environmental and Social Policies be Catered for as the Regulatory Framework for Electricity Becomes Increasingly National?* Report prepared by Gilbert + Tobin, November, 2006.
4. Australian Conservation Foundation, Australian Council of Social Services, Business Council for Sustainable Energy, Consumer Utilities Advocacy Centre, St Vincent de Paul Society, Total Environment Centre and WWF Australia, *Power for the People Declaration*, May 2007, at www.tec.org.au