

**TOTAL ENVIRONMENT CENTRE INC.**  
LEVEL 4, 78 LIVERPOOL STREET, SYDNEY, NSW 2000  
PO BOX A176, SYDNEY SOUTH 1235  
Ph: 02 9261 3437 Fax 02 9261 3990  
[www.tec.org.au](http://www.tec.org.au)



## **SUBMISSION**

### **Australian Energy Market Commission**

### **Review of the role of demand side participation in the National Electricity Market**

NERA Draft Report

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For further information contact:

Glyn Mather  
Ph 02 9261 3437  
Email [glyn.mather@tec.org.au](mailto:glyn.mather@tec.org.au)

# **AEMC Review of the role of demand side participation in the National Electricity Market**

## **NERA Draft Report**

### **1. Introduction**

#### **1.1 The Draft Report**

Total Environment Centre (TEC) welcomes another opportunity for input to the AEMC's Review of the Role of Demand Side Participation in the National Electricity Market (the NEM). While we acknowledge the constraints placed on NERA in preparing the Draft Report (hereafter "the report") – that is, the focus on the AEMC's current reviews of a national transmission planner (NTP), congestion management and reliability – we view the report as a missed opportunity for a broader examination of limitations on the wholesale market and transmission network service providers (TNSPs) in terms of facilitating demand side participation (DSP), and it does not address the potential for incentives for TNSPs to investigate DM. In particular, many of the issues raised in the report converge with those addressed in TEC's Rule Change Package<sup>1</sup> but this has been excluded from the review.

We also acknowledge that this is a preliminary paper since the reviews of transmission planning and congestion management are not yet concluded. We regard our comments in this submission as germane to those reviews.

In general we broadly support most of the recommendations presented by NERA, but consider that they fall well short of proper consideration of enhancing DSP across the NEM. Although one of the stated goals of the report is to "contextualise the framework" (p. 1), NERA has not given sufficient coverage to DSP opportunities and impediments across the NEM (even in reference to transmission regulation). This represents another missed opportunity, which hopefully will be addressed in later reports within the review.

Our main criticism is that the potential for the development of incentives has been omitted from this report. It is possible to develop regulatory methods that provide incentives for transmission networks to initiate cogeneration, standby generation, power factor correction, fuel switching, interruptible customer contracts, demand side aggregation and other load shifting mechanisms. Many of these technologies benefit the consumer but do not necessarily involve them directly. Rather, they should be catalysed by network regulation, including DM incentives and the requirement to ensure that DM is thoroughly considered before network augmentation plans are under way. This kind of regulation is already being developed for distribution – why not transmission?

In answer, some stakeholders argue that transmission networks have little or no relationship with customers. While this is technically true, it is not a barrier to DM, as DM is best implemented by DM providers who have expertise and interest in the area. DM providers can act as agents for transmission networks to procure significant, effective and

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<sup>1</sup> Total Environment Centre (2007) *Rule Change Package – Demand management and transmission networks*, November.

permanent DM on behalf of transmission networks. All that is required is the right regulatory incentives.

## **1.2 Stage 2**

As with the report, we have restricted this submission to the issues raised in those three AEMC reviews as well as focusing on NERA's recommendations, rather than raising extra issues. This leaves a number of broad areas relating to regulation of the wholesale market and of TNSPs (especially incentives for DSP) which will need to be picked up in Stage 2 of the review. In addition, further discussion of two of those reviews – transmission planning and congestion management – will be required as the reviews continue. TEC will be closely considering its input to the development of terms of reference for Stage 2 of the DSP review.

The report does highlight some of the anomalies which have developed in the treatment of DSP in the NEM – for instance, that NEMMCO surveys retailers regarding demand response but apparently not distribution businesses – which have arisen because of the piecemeal approach to the issue. The opportunity provided by the AEMC's DSP review to address oversights is therefore very worthwhile, and we commend them on the undertaking.

## **2. General discussion**

### **2.1 Introduction**

NERA note the increased interest in DSP in Australia and elsewhere. We would emphasise that this will only accelerate with a greater sense of urgency due to the expansion of government policies, programs and regulations relating to the minimisation of climate change. There are twin drivers – there is an increased demand for electricity overall (for instance through population increase and residential development) with an equally increased demand for reduction in consumption, particularly in consumption of fossil fuels, due to the acknowledgement of the risks posed by dangerous climate change.

A flaw in Chapter 2 of the report is its focus on the small actions of residential consumers (with occasional references to large users). In doing so, it overlooks network-driven DM and the vast potential for small to medium commercial and industrial users to participate in response to price. Whilst DM can incorporate cumulative, small actions of engagement in the market, more substantial participation is possible when DM is either *offered to* consumers by aggregators or implemented *for* them by providers who have been engaged by networks. A feature of the discussion of large users is that it highlights the importance to them of both wholesale market mechanisms and incentive arrangements (such as interruptible load bonuses): both of these warrant further investigation.

This chapter applies the habitual description of demand side participation as an area of risk for networks. As usual the argument is presented without sufficient scrutiny or evidence, instead of acknowledging that it is a circular one. As long as regulators continue to view DSP as risky, and the networks rely on network augmentation as a primary solution, any risk that is present will only be exacerbated. The underlying point about risk is that it can and should be managed. Furthermore, it is notable that now that the distribution network service providers (DNSPs) in NSW have had some experience of undertaking non-network solutions, they are publicly supportive of the D-factor

mechanism (for instance, see submissions on the AER's demand management incentive scheme). They have clearly been successful in managing the risk, to the benefit of consumers. It is time to support DM activities and remove the stigma such as by widely publicising successful ventures, rather than constantly trumpeting the alleged risk. Any risk can also be further reduced by appropriate regulation.

## 2.2 Smart meters

The references to the national rollout of smart metering tend to over-emphasise, by implication, the certainty of the process. Although it is true that smart metering offers the opportunities for greater engagement by consumers in the market, the presentation of the issue in the report is overly optimistic. In terms of the process, the cost benefit analysis has only just been completed and it is far from clear what path the process will follow in the future. It is also a weakness of the report that the discussion of the potential for action by small consumers is basically restricted to light bulbs and meters.

Of particular relevance in the context of this review is the lack of certainty whether:

- time of use tariffs will be offered by DNSPs
- time of use tariffs will be offered by retailers to consumers
- whether such tariffs will be mandated and, if so, where
- the rollout will be to all residential customers in all jurisdictions
- installation of in-home displays will occur in order to enhance demand response – if not, the consumer will still have imperfect knowledge of real prices
- direct load control mechanisms will be used in some locations in preference to smart meters, or in addition to the meters

Moreover, if time of use tariffs are offered by retailers, there is a wide range of tariffs that could be offered and the analysis of tariffs to date has been very simplistic (basically flat, shoulder, off peak and critical peak) and therefore severely limiting the potential for customer response. It is also possible that many consumers may choose flat tariffs if there is insufficient encouragement to do otherwise. Thus if the only change for a consumer is a different meter installed in the position of the previous meter, this will result in no change in terms of participation.

## 3. International examples

The discussion of international practice brought to light a very interesting feature of the New Zealand market, that is, that the objective of the Electricity Commission is to:

ensure that electricity is produced and delivered to all classes of consumers in an efficient, fair, reliable, and ***environmentally sustainable manner*** and promote and facilitate the efficient use of electricity. [our emphasis]

Such a principle should equally be applied to the NEL Objective, as TEC has been arguing. This would add another driver for regulators to focus on DSP solutions as it would serve two purposes. Actions arising from such a focus would serve to reduce carbon costs, serving consumers.

## 4. National transmission planning

### 4.1 Network planning

Although we would agree with the description on page 30 of some of the impediments to DSP, there is an over-emphasis in this chapter on the view that DSP relates only to cost-reflective pricing in regards to location. This is clearly important, but greater DSP can also deliver other benefits that a National Transmission Planner (NTP) should take into account in addition (for instance, as the chapters on congestion management and reliability highlight). There is also a related view of DSP that TEC has previously taken issue with – that is, that it should only be selected where **more** cost-effective. This attitude again overlooks other benefits beyond price, which could at least in part be enhanced by improvements to the regulatory test. This is not only anti-competition and against the principle of a level playing field, since DM providers for example are required to undercut network solutions, it also ignores flow-on benefits. At the very least, DSP solutions should be given serious consideration where they are **equally** cost effective; in fact, we would argue that a more costly non-network solution may bring other benefits which can improve efficiency overall.

The discussion in the report on information provision is helpful, but it is worth noting that although Version 3 of the regulatory test does include substantial criteria regarding requirements for a TNSP to seek information for non-network providers to develop a non-network solution, the time limit of four months is problematic. DM providers and embedded generators argue that they require a longer lead time to develop proposals, and this requirement increases the inconsistencies in requests for information and contracts (for instance, the report suggests NEMMCO contracts with DM providers may be developed nine months ahead). NERA's recommendation of additional requirements on TNSPs could therefore be beneficial, and we support this recommendation for a change to the rules, which we suggest should encompass both transmission and distribution businesses:

To require network service providers to seek information from demand side proponents on an annual basis, on potential non-network solutions to emerging network constraints, outside of the application of the regulatory investment test.

### 4.2 National Transmission Planner

TEC is in general support of the development of a national transmission planner (NTP), which we consider will assist the long-term interests of consumers as well as overall efficiency in the NEM. As regards DSP, NERA raised an interesting suggestion that the NTP itself could seek and invest in DSP options – we would consider this concept well worth investigating as it would certainly increase the uptake of DM in the NEM. There are obviously going to be some difficulties with it (such as potential inconsistency with treatment of DNSPs) but we would urge that the idea should be seriously looked into.

Proactive investigation of DM opportunities also certainly warrants attention, based on the very limited uptake of DM across the NEM to date, and the development of a new approach to transmission planning gives an opportune chance to energise approaches to non-network solutions. Inclusion of DSP in expected load forecasts is a useful suggestion. The report also presents two recommendations for development of a framework, but hedges its bets by qualifying one on the basis of materiality of the argument (that is, the

materiality of informational market failure). It seems clear to us that the argument for informational failure has been presented in so many contexts (and is raised yet again in this report), that the materiality of the problem has been established already. We therefore support the first recommendation on page 35, and part of the last:

require the NTP to develop a methodology for the inclusion of demand side participation within the expected load forecasts to be published on an annual basis in the NTNDP, by transmission exit point;

develop a framework for the NTP to identify and evaluate non-network options, with the information being provided to network service providers for consideration in the regulatory investment test.

A major criticism here is the neglect of the potential for the NTP to develop **incentives** for TNSP to undertake non-network solutions. There are many incentives for networks to expand their asset bases by building more infrastructure, yet there is little incentive for DM. There has been a lot of discussion about the possibilities for incentives for DNSPs and some implementation at both national and jurisdictional level. The stand-out examples are the AER's new demand management incentive scheme for NSW and the ACT; the WA demand response mechanisms; and ESCOSA's methodology.

NERA too has previously investigated these issues in its paper "Network Incentives for Demand Side Response and Distributed Generation" (2007) in the context of distribution networks, and we are puzzled as to why this current piece of work does not cover similar ideas in relation to transmission. This is a major oversight which must be addressed by the AEMC. It is an artificial divide to ignore transmission, as DM driven by regulatory incentives can directly reduce congestion and improve reliability.

#### **4.3 Regulatory test**

The situation on the regulatory test is becoming more complex as time passes and more confusing for community members to assess. The AER produced Version 3 of the test in 2007; but the recent AEMC discussion paper on the NTP addresses the issue as well. It is therefore difficult to know what the outcome for the test will be, although it is clear that the intent is to move away from reliance on two market limbs (which TEC supports) and there have been many improvements inserted in Version 3. As part of TEC's Rule change package we proposed changes to the regulatory test, which will presumably be considered by the AEMC in their final recommendations to the MCE and the AER. We will address this issue further in the context of the AEMC process under way specifically about the NTP, however we do support some of the recommendations (though note they could be improved in their detail):

- ensure that the timeframe over which demand side participation options are required to be presented as alternatives to a network solution is sufficient to allow these options to be considered viable;
- clearly define how 'wider national benefits' should be interpreted for non-network options;
- define an option-value benefit associated an investment that defers a proposed network investment.

We urge that the wider national benefits should also include reduced greenhouse emissions and reduced carbon costs of the DM solution, as it is simplistic to assume that carbon prices will alter network investment behaviour. By the time such a price signal reaches the networks, it will have been split across various parts of the supply chain and be absorbed in retail prices.

We do not support the concept of “risk-adjusted costs and benefits”. While it may help to make network resistance to DM on the basis of risk more transparent, without clear direction as to how this adjustment is to be applied it could result in disproportionate costs (or discount factors) being applied to DM. If this idea is eventually implemented, then the AEMC must recommend a method for ensuring that DM is not even further discriminated against. If risk is fed into the RIT, it is important that the risk created by networks frequently operating beneath N-1 standards is acknowledged and accounted for – DM should benefit from the ability to reduce this risk.

## **5. Congestion management**

We await further developments in the adjustment of policy and regulation on congestion management to optimise DSP, since this report was only able to address it in such a limited form (due to limitations by the AEMC). The recommendations presented are lacking in detail, and the consideration of congestion management is quite superficial. The discussions are also based on an unsubstantiated assumption that providing congestion prices at connection points is too costly (note on p. 6). Congestion pricing at connection points should be further investigated as a means to send accurate price signals from transmission networks to distributors.

TEC would expect that the DSP review will do further work on opportunities for DSP to assist with the management of congestion in the networks (this work should also consider distribution networks).

TEC supports the following recommendations, but would emphasise the need for timely publication of capability wherever possible to optimise opportunities for DSP aggregators:

We recommend that the NTP be given the responsibility to develop measures of transmission transfer capability and, where feasible, publish transfer capability at each distribution network connection point.

The Commission request NEMMCO to consider how technical requirements may be modified to better facilitate DSP as a means of providing NCAS as part of its current review of NCAS;

We also support the following recommendation, but with the proviso that it is extremely vague and therefore this issue needs further consideration:

The roles and responsibilities for the provision of NSCS between NEMMCO and TNSPs be clarified to ensure that DSP is facilitated.

## 6. Reliability

### 6.1 Reserve capacity arrangement

The chapter on reliability refers to the final report<sup>2</sup> of the AEMC Reliability Panel (RP), where one of the main recommendations is new reserve trader arrangements to increase DSP. The RP noted that, “On the whole, consumers of electricity have little direct involvement in the market (ie there is an absence of ‘demand-side participation’).”<sup>3</sup> The new arrangements as presented by the RP and supported in the NERA report would indeed assist DSP.

NEMMCO is currently able to act as a reserve trader by entering into arrangements with “demand-response facilities” to supply demand reduction or standby generation. We support the RP’s recommended improvements, in particular the incorporation of demand response within the minimum reserve methodology, and the formalisation of the arrangements under the title of “Reliability Emergency Reserve Trader”.

Although we support extending the time limit for contracting for reserve capacity, it is not clear why the extension was set at 9 months: as so many arrangements in the NEM rely on annual reporting, it seems feasible to make the time limit 12 months where possible. We also support NERA’s and the RP’s recommendations for greater flexibility in NEMMCO’s arrangements; as well as the general recommendation for improvement in NEMMCO’s methodology for including demand response in the determination of minimum reserve levels.

### 6.2 Surveys

There is also a discussion about NEMMCO’s current arrangements for surveying retailers about demand response. It is clear that the methodology needs improvement in terms of timing and criteria and we recommend that NEMMCO continue to investigate this. NERA suggest that one improvement could be that retailers supply information in confidence, to improve the accuracy of reporting. This seems a minor amendment, unless it is then published in some combined form to allow DM providers to access opportunities. The AER is intending to do similar work with distributors<sup>4</sup>, and the survey of retailers begs the question of why distributors are not being similarly surveyed particularly since DNSPs are already undertaking some DM.

We recommend that:

- The outer time limit for NEMMCO contracting for reserve capacity be set at 12 months
- NEMMCO should thoroughly overhaul its methodology for surveying and reporting on retailer demand response arrangements in reference to the AER development of distributor reporting
- NEMMCO should develop a similar methodology for distribution businesses, again in reference to the AER’s methodology

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<sup>2</sup> AEMC Reliability Panel (2007) *Comprehensive Reliability Review, Final Report*, December

<sup>3</sup> AEMC Reliability Panel (2007) *Comprehensive Reliability Review, Final Report*, December, p 13

<sup>4</sup> Australian Energy Regulator (2008) *Demand management incentive schemes for the ACT and NSW 2009 distribution determinations, Final Decision*, February

- The reporting mechanisms developed by the AER should be extended to all jurisdictions, not just NSW and the ACT.

## **6.2 Standing reserve**

In addition there is discussion of the notion of a standing reserve, on which there is divided opinion. The RP decided not to support it at this stage but noted that, “the Panel intends to provide information and analysis gathered in this Review to the AEMC in relation to the potential to develop medium-term demand-side reserves ...”<sup>5</sup> and will also continue to investigate it in other reviews. The NERA report argues against a standing reserve and instead recommends a staged approach, to include annual invitations to provide reserve capacity; where necessary invite these providers to quote for provision of reserve; then contract capacity on the basis of the quotes.

TEC supports NERA's recommendations but is not convinced the concept of a standing reserve has no value. We suggest that both approaches should be followed, that is, the staged approach be adopted as an interim but that the RP – with the assistance of NEMMCO – continue to investigate the potential for a standing reserve. The investigation should focus on the potential of demand side reserve to contribute to reliability and efficiency while following the principle of optimising demand side participation. This needs to be done in tandem with any investigation of the potential for DM bidding within the wholesale market.

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<sup>5</sup> AEMC Reliability Panel (2007) *Comprehensive Reliability Review, Final Report*, December, p 64