grid australia
BACKBONE OF THE NEM

Review of Demand-Side Participation in the National Electricity Market

Response to AEMC Stage 2 Issues Paper

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Powerlink Queensland · TransGrid · ElectraNet electricity transmission · TRANSEND · SP AusNet A member of Singapore Power Group

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1. Introduction and Overview

1.1 Background

The AEMC has published two documents in relation to its three-stage review on Demand-Side Participation (DSP) in the NEM. These documents are: the Final Report for Stage 1 of the Review (which was completed by NERA); and an Issues Paper for Stage 2. The objective of the AEMC's review is to identify whether there are barriers or disincentives within the Rules which inhibit efficient DSP in the NEM.

In its earlier submission to Stage 1 of the AEMC's review, Grid Australia (formerly the Electricity Transmission Network Owners' Forum, or ETNOF) expressed its support for efficient DSP and its important role in the NEM. The following general observations were also noted in response to NERA's draft report on Stage 1 of the review:

- The Rules already require TNSPs to actively consider non-network options for resolving network limitations (including DSP) and to publish information so as to encourage proponents of such solutions to come forward. Our submission noted that these important matters did not appear to be recognised in NERA's Stage 1 draft report.

- Large scale DSP at the electricity transmission level (which has the potential to defer transmission investment) will continue to be actively considered and taken into account by TNSPs as part of the normal transmission planning processes set out in the Rules.

- However, the greatest potential for DSP initiatives is in electricity distribution and retail. These sectors comprise the majority of the delivered price of electricity (while transmission accounts for only approximately 10 per cent of the delivered price of electricity).

- Consideration of improvements in transmission pricing signals is futile if end use customers do not see appropriate price signals aimed at changing their consumption behaviour.

Grid Australia welcomes the amendments to NERA's final report for Stage 1 of the Review, which recognised a number of the concerns expressed in our earlier submission. In particular, Grid Australia is pleased that better consideration has now been given to the existing information requirements in the Rules, and that NERA has withdrawn its earlier recommendation to place additional obligations on NSPs that would require them to meet on an annual basis with DSP proponents.

Grid Australia welcomes the opportunity to comment on the AEMC's Issues Paper that commences Stage 2 of the review.

1.2 Grid Australia's comments on AEMC's approach

Before commenting specifically on the matters raised in the Issues Paper, Grid Australia wishes to make some general observations on the AEMC's approach to this

review. In particular, Grid Australia notes that the following introductory remarks have been made by the AEMC on page 6:

> *"It is also relevant to consider what is not an impediment to more efficient and informed engagement by consumers. Participants in the electricity market face costs, obligations and incentives that are legitimate requirements of the market. These may relate to ensuring the reliability, security and quality of supply or to prudential obligations for participants in the wholesale electricity market. Such costs, obligations and incentives apply more or less to any participant and cannot be considered as an impediment to DSP."*

Grid Australia concurs with the AEMC's remarks. Contrary to these remarks, however, our view is that a number of the perceived barriers to DSP identified in the Issues Paper more accurately reflect the economic characteristics and practical limitations of DSP, rather than impediments in market or regulatory arrangements that might be addressed or removed. Specific examples are set out in detail in this submission.

Grid Australia strongly supports the AEMC's planned approach to the review, which is set out on page 1 of the Issues Paper as follows:

- The AEMC wants to focus on identifying high impact issues that are likely to have simple, low cost solutions.
- Where a complex, high cost option may provide benefits in excess of the costs, the Commission will want to ensure that those issues are identified and that work is started on considering them further.

Given the nature of the issues being addressed in the review, and the need to ensure that appropriate levels of resources are focused on delivering effective solutions to real problems, Grid Australia supports the pragmatic approach foreshadowed in the Issues Paper.

1.3 Remainder of this submission

This submission is structured consistently with the AEMC's Issues Paper. Accordingly, this submission is set out as follows:

- Section 2 provides Grid Australia's views on the incentive properties of network regulation and its potential impact on DSP.
- Section 3 comments on network planning issues and the proposition that these processes are biased towards network solutions.
- Section 4 discusses the network access and connection arrangements, including the extent to which these arrangements can and should be improved;
- Section 5 provides high-level observations regarding wholesale markets and financial contracting; and

- Section 6 concludes the submission with Grid Australia's comments on reliability issues.

Each section commences with a summary of Grid Australia's views. This summary is followed by a table that addresses the specific matters raised in the Issues Paper.

2. Economic Regulation of Networks

2.1 Grid Australia's views

Grid Australia notes that the Issues Paper does not distinguish between the economic regulation of transmission and distribution networks. It is important to recognise, however, that TNSPs are subject to revenue capping, and therefore the concerns expressed in the Issues Paper regarding the form of control are not applicable to TNSPs. More generally, whilst Grid Australia's view is that there are opportunities to enhance the regulatory regime to better reward and encourage efficient DSP; fundamental change to regulation is neither necessary nor desirable.

Grid Australia's view is that greater incentives could be provided to NSPs to undertake R&D to better exploit the opportunities available to deliver appropriate energy solutions to customers. It is also noted that many of these opportunities will be at the distribution and retail level, rather than transmission.

In relation to network pricing issues, it is important to recognise that there are practical limitations to improving locational signals to end-consumers. Substantial effort has been made in relation to transmission pricing to ensure that prices are cost-reflective. Grid Australia's view is that further reviews of transmission pricing issues would not deliver a cost effective outcome for improved DSP at this time.

2.2 Response to Issues Paper

Potential barrier	AEMC Discussion	Grid Australia
The balance of incentives may not encourage the efficient inclusion of demand-side options.	The Issues Paper suggests that the service incentive targets for NSPs may create a disincentive for the use of efficient DSP because DSP is not firm. The Issues Paper further comments that the efficiency carry-over schemes rewards operating expenditure savings more than capital expenditure savings. This could create a barrier to DSP, as this is typically an operating expense to the NSP.	Grid Australia does not accept that reliability issues with DSP should be considered to be a "barrier" to DSP. Reliability considerations are rightly factored into NSPs' expenditure decisions and should be reflected in the design of service incentive schemes. The balance of incentives between capital and operating expenditure is probably not a material consideration in terms of DSP take-up. TNSPs now face stronger incentives under Chapter 6A to minimise capital expenditure. Notwithstanding these observations, a DSP-specific incentive would further facilitate DSP whilst addressing any

Potential barrier	AEMC Discussion	Grid Australia
		perceived imbalance in the savings incentives for capital and operating expenditure. To improve incentives for DSP, Network Service Providers should be able to recover the costs of demand management projects through a DSP-specific incentive scheme, in addition to retaining the savings generated by capital expenditure deferral, and to provide positive encouragement to DM initiatives.
The building blocks form of regulation may limit the incentives for innovation on demand-side participation.	The Issues Paper suggests that the rules may provide insufficient incentives for network businesses to undertake R&D and innovation on DSP initiatives – given the "cost of service" approach with periodic resets.	Grid Australia supports better incentives to undertake R&D and explore non-network solutions. In this context, it is noted that: 'Smart networks' require R&D to exploit technological developments. OFGEM has recently recognised the need to encourage R&D expenditure as the pay-off is both uncertain and occurs over the long term. Grid Australia would support fuller consideration of such issues by the AEMC.
The form of price control may not facilitate efficient demand-side participation.	The Issues Paper suggests that under price cap regulation, as revenue is linked to demand, there may be incentives on a network business to avoid options, such as DSP, that will reduce consumption, and therefore revenue.	Grid Australia notes that the form of control for TNSPs is revenue capping. More generally, Grid Australia doubts whether tariff basket regulation (which is typically applied to DNSPs) would provide incentives for DNSPs to pursue marketing or pricing strategies that would materially discourage DSP initiatives.
The structure and components of tariffs may not provide customers with efficient signals about electricity use.	The Issues Paper notes the importance of appropriate price signals to consumers and asks whether the locational component of tariffs should be increased to provide stronger signals to consumers about the costs of their use of network capacity.	Grid Australia notes the importance of price signals being passed on to consumers. It is important also to recognise the practical limitations in sharpening locational signals to consumers, especially at the distribution and retail level. It should also be noted that time-of-use prices can be more important in providing signals for efficient consumption and investment than locational pricing. Electricity network investment is often driven by high utilisation for very short periods of high demand during the working week. This relationship is not always as clear for transmission as for distribution because of the highly variable generation dispatch patterns.

3. Network Planning

3.1 Grid Australia's views

NERA's final report for Stage 1 of the AEMC's Review concluded that the existing planning and consultation provisions in the Rules do not need to be augmented by further requirements for TNSPs to meet with DSP proponents on an annual basis. Grid Australia strongly supports NERA's findings, as TNSPs already provide substantial information to stakeholders regarding network constraints.

Grid Australia does not accept the proposition that TNSPs are biased towards network solutions. Providing that network regulation continues to encourage network businesses to deliver cost efficiencies, network businesses will assess network and non-network solutions on an equitable basis.

3.2 Response to Issues Paper

Potential barrier	AEMC Discussion	Our assessment
The Regulatory Test threshold may be limiting the ability for alternatives to smaller network augmentations to be considered.	The Issues Paper notes that consultation is not required on "small" network investments. It further comments that if demand-side proponents are not aware of opportunities for them to contribute, or are not adequately consulted about opportunities, potential efficient demand-side solutions may be lost.	Grid Australia notes that substantial information is provided to the market regarding network constraints and network plans. At a transmission level, Grid Australia believes that the present amount of consultation is, if anything, too onerous when measured against the non-network solutions that result from it. Grid Australia has separately proposed an increase in the regulatory test threshold to address this issue. This proposal included actual case studies showing that in the case of transmission, it is unusual for demand side options to present themselves during these consultation periods where the value of the proposed network augmentation alternative is less than $35 million in cost.
The planning arrangements may not allow sufficient time for demand-side options to integrate in the planning process.	The Issues Paper comments that DSP depends on the provision of timely and accurate information regarding the opportunities to substitute for network projects. However, the Issues Paper notes that it is likely to be at the project specification stage, when the amount of required DM is known.	Grid Australia's view is that it is important to recognise that timely investment is required in order to maintain the reliability and performance of the network. It should be noted that the Rules already set out extensive information and consultation processes for TNSPs through the APR and regulatory test processes.

Potential barrier	AEMC Discussion	Our assessment
		Furthermore, the time frames involved in these regulatory processes are usually longer than the normal periods allowed for equipment suppliers to develop tenders. Recent proposals in relation to the new Regulatory Investment Test provide for a new project specification phase that extends to include reliability driven augmentations. It also provides for an additional 4 weeks (i.e. a total of 12 weeks) to be made available for interested parties to propose alternative options. Grid Australia has generally supported these proposals subject to a more streamlined process where the most expensive feasible options are between $5 million and $35 million.
Consultation on augmentation options rather than on the needs of the network may create a bias against demand-side options.	The Issues Paper argues that network businesses are likely to be inclined to plan to build the network option unless a more efficient alternative is identified.	Grid Australia does not accept, on the basis of available evidence, that network solutions can be characterised as being the default option, although they do provide a reference point for assessing non-network options. Provided that network businesses have an incentive to minimise costs (as is currently the case), the lowest total cost option (taking into account reliability issues) will be adopted.

4. Network Access and Connection Arrangements

4.1 Grid Australia's views

Grid Australia notes that the network access and connection arrangements discussed in the Issues Paper raise issues that are principally matters for distribution network companies and embedded generators. In terms of general observations, however, Grid Australia's firmly held view is that embedded generators should be treated equitably compared to remote generators and load, i.e. treated no more favourably or unfavourably than other users of the network.

4.2 Response to Issues Paper

Potential barrier	AEMC Discussion	Our assessment
Arrangements for avoided TUOS and DUOS may under / over value demand management options.	The Issues Paper recognises that the DNSP may obtain little benefit from embedded generators responding to TUOS/DUOS rebates. The Paper also notes that the rebates may provide poor incentives to position embedded generation optimally.	These issues are, principally matters for distributors and embedded generators.
Minimum technical standards for connection to the network may provide a barrier to potential embedded generation options.	The Issues Paper comments that if connection standards are inappropriately burdensome for embedded generation (EG) it is possible that opportunities for the efficient development of EG are missed. It also suggests that Inconsistency within and between networks and jurisdictions in relation to connection obligations may also discourage EGs.	Grid Australia notes that these matters are principally the concern of distributors. As a general observation, however, it is important that appropriate minimum connection standards are applied to all parties. Any changes to required standards would need to be managed carefully to ensure that a reduction in standards applicable to new EGs does not lead to a reduction in quality of network service to the customer base generally, nor violate requirements in existing connection agreements. While this is principally a matter that should be addressed with distributors and EGs, there are occasions when larger EGs can and do impact on transmission service quality, the ability of TNSPs to meet system performance standards, and the terms of connection agreements between TNSPs and existing customers and generators. Depending on their location, large EGs could have an impact on power system security.

Potential barrier	AEMC Discussion	Our assessment
Deep connection costs to the network may be a barrier to potential embedded generation options.	The Issues Paper notes that under the Rules, a generator connecting to the transmission network only pays the costs directly attributable to their connection (shallow connection costs). However, the Issues Paper comments that there may be inconsistency in the costs imposed on an EG connecting to the distribution network, as NSPs differ in their interpretation of the physical assets needed to connect the EG.	Grid Australia does not consider that it is sufficiently informed on the differences in practices in this regard among DNSPs to comment.
Contracting arrangements for embedded generation may not reflect the network support benefits that can be provided.	The Issues Paper suggests that negotiation with distributors can be difficult. It notes that some distributors levy "anytime maximum demand" or "coincident peak demand" charges on EGs, even though EGs may reduce the total level of network loading. The Issues Paper also suggests that there are inconsistent approaches across NSPs; and that insufficient information and transparency regarding contracting arrangements may also make it difficult for EGs to connect to the network.	Grid Australia notes that this is primarily an issue for distributors.

5. Wholesale Markets and Financial Contracting

5.1 Grid Australia's views

The wholesale markets and financial contracting matters raised in the Issues Paper are not network issues, and therefore Grid Australia would only like to make general observations on the issues raised. As already noted, Grid Australia's view is that DSP should be treated on an equitable basis compared with other participants in the NEM. The economic characteristics of DSP will determine its position in the market place, including, in particular, its capacity to meet the needs of the market. Grid Australia supports a consistent application of wholesale market arrangements for all market participants and cautions against an approach that is focused on promoting DSP where this is inconsistent with the National Electricity Objective.

5.2 Response to Issues Paper

Potential barrier	AEMC Discussion	Our assessment
Wholesale market processes may exclude potential demand-side resources from efficiently participating.	The Issues Paper comments that demand-side resources may need to be given notice of when their services are required or they may only be able to reduce their consumption for minimum periods of time that are longer than required by the market. At present, the Issues Paper suggests that the Rules and dispatch mechanisms may not to be flexible enough for this to occur. It further suggests that NEMMCO's demand forecast may be inaccurate, leading to more or less generation being dispatched than required.	As recognised by the AEMC, Grid Australia notes that DSP can also occur through retailers as well as directly in the market through the dispatch process. Participation of the demand side via these means can impact on forecast maximum demand for network planning purposes in unpredictable ways. Increased transparency of the use of DSP by retailers could enhance network investment decision making, and help quantify the current levels DSP generally.
The costs of involvement in the wholesale market and in financial contracting may be unnecessarily high.	The Issues Paper notes that in order to participate in the wholesale market, each scheduled load or generator has to meet a number of eligibility conditions and face a number of obligations. The Issues Paper asks whether these costs are inappropriately high for DSP and whether there are mechanisms (such as a retailer and DSP bulletin board) to reduce costs of participation.	Depending on the circumstances it may well be appropriate to require the DSP to participate in the wholesale market, especially if the size of the response is sufficient to impact on power system security. This is not a network issue. Grid Australia therefore has no further comments to make in relation to this matter.
Demand-side participants may not be adequately compensated for providing a demand-side response.	The Issues Paper asks whether VoLL sets a barrier to DSP. The Issues Paper also questions whether the introduction of an uplift payment or a change in the VoLL would be a significant change in the market. The AEMC notes that it would need to be certain that the benefits would warrant such a change.	It is unclear to Grid Australia as to why different market arrangements should apply to DSP and generators.

6. Reliability

6.1 Grid Australia's views

Grid Australia reiterates its earlier comments that DSP should be treated on the same basis as other market participants. In practical terms this means that DSP should be

supported only to the extent that, to do so, contributes to the National Electricity Objective. This Objective supports clear efficiency, reliability, and system security outcomes. Within the constraints of this Objective, if DSP is less able to participate in Reserve Trader arrangements, this does not necessarily imply that there is an unfair or unreasonable impediment to DSP that ought to be addressed. Grid Australia notes that the matters canvassed in the Issues Paper properly involve the Reliability Panel, and it may be appropriate for the AEMC to receive advice from the Reliability Panel as part of its review.

6.2 Response to Issues Paper

Potential barrier	AEMC Discussion	Our assessment
The use of a short-term emergency Reserve Trader may not facilitate the development and use of efficient demand-side participation for reliability.	The Issues Paper notes that to participate in the Reserve Trader demand-side resources face a number of costs that, unlike a generation option, would not be required for their core business. These costs may include testing, measurement and verification requirements, plus the costs of negotiating contracts with NEMMCO. The Issues Paper comments that if the revenues from the Reserve Trader do not provide sufficient certainty over time, demand-side resources cannot be sure that these costs will be able to be recovered.	It is not clear that the matters identified in the Issues Paper constitute a barrier to DSP. Moreover, it is questionable whether DSP faces more onerous testing, measurement and verification requirements than generators, taking into account the different characteristics of these two reserve resources.
The use of reserves may not allow demand-side participants to obtain a fair market value for their services.	The Issues Paper explains that the Reserve Trader mechanism was introduced as an interim measure and was intended to eventually be replaced by more permanent reliability mechanisms. The Issues Paper suggests that ideally the market should be able to function in the longer-term by encouraging sufficient supply-side investment or demand-side response through market mechanisms. The AEMC asks whether these arrangements act as an impediment to DSP.	This is not a network issue. Grid Australia therefore has no particular comments to make in relation to this matter. However, the Reliability Panel may be able to provide useful input on this matter.