

18/05/2018

Mr John Pierce  
Chair  
Australian Energy Market Commission  
PO Box A2449  
Sydney NSW 1235

Lodged online via: [www.aemc.gov.au](http://www.aemc.gov.au)

Dear John,

**Reliability frameworks review – consultation on directions paper**

TransGrid welcomes the opportunity to respond to the AEMC's directions paper in relation to its reliability frameworks review.

TransGrid is the operator and manager of the high voltage transmission network connecting electricity generators, distributors and major end users in New South Wales and the Australian Capital Territory. TransGrid's network is also interconnected to Queensland and Victoria, and is instrumental to an electricity system that allows for interstate energy trading.

As recognised by the AEMC, Australia is in the midst of an energy transformation. This is primarily driven by community expectations, retirement of existing generation and advances in renewable energy technologies. These changes raise complex issues in relation to the design of the National Electricity Market (NEM) and have led to a greater focus on reliability of supply.

The governance framework, including the National Electricity Rules, should provide a robust framework which can adapt to these changes, and provide the basis for a reliable supply at the lowest cost to consumers over the long run. TransGrid understands that the review is not considering network reliability of supply but rather it is looking at the reliability of supply provided by generation and balancing options like demand response.

TransGrid is supportive that the AEMC is exploring ways to address concerns in the current design of the NEM and, in doing so, progressing several of the Finkel recommendations.

It is critical that the reliability frameworks in the NEM are supported by and take account of the Integrated System Plan currently being prepared by the Australian Energy Market Operator (AEMO) which was a key recommendation from the Independent Review into the Future Security of the NEM (Finkel Review).

We appreciate the opportunity to comment on this directions paper and look forward to engaging with the AEMC and other stakeholders further on this project. If you would like to discuss this submission, please contact Neil Howes, Regulatory Affairs Manager on 02 9284 3748.

Yours faithfully



Caroline Taylor  
**Manager, Regulatory Policy**

## 1. Introduction

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TransGrid welcomes the opportunity to respond to the Australian Energy Market Commission (AEMC) on its directions paper in relation to its reliability frameworks review.

TransGrid is the operator and manager of the high voltage transmission network connecting electricity generators, distributors and major end users in New South Wales and the Australian Capital Territory. TransGrid's network is also interconnected to Queensland and Victoria, and is instrumental to an electricity system that allows for interstate energy trading.

As recognised by the AEMC, Australia is in the midst of an energy transformation. This is primarily driven by community expectations, retirement of existing generation and advances in renewable energy technologies. These changes raise complex issues in relation to the design of the National Electricity Market (NEM) and have led to a greater focus on reliability of supply.

The governance framework, including the National Electricity Rules, should provide a robust framework which can adapt to these changes, and provide the basis for a reliable supply at the lowest cost to consumers over the long run. TransGrid understands that the review is not considering network reliability of supply but rather it is looking at the reliability of supply provided by generation and balancing options like demand response.

TransGrid is supportive that the AEMC is exploring ways to address concerns in the current design of the NEM and, in doing so, progressing several of the Finkel recommendations.

We understand that the AEMC's review is considering whether the current market and regulatory frameworks for reliability (in terms of enough generation and demand response to supply consumers' needs) are appropriate. The review does not cover network reliability, nor is it not looking specifically at what level the NEM reliability standard should be set at. It also appears that the AEMC is no longer focusing on generator flexibility and dispatchability as part of this review.

This submission is structured as follows:

- > Chapter 2 discusses our view that the reliability framework in the NEM must be supported by and take account of AEMO's Integrated System Plan and other closely related developments in the NEM.
- > Chapters 3, 4, 5 and 6 set out our views on the issues now being considered by the AEMC in this review, namely: forecasting, wholesale demand response, day-ahead markets and strategic reserve respectively.

## 2. The reliability framework in the NEM must be supported by and take account of AEMO's Integrated System Plan and other NEM developments

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TransGrid is supportive that the AEMC is exploring ways to address concerns in the current design of the NEM and, in doing so, progressing several of the Finkel recommendations.

It is critical that the reliability frameworks in the NEM are supported by and take account of the Integrated System Plan currently being prepared by the Australian Energy Market Operator (AEMO) which was a key recommendation from the Independent Review into the Future Security of the NEM (Finkel Review).

In a system with increasing levels of intermittent generation, more robust regional links and greater interconnection between states, the Integrated System Plan will be important in delivering the reliability that the AEMC's review seeks to facilitate. It is important that the transmission network does not become a bottleneck for electricity supply in the NEM.

It is also important that the AEMC considers the role of interconnectors in providing a low cost electricity supply to consumers in this review. Interconnectors are a cost-effective approach for integrating and aggregating a large share of variable renewable energy and maintaining energy security. The potential for interconnectors to meet reliability needs as an alternative to generation is also recognised by the regulatory investment test for transmission which assesses the costs and benefits of alternative options including network and non-network alternatives.

Finally, it is critical that the AEMC's work on reliability frameworks is undertaken concurrently with the development of the design and implementation of the proposed National Energy Guarantee.<sup>1</sup>

### 3. Forecasting

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The AEMC states that forecasting is becoming more complex due to the growth in distributed energy resources, deployment of variable renewable energy resources and more extreme weather days. In this context, the AEMC has proposed three potential improvements in relation to forecasting.

These are:

- > In the short-term, there would likely be benefit in an entity undertaking greater reporting of the differences between forecast and actual outcomes, especially in relation to the 30-minute pre-dispatch, short-term PASA and medium-term PASA forecasts. The transparency that a common source of reporting could provide would be conducive to industry participants and AEMO in their decision making, risk management and, if necessary, point to how to improve the forecasts.
- > In the medium-term, consider building on AEMO and Australian Renewable Energy Agency's (ARENA) trial to have wind and solar projects 'self-forecast', and implement such an obligation into the NER.
- > In the long-term, there may be benefits in imposing additional obligations on retailers in providing information or forecasting. This would give entities other than the system operator the opportunity to provide their own forecasts, which should increase efficiency by placing the risks with parties that may be better placed to manage them.

TransGrid agrees with the AEMC's comments about the increasing degree of uncertainty of forecasts that are arising and will continue to arise as the penetration of intermittent generation sources rises. We support the AEMC exploring ways which variances in forecasts can be better managed through the forecasting process.

To improve forecasting, TransGrid considers that greater visibility and transparency of behind the meter resources is needed in the market. Distributed energy resources are becoming increasingly important in balancing supply and demand as well as providing other system and network services.

In this regard, TransGrid notes that the AEMC is considering a rule change request from the COAG Energy Council to establish a register of distributed energy resources. As set out in our submission to the rule change request, TransGrid supports the establishment of a distributed energy resources register. However, we consider the register would have significantly greater transparency benefits if it was amended to allow transmission network service providers (TNSPs) to have access to the information in the register. This would provide a number of benefits for the planning and operation of transmission networks as part of the broader energy system.

In relation to the AEMC's option of placing an obligation on retailers to provide demand side forecasting, it is appropriate that a third party forecast provider can be appointed by a retailer to produce forecasts and that this not be limited to distribution network service providers. Other parties may be able to provide this service such as TNSPs.

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<sup>1</sup> The National Energy Guarantee consists of two parts: a reliability requirement and an emissions requirement. Retailers will be required to meet these guarantees through the contracts they enter into with generators.

## 4. Wholesale demand response

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The AEMC has identified three options that could be progressed to address facilitate wholesale demand response. They are:

- > Two options that could allow multiple parties, for instance a specialist demand response aggregator and a retailer, to engage a single consumer behind a connection point without that being contingent on the original financially responsible market participant.
- > Providing additional incentives for retailers to offer demand response products.

TransGrid supports the use of technically feasible and cost-effective demand response in the NEM. The current market for demand response in the NEM is relatively immature and the full potential of innovation in demand response is yet to be realised. In relation to this, the Australian Renewable Energy Agency and the AEMO are undertaking pilot projects under a demand response initiative to manage electricity supply during extreme peaks.

As a network service provider, TransGrid is supportive of demand response as it allows transmission businesses to be more responsive to changes in demand forecasts and the needs of consumers. The regulatory framework should allow for innovation by transmission businesses to actively build up the market, in the same way that an innovation scheme has been introduced for distribution businesses.

Demand response can offer services along the supply chain and it is important that these services can be defined and potentially separated between wholesale, transmission and distribution. If there are multiple demand response markets operating across the supply chain, we might need a system operator to dispatch resources in an orderly way so that a dynamic response to a wholesale signal does not create issues in a local distribution system for example. TNSPs would be well placed to provide this role due to their visibility of both system-wide and local issues.

TransGrid does not think it is necessary to provide additional incentives for retailers to offer demand response products. As retailers operate in a competitive market, they are already incentivised to explore demand response to limit wholesale market exposure when it is efficient to do so. To provide additional incentives for retailers to offer demand response products would distort the market and lead to inefficient outcomes.

## 5. Day-ahead markets

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The AEMC states that the NEM has many day-ahead features that go to addressing the benefits that might come from a day-ahead market. It reports that AEMO is currently identifying the existing ahead features of the NEM that may require change and compiling the evidence of the deficiencies that AEMO continues need to be addressed, either through targeted improvements to existing arrangements or through a centrally facilitated ahead market design. This will assist the AEMC understand what parts of the existing market design need to be improved and what the solution might be.

As set out in our submission to the AEMC's interim report, we note that day-ahead markets continue to be explored as tools to support reliability of supply in other markets. For example, Ontario is currently transitioning from a model of day-ahead commitments to a financially binding day-ahead market. The expected benefits of this transition are that "A Day-Ahead Market will provide market participants with price certainty ahead of real-time, increase operational certainty for both market participants and the Independent Electricity System Operator, and reduce out of market payments."<sup>2</sup>

TransGrid believes that the long term benefits of such a model, which include increased ability for generators to understand and manage congestion risks, are desirable as the network evolves to incorporate a greater number and diversity of generators. However, it is important that the benefits to consumers are clearly

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<sup>2</sup> Independent Electricity System Operator, <http://www.ieso.ca/en/sector-participants/market-renewal/market-renewal-day-ahead-market>, viewed 1 February 2018.

demonstrated before implementing a day-ahead market. TransGrid recommends that the AEMC continues to explore the potential of a day-ahead market and other reforms to support the evolution of the NEM.

## 6. Need for a strategic reserve

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The AEMC considers it remains appropriate for the NEM to have some form of strategic reserve to act as a safety net and as one of the last resort alternatives to involuntary load shedding. It states it will explore the issue of strategic reserves through rule changes it has received from AEMO.

TransGrid supports the need for a strategic reserve in the short run to better enable AEMO to ensure reliability in the network during the transition period to higher renewable penetration. In the long term, TransGrid does not believe that a strategic reserve is the best method to deliver reliability. Reserve contracts procured by AEMO may be expensive and are not the means of supplying electricity to consumers at the lowest cost.

As a potential solution to this issue, a broadening of the definition of unserved energy in the National Electricity Rules, used by AEMO to inform the market, may result in the need for strategic reserves less often. The current definition of unserved energy in clause 3.9.3C of the NER excludes occurrences from multiple contingency events, protected events and non-credible contingency events. Occurrences similar to load shedding such as voluntary curtailment, mandatory restrictions and large market responses are also not included, even when the effect on consumers is similar to unserved energy.

A broadening of the definition would also better align it with the level of reliability experienced by consumers. For example, on 10 February 2017 the unserved energy in New South Wales, as defined by clause 3.9.3C of the NER, was approximately 290 MWh. However, the actual consumer experience of unserved energy through voluntary curtailment and market or contractual arrangements was significantly higher than this.