Energy Security Board
Retail Technical Working Group

Demand Response – Reliability Requirement

Issues Paper

Introduction

The purpose of this paper is to facilitate discussions with Jurisdictions and the Technical Working Group (TWG) on how Demand Response (DR) is accounted for under the reliability requirement. Following the Senior Committee of Officials (SCO) Reference Group and TWG meetings, a more detailed technical working paper will be developed. The technical working papers and draft final design document will be available for public consultation in mid-June.

High level design

The Energy Security Board ESB has stated it is its intention that DR should be able to qualify as dispatchable capacity for the purposes of the reliability requirement. Ensuring all potential sources of dispatchable capacity are eligible will be critically important for ensuring the Guarantee is met at the lowest possible cost.

The Australian Energy Market Commission (AEMC) is currently assessing the suitability of a mechanism to enable DR to bid into the wholesale market through the *Reliability Frameworks Review*. The ESB has stated that any products developed to meet the requirements of a future wholesale DR mechanism should also qualify under the reliability requirement. But, conversely, eligibility of DR under the reliability requirement should not be dependent on the implementation of a wholesale DR mechanism, as the AEMC's assessment of the need and feasibility of such a mechanism is yet to be finalised.

It is also likely that AEMO's procurer of last resort function will utilise DR, as it can be a cost-effective source of temporary capacity. The ESB has stated that procurer of last resort reserves would be held out of market to avoid distorting investment signals. To meet this criterion, DR reserves should not be able to count towards a retailer's contracting obligation under the reliability requirement if they are also contracted with AEMO under the procurer of last resort.

Detailed design elements for TWG input

- What criteria should DR be required to meet to qualify under the reliability requirement? Do DR contracts need to be linked to the spot price as has been suggested for other contracts?
- How should the validity of DR capacity be verified under the reliability requirement? What measures will be required to enable DR participation under the Guarantee if a wholesale DR mechanism is not implemented following the AEMC's *Reliability Frameworks Review*?
- There is likely an issue of over counting DR under the current framework (retailers simultaneously counting DR as contract cover while reducing their overall contracting requirement by exercising the DR). What measures could be taken to mitigate this risk?
- Are there any issues specific to DR that might impact on how DR contracts are reported to the AER?

Issues for discussion

1. Eligibility

Consideration needs to be given to establishing eligibility requirements for DR participation under the reliability requirement. DR cannot currently bid into the wholesale market, and so specific eligibility criteria may need to be developed for DR contracts. It may be possible to introduce minimum contracting requirements to address this concern.

The extent to which DR contracts are required to be linked to the spot price, as is the case for other types of contract, needs to be considered. This would ensure DR is treated consistently with other forms of generation contract under the Guarantee.

A related issue is whether there needs to be minimum financial requirements placed on entities providing DR to the market. Generators and retailers are required to meet strict prudential requirements to participate in the ASX exchange or OTC market in order to manage the financial risks of counterparty default.

Questions for TWG:

- What requirements should be placed on DR contracts to be eligible to meet retailers' contracting obligations under the reliability requirement?
- Should contracts be required to be linked to the spot market, as has been proposed for other types of contract?

2. Validity

Verifying the delivery of DR is a challenging technical consideration. For example, activation of DR would reduce load below a business-as-usual level but may not show as a net reduction in overall load. The AEMC's Reliability Frameworks Review *Directions Paper* canvasses a number of methods by which DR could be verified for the purpose of a wholesale DR mechanism. A recommendation of the Finkel Review was that the AEMC develop a mechanism that facilitates efficient demand response participation in the wholesale energy market. The recommendation requires that the development be complemented by a rule change request to facilitate its implementation. The implementation of a wholesale DR mechanism would create a platform to verify the delivery of DR. However, the eligibility of DR under the reliability requirement should not be precluded from participating under the Guarantee if a wholesale DR mechanism is not implemented.

Without a suitably robust verification approach, it would be difficult to determine the validity of DR contracts. A weak verification methodology would create opportunities for liable entities to meet their requirements with contracts that do not truly add additional capacity to the system.

Questions for TWG:

- If a wholesale DR mechanism is implemented, would this be a suitable method for determining eligibility of DR under the guarantee? Are there any aspects in which it may not be adequate?
- How else could the validity of DR be verified?

3. Double counting DR under the current framework

There is an issue of double counting DR under the current reliability requirement framework. As currently proposed, a retailer could use DR to meet their contracting requirement at the year ahead compliance point (T-1), and in addition, by exercising the DR at period T, reduce their contribution to peak demand and therefore their overall contracting requirement.

Simplified example[1]:

A region with two retailers has an expected P_{50} peak demand of 200MW. Each retailer has 50 per cent market share with an individual expected peak load of 100MW each.

Retailer A contracts for 100MW of capacity a year ahead of a forecast 'gap' (T-1), 20MW of which is demand response. It submits these contracts the AER to comply with the reliability requirement.

If, during the peak period (T), Retailer A exercises that same DR contract, they reduce their peak load to 80MW. All else equal, they have reduced their market share at this point from 50 per cent to 80MW/180MW = 44 per cent.

For the purposes of the reliability requirement, Retailer A is required to have submitted contracts for 44% of the P_{50} (200MW) forecast = 89MW, a reduction of 11MW. A 20MW contract has therefore reduced Retailer A's contracting obligation by 20MW+11MW = 31MW.

The extent to which this is a problem depends on how a retailer's market share is determined (e.g. at one peak demand event or over an extended period) and the proportion of a retailer's load able to be reduced through the exercise of DR. This potential issue will be addressed further in the Retail and Penalties and Compliance Workstreams.

Questions for TWG:

- Is this issue of over counting sufficiently material to warrant mitigating measures?
- What mitigating measures could be taken?

4. Reporting DR contracts

DR contracts will need to be reported by retailers to the Australian Energy Retailer (AER) for the purpose of compliance with the reliability requirement. Requirements on centralised trading/reporting of DR contracts will be addressed separately under the Contracts Workstream.

Questions for TWG:

- Are there any considerations specific to DR that might impact on how DR contracts could be reported to the AER?

[1] The distinction between whether actual demand is greater than or less than P_{50} forecast is omitted for simplicity. In the above example, if actual native demand were 250MW, Retailer A's DR contract would reduce operational demand to 230MW, which would still be above P_{50} forecast and therefore obligations would bind. In this case, Retailer A would have reduced their market share to 46 per cent.

Interdependencies with other elements of the Guarantee

- Reporting of contracts
- Procurer of Last Resort
- Forecasting methodology and accountability
- Gap calculation