Response to Electricity Market Reform Position Paper on Design Recommendations for the Wholesale Energy and Ancillary Service Markets

Western Power Public Submission

27 April 2016

1 Introduction

On 14 March 2016, the Public Utilities Office (PUO) released the 'Position Paper: Design Recommendations for the Wholesale Energy and Ancillary Service Markets' (Position Paper) for comment. The Position Paper sets out proposed reforms to the energy and ancillary service operations and processes in the Wholesale Electricity Market (WEM).

The energy and ancillary service operations and processes in the South West Interconnected System (SWIS) are currently outlined within the *Wholesale Electricity Market Rules* (WEM Rules), which aligns with the *Electricity Networks Access Code 2004,* the Electricity Industry (Metering) Code 2012, as well as Western Power's Technical Rules. The last three documents will cease to apply from 1 July 2018.

This submission details Western Power's response to the Position Paper. The next sections summarise Western Power's comments, while APPENDIX A provides specific comments.

Western Power welcomes further discussions with the PUO to clarify any comments.

2 The core reforms

Western Power supports the proposed core reforms.[1] In particular, Western Power supports the adoption of a security-constrained market design. This is an essential outcome to ensure transition to non-firm network access as a result of adopting National Electricity Rules (NER) chapter 5.

A point to note here is that the introduction of a security-constrained network will not necessarily increase the frequency and materiality of constraints. Constraints will appear (and disappear) due to actions of participants, such as connection of generation or customer loads. Western Power has no information to indicate that constraints will increase solely as a result of the adoption of the national framework.

Western Power also supports other core design elements that reduce costs of electricity for consumers.

3 The case for alignment with the National Electricity Market

Western Power supports alignment with the National Electricity Market (NEM) where prudent, given that the SWIS will retain a separate market. In particular, alignment of definitions and concepts used in NER chapters 5, 5A, 6 and 6A is essential to ensure consistency with the regulations that will be imposed upon the network operator.

Western Power supports the use of existing systems that are applicable to minimise the costs for consumers. As such, Western Power supports the adoption of the Australian Energy Market Operator's NEMDE system with minimum modification required to accommodate WEM design differences.

Western Power also supports the use of a single node in the SWIS, as a pragmatic balance between cost and complexity, given the current environment. However locational issues are likely to arise at some point and may need to be considered in the future. The need to recognise some type of

[1] Note that Western Power has not provided comment on sections 3.6 (Ex-ante pricing) and 3.7 (Short Term Energy Market) of the Position Paper.

locational pricing signal, to incentivise prudent generation and network development decisions, has been raised as an issue by Western Power since commencement of the EMR II process.

4 Features of the proposed design

Western Power generally supports the features of the proposed design. However certain issues concerning Network Support and Control Ancillary Services (NSCAS) must be discussed.

As full information on the determination of NSCAS is yet to be provided, Western Power is not in a position to make an informed submission on the matter. In principle, Western Power supports the replacement of existing arrangements with NSCAS and network support arrangements. Western Power understands that the PUO will publish a consultation paper with this further information in due course, and will be able to submit a more informed position at that time.

However, requiring the Transmission Network Service Provider (TNSP) to fund all NSCAS may not be appropriate as there could be conflicts between the WEM Rules and the operation of the NER. For example, were the AER to disagree that a particular jurisdictional requirement was needed it could be disallowed from the regulated revenue. Other issues may also eventuate, such as the TNSP not being able to secure an appropriate NSCAS service, or timing issues which may prevent the TNSP from acting in a timeframe considered appropriate by AEMO. As such, Western Power suggests that the WEM align with the NER and adopt AEMO last resort powers for NSCAS.

Another issue concerns intermittent loads, in particular basis for dispatch. Western Power has identified that the method of registration of intermittent loads may impact on the formulation of equipment limits and therefore constraint equations. In particular locations on the SWIS, this may result in perverse outcomes. Western Power is happy to provide further detail on this issue.

5 Implementation considerations

Western Power considers that the timing of rule changes is important, and may be an impediment to the successful introduction of the new SWIS design in July 2018. In particular, finalisation of the reference node location is required before 1 July 2018 to support calculation of marginal loss factors and develop constraint equations.

Other than the potential costs of NSCAS, Western Power has not identified material costs as a result of the proposed changes that are not a consequence of other reforms:

- All metering changes are subsumed in the adoption of NER Chapter 7;
- All costs of supporting security constrained dispatch (e.g. limit equations and operational information) are subsumed in the adoption of NER chapters 5.

However, changes to processes or systems impacted by this change will only be able to be fully determined once the actual rule changes have been developed.

APPENDIX A

Position Paper section	Western Power comment
Core reforms	
3.1 Security-constrained market design	As indicated in section 2, Western Power supports these changes as an essential outcome to ensure transition to non-firm network access as a result of adopting NER chapters 5 and 5A.
3.2 Facility bidding	Support as facility bidding is essential to the implementation of constrained dispatch engine. However any implementation costs arising from this need to be taken into consideration.
3.3 Co-optimisation of energy and ancillary service markets	Support as a least cost outcome for customers. Western Power seeks confirmation regarding the six-second response ancillary service. This service generally relies on generator governor action. Currently, governor action is mandated by Western Power's Technical Rules. Western Power understands that governor action will be retained until 2022.
3.4 Later gate closure	Support
3.5 Shorter dispatch cycle	Support
3.6 Ex-ante pricing	No comment
3.7 Short Term Energy Market (STEM)	No comment
Alignment with the NEM	
4.1 Comparison of market clearing engine options	Support use of NEMDE as a least cost approach using existing, proven technology.
4.2 Network representation in market clearing engine	Support use of NEMDE, modified to account for WEM design requirements.
4.3 Locational pricing	Support single node. However, note that locational pricing issues may arise in the future.
Features of the proposed design	
5.2 Participant and facility classes	
5.2.1 Network definitions	Western Power supports the use of NER definitions where possible, as divergence could lead to non-

Position Paper section	Western Power comment
and registration classes	compliance with NER chapters 5 or 5A.
5.2.2 Generators and generating units	Support use of NER definitions to ensure consistency with NER chapters 5 and 5A. Western Power wishes to comment that small registered generators may not be aware of imposts of technical compliance with NER chapter 5. Also, the Position Paper only refers to generating units with a nameplate capacity of 30 MW or greater. Consistent with the NER, generating units that are part of a generating system with a combined nameplate rating of 30 MW or greater, should also be included. Western Power supports the retention of the 10 MW threshold for registration, as there is a trend for a greater number of smaller units, particularly distribution units, to be connected to the power system. Finally, Western Power supports the use of AEMO registration to determine the financially responsible market participant, noting that this does require the Metering Code to be revoked as part of the reforms.
5.2.3 Small Generation Aggregators	No comment.
5.2.4 Customers and Loads	Western Power wishes to reiterate the comment that small registered generators may not be aware of imposts of technical compliance with NER chapter 5.
5.2.5 Intermittent Loads	No comment.
5.2.6 Treatment of storage facilities	A clarification. Page 38 of the Position Paper comments that: “It is expected that larger facilities that store energy drawn from the grid in batteries for later resale to the market would need to be registered as both a generating unit and a load, to ensure the facility incurs its fair share of network use of system charges.” Western Power would like to take this opportunity to clarify that network use of system charges are independent of WEM registration.
5.2.7 Intending Participants	No comment.
5.2.8 Other classifications	Western Power supports the creation of the Metering Coordinator role, unless a more preferable arrangement is determined.
5.3 Ancillary Services	

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5.3.1 Frequency Control Ancillary Services	Western Power supports the adoption of the NER frequency control ancillary services arrangements. However, the need for additional frequency control measures or markets to cater for emerging issues should not be precluded or discounted. For example, contingency services with a faster response than the fast (6 second) contingency raise and lower services may be required, such as curtailable load and generation tripping scheme ancillary service options. Alternately, it may be more efficient for a generator to disconnect rather than ramp-down (similar to an interruptible load).
5.3.2 System Restart Ancillary Services	No comment.
5.3.3 Network Support and Control Ancillary Services	Please refer to section 4 for discussion of issues.
5.3.4 Cost Allocation	Western Power does not support the Network Provider being required to fund NSCAS. Given the implementation of a WEM specific market rules, there is a risk that costs may not be able to be recovered through the NER regulated revenue process.
Other	
5.4 Management of line losses	Support transition of transmission loss factor calculation to AEMO, as well as adoption of the relevant NER guideline.
5.5 Reference node	Western Power supports the transition of the reference node to a bulk supply point such as Southern Terminal to align with NEM practices, and to simplify the manner in which limit advice is provided by Western Power to AEMO for application in the NEMDE constrained dispatch engine. However, while Western Power is not impacted financially by such a change, any implementation or transitional costs will need to be taken into account.
5.6 Basis for dispatch (as-generated or sent-out)	Western Power supports the proposed position assuming that a variation in metering or SCADA equipment is not required. However, issues with constraint equations for Intermittent Loads have been identified that may result in untoward outcomes dispatch outcomes. See section 4 for further details.
5.7 Scheduling day processes and the STEM	No comment.
5.8 Planning and dispatch	No comment.

Position Paper section	Western Power comment
5.9 Pricing – comments by exception	
5.9.4 Constrained-on compensation	Western Power supports, as a locational signal, the socialisation of constrained-on payments across loads (as detailed on p.62). However, Western Power would like to query the statement on p.57 that "relocation (subject to further analysis) of the Reference Node to a load centre in the South West Interconnected System, which would be expected to reduce the likelihood of a binding constraint causing a generator to be constrained on out-of-merit". This does not conform to Western Power's understanding.
5.9.5 Removal of constrained-off compensation	Support removal of constrained off compensation as a least cost outcome for customers.
5.10 Metering and settlement	
5.10.1 Settlement cycle timing considerations	Western Power supports a weekly settlement to align with NER chapter 7. However, Western Power is not financially impacted by market settlement and any implementation or transitional costs will need to be taken into account. Western Power (as a default Metering Coordinator) confirms that meter data can be provided as required. Further, the development of forward estimates is included in the scope for transition to NER chapter 7.
5.10.2 Settlement by difference and management of loss residues	With regard to loss residues, Western Power suggests that the method chosen should be symmetrical. That is, positive and negative residues should be allocated identically.