1 September 2017

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Ms Nicola Cusworth
Chair
Economic Regulation Authority (ERA)
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Dear Ms Cusworth

2016/17 WHOLESALE ELECTRICITY MARKET REPORT FOR THE MINISTER

AEMO welcomes the opportunity to provide this submission in response to the ERA's Discussion Paper for its 2016/17 Wholesale Electricity Market (WEM) report to the Minister for Energy. AEMO supports the broad scope for this year's review.

Markets are established with the aim of delivering benefit to customers. However, customers around Australia are currently facing escalating energy costs and are seeking greater control of their energy production and costs. While there are many causes of the current cost increases, regulation and market design are lagging behind the rapid changes in technology, customer preferences and market structure.

AEMO considers that the best approaches to address this lag involve the adoption of regulatory and market settings that promote competition and efficiency, provide opportunities for innovation, remove barriers to entry and provide transparency for customers.

To support these aims, AEMO considers that the most pressing reforms required for the WEM are:

1. The transition to a constrained network access regime
2. The adoption of reforms to wholesale energy and ancillary service markets
3. The introduction of full retail contestability (FRC)

AEMO considers that these reforms will provide a platform for further development of the WEM to support and enable a more customer-led energy future.

AEMO welcomes the recent statements by the Minister for Energy committing to the long-overdue transition to a constrained network access regime. AEMO considers that an integrated implementation of this and the other reforms above would be the most efficient, least-cost implementation pathway. If work begins soon, AEMO considers that a timetable can be developed to implement these reforms in the WEM by mid-2020.

AEMO is keen to play an active role in market design, the development of rule change proposals, implementation, market participant training and market trials to support these reforms, in concert with work to be performed by other agencies. AEMO will be engaging with market participants in the coming months to holistically consider the market design that best aligns with the needs of an evolving power system.

We welcome discussion on this submission and would be pleased to provide further assistance to the ERA regarding the matters highlighted. If you would like to discuss or have any questions, please do not hesitate to contact myself or Greg Ruthven, WA Market Reform Strategic Advisor, on (08) 9469 9923.

Yours sincerely

Audrey Zibelman
Managing Director and Chief Executive Officer

Attachment: AEMO Submission to ERA Discussion Paper

2016/17 WHOLESALE ELECTRICITY MARKET REPORT FOR THE MINISTER

SUBMISSION TO ERA DISCUSSION PAPER

Published: **Sep 2017**

AEMO
AUSTRALIAN ENERGY MARKET OPERATOR

IMPORTANT NOTICE

Purpose

AEMO has prepared this submission in response to the Discussion Paper for the Economic Regulation Authority's 2016/17 Wholesale Electricity Market report for the Minister. This submission is generally based on information available to AEMO as at 11 August 2017. More recent information may have been included where practical.

Disclaimer

This document does not constitute legal or business advice, and should not be relied on as a substitute for obtaining detailed advice about applicable laws, rules, procedures or policies. AEMO has made every effort to ensure the quality of the information in this document but cannot guarantee its accuracy or completeness.

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1. INTRODUCTION

1.1 AEMO's roles in WA

AEMO is responsible for operating Australia's largest gas and electricity markets and power systems. AEMO's vision is to deliver energy security for all Australians.

As the energy market operator, planner and forecaster, AEMO plays an important role supporting the energy industry to deliver a more integrated, secure and cost-effective energy supply. AEMO provides independent planning, forecasting and power systems information, security advice, and services to our stakeholders.

AEMO has the following roles in WA:

- Responsibility for operating the Wholesale Electricity Market (WEM) and the WA Gas Bulletin Board and Gas Statement of Opportunities;
- Responsibility for ensuring that the South West Interconnected System (SWIS) operates in a secure and reliable manner (System Management functions); and
- Preparing for the future transfer of retail market operation functions.

These roles provide AEMO with unique insight into the design and operations of the WEM.

1.2 Approach and focus for the 2016/17 WEM Report

ERA Question 1: Based on the approach and focus for the 2016/17 WEM Report to the Minister, are there any other considerations not covered by this discussion paper that are fundamental to an assessment of the effectiveness of the operation of the WEM in meeting market objectives? If so, what are they and why should the ERA address them in its report?

Markets are established with the aim of delivering benefit to customers. However, customers around Australia are currently facing escalating energy costs and are seeking greater control of their energy production and costs. In this context, AEMO supports the ERA's proposed broad scope for the 2016/17 WEM Report for the Minister.

Now that the Electricity Market Review (EMR) is not continuing in its previous guise, the 2016/17 WEM Report provides an opportunity to take stock of reforms that have been implemented and identify short-term and medium-term priorities for the evolution of the WEM from its current state.

This submission is structured to support the ERA's proposed scope:

- Section 2 provides AEMO's views on the highest reform priorities.
- Section 3 provides commentary in respect of network access and connections.
- Section 4 describes important considerations for the future management of power system security and reliability.
- Section 5 discusses the need for reforms to the WEM, including both the energy and capacity market mechanisms.

2. REFORM PRIORITIES

The steps taken towards deregulation of electricity supply in the SWIS and the establishment of the WEM in 2006 have enabled some competition between electricity providers and retailers. The simplicity of the WEM design was appropriate for the market structure and conditions at the time of its establishment, while further changes such as the introduction of the Balancing Market in 2012 have further improved the WEM design. The WEM includes explicit measures (predominantly the Reserve Capacity Mechanism) to ensure adequate capacity to satisfy a prescribed reliability standard.

While the WEM has generally served Western Australia well, regulation and market design have fallen behind changes in the market structure and other industry trends. AEMO considers that this gap is widening as the pace of change in the electricity sector increases, including through:

- the continued growth of solar PV and the resultant change to daily demand profiles, with demand falling in the middle of the day but ramping more steeply in the mornings and evenings, on either side of the midday trough;
- the anticipated proliferation of battery storage, for which experts are divided as to the role(s) that storage will play in the future electricity system;
- the growth of variable renewable generation, requiring consideration of the effects on power system reliability and security; and
- the progressive shift from synchronous to asynchronous generation that will occur during the transition to low-emissions power generation, requiring consideration of the resilience of the power system to contingency events.

AEMO considers that the best approaches to address this lag involve the adoption of regulatory and market settings that promote competition and efficiency, provide opportunities for innovation, remove barriers to entry and provide transparency for customers. AEMO will be engaging with market participants in the coming months to holistically consider the market design that best aligns with the needs of an evolving power system.

2.1 Prioritisation

ERA Question 2: Do market participants agree with the selection of market reforms identified by the ERA? If not, what other identified reforms should be considered?

AEMO agrees with the reform priorities listed by the ERA in section 2.1.1 of its Discussion Paper.

- AEMO supports recent statements by the Minister for Energy committing to **transition to a constrained network access regime**. AEMO considers this to be among the most urgent matters in WA energy policy, to address the inefficiencies and barriers to entry within the current access regime. AEMO's detailed views in respect of network access and connections are set out in section 3 of this submission.
- AEMO supports the **reforms to the wholesale energy and ancillary service markets** that were detailed in the *Final Report: Design Recommendations for Wholesale Energy and Ancillary Service Market Reforms*[1] published by the Public Utilities Office (PUO) in July 2016. This report highlighted the need for security-constrained dispatch with co-optimisation of energy and ancillary services. These spot market reforms must be implemented as part of the transition to a constrained network access regime, though they would deliver benefits even in the absence of network access reform. Facility bidding for Synergy is a necessary component of this reform package. AEMO's detailed views on reforms to the WEM are set out in section 5 of this submission.

[1] Report available at http://www.treasury.wa.gov.au/uploadedFiles/Site-content/Public_Utilities_Office/Industry_reform/Final-Report-Design-Recommendations-for-Wholesale-Energy-and-Ancillary-Market-Reforms.pdf, accessed 7 August 2017.

AEMO advises that implementing individual aspects of these reforms in isolation may create as many problems as it solves. For example, AEMO considers that a transition to facility bidding for Synergy will improve market transparency and provide Synergy with greater control over the operation of its generating units. However, AEMO agrees with the PUO's *Position Paper: Design Recommendations for Wholesale Energy and Ancillary Service Market Reforms*[2] that co-optimisation of energy and ancillary service markets is essential for facility bidding to be workable and to deliver efficient market outcomes, given Synergy's dominance in the provision of ancillary services. The transition to facility bidding, which will require Synergy to build additional capability, may also require increased ancillary service requirements if implemented in isolation.[3]

ERA Question 3: Should some of the reforms identified above be prioritised? If so, please explain which ones and why.

AEMO supports the **introduction of full retail contestability (FRC)** as soon as practicable to promote innovation, cost discipline and improved customer experience. FRC would be expected to result in increased market understanding and participation by customers, which will drive retailers to innovate to better meet customer needs. FRC will enable more innovative pricing structures that promote customer behaviours that lower the total long-term cost of the electricity system.

Fuelled by the growth of distributed generation, electricity retailers and other energy service providers can now compete with Synergy by offering services behind the meter[4], and customers may soon be able to trade between themselves via peer-to-peer trading platforms. Consequently, the transfer of the meter from one retailer to another is no longer the sole vehicle for enabling retail competition. In this changing environment, the current restrictions on meter transfers between retailers represent a barrier for customers, particularly those with lower capacity to invest in, or accommodate, behind-the-meter solutions. AEMO advises that FRC will remove the remaining barriers to competition and promote efficient investment decisions.

While WA gas consumers are experiencing the benefits of increased competition in the retail gas market, WA continues to lag behind the rest of Australia by not offering FRC in electricity. WA has the opportunity to learn from experience in other states and gain greater benefit from FRC, including greater value to customers through a richer range of services. AEMO notes experience from around Australia that market structure is a critical determinant of the success of retail competition and, as such, recommends consideration of how the market structure will evolve in the WEM.

AEMO considers that several of the recommendations listed on page 6 of the Discussion Paper require consideration within an FRC implementation package, including:

- a review of concessions to ensure that necessary assistance is provided to those in need, supported by a retailer-neutral approach to payment of concessions and subsidies;
- phasing out the Tariff Adjustment Payment;
- enabling increased roll-out of advanced meters; and
- the role of independent retail price regulation.

AEMO also recognises the challenges associated with maintaining reliability and security of supply to remote regional areas and supports the removal of regulatory barriers that prevent Western Power from deploying non-network solutions in place of network solutions (including stand-alone power systems).

[2] Report available at http://www.treasury.wa.gov.au/uploadedFiles/Site-content/Public_Utilities_Office/Industry_reform/Position-paper-Energy-Market-Operations-and-Processes.pdf, accessed 7 August 2017.

[3] The Synergy Balancing Portfolio includes four wind farms (Albany, Bremer Bay, Grasmere and Kalbarri). Fluctuations in the generation of these wind farms are currently balanced within the Balancing Portfolio rather than through the Load Following Ancillary Service market.

[4] For example, a solar PV provider may install a solar PV system behind a customer's meter without requiring an up-front capital payment, instead billing the customer for energy produced by the PV system. The PUO accepts applications from solar power purchase agreement providers for exemption from the requirement to hold a retail licence for these activities. More information is available at http://www.treasury.wa.gov.au/Public-Utilities-Office/Industry-reform/Solar-Power-Purchase-Agreement-Providers/, accessed 8 August 2017.

ERA Question 14: Are there any concerns that the ERA should consider when it assesses the effectiveness of:

a. AEMO (including in its capacity as System Management) in carrying out its functions under the Regulations, the Market Rules and Market Procedures?

b. The Rule Change and Procedure change process?

c. The compliance monitoring and enforcement measures in the Market Rules and Regulations?

Since AEMO took responsibility for market and power system operation in the WEM, it has identified opportunities for alignment between systems and processes in the WEM and the National Electricity Market (NEM), and has achieved efficiency improvements through consolidation of corporate services.

Market participants have already expressed interest in AEMO increasing alignment between its WEM and NEM operations to lower WEM operating costs and market fees, while retaining positive features of current WEM systems.[5]

AEMO's proposed system architecture to support EMR reforms to the energy and ancillary service markets[6] had sought to leverage NEM systems and processes to the extent practicable, with the objective of minimising market administration costs and market fees for WA consumers. The delays to market reform mean that the achievement of synergies between WEM and NEM operations will progress at a slower pace.

While wholesale market reforms are being designed to support the transition to constrained access, AEMO will take a prudent approach in the management of its systems and supporting infrastructure. AEMO will focus on positive net present value capital projects that address critical business risks, lower operating costs and support future market reforms. AEMO notes that the Allowable Revenue process provides oversight of AEMO's operating and capital budgets, including public consultation processes.

AEMO suggests that the annual market audit of AEMO's compliance[7] may also be used as an indication of market effectiveness. For the 2016 Audit[8], a number of the market auditor's findings related to the transition of the system operator role from Western Power to AEMO. AEMO has invested resources to lower the risks arising from the transition, including managing the large change-over of personnel. AEMO's progress with the transition, amongst other things, will be assessed in the 2017 Audit, for which the market auditor's reports will be published on AEMO's website.

2.2 An integrated plan for reform implementation

Provided that work begins soon, AEMO considers that an integrated timetable can be developed to implement constrained access, the spot market reforms and FRC in the WEM by mid-2020.

AEMO considers an integrated approach to be the most efficient, least-cost implementation pathway to realise the benefits of these reforms, which will provide a platform for further development of the WEM to support and enable a more customer-led energy future.

AEMO is keen to play an active role in market design, the development of rule change proposals, implementation, market participant training and market trials to support these reforms, in concert with work to be performed by other agencies.

AEMO considers that a mid-2020 implementation is achievable, providing time for amendments to legislation (if required) and rules, for system changes by AEMO and market participants, and for market trials prior to go-live.

[5] For example, Bluewaters Power's response to AEMO's proposal to adjust the 2016-19 Allowable Revenue, dated 30 March 2017, available at https://www.erawa.com.au/cproot/17891/2/Public%20Submission%20%E2%80%93%20Bluewaters%20Power.pdf, accessed 8 August 2017.

[6] This was outlined in AEMO's 2016-19 Allowable Revenue Submission to the Economic Regulation Authority, September 2016, available at https://www.erawa.com.au/cproot/14530/2/Attachment%20-%202016-2019%20WA%20Functions%20Allowable%20Revenue%20Proposal.PDF, accessed 9 August 2017.

[7] As required under clause 2.14.3 of the Market Rules.

[8] The 2016 Audit Reports are available at http://www.aemo.com.au/Electricity/Wholesale-Electricity-Market-WEM/Compliance-and-audit.

3. NETWORK ACCESS AND CONNECTIONS

3.1 Transition to a constrained network access regime

As stated above, AEMO considers that the transition to a constrained network access regime in the SWIS is among the most urgent matters in WA energy policy and supports the recent commitment by the Minister for Energy to implement this reform. AEMO's view is consistent with those expressed previously by the PUO, Western Power and the ERA.

AEMO supports a transition to a constrained network access regime on the basis that it will promote efficient investment in the network, improved utilisation of network capacity, greater transparency of network conditions, continued reliability of supply, least-cost generation dispatch and increased competition between generators.

By contrast, the current access regime is resulting in numerous inefficiencies:

- Barriers to entry – the restrictions on network access for new generators present an increasing barrier to entry that has hampered the development of new generation (particularly new renewable generation) in the SWIS for many years. This is likely to lead to increased costs for consumers and may lead to reduced reliability in the future if required investment is delayed.
- Higher generation costs – newer generators connected with non-firm access are curtailed first, even if their operating costs are lower than those of incumbent generators. This flows through to higher costs for consumers.
- Costly work-arounds – Western Power and AEMO are having to implement bespoke work-around solutions to manage the connection and secure dispatch of new generation, the most recent of which is the Generator Interim Access (GIA) solution. While every effort is made to minimise the cost associated with short-term work-around solutions, these costs (that would not be required under a constrained network access regime) will ultimately be borne by electricity consumers.
- Higher market operation costs – the different network access regimes between the WEM and the NEM restrict AEMO from employing common systems and processes across the two markets, leaving WA consumers to fund the costs associated with operating and maintaining distinct WEM systems.

AEMO notes that the transition to a constrained network access regime is not without challenges, requiring discussions with existing generators and consideration of pre-existing rights that may exist in their access contracts with Western Power. It will also take time to design the necessary modifications to the WEM, specifically to replace the Balancing Market with a security-constrained co-optimised energy and ancillary service spot market (described further in section 5) and to update the approach for accrediting capacity that is subject to network constraints.

However, AEMO considers that the long-term benefits of this transition will significantly outweigh the costs.

With the Minister for Energy indicating that the transition will be effected through amendment of local legislation and subordinate instruments, AEMO is not aware of any barriers to this transition occurring before the end of Western Power's 2017-2022 access arrangement period.

There would be benefit (or avoided costs) in the transition coinciding with changes to the WEM's energy and ancillary service markets. If the transition occurred after the energy and ancillary service market changes, interim modifications may be required for AEMO's systems to preserve pre-existing network access rights for incumbent generators. These changes would then need to be reversed when the transition to constrained access occurred, again leading to increased costs for WA consumers.

ERA Question 10: In a scenario of increasing network constraints, the ERA is interested in hearing stakeholders' views on what happens to the currently unconstrained network access once facilities close?

a. Should this unconstrained access become available to other generators or new generators in the network once the plants close? If so, how should this be valued and offered to market?

b. Alternatively, if access rights are retained by a Market Participant what issues does this present for other stakeholders?

AEMO notes that the adoption of a constrained network access regime would remove the need to further consider the potential retention or relinquishment of access rights.

In advance of this transition occurring, AEMO supports relinquishment of unconstrained access rights upon closure of a generating unit. This approach would remove or lessen barriers to the development and dispatch of new generation, promote competition and would potentially lower costs for consumers. AEMO considers that retention of access rights in respect of retiring generating plant is anti-competitive and promotes inefficient utilisation of the network.

AEMO notes that access rights held by a Market Participant at a particular location and for a particular generation technology cannot be readily transferred to different locations and technologies. Western Power, as the network operator, would need to conduct the same connection studies in respect of new generation facilities.

3.2 Generator Interim Access (GIA)

ERA Question 8: What concerns, if any, do stakeholders have with the interim network access solution (GIA) currently in development?

As spare network capacity has been absorbed over the last decade, new connecting generators, both conventional and renewable, would have been required to fund substantial capital upgrades to the Western Power network to maintain an unconstrained network. Given the prohibitive costs of the capital works, new connecting generators have instead been opting for curtailed operation through the use of post-contingent[9] 'run-back schemes' which automatically reduce the generator's output to eliminate any overload. To date, the level of curtailment has been relatively small.

Spare network capacity has now been further absorbed to the point that risks to system security could be increased if additional run-back schemes were implemented. Additional new generators wishing to connect will require measures to initiate pre-contingent[10] curtailment.

The GIA solution is a short-term approach to connect a limited amount of new generation while managing compliance with the connection service requirements within Western Power's suite of generator access contracts. The GIA solution requires interim changes to systems used for generator dispatch, as well as interim changes to market design, specifically in the allocation of Capacity Credits to new generators.[11] The GIA solution will not dispatch non-GIA generators, and cannot be used to automate dispatch when elements of the transmission network are out of service, so existing manual processes to manage network congestion will need to be used increasingly in these conditions.

In AEMO's view, the GIA solution is the last work-around arrangement that can be employed under the current network access regime and represents the 'least-worst option' to allow the connection of new

[9] 'Post-contingent' run-back schemes operate after a contingency, such as where a line has tripped and run-back of the generator is required to prevent the remaining line(s) from becoming overloaded.

[10] 'Pre-contingent' curtailment occurs prior to a contingency event to prevent a line overload, or because the sheer size of the overload that would occur post a contingency could cause permanent network damage.

[11] Amending rules were made by the Minister for Energy on 23 June 2017, available at https://www.slp.wa.gov.au/gazette/gazette.nsf/searchgazette/ACC44979CFEDEF4B48258147002449BB/$file/Gg125.pdf, accessed 9 August 2017.

generation in the current framework. In addition to the economic efficiency concerns raised by the ERA in its Discussion Paper, AEMO notes that the GIA solution has the following shortcomings:

- Management of power system security under network outage conditions remains manual. Complexity will grow as the number of generators increase, resulting in higher risks to maintaining secure operations in a reliable, repeatable and transparent manner.
- While the GIA solution can enable some generator connections, it provides limited investment certainty. GIA generators will face significant risks as their capacity payments and the level of constraint will be impacted by any subsequent GIA generators. This may lead GIA generators to build a risk premium into their prices, which will flow through to higher costs for customers.
- The quantity of curtailment faced by low-cost GIA generators will likely grow as additional generators connect to the SWIS, resulting in less efficient market outcomes.
- The curtailment of a generator by the GIA tool will compromise the accuracy of market price forecasts, increasing market risk for all generators and impairing market efficiency.
- The solution requires the use of Network Control Service contracts as a work-around to prevent payment of Constrained Off Compensation to GIA participants that are constrained under normal operation. While this may be a workable intermediate solution, individual contracts with participants may cease to be effective over time as conditions change and the terms of these contracts vary.
- While these impacts may be palatable in the short term, the growing market price inaccuracy and/or growing constraint on new generation will require the full transition to a constrained network access model (or costly network augmentation).
- While Western Power is funding the development of the GIA tool via connection fees for GIA generators (including funding any necessary modifications to AEMO's market systems), there is some risk of future cross-subsidy from existing participants via market fees (e.g. system maintenance, fault repair).

Given these shortcomings, AEMO welcomes the Minister's commitment to effect the enduring transition to a constrained network access regime, which will supersede the GIA solution.

3.3 'Partially constrained access'

ERA Question 9: What are the risks of having a partially constrained network if it becomes the final network access solution?

AEMO considers that a 'partially constrained' network access regime will fail to address the inefficiencies explained earlier in this section and will lock in higher costs for WA consumers.

- Barriers to entry will remain and will stifle competition as the rights of incumbent generators limit the potential access (and revenue) of new generators.
- Electricity markets are generally designed on the basis of achieving the least-cost dispatch of generation. This principle would be undermined by a partially constrained network access regime, resulting in higher generation costs whenever cheaper new generation is curtailed in preference to incumbent but more expensive generation. AEMO agrees with the ERA's Discussion Paper that a partially constrained network access regime would enshrine an uneven playing field and limit effective competition between generators, ultimately increasing costs for WA consumers.
- No other liberalised electricity market operates under a partially constrained network access regime, so AEMO would need to implement and maintain bespoke market and dispatch systems to operate the WEM and the power system. These systems would need to be fully funded by WA consumers via market fees, limiting the extent to which synergies could be achieved between WEM and NEM operations.

4. MAINTAINING POWER SYSTEM SECURITY AND RELIABILITY

AEMO welcomes the strong focus in the ERA's Discussion Paper on the maintenance of power system security and reliability, which is timely given the recent completion of the Finkel Review.[12]

AEMO considers that many of the Finkel Review recommendations related to the management of power system security are of relevance to the SWIS. However, several recommendations are not required due to the existence of the Reserve Capacity Mechanism, which takes a 'hands-on' approach to maintaining power system reliability, the Short Term Energy Market (STEM) and the distinct governance arrangements in WA.[13]

4.1 Planning and coordination arrangements

ERA Question 11: In response to an increasing level of intermittent generation, what planning and coordination arrangements need to be established or strengthened to ensure all aspects of effective WEM operation are considered; including policy, operational efficiency, market development and customer engagement and protection?

ERA Question 13: The ERA is interested in stakeholder views on arrangements for oversight and/or coordination of planning and market development in the WEM.

AEMO agrees with the ERA that the current level of intermittent generation in the SWIS is manageable but that changes to current planning and coordination arrangements are likely to be required to meet the challenges of an evolving power system while aiming to maximise benefit for consumers. With new intermittent generators seeking to connect to the SWIS in the next few years, AEMO considers that the design of new arrangements must start immediately.

With slow levels of demand growth in the SWIS, the connection of new intermittent non-synchronous generation, both small- and large-scale, will predominantly displace synchronous generation. AEMO is currently studying the impacts of increasing intermittent non-synchronous generation and any practical limits that may exist in the SWIS given its isolation and the characteristics of the transmission network.

AEMO considers that a range of market-based and regulatory measures will likely be required to address the challenges as the SWIS transitions. For example:

- Increasing intermittent generation will place increased demand on Load Following Ancillary Services (LFAS) to balance supply and demand in real time and may increase the cost of that service.

  This can be countered to some extent by the spot market reforms referenced in sections 2 and 5.1, which can be implemented through existing change processes for the WEM Rules. These reforms include measures to reduce demand for LFAS and reduce the risk of participating in the LFAS market, such as 5-minute dispatch and later gate closure. The reforms also include an improved causer-pays basis for the allocation of LFAS costs that provides incentives to reduce the need for, and cost of, this service.

- The displacement of high-inertia synchronous generation with low-inertia non-synchronous generation can present challenges for the resilience of the power system to disturbances. Learnings and actions emanating from the system black event in South Australia in September 2016 include consideration of enhancements to system inertia requirements, system strength, fast

[12] *Independent Review into the Future Security of the National Electricity Market*, details available at http://www.environment.gov.au/energy/national-electricity-market-review, accessed 4 August 2017.

[13] AEMO provided its considerations in respect of the applicability of Finkel Review recommendations for the SWIS to its WA Electricity Consultative Forum meeting on 22 August 2017. Presentation slides are available at http://aemo.com.au/Stakeholder-Consultation/Industry-forums-and-working-groups/WA-Forums/WA-Electricity-Consultative-Forum-WAECF, accessed 15 August 2017.

frequency response requirements, fault ride-through, reactive power capability and generator modelling data. Western Power and AEMO have held some preliminary workshops to discuss potential changes to generator connection requirements and AEMO has foreshadowed potential changes in its stakeholder forums.[14] AEMO has also commissioned analysis of the vulnerabilities of the SWIS to a similar system black event.

System performance standards and generator connection standards for the WEM are currently contained in the Technical Rules, though it should be noted that there are limitations in their coverage, including the absence of system-wide inertia or system strength requirements. AEMO notes that the EMR considered changes to the governance arrangements for system performance standards and generator connection standards, and changes to the regulatory instruments in which they are housed, but did not analyse the standards themselves.

Numerous reform initiatives are currently under development in the NEM to support system security, including the development of new markets, strengthening of generator connection standards and improved data for management of the power system. AEMO considers that **increased alignment between the WEM and NEM** will, in addition to benefits described elsewhere in this submission, allow ready adoption of these reforms where they would strengthen the security of the power system and the operation of the WEM.

AEMO notes that various commentators have been critical of the NEM in recent times, particularly in respect of the management of power system reliability and security. However, AEMO observes that the current arrangements for ancillary services and the management of power system security in the SWIS are less sophisticated than in the NEM. AEMO considers that the WEM would also have faced threats to power system security if it experienced the multiple trigger events that were encountered in the system black event in South Australia in September 2016.

AEMO supports **a focused, adequately-resourced PUO** to support the Minister for Energy and perform its core role of driving policy development for WA. Given that the WEM operates in a single jurisdiction, AEMO considers that the PUO is the appropriate body in WA to fulfil the roles that are envisaged for the NEM Energy Security Board. However, AEMO is concerned that the discontinuation of the EMR in its previous form and the loss of skilled personnel from the PUO will challenge its ability to fulfil this role in the near future. In particular, while the EMR recommendation to establish a Reliability Advisory Committee would support evolution of standards for power system security and reliability, it is unclear whether and when this will occur.

In the NEM, AEMO has responsibility for whole-of-system planning oversight and produces the National Transmission Network Development Plan. The EMR had proposed the creation of a similar, fit-for-purpose version of this role for the SWIS, including **the production of an annual Transmission Network Outlook document**.[15] AEMO is currently considering the requirements and potential scope for a Transmission Network Outlook in the SWIS to identify emerging issues and opportunities for investment at the best network locations with the most appropriate performance and capability. Currently there is no obligation for Western Power to publish any forward-looking assessment of overall power system security and reliability. This capability would support AEMO's responsibility for the maintenance of power system security by:

- providing an independent view of future power system security and reliability risks for the SWIS;
- identifying areas of the SWIS that may require augmentation in order to preserve system security and reliability (including potential non-network solutions);
- monitoring the impact of emerging technologies on the security and reliability of the SWIS; and
- identifying requirements to amend or augment technical standards to support future connections.

[14] This topic was discussed at the April 2017 and July 2017 meetings of the WA Generator Forum. Meeting packs are available at http://aemo.com.au/Stakeholder-Consultation/Industry-forums-and-working-groups/WA-Forums/WA-Generator-Forum-WAGF, accessed 16 August 2017.

[15] The *Position Paper: Proposed role of AEMO in Local Transmission Network Planning* is available at http://www.treasury.wa.gov.au/Public-Utilities-Office/Industry-reform/Network-Regulation/, accessed 16 August 2017.

Governance and change processes for the WEM Rules, overseen by the Rule Change Panel, are effective in AEMO's view. Anyone is permitted to submit Rule Change Proposals, which are processed efficiently by the Rule Change Panel. However, AEMO considers that the role that it plays in market development is currently unclear in the WEM Rules. AEMO's central, independent role in market and system operation means that it is uniquely placed to identify opportunities for improvement in market operation and administration. Consequently, AEMO has submitted a Rule Change Proposal to clarify its role in supporting market development and ensure that it is allowed to recover costs associated with this role.[16]

Change processes for the Technical Rules are separate and less inclusive. Only Western Power or the Technical Rules Committee, which is currently inactive, are permitted to propose amendments to the Technical Rules, which are assessed by the ERA.[17] Despite the Technical Rules imposing obligations on AEMO (in its role as System Management), AEMO is unable to directly propose amendments to these rules. By contrast, corresponding technical requirements in the NEM are contained in the National Electricity Rules, for which any party may propose amendments to the Australian Energy Market Commission.

AEMO advises that changes in the electricity sector will require substantial amendments to the Technical Rules and recommends that a greater range of stakeholders should be able to propose amendments. AEMO also advises that reform initiatives to bolster power system security are likely to straddle the WEM Rules and the Technical Rules, so consideration should be given to harmonising the approval processes for these two instruments, perhaps by tasking the Rule Change Panel with approving amendments to the Technical Rules.

4.2 Transitional changes in the WEM

ERA Question 12: Which of the changes emerging in the WA electricity sector represent the greatest opportunity or threat to the effective operation of the WEM in meeting the Market Objectives? Please explain why.

Discussion on opportunities and threats is contained throughout this submission. AEMO offers the following additional comments.

The increasing capacity of small-scale solar PV in the SWIS, which now exceeds the combined capacity of the two largest generating units and is growing by approximately 100 MW per year[18], presents challenges for the operation of the power system and opportunities for generators and customers with characteristics that support the power system.

- The reduction of midday load is changing the economics of different generation types. In the absence of other changes, base load generators will increasingly be required to cycle their output through the day and some may be required to decommit, rendering them unable to recommit for several hours. By contrast, fast ramping capability provides increasing value to manage the steepening load movements on either side of the midday trough.
- Synchronised variability in PV output, particularly on cloudy days, will increase the need for LFAS and the cost of this service.
- There is the potential in the future that the aggregate output of small-scale PV systems at midday exceeds demand. To avoid system security issues, this will require measures to store and/or curtail PV energy production at these times.

[16] See Rule Change Proposal RC_2017_05, available at https://www.erawa.com.au/cproot/18094/2/RC_2017_05_Rule_Change_Proposal_and_Notice.pdf, accessed 16 August 2017.
[17] The ERA may establish a technical rules committee from time to time in accordance with section 12.16 of the *Electricity Networks Access Code 2004*. The process for amending the Technical Rules is described in sections 12.50 to 12.54.
[18] The total capacity of small-scale PV in the SWIS was 671 MW in February 2017, as reported in the 2017 Electricity Statement of Opportunities, available at http://aemo.com.au/-/media/Files/Electricity/WEM/Planning_and_Forecasting/ESOO/2017/2017-Electricity-Statement-of-Opportunities-for-the-WEM.pdf, accessed 16 August 2017.

Transparent market signals and the removal of barriers will be critical to communicate the value provided by specific production characteristics and promote economically efficient outcomes. There will be opportunities for the WEM to learn from evolving NEM regulatory and operational approaches to integrate large-scale storage (noting the impending development of the battery storage facilities at the Hornsdale Wind Farm and on the Yorke Peninsula in South Australia) and to gather data from distributed energy resources.[19] In addition, the spot market reforms referenced in sections 2 and 5.1 would improve automation in the dispatch of frequency control ancillary services, enabling participation by a larger range of small providers of these services, and would promote increasing responsiveness to market conditions through the removal of current gate closure restrictions. Tariff reform will also require consideration to ensure that price signals reach customers to encourage behavioural changes that contribute to lowering the long-term cost of electricity supply in the SWIS.

4.3 Closure of power stations providing Dispatch Support Services

ERA Question 6: What risks can be identified with the removal of power stations from the network that currently provide dispatch support services?

AEMO advises that the retirement of Synergy plant by October 2018 may affect service levels experienced by customers in regions at the edge of the SWIS. However, AEMO does not foresee a circumstance that would require it to procure a replacement Dispatch Support Service (DSS) at this time (noting that Western Power can procure Network Control Services but is unable to procure DSS).

Eastern Goldfields region

The Eastern Goldfields region is connected to the SWIS via a single 220kV transmission line, which has been supported by local supply from the West Kalgoorlie power station. The privately owned Parkeston and Southern Cross power stations are also connected in the Eastern Goldfields region via private networks.

The Technical Rules state that the N-0 criterion applies to the 220kV connection to the Eastern Goldfields, indicating that there is no redundancy for this connection. The Technical Rules indicate that there is an arrangement in place to supply power to the Kalgoorlie-Boulder and Coolgardie town loads during an outage of the 220kV connection, referring to the current DSS contract. However, this is not worded as an obligation on Western Power to ensure that such an arrangement is in place.

When the 220kV line is unavailable due to planned maintenance, West Kalgoorlie has been able to provide energy and frequency control to maintain stable supply in the islanded Eastern Goldfields region, supported by the provision of energy from the Parkeston and Southern Cross power stations (which are not covered by a DSS contract but receive Constrained On Compensation).

In the event of a sudden failure of the 220kV transmission line, the private networks containing the Parkeston and Southern Cross power stations will separate from the SWIS and the Eastern Goldfields region will go black. However, West Kalgoorlie also provides regional black start capability (though is not capable of restarting the whole SWIS), allowing it to work in tandem with the private power stations to restore all Eastern Goldfields load within approximately 30-120 minutes after the line is lost.

Following the retirement of the West Kalgoorlie power station, AEMO understands that the total capacity of the Parkeston and Southern Cross power stations will be insufficient to satisfy all demand in the Eastern Goldfields region, but may be sufficient to supply Kalgoorlie-Boulder and Coolgardie town loads. Restoration of power to the remainder of the Eastern Goldfields load may take as long as a few days following a major event such as critical steel tower failure. In addition, AEMO understands that the

[19] The need for visibility of distributed energy resources has been explored in AEMO's Future Power System Security Program. See https://www.aemo.com.au/-/media/Files/Electricity/NEM/Security_and_Reliability/Reports/AEMO-FPSS-program----Visibility-of-DER.pdf, accessed 16 August 2017.

private power stations may require control system changes in order to maintain frequency if the Eastern Goldfields was islanded.

Despite the lack of clarity around its obligations in the Technical Rules, AEMO understands that Western Power is currently investigating options (including the procurement of Network Control Services) to support the Eastern Goldfields region following the retirement of the West Kalgoorlie power station. Nevertheless, AEMO supports improved clarity of obligations in the Technical Rules.

North Country region

The North Country region is connected to the SWIS via two 132kV transmission lines from Three Springs to Geraldton. This is deemed to satisfy the N-1 criterion required in the Technical Rules, indicating redundancy that allows supply to be maintained following a single contingency.

As the 132kV lines are of wood-pole construction in sandy soils, exposed to regular environmental challenges (lightning and wind storms), there is a credible risk of both lines being unavailable simultaneously. This has occurred twice in the last three years, with one event resulting in the Geraldton area being islanded for one day.

In such instances, the Mungarra power station has operated under the DSS contract to provide energy and frequency control capability, allowing it to maintain supply in the islanded North Country system. As Mungarra does not have regional black start capability (and nor do any other power stations in the North Country region), it has also operated when one of the transmission lines has been out of service[20] to maintain system security in the event of the failure of the other line (to allow a stable island to operate), as well as to provide local voltage support.[21]

Following the retirement of the Mungarra power station, and assuming that no additional scheduled generation is installed in the North Country region, AEMO advises that the remaining generation (mainly renewables) in the area will not have the capability to manage frequency or voltage in an island situation. As such, following the loss of one line AEMO would constrain renewable generation to maintain security. This way, if the second line were to also trip the region would go black to mitigate the risk of uncontrolled frequency and voltage excursions. The curtailment of renewable generation adds cost to the production of electricity, so AEMO recommends that Western Power considers implementing anti-islanding protection in the Geraldton area to reduce the need for this curtailment.

In the event that both lines are out of service, supply would be lost to the North Country region until one or both lines were returned to service to reconnect the region to the remainder of the SWIS.

AEMO understands that Western Power is considering options for the North Country region though, as above, the Technical Rules do not provide clear guidance. Specifically, the N-1 criterion described in the Technical Rules does not indicate whether additional redundancy is required to be provided by Western Power during an outage of one of the 132kV lines. Similarly, neither the WEM Rules nor Technical Rules address the way in which regional black start capability influences operating practice – in this case, the fact that Mungarra has been operated in advance of islanding, whereas West Kalgoorlie has not.

Muja

The southern regions of the SWIS relied on the Muja AB generating units several years ago following the failure of two Muja Bus Tie Transformers. However, AEMO notes that the simultaneous outage of the two transformers is an extremely low likelihood event and that supply was maintained despite the two failures (albeit at higher cost), consistent with the N-1-1 criterion in the Technical Rules for this part of the network.

[20] Renewable generators in the North Country are dispatched down in these situations to ensure system security in the North Country in the event that the remaining 132kV line trips. The affected renewable generators are compensated in the market for being constrained off.

[21] The need for Mungarra to provide voltage support has decreased substantially since the commissioning of the Mid West Energy Project Southern Section Stage 1, which comprises a 330kV transmission line from Neerabup to Three Springs.

AEMO understands that the additional transmission line works by Western Power and replacement of transformers mean that the N-1-1 criterion will be satisfied following the retirement of Muja AB, so considers the risk associated with this retirement to be very small.

However, the differing views about the appropriate mechanisms to deal with the failure of the transformers highlight a lack of clarity in the specification of the N-1-1 criterion in the Technical Rules. The first transformer failure occurred more than a year before the second failure, but it appears that the failed asset is still considered to be part of the network, contributing to satisfaction of the N-1-1 criterion, irrespective of the duration of an outage. AEMO advises that 'return to service' standards should be considered for inclusion in the Technical Rules to provide clarity, perhaps using the South Australian Electricity Transmission Code[22] as a guide.

4.4 Clarity of service standards

ERA Question 7: More generally, what changes are necessary to deliver economically efficient outcomes in determining when and how support service contracts should be procured?

It is vital that service standards, and responsibility for satisfying those standards, are clearly specified. Section 4.1 of this submission and the commentary in section 2.1.3 of the ERA's Discussion Paper highlight opportunities for improvement in this area.

AEMO considers that clarification of network planning criteria in the Technical Rules would be valuable to more clearly specify the boundary between Western Power's and AEMO's obligations to maintain reliability and security in sub-regions of the SWIS. AEMO recommends that this could be progressed quickly through revival of the Technical Rules Committee or following the establishment of a Reliability Advisory Committee, if this occurs.

[22] Available at http://www.escosa.sa.gov.au/industry/electricity/codes-guidelines/codes, accessed 15 August 2017.

5. WHOLESALE MARKET EFFICIENCY

5.1 Energy and ancillary service markets

As noted in section 2, AEMO supports the reforms to the wholesale energy and ancillary service markets that were detailed in the *Final Report: Design Recommendations for Wholesale Energy and Ancillary Service Market Reforms* published by the PUO in July 2016. This spot market package includes elements described in section 2.1.1 of the ERA's Discussion Paper, including security-constrained dispatch, co-optimisation of energy and ancillary services and facility-based bidding for Synergy.

AEMO agrees that these important spot market reforms will remove inefficiencies and cross-subsidies, improve the automation and dynamism of market processes, promote competition and technology neutrality, increase market transparency and strategically position the WEM for future developments in the electricity sector.

AEMO considers that these reforms are becoming increasingly urgent. The connection of new generation will increase the frequency with which network constraints will bind, increasing the pressure on manual processes for the management of power system security.[23] In addition, the current hybrid design of the Balancing Market, with different treatment of Synergy and non-Synergy generating units, restricts the ability to make incremental improvements (such as later gate closure) and limits cost transparency. For example, the cost of LFAS has increased year-on-year by $23.3 million (an increase of 59 per cent)[24], but the special portfolio bidding and dispatch arrangements for Synergy's generation fleet hamper efforts to analyse the causes of the cost increase. Similarly, despite the market efficiency improvements that would result by shifting the gate closure time later, the portfolio bidding and dispatch arrangements for Synergy are a barrier to this shift.[25]

The PUO's proposed WEM reforms for the wholesale energy and ancillary service markets must be implemented as part of the transition to a constrained network access regime, as the current WEM design is incompatible with a constrained network access regime, though AEMO considers that these reforms would deliver benefits even in the absence of network access reform.

The PUO's Final Report estimated quantifiable efficiency benefits and avoided costs of between $190 million and $375 million in present value terms, which would be expected to reduce pressures on electricity tariffs for consumers and the subsidy paid by the WA Government to Synergy. The recent increase in LFAS costs has increased the scale of efficiency benefits that can be realised.

These reforms propose to leverage NEM systems and processes for the operation of the wholesale spot market that will improve the operation and efficiency of the WEM. These can be effectively integrated with existing WEM market processes that support reliability of supply, specifically the Reserve Capacity Mechanism (RCM) and the day-ahead STEM, neither of which exist in the NEM.[26] As discussed in section 4.1, closer alignment with the NEM will allow WA to more readily adopt system security-related reforms identified in the Finkel Review at relatively low cost and risk. This is becoming more important as the market transitions from a centralised, scheduled generation model to an increasingly dispersed, intermittent model.

[23] The GIA solution will provide some automation when the transmission network is in 'system normal' conditions, consistent with Western Power's access contracts with generators. However, the existing manual processes will still apply when one or more network assets are unavailable.

[24] The total cost of LFAS was $63.1 million for the year from 1 April 2016 to 31 March 2017, compared to $39.8 million for the previous 12-month period. This is contained in AEMO's Ancillary Services Report 2017/18, June 2017, available at https://www.aemo.com.au/-/media/Files/Electricity/WEM/Data/System-Management-Reports/2017/2017-Ancillary-Services-Report.pdf, accessed 10 August 2017.

[25] This has been proposed by Perth Energy in the Rule Change Proposal RC_2017_02, which it has submitted to the Rule Change Panel. The Rule Change Proposal and associated documentation, including AEMO's submission, are available at https://www.erawa.com.au/rule-change-panel/market-rule-changes/rule-change-rc_2017_02, accessed 10 August 2017.

[26] The recommendations of the Finkel Review include consideration of capacity procurement processes and a day-ahead market to support the security and reliability of the NEM.

ERA Question 4: Do Market Participants consider that the existing arrangements to mitigate and address exercise of market power in the energy markets are sufficient?

a. If not, what other measures could be introduced and what benefits would these bring?

b. If current measures are sufficient, would Market Participants benefit from having additional guidance around placing their market bids? What additional information would be useful?

AEMO generally supports the work and views of the PUO in respect to market power mitigation arrangements for the energy markets (Balancing Market, STEM and the proposed spot market). Reports published by the PUO[27] indicated that the current market power mitigation measures were generally fit-for-purpose for the WEM, particularly (though not exclusively) in light of the market structure, but noted that greater clarity was required for market participants to fully understand their bidding obligations.

ERA Question 17: The ERA is interested in stakeholder feedback on their understanding of what caused the observed volatility in peak STEM prices, peak balancing prices and LFAS lower prices over the end of 2016 and beginning of 2017?

a. What, if any effect did this price volatility have on stakeholders; and

b. Does this impede the effective operation of the WEM? If so, how?

AEMO concurs with the ERA's analysis of volatility in energy and LFAS prices in section 4 of the Discussion Paper. AEMO considers it inappropriate to comment in this submission on potential causes, given the recent announcement by the ERA that it is investigating Synergy's pricing behaviour within the period described in the Discussion Paper.[28] However, AEMO makes the following observations based on data that is publicly available:

- Synergy's Balancing Portfolio continues to set the Balancing Price in the vast majority of Trading Intervals (78 per cent of Trading Intervals between January 2016 and June 2017).
- The South West Cogeneration Joint Venture facility ceased generating on 28 March 2016. This facility, which was within Synergy's Balancing Portfolio, operated with a very high capacity factor and supplied low-cost power up until its retirement.
- The Gorgon domestic gas plant began supplying gas on 14 November 2016. The commencement of this new source of gas supply may have changed input costs for generation.
- The Upwards LFAS Quantity and Downwards LFAS Quantity have been held constant at 72 MW through the period analysed by the ERA.

In response to part b of question 17 in the Discussion Paper, AEMO advises that higher and more volatile prices do not, in themselves, impede the effective operation of the WEM. They provide signals to the market, either signalling opportunities to invest and compete, or alternatively signalling where competition may be ineffective.

[27] Available at http://www.treasury.wa.gov.au/Public-Utilities-Office/Industry-reform/Wholesale-Electricity-Market-Improvements/, accessed 10 August 2017.

[28] See notice at https://www.erawa.com.au/cproot/18115/2/ERA%20Investigation%20into%20Synergy%20s%20pricing%20behaviour.pdf, accessed 11 August 2017.

5.2 Reserve Capacity Mechanism

ERA Question 5: Do interested parties have concerns around the proposed market power mitigation measures in the transitional capacity pricing arrangements and/or in a future capacity auction?

a. Are there any situations where such measures will be ineffective and if so, why?

b. What alternative market power mitigation mechanisms could be considered?

ERA Question 15: Although reforms to address excess generation capacity have not been in operation for long, do Market Participants see this as improving the effectiveness of the market? If so, how is this demonstrated?

ERA Question 16: Are there any concerns stakeholders have that the ERA should consider when it assesses the effectiveness of the Reserve Capacity Mechanism?

AEMO supports the use of competitive markets where there is likely to be sufficient competitive tension to deliver positive outcomes for consumers. AEMO agrees that a capacity price determined through competitive market processes is preferable, in principle, to an administered pricing mechanism.

However, AEMO views stringent market power mitigation measures to be essential if a capacity auction is implemented in the WEM. The success of competitive markets can be challenged by inadequate competition, high barriers to entry and paucity of information to enable efficient decision-making of market participants. AEMO agrees with the observations in the EMR reports and in the ERA Discussion Paper that capacity auctions can be particularly susceptible to the exercise of market power, and that workable competition may be challenging in the WEM where the vast majority of the generating capacity is held by a small number of market participants.

AEMO believes that the reform priorities described in section 2 of this submission (constrained access, spot market reforms and FRC) are likely to deliver greater efficiency benefits for the WEM and should be advanced before implementing a capacity auction.

AEMO notes that the intangible nature of the capacity product in electricity markets can lead to misunderstanding regarding the design of capacity mechanisms. Some commentators have suggested that infrequent utilisation of certain capacity in the WEM, particularly demand-side management (DSM) capacity, indicates that it has delivered little value. However, the current reliability standard requires sufficient capacity (generation and DSM) to supply a one-in-ten-year demand peak, plus margins for unplanned generation outages and maintenance of system frequency. As a direct result of the reliability standard, it is expected that the capacity providers with the highest dispatch costs (e.g. diesel peaking generators and DSM) will be dispatched very rarely.

AEMO considers that the next stages of reform to the RCM should be underpinned by a clear definition of the capacity product that is needed for the SWIS, to which the various elements of the RCM design can be linked. With the capacity product defined, AEMO supports technology-neutral mechanisms for the procurement and trading of capacity. Technology-neutral market mechanisms are proven to be the best way to promote innovation and competition and to minimise long-term costs for consumers. A clearly defined capacity product will aid policy and rule makers to understand the role that new technologies can play in the RCM, including battery storage which is currently excluded.

AEMO notes that the EMR changes to the RCM included transitional changes to the conditions for participation of demand-side management (DSM) capacity (specifically lower capacity pricing) that were planned to be unwound upon the commencement of the capacity auction. AEMO considers that price equivalency for supply-side and demand-side capacity resources in the RCM would promote technology neutrality in that mechanism, provided that the service offered by the two resource types is harmonised.

- If the government decides to proceed with the implementation of a capacity auction, AEMO supports the previous EMR intention to restore price equivalency for DSM and generation resources at that time.

- If the government elects not to proceed with a capacity auction, AEMO supports reconsideration of DSM participation conditions to allow the restoration price equivalency. However, AEMO advises against a simple reversal of the EMR changes.

When assessing the effectiveness of the transitional EMR reforms, AEMO suggests that the ERA consider effects on both capacity quantity and price. Despite the exit of the majority of DSM capacity for the 2017-18 Capacity Year, the Reserve Capacity Price is estimated to fall to $111,753 from $121,889 in 2016-17[29] as a result of the new price formula. However, the Reserve Capacity Price is expected to increase to around $139,000 in 2018-19 following Synergy's plant retirements, assuming there is no change to the level of Capacity Credits assigned to other facilities.

AEMO notes that the WEM Rules require the ERA to conduct periodic reviews of various aspects of the design of the WEM, but that several of these reviews have been delayed due to the EMR.[30]

- The five-yearly review of the Benchmark Reserve Capacity Price (BRCP) methodology has not been completed since 2011. AEMO and Market Participants have raised multiple concerns with the current BRCP methodology[31], particularly around the weighted average cost of capital and choice of reference technology (currently a liquid-fuelled 160 MW open cycle gas turbine). AEMO considers that the role of the BRCP is equivalent under a capacity auction and under the current administered-price approach, being to determine a benchmark cost for development of new capacity. An immediate review of the BRCP methodology will address a number of shortcomings in the current approach and would allow the Reserve Capacity Price to more closely reflect the economic value of capacity in the WEM. It would be prudent to perform the BRCP methodology review prior to undertaking the five-yearly Planning Criterion review (last conducted in 2012) as the former review will provide updated cost information for use in the latter review.
- AEMO also considers that the five-yearly review of the Planning Criterion should be undertaken as soon as practicable. Material shifts have occurred in the SWIS since the previous review in 2012, with the growth of distributed energy resources, changes in the generation mix and changing customer behaviour. AEMO notes that there is uncertainty as to the governance of this review, given the potential establishment of a Reliability Advisory Committee, but urges the ERA to begin planning for this review and communicate the schedule to market participants.

[29] Based on 5,193.925 MW of Capacity Credits assigned for the 2017-18 Capacity Year.
[30] Clause 1.17.5 of the WEM Rules formalises the delay to these reviews.
[31] See http://aemo.com.au/-/media/Files/Electricity/WEM/Reserve_Capacity_Mechanism/BRCP/2017/Final-Report-Benchmark-Reserve-Capacity-Price-for-the-2019-20-Capacity-Year.pdf, accessed 16 August 2017.