Energy Transformation Taskforce

PROPOSED AMENDING RULES TO THE WHOLESALE ELECTRICITY MARKET RULES – TRANCHE 3

EXPLANATORY MEMORANDUM

Message from the Taskforce Chair

Dear Stakeholder,

I am pleased, on behalf of the Energy Transformation Taskforce, to release Tranche 3 of the draft Amending Rules for the new Wholesale Electricity Market. This is another major milestone in the implementation of the Energy Transformation Strategy, a culmination of extensive policy design and industry consultation over 2019 and 2020.

Tranche 3 of the draft Amending Rules provide for several key reforms to the Reserve Capacity Mechanism as well as changes to the WEM Rules to provide for future iterations of the Whole of System Plan (WOSP). These proposed changes include:

- The introduction of the Network Access Quantities Framework;
- The treatment of how storage resources (including hybrid facilities with storage) will be accredited;
- Consequential changes to the Reserve Capacity Mechanism to support the implementation of the new security constrained market design;
- Alignment of Reserve Capacity Settlement to a weekly settlement process; and
- A governance framework for the development of future WOSPs.

I invite the industry to engage with this package of Amending Rules through one-on-one consultations with the Energy Transformation Implementation Unit and through the Transformation Design and Operation Working Group meetings scheduled for the first week of November 2020.

Following consultation and incorporation of industry feedback, I look forward to providing this package of Amending Rules to the Minister for Energy for his approval.

I would like to take this opportunity to thank the Energy Transformation Implementation Unit, AEMO, Western Power and other energy sector stakeholders for this significant achievement, and I look forward to your continuing input in implementing an important component of the Government's Energy Transformation Strategy.

Stephen Edwell

Chair
Energy Transformation Taskforce

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Background

The Energy Transformation Strategy is the Government's work program to embrace new technologies to ensure the ongoing delivery of secure, reliable, sustainable and affordable electricity to Western Australians. The Strategy is responding to the energy transformation through fundamental changes to the way the power system operates and by developing a plan for the future.

An imperative element of the Energy Transformation Strategy is the adoption of a constrained model of network access and market dispatch whereby generator access to the network and the Wholesale Electricity Market (WEM) is subject to network constraints. This reform will facilitate the entry of new generation capacity and technologies that will ultimately benefit electricity consumers through cheaper and cleaner energy whilst facilitating a stronger and more resilient power system.

Complementary reforms to the design of the WEM are being made to ensure that consumers reap the full benefit of the Energy Transformation Strategy. Separate tranches of Amending Rules have been released by the Taskforce that cater for a new security constrained market design, a new essential system services market, revised power system security and reliability arrangements, and new frameworks to govern generator performance standards.

This tranche of Amending Rules relates to important reforms to the Reserve Capacity Mechanism (RCM) to ensure that it continues to achieve its intended purpose to incentivise investment in sufficient reserve capacity in the South West Interconnected System (SWIS). The reforms will alter the way that Capacity Credits are assigned to capacity resources under the RCM through a new Network Access Quantities (NAQ) framework. The NAQ framework is intended to protect existing capacity revenue from an unhedgeable risk created by the introduction of constrained access, where new entrants locate in constrained regions of the network and contribute to network constraints that impact on the availability of existing capacity resources at times of peak demand. The NAQ framework will also provide important locational signals that, in conjunction with the Whole of System Plan, will guide new capacity investment to areas of the network that are not congested.

Changes to the RCM are also being made to provide for the accreditation of storage resources that will strengthen the resilience of the SWIS while providing new opportunities for market participants. In the short term, it is more likely that storage facilities will enter the market as part of a 'hybrid' facility, that is, co-located with another type of generation technology. New rules governing the treatment of these hybrid facilities under the RCM have also been developed.

Throughout 2019 and 2020, the Energy Transformation Taskforce (Taskforce) released three Information Papers outlining the features of the new NAQ framework and accreditation of storage.

- A new Network Access Quantities regime, as described in the Taskforce information papers Allocation of Capacity Credits in a Constrained Network – Design Proposal and Assigning Capacity Credits in a Constrained Network: Network Access Quantity – Key Design Parameters.
- Accreditation of storage capacity in the RCM, as described in the Taskforce information paper Storage Participation in the RCM.
- Consequential changes to support the implementation of the new market design.

Given the role that the Whole of System Plan (WOSP) will play in informing future policy and market evolution in Western Australia, the Government has decided that responsibility for developing future periodic WOSPs should be undertaken by the Coordinator for Energy. These Amending Rules also contain the proposed provisions related to the overall regulatory framework for future WOSPs.

This explanatory memorandum provides a high-level overview of the Tranche 3 Amending Rules.

Consultation process

The Exposure Draft of the Amending Rules (Tranche 3) is now available in the consultation section of the Energy Transformation website at https://www.wa.gov.au/organisation/energy-policy-wa/energy-transformation-strategy.

Stakeholders are invited to provide written comment on this rules package by 5:00 PM Western Standard (Perth) time on 23 November 2020 to: energytransformation@energy.wa.gov.au

The Energy Transformation Implementation Unit is also available on request to meet with interested stakeholders to discuss the Amending Rules. Contact can be made using the email address above.

Three Transformation and Design Operations Working Group meetings will be scheduled in the first week of November 2020 to discuss the Tranche 3 Amending Rules:

- 4 November – Storage and Hybrid Facilities and associated RCM changes.
- 5 November – RCM implementation – Transition options.
- 6 November – Network Access Quantities Framework.

An Information Paper setting out the key changes to the RCM will be released in November 2020.

Approach to drafting

A key principle guiding the design of the NAQ framework is that the new regime should be simple, transparent, and readily implemented in the WEM with minimal changes to existing processes. Consistent with this key design principle, new requirements have been kept to the minimum necessary to facilitate the new NAQ assignment process.

The Amending Rules have been drafted to account for the new registration taxonomy that is to be gazetted with the Tranche-2 and Tranche-3 Amending Rules to support the new NAQ framework and security-constrained market design. This is to allow for facilities to be registered under the new classes and to cater for storage facilities and provide transparency on the market obligations for each registration class. The new taxonomy was described in the Taskforce Information Paper *Registration and Participation Framework in the Wholesale Electricity Market*, February 2020, available at https://www.wa.gov.au/government/document-collections/taskforce-publications. Other aspects of the registration and participation framework, including standing data and amendments to the registration process, will be progressed in early 2021.

The Amending Rules have made changes to the Reserve Capacity Cycle timeframes to cater for the new NAQ framework. These will be the timeframes that are proposed to apply under a normal Reserve Capacity Cycle. A transitional timeframe will be developed to cater for the Reserve Capacity Cycle in which the NAQ assignment process is to be undertaken for the first time. AEMO and the Energy Transformation Implementation Unit will consult with industry on the proposed transitional timeframe at the Transformation Design and Operation Working Group meetings scheduled in early November 2020.

Components of this Amending Rules package

Network Access Quantities

Generation is a long-term investment and requires reasonable certainty over the ability to recover fixed costs. Future loss of Capacity Credits by the inefficient decisions of new entrants to locate in congested areas of the network is an unhedgeable risk outside of the direct control of an existing facility that will erode incentives for investment in reserve capacity to meet peak demand.

To manage this risk the Taskforce endorsed the introduction of the Network Access Quantities (NAQ) framework. The key purpose of the NAQ is to provide investment certainty against an unhedgeable risk of losing Capacity Credits due to network constraints caused by a new entrant locating in a constrained region of the network. The NAQ protects a facility's quantity of Capacity Credits from being displaced by the new entrant and signals the value of additional capacity from a reliability perspective at locations throughout the SWIS.

Key changes under the NAQ framework.

Several changes are being made to the Reserve Capacity Cycle timeframes to accommodate the introduction of the NAQ framework. The changes primarily relate to the bringing forward of several key dates to accommodate the preparation of limit advice and constraint equations to be used in the NAQ assignment process.

The security constrained market design places new requirements on Western Power and AEMO to publish information to enable market participants to understand the patterns and market impacts of network congestion. The NAQ framework will impose additional and specific requirements on Western Power and AEMO with respect to the development of limit advice and constraint equations for the purposes of the NAQ assignment process. Western Power will be required to provide AEMO with network information and thermal limit advice that represent Western Power's reasonable expectation of the configuration of the network on 1 October of Year 3 of the Reserve Capacity Cycle (RCM Limit Advice). AEMO will then use the RCM Limit Advice and the non-thermal limit advice it has available as part of the security constrained market Limit Advice to develop constraint equations for use in the NAQ Model (RCM Constraint Equations). RCM Limit Advice and RCM Constraint Equations will be published in AEMO's Constraints Library.

Market participants with new facilities (including an upgrade to existing nameplate capacity) must submit an Expression of Interest if they wish to be considered in the NAQ assignment process. A mandatory EOI requirement for new facilities is necessary so that Western Power and AEMO have some certainty about the new facilities that are seeking NAQ because Western Power will need to develop thermal limit advice and AEMO will need to develop constraint equations that reflect the new facilities in the NAQ Model.

The WEM Rules currently require Market Participants with generation facilities to notify AEMO of the retirement of their facilities where the expected retirement date is not less than three years from when the notification is provided to AEMO. Market participants that announce the retirement of their facilities will not retain the NAQ associated with the facility beyond the date for retirement as specified in the notice. AEMO will be required to publish information on facility retirements, including the name of the Market Participant, the name and location of the retiring facility, and the NAQ that has been assigned to the facility for the Reserve Capacity Cycle in which the retirement is specified to occur.

Schedulable facilities will no longer be able to opt to nominate to have AEMO use the Relevant Level Methodology (RLM) to have their capacity certified. This is because new rules have been developed for how storage facilities (which are a type of schedulable facility) will have their capacity accredited through a linear derating method. If this option was not removed, then the storage facility would be able to nominate the RLM as a means of certifying its capacity.

New procedural requirements have been developed for market participants that are funding augmentations to the shared transmission network to allow priority access over new entrant facilities. These are described in new replacement section 4.10A and include a requirement to nominate to be classified as a Network Augmentation Funding Facility in the Expression of Interest process and to provide AEMO with evidence that demonstrates its commitment to fund the augmentation and that the augmentation will be completed and in-service before the start of the Capacity Year to which the application for Certified Reserve Capacity relates.

The Reserve Capacity Auction is being removed. Shortfall capacity will be procured through the Supplementary Reserve Capacity mechanism, noting that NAQ will not be assigned to capacity procured through this mechanism, but network access will be confirmed as part of the procurement.

New proposed (replacement) section 4.15 of the Amending Rules sets out the new NAQ framework and provides for the general process by which AEMO will determine the NAQ for relevant Facilities. The clause also describes the key principles and parameters of the NAQ Model that will be developed by AEMO to undertake the sequenced NAQ assignment process.

Appendix 3 has been amended to remove the Reserve Capacity Auction and to prescribe the NAQ Prioritisation Order that has been developed to assign NAQ to individual capacity resources for a Reserve Capacity Cycle. The NAQ assignment process has been designed to accommodate the changes to the prioritisation order that was introduced by the RCM pricing reforms. The NAQ Prioritisation Order applies the following key design parameters.

- Existing facilities are prioritised ahead of new facilities.
- Facility performance (CRC) must support its level of NAQ, otherwise NAQ is reduced.
- NAQ will not be assigned beyond the transfer capability of the network.
- NAQ enabled by augmentation funded by the network operator will be prioritised to existing facilities ahead of new facilities.
- NAQ enabled by augmentation funded by capacity resources will be prioritised to the funding facility ahead of new facilities but not ahead of other existing capacity resources.
- Capacity upgrades that involve an increase in an existing facility's installed capacity above its initial capacity will be assessed for NAQ together with new facilities for the upgraded capacity.
- New committed facilities are prioritised ahead of new proposed facilities.
- New facilities that choose not to fix their capacity price are prioritised ahead of facilities that choose to do so.

The ability for small facilities (less than one megawatt in nameplate capacity) to apply for Capacity Credits outside of the normal Reserve Capacity Cycle process and timeframes is being removed. These facilities will need to apply as part of the normal process and timeframes from the 2021 Reserve Capacity Cycle.

Early Certification of Reserve Capacity (Early CRC) is being retained with two key amendments. Firstly, facilities can only apply for Early CRC up to a maximum of two years in advance of the normal Reserve Capacity Cycle timeframes. Secondly, facilities must be able to demonstrate to AEMO that the commissioning of their project cannot be achieved within the timeframes of a Reserve Capacity Cycle. AEMO will have the discretion to reject applications for Early CRC if it is satisfied that the construction of the facility can be achieved within the timeframes of a Reserve Capacity Cycle.

If a facility is eligible for Early CRC, then the facility will be assessed for NAQ in the next Reserve Capacity Cycle and, if available, NAQ will be assigned to the facility. While NAQ will be assigned to Early CRC facilities outside of the normal Reserve Capacity Cycle timeframes, Capacity Credits will not be assigned to the facility until the relevant Reserve Capacity Cycle. The purpose of assigning NAQ to Early CRC facilities outside of the normal Reserve Capacity Cycle timeframes is to provide the same level of certainty to Early CRC facilities as is provided to other types of facilities that are not reliant on early certification. A different process applies to Early CRC facilities depending on whether the facility is funding an augmentation to the shared transmission network.

Managing the transition to the new regime

A key objective of the RCM reforms is to protect against unhedgeable risk that causes a reduction in the level of Capacity Credits assigned to the facility. The NAQ framework protects existing facilities against the future loss of Capacity Credits caused by new entrants locating in congested areas of the network. However, it is possible that some existing generators may receive less Capacity Credits in the transition to the new regime because of the way that network capacity will be modelled under the new regime.

A new capacity allocation tool (the NAQ Model) will be developed by AEMO to account for the transfer capability of the network as part of the NAQ and Capacity Credit assignment process. The NAQ Model will incorporate a wide range of information and assumptions to model available network capacity and assign NAQ to facilities. For example, the NAQ Model will incorporate constraint equations based on network thermal limits that assume an ambient temperature of 41 degrees for the Western Power network, achieving a consistent approach in how AEMO currently assigns Capacity Credits to capacity resources. The NAQ Model will also incorporate non-thermal constraints (to address voltage and stability issues).

To cater for the risk that the modelled network capacity does not support the number of Capacity Credits currently held by existing generators, the Taskforce has endorsed an additional mechanism to 'uplift' the allocation to the level that was assigned to the facility in the Reserve Capacity Cycle immediately preceding the commencement of the new NAQ framework. The 'Capacity Credit Uplift' would only apply to generators that have connected to the network under an arrangement for access entered into before 24 June 2017 (i.e. generators that are not under the Generator Interim Access solution). The uplift represents the difference between the initial NAQ value assigned to a generator and the Capacity Credits assigned to the facility in the immediately preceding Reserve Capacity Cycle, but is only provided up to the amount of Certified Reserve Capacity assigned to the facility in the Reserve Capacity Cycle that NAQ is first assigned.

The amount of the uplift would be procured by AEMO through the RCM and then assigned to eligible facilities in each year, the uplift being an enduring arrangement for the life of the impacted facility provided the facility continues to provide certified capacity. For most years, there will be a sufficient level of excess capacity in the RCM from which to procure the uplift. If there is a shortfall of capacity, then AEMO would need to procure an additional amount of capacity to cover the uplift amount. This may result in a higher level of excess capacity than would otherwise have been procured and result in a lower price for Capacity Credits.

The sum of a facility's NAQ and its uplift must not exceed the facility's Certified Reserve Capacity. If the sum of the NAQ and the uplift exceeds the Certified Reserve Capacity for the Facility, then the amount of the uplift will be reduced. When an uplift amount is reduced, it cannot then be subsequently increased. Capacity Credits assigned to facilities under this uplift provision will be treated in the same way as Capacity Credits, and subject to the same obligations, testing requirements, refunds, payments, and any other provisions applicable to Capacity Credits.

Treatment of storage

The capacity value for large transmission connected Electric Storage Resources (ESR) will be assessed through a linear derating method whereby the amount of CRC assigned to ESR will be a function of both its maximum output and duration. Different rules apply to ESR registered as a Non-Scheduled facility,[1] for

[1] Note that new registration classes for the WEM are outlined in the Taskforce Information Paper *Registration and Participation Framework in the Wholesale Electricity Market*, February 2020

which the Relevant Level Methodology (RLM) applies unless the ESR does not have five years of operational data, in which case the linear derating method will apply.

In the short term, it is more likely that storage facilities will enter the market as part of a 'hybrid' facility. Hybrid facilities – i.e. facilities with different types of generation technologies behind a single connection point – will have each of their components certified separately in accordance with the relevant certification method, with the ESR component assessed through the linear derating method (noting that different rules apply to Non-Scheduled facilities).

ESR, including those co-located with other types of generating technology as part of a hybrid facility, will have a Reserve Capacity Obligation Quantity (RCOQ) corresponding to specific trading intervals (the ESR Obligation Interval) over a contiguous period (the ESR Obligation Duration) every day. The ESR Obligation Duration will be set at four hours (i.e. 8 contiguous trading intervals), and the four-hour window applying to a Capacity Year will be determined and advised to market participants in the Electricity Statement of Opportunities. AEMO will also have the flexibility to change the window of time (but not the length of the window) on a shorter-term basis (by 8.30 am on the Scheduling Day) to respond to changing or unexpected market conditions. ESR that is registered as a Non-Scheduled facility (or is part of a Non-Scheduled hybrid facility) is not subject to Reserve Capacity obligations.

On occasion, it may be necessary for AEMO to intervene in the operation of the WEM to maintain or re-establish a secure and reliable power system. In such cases, AEMO may direct ESR (or a hybrid facility with ESR) to operate their facility in a certain way or to provide Essential System Services. In circumstances where AEMO has directed an ESR to operate at a value higher than its RCOQ, then the ESR RCOQ will be reduced to zero for all subsequent ESR Obligation Intervals for that trading day.

New information requirements for ESR apply as part of the certification of Reserve Capacity process, including the nameplate capacity and maximum charge level. ESR contained in the new 'Non-Scheduled' facility class will be required to provide the location of the single Transmission Node Identifier behind which the Non-Scheduled facility is located.

ESR co-located with other facilities must install separate metering for the purposes of certifying Reserve Capacity (given that different methods may apply for the different types of generation technologies comprising the hybrid facility) for ESR and for Reserve Capacity testing. The metering will not be used for the purposes of settlement. The requirements for the meter and the communication and provision of metering information to AEMO will be documented in a WEM Procedure.

ESR (including hybrid facilities containing ESR) will be subject to Reserve Capacity Testing and must demonstrate operation (either via observation or a scheduled test) at the level of its Capacity Credits (or for hybrid facilities containing ESR, at the level of Capacity Credits associated with the ESR component) for the ESR Obligation Duration (i.e. across the eight contiguous ESR Obligation Intervals) once in each of the summer and winter periods. Non-Scheduled ESR (or Non-Scheduled facilities containing ESR) are not subject to Reserve Capacity Testing.

If an ESR fails two Reserve Capacity Tests, AEMO will reduce the Capacity Credits for the ESR to reflect the highest average performance achieved over the ESR Obligation Duration in each of the two previous tests. For hybrid facility containing ESR, AEMO only reduces the Capacity Credits associated with the component of the facility that has failed both tests. Where a re-test has been requested, AEMO will set the Capacity Credits for the ESR to reflect the average achieved over the ESR Obligation Duration in the re-test.

A review of the method for certifying Reserve Capacity for ESR will be undertaken periodically by the Coordinator for Energy, with the first review to be conducted within five years of the commencement of the new framework.

Other key changes to the RCM

In line with other workstreams, consequential outages will be removed from the WEM Rules. Market participants will have to submit planned or forced outages in accordance with the new outage management framework. Scheduled facilities that do not comply with their Dispatch Target for a Dispatch Interval (where the RCOQ of the facility is greater than zero for that interval) must submit a Forced Outage as soon as practicable at the end of the interval (or, in any event, by the end of the next Business Day). The quantity of the Forced Outage is intended to be the difference between the injection of the Facility and its Dispatch Target during the interval.

Several changes to the RCM settlement process are being made to accommodate the move to a weekly settlement timeframe. While the Individual Reserve Capacity Requirement calculation remains unchanged (that is, it will continue to be calculated on the current monthly basis), the RCM settlement changes include:

- Moving from monthly RCM settlement calculations to daily RCM calculations, in order to include them in the weekly settlement process.
- Changes to the RCM refunds to incorporate ESR including the calculation of an ESR specific refund rate. A hybrid facility with an ESR will have a 'blended' refund rate calculated by reference to the capacity associated with each component of the facility and its corresponding refund rate.
- Moving the Capacity Credit Allocation process from Chapter 9 to Chapter 4 but retaining a monthly allocation process.

Governance framework for the development of future WOSPs

The Taskforce has agreed a governance framework for the development and implementation of the WOSP that balances the need for stakeholder consultation to deliver industry confidence with the need for rigorous analysis and timely decision making. These Amending Rules contain the proposed WEM Rule changes that would implement the framework, including:

- It is proposed that the Coordinator publishes a WOSP at least once in every five years in accordance with the WEM Rules. This would be completed in sufficient time to inform Western Power's access arrangement process, which is undertaken every five years.
- The Coordinator may publish updates to the WOSP at any time if the Coordinator considers that there have been material changes to the inputs, assumptions and scenarios used in the most recent published WOSP.
- It is proposed that if, after the publication of the most recent WOSP, new information becomes available and, in the Coordinator's opinion, that new information may materially change the outcome of the WOSP the Coordinator may prepare and publish an update to the WOSP. The WOSP will remain in effect until it is replaced in whole or in part by a WOSP update.
- It is proposed that the WOSP is a plan over a planning horizon of at least 20 years for the efficient development of the SWIS to meet the power system needs in the long-term interests of the consumers of electricity. This is consistent with the planning horizon of the Taskforce's inaugural WOSP.
- It is proposed to create an obligation for the Coordinator to publish an approach for the development of the WOSP, with the flexibility to adjust and evolve the approach over time.
- It is proposed that the Coordinator consults on a draft WOSP before publishing the final WOSP. The consultation process will also be an important vehicle for the Coordinator to conduct an informed assessment on whether non-network options are reasonably likely to meet a relevant identified need. It is proposed that proponents of non-network options will have the opportunity to submit their alternative solutions in response to the draft WOSP.

- It is proposed that certain types of projects in the WOSP would become “priority projects” for the purpose the Electricity Network Access Code, which in practice would mean that Western Power will be able to progress specific network augmentation projects, if the WOSP identifies that these projects must be implemented to enhance market efficiency.
- For other types of projects that can be developed in the competitive market, for example new generation developments, the role of the WOSP should be to inform market participants and policy makers.
- Both AEMO and Western Power have very important roles to play in providing information and expertise in the development of the WOSP. The proposed changes provide for the Coordinator to collaborate with AEMO and Western Power in the development of the WOSP, and for Rule Participants to provide the necessary information and assistance to the Coordinator to enable the effective development of the WOSP.

Government has indicated that it will continue to meet some of the cost of developing the WOSP, with Energy Policy WA’s costs to be shared between Government and industry fees.