

Rule Change Notice: Estimates for GIA facilities (RC_2020_03)

This notice is given under clause 2.5.7 of the Market Rules.

Submitter: Jacinda Papps – Alinta Energy

Date submitted: 13 May 2020

The Rule Change Proposal

Alinta Energy (**Alinta**) has submitted a Rule Change Proposal seeking to amend the Relevant Level Methodology in Appendix 9 of the Market Rules to include a requirement for AEMO to estimate a Facility's output for Trading Intervals where an Operating Instruction to reduce output has been issued in accordance with a Network Control Service Contract (**NCS intervals**).

Like all Intermittent Generators, intermittent Constrained Access Facilities connected under the Generator Interim Access (**GIA**) solution (**GIA generators**) are assigned Certified Reserve Capacity based on their Relevant Levels.¹ A Relevant Level is a forecast of an Intermittent Generator's availability during future periods of peak load for scheduled generation (**LSG**) that is based on that Facility's output during previous peak LSG periods. As a result, the lower an Intermittent Generator's output during peak LSG periods, the lower its Capacity Credits.

Where a network outage reduces a non-GIA Intermittent Generator's output, the flow-on impacts to its Capacity Credits can be averted in one of two ways:

- AEMO issuing a Dispatch Instruction to the Intermittent Generator to reduce generation: when a Dispatch Instruction is issued, AEMO estimates what the Intermittent Generator would have generated had the Dispatch Instruction not been issued;² or
- approval of a Consequential Outage: a Consequential Outage is an outage caused by an outage of another Rule Participant's equipment.³ If approved, AEMO must estimate what the Intermittent Generator would have generated had the Consequential Outage not occurred, and use this estimate in the Facility's Relevant Level calculation.

However, when a GIA generator's output is limited under the GIA solution:

- it does not receive a Dispatch Instruction (instead it receives an Operating Instruction); and
- clause 3.21.2A renders it ineligible for a Consequential Outage.⁴

¹ The Certified Reserve Capacity of a GIA generator is also currently limited by its Constrained Access Entitlement, determined in accordance with Appendix 11 of the Market Rules.

² See clause 7.7.5B.

³ See clause 3.21.2.

⁴ Clause 3.21.2A states that "An outage does not occur in respect of a Constrained Access Facility for the purposes of these Market Rules where the Constrained Access Facility is dispatched in accordance with a Network Control Service Contract and these Market Rules".

As a result, GIA generators do not receive estimates for Trading Intervals where they are impacted by network outages and constrained using the GIA tool. Alinta considers that this will significantly decrease a GIA generator's Relevant Level calculation inputs and therefore its Certified Reserve Capacity in future Reserve Capacity Cycles.

Alinta suggested in the Rule Change Proposal that this outcome was not the intent of clause 3.21.2A, and that a GIA generator's Certified Reserve Capacity should not be negatively impacted by a Western Power Planned Outage. Alinta noted that all Intermittent Generators are exposed to the risk of network planned outages impacting their output and cannot manage this risk.

The Rule Change Panel notes that while the Rule Change Proposal refers to a manifest error in clause 3.21.2A, Alinta does not propose amendments to that clause. Further, the Rule Change Panel understands that under AEMO's current interpretation of the Market Rules, if a network outage creates a constraint that causes an Intermittent Generator's output to be limited by a Dispatch Instruction, but the network outage does not leave the Facility physically unable to send out energy, then the Facility is deemed not to have suffered a Consequential Outage (or any kind of Outage). Under this interpretation, some of the fixed constraints that have been placed on GIA generators during network outages would not be deemed to have caused a Consequential Outage, even if the constraints had been applied through Dispatch Instructions instead of the GIA tool.

The Rule Change Panel therefore sought clarification from Alinta on what specific manifest error in the Market Rules Alinta sought to address through the Rule Change Proposal.

Alinta provided the requested clarification on 14 May 2020. Alinta considered that the Minister's Amending Rules to implement the GIA solution⁵ did not intend to prevent GIA generators from receiving an estimate in the scenario where a network outage limits their output; and that this outcome was a manifest error in the Market Rules. Alinta considered the manifest error extended to all NCS intervals where the Operating Instruction(s) were issued because of a network outage (**network outage intervals**).

The Rule Change Panel agrees that the failure to provide estimates to GIA generators for network outage intervals is a manifest error in the Market Rules. The Rule Change Panel notes that Energy Policy WA provided verbal advice to RCP Support, at the 5 May 2020 meeting of the Market Advisory Committee and in subsequent discussions, that the Public Utilities Office did not intend for GIA generators to not receive estimates when their output was restricted because of a network outage.

The Rule Change Panel also notes that, while the Rule Change Proposal discusses the provision of estimates to GIA generators whose output is reduced due to a planned network outage, the proposed Amending Rules provide estimates to GIA generators whenever their output is reduced by the GIA tool under their Network Control Service Contract, regardless of the state of the network at the time.

In the clarification provided on 14 May 2020, Alinta confirmed that it did not consider the Public Utilities Office intended to require AEMO to estimate a GIA generator's output in Trading Intervals where its output was restricted by the GIA tool under 'system normal'⁶ conditions (**system normal intervals**). Accordingly, Alinta did not request the Rule Change Panel to consider whether GIA generators not receiving estimates for system normal intervals was a manifest error.

⁵ See the *Wholesale Electricity Market Amending Rules 2017*, which commenced on 24 June 2017.

⁶ Alinta defines system normal to be when all critical network elements are in service.

However, Alinta considered that the provision of estimates to GIA generators for system normal intervals was an acceptable by-product of its proposed solution because:

- it would not distort the load carrying capability of GIA generators, given that the Relevant Level Methodology is designed to represent the unconstrained capacity of an Intermittent Generator, while the Constrained Access Entitlement process accounts for the impact of thermal constraints;
- incorporating the effect of network constraints in the Relevant Level Methodology would lead to ‘double-counting’ of those constraints, as discussed in the final report for the Economic Regulation Authority’s 2018 review of the Relevant Level Methodology;⁷ and
- it avoids potential operational complexity for AEMO in determining which NCS intervals to determine estimates for.

The Rule Change Panel notes that the proposed Amending Rules could be modified to limit the provision of estimates to network outage intervals only, for example by amending proposed Step 3(d) in Appendix 9 to only consider Operating Instructions that were issued, in part or fully, because of a network outage. This would limit the effect of the Rule Change Proposal to the manifest error identified by Alinta.

However, based on its preliminary assessment of the Rule Change Proposal, the Rule Change Panel considers that requiring estimates for all NCS intervals may be the most efficient way to address the manifest error. The Rule Change Panel considers that it may be perverse to exclude system normal intervals from the scope of the Rule Change Proposal if their inclusion is more efficient and has no material adverse impacts.

The Rule Change Panel therefore encourages stakeholders to consider the relative costs and benefits of providing estimates for all NCS intervals or providing estimates only for network outage intervals when preparing their submissions on this Rule Change Proposal.

Decision to progress the Rule Change Proposal

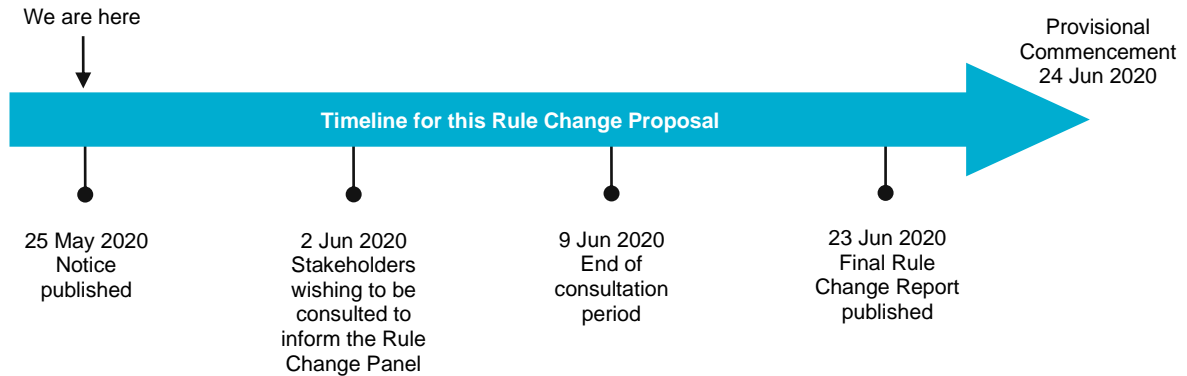
The Rule Change Panel has decided to progress the Rule Change Proposal on the basis of its preliminary assessment that the proposal raises a valid issue and may be consistent with the Wholesale Market Objectives.

Timeline

This Rule Change Proposal will be progressed under the Fast Track Rule Change Process described in section 2.6 of the Market Rules, on the grounds that the proposed changes correct a manifest error, thereby satisfying the criterion in clause 2.5.9(b) of the Market Rules.

⁷ See pages 66-67 of [Relevant Level method review 2018: Capacity valuation for intermittent generators: Final report](#), available on the Economic Regulation Authority’s website.

The projected timeline for progressing this proposal is:



Call for Submissions

Any Rule Participant wishing to be consulted regarding this Rule Change Proposal is invited to notify the Rule Change Panel within 5 Business Days of the Rule Change Notice publication date, by **5:00 PM on Tuesday 2 June 2020**.

The consultation period is 10 Business Days from the Rule Change Notice publication date. Submissions must be delivered to RCP Support by **5:00 PM on Tuesday 9 June 2020**.

The Rule Change Panel prefers to receive submissions by email, using the submission form available at: <https://www.erawa.com.au/rule-change-panel/make-a-rule-change-submission> sent to support@rcpwa.com.au.

Submissions may also be sent to the Rule Change Panel by post, addressed to:

Rule Change Panel
Attn: Executive Officer
C/o Economic Regulation Authority
PO Box 8469
PERTH BC WA 6849

Wholesale Electricity Market Rule Change Proposal

Rule Change Proposal ID: RC_2020_03
Date received: 13 May 2020

Change requested by:

Name:	Jacinda Papps
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Organisation:	Alinta Energy
Address:	Raine Square, 300 Murray St, Perth WA 600
Date submitted:	13/05/2020
Urgency:	High
Rule Change Proposal title:	Estimates for GIA facilities
Market Rule(s) affected:	Appendix 9, 7.7.5

Introduction

Clause 2.5.1 of the Wholesale Electricity Market (WEM) Rules (Market Rules) provides that any person may make a Rule Change Proposal by completing a Rule Change Proposal form that must be submitted to the Rule Change Panel.

This Rule Change Proposal can be sent by:

Email to: support@rcpwa.com.au

Post to: Rule Change Panel
 Attn: Executive Officer
 C/o Economic Regulation Authority
 PO Box 8469
 PERTH BC WA 6849

The Rule Change Panel will assess the proposal and, within 5 Business Days of receiving this Rule Change Proposal form, will notify you whether the Rule Change Proposal will be further progressed.

In order for the proposal to be progressed, all fields below must be completed and the change proposal must explain how it will enable the Market Rules to better contribute to the achievement of the Wholesale Market Objectives.

The objectives of the market are:

- (a) to promote the economically efficient, safe and reliable production and supply of electricity and electricity related services in the South West interconnected system;
- (b) to encourage competition among generators and retailers in the South West interconnected system, including by facilitating efficient entry of new competitors;
- (c) to avoid discrimination in that market against particular energy options and technologies, including sustainable energy options and technologies such as those that make use of renewable resources or that reduce overall greenhouse gas emissions;
- (d) to minimise the long-term cost of electricity supplied to customers from the South West interconnected system; and
- (e) to encourage the taking of measures to manage the amount of electricity used and when it is used.

Details of the Proposed Rule Change

1. Describe the concern with the existing Market Rules that is to be addressed by the proposed rule change:

Background to the Generator Interim Access (GIA) solution

The GIA solution, implemented in 2017, is an interim, temporary solution designed to provide generators with access to Western Power's network on a curtailable basis pending the introduction of a fully constrained market.

The underlying principle of the GIA solution is that it applies constraints to limit the output of a GIA generator (known as a Constrained Access Facility in the Market Rules) when network capacity is limited. This includes:

- A dynamic (real-time) assessment and application of constraint equations during system normal¹ that determines the available network capacity and any requirement for a generator to limit its transfer of electricity;
- Manual assessment and application of constraints in other circumstances:
 - When there is a planned outage of any network element that impacts the GIA generator, the GIA solution does not have a network model (constraint equations) for outage scenarios and, in the initial months of operation, a fixed constraint was applied (50% output, 25% output, or nil output) for the duration of the planned outage; and
 - Following an unplanned network outage - the requirement for curtailment to ensure the system remains secure is determined by AEMO and/or Western Power controllers.

¹ System normal is when all critical network elements are in service.

When a limit on the transfer of electricity into a network is required, AEMO issues an Operating Instruction (under the Network Control Service) to the GIA generator to limit its output.

Badgingarra Wind Farm (BWF)² is the first GIA generator in commercial operation on the South West Interconnected System (SWIS). As the intermediary for BWF, Alinta Energy has first-hand experience on how the GIA is operating in practice.

What this experience has shown is that GIA generators have been constrained significantly more than was ever contemplated and communicated to participants during the GIA design process. This increase has largely arisen from constraints occurring due to planned outages on Western Power network elements rather than constraints being imposed during system normal operation due to thermal line overloads.

Significant work has occurred to identify strategies to mitigate the impact of the GIA and therefore maximise the quantity of low-cost renewable energy being made available to the market, including but not limited to:

- Improved forecasting of the impacts of the GIA;
- Improvements to the methods to model outage impacts on generation; and
- Development and use of planned outage constraint equations.

The issue

Alinta Energy considers that the Amending Rules developed in 2017 to implement the GIA solution were based on the understanding that the GIA solution primarily addressed the dynamic (real-time) assessment and application of constraint equations during system normal and that, at the time, the extent of planned outages impacting GIA generators was not a factor in the rule change development.

As a result of this drafting, Constrained Access Facilities impacted by network outages will inadvertently lose Capacity Credits.

Like all intermittent generators, intermittent Constrained Access Facilities receive Capacity Credits based on Relevant Level Methodology (RLM). The RLM is a forecast of an intermittent generator's availability during future periods of peak load on scheduled generation (LSG) that is based on that generator's output during previous peak LSG periods. As a result, the lower an intermittent generator's output during peak LSG periods, the lower their Capacity Credits.

Where a network outage impacts a non-GIA intermittent generator's output, the flow-on impacts to its Capacity Credits can be averted in one of two ways:

- AEMO issues a Dispatch Instruction to the intermittent generator to reduce generation. When a Dispatch Instruction is issued, AEMO estimates what the intermittent generator would have generated had the Dispatch Instruction not been issued³; or
- By applying for a Consequential Outage. A Consequential Outage denotes an outage that was caused by an outage of another Rule Participant's equipment⁴. If approved, AEMO must estimate what the facility's output would have been, had the Consequential Outage not occurred, and use this estimate in the facility's RLM calculation.

² Owned and operated by APA and underpinned by an agreement with Alinta Energy for the purchase of all the energy and Large-Scale Renewable Generation Certificates generated by the wind farm through to December 2035

³ See clause 7.7.5B

⁴ See clause 3.21.2

However, a GIA generator does not receive a Dispatch Instruction when its output is limited under the GIA solution (instead it receives an Operating Instruction) and clause 3.21.2A renders Constrained Access Facilities ineligible for Consequential Outages. Clause 3.21.2A states that "an outage does not occur in respect of a Constrained Access Facility [...] where the Constrained Access Facility is dispatched in accordance with a Network Control Service Contract and these Market Rules."

As a result, Constrained Access Facilities do not receive estimates for intervals where they were impacted by network outages. This will significantly decrease a Constrained Access Facility's RLM data and therefore its Certification of Reserve Capacity in future Reserve Capacity Cycles.

Alinta Energy considers that this was not the intent of clause 3.21.2A.

Principle: A Constrained Access Facility's Certification of Reserve Capacity should not be negatively impacted by a Western Power Planned Outage. All generators are exposed to the risk of network planned outages impacting their output and they cannot manage this risk.

Clause 3.21.2A formed part of the amending rules that implemented the GIA solution. The aim of the GIA solution was to connect generators on a constrained basis, despite the constrained access legislation being deferred.

Agreeing to be connected on a constrained basis means that generators accept a lower level of firm access due to there being insufficient network capacity for all generators to dispatch on an unconstrained basis. It does not mean that generators must accept a lower level of access due to network outages.

Western Power confirmed this point during consultation on the GIA solution. Western Power stated the GIA tool would "only operate in system normal",⁵ meaning the tool would only curtail Constrained Access Facilities where there was insufficient network capacity under system normal conditions. In abnormal conditions, e.g. where there is a network outage, the tool would not be applied. As a result, the constraint would be attributed to the network outage as opposed to the GIA tool and the facility would be eligible for a Consequential Outage.

Clause 3.21.2A is also inconsistent from a capacity valuation perspective and would cause AEMO to understate Constrained Access Facilities' availability. By prohibiting estimates for intervals impacted by network outages, clause 3.21.2A requires AEMO to assume that a network outage which impacted a facility in the past will also impact the facility's availability in the future. This is incorrect for two reasons:

- Firstly, Western Power does not schedule the same outages each year.
- Secondly, AEMO may defer planned network outages if the impacted facilities are required to maintain reliability.⁶ This means that even if planned network outages are scheduled to occur during peak LSG periods, the capacity that would be impacted is still available, if required.

Failing to correct this assumption will impact investment signals. Under-allocating Capacity Credits to Constrained Access Facilities will cause the Reserve Capacity Price to be higher than it should be. This could perversely incentivise excess investment in reserve capacity and would cause customers to pay higher capacity costs.

The solution

Given that the reforms to implement Security Constrained Economic Dispatch (SCED) will likely

⁵ Western Power Generator Forum Presentation 3 May 2017 (slide 24).

⁶ Subject to the criteria outlined in clause 3.19.6.

remove Consequential Outages, Alinta Energy understands ETIU is planning to implement different triggers for intermittent generators to receive estimates under the RLM before SCED is implemented in October 2022. As a result, a solution to this issue is only likely to be required for the 2020 and 2021 Reserve Capacity Cycles.

Therefore, Alinta Energy considers that Appendix 9 (Relevant Level Determination) of the market rules should be amended to include a requirement for AEMO to estimate a facility's output under the RLM for intervals where an Operating Instruction to reduce output has been issued in accordance with a Network Control Service Contract.

Alinta Energy considers that this proposal provides a least cost, least intervention solution which meets the principle that no facility's Certification of Reserve Capacity should be negatively impacted by a Planned Outage on Western Power's network (including Constrained Access Facilities).

2. Explain the reason for the degree of urgency:

If this Rule Change Proposal is not implemented before the upcoming 2020 Reserve Capacity Cycle accreditation processes, Constrained Access Facilities will be significantly undervalued, and the Reserve Capacity Price will be higher than it should otherwise be. As a result, Alinta Energy considers this Rule Change Proposal is of 'high' urgency.

3. Provide any proposed specific changes to particular Market Rules: *(for clarity, please use the current wording of the rules and place a ~~strikethrough~~ where words are deleted and underline words added)*

Insert a requirement in Appendix 9 for AEMO to estimate a facility's output under the RLM for intervals where an Operating Instruction issued in accordance with a Network Control Service applies.

Appendix 9: Relevant Level Determination:

Step 3: For each Candidate Facility, identify any Trading Intervals in the period identified in step 1(b) where:

- (a) the Facility, other than a Facility in the Balancing Portfolio, was directed to restrict its output under a Dispatch Instruction as provided in a schedule under clause 7.13.1(c); or
- (b) the Facility, if in the Balancing Portfolio, was instructed by System Management to deviate from its Dispatch Plan or change its commitment or output as provided in a schedule under clause 7.13.1C(d); or
- (c) was affected by a Consequential Outage as notified by System Management to AEMO under clause 7.13.1A-; or
- (d) the Facility was directed to restrict its output under an Operating Instruction, under clause 5.7.4 as provided in a schedule under clause 7.13.1(cC).

Step 6A: For each Candidate Facility and Trading Interval identified in step 3(d) use:

- (a) the schedule of Operating Instructions determined by System Management under clause 7.13.1(cC);
 - (b) the quantity determined for the Facility and Trading Interval in step 2; and
 - (c) the information recorded by System Management under clause 7.13.1C(a),
- to estimate the maximum quantity of energy (in MWh) that would have been generated by the Facility had the Operating Instruction issued in accordance with clause 5.7.4 not been issued in the Trading Interval.

Consequential amendments:

- 7.7.5 A. System Management must develop a Power System Operation Procedure specifying:
 - (a) information that a Market Participant must provide to System Management, for each of the Market Participant's Non-Scheduled Generators, and for each Trading Interval, for the purposes of:
 - i. the estimate referred to in clause 7.7.5A(b);
 - ii. the revised estimate referred to in clause 7.7.5A(c); ~~or~~
 - iii. step 6 of Appendix 9; or
 - iv. step 6A of Appendix 9;

_____ ...

4. Describe how the proposed rule change would allow the Market Rules to better address the Wholesale Market Objectives:

Wholesale Market Objective (a)

The proposed rule change would allow the Market Rules to better address the Wholesale Market Objective in 1.2.1 (a) as it would improve the economic efficiency of the WEM.

If unaddressed, the manifest error in clause 3.21.2A would cause AEMO to under-allocate Capacity Credits to intermittent Constrained Access Facilities impacted by network outages. As a result, the Reserve Capacity Price would not reflect supply and be higher than it should be, incentivising excess investment in reserve capacity.

Implementing the proposed rule change would support price efficiency by preventing network outages from decreasing intermittent Constrained Access Facilities' Capacity Credits.

Wholesale Market Objective (b)

The proposed rule change would allow the Market Rules to better address the Wholesale Market Objective in 1.2.1 (b) as it would lower barriers to entry, supporting competition.

The manifest error in clause 3.21.2A presents a barrier to entry to Constrained Access Facilities as it requires them to accept a higher level of financial exposure to network outages compared to all other facilities. Addressing the manifest error would remove this additional financial exposure and the barrier to entry it presents.

5. Provide any identifiable costs and benefits of the change:

Alinta Energy does not anticipate that the proposed change would create additional costs considering AEMO already provides estimates for a number of other circumstances.

The proposed change would benefit customers by preventing an inefficient increase in capacity costs. If the manifest error is not corrected, the under-valuation of intermittent Constrained Access Facilities will decrease the quantity of Capacity Credits that would have otherwise been assigned and increase the Reserve Capacity Prices passed through to customers.
