



INDEPENDENT
MARKET
OPERATOR

Rule Change Notice

Correction of estimated output of Intermittent Generation for purposes of Appendix 9 (RC_2013_17)

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

Submitter: (Fiona Edmonds, Alinta Energy)

Date Submitted: (22 November 2013)

The Proposal

The level of Certified Reserve Capacity assigned to Intermittent Generation is currently determined in accordance with the Relevant Level Methodology specified in Appendix 9 of the Wholesale Electricity Market Rules (Market Rules). The methodology looks at the output of a candidate Facility in peak Load for Scheduled Generation Trading Intervals, selected from previous years.

Where an Intermittent Generator receives downward a Dispatch Instruction from System Management, the amount of electricity sent out by the Facility will be lower than would have been the case in the absence of the Dispatch Instruction. When such a Dispatch Instruction is received during a peak Load for Scheduled Generation Trading Interval, to ensure that Facility is not inappropriately penalised in the determination of its Relevant Level, an estimate of the output that could have otherwise been achieved by the generator is provided to the IMO by System Management, and is used by the IMO in setting the Facility's Relevant Level for certification.

Neither the Market Rules nor the Power System Operation Procedure: Dispatch currently contemplate the possibility that these estimates may require updating to take into account more up-to-date information or to correct for estimation errors. However, as the intention of certification is to reflect the true ability of an Intermittent Generator to produce during the peak periods, it is appropriate that a revised estimated value of the potential output of a facility (where a Dispatch Instruction was issued) should be able to be taken into account by the IMO – the IMO should not be forced by the Market Rules to use knowingly incorrect information when certifying Intermittent Generators.

It is therefore proposed that amendments to the Market Rules should be made in order to enable revisions to estimates where a Dispatch Instruction was issued, and to allow the IMO to take these revised values into account in the Relevant Level Methodology.

Appendix 1 contains the Rule Change Proposal and gives complete information about:

- the proposed amendments to the Market Rules;



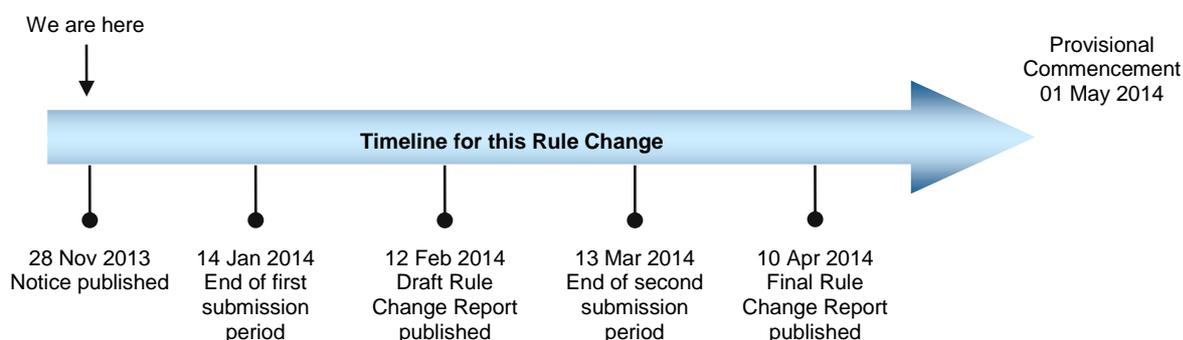
- relevant references to clauses of the Market Rules and any proposed specific amendments to those clauses; and
- the submitter's description of how the proposed amendments would allow the Market Rules to better address the Wholesale Market Objectives.

Decision to Progress the Rule Change

The IMO has decided to progress the Rule Change Proposal on the basis that Rule Participants should be given an opportunity to provide submissions as part of the Standard Rule Change Process.

Timeline

The projected timelines for processing this proposal are:



Call for Submissions

The IMO invites interested stakeholders to make submissions on this Rule Change Proposal. The submission period is 30 Business Days from the Rule Change Notice publication date. Submissions must be delivered to the IMO by **5.00pm on Tuesday, 14 January 2014**.

The IMO prefers to receive submissions by email (using the submission form available on the Market Web Site: <http://www.imowa.com.au/rule-changes>) to: market.development@imowa.com.au

Submissions may also be sent to the IMO by fax or post, addressed to:

Independent Market Operator

Attn: Group Manager, Development and Capacity
 PO Box 7096
 Cloisters Square, PERTH, WA 6850
 Fax: (08) 9254 4399



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Wholesale Electricity Market Rule Change Proposal

Rule Change Proposal ID: RC_2013_17
Date received: 22 November 2013

Change requested by:

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Organisation:	Alinta Energy
Address:	Level 13, 1 William Street, Perth, WA 6000 Australia
Date submitted:	22 November 2013
Urgency:	Medium
Change Proposal title:	Correction to estimated output of Intermittent Generation for purposes of Appendix 9
Market Rule(s) affected:	Appendix 9 and new clauses 7.7.5(E), 7.7.5(F), 7.7.5(G) and 7.7.5(H)

Introduction

Market Rule 2.5.1 of the Wholesale Electricity Market Rules provides that any person (including the IMO) may make a Rule Change Proposal by completing a Rule Change Proposal Form that must be submitted to the Independent Market Operator.

This Change Proposal can be posted, faxed or emailed to:

Independent Market Operator

Attn: Group Manager, Development and Capacity
PO Box 7096
Cloisters Square, Perth, WA 6850
Fax: (08) 9254 4339
Email: market.development@imowa.com.au

The Independent Market Operator 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 electricity 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 Market Rule change:

Background

Intermittent Generation is currently certified in accordance with the Relevant Level Methodology that is specified in Appendix 9 of Wholesale Electricity Market Rules (Market Rules). The methodology looks at the output of candidate facilities in peak Trading Intervals selected from years prior to the certification period. In particular the methodology requires the IMO to:

- Identify the top 12 Load for Scheduled Generation (LSG)¹ Trading Intervals on separate days in each of the previous five years;
- Calculate the average output of each Intermittent Generator in these 60 Trading Intervals and the variance of the output;
- Set the Relevant Level for the Facility on the basis of its average output less an adjustment factor “G” times the variance of the Facility’s output, where “G” is calculated by “K” +”U”/average output.

Note that the parameter “K” is intended to reflect the variability of output of the Intermittent Generator during peak Trading Intervals. The parameter “U” is intended to reflect the uncertainty of the output of the Intermittent Generator during peak Trading Intervals.

In determining the LSG periods adjustments to the metered output of a Facility are made where it was dispatched downwards or suffered a Consequential Outage. For example, where an Intermittent Generator receives downward Dispatch Instructions from System Management the amount of electricity sent out by the Facility, as measured by meter data

¹ LSG is calculated by removing the aggregate output from Intermittent Generation from Operational Load.

submissions received by the IMO, will be lower than would have been the case in the absence of the Dispatch Instruction². To ensure that Facility is not inappropriately penalized at certification in this circumstance an estimate of the output that could have otherwise been achieved by the generator is used in setting the Facility's level of certification. This ensures that the Facility is certified to a level that reflects its true ability to produce electricity during the peak periods (consistent with the intention of the IMO's certification processes).

Estimates of the output of an Intermittent Generator where it is dispatched downwards are determined by System Management in accordance with the Power System Operation Procedure (PSOP): Dispatch and provided to the IMO for the purposes of both settlements and certification under clause 7.13.1(eF). In particular, under step 8.1.2 of the PSOP: Dispatch System Management may utilize any of the following means to estimate the output of the Non-Scheduled Generator (which includes Intermittent Generation):

- A predictive algorithm provided by the Market Participant, providing an assessment of the generators output from relevant independent variables over the Trading Interval;
- A predictive algorithm developed by System Management, providing an assessment of the generators output from relevant independent variables over the Trading Interval;
- An assessment by System Management based on output of the generator in a past Trading Interval under similar conditions; or
- An estimate using participant data provided to System Management that uses output data from particular generating facilities that continue to operate unconstrained after the Dispatch Instruction, with the output data subsequently scaled up to represent the output from all generating facilities that otherwise would have operated.

System Management is required to consult with the relevant Market Participant from time to time regarding which option has been selected by System Management.

Alinta notes that the introduction of the competitive Balancing market (RC_2011_10) changed the relevant rules relating to estimations of an Intermittent Generators output. Previously System Management provided an estimated reduction in output during the relevant interval where the Dispatch Instruction was issued through to the IMO. This information was used by the IMO along with metered output to calculate an accurate estimate of the amount of energy that could otherwise have been produced in the relevant period.

Under RC_2011_10 the rules were changed to require System Management to determine an estimate of the amount of energy that could otherwise be produced. The intention of the estimate was predominantly to feed into the determination of facilities' Theoretical Energy Schedules (TES) and therefore timeliness of its provision became the focus.

Issue

Neither the Market Rules nor the current PSOP: Dispatch currently contemplate the possibility that the estimates provided to the IMO under clause 7.13.1(eF) may require updating to take into account more up-to-date information or to correct for estimation errors. Where the estimates are determined using an algorithm there is a significant reliance on the accuracy of any independent variables (input data). Where updated input data is available a significantly different estimate may be produced by System Management. Similarly it's unlikely that any methodology applied to determine an estimate of the output of a generator

² Note that this adjustment to the Market Rules was originally implemented as a result of the Rule Change Proposal: Adjustment to Relevant Level for Intermittent Generation Capacity (RC_2010_24). Subsequent amendments to the overall methodology applied in determining the Relevant Level of an Intermittent Generator, as amended by the Rule Change Proposal: Calculation of the Capacity Value of Intermittent Generation – Methodology 1(IMO) (RC_2010_25) maintained the original amendments implemented by RC_2010_24.

will always be 100% accurate.

Currently the algorithm generally used by System Management to estimate the output of Intermittent Generators incorporates variables such as wind speed and capacity factor to determine the maximum level of sent out capacity that the Facility could have otherwise produced in the relevant Trading Interval. As the estimate is required to be provided through to the IMO by noon on the first Business Day following the day on which the Trading Day ends (refer to clause 7.13.1) it is likely that more accurate data, such as meter data, will become available afterwards.

For the purposes of the IMO's 2013 round of certification, the estimates for Alinta's windfarm produced by System Management reflected a significantly lower level of output than was actually achieved by the Facility (as reflected by both SCADA and meter data for the relevant Trading Interval(s)). This issue was originally identified by the IMO with a subsequent revision to the estimate being undertaken by System Management. System Management's revision indicated a significantly higher estimate for the windfarm would otherwise have been provided to the IMO. *For clarity Alinta notes that the issue experienced during the 2013 round of certification was not with the input data used in the calculation but rather was more broadly with the accuracy of the methodology applied in calculating the estimates for its windfarm.*

As the original estimate was calculated in accordance with the PSOP: Dispatch the IMO was however unable under the current Market Rules to take into account the revised more accurate value for the purposes of certification. Requiring the IMO to continue to use the original estimate (which the IMO, System Management and Alinta all agreed was incorrect) is an absurd outcome and is inconsistent with the design of the Relevant Level Methodology and the intention of the broader certification processes.

To the extent that the Certified Reserve Capacity assigned to an Intermittent Generator Facility is lower than its actual capacity contribution the Market Participant is disadvantaged financially and its actual level of capacity is not taken into account by the market. Likewise if an estimate is significantly greater than the actual ability of the Facility to produce in a Trading Interval (as compared to its actual metered output) it would be inappropriate for the facility to be certified at the higher level and would result in a distortion between the actual level of capacity available for dispatch by System Management and that which is certified.

Proposal

Given the intention of certification is to reflect the true ability of an Intermittent Generator to produce during the peak LSG periods it is appropriate that a revised estimated value of the potential output of a facility (where a Dispatch Instruction was issued) should be able to be taken into account by the IMO. ***The IMO should not be forced by the Market Rules to use knowingly incorrect information when certifying Intermittent Generators.***

Alinta therefore proposes the following process be adopted in the Market Rules to formally enable revisions to estimates where a Dispatch Instruction was issued and to allow the IMO to take these revised values into account in the Relevant Level Methodology:

- Market Participants or the IMO may request System Management to revise an estimate of its output previously calculated in accordance with clause 7.7.5B and provided to the IMO under clause 7.13.1(eF) (New clause 7.7.5E).

Alinta notes that it is important that the IMO is able to request a revision to ensure that circumstances where the estimate might be higher than the actual capability of the facility during the relevant interval are also adjusted for given the limited incentives for Market Participants to request a reduction in their estimates in these circumstances;

- Following a request from a Market Participant or the IMO, or where System

Management determines it would be appropriate to revise an estimate of a value previously provided to the IMO, System Management must as soon as practicable revise the applicable value, incorporating any relevant updated information including meter data (New clause 7.7.5F);

- Where System Management's revision results in an alternative estimate it must provide this value through to the IMO for potential use in the Relevant Level Methodology as soon as practicable (New clause 7.7.5G). For the purposes of certification it is only relevant for System Management to provide through a revised estimate where it differs from the original estimate. This will avoid creating additional unnecessary process requirements for System Management; and
- For the purposes of step 4 and step 9(b) of Appendix 9 the IMO may use any revised values provided through to it by System Management under new clause 7.7.5G. It is appropriate that the IMO has discretion to incorporate revised estimates into the Relevant Level Methodology where there would be a material impact on the outcomes of certification. This avoids creating unnecessary administrative burden where there are superfluous changes in data and will indirectly reduce the circumstances where Market Participants request System Management to undertake a re-estimation.

Alinta notes that the predictive algorithm employed by System Management should generally produce accurate results. If this is not the case then it's likely to be in the best interests of the relevant Market Participant to work directly with System Management to develop a more accurate estimation methodology. As a result it is unnecessary to implement a general requirement for System Management to provide updated estimates once actual meter reads become available for the purposes of certification. Rather it is more appropriate that, as proposed, the IMO is able to take into account updated estimates where they are likely to have a material impact on certification.

For the avoidance of doubt new clause 7.7.5H is also proposed to clarify that revised estimates would not apply for the purposes of the Minimum Theoretical Energy Schedule calculation under clause 6.15.2(b) or settlements under Chapter 9.

Alinta's proposed revisions represent a solution that can be implemented in time for the 2014 certification processes, while requiring minimal change to the IMO and System Management's processes.

It is understood that broader changes to address the issue of not enabling TES values to be disputed will be shortly progressed by the IMO. Alinta does not therefore propose any amendments to address these wider issues as part of this Rule Change Proposal so as to avoid any potential delays to rectifying the identified issues relating to the use of estimates in Appendix 9 prior to the 2014 certification processes.

Consequential Outages and requests for Verve Energy to deviate from its Dispatch Plan

Where a Facility experiences a Consequential Outage the estimate of its potential level of output is determined by the IMO (not System Management) in accordance with step 6 of Appendix 9. The information taken into account by the IMO in determining its estimate includes information provided by System Management under clause 7.13.1C. Likewise where Verve Energy is requested to deviate from its Dispatch Plan or change its commitment or output System Management will provide an estimate of its potential level of output which is then taken into account under step 5 of Appendix 9.

In both of these cases the relevant information is provided by System Management on request from the IMO under clause 7.13.1C. It is understood that such a request is likely to only be issued close to the time of certification and therefore is likely to contain the most up-to-date information available. As such Alinta doesn't consider it is necessary to amend the Market Rules to enable Market Participants to request the IMO to reconsider its estimation as

part of this Rule Change Proposal. However, should this assumption be incorrect then further amendments to the rules may be required. Likewise it may be necessary to consider whether broader concerns with the accuracy of the estimation methodology would be applicable to Verve Energy.

Updates to Market Procedures

Alinta suggests that updates to the Market Procedure for the Certification of Reserve Capacity and to the PSOP: Dispatch may be required to provide further details of the processes for seeking System Management to undertake a re-estimation and the use of revised estimates in the IMO's certification processes. For example System Management is likely to require meter data for the purposes of a re-estimation. This information may need to be provided by the IMO.

In this circumstance Alinta does not consider that these procedural changes need to be in place prior to the commencement of any resultant Amending Rules.

2. Explain the reason for the degree of urgency:

Alinta considers that the IMO should be able to use an estimate of the output of an Intermittent Generator that reflects its true ability to produce energy during the relevant interval. The IMO should not be precluded from using updated estimates from System Management which would materially impact on certification. To force the IMO to use an original estimate where it is known to be materially wrong is an absurd outcome which is inconsistent with the design of the Relevant Level Methodology and the intention of the broader certification processes. Ultimately not utilizing more accurate information means that an accurate representation of the performance of the Non-Scheduled Generator during peak LSG intervals cannot be achieved. This issue needs to be rectified prior to the 2014 certification processes beginning.

Alinta submits the proposed changes into the standard rule change process.

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

7.7.5E. A request for System Management to revise an estimate previously provided under clause 7.13.1(eF) for a Trading Interval may be made by either:

(a) a Market Participant, with respect to any or all of its Non-Scheduled Generators; or

(b) the IMO.

7.7.5F. Following a request under clause 7.7.5E or when System Management has information available to it and application of that information may mean that an estimate previously provided under clause 7.13.1(eF) for a Trading Interval will no longer be accurate, System Management must, as soon as practicable and using the most accurate information available to it, revise the estimate of the maximum amount of sent out energy, in MWh, which the Non-Scheduled Generator would have supplied in the Trading Interval had a Dispatch Instruction not been issued.

7.7.5G. Where the revision by System Management under clause 7.7.5F determines a different value to that provided previously to the IMO under clause 7.13.1(eF), System Management must as soon as practicable provide the revised estimate to the IMO for the purposes of the Relevant Level Methodology.

7.7.5H. For the avoidance of doubt any revised estimates provided under clause 7.7.5G must not be used for the purposes of clause 6.15.2(b)(i) or settlement under Chapter 9.

Appendix 9: Relevant Level Determination

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Step 4: For each Candidate Facility and Trading Interval identified in step 3(a) use either:

(a) the estimate provided by System Management to the IMO under clause 7.13.1(eF); or

(b) if a revised estimate has been provided by System Management under clause 7.7.5G, the last such revised estimate where considered appropriate by the IMO,

as the quantity of energy (in MWh) that would have been sent out by the Facility during the Trading Interval had a Dispatch Instruction not been issued for that Trading Interval.

...

Step 9: Identify, for each 12 month period identified in step 1(c), the following:

(a) the Existing Facility Load for Scheduled Generation previously determined under this Appendix 9 for each Trading Interval in the 12 month period;

(b) the sent out generation (in MWh) for each Candidate Facility for each Trading Interval in the 12 month period that was either:

i. used previously in the determination of the Existing Facility Load for Scheduled Generation for that Trading Interval; or

ii. revised since the IMO's last determination of the Facility's Relevant Level, where the IMO considers it is appropriate to use the last such revised estimate provided by System Management under clause 7.7.5G; and

(c) the 12 Trading Intervals occurring on separate Trading Days that were previously determined to have the highest Existing Facility Load for Scheduled Generation in the 12 month period.

...

4. Describe how the proposed Market Rule change would allow the Market

Rules to better address the Wholesale Market Objectives:

Alinta considers that the proposed procedural amendments will:

- Improve reliability in the SWIS by more accurately valuing the capacity of Intermittent Generators than under the existing methodology. This is achieved by ensuring that the output taken into account in the Relevant Level Methodology accurately reflects the capability of the generator to produce energy during the peak system demand. System Management will therefore have greater certainty that the capacity available in the market can meet peak demand requirements (Market Objective (a));
- ensure that the best estimate of the output of an Intermittent Generator where it has reduced its output in accordance with a Dispatch Instruction from System Management is used when determining the Relevant Level. This will ensure that an Intermittent Generator is assigned Certified Reserve Capacity based on the best estimate of its output and availability during the five year period accounted for by the Relevant Level Methodology. As the quantity of Certified Reserve Capacity assigned to a Facility that is a Scheduled Generator is not affected by Dispatch Instructions from System Management, the proposed amendments will ensure that Intermittent Generators are not discriminated against (Market Objective (c)).

Alinta considers the proposed amendments are consistent with Market Objectives (b), (d) and (e).

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

Benefits:

- Remove a current distortion in the Relevant Level Methodology.
- Ensure the level of Certified Reserve Capacity assigned to Intermittent Generators reflects their true ability to provide energy during peak demand periods.
- Ensure that Intermittent Generators are fairly compensated by the Reserve Capacity Mechanism.

Costs:

- There may be a slight increase in administrative costs incurred by Market Participants, System Management and the IMO during the certification process in respect of facilities that are Intermittent Generators.
- Alinta notes that the IMO determined to implement a spread sheet solution for calculating the Relevant Level Methodology (refer to the final report for RC_2010_25) and therefore perceives that there should not be any IT costs associated with implementation of its proposed changes.
- Alinta does not consider there will be a substantial number of requests for revised estimates to be used for certification.