
Wholesale Electricity Market Rule Change Proposal

Change Proposal No: RC_2010_22
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Change requested by

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Urgency:	Standard Rule Change Process
Change Proposal title:	Partial Commissioning of Intermittent Generators
Market Rule affected:	4.26.1

Introduction

Clause 2.5.1 of the Wholesale Electricity Market Rules (Market Rules) provides that any person (including the Independent Market Operator (IMO)) may make a Rule Change Proposal by submitting a completed Rule Change Proposal form to the IMO.

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

Independent Market Operator
Attn: General Manager Development
PO Box 7096
Cloisters Square, Perth, WA 6850

Fax: (08) 9254 4339
Email: market.development@imowa.com.au

The IMO will assess the proposal and, within five 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 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 Market Rule Change

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

Background

The IMO has recently undertaken a review of the provisions in the Market Rules around the administration of Reserve Capacity Security. One of the issues identified as part of this review was the treatment of Intermittent Generation Facilities and the uncertainty created around when an Intermittent Generation Facilities would be entitled to receive its security back due to the interrelationship of clauses 4.13.11A and 4.13.10(c).

Clause 4.13.11A (via a reference to clause 4.13.11) stipulates that the Reserve Capacity Security provided will be forfeited for Facilities that cannot, at least once during the Capacity Year, operate at least at 90 percent of the Reserve Capacity Obligation Quantity (RCOQ) level, in a Trading Interval when the RCOQ for that Facility is greater than zero. Intermittent Facilities have an RCOQ level of zero at all times and it is therefore impossible for them to meet the requirements of clause 4.13.11A. At the same time clause 4.13.10(c) stipulates that a Facility captured by that clause (which applies to Intermittent Generation Facilities) should have its security returned by the end of the Reserve Capacity Cycle irrespective of performance. This is in contrast to the requirements under clause 4.13.11A.

At the May 2010 MAC meeting, a paper was presented outlining a number of issues identified with the administration of Reserve Capacity Security and in particular the return of security to Intermittent Generation Facilities. During the meeting the MAC agreed that all Facilities (both conventional and non-conventional) should be entitled to receive their Reserve Capacity Security back when they can prove to the IMO that they can perform to the level at which their certification is based.

To implement the agreed changes, the IMO prepared the Rule Change Proposal: Required Level and Reserve Capacity Security (RC_2010_12). One component of the proposal is the implementation of a Required Level of output a Facility is required to perform at for the purposes of the return of Reserve Capacity Security, Reserve Capacity Testing and Reserve Capacity refunds. The Required Level for each Facility type will be calculated by the IMO as follows:

- for Facilities assigned Certified Reserve Capacity (CRC) under clause 4.11.1(a), using the Metered Schedule and Temperature Dependence Curves submitted to the IMO under clause 4.10.1(e)i. and converted to a sent out basis at 41°C;
- for Facilities assigned CRC under clause 4.11.2(b), using either the:
 - a value which equals the 5 percent probability of exceedance (POE) of the 3-year expected generation output for the Facility, expressed in MW, provided to the IMO under clause 4.10.3; or
 - in the case where the value which equals the 5 percent POE is not considered to be appropriate by the IMO, an alternative value, expressed in MW, to that identified in the report provided under clause 4.10.3; and
- Curtailable Loads and Demand Side Programmes, using the Facility's Relevant Demand minus Capacity Credits assigned to that Facility.

Alternatively a Market Participant who does not consider that its Facility, that was assigned CRC under clause 4.11.2(b), will be able to meet the 90 percent requirement (of the Required Level) prior to the end of the relevant Capacity Year, may provide to the IMO a report prepared by one of the IMO's accredited experts that specifies the Facility has been built to the specifications its certification was based on. In this case the security will also be returned to a Market Participant following the end of the Capacity Year. Note that the report from the accredited expert can be provided at any time during the Capacity Year, and to the extent that the report indicates that the Facility has been built to its original specifications full capacity refunds will no longer be required from that time onwards.

Note that in determining the Required Level to be met for Facility's assigned CRC under clause 4.11.2(b) (mainly Intermittent Generators), the views of the IMO's panel of independent experts were sought. Further details of the Required Level criterion and the advice received from the independent experts are available on the following webpage: http://imowa.com.au/RC_2010_12

Issue

A new Intermittent Generator is currently required to make Capacity Cost Refunds until it is deemed to be commissioned by the IMO. Any amendments to the Market Rules resulting from RC_2010_12 will specify that an Intermittent Generator will be commissioned when it has met 100 percent of its Required Level for two Trading Intervals and is considered by the IMO to be in Commercial Operation.¹ With the application of the IMO's proposed new Required Level criterion it will be possible that an Intermittent Generator may never be deemed commissioned. For example a 100MW wind farm (comprising of 50 2MW turbines)

¹ Note that the IMO proposes in RC_2010_12 to define the term "Commercial Operation" in the Market Rules and the considerations that will taken into account in making its decision as to whether a Facility meets the criteria to be deemed in Commercial Operation. Further details will be specified in the Market Procedure for Reserve Capacity Security (see Appendix 1 of RC_2010_12 for further details).

may have commissioned 20 turbines (40MW) but would not be deemed by the IMO to be completely commissioned and therefore required to make full refunds.

Proposal

The IMO proposes to introduce the concept of partially commissioned Intermittent Generators for the purposes of Capacity Cost Refunds in the Market Rules. Clause 4.26.1 will be amended to allow for a new Intermittent Generator who has not operated at 100 percent of its Required Level or provided the IMO with a report prepared by one of the IMO's accredited experts but which the IMO considers to be Commercial Operation to only make partial refunds. The level of partial refund to apply will be determined by the IMO as either:

- the second highest percentage (of its Required Level) that the Intermittent Generator has performed to²; or
- the equivalent percentage of the Facility described in the report provided under clause 4.10.3 that has been built, where a report has been provided from an independent expert accredited by the IMO³.

The IMO considers that the introduction of the concept of partial commissioning for Intermittent Generators will better reflect the value of the capacity delivered by these Facilities to the Wholesale Electricity Market. Intermittent Generators are paid for a service and should only be required to make refunds to the extent that they do not deliver that service. The IMO considers that for a Facility which it deems to be in Commercial Operation, the Facility's availability is either indicated by the highest level of output achieved for two Trading Intervals (second highest level of output) during the Trading Month or alternatively as the level detailed in the accredited expert's report.

Implementing a partial refund scheme will provide sufficient incentive for Market Participants developing Intermittent Generators to develop projects in accordance with applications made to the IMO. This is while recognising the value of any capacity made available to the market. While there could be an alternative option of implementing a completely dynamic partial refund scheme, the IMO does not consider that this would reflect the Intermittent Generators true availability, given the nature of these types of facilities (e.g. variable wind conditions), and would create additional complexity to both the Market Rules and IMO Settlement System.

The proposed solution will ensure greater consistency between the treatment of new Intermittent Generators and new Scheduled Generators that are no longer undertaking Commissioning Tests. Currently once a Scheduled Generator has completed its Commissioning Tests it is required to make refunds only to the extent that it fails to make all of its capacity available to the market (Clause 4.26.1A)⁴. Requiring new Intermittent

² Note that this requirement is consistent with the number of Trading Intervals that a Facility must achieve its Required Level to be entitled to receive its Reserve Capacity Security back, as proposed under RC_2010_12.

³ Note that the ability to provide a report from an accredited expert to apply for the purposes of the return of security or partial refunds will be introduced under RC_2010_12.

⁴ Note that after 1 October of Year 3 of the Capacity Cycle, Market Generators who have yet to commence operation or that are undertaking late commissioning are required to make full Capacity Cost Refunds. For late commissioning plants full Capacity Cost Refunds will apply for a period of up to four continuous months. Market Generators undertaking late commissioning can make commercial

Generators to only make refunds to the extent that they were unavailable (as indicated by the Facility's second highest level of output during the Trading Month) will promote a more consistent outcome for the different technology types (Wholesale Market Objective (c)).

The IMO notes that the introduction of the concept of partially commissioned Intermittent Generators for the purposes of Capacity Cost Refunds will be conditional on the outcomes of RC_2010_12 and that any Amending Rules resulting from either Rule Change Proposal would be commenced at the same time.

Worked Example

Consider a Market Participant that has not installed all the turbines that its wind farm (Facility 1) was originally certified for, but following an application the IMO considers Facility 1 to be in Commercial Operation. If during a Trading Month the turbines which have been installed for Facility 1 operate at 77 percent of the Facility's Required Level (second highest level of output achieved) the Market Participant will only be required to make refunds of 23 percent (the shortfall in output) of the Facility's Capacity Credits for the Trading Month from the date where the IMO considers that Facility to be in Commercial Operation.

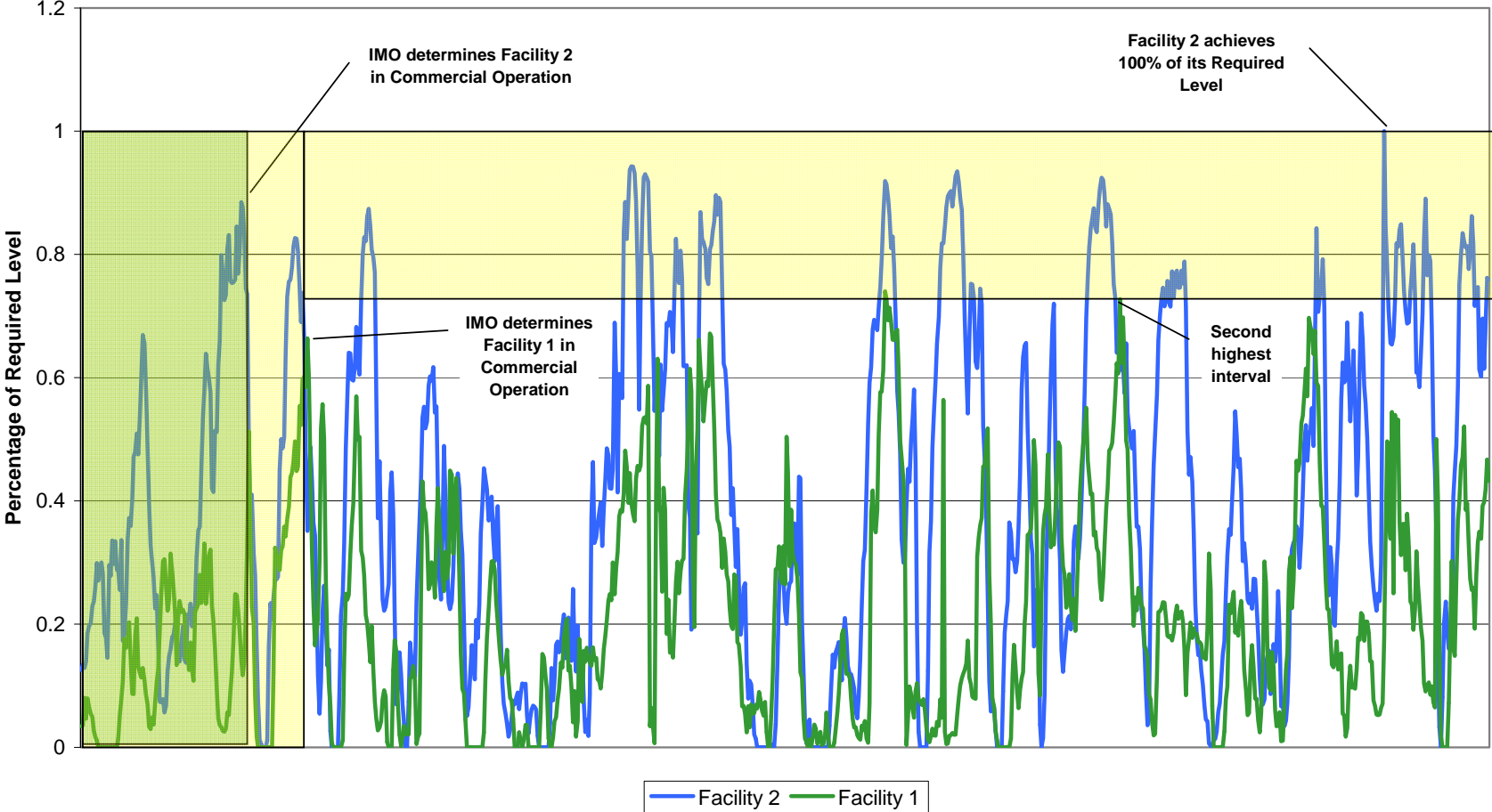
This example is illustrated in the diagram presented below. The yellow section illustrates the amount of refunds that would be required to be made by Facility 1 during the Trading Month (including full refunds prior to the Facility being deemed to be in Commercial Operation and partial refunds subsequently). Note that under the Market Rules (as proposed to be amended under RC_2010_12), Facility 1 would be required to make refunds of 100 percent of its Capacity Credits until such time as it reached 100 percent of its Required Level.

An example of a Facility which the IMO determines is in Commercial Operation and which during the same month reaches 100 percent of its Required Level (Facility 2) is also presented in the diagram below. In this case full refunds would be required to be made for the entire period up until the IMO determined the Facility is in Commercial Operation (indicated by the green section). For the remainder of the Trading Month, once the Facility has been determined to be in Commercial Operation, no refunds will apply. This will also be the case for subsequent Trading Months.

Note that Market Participants wishing for a Facility to be considered by the IMO to be in Commercial Operation will be required to make an application to the IMO for this purpose. Details of the process for applications will be specified in the Reserve Capacity Market Procedure (consistent with the proposed definition of Commercial Operation and criterion for the IMO's determination to be implemented in any Amending Rules resulting from RC_2010_12). The IMO will develop the specific proposed amendments to the Market Procedure during the first submission period for RC_2010_12. This will be in conjunction with the IMO Procedure Change and Development Working Group. This will ensure that interested parties submitting on the Rule Change Proposal will be provided with transparency of the proposed changes to the Market Procedure.

decisions around whether to officially finish commissioning once they have reached a certain level of reliability.

Wind Farm Output during 1 Trading Month



2. Explain the reason for the degree of urgency:

The IMO proposes that this Rule Change Proposal be progressed through 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)

The proposed amendment to clause 4.26.1 will allow for a partially commissioned Intermittent Facility to only pay partial Capacity Cost Refunds where the IMO considers it to be in Commercial Operation. The IMO proposes to insert the same scaling factor to Capacity Credits assigned at the beginning of the Capacity Year as used for the purposes of the return of Reserve Capacity Security and in determining when a Facility has operated at 100% of its Required Level.

The amendments to clause 4.26.1 proposed under RC_2010_12 have been presented in the drafting to ensure that the further amendments to this clause to allow for partially commissioned Intermittent Facilities to pay partial refunds can be reviewed in context.

Note that clause 4.13.10C is a new clause proposed under RC_2010_12. The proposed new clause 4.13.10C will allow a Market Participant to provide the IMO with a report from an independent expert outlining that the Facility has been installed as was originally proposed to be built during certification (as used in the report provided under clause 4.10.3). Alternatively the report can specify that a equivalent percentage of the Facility has been installed. Note that a Market Participant may provide multiply updates of the report as necessary

4.26.1. If a Market Participant holding Capacity Credits associated with a generation system fails to comply with its Reserve Capacity Obligations applicable to any given Trading Interval then the Market Participant must pay a refund to the IMO calculated in accordance with the following provisions.

REFUND TABLE

Dates	1 April to 1 October	1 October to 1 December	1 December to 1 February	1 February to 1 April
Business Days Off-Peak Trading Interval Rate (\$ per MW shortfall per Trading Interval)	0.25 x Y	0.25 x Y	0.5 x Y	0.75 x Y
Business Days Peak Trading Interval Rate (\$ per MW shortfall per Trading Interval)	1.5 x Y	1.5 x Y	4 x Y	6 x Y
Non-Business Days Off-Peak Trading Interval Rate (\$ per MW shortfall per	0.25 x Y	0.25 x Y	0.5 x Y	0.75 x Y

Trading Interval)				
Non-Business Days Peak Trading Interval Rate (\$ per MW shortfall per Trading Interval)	0.75 x Y	0.75 x Y	1.5 x Y	2 x Y
Maximum Participant Refund	The total value of the Capacity Credit payments paid or to be paid under these Market Rules to the relevant Market Participant for the 12 Trading Months commencing at the start of the Trading Day of the previous 1 October assuming the IMO acquires all of the Capacity Credits held by the Market Participant and the cost of each Capacity Credit so acquired is determined in accordance with clause 4.28.2(b), (c) and (d) (as applicable).			

Where:

For an Intermittent Facility that:

- (a) has operated at 100 percent of its Required Level, scaled to the level of Capacity Credits specified in clause 4.20.1(a), in at least two Trading Intervals; or
- (b) has provided the IMO with a report under clause 4.13.10C, where this report specifies that 100 percent of the Facility certified under clause 4.11.2(b) has been built; and
- (c) is following a request to the IMO by a Market Participant, considered by the IMO to be in Commercial Operation:

Y equals 0.

For an Intermittent Facility that:

- (a) has not operated at 100 percent of its Required Level, scaled to the level of Capacity Credits specified in clause 4.20.1(a), in at least two Trading Intervals; or
- (b) has not provided the IMO with a report under clause 4.13.10C, where this report specifies that 100 percent of the Facility certified under clause 4.11.2(b) has been built; and
- (c) is following a request to the IMO by a Market Participant, considered by the IMO to be in Commercial Operation:

Y is determined by dividing the Monthly Reserve Capacity Price (calculated in accordance with clause 4.29.1) by the number of Trading Intervals during the relevant Trading Month, and multiplying this value by either

- (i) the following formula:

$$\frac{RL - (2 \times Max_2)}{RL}$$

where:

RL is the Required Level, scaled to the level of Capacity Credits specified in clause 4.20.1(a)

Max₂ is the second highest value of the output for the Facility (MWh) achieved during a Trading Interval during the relevant Trading Month, as measured by the Meter Schedule data (sent out) that has been achieved since the date the IMO determined the Facility to be in Commercial Operation, where this value must be set equal to or greater than the Max₂

applied by the IMO for the previous Trading Month; or

(ii) the percentage detailed in the most recent report provided by Market Participant under clause 4.13.10C.

For all other facilities, including Intermittent Facilities that ~~following a request to the IMO by a Market Participant~~ are not considered by the IMO to be in Commercial Operation: Y is determined by dividing the Monthly Reserve Capacity Price (calculated in accordance with clause 4.29.1) by the number of Trading Intervals in the relevant Trading Month.

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

The IMO considers that the proposed amendments are consistent with the Wholesale Market Objectives and better address the Wholesale Market Objective (c). In particular, the introduction of the concept of Intermittent Generators being partially commissioned will better reflect the value of the capacity delivered by Intermittent Generators to the market. The IMO considers that requiring new Intermittent Generators who are considered by the IMO to be in Commercial Operation to only make refunds to the extent that they were unavailable during the Trading Month will promote a fairer outcome (and greater consistency with the treatment of new Scheduled Generators) which is consistent with Market Objective (c).

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

Costs:

- The IMO would require changes to its system to calculate the level of partial refunds required once the IMO considers a Facility to be in Commercial Operation.

Benefits:

- Equal treatment of conventional and non-conventional generation.
- Better reflection of the value of the capacity delivered by Intermittent Generators, who are in Commercial Operation, to the market.