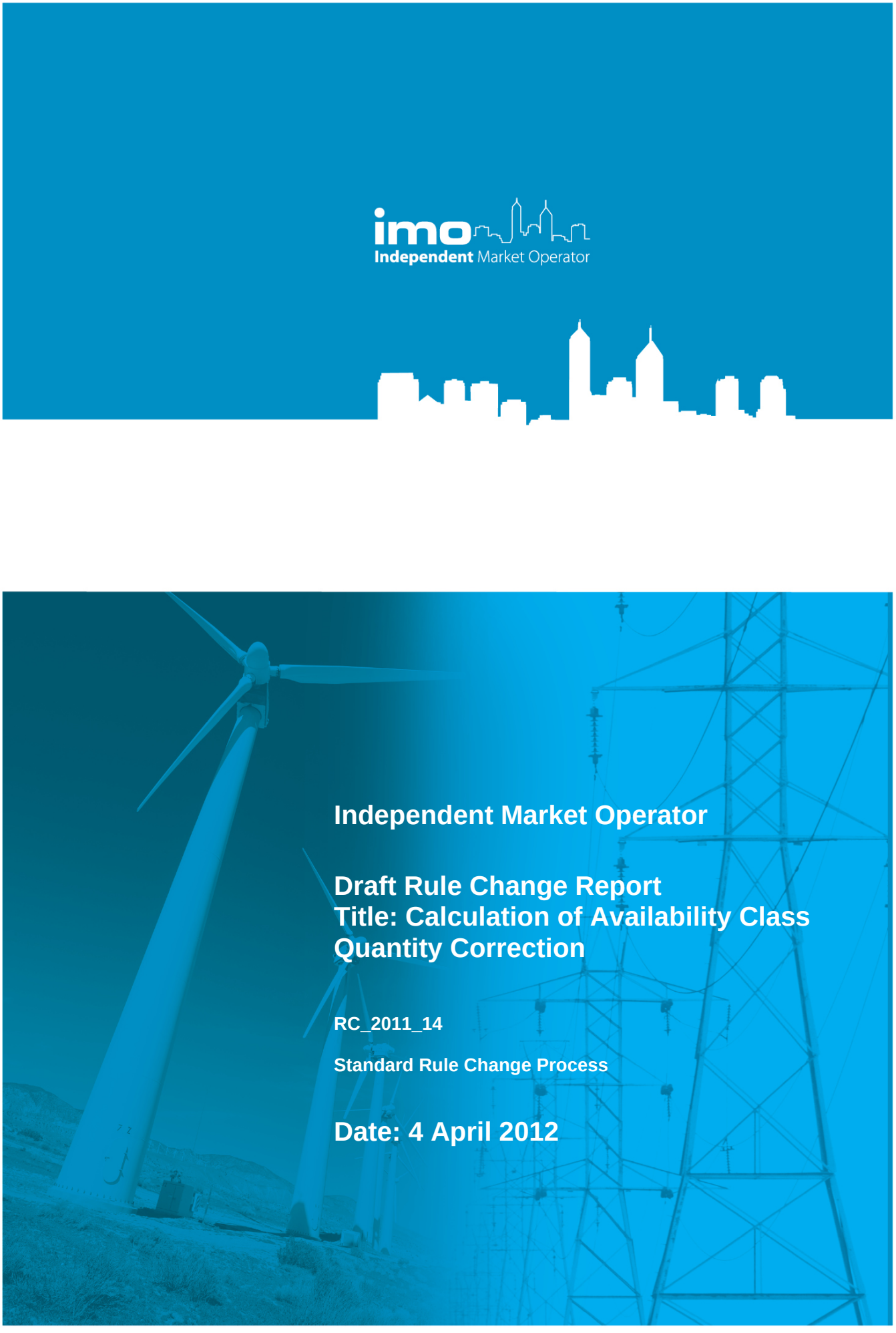

Independent Market Operator

Draft Rule Change Report
Title: Calculation of Availability Class Quantity Correction

RC_2011_14

Standard Rule Change Process

Date: 4 April 2012

CONTENTS

1. RULE CHANGE PROCESS AND TIMETABLE 4

2. CALL FOR SECOND ROUND SUBMISSIONS 4

3. PROPOSED AMENDMENTS 4
3.1 The Rule Change Proposal 4
3.2 The IMO's Initial Assessment of the Proposal 5

4. CONSULTATION 5
4.1 The Market Advisory Committee 5
4.2 Submissions received during the first submission period 6
4.3 Further Consultation with Perth Energy 6
4.4 The IMO's response to submissions received during the first submission period 6
4.5 Interpretation of clause 4.5.12 9
4.6 Public Forums and Workshops 10

5. THE IMO'S ASSESSMENT 11
5.1 Additional Amendments to the Proposed Amending Rules 11
5.2 Wholesale Market Objectives 11
5.3 Practicality and Cost of Implementation 12

6. THE IMO'S PROPOSED DECISION 12
6.1 Reasons for the decision 12

7. PROPOSED AMENDING RULES 12

APPENDIX 1: FURTHER AMENDMENTS TO THE PROPOSED AMENDING RULES 15

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EXECUTIVE SUMMARY

Proposed Amendments

System Management's Rule Change Proposal seeks to address a misalignment between clause 4.5.12(c) and Appendix 3 of the Wholesale Electricity Market Rules (Market Rules). There is an issue in the current Market Rules where the capacity requirement for Availability Class 4 may include capacity required for up to 48 hours per year, although Facilities in Availability Class 4 need only be available for 24 hours per year. A similar issue arises for Availability Classes 3 and 2.

The proposed amendments aim to correct the calculation algorithm in clause 4.5.12(c) to make it consistent with Appendix 3.

Consultation

- A Pre Rule Change Discussion Paper was discussed by the Market Advisory Committee (MAC) at its December 2011 meeting. There was some discussion on the urgency of this issue, given that the impending review of the Reserve Capacity Mechanism (RCM) was likely to include a reassessment of the Availability Classes. One member questioned whether the issue would necessarily lead to an increased risk to system security. A majority of MAC members agreed that the proposal should be progressed as it was important to bring consistency into the Market Rules before the publication of the 2012 Statement of Opportunities.
- System Management formally submitted the Rule Change Proposal on 20 January 2012. The first submission period was from 24 January 2012 to 7 March 2012. Submissions were received from Perth Energy, Landfill Gas & Power and Synergy. Two of the submissions received supported the proposed amendments. Perth Energy did not support the proposal, due mainly to its interpretation of clause 4.5.12 being different to that of System Management and the Independent Market Operator (IMO).

Assessment against Wholesale Market Objectives

The IMO has found that the proposed amendments better Wholesale Market Objective (a) and are consistent with the remaining Market Objectives.

Practicality and Cost of Implementation

No implementation costs have been identified by the IMO, System Management or any other Rule Participant. The IMO has not identified any issues with the practicality of implementing the proposed changes.

The IMO's Decision

The IMO's proposed decision is to accept the Rule Change Proposal (as modified following the first submission period).

Next steps

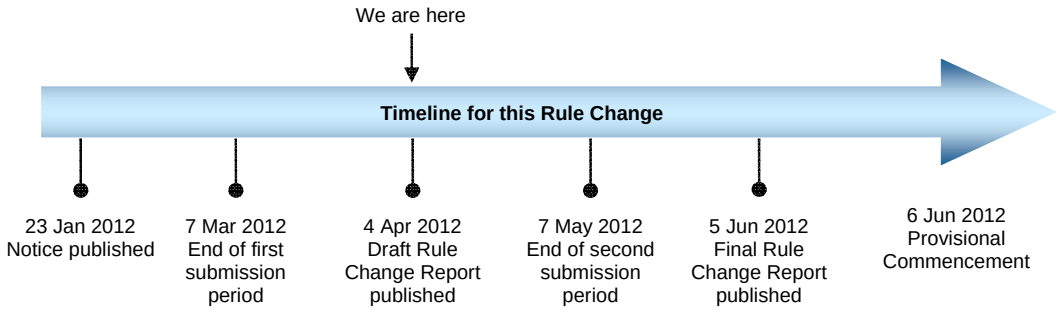
The IMO now invites interested stakeholders to make submissions on this Draft Rule Change Report by **5.00pm on Monday 7 May 2012**.

1. RULE CHANGE PROCESS AND TIMETABLE

On 20 January 2012 System Management submitted a Rule Change Proposal regarding amendments to clause 4.5.12 of the Wholesale Electricity Market Rules (Market Rules).

This proposal is being processed using the Standard Rule Change Process, described in section 2.7 of the Market Rules.

The key dates in processing this Rule Change Proposal are:



Please note the commencement date is provisional and may be subject to change in the Final Rule Change Report.

2. CALL FOR SECOND ROUND SUBMISSIONS

The IMO invites interested stakeholders to make submissions on this Draft Rule Change Report. The submission period is 20 Business Days from the publication date of this report. Submissions must be delivered to the IMO by **5.00pm on Monday 7 May 2012.**

The IMO prefers to receive submissions by email (using the submission form available on the IMO website: 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, Market Development
PO Box 7096
Cloisters Square, PERTH, WA 6850
Fax: (08) 9254 4399

3. PROPOSED AMENDMENTS

3.1 The Rule Change Proposal

System Management's Rule Change proposal seeks to correct a misalignment between the IMO's calculation of the capacity associated with each Availability Class for a Capacity Year and the IMO's procurement of that capacity. Currently under clause 4.5.12(c) of the Market Rules the calculation of the quantity of capacity required in each of Availability Classes 2, 3 and 4 is inconsistent with the hours of availability prescribed for those Availability Classes in Appendix 3. For example, the capacity requirement for Availability Class 4 may include capacity required for up to 48 hours per year, although Facilities in Availability Class 4 need only be available for 24 hours per year. This may lead to an increased risk to system reliability.

For full details of the Rule Change Proposal please refer to the IMO Website: http://www.imowa.com.au/RC_2011_14.

3.2 The IMO's Initial Assessment of the Proposal

The IMO 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 rule change process.

4. CONSULTATION

4.1 The Market Advisory Committee

The Market Advisory Committee (MAC) discussed the proposal at its 14 December 2011 meeting. At this meeting, Mr Brendan Clarke presented the proposal as a Pre Rule Change Discussion Paper. The following points were raised by MAC members:

- Mr John Rhodes queried whether the required hours of availability per year for Availability Class 1 was being changed from 96 to 72. Ms Jenny Laidlaw confirmed that under the proposed changes to clause 4.5.12(c) the forecast of capacity required for 96 hours per year was no longer used.
- The Chair passed on some comments on the proposal sent to him by Mr Corey Dykstra prior to the meeting. Mr Dykstra had commented that it was unclear whether the issue identified by System Management would lead to increased risk to system reliability. Mr Greg Ruthven from the IMO had written correspondence with Mr Dykstra explaining that the IMO agreed with System Management's proposal and its concerns regarding system reliability and security, though noted that issues would only arise in a marginal scenario. As suggested in the Pre-Rule Change proposal, the Availability Curve calculation could result in a situation where the Rules consider the certified capacity to be sufficient, but the actual availability of that capacity would not allow the reliability criterion to be completely satisfied.
- Mr Shane Cremin noted that the proposal did not have any impact on what DSP providers can bring into the market. Mr Cremin queried whether the proposal could be varied so that a DSP was made to provide at least 48 hours of availability for certification in Availability Class 4. The Chair suggested that the upcoming review of the Reserve Capacity Mechanism (RCM) was likely to review the availability requirements for DSM. Mr Clarke advised that System Management had considered the option suggested by Mr Cremin, but had chosen the option presented in PRC_2011_14 as it believed that this would be easier to implement in the short term. Mr Clarke considered that the changes were only likely to be in effect for the next Statement Of Opportunities (SOO), as they would be overtaken by the outcomes of the RCM review.
- MAC members discussed whether there was a need to progress the rule change further given that its results would be overtaken by the impending RCM review.
- Mr Ben Tan raised an issue regarding the load forecast. Mr Tan noted that System Management must use Demand Side Programmes (DSPs) at the perfect times in order to make the load forecast accurate and to do this it would need to predict the peak intervals with 100% accuracy. Mr Clarke agreed that this was true but noted the issue was not something that could be resolved easily.
- Dr Paul Biggs suggested that the effect of the change would be trivial when compared to the effect of forecast errors contained within the SOO.
- The MAC supported the progression of PRC_2011_14 into the formal rule change process.

Further details are available in the MAC meeting minutes available on the IMO website: http://www.imowa.com.au/MAC_45.

4.2 Submissions received during the first submission period

The first submission period for this Rule Change Proposal was between 24 January 2012 and 7 March 2012. Submissions were received from Landfill Gas & Power (LGP), Perth Energy and Synergy.

LGP and Synergy supported the Rule Change Proposal and its "high" urgency classification, with Synergy recommending its progression via the Fast Track Rule Change Process. Synergy also suggested some amendments to the Availability Class table in Appendix 3.

Perth Energy considered that clause 4.5.12 was ambiguous, but did not agree with System Management's assessment that there was a misalignment between that clause and Appendix 3. Perth Energy considered that the proposed changes would introduce inconsistencies between clause 4.5.12 and Appendix 3 and could result in no capacity being assigned to Availability Class 4. Perth Energy raised a separate concern with the wording of clauses 4.5.12(c)(iii) and 4.5.12(c)(iv).

The assessment by submitting parties as to whether the proposal would better the Wholesale Market Objectives is summarised below:

Submitter	Wholesale Market Objective Assessment
LGP	Better address Wholesale Market Objective (a) and consistent with the remaining Wholesale Market Objectives
Synergy	None provided
Perth Energy	RC_2011_14 would have a marginally detrimental impact on achieving Wholesale Market Objectives (a) and (d)

A copy of all submissions in full received during the first submission period is available on the IMO website: http://www.imowa.com.au/RC_2011_14.

4.3 Further Consultation with Perth Energy

After reviewing Perth Energy's submission, the IMO requested clarification from Perth Energy regarding its interpretation of clause 4.5.12. Perth Energy provided an addendum to its original submission that clarified its interpretation of the relevant clause. The full text of this addendum is available on the IMO website.

4.4 The IMO's response to submissions received during the first submission period

The IMO's response to each of the issues identified during the first submission period is presented in the table over the page:

RESPONSES TO SUBMISSIONS RECEIVED DURING THE FIRST SUBMISSION PERIOD

	Submitter	Comment/Change requested	IMO Response
1	Perth Energy	Although clause 4.5.12 is somewhat ambiguous, there does not seem to be a misalignment between the availability requirements listed in Appendix 3 and the information about the Availability Classes in clause 4.5.12.	The IMO disagrees with Perth Energy's interpretation of clause 4.5.12. Please refer to section 4.5 of this Draft Rule Change Report.
2	Perth Energy	Perth Energy asks the IMO to inform Market Participants as to how it has interpreted clause 4.5.12 to date.	Please refer to Section 4.5 of this Draft Rule Change Report.
3	Perth Energy	There is a different issue with the wording of the clause 4.5.12(c)(iii) and clause 4.5.12 (c)(iv). In the calculation of the capacity quantity associated with an Availability Class, all previous Availability Classes should be accounted for. Therefore, the clause should be amended as: "iii. the capacity quantity associated with Availability Class 2 is: ... 2. the total capacity quantity associated with Availability Class 3 ~~or~~ and Availability Class 4;" Clause 4.5.12(c)(iv) should also be similarly amended.	The IMO has proposed amendments to clauses 4.5.12(c)(iii) and 4.5.12(c)(iv) to clarify their intent. Please refer to section 5.1 and Appendix 1 of this Draft Rule Change Report.
4	Perth Energy	Perth Energy considers that if the proposed changes were made, inconsistencies would be introduced between clause 4.5.12 and Appendix 3. The proposed amendments would imply that no capacity could be associated with Availability Class 4 as presumably the capacity that must be available for 24 hours or more would be equal to the full Reserve Capacity Target.	The IMO disagrees with Perth Energy's interpretation of clause 4.5.12. Please refer to section 4.5 of this Draft Rule Change Report.
5	Synergy	Synergy supports the proposed rule change as drafted, though further suggests that the IMO consider removing the column in Appendix 3 titled "Maximum Hours of Availability Per Year". Synergy considers that this column would no longer be required if clause 4.5.12(c) of the Market Rules was amended as per the proposed amendments. Synergy further considers that removing	The IMO has proposed amendments to Appendix 3 to clarify the rules for the assignment of capacity offers to Availability Classes. Please refer to section 5.1 and Appendix 1 of this Draft Rule Change Report.

	Submitter	Comment/Change requested	IMO Response
		this column will negate the strange behaviour certain DSP providers undertake in deciding which Availability Class to use for 48 hours of availability.	
6	Synergy	Synergy considers this proposal to be urgent and to be progressed using the fast track process.	The IMO notes Synergy's support for the Rule Change proposal and its classification as "highly urgent". The IMO notes that this Rule Change Proposal was initially submitted under the Standard Rule Change Process. The IMO also notes that as per current timeline, the process is expected to allow the proposed amendments to commence prior to the publication of the 2012 SOO in June 2012.

4.5 Interpretation of clause 4.5.12

In its addendum, Perth Energy used the following example to explain its calculations for the capacity quantity associated with each Availability Class:

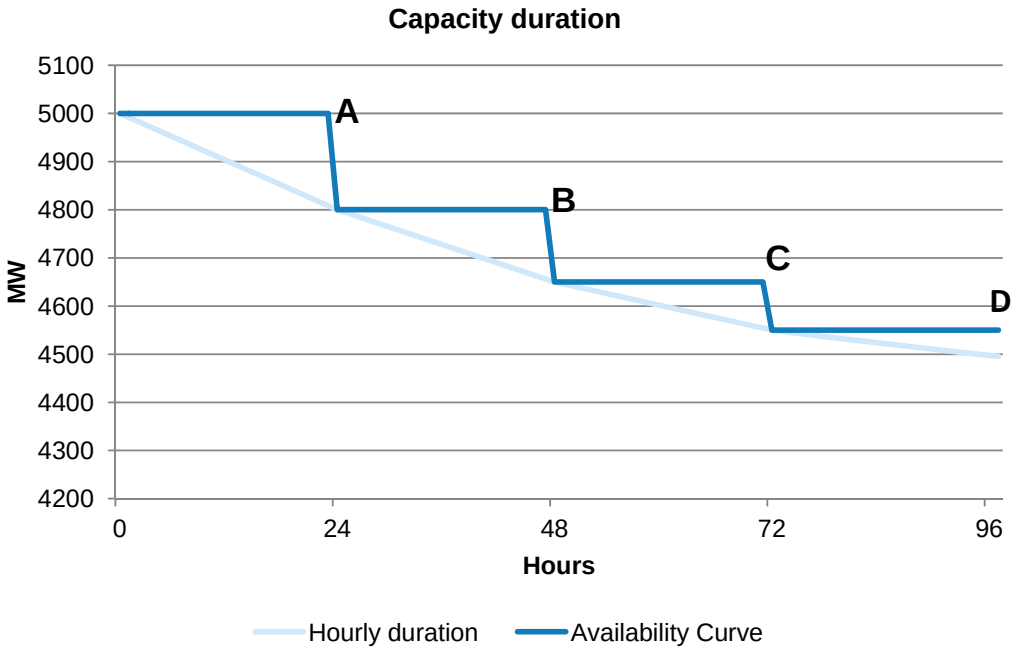


Figure 1: 0 - 96 hours capacity duration curve

Figure 1 shows the first 96 hours of a hypothetical annual capacity duration curve, corresponding to an annual maximum capacity requirement of 5000 MW. To simplify its example, Perth Energy ignored the effects of clause 4.5.12(b) in its calculations.

Perth Energy assumed that the IMO would determine "the forecast capacity required for more than 24 hours per year" as being equal to the RCT, i.e. 5000 MW (Quantity "A"). The IMO would select a level of capacity that it only expected to be needed for one hour of the year "to take a conservative approach". Using the same reasoning, Perth Energy assumed that the IMO would determine the forecast capacity required for more than 48 hours per year, 72 hours per year and 96 hours per year as 4800 MW, 4650 MW and 4550 MW respectively. The resulting association of capacity to the Availability Classes under clause 4.5.12(c) would therefore be:

Availability Class	MW Capacity
1	4550
2	100
3	150
4	200

However, Perth Energy's assumption is not correct. Clause 4.5.12(a) contains no suggestion that the forecast capacity quantities should be inflated to build in additional conservatism. From the capacity duration curve it is clear that no more than 4800 MW of capacity (Quantity "B") is required for *more than* 24 hours per year. The IMO considers that to determine "the forecast capacity required for more than 24 hours per year" as being greater than 4800 MW would be incorrect and in breach of the Market Rules.

For this example the IMO would determine the forecast capacity required for more than 24 hours per year, more than 48 hours per year, more than 72 hours per year and more than 96 hours per year as being 4800 MW, 4650 MW, 4550 MW and 4500 MW respectively. Under the current Market Rules, the resulting association of capacity to the Availability Classes would be:

Availability Class	MW Capacity
1	4500
2	50
3	100
4	350

The IMO most recently applied this methodology in its preparation of the 2011 SOO. As explained in System Management's Rule Change Proposal, the calculations resulted in capacity required for more than 24 hours per year being associated with Availability Class 4. On this occasion there was no adverse impact, as the full RCT was met by generation capacity from Availability Class 1. However, in a situation where the RCT is not covered by generation capacity there is a risk that the capacity offered from Availability Classes 2, 3 and 4 may not be available for enough hours to meet the capacity requirements of those classes.

The IMO considers that the capacity associated with Availability Class 4 should be (ignoring any impacts of clause 4.5.12(b)) the capacity that is required for *up to 24 hours per year*, i.e. the total RCT less the capacity that is required for *more than 24 hours per year* (not 48 hours as currently prescribed in clause 4.5.12(c)(i)). In Perth Energy's example, this would be 200 MW (5000 MW – 4800 MW). To ensure this capacity requirement is met, any capacity assigned to Availability Class 4 must be available to the market for *at least 24 hours per year*. The IMO considers that this approach provides an adequate degree of conservatism.

Continuing with this example, the capacity associated with Availability Class 3 should be the capacity that is required for *up to 48 hours per year, but for more than 24 hours per year*, i.e. the total RCT less the capacity that is required for *more than 48 hours per year*, less the capacity that is assigned to Availability Class 4. This would be 150 MW (5000 MW - 4650 MW – 200 MW). To ensure this capacity requirement is met, any capacity assigned to Availability Class 3 must be available to the market for *at least 48 hours per year*.

The capacity associated with Availability Class 2 should be the capacity that is required for *up to 72 hours per year, but for more than 48 hours per year*, i.e. the total RCT less the capacity that is required for *more than 72 hours per year*, less the sum of the capacity quantities assigned to each of Availability Classes 3 and 4. This would be 100 MW (5000 MW – 4550 MW – (200 MW + 150 MW)). To ensure this capacity requirement is met, any capacity assigned to Availability Class 2 must be available to the market for *at least 72 hours per year*.

The remainder of the RCT, or 4550 MW (5000 MW – (200 MW + 150 MW + 100 MW)) should be assigned to Availability Class 1. The Market Rules (and in particular clause 4.11.4 and Appendix 3) dictate that only generation capacity is assigned to this Availability Class.

It should be noted that the capacity quantities associated with each Availability Class under the proposed Amending Rules would be the same (in this example) as the quantities Perth Energy suggested should be selected under the current Market Rules.

4.6 Public Forums and Workshops

No public forums or workshops were held in relation to this Rule Change Proposal.

5. THE IMO'S ASSESSMENT

In preparing its Draft Rule Change Report, the IMO must assess the Rule Change Proposal in light of clauses 2.4.2 and 2.4.3 of the Market Rules.

Clause 2.4.2 outlines that the IMO *"must not make Amending Rules unless it is satisfied that the Market Rules, as proposed to be amended or replaced, are consistent with the Wholesale Market Objectives"*.

Additionally, clause 2.4.3 states, when deciding whether to make Amending Rules, the IMO must have regard to the following:

- any applicable policy direction from the Minister regarding the development of the market;
- the practicality and cost of implementing the proposal;
- the views expressed in submissions and by the MAC; and
- any technical studies that the IMO considers necessary to assist in assessing the Rule Change Proposal.

The IMO notes that there has not been any applicable policy direction from the Minister or any technical studies commissioned in respect of this Rule Change Proposal. A summary of the views expressed in submissions and by the MAC is available in section 4 of this report.

The IMO's assessment is outlined in the following sub-sections.

5.1 Additional Amendments to the Proposed Amending Rules

Following the first public submission period the IMO has made some additional changes to the proposed Amending Rules to:

- remove the requirement to determine the forecast capacity required for more than 96 hours per year from clause 4.5.12(a), as it is not required for the Availability Class calculations;
- clarify the rules for assigning capacity offers to Availability Classes in Appendix 3;
- remove any potential ambiguity from clauses 4.5.12(c)(iii) and 4.5.12(c)(iv); and
- incorporate a number of minor and typographical amendments to improve the overall integrity of the Amending Rules

The changes the IMO made to the Amending Rules presented in the Rule Change Proposal are outlined in detail in Appendix 1 of this Draft Rule Change Report.

5.2 Wholesale Market Objectives

The IMO considers that the Market Rules as a whole, if amended as presented in section 7, will not only be consistent with the Wholesale Market Objectives but also allow the Market Rules to better achieve Wholesale Market Objective (a).

The IMO's assessment is presented below:

(a) to promote the economically efficient, safe and reliable production and supply of electricity and electricity related services in the South West Interconnected System:

The IMO considers that the proposed amendments will promote reliability of electricity supply by ensuring that the availability of facilities are equal to or greater than the load which it is meant to serve.

The IMO also considers that the proposed amendments will improve the integrity of the overall Market Rules by clarifying their application and are consistent with the other Wholesale Market Objectives.

5.3 Practicality and Cost of Implementation

Cost:

The IMO considers that the proposed amendments do not have any cost implications associated with them. The proposed amendments do not require any changes to the IMO's or System Management's systems or procedures. In addition, there are no identified costs for Rule Participants.

Practicality:

The IMO has not identified any issues with the practicality of implementing the proposed changes.

6. THE IMO'S PROPOSED DECISION

The IMO's proposed decision is to accept the Rule Change Proposal as modified by the amendments outlined in section 5.1 and specified in Appendix 1 of this report.

6.1 Reasons for the decision

The IMO has made its proposed decision on the basis that the Amending Rules:

- will allow the Market Rules to better address Wholesale Market Objective (a);
- are consistent with the remaining Wholesale Market Objectives;
- have the support of the majority of MAC members; and
- have the support of two of the three submissions received during the first submission period.

7. PROPOSED AMENDING RULES

The IMO proposes to implement the following Amending Rules (added text, ~~deleted text~~):

4.5.12. An Availability Curve for a Capacity Year is to contain the following information:

(a) the forecast capacity, in MW, required for more than 24 hours per year, 48 hours per year~~,~~ and 72 hours per year ~~and 96 hours per year~~;

(b) the minimum capacity required to be provided by generation capacity if Power System Security and Power System Reliability is to be maintained. This minimum capacity is to be set at a level such that if:

i all Demand Side Management capacity (excluding Interruptible Load used to provide Spinning Reserve to the extent that it is anticipated to provide Certified Reserve Capacity), were activated during the

Capacity Year so as to minimise the peak demand during that year; and

ii the Planning Criterion and the criteria for evaluating Outage Plans set out in clause 3.18.11 were to be applied to the load scenario defined by clause 4.5.12(b)(i), then

it would be possible to satisfy the Planning Criterion and the criteria for evaluating Outage Plans set out in clause 3.18.11, as applied in ~~paragraph~~ clause 4.5.12(b)(ii), using, to the extent that the capacity is anticipated to provide Certified Reserve Capacity, the anticipated installed generating capacity, the anticipated Interruptible Load capacity available as Spinning Reserve and, to the extent that further generation capacity would be required, an appropriate mix of generation capacity to make up that shortfall; and

(c) the capacity associated with each Availability Class where:

i. the capacity quantity associated with Availability Class 4 is the Reserve Capacity Target for the Capacity Year less the greater of the quantity specified under ~~paragraph~~ clause 4.5.12(b) and the quantity specified under ~~paragraph~~ clause 4.5.12(a) as being required for more than ~~48~~ 24 hours per year;

ii. the capacity quantity associated with Availability Class 3 is:

1. the Reserve Capacity Target for the Capacity Year less the greater of the quantity specified under ~~paragraph~~ clause 4.5.12(b) and the quantity specified under ~~paragraph~~ clause 4.5.12(a) as being required for more than ~~72~~ 48 hours per year; less

2. the capacity quantity associated with Availability Class 4;

iii. the capacity quantity associated with Availability Class 2 is:

1. the Reserve Capacity Target for the Capacity Year less the greater of the quantity specified under ~~paragraph~~ clause 4.5.12(b) and the quantity specified under ~~paragraph~~ clause 4.5.12(a) as being required for more than ~~96~~ 72 hours per year; less

2. the ~~total~~ sum of the capacity ~~quantity~~ quantities associated with each of Availability Class 3 ~~or~~ and Availability Class 4;

iv. the capacity quantity associated with Availability Class 1 is:

1. the Reserve Capacity Target for the Capacity Year; less

2. the ~~total~~ sum of the capacity ~~quantity~~ quantities associated with each of Availability Class 2, Availability Class 3 ~~or~~ and Availability Class 4;

...

Appendix 3: Reserve Capacity Auction & Trade Methodology

...

The parameter “a” denotes the active Availability Class where “a” can have a value of {1, 2, 3, 4}. Availability Class 1 has the highest availability requirement, followed by Availability Class 2, Availability Class 3 and then Availability Class 4. All Certified Reserve Capacity is assigned an Availability Class. ~~For the purpose of identifying which capacity can be applied to satisfying capacity requirements the minimum availability of each Availability Class is set to the maximum availability of the next Availability Class.~~ However the algorithms in this appendix allow capacity from an Availability Class with higher availability to be used in place of capacity from an Availability Class with lower availability. ~~The following table indicates the required availability of capacity offered for each Availability Class:~~

~~Availability Class (i.e. value of “a”)~~	~~Minimum Hours of Availability Per Year~~	~~Maximum Hours of Availability Per Year~~
~~1~~	~~96~~	~~All~~
~~2~~	~~72~~	~~96~~
~~3~~	~~48~~	~~72~~
~~4~~	~~24~~	~~48~~

All Certified Reserve Capacity associated with Interruptible Loads, Demand Side Programmes or Dispatchable Loads is ~~explicitly~~ assigned an Availability Class according to the following table, where “Hours of Availability” is the maximum number of hours of availability per year specified for the relevant Facility under clause 4.10.1(f)(ii).

Hours of Availability	Availability Class (i.e. value of “a”)
>= 72	2
>=48 and <72	3
>=24 and <48	4

~~, whereas all~~All other Certified Reserve Capacity is automatically in Availability Class 1.

...

APPENDIX 1: FURTHER AMENDMENTS TO THE PROPOSED AMENDING RULES

The IMO has made some amendments to the Amending Rules following the first submission period. These changes are as follows (~~deleted text~~, added text):

4.5.12. An Availability Curve for a Capacity Year is to contain the following information:

(a) the forecast capacity, in MW, required for more than 24 hours per year, 48 hours per year~~,~~ and 72 hours per year ~~and 96 hours per year~~;

(b) the minimum capacity required to be provided by generation capacity if Power System Security and Power System Reliability is to be maintained. This minimum capacity is to be set at a level such that if:

i all Demand Side Management capacity (excluding Interruptible Load used to provide Spinning Reserve to the extent that it is anticipated to provide Certified Reserve Capacity), were activated during the Capacity Year so as to minimise the peak demand during that year; and

ii the Planning Criterion and the criteria for evaluating Outage Plans set out in clause 3.18.11 were to be applied to the load scenario defined by clause 4.5.12(b)(i), then

it would be possible to satisfy the Planning Criterion and the criteria for evaluating Outage Plans set out in clause 3.18.11, as applied in ~~paragraph~~ clause 4.5.12(b)(ii), using, to the extent that the capacity is anticipated to provide Certified Reserve Capacity, the anticipated installed generating capacity, the anticipated Interruptible Load capacity available as Spinning Reserve and, to the extent that further generation capacity would be required, an appropriate mix of generation capacity to make up that shortfall; and

(c) the capacity associated with each Availability Class where:

i. the capacity quantity associated with Availability Class 4 is the Reserve Capacity Target for the Capacity Year less the greater of the quantity specified under ~~paragraph~~ clause 4.5.12(b) and the quantity specified under ~~paragraph~~ clause 4.5.12(a) as being required for more than 24 hours per year;

ii. the capacity quantity associated with Availability Class 3 is:

1. the Reserve Capacity Target for the Capacity Year less the greater of the quantity specified under ~~paragraph~~ clause 4.5.12(b) and the quantity specified under ~~paragraph~~ clause 4.5.12(a) as being required for more than 48 hours per year; less

2. the capacity quantity associated with Availability Class 4;

iii. the capacity quantity associated with Availability Class 2 is:

1. the Reserve Capacity Target for the Capacity Year less the greater of the quantity specified under ~~paragraph~~ clause

4.5.12(b) and the quantity specified under ~~paragraph~~ clause 4.5.12(a) as being required for more than 72 hours per year; less

2. the ~~total~~ sum of the capacity ~~quantity~~ quantities associated with each of Availability Class 3 ~~or~~ and Availability Class 4;

iv. the capacity quantity associated with Availability Class 1 is:

1. the Reserve Capacity Target for the Capacity Year; less

2. the ~~total~~ sum of the capacity ~~quantity~~ quantities associated with each of Availability Class 2, Availability Class 3 ~~or~~ and Availability Class 4;

...

Appendix 3: Reserve Capacity Auction & Trade Methodology

...

The parameter “a” denotes the active Availability Class where “a” can have a value of {1, 2, 3, 4}. Availability Class 1 has the highest availability requirement, followed by Availability Class 2, Availability Class 3 and then Availability Class 4. All Certified Reserve Capacity is assigned an Availability Class. ~~For the purpose of identifying which capacity can be applied to satisfying capacity requirements the minimum availability of each Availability Class is set to the maximum availability of the next Availability Class~~ However the algorithms in this appendix allow capacity from an Availability Class with higher availability to be used in place of capacity from an Availability Class with lower availability. ~~The following table indicates the required availability of capacity offered for each Availability Class:~~

~~Availability Class (i.e. value of “a”)~~	~~Minimum Hours of Availability Per Year~~	~~Maximum Hours of Availability Per Year~~
~~1~~	~~96~~	~~All~~
~~2~~	~~72~~	~~96~~
~~3~~	~~48~~	~~72~~
~~4~~	~~24~~	~~48~~

All Certified Reserve Capacity associated with Interruptible Loads, Demand Side Programmes or Dispatchable Loads is ~~explicitly~~ assigned an Availability Class according to the following table, where “Hours of Availability” is the maximum number of hours of availability per year specified for the relevant Facility under clause 4.10.1(f)(ii).

Hours of Availability	Availability Class (i.e. value of “a”)
>= 72	2
>=48 and <72	3
>=24 and <48	4

~~, whereas all~~All other Certified Reserve Capacity is automatically in Availability Class 1.

...