



Independent Market Operator

**Procedure Change Report
Title: 5 Yearly Review of the Methodology
and Process for Determining the Maximum
Reserve Capacity Price**

PC_2011_06

Standard Procedure Change Process

Date: 21 October 2011

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EXECUTIVE SUMMARY

Procedure Change Proposal

Clause 4.16.9 of the Market Rules requires the IMO to review the Maximum Reserve Capacity Price (MRCP) Market Procedure once in every five year period. To assist in undertaking this five year review, the Market Advisory Committee established the MRCP Working Group (MRCPWG) in 2010 to consider, assess and develop any recommendations for changes to the Market Procedure. Following the MRCPWG's deliberations the IMO put forward a number of proposed amendments to the Market Procedure to enact the Working Group's agreed changes.

Consultation

- The proposed amendments were developed by the MRCPWG and finalised following two rounds of out-of-session consultation that took place after the final meeting.
- The Market Advisory Committee (MAC) was provided with the proposed amendments out of session on 3 August 2011. MAC members provided out-of-session submissions. The views expressed in these submissions were mixed.
- A public workshop was held on 1 September to present the proposed amendments to the Market Procedure.
- The IMO formally submitted the Procedure Change Proposal and issued a notice calling for submissions on 6 September 2011.
- Submissions were received from Alinta Sales, Argonaut Capital, EnerNOC, Infracore Energy, Landfill Gas & Power, Merredin Energy, Perth Energy, Tesla Corporation, Verve Energy and Western Power. The views expressed in submissions were mixed. The IMO notes that several of the submitting organisations are affiliated and have expressed similar views.

The IMO's Assessment of the proposal

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

The IMO's Decision

The IMO's decision is to accept the Procedure Change Proposal as modified following the public consultation period.

Next steps

The amended Market Procedure for Maximum Reserve Capacity Price will commence at **8:00am on 24 October 2011.**

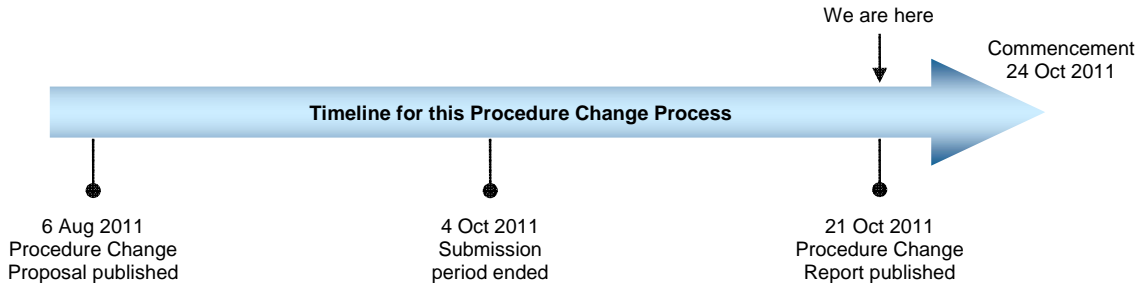


1. PROCEDURE CHANGE PROCESS AND TIMELINE

On 6 September 2011, the Independent Market Operator (IMO) published a Procedure Change Proposal titled “5-yearly Review of the Methodology and Process for Determining the Maximum Reserve Capacity Price”.

The proposal has been processed according to the Procedure Change Process under clause 2.10 of the Wholesale Electricity Market Rules (Market Rules).

The key dates in processing this Procedure Change Proposal are:



2. PROPOSED AMENDMENTS

2.1 The Procedure Change Proposal

The Maximum Reserve Capacity Price (MRCP) sets the maximum bid that can be made in a Reserve Capacity Auction and is used to determine an administered Reserve Capacity Price if no auction is required. The MRCP aims to reflect the marginal cost of providing additional Reserve Capacity. Each year the IMO determines the MRCP.

Clause 4.16.9 of the Market Rules requires the IMO to review the MRCP Market Procedure once in every five year period. To assist in undertaking this five year review, the MAC established the MRCP Working Group (MRCPWG) in 2010 to consider, assess and develop any recommendations for changes to the Market Procedure. The MRCPWG met ten times between May 2010 and June 2011.

To enact the outcomes of the Working Groups review, the IMO proposed the following amendments to the Market Procedure:

- Include a provision for an inlet air cooling system in the definition of the model power station, step 2.1;
- Change the Fixed Fuel Cost to include an allowance to initially fill the fuel tank with sufficient distillate for 14 hours of operation;
- Include in step 2.7.2 (a) where the minimum land size available in any specific location is greater than 3ha, for the purpose of calculating the land cost for that specific location, the minimum available land size at that location shall be used;
- Change the effective compensation period for the total investment costs for the generic power station cost, which was previously 2 years, to 6 months;



- Clarify that the escalation of values in respect of power station, transmission, switchyard and Operating and Maintenance (O&M) costs to April of Year 3 is to be performed by the consultant(s) developing the cost estimates;
- Include an allowance for annual asset insurance costs for the model power plant is to be within Fixed O&M Costs;
- Base the methodology for forecasting Transmission Connection Works costs on historical connection costs and relevant access offers determined by Western Power;
- Include debt issuance costs within the Weighted Average Cost of Capital (WACC) and remove the corresponding debt financing costs from within margin M;
- Rename the “Minor” and “Major” components of the WACC, as listed under procedure step 2.9.8, as having “Annual” and “5-yearly” “Review Frequency”;
- Re-classify the Review Frequency of some WACC components;
- Provide the IMO with a discretion to nominate a method for determining the Debt Risk Premium (DRP) that is consistent with current accepted Australian regulatory practice; and
- Incorporate a number of minor changes to the format and wording of the Market Procedure.

Note that early in its review the MRCPWG agreed that the MRCP should continue to be based on the concept of a 160 MW Open Cycle Gas Turbine (OCGT) power plant.

Full details of the Procedure Change Proposal are available in Appendix 1 of this report.

3. CONSULTATION

3.1 Market Advisory Committee or Working Group

The Market Advisory Committee (MAC) delegated the role of considering, assessing and developing changes to the Market Procedures associated with the determination of the MRCP and the methodology for the determination of the associated WACC to the MRCPWG (clause 2.3.17(a)). The proposed amendments to the Market Procedure enact the recommendations of the MRCPWG and were developed during the ten meetings of the Working Group (held between 31 May 2010 and 20 June 2011) and finalised following two rounds of out-of-session consultation that took place after the final meeting. Details of the proceedings of the MRCPWG can be found on the following IMO web site: www.imowa.com.au/MRCPWG.

Prior to formal submission into the formal Procedure Change Process the draft amended MRCP Market Procedure was provided to MAC members for out of session comment on 3 August 2011. Submissions were received from Mr Corey Dykstra (Alinta), Mr Stephen MacLean (Synergy), Mr Peter Mattner (Western Power) and Dr Steve Gould (LGP). A summary of the submissions received and the IMO’s response is available on the following IMO web site: <http://www.imowa.com.au/MAC41>. The comments of MAC members received by the IMO were taken into account where appropriate in the amended Procedure Change Proposal that was formally submitted by the IMO on the behalf of the MRCPWG, though did not result in any changes to the proposed Market Procedure.

In accordance with clauses 2.10.8 and 2.10.9 the IMO also notified the MAC once the Procedure Change Proposal had been published and noted that it would convene a meeting of

the MAC to discuss should two or more members request it. No MAC member contacted the IMO in this regard.

3.2 Public Workshop

Prior to formal submission, the IMO held a public workshop on 1 September to discuss the proposed amendments to the MRCP methodology. The presentations and minutes from this workshop are available on the following IMO web site: http://www.imowa.com.au/PC_2011_06 Following this workshop, minor amendments were made to the proposed Market Procedure as developed by the MRCPWG. These changes related to:

- The addition of water receipt and storage facilities to allow 14 hours of continuous operation;
- Clarification that no additional costs are to be added to the direct connection cost scope in steps 2.4.2 a-h (steps 1.8.2 a-h in the Procedure Change Proposal) of the Market Procedure when this value is used for a year for which no connection data is available; and
- Clarification of the facilities that are considered in the transmission connection cost estimate.

3.3 Submissions received during consultation period

The public consultation period for the proposed amendments was between 7 September and 4 October 2011. The IMO received submissions from Alinta Sales, Argonaut Capital, EnerNOC, Infracore Energy, Landfill Gas & Power (LGP), Merredin Energy, Perth Energy, Telsa Corporation, Verve Energy and Western Power during the public consultation period. The IMO notes that several of the submitting organisations are affiliated and have expressed similar views.

The main points raised in submissions received are summarised below. The full text of the submissions is available on the IMO website. Additional detail along with the IMO's response to issues raised in submissions is contained in Appendix 2 of this paper.

In summary, the views of submitting parties on the proposed changes were polarised. The following general issues were raised in submissions:

- Need for a transition period;
- Creation of regulatory risk;
- Creation of pricing volatility, including options for smoothing year on year changes;
- General alignment of the MRCP with the costs incurred in reality, with particular reference to the:
 - methodology for forecasting transmission costs as recommended by Sinclair Knight Merz (SKM); and
 - the adequacy of the allowance for inlet air cooling systems, including the fixed costs of supplying water;
 - the adequacy of the debt issuance costs that have been incorporated;
- Impacts on investment;
- Adjustment of the WACC period to 6 months;

- Non-inclusion of an adjustment for a Forced Outage rate;
- The MRCPWG review and the level of consultation;
- Links with the broader Reserve Capacity Mechanism (RCM) review and the current capacity surplus;
- Consideration of dual fuel plant;
- Application of 85% discount factor to the MRCP when determining the Reserve Capacity Price (*The IMO notes that this issue is out of scope*);
- The likelihood of Auction for capacity in the WEM occurring (*The IMO notes that this issue is out of scope*); and
- Estimates of deep connection costs should be determined only by Western Power.

A summary of the assessment by the submitting parties as to whether each proposal would better achieve the Wholesale Market Objectives (Table 1) and an overview of submissions on the costs associated with implementing each of the proposed changes and the timeframe for implementation (Table 2) is presented below.

Table 1: Submitting parties' Wholesale Market Objective assessment

Submitter	Assessment
Alinta	The proposed changes may impede Market Objective (b) and (d).
Argonaut	The proposed changes would be expected to reduce Market Objective (a), (b), (c) and (d).
EnerNOC	The majority of the proposed changes improve Market Objective (a), however the adoption of the proposed transmission cost methodology undermines Market Objective (a).
Infratil Energy	No explicit assessment provided
LGP	Consistent with the Market Objectives
Merredin Energy	No explicit assessment provided
Perth Energy	No explicit assessment provided
Tesla Corporation	Not consistent with Market Objectives (a), (b), (d)
Verve Energy	No explicit assessment provided
Western Power	Understands that economic analysis has not been performed to determine the overall net benefit or otherwise to the market due to this proposed procedure change.

Table 2: Submitting parties' identified costs and implementation timeframes

Submitter	Identified Costs	Implementation Timeframe
Alinta	No direct IT or Business Costs, but would result in a reduction in Alinta's revenue	No timeframe required for implementation, however suggests that the MRCP change be smaller and more incremental



Submitter	Identified Costs	Implementation Timeframe
		(±10%)
Argonaut	N/A	N/A
EnerNOC	None	None
Infratil Energy	N/A	N/A
LGP	None	Can implement immediately.
Merredin Energy	N/A	N/A
Perth Energy	N/A	N/A
Tesla Corporation	Significant implications on Tesla, suddenness of change with the large fall in MRCP, with resultant impact on the Reserve Capacity Price, will affect financing for Tesla.	N/A
Verve Energy	N/A	N/A
Western Power	N/A	Will require 6 weeks to calculate estimate of Transmission Costs and file auditors report once procedure is approved.

The IMO acknowledges Western Power's statement that economic analysis has not been performed to determine the overall net benefit or otherwise to the market due to this proposed procedure change. The IMO considers that the MRCP is a technical parameter that is supported by prudent engineering cost estimates. The proposed changes seek to more accurately reflect the marginal cost of developing new capacity, based on the theoretical construct of a 160 MW Open Cycle Gas Turbine (OCGT) power plant. The IMO considers that by reflecting these costs accurately, greater economic efficiency will likely be promoted in the market particularly with regard to investment decisions.

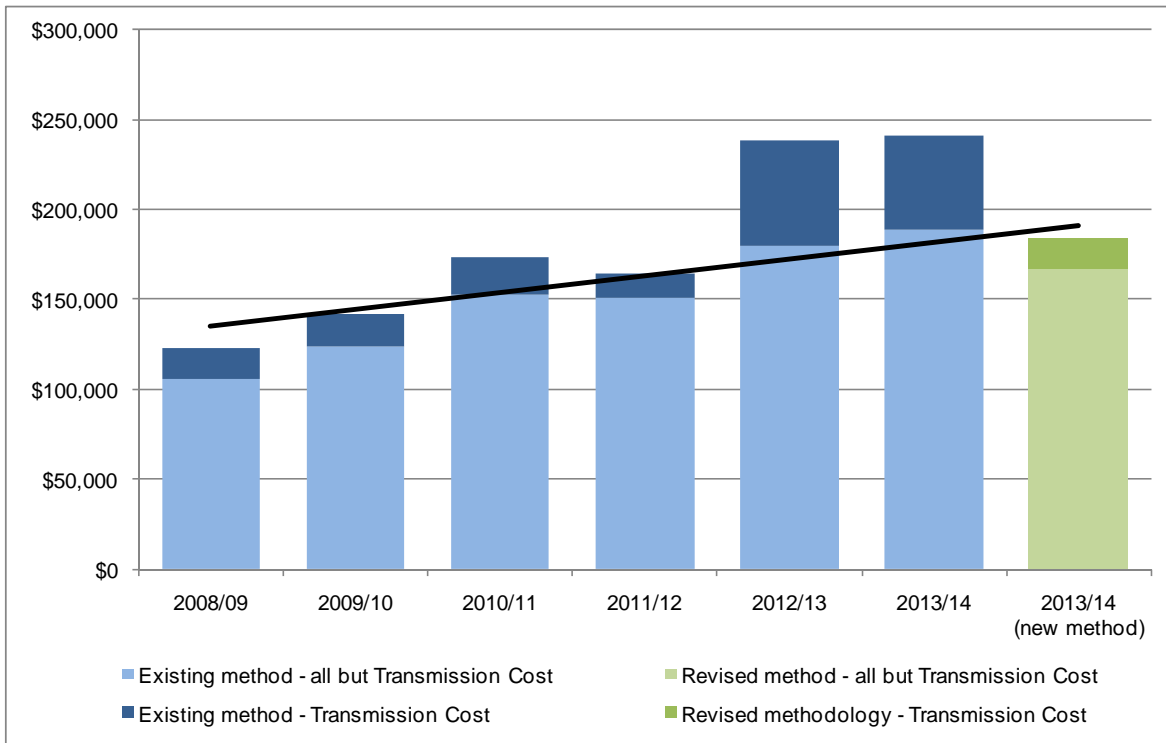
The IMO also acknowledges Western Power's statement that it will require 6 weeks to calculate the Transmission Cost estimate and file the auditor's report from the publication of this report. The IMO notes that this is less than the requirement of approximately 3 man-months to complete the estimation under the previous methodology, as previously advised by Western Power.

3.3.1 Volatility of the MRCP

The IMO notes that several of the submitting parties raised concern about the potential for the proposed amendments to contribute to volatility in the MRCP. The IMO observes that much of this concern stems from the indicative impact assessment contained within the Procedure Change Proposal.

The graph below shows the MRCP determined for the Capacity Years from 2008/09 through to 2013/14, along with the estimate of the MRCP that would have been determined for 2013/14 under the proposed methodology. The Transmission Cost component of each MRCP has been highlighted. A linear trend line is also displayed, which excludes the impact of the 2012/13 and 2013/14 MRCP's.





The graph indicates that variability in the Transmission Cost estimate, largely caused by changes in methodology, is the source of much of the volatility in the MRCP in recent years. The graph also suggests that the 2012/13 and 2013/14 MRCP's are outliers and that the proposed changes to the MRCP methodology would see the MRCP return to the trend that existed from 2008/09 to 2011/12.

The IMO notes that the method used by Western Power to estimate the Transmission Cost component changed for the 2012/13 MRCP following discussions between the IMO and Western Power. The IMO considered that estimates provided by Western Power for previous years lacked detail and transparency.

However, the IMO notes that the 2012/13 estimate provided by Western Power for the shared connection cost at the cheapest location was more than 350% higher than the indicative value provided for the 2011/12 MRCP¹. In its analysis for the MRCPWG, SKM highlighted that the method used by Western Power for the 2012/13 and 2013/14 MRCP's requires a broad range of assumptions that can lead to significant inaccuracies. Further, the transmission cost estimate derived from the proposed methodology, which is based on actual connection costs and Access Offers, is significantly lower than the estimates provided by Western Power for the 2012/13 and 2013/14 MRCP's. This suggests that the higher cost estimates provided for 2012/13 and 2013/14 are not reflective of the capital contributions actually being charged to project developers by Western Power.

¹ From Final Reports for the 2011/12 MRCP (shared connection cost of \$10.158m) and 2012/13 MRCP (shared connection cost of \$46.801m), available from <http://www.imowa.com.au/mrcp> and http://www.imowa.com.au/mrcp_archive



The IMO considers that the proposed Transmission Cost estimation methodology developed by SKM will provide a more robust approach based on actual data. Further, the use of several years of data in a weighted average calculation should significantly reduce volatility when compared with the current methodology.

As was noted in the Procedure Change Proposal, the indicative comparison was provided for information only and is only reflective of the outcomes of the proposed methodology at a point in time. Further, the IMO notes that the indicative assessment did not consider the following additional costs that have been incorporated into the revised MRCP methodology (as reflected in section 4.2 of this report):

- The cost of constructing water receiveal and storage facilities;
- Fixed operating and maintenance costs related to water receiveal and storage facilities; and
- Premiums for public and products liability insurance and business interruption insurance.

The indicative impact assessment has not been updated to include these changes as it does not form part of the IMO's assessment of the proposed changes. The IMO notes that the impact of these components will be shown in the Draft Report for the 2014/15 MRCP, which is scheduled to be published in November 2011.

3.4 The IMO's response to submissions received during the consultation period

The IMO's response to each of the issues identified during the consultation period is presented in the table in Appendix 2.

4. THE IMO'S ASSESSMENT

In determining whether to accept the Procedure Change Proposal, the IMO has undertaken an assessment in light of clauses 2.9.3 (a) of the Market Rules. Market Procedures must be:

- developed, amended or replaced in accordance with the process in the Market Rules;
- consistent with the Wholesale Market Objectives; and
- consistent with the Market Rules, the Electricity Industry Act and Regulations.

To simplify the IMO's assessment, the following approach has been undertaken:

- Section 4.1 provides a summary of the analysis of the proposed amendments completed during the MRCPWG process and further discussions with relevant parties following the public consultation period for this Procedure Change Proposal;
- Section 4.2 provides an overview of the additional amendments to the Market Procedure as a result of the issues raised during the public workshop and following the public consultation period. The IMO's analysis of the proposed amendments has been conducted taking these additional amendments into account.



- Section 4.3 provides details of the IMO's assessment of the proposed amendments against the Wholesale Market Objectives, including an assessment of the alignment of each proposed amendment with actual costs;
- Section 4.4 presents details of the IMO's assessment of the proposed amendments and Market Rules, Electricity Industry Regulations and Act; and
- Section 4.5 examines the practicality of implementing the proposed changes.

During the public consultation phase the IMO received a number of submissions on the relative merits of the proposed amendments. These comments have been considered by the IMO in conducting its assessment. The IMO's response to specific comments can be found in Appendix 2.

4.1 Summary of analysis performed in developing and assessing the changes

The IMO notes that this Procedure Change Proposal was developed following extensive analysis:

- A dedicated Working Group of industry representatives analysed each component of the MRCP over more than a year;
- Pricewaterhouse Coopers (PwC) provided advice on the Weighted Average Cost of Capital (WACC);
- SKM provided advice on the Transmission Cost estimation methodology;
- WorleyParsons provided advice on cost escalation methods and the margin M;
- PwC provided cash flow modelling for the review of the annualisation period; and
- SKM provided estimates of the cost and impact of the addition of inlet cooling in the power station design².

Following the public consultation period, the IMO has:

- Met with SKM and Western Power to refine and clarify the Transmission Cost estimation methodology;
- Discussed elements of the WACC with PwC;
- Discussed water and water infrastructure requirements with SKM; and
- Consulted with two well-known insurance brokers for further information regarding insurance costs.

These discussions have been taken into account by the IMO in determining the amendments to the proposed amended Market Procedure as presented in the next section.

4.2 Additional Amendments to the Market Procedure

Following the public consultation period the IMO has made some amendments to the proposed amended Market Procedure including to:

² Further details are available on the following IMO Web Page: <http://www.imowa.com.au/MRCPWG>



- Expand the criteria for exclusion of projects from the Transmission Cost methodology in response to Western Power’s submission and following discussion with Western Power;
- Amend the 5-year window that is used for estimation of Transmission Costs in response to Western Power’s submission and following discussion with Western Power and SKM;
- Improve the clarity of Section 2.4 (Transmission Connection Works) in response to Western Power’s submission and following discussion with Western Power;
- Move the technical boundary of the Transmission Cost estimate from the generator step-up transformers to “*high voltage (HV) bus bar (or in the absence of a HV bus bar, the HV circuit breaker or terminals of generator step-up transformers)*” (the IMO notes that the Power Station cost will then include all costs up to the HV bus bar or circuit breaker);
- Allow for the inclusion of public and products liability insurance and business interruption insurance costs in response to submissions by Infratil Energy and Merredin Energy;
- Correct an error in the calculation of CAPCOST to reflect the Transmission Cost being estimated on a per MW basis
- Align the format of the Market Procedure with the amended format for IMO Market Procedures that has resulted from the Market Procedures project; and
- Improve the integrity of the Market Procedure through a number of minor and typographical amendments.

4.3 Wholesale Market Objectives

The IMO considers that the steps are drafted in a way that does not change the operation or objectives of the Market Rules. As a result the IMO considers that the revised Market Procedure, as a whole, is consistent with the Wholesale Market Objectives. Further the IMO considers that the revised Market Procedure will better Market Objective (a) by promoting economic efficiency through greater alignment of the MRCP with real-world costs.

The IMO has reviewed each of the proposed changes to the methodology for determining the MRCP and has assessed the impact of each change on the ability of the methodology to reflect real costs. This assessment is summarised in Table 3.

Table 3: Assessment of proposed changes with respect to ability to reflect real costs

Methodology change	Basis of change
Inclusion of inlet air cooling in the power station definition, including costs for construction and maintenance of water receival and storage facilities	<ul style="list-style-type: none"> • MRCPWG agreed that developer of a 160MW OCGT would install inlet cooling • Reflects current market practice for gas turbine facilities
Allowance for initially filling the fuel tank increased from 12 hours to 14 hours of operation	<ul style="list-style-type: none"> • Recommended by MRCPWG • Aligns with the requirements for Certified Reserve Capacity
Land size to be greater than 3ha at a location for which the minimum land size is larger	<ul style="list-style-type: none"> • Recommended in submission on 2013/14 MRCP, agreed by MRCPWG • Aligns with available land at each of the listed locations



Average land cost from the nominated locations to be used	<ul style="list-style-type: none"> Recommended by IMO due to new Transmission Cost methodology, endorsed by MRCPWG Reflects the removal of the locational aspect of the Transmission Cost
Effective compensation period shorted from 2 years to 6 months (requires costs to be escalated to 1 April of Year 3 of the Reserve Capacity Cycle)	<ul style="list-style-type: none"> Recommended by PwC and agreed by MRCPWG Provides a reasonable estimate of the finance costs given the construction timetable for an efficient new generator
Cost escalation for some components to be performed by relevant consultant(s), method(s) explained	<ul style="list-style-type: none"> Recommended in submission on 2013/14 MRCP, agreed by MRCPWG Enables alignment with current expectations of forecast price movements, not historical price movement
Insurance costs to be included for: <ul style="list-style-type: none"> Asset insurance Public and products liability Business interruption 	<ul style="list-style-type: none"> Recommended in submission on 2013/14 MRCP, agreed by MRCPWG Acknowledges a fixed cost borne by project developers
Transmission Cost estimate to be based methodology developed by SKM, using actual capital contributions and Access Offers	<ul style="list-style-type: none"> Recommended by SKM and agreed by MRCPWG Reflects the true connection cost paid for real projects
Debt issuance costs included in WACC and associated costs excluded from margin M	<ul style="list-style-type: none"> Recommended by PwC and MRCPWG Reflects standard regulatory practice
“Minor” and “Major” WACC components renamed “Annual” and “5-Yearly”, with some re-classification	<ul style="list-style-type: none"> Recommended by MRCPWG Acknowledges the likelihood of variation in the components
IMO to nominate a Debt Risk Premium methodology consistent with current accepted Australian regulatory practice	<ul style="list-style-type: none"> Recommended by MRCPWG This flexibility acknowledges the lack of consistency amongst regulators in recent decisions

4.4 Wholesale Market Rules, the Electricity Industry Act and Regulations

Clause 4.16.3 of the Market Rules provides the heads of power for the establishment of the MRCP procedure by the IMO and requires that both the IMO and Market Participants follow the documented Market Procedure when conducting a review of the MRCP. The Market Procedure as currently drafted however includes a number of obligations on Western Power (who is not a Market Participant by definition) which are not provided for in the heads of power in the Market Rules.

The requirements for Western Power to provide transmission cost estimates are necessary for the IMO to be able to determine the MRCP. The IMO considers that the failure for the heads of power to apply to all Rule Participants (which would encompass Western Power) is a potential manifest error in the Market Rules and will be initiating a Rule Change Proposal to correct for this shortly. In light of this pending amendment to the Market Rules the IMO retained the obligations on Western Power in anticipation of putting the rule change into effect. However the IMO notes that until clause 4.16.3 is amended the obligations on Western Power are potentially unenforceable.



The IMO considers that the remainder of the proposed amended Market Procedure is consistent, as a whole, with the Market Rules, the Electricity Industry Act and Regulations.

The IMO also considers that the Market Procedure is consistent with all other Market Procedures.

4.5 Implementation of the Market Procedure

Costs of implementation

The proposed amendments to the Market Procedure are anticipated to require slightly higher consultancy fees in the annual MRCP determination. These are estimated to be approximately \$3000 more per year than the costs of completing the review under the previous methodology.

The required appointment of an auditor under step 2.4.1(g) to review the transmission cost estimate calculated by Western Power is expected to cost approximately \$4,000-10,000 per year. However, the proposed transmission cost methodology is easier for Western Power to calculate and would require less of Western Power's resources to be diverted away from real access applications.

Timelines for implementation

The Market Procedure will not require the IMO to implement any procedural or system amendments before it can commence. In the submissions received, only Western Power noted restrictions in its ability to implement the proposed change to the estimation of transmission costs (estimated to require six weeks from when the procedure is approved). The IMO notes that this restriction does not affect the commencement of the Market Procedure, only Western Power's ability to estimate the Transmission Cost following commencement. No other issues relating to the implementation of the proposed amendments have been raised by Rule Participants. Consequently, the IMO considers that commencement at **8:00 am on 24 October 2011** will allow Rule Participants sufficient time from the date of publication of this Procedure Change Report to ensure compliance with the amended Market Procedure.

5. THE IMO'S DECISION

The IMO's decision is to approve the proposed Market Procedure for Maximum Reserve Capacity Price as proposed in the Procedure Change Proposal and modified following the public consultation period.

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

- will better Market Objective (a) and are consistent with the remaining Market Objectives;
- are consistent with the Market Rules³, Electricity Industry Act and Regulations;
- reflect the recommendations of the MRCPWG;
- will more closely align the MRCP with actual costs faced by project developers; and

³ The IMO notes the issues with the current heads of power for the MRCP Market Procedure under clause 4.16.3 (refer to 4.4 of this procedure)

- require no system changes prior to implementation.

Additional detail outlining the analysis behind the IMO's reasons is outlined in section 4 of this Procedure Change Report.

6. THE AMENDED MARKET PROCEDURE

6.1 Commencement

The amended Market Procedure for Maximum Reserve Capacity Price will commence at **8.00 am** on **24 October 2011**.

6.2 The Amended Market Procedure

The amended Market Procedure for Maximum Reserve Capacity Price is attached to this report and is also available on the IMO's website: http://www.imowa.com.au/PC_2011_06

APPENDIX 1: FULL DETAILS OF THE PROPOSAL

Procedure Change No: PC_2011_06

Received date: 6 September 2011

Change requested by:

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Date submitted:	6 September 2011
Procedure change title:	5-yearly Review of the Methodology and Process for Determining the Maximum Reserve Capacity Price
Market Procedure affected:	Market Procedure for Maximum Reserve Capacity Price

1. Provide a reason for the proposed new, amended or replacement Market Procedure:

Background

The Maximum Reserve Capacity Price (MRCP) sets the maximum bid that can be made in a Reserve Capacity Auction and is used to determine an administered Reserve Capacity Price if no auction is required. The MRCP aims to reflect the marginal cost of providing additional Reserve Capacity. Each year the IMO determines the MRCP.

Clause 4.16.9 of the Market Rules requires the IMO to review the MRCP Market Procedure once in every five year period. To assist in undertaking this five year review, the MAC established the MRCP Working Group (WG) in 2010 to consider, assess and develop any recommendations for changes to the Market Procedure. The MRCPWG first met on 31 May 2010 and last met on 20 June 2011 with a total of ten meetings held. A record of the proceedings of the MRCPWG can be found at www.imowa.com.au/MRCPWG.

To enact the outcomes of the MRCPWG review, the IMO has made related amendments to the MRCP Market Procedure as detailed in the attached copy of the Market Procedure.

The MRCPWG's Review

Early in its review the MRCPWG agreed that the MRCP should continue to be based on the concept of a 160 MW Open Cycle Gas Turbine (OCGT) power plant. However the MRCPWG has agreed a number of changes, as follows, that will require amendments to the Market Procedure:

- where cost effective to do so the definition of the model power station is to include a provision for an inlet air cooling system which will affect power station capital costs and impact the summer de-rating factor. The likely capacity value for the model power station



is also to be assessed annually in the consultant report on the power station capital costs. The MRCPWG agreed that a developer for a facility similar to the model plant would be likely to install inlet cooling as a cost effective method of boosting Capacity Credit income;

- the Fixed Fuel Cost should include an allowance to initially fill the fuel tank with sufficient distillate for 14 hours of operation, not 12 hours as currently indicated in the Market Procedure. This aligns the Market Procedure with the requirements for Certified Reserve Capacity under clause 4.11.1 of the Market Rules;
- where the minimum available land size in any particular location is greater than 3ha, a greater land size is to be considered for that location. In addition the IMO shall have the scope to include additional locations, where appropriate, for purposes of the MRCP. The MRCPWG adopted these changes to allow for instances where a minimum land size of 3ha is not available and the inclusion of additional regions to reflect the areas, within the South West interconnected system (SWIS), where generation projects are most likely to be proposed. With the Transmission Connection Cost estimate method being amended (described below) and decoupled from specific location, the calculation of the Capital Cost shall be made using the average of the Land Costs across all locations;
- the effective compensation period for the total investment costs for the generic power station cost, which was previously 2 years, is to be changed to 6 months. This was based on the assumption that the total investment cost of the generic power station will be incurred in even incremental amounts over the 12 month period immediately preceding the first Capacity Year. PricewaterhouseCoopers (PwC) recommended the change in assumed construction period in their report on the Weighted Average Cost of Capital (WACC)⁴ methodology and the MRCPWG agreed the change. In relation to this it was agreed that the total investment costs for the generic power station shall be determined as at the same date, being April of Year 3 of the relevant Reserve Capacity Cycle;
- escalation of values in respect of power station, transmission, switchyard and Operating and Maintenance (O&M) costs to April of Year 3 is to be performed by the consultant(s) developing the cost estimates, with the methods to be explained;
- an allowance for annual asset insurance costs for the model power plant is to be included within Fixed O&M Costs. The MRCPWG agreed a provision should be made within the Market Procedure for the inclusion of annual asset insurance costs;
- the methodology for forecasting Transmission Connection Works costs is to be based on historical connection costs and relevant access offers determined by Western Power. The Sinclair Knight Merz (SKM)⁵ report on determining Deep Connection Costs recommended the use of an alternative methodology of using historic connection costs to indicate future connection costs. The MRCPWG agreed to adopt the recommended methodology;
- debt issuance costs are to be included within the WACC and corresponding debt financing costs are to be removed from within margin M. The Market Procedure will continue to maintain an allowance for financing costs associated with equity raising in the determination of margin M;

⁴ Maximum Reserve Capacity Price – WACC methodology http://www.imowa.com.au/f2179.1210106/PwC_MRCP_WACC_-_Final_Report_28_February_2011.pdf

⁵ Calculation Methodology to be Applied in Determining Deep Connection Costs http://www.imowa.com.au/f2179.1254370/WP04128_-_IMO041_MRCP_Deep_Connection_Cost_Calculation_Method_Interim_Report_Rev3.pdf

- the “Minor” and “Major” components as listed under procedure step 1.13.8 are to be renamed as having “Annual” and “5-yearly” “Review Frequency” as the MRCPWG deemed that this would clarify the review status of the components listed under procedure step 1.13.8;
- the WACC components are to be re-classified to reflect the need for annual review. Specifically the Statutory Corporate tax rate is to be classified for “Annual” review (formerly classed as a “Minor” component) component as the rate of corporate tax can change from year to year. The Debt issuance costs are to be classified for “5-yearly” review (formerly classed as a “Major” component) component, with a fixed value of 0.125%, as they are not considered to be significantly volatile on an annual basis; and
- given the reducing availability of bond market data and current regulatory uncertainty, the IMO is to have discretion to nominate a method for determining the Debt Risk Premium (DRP) that is consistent with current accepted Australian regulatory practice. In addition the MRCPWG also agreed that the Market Procedure is to include a statement expressing the intent to amend the Procedure if the “Bond Yield Approach” developed by the Economic Regulation Authority (ERA)⁶ becomes accepted Australian regulatory practice.

The MRCPWG considered the limitations of the existing DRP calculation methodology based data supplied by Bloomberg. The ERA presented an alternative approach that it has applied in a recent regulatory decision (WAGN⁷), however that decision is being challenged at the Australian Competition Tribunal by WAGN⁸. The MRCPWG noted the merits of the ERA’s approach, but also noted that the method could not be considered as accepted regulatory practice whilst the decision was being challenged. Based on this the IMO considers it prudent to allow for the continued use of the current methodology with some minor amendments as recommended by PwC. However noting the in principle agreement by the MRCPWG of the merits of the ERA’s approach the IMO intends to further amend the Market Procedure if and when the ERA’s proposed methodology is adopted as accepted regulatory practice.

The MRCPWG has noted that the basis of the contingency cost in the calculation of Margin M was ambiguous and incompatible with the rest of the Market Procedure. As a result it was agreed that the Market Procedure should be updated, to clarify and align the contingency provision with the current practice of applying the contingency allowance to the full Power Station cost rather than the other components of margin M. The proposed revised Market Procedure reflects this agreement.

In addition it should also be noted that the IMO has made a number of minor changes to the format and wording of the Market Procedure. These changes are intended to improve clarity and the readability of the Market Procedure.

Impact of the proposed amendments to the Market Procedure

Analysis has been performed by the IMO to estimate the impact of implementation of the agreed changes with regards to annual insurance costs, the increase in the fuel requirement from 12 to

⁶ Debt Risk Premium – ERA Methodology http://www.imowa.com.au/f2179,1210187/Appendix_A_-_ERA_presentation_-_DRP_to_the_MRCPWG_-_24_March_2011.pdf

⁷ ERA Final decision on WA Gas Networks Pty Ltd proposed revised access arrangement <http://www.erawa.com.au/cproot/9382/2/20110228%20Final%20decision%20on%20WA%20Gas%20Networks%20Pty%20Ltd%20proposed%20revised%20access%20arrangement%20for%20the%20MW%20and%20SW%20GDS.pdf>

⁸ WA Gas Networks (WAGN) Media Release <http://www.wagn.com.au/LinkClick.aspx?fileticket=Rwky1238dUs%3d&tabid=39>

14 hours, the allowance for a minimum land size above 3 ha, the application of a construction uplift factor, the inclusion of inlet cooling in the Power Station definition, the revised Transmission Connection Cost (TCC) methodology and the reduced effective construction period of 6 months.

The analysis considers the impact of the changes if they had been in place at the time of determination of the MRCP for the 2013/14 Capacity Year. It should be noted that this indicative comparison is provided for information only and is reflective of the outcomes of the proposed methodology at a point in time. Future MRCP determinations could be affected by changes in MRCP cost components, including construction costs, currency exchange rates or future transmission connection offers.

The comparison is based on the following assumed variations:

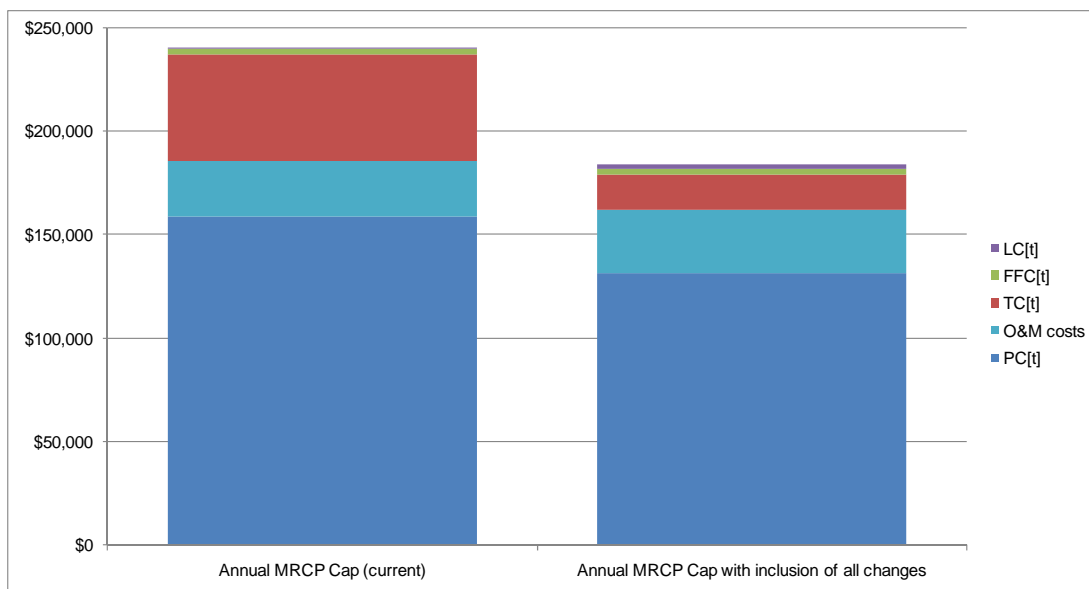
- The WACC has been applied to allow 6 months of return during the construction period (as proposed by PwC and endorsed by the MRCPWG) versus 2 years, as is currently applied. In order to calculate a value at 6 months prior to completion of construction (April of Year 3) an escalation rate of 3% has been estimated and applied for 22 months. The rate of 3% has purely been used for comparison purposes;
- The TCC methodology as proposed by SKM and endorsed by the MRCPWG, producing a TCC of \$127,000 per MW versus the current value of \$305,000 per MW has been used for comparison purposes;
- Inlet Cooling, including water injection, has been included in the Power Station definition increasing the estimated power station capital cost from \$121.8M to \$127.3M (+4.5%) and effective capacity at 41°C from 135.6MW to 159.9MW (+17.9%);
- The fuel requirement has been increased from 12 to 14 hours at full operation;
- The average land cost across all locations which increases the total Land Cost value used from \$773,000 to \$2,808,300; and
- The inclusion of annual insurance premiums within the fixed O&M cost as agreed by the MRCPWG. An estimated asset insurance cost of \$2,500 per MW has been used for this exercise. This estimate is based on indicative quotations obtained from insurance brokers. This cost shall be determined on an annual basis.

The table below provides indicative analysis of the impact of the changes listed above on the 2013/14 MRCP. However the IMO notes that if the changes are implemented through this Procedure Change Proposal, they would be applied for the first time in the determination of the 2014/15 MRCP.

The graph following the table illustrates the relative contribution of the various component costs to the total MRCP, both under the current methodology and under a methodology where all of the changes listed in the table above are implemented. A comparison for implementation of the revised DRP methodology has not been included as the proposed amendments to the Market Procedure provide an option to use an alternative methodology rather than a requirement to do so.



	MRCP (\$)	Percentage change (%)
Annual MRCP Cap (current)	240,621	0%
MRCP with Insurance costs	243,121	1%
MRCP with increase in fuel requirement from 12 to 14 hours	241,241	0.3%
MRCP using average land cost	242,614	0.8%
MRCP with WACC applied based on 6 months return	227,836	-5%
MRCP with inlet cooling (including water injection)	214,172	-11%
MRCP with new Transmission Cost methodology	210,657	-12%
MRCP with all changes incorporated	184,035	-24%



Capacity Year	13/14 current	13/14 indicative
Power Station Cost	\$ 158,710	\$ 131,261
Transmission Costs	\$ 51,621	\$ 17,137
Fixed O& M	\$ 26,649	\$ 30,805
Fuel Costs	\$ 2,825	\$ 2,608
Land Costs	\$ 818	\$ 2,163
MRCP (nearest \$100)	\$ 240,600	\$ 184,000

Implications to the operation of existing WEM processes and physical outcomes

Any changes to future MRCPs resulting from these proposed amendments will be proportionately reflected in the Reserve Capacity Price and Reserve Capacity Refunds. The IMO notes that it is reviewing both the Reserve Capacity Price calculation and the refund regime



in its Reserve Capacity Mechanism review, which is due to be presented to the MAC in late 2011.

The Short Term Energy Market and Balancing mechanism are both based on Short Run Marginal Cost. These should not be directly affected by changes to the MRCP methodology.

Financial costs and benefits

The proposed amendments to the Market Procedure are anticipated to require slightly higher consultancy fees in the annual MRCP determination, particularly through the appointment of an auditor to review the transmission cost estimate calculated by Western Power. However, the proposed transmission cost methodology is easier for Western Power to calculate and would require less of Western Power's resources to be diverted away from real access applications. The IMO is currently obtaining quantitative estimates of the cost increases and reduction in Western Power's requirements.

As noted in Section 4 below, the IMO considers that the proposed amendments better address the Market Objectives.

Public workshop

The IMO held a public workshop on 1 September to discuss the proposed amendments to the MRCP methodology. The presentations and minutes from this workshop are available on the following Market Web Site: http://www.imowa.com.au/PC_2011_06

Following this workshop, minor amendments have been made to the proposed Market Procedure as developed by the MRCPWG. These changes relate to:

- The addition of water receipt and storage facilities to allow 14 hours of continuous operation;
- Clarification that no additional costs are to be added to the direct connection cost scope in steps 1.8.2 a-h of the Market Procedure when this value is used for a year for which no connection data is available; and
- Clarification of the facilities that are considered in the transmission connection cost estimate.

2. Provide the wording of the Procedure

The proposed revised Market Procedure for Maximum Reserve Capacity Price is provided as an attachment to this proposal.

3. Describe how the proposed changes to the Market Procedure would be consistent with the Market Rules, the Electricity Industry Act and Regulations

The proposed revised Market Procedure has been reviewed as a whole by the IMO to ensure compliance of the Market Procedure with the relevant provisions in the:

- Market Rules;



- Electricity Industry Act 2004; and
- Regulations made under the Electricity Industry Act 2004.

4. Describe how the proposed changes to the Market Procedure would be consistent with the Wholesale Market Objectives

The IMO considers that the revised Market Procedure will better Market Objective (a) by promoting economic efficiency through greater alignment of the MRCP with real-world costs.

The IMO considers that the steps are drafted in a way that does not change the operation or objectives of the Market Rules. As a result the IMO considers that the revised Market Procedure, as a whole, is consistent with the Wholesale Market Objectives.



APPENDIX 2: IMO'S RESPONSE TO SUBMISSIONS RECEIVED DURING THE CONSULTATION PERIOD

Number	Clause/Issue	Submitter	Comment/Change Requested	IMO's response
1	Price volatility	Argonaut Capital Limited	<p>As peaking power stations often do not have a high quality energy sales contract, capital providers place a large emphasis on the robustness of the WEM capacity credit regime, which is unique in Australia. The pricing of capacity credits is seen as the greatest risk to financing peaking power stations, due to historical volatility and the annual setting of prices.</p> <p>Power generation projects are long term investments, which require investors to be comfortable with cash flow projections over 20 to 30 years. This long term investment horizon is at odds with annual re-setting of Capacity Prices. When such a timing mismatch is combined with a volatile Capacity Price history, as is the case in the WEM, then pricing risk becomes a key hurdle for financiers.</p>	<p>The IMO considers that the MRCP is a technical parameter that is supported by prudent engineering cost estimates. The proposed changes seek to more “correctly” reflect the accurately reflect the marginal cost of developing new capacity, based on the theoretical construct of a 160 MW Open Cycle Gas Turbine (OCGT) power plant. The IMO considers that by accurately reflecting costs, greater economic efficiency will likely be promoted in the market, particularly with regard to investment decisions.</p> <p>The MRCP is determined without regard for the supply-demand balance and is not, in itself, intended to be an investment signal. The IMO notes that the downstream functions of the MRCP (calculation of the Reserve Capacity Price and Reserve Capacity refunds) are intended to provide signals to Market Participants. These two mechanisms are being separately considered in the Reserve Capacity Mechanism (RCM) review that was commissioned by the IMO Board and was presented to the Market Advisory Committee (MAC) at its 5 October 2011 meeting.</p> <p>Notwithstanding the potential for downward movement in the MRCP if the proposed changes are implemented, the IMO expects that the proposed methodology (particularly the weighted average calculation of the transmission connection cost estimate) could be expected to reduce future price volatility compared with the existing methodology.</p> <p>The IMO also notes the design of the RCM is such that a project developer may address price risk through a bilateral contract with a Market Customer. It is not necessary that bilateral contracts contain an energy</p>

Number	Clause/Issue	Submitter	Comment/Change Requested	IMO's response
				<p>sales component. All recipients of Capacity Credits have declared their intent to bilaterally trade their capacity in the annual Bilateral Trade Declaration process that precedes the allocation of Capacity Credits.</p> <p>The frequency of determination (annual) of the MRCP is required by clause 4.16 of the Market Rules and is outside of the scope of this Procedure Change Proposal.</p> <p>The issue of volatility is further discussed in section 3.3.1 of this report.</p>
2	Regulatory risk	Argonaut Capital Limited	<p>The second largest risk to financing WEM projects is perceived to be regulatory risk. This is linked to pricing risk due to the annual price setting mechanism. However, the five yearly pricing methodology review process adds another layer of uncertainty to WEM investment returns. Considering that a 30 year investment would incorporate six methodology reviews, significant change and uncertainty is introduced via the regulatory mechanisms that govern WEM investments.</p> <p>On a recent transaction where Argonaut acted as advisor, two of the "four pillar" Australian commercial banks were not comfortable with Western Australian capacity credit regulatory risk due to volatility in capacity credit prices on an annual basis for reasons that were not always clear or expected.</p> <p>Argonaut understands that the capacity credit market is new and evolving but the ongoing change in pricing and methodology creates undue uncertainty. Consequently many large capital providers will not currently consider financing WEM peaking power stations.</p>	<p>As an administrative mechanism, the MRCP requires ongoing review and adjustment to ensure it strives to reflect technological developments and market conditions. That the Market Rules require a review of the methodology to be undertaken every 5 years, by implication allows the methodology to evolve over time. The IMO considers that this review of the MRCP methodology has been clearly signalled and communicated:</p> <ul style="list-style-type: none"> • The IMO highlighted in the 2012/13 MRCP determination (in late 2009) that it would initiate the methodology review in early 2010. The ERA supported this in its decision on the 2012/13 MRCP. • The ERA's 2009 Annual WEM Report to the Minister for Energy recommended that the IMO initiate the review. • The review has now been highlighted in the last two MRCP determinations and the last two Statements of Opportunities (2010 and 2011). <p>The proceedings of the MAC and MRCPWG have been available on the IMO website throughout the review process, which ran for more than one year.</p>

Number	Clause/Issue	Submitter	Comment/Change Requested	IMO's response
				See also response 1.
3	Potential impact of reduction in MRCP	Argonaut Capital Limited	<p>The Proposed Procedure Changes, which if introduced would be likely to reduce Capacity Prices (both MRCP and RCP) by approximately 24%, would have dire, far reaching and long term consequences on the ability of the WEM to both attract new capital and to retain existing capital.</p> <p>According to Argonaut's modelling, a 24% Capacity Price reduction would reduce the post-tax internal rate of return ("IRR") on a typical diesel fired peaking power station from 10-11% to less than 6%. 6% IRR is substantially below the cost of equity. Consequently, a 24% price reduction would result in no further peaking power stations being built in the WEM.</p> <p>Further, a 24% Capacity Price reduction would most likely precipitate significant distress for some existing market participants, as a result of lending defaults being triggered. At current Capacity Prices, the Debt Service Coverage Ratio ("DSCR") for recently built projects geared at 60% is typically around 1.75-2.00x (excluding revenue from energy generation). The DSCR would fall to between 1.3 and 1.6x under the proposed pricing methodology. Argonaut expects that such deterioration in DSCR would result in multiple market participants breaching covenants on their debt facilities. Combined with the asset price devaluation that would occur following a 24% reduction in revenue, it is plausible that some market participants may be placed in voluntary administration.</p> <p>Clearly this would have a negative impact on the reliability and efficiency of the WEM. Competition would also be reduced, both by the exit of existing players, and the lack of entry of any new competitors.</p> <p>The logic of Argonaut's expectations outlined above is supported by comparing the proposed theoretical cost of building a 160MW peaking power station, to reality. Argonaut's experience is that peaking power stations presently cost between \$1 million and \$1.1 million per MW, fully</p>	<p>The Procedure Change Proposal provides an indication of the impact of the proposed changes if they had been applied in the calculation of the MRCP for the 2013/14 Capacity Year. The IMO notes that this indicative analysis is provided for information only.</p> <p>The indicative MRCP of \$184,000 derived under the revised methodology was based on an estimated total capital cost in the 2013/14 Capacity Year would have been \$201.6 million (after escalation and application of the WACC). This results in an effective total capital cost of \$1,260,292 per MW (based on the notional capacity of 160 MW).</p> <p>The IMO notes that the value of \$127.3 million quoted in the submission is the un-escalated cost of only the power station with inlet cooling, without transmission, fixed fuel and land costs.</p> <p>The IMO also notes that the capital cost for the MRCP is annualised over a period of 15 years rather than the suggested 30 year life of investment detailed in the submission. An annualisation of costs over a 30 year period in line with a "30 year investment" would see a substantial reduction in the annualised capital cost component of the MRCP.</p> <p>The IMO notes that there is an opportunity for stakeholders to comment on the MRCP prior to publication of the final annual report. The IMO is confident that the values provided by SKM represent an accurate estimate of likely actual costs based on a robust approach and notes that the MRCPWG accepted those estimates for final use in the MRCP.</p> <p>See also response 1.</p>

Number	Clause/Issue	Submitter	Comment/Change Requested	IMO's response
			installed. Under the proposed changes, Argonaut's understanding is that the theoretical cost of building a 160MW peaking power station would be \$800k per MW (\$127.3 million for 160MW). This is between 20% and 27% below the real cost of building a 160MW peaking station. Argonaut believes it is important to ensure theoretically set prices continue to reflect reality, in order to preserve the integrity and relevance of Capacity Prices.	
4	Regulatory risk	Argonaut Capital Limited	A serious longer term impact of a 24% price reduction would be the large and permanent increase in regulatory risk associated with the WEM. Even if prices were increased back to a level that allowed investors to make an acceptable return, the potential for further unforeseen and uncommercial regulatory changes would be likely to deter new capital from flowing into the sector. There is unlikely to be any easy way to undo the damage that would be caused to the reputation of the WEM in financial markets as an investment option.	See response 2.
5	Cost reflectivity	Argonaut Capital Limited	Argonaut strongly recommends that Capacity Prices are maintained around the current levels to reflect the true cost of building a 160MW peaking power station, based on recent projects that we have arranged finance for, and our knowledge of the project finance market.	<p>The IMO considers that the proposed amendments will align the MRCP with real-world costs of building a 160 MW OCGT, with the capital cost annualised over a 15 year period.</p> <p>In addition the IMO notes that under MR4.16.6 it is required to request and consider submissions from stakeholders on the MRCP prior to publication of its final report. This provides an opportunity for stakeholders to provide feedback on their experience in the area of power station costs .</p> <p>See also responses 1 and 3.</p>
6	Price volatility	Argonaut Capital Limited	Argonaut suggests that long term pricing stability should be a key priority in setting Capacity Prices. Rather than setting the price annually and reviewing the methodology every five years, Argonaut proposes that Capacity Prices be set on a longer timeframe (10 to 15 years), with annual price changes linked to inflation. An annual adjustment based on surplus capacity	See section 3.3.1 of this report and response 1.

Number	Clause/Issue	Submitter	Comment/Change Requested	IMO's response
			could continue to be built into prices in a similar fashion to the current formula, in order to provide price signals to encourage or discourage new capacity depending on projected supply-demand conditions, without significantly and unfairly disadvantaging existing capacity.	
7	Calculation of Reserve Capacity Price	Argonaut Capital Limited	Argonaut suggests that the automatic 15% reduction in MRCP could also be removed, as it appears to be superfluous and arbitrary, and only serves to complicate the pricing process.	The calculation of the Reserve Capacity Price is outside of the scope of this Procedure Change Proposal. As noted in response 1, this is being separately considered in the RCM review.
8	Price volatility	Infratil Energy Australia	<p>The MRCP, and the resulting Reserve Capacity Price (RCP), plays a critical role as the only visible price for capacity available in the market.</p> <p>The importance to financiers of the absolute quantum of the MRCP and its minimal year to year variations in determining whether to invest in SWIS generating capacity should not be underestimated by the IMO (while the decision when to invest is related, it is separate and based on the forecast balance of generation supply versus consumer demand).</p> <p>As suggested in our 2010 submission, we urge the IMO to give thought to methods for smoothing the annual MRCP (without blunting its price signal). Such methods might include a rolling, say, 3 year price or limiting the move (down) in price by, say, 5% from one year to the next.</p>	<p>See section 3.3.1 of this report and response 1.</p> <p>The IMO considers that the MRCP needs to be sufficiently responsive to development costs in the year in which a new facility would be assigned Capacity Credits. Consequently, the IMO considers it inappropriate to apply smoothing to the MRCP.</p> <p>There may be merit in smoothing being applied in the Reserve Capacity Price calculation, which is being separately considered in the RCM review. The IMO considers that any price smoothing or limits to annual variation would need to apply symmetrically, in order to appropriately balance the need to compensate investors for costs with the objective <i>"to minimise the long-term cost of electricity supplied to customers from the South West Interconnected System"</i> (Market Objective (d)).</p>
9	Water requirements for inlet cooling & emissions control	Infratil Energy Australia	<p>Infratil notes that the power station definition has been augmented by the inclusion of a gas turbine inlet air cooling system. While an additional \$5.5m has been allowed in the capital cost estimate of the power station for this inclusion, Infratil is concerned that this amount is inadequate to cover the fair cost of supplying demineralised water to this cooling system in the quantities necessary.</p> <p>We believe the cost estimate should allow for the inclusion of:</p> <ul style="list-style-type: none"> a water demineralisation plant suitably sized such that 	The IMO has confirmed that SKM's estimate of the additional capital cost for the addition of inlet cooling included an allowance for a demineralisation plant and related infrastructure. The IMO considers that the Procedure as drafted allows complete consideration of water volume requirements as raised in this submission.

Number	Clause/Issue	Submitter	Comment/Change Requested	IMO's response
			<p>it can supply the needs of the gas turbine at full output;</p> <ul style="list-style-type: none"> • raw and demineralised water storage tanks; • all water handling apparatus within the power station perimeter - pipe work, valves, pumps etc; • a connection to a water pipeline and/or system than can supply at least 23 kl/hr, being the water consumption of a nominal 160MW gas turbine; and • waste water disposal options such as evaporation ponds or pipelines. <p>Infratil also understands that controlling nitrous oxide emissions produced by gas turbines burning distillate is not possible using dry low NOx burner technology with the preferred methods of control being either water injection into the combustion zone or external treatment of the GT exhaust via a selective catalytic reactor. We note that a nominal 160MW gas turbine would require water at a rate of 42 kl/hr for emissions control.</p>	
10	Transmission connection cost review criteria	Infratil Energy Australia	<p>SKM, (refer section 5.1.2 and 5.1.3 of its report) has developed its own criteria to assess the DCC calculation options. Infratil believes that SKM has erred in its definition of accuracy, "...as the extent to which the DCC calculation methodology drives the correct level of new capacity investment and supports the correct mix of generation technologies in the market as prescribed by the Market Objectives".</p> <p>It is definitely not the role of the DCC to "drive" the level of new generation investment in the market nor to support the correct mix. The timing of new investment is driven by the forecast balance of supply versus demand, as published in the Statement of Opportunities each year, and the resultant forecast of RCP which has been adjusted for excess capacity as per the Market Rules.</p> <p>Infratil believes that the accuracy criterion should primarily concern itself with the extent to which the calculation option accurately reflects the cost of connecting a 160MW OCGT to the SWIS at a representative set of locations for the market</p>	<p>The IMO agrees that the accuracy criterion should concern itself with the extent to which the result is reflective of the real costs faced by project developers.</p> <p>In its report for the MRCPWG, SKM indicated that "<i>The existing methodology represents an opportunity for significant inaccuracy in the order of ±30-50% of the actual completed cost of the connection asset</i>". In addition, "<i>The lack of dedicated options analysis has the opportunity to introduce significant inaccuracies</i>".</p> <p>The proposed methodology is based on actual connection costs and actual Access Offers made by Western Power, so is determined from the real costs faced by project developers. The proposed methodology automatically accounts for the dedicated options analysis.</p>

Number	Clause/Issue	Submitter	Comment/Change Requested	IMO's response
			year under consideration. On this fundamental basis, Infratil queries how option 2 is awarded a "tick" for accuracy.	
11	Transmission connection cost review criteria	Infratil Energy Australia	<p>Determining the extent of deep connection works at any location within the SWIS is a complex task that can only be done by Western Power system planners, the experts. A simplicity criterion that seeks "...to the extent that it is feasible, (to allow) participants other than Western Power to independently apply the methodology, therefore supporting their own investment modelling" will almost certainly end up with investors developing false expectations of the cost of connection.</p> <p>Investors are best served by an early understanding of likely future connection costs, particularly in a power system where spare generation connection capacity is scarce. Investors will eventually face the true cost of connection when an application is made to Western Power so it is somewhat irrelevant whether they can independently model their own DCC. An MRCP, and resulting RCP, that reflects typical future connection costs will not only help an investor decide whether to invest in the SWIS but may also provide an initial guide as to where to locate this investment.</p> <p>It is Infratil's view that participants are better off having an unbiased expert produce the DCC rather than having the ability for an independent non-expert being able to replicate a weighted average DCC based on historical DCC contributions.</p>	<p>The proposed methodology is based on actual connection costs and actual Access Offers, which have been developed by Western Power.</p> <p>As noted in response 10, the estimates developed by Western Power for the 2012/13 and 2013/14 MRCP's did not incorporate any dedicated options analysis, so were less rigorous than the estimates that are developed for actual generation facilities connecting to the SWIS.</p>
12	Transmission cost volatility	Infratil Energy Australia	While Infratil is supportive of SKM's view on certainty, that "...the methodology must be stable over time, therefore promoting regulatory certainty, and as a consequence, minimal investment risk", such certainty could be achieved by constraining any year-on-year movement in the DCC as provided by Western Power to, say, 5%.	See response 8.
13	Transmission costs	Infratil Energy Australia	SKM's preferred option 2, of the four considered, is the only option that uses a backward looking approach. SKM has identified a number of issues with this approach including the	In its report for the MRCPWG, SKM acknowledged that option 4, which involved reinforcement of the existing approach, would likely yield the most accurate

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			<p><i>"...ability (of the DCC estimate) to respond to rapid changes in actual connection costs".</i> The report went on to say <i>"Western Power has indicated that they believe increasing constraints on the SWIS will result in a rapid increase in connection costs and have raised concerns that using historic data may not be able to capture this"</i>. SKM did not think this an issue of concern as it believed that this rise in DCC was not reflective of the long term cost of connection, when actually it most probably is. This is driven by transmission utilisation continuing to increase and the regulatory framework only allowing Western Power to reinforce the system where transmission shortfalls are due to increasing customer demand (coupled with existing generation).</p> <p>Infratil is supportive of options 3 and 4 which are forward looking and involve the expertise of Western Power. Infratil rejects the inference that these options are overly onerous for Western Power and suggests that they are merely an extension of the work already undertaken by Western Power in its ordinary course of business.</p> <p>We believe that SKM's suggestion "...that a forward looking method that embraces options analysis in a planning framework is overly onerous, a method that uses historical data with weights to give greater emphasis to current conditions may be an adequate compromise, and may reveal emerging condition., is flawed and that a weighted historical average grossed up by 15% will not be an adequate reflection of the true deep transmission connection cost of a future 160MW power station.</p>	<p>assessments. However, SKM concluded that the increased complexity and management cost of this option outweighed the benefits. The MRCPWG endorsed SKM's recommendation at its 24 March 2011 meeting.</p> <p>The IMO also notes that the methodology scales up the calculated weighted average by the 15% forecasting margin to <i>"ensure significant increases in the cost of connection do not undermine the ability of the methodology to reflect the short term imperatives of the MRCP calculation as a price cap"</i>.</p> <p>As noted in section 3.3.1 of this report, for the 2012/13 MRCP, the estimate provided by Western Power for the shared connection cost at the cheapest location was more than 350% higher than the indicative value provided for the 2011/12 MRCP.</p> <p>However, the transmission cost derived from the proposed methodology, which was calculated from actual connection costs and access offers, is significantly lower than the estimates provided by Western Power for the 2012/13 and 2013/14 MRCP's. This suggests that the higher cost estimates are not reflective of the capital contributions being charged to project developers by Western Power.</p> <p>Western Power has advised the IMO that the estimates developed for the 2012/13 and 2013/14 MRCP's required approx 3 man-months to complete. This has required the diversion of resources away from the processing of access applications for Western Power's customers. In its report for the MRCPWG, SKM indicated that the proper implementation of option 4 would require 1-2 full time staff. Conversely, Western Power has indicated in its submission on this proposal that the proposed methodology would require</p>

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				approximately 6 weeks for developing the estimate.
14	Transmission costs	Infratil Energy Australia	<p>With respect to the proposed market procedure for the Transmission Connection Works, (clause 1.8), Infratil:</p> <ul style="list-style-type: none"> assumes that the reference to "relevant generators" in clause 1.8.1 (a) means generators greater than or close to a capacity of 160MW; and notes that clause 1.8.1 (b) says that "For years which no historic data for relevant generators is available a connection cost will be calculated on the basis defined in clause 1.8.2." but clause 1.8.2 no longer includes an estimate of deep connection costs. 	<p>The term "relevant generators" means those that meet the criteria outlined earlier in step 2.4.1 (step 1.8.1 in the original Procedure Change Proposal) of the proposed Market Procedure. The methodology does not include or exclude generators from the calculation based on their size.</p> <p>The deep connection cost component of step 2.4.2 (step 1.8.2 in the original Procedure Change Proposal) has been removed. Analysis performed by SKM during its review indicated that the cost of the direct connection described in step 2.4.2, with no explicit deep connection cost component, was higher than the capital contributions (on a \$/MW basis) during the period considered.</p>
15	Fixed O&M – water-related costs	Infratil Energy Australia	An allowance for the fixed costs of supplying water to the power station for inlet cooling and emissions control should be included in the fixed O&M cost. This cost should consist of the cost of maintaining the incoming water and waste water processing, transport, storage and disposal infrastructure in addition to any standing charges from a water authority.	See response 9.
16	Fixed O&M – insurance costs	Infratil Energy Australia	<p>Infratil supports the inclusion of operating insurance costs but notes that the IMO's estimate of \$2,500 per MW does not reflect the full cost of basic insurance required for a plant of this type. Specifically, the IMO estimate appears to:</p> <ul style="list-style-type: none"> include property insurance only; exclude public and products liability insurance; and ignores the stamp duty costs of 10% and the 2% terrorism levy. <p>Infratil notes that it is a requirement of the Electricity Transfer Access Contract with Western Power for a generator to maintain public and products liability insurance of at least \$50million.</p>	<p>The IMO accepts that it is a requirement under ETAC for generators to maintain Public and Products Liability Insurance and will amend the Procedure to allow for the inclusion of these costs.</p> <p>The IMO has received a number of cost indications, for the types of insurance mentioned, from insurance brokers. These cost indications have included stamp duty.</p> <p>In future MRCP determinations the IMO will make use of cost indications from insurance brokers to establish the relevant costs for respective insurance premiums.</p> <p>It is noted that the Terrorism Levy represents a loading</p>

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				of between 2-12% on insurance premiums. An allowance for the Terrorism Levy will be included in the calculation of insurance costs.
17	Margin M	Infratil Energy Australia	<p>Infratil suggests that, while the inclusion of a debt issuance cost in the formulation of the WACC is welcomed, it should not be considered as sufficient to cover the material costs incurred by the project as a result of the due diligence undertaken by debt financiers. The debt issuance cost set at 0.125% may be sufficient to cover the upfront fees charged by a debt financier when a project is financed or refinanced but not their due diligence costs.</p> <p>Infratil suggests that clause 1.12 (b) is changed to <i>"financing costs associated with equity raising and debt raising due diligence"</i>.</p>	<p>As part of the MRCPWG review, PricewaterhouseCoopers (PwC) was engaged by the IMO to review the WACC as applied in the MRCP. Part of this review included consideration of costs associated with debt. The debt issuance cost of 0.125% is intended to cover debt raising costs including Arranger, Agency, Placement, Company credit rating, Issue credit rating, and Legal fees as well as an allowance for a Dealer swap margin.</p> <p>Whilst the IMO accepts that different projects and project developers are likely to have differing debt structures, complexities and risks with related variability in costs, it is not the objective of the Procedure to include all possible costs but to make a reasonable allowance for likely debt related costs. The PwC report suggests that the use of 0.125% in respect of debt issuance costs has sound regulatory basis. As a result an additional allowance for due diligence costs will not be included through any change to the Procedure.</p>
18	WACC	Infratil Energy Australia	<p>Infratil believes that the allowance for funds used during construction (AFUDC) is insufficient based on its recent experience in building a peaking OCGT in the SWIS and refutes PwC's recommendation.</p> <p>It is our experience that construction cash outflows do not occur in the manner described in PwC's document with material outflows required prior to the commencement of site works, specifically those associated with:</p> <ul style="list-style-type: none"> • the initial (and in some case multiple) payments for major items of plant; • detailed engineering designs; • debt raising due diligence; 	<p>As part of this process, PricewaterhouseCoopers (PwC) was engaged by the IMO to review the WACC applied in determining the MRCP. Part of this review included consideration of how the WACC should be applied in calculating the amount of compensation within the MRCP for costs incurred in the construction phase.</p> <p>At the MRCPWG meeting held on 17 February 2011 the MRCPWG accepted the recommendation from PwC to reduce the effective construction compensation period over which the WACC should be applied from 2 years to 6 months (assuming linear cash flows over a</p>

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			<ul style="list-style-type: none"> • equity raising; • project contract negotiations; and • the securing of leases, licenses, access rights and easements. <p>Further, while site works may take as little as 12 to 14 months to complete, these works would be scheduled to be completed at least 3 months prior to the beginning of the Market Year on 1 October to allow for any construction over-run and the avoidance of loss of income and/or penalties.</p> <p>Based on very recent experience, Infratil is of the view that a realistic construction period for the determination of AFUDC is 24 months with an "effective compensation period" of 12 months.</p>	<p>period of 12 months). Related to this, the Procedure requires that the total investment costs for the generic power station be determined as at the same date as effective commencement of the 6 month WACC compensation period, being 1 April of Year 3 of the relevant Reserve Capacity Cycle. This effectively sees an escalation of costs applied to the initially determined investment costs to determine a value in April of Year 3, to which WACC is applied for 6 months for a final capital cost of construction.</p> <p>The IMO recognises that some projects may have significantly different cash flows from the assumptions made by PwC. However the IMO maintains that the proposed amendment, based on expert advice, allows for escalation of costs during the complete period from initial investment cost determination until October of Year 3, and provides a reasonable estimate of the finance costs given the construction timetable for an efficient new generator.</p>
19	WACC	Infratil Energy Australia	Infratil notes and supports the inclusion of a debt issuance cost to allow for the fees charged by debt financiers initially and then at each subsequent refinance.	Noted.
20	Forced Outage refund compensation	Verve Energy	<p>As recorded in the minutes of the MRCPWG Meeting No 10, Verve Energy is concerned that the non-inclusion of an adjustment for forced outage rate in the MRCP formula could have a significant financial impact, even for plants with a relatively low forced outage rate. Verve Energy does not support the conclusion "... it was generally accepted that an allowance for compensation for forced outages within the MRCP was not justified at present".</p> <p>In the MRCPWG's deliberation on including a forced outage rate in the MRCP formula, no logical objection was found. The IMO had researched its forced outage record and determined the forced outage rate for peaking generators to be 0.73%. On the premise that such a FOR is low, the MRCPWG appears to</p>	<p>While the MRCPWG considered the inclusion of an allowance for Forced Outage refunds, it was generally accepted that this should not be included at this time. The reasons for this outcome were that:</p> <ul style="list-style-type: none"> • The theoretical power station on which the MRCP is based has only a 2% capacity factor; • The magnitude of the Forced Outage refunds paid in the WEM for similar facilities was considered small; and • The Reserve Capacity refund mechanism is being reviewed in the RCM review. <p>The IMO considers that an allowance for Forced Outages should be reconsidered in the future, based</p>

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			<p>have dismissed it on the basis that it would not be a material component. Verve Energy considers that materiality determination to be disputable. Indeed, the impact could be commensurate with, and possibly more significant than, that from other parameters such as insurance cost, an increase in the fuel requirement or using the average land cost which have been incorporated in the proposal.</p> <p>The IMO statistics, reported in the Meeting 10 minutes, of 0.73% based on 6 facilities over 3 years are noted. However, given the infrequent and random nature of forced outages it is suggested that a larger database should be considered. (Verve refers to a report from the New Zealand Electricity Commission, which references statistics from the Whirinaki Open Cycle Gas Turbine (OCGT) in New Zealand, as well as the North American Electricity Reliability Corporation. Both references suggest that a typical Forced Outage Rate for an OCGT is 2%.)</p> <p>Verve Energy considers that a FOR of 0.73% is material and should be incorporated in the determination of MRCP. If the contention holds that 2% is a more appropriate FOR to use, then the argument for incorporating the parameter is even more compelling – generators could be under compensated not by 0.73% but by 2%.</p> <p>Verve Energy requests that the IMO reconsiders its position on this matter.</p>	<p>on analysis of market data following the implementation of any changes to the Reserve Capacity refund regime, which are expected to be significant.</p> <p>The IMO also notes that it considers it reasonable to include the cost of business interruption insurance, as noted in response 52.</p>
21	Price volatility	Perth Energy	<p>The proposed change is based on flawed approaches to key cost components of the MRCP. These lead to an unjustifiable 24% reduction in the MRCP that would threaten the credibility of the IMO. Stability and robustness in the MRCP setting mechanism are paramount to maintaining investor confidence in the WEM.</p>	<p>See section 3.3.1 of this report and response 1.</p>
22	MRCPWG review and consultation	Perth Energy	<p>The shallowness of the technical arguments in support of the proposed change, and the lack of review and scrutiny at MAC and stakeholder level following the working group period, gives</p>	<p>See response 2.</p> <p>Substantial consultation has taken place during the development of these amendments, as outlined in</p>

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	processes		the impression of the IMO either not in control of the process or taking a knee-jerk reaction to its misperception of the capacity surplus situation in the market.	Section 3 of this Final Report.
23	Link with broader Reserve Capacity Mechanism (RCM) review	Perth Energy	The dysfunctional approach to capacity pricing mechanism review where the MRCP setting methodology is proposed to be drastically changed now while other important features of capacity pricing are still under review. If MRCP determination is designed to work within the broader capacity pricing framework to efficiently bring new capacity to market as per Market Objectives, then a comprehensive review should be done before proposing any change. There is no point rushing through some limited modification to the MRCP procedures, but with significant impact on the resulting MRCP, and shocking the investor market when the outcome of the comprehensive review may well point capacity pricing in an opposite direction. This would compound market instability in the near future.	See responses 1 and 2.
24	Calculation of Reserve Capacity Price	Perth Energy	<p>A fuller review would and should question why capacity pricing still adheres to a 15% discount to the MRCP to derive the first-order Reserve Capacity Price (RCP), with this price being adjusted down further for surplus capacity in the system. If IMO does its job adequately and compiles an accurate MRCP (ie cost based capacity price) in the first place, then there would be no need for an automatic 15% discount to hedge against errors.</p> <p>On the other hand, in a situation of projected capacity shortage, IMO would go for an Auction as prescribed under the Rules, in which case IMO would pay a full bid price – the MRCP – without discount and for a 10-year term. To protect consumer interest, IMO presumably would prefer to be prudent and try to secure sufficient initial bid capacity without having to go to an Auction and having to offer 10-year term support to Auctioned capacity. An MRCP price shock is then not the way to go about securing initial capacity or Auctioned capacity for that matter.</p>	See response 7.

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25	MRCPWG review	Perth Energy	<p>The MRCP Working Group's objective was to put up a methodology that would 1) provide a reasonable return to a marginal Open Cycle Gas Turbine (OCGT) plant of 160MW as per Market Rules if this plant were to be called through an IMO Auction, and 2) give a reasonable cap price at which the IMO could use as benchmark to call such an Auction.</p> <p>In this regard, the Group's work result has failed to satisfy the objective due to its limited work on a narrow number of items that make up "reasonable return" to an OCGT.</p>	<p>Upon initial agreement that the MRCP should continue to be based on a 160MW OCGT using the same broad components as previously (power station, transmission cost, land, fixed fuel costs, margin, fixed O&M, WACC), the MRCPWG reviewed each element of those components.</p> <p>The IMO notes that the General Manager of Western Energy (a wholly owned subsidiary of Perth Energy) was a member of the MRCPWG and played an active role in this process.</p>
26	Consideration of capacity surplus in MRCPWG review	Perth Energy	<p>Further, while the MRCPWG may have been given a certain technical review role, the conclusion had perhaps already been drawn even before the work started that the MRCP might have been too high, based on the expressed IMO concerns over excess capacity in the market at its presentation on 20 July 2011.</p> <p>Our view is IMO had misunderstood where this short term capacity surplus came from and as a result has been pointing its mitigation effort in the wrong direction.</p>	<p>The MRCPWG review focused on the costs to develop a power station and was undertaken without regard to the current capacity surplus in the WEM.</p> <p>The IMO notes that the current capacity surplus is the result of many factors, some of which pre-date the WEM. This is being considered in the RCM review and is highlighted in the report <i>Review of RCM: Issues and Recommendations</i>, prepared for the IMO Board by The Lantau Group, which was presented to the 5 October 2011 MAC meeting.</p>
27	Transmission costs	Perth Energy	<p>A key concern with the existing MRCP methodology was the potential volatility resulting primarily from the method used by Western Power to provide an estimate of DCC. Weighting of network connection costs using several years of data, as proposed by SKM, would reduce the volatility of any movements in network costs.</p>	Noted.
28	Transmission costs	Perth Energy	<p>However, there was only one sharp rise in DCC estimates from Capacity Year 2011-12 to 2012-13. Western Power had stated repeatedly that the transmission network was full and any new 160MW OCGT would have to pay full connection cost. The utility actually produced similar DCC estimates for the following Capacity Year 2013-14 based on its current system planning and ERA approved capital contribution policy. Any attempt now</p>	<p>As noted in section 3.3.1 of this report, the 2012/13 estimate provided by Western Power for the shared connection cost at the cheapest location was more than 350% higher than the indicative value provided for the 2011/12 MRCP. The transmission cost estimate derived from the proposed methodology, which is based on actual connection costs and actual Access</p>

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			<p>to introduce a simplistic, non-expert formula to “smooth” DCC, with a 58% reduction in these estimates, would be “fighting the last war” and restarting the DCC instability cycle without basis.</p> <p>There is no reason to believe DCC for 2014-15 will be less than the previous 2 year's DCC as quoted by Western Power in the MRCP process, especially when the marginal 160MW OCGT is assumed to be able to be placed at any location in the SWIS, not just confined to the lowest cost location. Western Power has stated as much throughout the MRCP review exercise.</p>	<p>Offers, is significantly lower than the estimates provided by Western Power for the 2012/13 and 2013/14 MRCP's. This suggests that the higher cost estimates are not reflective of the capital contributions being charged to project developers by Western Power.</p> <p>See also response 13.</p>
29	Transmission costs	Perth Energy	<p>The proposed approach is backward looking and is bound to be inaccurate given the step change in DCC estimates that has been made. It is also bound to miss the business cycle – either its result would be too high or too low but never matching actual DCC. The proposed methodology creates risk that at any point the allowance for network connection costs will differ substantially from actual costs. If the estimate of DCC does not parallel its reality, the estimate would become irrelevant and so would be the MRCP.</p>	See responses 13 and 28.
30	Volatility in transmission cost estimate and MRCP	Perth Energy	<p>If attempt at reducing DCC volatility would cause a sharp decline in, and therefore a sharp rise in instability of, the MRCP procedure then adopting such a DCC estimation approach would be self defeating, especially with the ongoing risk of the DCC estimates increasingly diverging from the actual DCC, compounding volatility in the MRCP over time.</p>	See response 13.
31	Price signals in the WEM	Perth Energy	<p>Reform in the electricity market over the last 10 years has focused on getting price signals right. Industry and Government have worked hard to get to this ultimate result that the cost of generating and supplying power be reflected truly and accurately to consumers. Adopting the proposed change in DCC would set back cost-reflective pricing years.</p>	See response 1.
32	Allowance for funds used during	Perth Energy	<p>The PwC report considered whether the existing assumption about the timing of the capital expenditure was correct. Currently, the implicit assumption in the MRCP procedure is</p>	See response 18.

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	construction (application of WACC)		<p>that all of the capital costs are incurred two years prior to the commencement of Capacity Year. The PwC report attempts to show that using first principles, the likely "allowance for funds used during construction" is close to that given by a "rule of thumb" that assumes a linear capital expenditure profile, with an effective compensation period of 6 months.</p> <p>This is out of touch with real project financing and construction. A simple check with any generator that has delivered projects in SWIS since WEM start would show financing cost is front-loaded and construction and delivery of a peaking power station has been 2 years and baseload much longer, with payments also skewed to the front end.</p> <p>Our own experience is that capital expenditures are usually three-quarters spent by half mark, ie end of first year with one year to go, since deposit and then full payment for plant and equipment, which make up more than half the total cost of a power station, have to be effected early in the order and manufacturing process.</p> <p>The plant delivery time frame and front-loaded capex schedule require the effective compensation period to be at least 14 months.</p>	
33	Inlet cooling	Perth Energy	<p>The 11% discount applied to the full cost of a power station as a result of one component, the inlet air cooling, being included while ignoring all other technology-versus-cost changes to a total power station package is inappropriate.</p> <p>There are revisions year on year to the cost of a "standard" GT package and the full cost of such a package needs to be compiled each year as it stands. Eg, past packages would have included full external electrical cabling for the control system while new packages do not anymore. Taking one component and assigning a single change to the total cost of a past package is the wrong way to determine the full cost of a package at any point in time. If there are supportable changes to the full cost, they will as a matter of course show up in the</p>	<p>The Market Procedure (before and after the proposed amendments) states that the MRCP is to "be representative of an industry standard liquid-fuelled Open Cycle Gas Turbine (OCGT) power station". The IMO considers that this definition has allowed, and will continue to allow, for the incremental changes to power station design, such as the electrical cabling change described by Perth Energy.</p> <p>The MRCPWG agreed that the addition of inlet cooling to the scope of the theoretical power station was appropriate because:</p> <ul style="list-style-type: none"> • It was cost-effective, delivered a higher Capacity Credit allocation (due to higher facility output at

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			<p>process of IMO costing a new 160MW OCGT for a particular year's MRCP.</p> <p>This 11% discount is not justifiable as a stand-alone item and should not be adopted as proposed.</p>	<p>41°C) for a relatively small capital cost increase; and</p> <ul style="list-style-type: none"> It is reflective of current market practice in the WEM. <p>The addition of inlet cooling is an augmentation to the OCGT "package" that was not previously included in the Market Procedure.</p>
34	Dual fuel plant	Perth Energy	<p>Fuel infrastructure and (fixed) transportation costs covering both gas and liquid fuels for a dual-fuel power station. A dual-fuel power station provides better security of supply to the system by providing a higher certifiable capacity level on gas but is certified only on liquid fuel capacity that is lower than gas based. Lower emission when a dual-fuel plant is run on gas is of further value to the market. A Market Objective is to avoid discrimination against technologies that deliver lower emission to the market.</p>	<p>The MRCPWG considered the fuel type for the theoretical power station at Meeting 4 on 23 August 2010. The MRCPWG agreed that it was not appropriate for the MRCP to consider a dual fuel plant and noted that the need for dual fuel incentives was being separately reviewed.</p> <p>As noted in its submission to the Strategic Energy Initiative Directions Paper⁹, the IMO has recommended a design concept to the Office of Energy. The IMO has followed up with the Office of Energy in September 2011 and is awaiting feedback.</p>
35	WACC	Perth Energy	<p>The WACC as currently applied is low. The risk premium for equity is shown in the PwC report to less than the risk premium for debt, resulting in the cost of equity being 10.57% against cost of debt of 10.84% on a pre-tax basis. There is no basis for this or for thinking that equity could be obtained for less than 15% in SWIS. While the WEM Capacity Market provides a level of security in revenue, the other side of the coin is that it carries high risk in price volatility and capacity refunds, which could concentrate significant losses within a short period of time. This could cause irreparable damage to a power station's earnings in a full year with ramification for the plant's long term viability. IMO should be mindful of these real market risks, which have manifested themselves in the SWIS, before stripping any simplistically perceived margin from generation</p>	<p>The IMO notes that the higher debt funding costs in the current economic environment have resulted in the cost of debt being calculated as being higher than the cost of equity.</p> <p>The IMO considers that the WACC as described in the proposed Market Procedure is consistent with current regulatory practice.</p> <p>See also response 26.</p>

⁹ <http://www.energy.wa.gov.au/cproot/2631/2/Independent%20Market%20Operator.pdf>

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			projects by deliberately driving the MRCP down.	
36	Reserve Capacity Auction	Perth Energy	<p>An Auction scenario as provided for in the Market Rules will unlikely happen in reality. There has not been an Auction in the WEM and there will not likely be one. The current Capacity Certification timeline does not realistically allow for an Auction to ever be called. Generation project developers have to spend about 2 years preparing to take a project to unconditional project finance by July each year in order to apply for Certification. Upon confirmation from IMO by late August, the developer will have to put up security deposit equivalent to 25% of the first year's total Capacity Credit revenue. For a 160MW plant this security deposit would be approx \$6 million at current Reserve Capacity Price.</p> <p>No projects that could be certified within a current year's time frame would hold back from seeking Certification in July in order for project owner to take a punt on bidding into an Auction that might or might not happen, ie that would not be known until after IMO had allocated Capacity Credits for the year.</p> <p>The project development costs to the point of a July Certification application would have been substantial given the long lead time for land, network access, environmental and various other approvals, and most critically project finance, which needed to be confirmed in order for a developer to obtain the security deposit facility. Such costs would not be incurred on the basis of taking a punt on whether IMO would call an Auction in November or not. A project ready for an Auction would have been bid into the July Certification process to secure Capacity Credit allocation.</p> <p>At most, if some shortfall in forecast capacity did materialize for any reason, an Auction might be able to squeeze out incremental capacity from existing plants. Under this more realistic scenario, maybe a 10-year contract with IMO for incremental capacity could come to fruition. Otherwise, it is not feasible for a stand-alone 160MW OCGT to be prepared for an</p>	<p>The Reserve Capacity Auction is outside of the scope of this Procedure Change Proposal. However, the IMO notes that the primary function of the MRCP is as the price cap for a Reserve Capacity Auction.</p> <p>See also response 7.</p>

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			<p>Auction, hence the 10-yr contract pricing scenario should not even be considered at all. All debt profiles should be based on the year-by-year RCP revenue, which is exactly what investors have borne since WEM start.</p> <p>This picture points to 2 scenarios:</p> <ol style="list-style-type: none"> 1. The improbability of IMO ever carrying out an Auction would make an attempt to set an MRCP for the purpose of providing a cap price for such Auction redundant. The MRCP is in reality a cost based indicator price for investors to make a decision whether to prepare a project for Certification application in July each year or not. It is imperative that the MRCP be set based on true costs. Using an arbitrarily driven process aimed at reducing it in reaction to a short term excess capacity situation in a highly capital intensive market with lumpy investments is fraught with danger. 2. If IMO ever needed to call an Auction, incremental capacity would require full cost MRCP without discount, as a discount is neither provisioned in the Market Rules nor can be realistically considered in a capacity shortage situation. Any attempt to lower the MRCP artificially would not be acceptable to bidders. 	
37	Current capacity surplus	Perth Energy	<p>IMO's concerns over the current (short term in our view) state of surplus capacity should be balanced by a proper look at WEM's capacity composition. WEM has not truly been tested in terms of it being able to bring in private sector investment in large scale generation for retail competition purposes – a key Market Objective.</p> <p>Up until now the only substantive plant that has been built for and by a stand-alone private entity for retail purposes is Perth Energy's Kwinana Swift power station. All other substantive power stations built in the SWIS under the auspices of the WEM have been done with underwriting by incumbent State utilities or major resources projects that were not that different to those power plants that had been set up to supply mining projects in the old monopoly structure days – the so called self-</p>	See responses 2 and 26.

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			<p>supply power projects.</p> <p>This means the WEM has not been truly tested for new generation entry without being underwritten by dominant incumbent, State owned utilities or the few largest loads in the SWIS. There is no evidence yet that the general contestable market, the SME market, under the current structure, will be able to bring in new substantive generation capacity to enable genuine retail competition to be sustainable.</p> <p>For this Market Objective reason alone IMO should refrain from making Rule or Procedure changes that could destabilise the capacity market and deprive retail based generation entry. The setting of MRCP cannot be divorced from this reality.</p>	
38	Demand Side Management capacity	Perth Energy	<p>The second key restraint on any MRCP methodology change as proposed by IMO is IMO's own mistreatment of DSM capacity.</p> <p>A large part of the current so-called excess capacity is due to DSM "capacity". Besides 190MW of DSM currently available, another 250MW-odd is being projected to become available in the next few years.</p> <p>But DSM is not equivalent to generation capacity. A power plant is an investment for the sole purpose of generating power, so its alternative value is close to zero. Once built, a power plant is locked into supplying SWIS and will remain open for business as long as it could sell energy and capacity above its marginal cost. Its supply security value to SWIS is absolute since it is a sunk investment for SWIS.</p> <p>DSM capacity is not generation capacity but industrial and commercial production capacity equivalent. The marginal cost of production is not what it receives from WEM but from its owners' product markets. The marginal value to DSM capacity is its unit revenue from product markets unrelated to power supply and demand in SWIS. The security of DSM capacity is not based on what WEM can offer at the margin but on what its product markets worldwide can offer at the margin. These</p>	<p>The role and value of Demand Side Management (DSM) capacity is outside of the scope of this Procedure Change Proposal. This is being separately considered in the RCM review.</p>

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			<p>markets' conditions determine whether DSM capacity will be honoured, hence its supply security value to WEM/SWIS is unknown.</p> <p>Evidence of this fundamental difference in value could be observed during the 2000 crisis in California, where hundreds of DSM contracts were not honoured by DSM customers as these refused to interrupt their power demand and continued to consume throughout the crisis. Even when the System Manager had the technology to interrupt remotely the DSM loads – a condition that is critically not required in WEM to be classified as DSM – the potential political fall-out in cutting supply to high priority loads such as hospitals and emergency or disadvantaged facilities, or schools and colleges or other “sensitive” customers prevented the System Manager from activating interruptibility.</p> <p>DSM is an ancillary service that should be negotiated between the System Manager and DSM owners. The price payable for dedicated power generation in SWIS and that for DSM must differ to account for this critical difference in value to SWIS/WEM.</p> <p>Further, as DSM capacity can be garnered at much lower cost than developing and building new power generation plant, and can be dispatched at lower cost than that for peaking plant, DSM capacity should be dispatched first before peaking plants are called on in any constrained supply situation.</p> <p>Mixing DSM with actual generation capacity leads to the lowest common denominator detrimental to the capacity market. By clearly and accurately measuring DSM's value and risk to WEM, a price could be developed to encourage optimal DSM provision in SWIS.</p>	
39	Intermittent Generation capacity	Perth Energy	IMO has proposed changing the Certification factor for intermittent renewable energy generation capacity due to concerns that wind farms in particular are currently assigned too high a factor. This perceived “generous” Certifiable	The certification of Intermittent Generators is outside of the scope of this Procedure Change Proposal. This is the subject of Rule Change Proposals RC_2010_25 and RC_2010_37.

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			<p>capacity factor is seen to have caused too much entry of wind capacity.</p> <p>However, renewable energy capacity entry has clearly been encouraged by the advantages of 1) renewable capacity being given intermittent (non-dispatchable) status, and 2) not having to pay for full energy balancing and load following costs. Changing the way energy balancing and load following costs can be transparently paid for by intermittent generators would make the change in the Certifiable capacity factor redundant in resetting such entry to what the market can actually bear.</p> <p>This is another example of looking at the big picture providing us with a more accurate diagnosis for "excess" capacity than being panicked in the short term into changing the MRCP methodology.</p>	<p>The Balancing mechanism is also outside of the scope of this Procedure Change Proposal. This has been re-designed through the Market Evolution Program (MEP) and is the subject of Rule Change Proposal RC_2011_10.</p> <p>The allocation of load following costs is also outside of the scope of this Procedure Change Proposal. This was reviewed by the Renewable Energy Generation Working Group (REGWG) and will be the subject of a future Rule Change Proposal.</p> <p>See also response 26.</p>
40	Regulatory risk	Perth Energy	<p>A skewed change in the MRCP methodology as proposed, with a dramatic negative impact on the MRCP itself, without substantive evidence would cause a backlash in private sector capacity investment, leading to a potential capacity shortage in 2015-16 or 2016-17 given the unlikelihood of the Auction process materialising as discussed above.</p> <p>This year (2011)'s Certification results show no new material size generation capacity being committed for 2013-14. We expect the same for 2014-15 due to what can now be seen as a serious regulatory risk from this IMO proposal.</p>	<p>The IMO notes that many factors may have contributed to no new "material size" generation capacity being committed for 2013/14, including the strong capacity surplus (projected to be 775 MW for 2013/14).</p> <p>See also response 2.</p>
41	Current capacity surplus	Perth Energy	<p>Our view is there is no basis for a significant change in the MRCP methodology or that a high MRCP exists that has brought in excess capacity. There is no excess peaking or mid-merit capacity in the system. Excess capacity is due to flawed treatment of DSM and inaccurate cost assignment to intermittent capacity entry.</p> <p>A potential shortage in conventional peaking and mid-merit capacity can be foreseen a few years out and this would swing the MRCP significantly upwards next year or the year after, leading to a surge in power costs due to higher cost of capital</p>	See responses 1 and 26.

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			as a result of perceived regulatory risk.	
42	Capacity pricing	Perth Energy	We recommend IMO undertake a full comprehensive review of capacity pricing as a whole, incorporating review of DSM and energy balancing costs for intermittent generation, before making any decision on piecemeal changes.	See responses 1, 38 and 39.
43	Role of MRCP	Merredin Energy	<p>Merredin Energy is an avid supporter of the capacity payment regime in the Wholesale Electricity Market.</p> <p>In particular we note that the policy objectives of the MRCP are:</p> <ul style="list-style-type: none"> • to provide fair compensation for new peaking generators; and • not intended to be an investment signal and is not affected by demand/supply balance. <p>We recommend that these broad policy settings remain in place.</p>	Noted.
44	Current capacity surplus	Merredin Energy	<p>However, Merredin Energy would like to express concern that the proposed MRCP revisions may be a response to a preconceived view that the current reserve capacity price was too high.</p> <p>For example, we note the IMO presentation <i>Overview on the Market Evolution Program (MEP)</i> by Messrs Birnie, Black and Parrotte dated 20 July 2011 stated:</p> <p><i>"the IMO Board commissioned a review of the Capacity Mechanism; identifying an alarming increase in the credits being procured from the IMO (around 50% of the total now) indicating that the price might be too high"</i></p> <p>The relationship between (i) the volume of credits procured through the IMO and (ii) the reasonableness of the capacity price is unclear to us. We would have thought those factors were independent.</p> <p>We note that the IMO does not have an objective to limit capacity credits procured via the IMO. We would recommend</p>	<p>See response 26.</p> <p>The review referred to in the MEP presentation is the RCM review, not the review undertaken by the MRCPWG.</p> <p>The IMO disagrees that excess capacity is "at no increased cost to retailers or end customers". The IMO notes that the current Excess Capacity Adjustment in the Reserve Capacity Price would keep the annual cost of Capacity Credits constant if all Capacity Credits were traded through the IMO. However, this discount may not apply to Capacity Credits that are traded bilaterally between Market Participants.</p>

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			<p>against such an objective being introduced and would hope the IMO remains indifferent as to the volume of capacity credits procured through it.</p> <p>We also note that the IMO does not have a lever to limit the short term over supply of generation. We assume that market participants and policy makers are not particularly concerned with excess capacity, given that any excess of capacity leads to a corresponding reduction in the Reserve Capacity Price. Excess capacity actually increases the overall system reliability at no increased cost to retailers or end customers.</p>	
45	Reserve Capacity Auction	Merredin Energy	<p>We note that to date there has been no auction in the WEM and it is our opinion that an auction is most unlikely under the current arrangements.</p> <p>To be able to participate in an auction, a project must have secured certification which, in turn, requires it to have secured a network access offer, arranged finance, secured a site, secured firm plant supply offers and advanced environmental approvals. It is unlikely a proponent would take a significant project to this stage of development unless it intended to secure capacity credits through the bilateral trade arrangement.</p> <p>However, in the event that an auction were to take place, we see that there is a significant risk that it could be gamed by a proponent to push prices to the maximum permitted level or that the price could collapse due to generators bidding at zero, or close to zero.</p> <p>Merredin Energy recommends that the IMO significantly alters the auction rules to address these risks by:</p> <ul style="list-style-type: none"> • removing the auction mechanism completely; or • Introducing an auction floor at the pre-determined (non-auction) capacity price 	See response 36.
46	Price volatility	Merredin Energy	The IMO may wish to consider the benefits of making a policy decision to stabilise MRCP.	The IMO notes that many factors impact the cost of funding for Participants including individual project characteristics, the corporate structure of the

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			<p>The flaw with the current policy position is that there is significant volatility in the reserve capacity price (evident by the 45% increase in the MRCP in 2012 and the proposed 24% fall in 2013-14) but no allowance is made in the equity market risk premium or WACC calculations for the high level of regulatory price risk.</p> <p>A volatile capacity price creates serious funding issues for generators. Merredin Energy recently raised equity and bank debt to fund the construction of its 82MW plant. The cost of funding was higher than assumed in the proposed WACC calculations. This was due, in part, to the high bank margins arising directly from the perceived risks with the reserve capacity determination process (i.e. regulatory risk) and in part due to the lack of competition from banks, with several banks refusing to loan funds to development projects. Stabilising capacity prices may assist in improving bank's willingness to loan to generators.</p> <p>The proposed 24% decline in the MRCP will make it even more difficult to raise finance for future projects. In response to such a dramatic fall, we expect lenders to take the following actions:</p> <ul style="list-style-type: none"> • Limiting debt tenors to coincide with the next IMO five yearly review; and/or • Require repayment triggers in the loan agreements so that loans are repaid, resized or margins increased in the event of future downward capacity price determinations. <p>These debt terms, if introduced, would significantly increase the refinancing risk for projects and should translate into a higher WACC and higher capacity prices. Higher capacity prices would assist generation facilities to remain solvent in the event of a negative short term price determination. However, higher capacity prices are ultimately borne by end consumers, which runs contrary to wholesale market objective (d).</p>	<p>proponent and related parties, as well as the underlying level of risk tolerance in financial markets.</p> <p>See also section 3.3.1 of this report and responses 1 and 8.</p>

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			<p>Smoothing capacity credits changes over time could help to achieve the market objective of lowering long term supply costs via a lower WACC. Sharing aggregate capacity costs across end consumers over longer periods, should not necessarily result in an overall increase in aggregate capacity payments and therefore should not lead to inefficient economic outcomes.</p>	
47	Financial impact on project	Merredin Energy	<p>The proposed 24% reduction in the capacity price would put significant financial stress on Merredin Energy.</p> <p>Merredin Energy's project costs were funded by raising equity from institutional investors (primarily Australian superannuation funds) and raising ten-year bank debt. The commitment by long term superannuation investors to build essential infrastructure in WA should be seen as a very positive development. Merredin Energy has aspirations to develop a further two new open cycle generator units to increase its total capacity to 160MWs and had already commenced discussions with our investors in that regard.</p> <p>A 24% reduction in the capacity prices would result in a significant reduction in investor returns and make it virtually impossible for Merredin Energy to raise additional equity in future. We expect this situation would also apply to other generators.</p> <p>The current amount of bank debt raised by Merredin Energy was based on debt service cover ratio (DSCR) projections of 1.8x. This is a relatively modest gearing level, with operational earnings generally expected to exceed debt payments by a factor of 1.8 times. A 24% reduction in capacity prices would reduce Merredin Energy's average DSCR to 1.39x, which is only marginally above the lock-up threshold of 1.30x and significantly increases the risk of the company breaching its debt covenants. Such a revenue shock would also significantly reduce the enterprise value (EV) of the business, pushing the Debt to EV ratio to uncomfortably high levels. This would make future refinancing almost impossible and would</p>	See response 3.

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			severely restrict our ability to undertake future capital/maintenance expenditure.	
48	Calculation of Reserve Capacity Price	Merredin Energy	<p>There does not appear to be any published information explaining why the MRCP is discounted in the event that the auction is cancelled. The recent review has been silent on whether the 85% discount factor is necessary or appropriate.</p> <p>We would question whether it is still relevant and would welcome some clear justification for its retention.</p>	See response 7.
49	Inlet cooling	Merredin Energy	<p>We note SKM advised the IMO on the impact of inlet cooling on the MRCP. Merredin Energy is also aware of recent work conducted by SKM where it estimated future capacity prices by assuming an annual 1% efficiency gain from technological improvements.</p> <p>Given water cooling is not a particularly new technology, it is surprising that this improvement should give rise to an immediate 11% fall in capacity prices. This is well above an average long term technological improvement factor of 1% sourced from SKM.</p> <p>The large change in MRCP from the water cooling improvement suggests that the input parameters are difficult to estimate accurately and that either (i) the 2013 capital costs were significantly overestimated or (ii) the revised costs are significantly underestimated. This highlights a potential flaw with the current procedures. Perhaps small annual adjustments for technological improvements could be applied to achieve a lower real capital cost over time rather than making significant one-off adjustments.</p>	<p>The IMO recognises that inlet cooling technology is not a new development. The IMO also notes that reviews of this type are not conducted on an annual basis and so the integration of any technology change into the definition of the model power plant may result in step changes, primarily due to the requirement for review at least once every five years.</p> <p>See also response 33.</p>
50	Comparison with Merredin Energy project costs	Merredin Energy	The total project costs for Merredin Energy (including EPC, connection costs, development fees, etc) amount to \$96.7 million. Of that amount \$67.5 million (equivalent to \$823,658/MW) related to the power station capital costs for the open cycle gas turbine plant with water cooling. These costs are similar to the total capital cost used to develop the 2013/14 MRCP even though Merredin Energy was able to secure a	See response 3.

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			<p>low-priced connection point to the SWIS.</p> <p>The construction costs are significantly higher than the parameters used to calculate the revised capacity price. We recognise that Merredin Energy's 82MW OCGT facility is smaller than the notional 160MW OCGT and therefore it may not benefit from the same economies/efficiencies of a larger plant. However, we remain concerned that the estimated plant costs derived by SKM do not align with actual costs.</p>	
51	Allowance for funds used during construction (application of WACC)	Merredin Energy	<p>The IMO is proposing to reduce the WACC period from 24 months to 6 months.</p> <p>This change is inappropriate. An equity sponsor has a financial exposure from the time it commits to the project, generally two years prior to the completion date. An equity risk premium (i.e. WACC less the cash rate) should apply from the equity commitment date.</p> <p>While finance theory might suggest the full WACC should be earned over the final six months reflecting the full cost of funding the project, we consider a six month period to be very short. In deriving a six month period, PwC assumed a 12 month construction spend period, with construction completed the same day that capacity revenues commence. Prudent planning and construction timetables include buffering for testing periods and appropriate delay contingencies. Our view is that the six month period should be increased to nine months, at a minimum.</p> <p>Accounting for a total 24 month commitment period, including a nine month construction funding midpoint, the gross-up factor would be:</p> $(1 + \text{WACC})^{9/12} \times (1 + \text{WACC} - \text{risk free})^{15/12}$ <p>Merredin Energy's view is that even a nine month mid-point spend is overly aggressive.</p> <p>(Merredin Energy provided a graph showing the expenditure</p>	See response 18.

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			<p>profile for its project.)</p> <p>Significant costs under the Interconnection Works contract with Western Power were incurred in month 8 and in month 13. By the end of month 8, almost one-quarter of total project costs had been incurred. Around 30% of total project costs were incurred in month 9 due to significant instalment payments to General Electric for turbine units and to the EPC contractor for the balance of plant works.</p> <p>The average S-curve value over the full 24 month period is 57.2%. This would suggest a gross-up factor of 14 months at the full WACC rate, and ten months at the reduced risk-premium rate:</p> $(1 + WACC)^{14/12} \times (1 + WACC - \text{risk free})^{10/12}$	
52	Insurance costs	Merredin Energy	<p>In addition to property insurance, Merredin Energy has (i) public and products liability and (ii) business interruption insurance. Once construction is completed we anticipate extending the insurance cover to incorporate pollution liability. These forms of insurances are necessary regardless of the hours operated and should be included in the fixed annual O&M provision.</p> <p>In particular, business interruption insurance is necessary for generators funded by debt, as capacity penalty refunds could easily cause an event of default under the bank financing agreements in the absence of such cover. The pollution liability insurance provides cover for claims and remediation costs arising from the release or seepage of a contaminant or pollutant into land surface water or groundwater. We consider the cost of such cover to be a fixed cost rather than a marginal operating cost. Such cover is prudent even if the plant is not operating because there is a risk of contamination arising from the on site storage of fuel.</p> <p>The practical reality is that the insurance costs are largely independent of the hours of operation and should not be</p>	<p>Business interruption insurance is likely to represent a fixed cost, although premium levels could be expected to vary depending on plant utilisation factors, Based on this the IMO accepts that it is reasonable that a cost in respect of this insurance be included with other O&M costs.</p> <p>The IMO has amended the Market Procedure to allow for this.</p> <p>See also response 16.</p>

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			treated as marginal costs.	
53	Debt issuance costs	Merredin Energy	<p>Included in the development costs is a 0.125% allowance for up-front debt issuance costs. This estimate appears to be well below current market rates. Merredin Energy's recent experience in raising debt through a facility with a 'big four' bank involved an upfront loan establishment fee of 1.6%.</p> <p>Merredin Energy's construction facility agreement also includes a line fee of 1.5% of the undrawn commitment. The current debt issuance costs do not include an allowance for the line fee.</p> <p>Arguably, there may be some economies of scale with larger 160MW plants incurring smaller percentage costs. However, we expect the rates applying to Merredin Energy would not deviate significantly for a 160MW facility funded with 35% debt.</p>	See response 17.
54	Transmission costs	Merredin Energy	<p>Merredin Energy notes the options identified by SKM in determining connection costs. We disagree a backward looking approach such as Option 2 is sensible (refer to SKM's report IMO Deep Connection Cost Calculation -Methodology Review).</p> <p>We have not been convinced of the short comings with the current process and recommend no change in methodology at this point.</p> <p>Should the IMO be concerned about connection efficiencies, consideration could be given to the importance of network reinforcement and whether the existing regime provides appropriate economic incentives to upgrade or build around network constraints. For example:</p> <ul style="list-style-type: none"> • Should capacity price adjustments be applied to plants that fund deep connection costs? • Could generators be assigned a 'regulated asset base' for the deep network connection costs they fund, thereby removing deep connection costs from the capacity credit calculation? • Should premia/discounts apply to plants constructed in 	<p>See response 13.</p> <p>Broader questions about the current network access regime are outside of the scope of this Procedure Change Proposal.</p>

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			certain areas that add to/detract from network stability?	
55	Proposed amendments	Landfill Gas & Power	LGP is a member of the IMO Maximum Reserve Capacity Price Working Group and supports the Amended Market Procedure as a conclusion of that group's deliberations.	Noted.
56	Proposed amendments	Landfill Gas & Power	In particular, we note that the purpose of the Procedure is to determine a reasonable maximum permitted offer price in the event of a Reserve Capacity Auction being held. While the Maximum Reserve Capacity Price is also a key determinant of other matters such as the default Reserve Capacity Price and Capacity Refunds, these matters are outside the scope of both this procedure change and the terms of reference of the working group. Furthermore, these matters are subject to a separate review being conducted in parallel. While we welcome inclusion of the analysis of the impact of the proposed changes, we submit that those impacts are not of themselves open to comment or discussion as part of the present public consultation and, consequently, we confine our comments to appropriateness of the proposed changes. On this basis, we wish to emphasise our full support for the revised Transmission Connection Method, the inclusion of Inlet Cooling, the 6 month WACC cash-flow period, and the intention to harmonise the WACC calculation with the prevailing regulatory environment.	Noted.
57	Proposed amendments	EnerNOC	We are supportive of a number of the proposed changes to the MRCP methodology that we believe will ensure the MRCP remains an accurate predictor of the real world cost of new capacity in the SWIS, namely: <ul style="list-style-type: none"> • the Fixed Fuel Cost including an allowance to initially fill the fuel tank with sufficient distillate for 14 hours of operation; • accommodating greater land size than 3ha in any particular location where the minimum available land size in that location warrants this consideration; • that the IMO should have the scope to include 	Noted.

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			<p>additional locations, where appropriate, to reflect the areas within the South West interconnected system (SWIS) where generation projects are most likely to be proposed;</p> <ul style="list-style-type: none"> • that the Capital Cost should include the average of the Land Costs across all locations considered; • the compensation period for the total investment costs for the power station be amended to 6 months, in accordance with PricewaterhouseCoopers (PwC) recommendation, and that the total investment costs be determined as of April of Year 3 of the relevant Reserve Capacity Cycle; • that the escalation of values in respect of power station, transmission, switchyard and Operating and Maintenance costs to April of Year 3 be performed by the consultant(s) developing the cost estimates, with the methods to be explained; • that an allowance for annual asset insurance costs for the power plant to be included within Fixed O&M Costs; • debt issuance costs to be included within the WACC and debt financing costs be removed from within margin M; • that the "Minor" and "Major" components of the WACC be reconfigured in procedure step 1.13.8 as having a "Review Frequency" of "5-yearly" and "Annual" respectively; • that the Statutory Corporate tax rate be reclassified for "Annual" review while Debt issuance costs be slated for "5-yearly" review with a fixed value of 0.125%; • that the IMO be accorded the discretion to nominate a method for determining the Debt Risk Premium (DRP) that is consistent with current accepted Australian regulatory practice, and that the intent of the Procedure be expressed as adopting the "Bond Yield Approach" developed by the Economic Regulation Authority (ERA) when and if this becomes accepted 	

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			Australian regulatory practice.	
58	Inlet cooling	EnerNOC	EnerNOC accepts and supports the proposed change to incorporate the provision for an inlet air cooling system to be included in the power station costs of the MRCP, as this capability would appear to be a practice being undertaken by power station developers in recent times. We note the comments made at the MRCP Procedure Change Workshop with regards whether appropriate water supply considerations had been taken into account within the MRCP to accommodate the requirement for inlet cooling to be installed in the generic power station. It is understood this consideration has not been included within the proposed MRCP methodology, but as outlined by Sinclair Knight Merz (SKM)'s representative at the public workshop, a "a non-location specific calculation could be undertaken to determine costs associated with meeting water requirements under the power station elements capital cost." EnerNOC supports the development and inclusion of such a calculation within the MRCP, or the incorporation of an otherwise appropriate consideration of the water supply needs associated with inlet cooling installations.	<p>The IMO agrees that costs for water receipt and storage facilities should be included in the MRCP. This requirement was included in the proposed Market Procedure following the MRCP Procedure Change Workshop and prior to submission into the Procedure Change Process.</p> <p>The IMO notes that this additional cost was not fully accounted for in the indicative impact assessment in the Procedure Change Proposal, and does not consider it necessary to update the indicative impact assessment for this Procedure Change Report. The impact of the water receipt and storage facilities will be identified at the time of publication of the Draft Report for the 2014/15 MRCP.</p>
59	Transmission costs	EnerNOC	We have significant reservations with respect to the proposed change to the methodology for forecasting Transmission Connection Works costs within the MRCP. We note that the purpose of the MRCP is intended to correctly reflect the actual real-world costs faced by a project developer to construct and operate a power station of relevant size and capability in the event the WEM requires such capacity to be made available within the required timeframe. Therefore the MRCP's construction, including the engineering considerations underlying its development, should seek to be as accurate a reflection of the likely future costs faced by the generic developer as possible. Where the MRCP's methodology results in costs that are much higher than the likely future costs, the market faces significant inefficiencies in its capacity procurement, where these costs are much lower than the likely	Noted.

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			future costs, the market impact will be felt in relation to future system reliability.	
60	Transmission costs	EnerNOC	While EnerNOC acknowledges those comments that have been registered outlining the immediate capacity "price shock" (downwards) impact of the proposed Transmission Connection Works methodology developed by SKM, this immediate impact does not describe our main reservations with the method proposed. We acknowledge that the SKM methodology could, in the short to medium term and dependent upon access applications made to connect to the SWIS, equally result in a significant increase in Transmission Connection Works costs, an upwards "price shock" reflective of growing transmission constraints.	Noted.
61	Transmission costs	EnerNOC	We do not subscribe to the thesis that the proposed methodology necessarily reduces price volatility when compared to the existing methodology.	Under the current methodology, the deep connection cost component could fall to zero if major network augmentation works (such as the Mid West Energy Project Stage 1 to Eneabba) were performed by Western Power and generators were able to connect without being required to fund any further network augmentation. Under the proposed methodology, the weighted average calculation would smooth such variation from year to year.
62	Transmission costs	EnerNOC	Our reservations with the proposed methodology relate to its ability to accurately predict future transmission costs associated with the construction of a 160MW liquid-fuelled OCGT. The MRCP Working Group considered the potential for determining costs associated with a range of different plant sizes and configurations that might more accurately reflect the reality of power station constructions and connections to the SWIS. However it was agreed, and subsequent consultations appear to have confirmed, that the power station "peg" to be utilised for the MRCP remains the original 160MW liquid-fuelled OCGT.	As noted in the SKM presentation from the public workshop, " <i>Fixing the connection size and voltage undermines the ability of the methodology to respond to changes in the position of the technical nature of the efficient new entrant generator within the market</i> ". Transmission networks are such that tipping the size of a connecting generator above a (purely theoretical) threshold could lead to disproportionately higher connection costs. This problem is not applicable to other MRCP components, such as the cost of gas turbines.

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				Consequently, the IMO considers that decoupling the transmission cost methodology from a fixed capacity of 160MW improves the estimate of the cost per MW of connecting the efficient new entrant generator to the transmission network.
63	Transmission costs	EnerNOC	The definition of accuracy used by SKM within its methodology - <i>the extent to which the DCC calculation methodology drives the correct level of new capacity investment and supports the correct mix of generation technologies in the market as prescribed by the Market Objectives</i> - introduces a normative market-outcome statement to an approach that should concern itself with accurate engineering forecasts. As the IMO itself has commented, "the MRCP is determined without regard for the supply-demand balance and is not, in itself, intended to be an investment signal...[and it notes]...that the downstream functions of the MRCP (calculation of the Reserve Capacity Price and Reserve Capacity refunds) are intended to provide signals to Market Participants". Through defining accuracy in the way it has, SKM's proposed methodology seeks to determine what the "system marginal cost of new peaking (liquid fuelled) capacity when the market is in long-run equilibrium" may potentially be. EnerNOC contends that, while SKM's work outlines an insightful analysis of what the transmission costs for an efficient marginal generator <i>should be</i> , it does not reflect what the actual transmission costs <i>will be</i> , these being determined solely by the transmission service operator, Western Power.	See responses 10 and 11.
64	Transmission costs	EnerNOC	The proposed methodology for estimation of transmission connection costs considers access offers and proposals for a range of facilities of various sizes, and not specifically 160MW (or even necessarily within bounds closely approximating this unit size). While we acknowledge that the methodology determines a cost (\$) per MW and scales this figure to meet a 160MW unit size, such scaling is not likely to match the actual \$/MW cost for the size of unit being considered, due to the "lumpy" nature of transmission costs which works against	See response 62.

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			<p>approaches that invoke linear scaling to determine accurate transmission costs.</p> <p>Including historical generation facilities, almost regardless of size, within the methodology is likely to skew the results towards the historically predominant unit sizes captured within the sample. The sample units captured within the methodology may be significantly larger or smaller than 160MW, weighting the cost result to reflect much higher or lower transmission costs than those that may apply to the agreed peg of 160MW.</p>	
65	Transmission costs	EnerNOC	<p>The conservative forecasting error margin adopted within the methodology (15%) takes its lead from the Reserve Capacity Price determination when the market has secured exactly its capacity requirements without going to Auction (the Reserve Capacity Price is 85% of the MRCP). While we acknowledge the intended symmetry implied by utilising this figure, we contend that the underlying justification and rationale for the 15% "administered price discount" achieved under current rules is entirely unclear. Adopting this unclear percentage discount as the basis for forecasting error margin potentially diminishes the accuracy of forecast transmission costs which the method seeks to attain.</p>	<p>In its report for the MRCPWG, SKM highlighted the significant deficiencies with the current methodology for estimating transmission connection costs, particularly that it:</p> <ul style="list-style-type: none"> • required a broad range of assumptions that led to significant inaccuracies; and • was onerous for Western Power. <p>SKM acknowledged that the development of alternative methods required a trade-off between accuracy and simplicity. The IMO considers that the proposed methodology, recommended by SKM, strikes an appropriate balance between these competing objectives.</p> <p>The forecasting margin addresses part of this trade-off. The IMO considers that the conservatism of the forecasting margin is appropriate given that the MRCP is a price cap.</p>
66	Transmission costs	EnerNOC	<p>Fundamentally, EnerNOC takes the view that the MRCP's construction is a technical exercise once the basis for the "capacity peg" has been agreed to, which, as noted above and elsewhere in relation to this proposal, is a liquid-fuelled 160MW OCGT. How the MRCP is applied and utilised throughout the WEM is foremost with regards the achievement of market objectives, however, it is a secondary function post the MRCP's determination.</p>	See responses 1 and 62.

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67	Transmission costs	EnerNOC	<p>Informed by this perspective, we contend that the transmission cost components within the MRCP should, given the Western Australian situation, only be provided by Western Power as the sole provider of transmission services for the SWIS. We acknowledge, and have significant sympathy with, comments in relation to Western Power's quotations for transmission costs in previous capacity cycles.</p> <p>We also acknowledge comments made in forums relating to the MRCP review that, in order for Western Power to more accurately determine transmissions costs for the MRCP unit and locations, it would require further resources to be made available on a permanent basis (up to 2 full-time resources) within the organisation to complete. Therefore to pursue one option identified by SKM in its review - continue with the existing approach of the modelling of the connection of a model generator and reinforce the methodology to undertake analysis more consistent with that undertaken for an access applicant. This would include options analysis, integration with Western Power long term planning and perhaps consideration of the impact of the Applications and Queuing Policy – would require further costs to be incurred annually to make accurate.</p> <p>EnerNOC believes that these additional costs need to be weighed up against the annual costs incurred through the utilisation of consultants to determine transmission costs, as well as the benefits underlying an increased accuracy of the results of the costs determination. Further, we contend significant flow-on benefits could be derived by pursuing this approach, through greater transparency being made available regarding Western Power's design and costing methodologies for transmission connections, as well as reducing the likelihood of contention surrounding the MRCP's construction and the potential for realising a capacity shortfall in future years.</p> <p>With a sole transmission service provider in the WEM, determining engineering costs for a prospective 160MW OCGT must be provided by this service provider and the IMO should</p>	See response 11.

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			<p>seek to enable it, and the market, to have the appropriate resources to provide accurate forecasts relating to the MRCP's unit specification and locations.</p>	
68	Proposed amendments	Tesla Corporation	<p>This procedure change is highly concerning to Tesla. We feel that the revisions do not accurately reflect the true costs of building, connecting and commissioning a generator on the SWIS. If this procedure change were to process in its current form, we envisage a significant reduction in the level of capacity that will be offered into the market and, coupled with the uncertainty in regards to firm offtake with Synergy, this may put a halt to new capacity for some period of time.</p> <p>The risk to the market is that power generation is a long lead time industry and by the time the mechanism is rectified to encourage new generation, the SWIS may go back to a capacity shortage in a similar fashion to only a short three years ago. It is our view that a major change to the procedure will be viewed by the investment market as the introduction of regulatory risk. This procedure change has wide reaching effects - we note that it has been introduced through the procedure change process, which has a one month consultation period as opposed to through the rule change process, which has multiple periods of consultation and feedback. For a major market impacting change like this, there should be more consultation and feedback, not less. The large effect this change has, coupled with the short period of consultation, will increase the perceived regulatory risk of the WA Electricity Market and may in turn reduce the attractiveness of the market and increase costs to users in the long run.</p> <p>Given the long term nature of capital investments in power generation plant, decisions are made on a long term basis – capital is recovered over 10 to 20 years. Investment decisions require certainty in terms of procedure and stability – as mentioned above, regulatory risk does not aid certainty in terms of market stability and economic modelling.</p>	<p>See responses 1, 2 and 3.</p> <p>Extensive consultation has already occurred with regard to this Procedure Change Proposal. As noted in response 2, this Procedure Change Proposal has been developed by a Working Group of industry members over a period of more than a year, with the Working Group proceedings publicly available. In addition, the Procedure Change Proposal was provided to the MAC for its comment and a public workshop was held prior to its submission into the Procedure Change Process.</p>

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69	Allowance for funds used during construction (application of WACC)	Tesla Corporation	In response to the 6 month "approximation" of construction costs, we note that in the real world, a number of costs are front ended – engineering design, deposits for long lead time parts, and approval submission costs amongst others. The Report commissioned by the IMO suggests that a straight line approximation from 12 months out from commissioning to commissioning date closely represents the cashflow of a project. Given the IMO has instigated a two year forward capacity market, and the fact that the IMO requires significant commitment (which can be represented by expenditure) prior to allocating capacity credits for any particular project, it is assumed the IMO also recognises (and requires) more than an insignificant level of funds prior to the commissioning minus two year mark. If it is envisaged by the IMO that funds are expended, in actuality, only from one year out, perhaps the process should be revised to a one year forward capacity market to recognise this fact. Given it has not been a point of discussion thus far, it seems an inconsistent argument to the 6 month expenditure suggested change. We suggest that a one year, or one and a half year period of time be adopted against the 6 month period that has been proposed. This is more consistent with the IMO's position of allocation of capacity credits. It is understood that major payments are required upfront to secure the plant and equipment for delivery around the 3-6 month period prior to commissioning – an assumption that there is a linear expenditure over a one year period is inaccurate.	See response 18.
70	Inlet cooling	Tesla Corporation	In response to the inclusion of "inlet cooling" in the capital expenditure, and therefore a reduction in the overall cost of construction, we are supportive.	Noted.
71	Power station type	Tesla Corporation	We would like to see the whole power station design re-evaluated as a whole. If the IMO is accepting "inlet cooling" as current standard practice, then perhaps evaluating the cost of closed cycle, or combined cycle stations should be evaluated as well to be consistent with "keeping up with the market". Also, as pointed out at the Public Workshop, the cost of the	The MRCP is based on a theoretical peaking power station with a low capacity factor (2%) as this type of facility can be constructed quickly and is expected to be almost solely reliant on Capacity Credit revenue. Combined Cycle Gas Turbine (CCGT) power stations have longer construction times, and are not considered

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			<p>provision of water to the various land locations has not been priced in to include a water based "inlet cooling" technique. Given this item was overlooked when putting the capital costs of the plant together, a full evaluation of the plant construction should be put into place for incorporation – a partial recalculation of cost is likely to lead to discrepancies in the plant design/costing.</p>	<p>to be peaking generators as they would typically operate at significantly higher capacity factors. Typically, a significant portion of the revenue for a CCGT would be through energy sales.</p> <p>The IMO does not consider that CCGT power stations have become the current standard practice. Only two CCGT power stations currently exist in the SWIS.</p> <p>The power station design was agreed by the MRCPWG at its 23 August 2010 meeting.</p> <p>See also response 9.</p>
72	Transmission costs	Tesla Corporation	<p>In response to the proposed Transmission Connection Cost Methodology, we believe that Western Power is best placed to determine the future cost of connection to the network. Utilising historical data will guarantee that the connection cost calculation will not be accurate. Western Power's process in determining the cost to connect for input into the MRCP is not the most transparent of processes, but calculating the costs to connect in real life is also not entirely transparent due to the complexities of the network itself. Utilising a pool of historical costs (that as an aside will always lag the true market due to the "weighting" system) will be just as opaque, if not more opaque, as the market will not have the opportunity to see the data set that went to create the final blended price.</p> <p>Furthermore, utilising historical data will have to be normalised for the various run back schemes that have been put into place. The costs of connection to the network might be somewhat lower to participants that have already connected with a run back scheme implemented, but there is no central register of run back schemes that are in place. As a consequence, there has been no analysis of the capital savings that have occurred because of these run back schemes. As a minimum, as the procedure requires adherence to the Access Code and Technical rules, the historical connection application costs will need to be normalised to a</p>	<p>See responses 10, 11, 13, 61 and 62.</p> <p>The proposed methodology for estimating transmission connection costs estimates future connection costs through analysis of the costs for actual projects, so will reflect current practice. The methodology requires that the capital contributions are divided by the level of certified capacity for the facilities. Where a runback scheme leads to a reduction in the quantity of Capacity Credits assigned by the IMO, this normalisation will take this into account.</p>

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			<p>connection cost without run back scheme attached.</p> <p>As a matter of course, generators wishing to connect to the network pay actual costs to connect which bear little to no relationship to historical costs given the constraints on the network. Again, this emphasises historical costs will not be reflective of the plant the procedure is envisioned to embody.</p> <p>It also is not likely that the "average per unit capacity" cost of connection is an accurate representation of the likely connection cost for a 160MW. The cost of connecting a plant to the 330kV system is likely to be significantly higher than the cost of connecting a plant to the distribution network for example. However, the revised procedure will likely take a distribution connected plant into account when calculating the average cost. Following this thought process; it is also likely there is a threshold at which connection prices incur a step change (i.e. not follow an average per unit capacity theory). For example, a 100MW connection may be below a large upgrade threshold (and the proponent would have sized accordingly). The 160MW connection would be subject to a higher average per unit capacity cost, but would not be reflected in a historic average calculation. This seems inconsistent with the terms of reference.</p> <p>Western Power has stated in its most recent Annual Planning Report that the transmission system is reaching the "limit of its ability to transfer power across the system". These limits are impacting on the ability of new generation to connect to the network at a reasonable connection cost. While Western Power is working on "unleashing" their network capacity, this has not yet occurred and is envisioned to take a number of years. In the meantime, applications are made, but either put on hold or withdrawn due to high connection costs. While these connection costs are real, under the proposed process, these would not be counted in the "average per unit capacity" cost. It is a flaw in the proposed process where real connection applications are not being counted when the proponent cannot</p>	

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			<p>proceed to financial close due to high connection costs. Western Power has only recently requested further significant increases in their recoverable revenue due to the urgent need for network upgrades. This exemplifies the high cost of connection to the SWIS.</p> <p>This process is likely to result in either an inaccurate data set of historical prices, or will result in proponents pushing forward to the Access Proposal stage with uneconomical projects to ensure these are registered in the future data sets. This will place an unnecessary burden on Western Power to process applications which may not be feasible.</p>	
73	Location of theoretical generator	Tesla Corporation	<p>There is also the issue of removing the locational characteristics of the "model plant". It is unclear as to how a proponent would build a plant from taking a blended and historical Western Power Connection cost at an unknown location blended with the lowest land price available. By simple logic, it is likely that the lower cost connection points are being (or have been) taken up by other proponents. In our view, the proposed methodology no longer reflects a potential project, but the conglomeration of the minimum of each input cost available. This does not seem consistent with the required outcomes of the MRCP methodology.</p>	<p>The Power Station Cost in the existing methodology is not determined for a specific location.</p> <p>Notwithstanding this, the IMO recognised that the removal of the locational element of the transmission cost estimate required reconsideration of the Land Cost calculation. The proposed amendments base the Land Cost on the average land cost from the nominated locations.</p>
74	Fixed O&M	Tesla Corporation	<p>We also would be looking for modification to the process that the network access charges utilised for the "fixed O&M costs" portion are inflated to a fair expectation of cost at the time of operation – it appears that the WEM is undergoing a structural shift in the network access charges as exemplified by the consistent increases in the access charges allocated by Western Power year on year. These have been significantly above CPI for the last number of increases which may not have been incorporated into the MRCP calculation. It is important to note the procedure merely utilises CPI for the growth rate where in actual fact in April 2010, transmission tariff components were increased by 14% and distribution tariff components by 16%. In addition, in April 2011, an increase of</p>	<p>The MRCPWG considered this issue at its 20 January 2011 meeting. In response to a similar question, "<i>Mr [Neil] Gibbney advised that changes in tariffs were difficult to forecast and that Western Power was not prepared to make forecasts in this regard.</i>"</p>

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			transmission tariffs of 8.7%, transmission tariff components for distribution connected customer's increase of 15.7% and distribution tariff components increase of 15% were approved by the ERA. Moving back to a previous point, the structural shift that is represented by tariff increases may be lost when moving to an averaged historical cost basis.	
75	Forced Outage refund compensation	Tesla Corporation	The IMO should also consider including an allowance for the "assumed forced outage" rate a model plant would experience. If the MRCP is theoretically calculated to compensate for fixed costs and an outage rate is also assumed to be fixed, then an allowance when calculating the required return for an investor is a necessary inclusion.	See response 20.
76	Proposed amendments	Alinta	Alinta was represented on the Working Group, and is generally comfortable with the rationale for the changes proposed by PC_2011_06 to the method outlined in the Market Procedure for determining the MRCP.	Noted.
77	Price volatility	Alinta	<p>Nevertheless, the IMO's analysis shows that had the revised method been used to establish the MRCP for the 2013/14 Capacity Year, the resultant MRCP would have been around 24 per cent lower than using the existing method set out in the Market Procedure.</p> <p>As a matter of general principle, it may be prudent to provide for a transition period where a change in method, as opposed to a change in the observed value of input parameters, results in material changes in financial flows between Market Participants.</p> <p>Providing for a transition period would appear especially appropriate in instances, such as in respect of the amendments being contemplated by PC_2011_06, where the changed method immediately changes financial flows between market participants, but where due to fixed term contracts, benefits can only be expected to flow through to customers over time.</p> <p>For example, it may be appropriate to provide for a transitional</p>	See section 3.3.1 of this report and responses 1, 3 and 8.

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			<p>mechanism to smooth the financial impact of any changed methodology where the outcome would otherwise result in changes that exceed a certain threshold level - say $\pm 10\%$.</p>	
78	Price volatility	Alinta	<p>The primary purpose of the MRCP is to cap the price that may be paid by the IMO if insufficient capacity is made available to the market voluntarily and the IMO is therefore required to procure additional capacity through a Reserve Capacity Auction.</p> <p>However, the MRCP also links to the price paid for capacity that is voluntarily provided to the market, but is not bilaterally traded – the Reserve Capacity Price is set to 85% of the MRCP and further adjusted to account for any over supply of capacity.</p> <p>Although this linkage was not within the scope of the review of the MRCP (and it is noted that the IMO Board has commissioned a separate review of the Reserve Capacity Mechanism), Alinta considers that as a matter of general principle, it would be prudent to provide for a transition period where a change in method, as opposed to a change in the observed value of input parameters, results in material changes in financial flows between Market Participants.</p>	See section 3.3.1 of this report and responses 1, 3 and 8.
79	Regulatory risk	Alinta	<p>Given the linkage between the MRCP and the price paid for uncontracted capacity, Alinta is concerned that the step change in the MRCP that would result from the proposed change in the method for determining the MRCP contemplated by PC_2011_06, rather than in the observed value of input parameters, may increase the perceived regulatory risk associated with investments in the Wholesale Electricity Market (WEM).</p> <p>To the extent that the changes contemplated by PC_2011_06 increase the perceived regulatory risk associated with investments in the WEM, the efficient entry of new generation competitors may be impeded. In addition, it is likely that existing generators would attribute a lower risk-adjusted value</p>	See response 2.

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			<p>to the revenue stream from Capacity Credits, which would lead to increased energy costs for retailer.</p> <p>Consequently, the additional risk perceived to be associated with participating in the WEM may increase the long-term cost of electricity supplied to customers from the South West Interconnected System.</p>	
80	Price volatility	Western Power	<p>Firstly, it should be noted that Western Power is relatively indifferent to any change to the MRCP methodology but has previously raised some concerns regarding the proposed procedure changes in terms of overall market outcomes.</p> <p>In summary, Western Power is concerned that the volatility of a forecast 24% reduction in a key market parameter may represent a significant price shock for some participants which may have a material financial impact. It appears that no assessment has been performed of any net economic benefit which may arise due to changes to the MRCP and it is not possible to say whether the MRCP is indeed too high or too low to promote the economically efficient, safe and reliable production and supply of electricity. Even if substantial changes to the MRCP were justified, Western Power suggests serious consideration must be given to limiting or smoothing the price movements from year to year in order to provide reasonable certainty to existing and potential market participants.</p> <p>Western Power notes that these concerns have not been widely supported and on this basis consequently supports the principle of the proposed amendments subject to the administrative qualifications below.</p>	<p>The IMO notes Western Power's support.</p> <p>See also section 3.3.1 of this report and responses 1, 3 and 8.</p>
81	Transmission costs	Western Power	<p>The draft procedure section 1.8.1 currently reads:</p> <p><i>"The calculation should exclude generation facilities for which the significant driver for the location of the facility is the access to source energy (fuel or renewable) or the need to embed the generation with a load (electrical or heat). For clarity, this includes but is not limited to coal, renewable and embedded</i></p>	<p>The IMO has met with Western Power and SKM to discuss the need for further clarity in the drafting of the Market Procedure.</p> <p>The IMO has amended the drafting around the "significant driver for the location of the facility" and has</p>

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			<p><i>(including waste heat capture) generators."</i></p> <p>However, with respect to the direct connection cost, IMO also advised in an email:</p> <p><i>"The intent was that the real direct connection cost be included directly from the capcon (even if it is 1km or 20km). The 2km calculation was only to be used in circumstances where the direct connection cost is unknown."</i></p> <p>Together these two statements suggest the calculation of TC should include generators irrespective of how long the direct connection is, but also exclude facilities for which the significant driver for the location is the access to source energy. These requirements are somewhat mutually exclusive and don't provide the level of clarity required for the Network Operator to follow an auditable process. There are examples of generators on the SWIS for which Western Power is unable to say whether the significant driver for the location was access to source energy or some other commercial driver unknown to Western Power.</p>	<p>added the following statement:</p> <p><i>"Western Power may seek clarification from the IMO with regard to the inclusion of exclusion of specific projects in line with the above criteria."</i></p>
82	Transmission costs	Western Power	<p>Also, there are cases where new generators have been allocated new capacity credits but they are replacing previously decommissioned plant and utilising their own existing network Declared Sent Out Capacity (DSOC), although there still may be capital contributions required such as for fault level upgrades. Also there are examples of existing generators being allocated small increases in capacity credits from time to time as they increase their available output incrementally but without any significant network upgrades. To include these minor increases in capacity in the MRCP calculation at no or little cost could be misleading, and Western Power proposes we should exclude any new or existing generators which have been allocated new additional capacity credits but without any significant increase in their DSOC.</p>	<p>The IMO agrees and has amended step 2.4.1 of the Market Procedure (step 1.8.1 in the original Procedure Change Proposal) to state that <i>"The calculation should exclude a facility where ... the capital contribution does not relate to a significant increase in the Declared Sent Out Capacity associated with the facility"</i>.</p>
83	Transmission costs	Western Power	<p>Further, Western Power believes the issue of whether or not to include connection cost data from distribution-connected</p>	<p>The IMO met with Western Power and SKM on 30 September 2011 to review the transmission connection</p>

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			<p>generators was discussed in the working group and it was agreed that they would not be included on the basis that they would not be reflective of the costs of the notional 160MW generator. Western Power believes the working group's decision has been reflected in the draft procedure which calls for "the estimate of Total Transmission Costs ... for all works required to connect relevant generators to the transmission network". However, Western Power notes that SKM and the IMO both discussed this matter at the public forum and appeared to imply that distribution-connected generators were to be included. SKM have reiterated this view in subsequent meetings on the basis they believe the 9.9MW diesel generators are the most economic marginal generator. However, Western Power considers this would be contrary to the requirements of section 4.16.4 of the Market Rules which Western Power believes to imply the MRCP be based on the cost of an Open Cycle Gas Turbine connected to the transmission network.</p>	<p>component of the MRCP. At the meeting, Geoff Glazier from SKM indicated that it was intended that the methodology include distribution-connected generators. (Note that distribution is defined in the Access Code as relating to voltages under 66kV.)</p> <p>As noted in the SKM report, "<i>Fixing the connection size and voltage undermines the ability of the methodology to respond to changes in the position of the technical nature of the efficient new entrant generator within the market.</i>" Conversely, allowing the inclusion of distribution-connected generators enables the methodology to consider these facilities where they reflect prevailing market behaviour.</p> <p>In subsequent discussions, Western Power has reiterated its view that the connection costs for smaller generators connected on shared distribution feeders would not be representative of the costs of the notional 160 MW generator. However, Western Power has suggested that larger generators connected at distribution voltages via dedicated feeders are more technically comparable with a 160 MW generator.</p> <p>Consequently, following discussion with Western Power and SKM, the IMO has amended step 2.4.1 of the Market Procedure (step 1.8.1 in the original Procedure Change Proposal) to specifically state that "<i>The calculation should exclude a facility where ... the facility is connected on a shared distribution feeder</i>".</p>
84	Transmission costs	Western Power	<p>Western Power either requires the procedure to explicitly identify which generators should be included in the MRCP calculation in every case including the atypical, or an additional clause is required such that where there is any doubt Western Power will receive confirmation from the IMO as to which specific generators should be included in the calculation of TC each year.</p>	<p>See response 81.</p>

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85	Transmission costs	Western Power	<p>Sections 1.8.1(d) and 1.8.1(e) both refer to a "Calculation Year" however this term is not defined. There has been significant confusion over this term, but clarity over the Calculation Year is important since it determines the number of years for which historical capital contributions will be included in the calculation of TC and for how many years the estimated data from Access Offers will be utilised.</p> <p>Western Power believes the intention of the working group was for the Calculation Year to be the Capacity Year commencing in year 1 of the relevant Reserve Capacity Cycle, and notes the words in section 1.8.1(d) "the year of calculation (Year 1 of the relevant Reserve Capacity Cycle)". In this case the calculation of TC would include approximately 1 year of data from Access Offers, and 4 years of historical capital contribution data.</p> <p>However in recent meetings with SKM and the IMO, SKM advised they intended the Calculation Year to be the Capacity Year commencing in year 3 of the relevant Reserve Capacity Cycle. The IMO highlighted the perceived advantage of this approach by providing a further forward-looking estimate of transmission costs. However, Western Power advised it is extremely unlikely for Access Offers to be made this far in advance for relevant generators, and considers that if the Calculation Year is commencing in year 3 it is unlikely there will be sufficient data to calculate a realistic transmission connection cost.</p>	<p>The IMO met with Western Power and SKM on 30 September 2011 to review the transmission connection component of the MRCP. At the meeting, Geoff Glazier from SKM indicated that it was intended that the Calculation Year be the Capacity Year commencing in Year 3 of the relevant Reserve Capacity Cycle.</p> <p>The IMO notes Western Power's advice that Access Offers are rarely made 3 years in advance of the connection works being completed (typically made within 18 months of the works being completed). The IMO also notes that the SKM report was prepared with the assumption that a facility would have been issued an Access Offer prior to being granted Certified Reserve Capacity.</p> <p>The proposed transmission cost methodology considered capital contribution data for a five year period, ending with the Capacity Year for which the MRCP is being calculated. The timing of Access Offers means that at least two of the five years are unlikely to ever include any connection cost data.</p> <p>In light of this and following discussion with Western Power and SKM, the IMO has amended the Market Procedure so that the methodology considers five years of connection cost data up to, and including, the later of:</p> <ul style="list-style-type: none"> • the latest Capacity Year for which one or more Access Offers have been issued; or • the Capacity Year commencing in Year 1 of the relevant Reserve Capacity Cycle.
86	Transmission costs	Western Power	<p>The IMO requested advice from Western Power as to whether Access Proposals (which are typically made before Access Offers but are not a required part of the access process) could be used instead of Access Offers as currently required by the draft procedure. Western Power hereby advises that while the estimated costs provided in Access Proposals are made in</p>	<p>The IMO notes Western Power's advice. See also response 85.</p>

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			<p>good faith they do not have a sufficient level of rigor for commercial application and are not binding. Western Power consequently does not believe it is appropriate to use Access Proposals (which were developed for a different purpose and provide indicative information only) to determine the TC component of the MRCP.</p>	
87	Transmission costs	Western Power	<p>The terms 'direct connection assets' and 'direct transmission connection costs' are not defined and in fact section 1.8.2 seems to offer a possible definition but describes some assets which Western Power considers (in accordance with our Access Arrangement) to be shared assets which are likely to be covered somewhat by a capital contribution. This introduces an ambiguity which requires resolution.</p> <p>Western Power believes the intent as discussed in the working group was for all of the costs in 1.8.2 to be included whenever that clause is enacted, and as such proposes the following procedure wording changes for clarity:</p> <p><i>Section 1.8.1(a)</i></p> <p>"If capital contributions paid or forecast to be paid to Western Power have not been calculated to cover the cost of the direct connection assets <u>all transmission connection works required to connect from the terminals of generator step up transformers to the shared transmission network</u>, Western Power shall include <u>all of those additional costs</u> estimated in accordance with section 1.8.2 of this procedure."</p> <p><i>Section 1.8.2</i></p> <p>"For the purposes outlined in clause 1.8.1, Western Power will also estimate <u>the direct transmission connection costs only required to connect the generator all transmission connection works required to connect from the terminals of generator step up transformers</u> to the shared transmission network using the following assumptions:"</p> <p>However, while Western Power understands the above</p>	<p>The IMO met with Western Power and SKM on 30 September 2011 to review the transmission connection component of the MRCP. As was discussed at the meeting, the intent of the methodology is to use actual costs wherever possible. Specifically, Mr Glazier stated that it was intended that Western Power would identify any of the elements in step 2.4.2 (step 1.8.2 in the original Procedure Change Proposal) that had not been covered in the capital contribution, and would add its estimate of those costs to the capital contribution.</p> <p>Western Power has indicated that it can estimate the cost of these assets but has suggested some simplifications to this process to minimise the complexity of estimating the cost of assets not covered by the capital contribution. These include:</p> <ul style="list-style-type: none"> • Estimation of the easement costs by the IMO; and • Assuming the terrain as described in step 2.4.2(e) (50% flat - 50% undulating, 50% urban – 50% rural) (step 1.8.2(e) in the original Procedure Change Proposal). <p>The IMO has amended steps 2.4.1(a) and 2.4.2 (steps 1.8.1(a) and 1.8.2 in the original Procedure Change Proposal) in line with Western Power's recommendations, but with further amendments to ensure that the intent of the methodology and the IMO's discussions with Western Power are reflected.</p>

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			<p>interpretation is not without flaw in every case, subsequent discussions with the IMO and SKM have revealed very different understandings between all parties of what is required. Where capital contributions do not cover all of the required connection works, views ranged from Western Power being required to estimate the actual costs of private connection assets irrespective of the guidelines in 1.8.2, to Western Power determining which assets were not covered by a capital contribution and estimating the costs consistent with only the relevant parts of section 1.8.2.</p> <p>Western Power is concerned at the wide interpretation possible to the existing clauses and at the possibility of being required to estimate the cost of specific private connection assets without definitive guidelines.</p> <p>Clarification is required regarding the assessment of direct connection costs in an auditable manner.</p>	
88	Transmission costs	Western Power	<p>For the years where no relevant data is available, in accordance with discussion at the public forum, Western Power proposes the following amendment simply for clarity:</p> <p><i>Section 1.8.1(b)</i></p> <p>For years for which no historic <u>capital contribution</u> data or <u>Access Offers</u> for relevant generators is <u>are</u> available a connection cost will be calculated on the basis defined in clause 1.8.2 with no additional costs assumed. <u>and the cost to reinforce the shared transmission network will be assumed to be zero.</u></p>	<p>The IMO has amended step 2.4.1(b) (step 1.8.1(b) in the original Procedure Change Proposal) to reflect Western Power's comment. The amendment also highlights that <i>"it will be assumed that the costs of the works described in step 2.4.2 are fully borne by the connecting generator"</i>.</p>
89	Transmission costs	Western Power	<p>The following paragraphs in the draft procedure are relevant to the escalation of costs however there are several possible interpretations.</p> <p><i>Section 1.8.1</i></p> <p>"For the purpose of the calculation, the capital contribution for each facility will be attributed to the Capacity Year for which the facility is first assigned, or expected to be assigned,</p>	<p>The IMO has amended the drafting of step 2.4.1 (step 1.8.1 in the original Procedure Change Proposal) to clarify the process of escalation of costs. The procedure now states that <i>"For the purpose of the calculation, the unescalated dollar value of the capital contribution for a facility will be attributed to the Capacity Year for which the facility is first assigned, or expected to be assigned, Capacity Credits and will be</i></p>

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			<p>Capacity Credits."</p> <p><i>Section 1.8.1(a)</i></p> <p>"All costs shall be with reference to the year of commissioning of the generator."</p> <p><i>Section 1.8.1(d)</i></p> <p>"The average per unit capacity costs are to be escalated into the dollars of the year of calculation (Year 1 of the relevant Reserve Capacity Cycle). The basis of escalation is to be the average change over 5 years in the estimates calculated consistent with clause 1.8.2."</p> <p>Western Power receives and accounts for capital contributions in financial years, and does not always receive a single lump sum payment in accordance with a definitive timetable which may have been assumed in drafting the clauses above.</p> <p>SKM have advised their intention was that actual dollar amounts received should be allocated to the Capacity Year (1 Oct to 1 Oct) for which the facility is first assigned Capacity Credits irrespective of when the payment was received and whether it was positive or negative (a refund).</p> <p>Western Power accepts this is a pragmatic approach which avoids any requirement to escalate capital contributions to a common base before calculating the average per unit capacity costs. Of course the clauses above will need amendment to allow for using cost data from Access Offers also.</p> <p>Western Power notes the intention to escalate the average per unit capacity costs to the appropriate year is unchanged, however due to the confusion over the definitions of the Calculation Year and the connection costs in section 1.8.2 care will be required to clarify how that escalation should be performed and exactly to which year.</p> <p>Clarification is required over how to escalate capital contributions, connection cost data from</p>	<p><i>assumed to be in the dollars as at 1 October of that Capacity Year."</i></p> <p>The escalation of costs has been simplified so that it occurs once, prior to the weighted average calculation. Step 2.4.1(d) (step 1.8.1(d) in the original Procedure Change Proposal) now states that <i>"The escalated average per unit capacity costs for each Capacity Year shall be determined by escalating the average per unit capacity determined in (c) to 1 April of Year 3 of the relevant Reserve Capacity Cycle. The basis of escalation is to be the average change over 5 years in the estimates calculated consistent with step 2.4.2."</i></p> <p>This change does not alter the result of the calculation.</p>

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			Access Offers and the average per unit capacity costs.	
90	Transmission costs	Western Power	<p>Section 1.8.1(c) states:</p> <p>"The sum of connection costs for each Capacity Year is to be divided by the sum of the generators' certified capacity in that year to provide an "average per unit capacity" connection cost for each year."</p> <p>The most obvious interpretation of the above clause requires that all cost data from capital contributions and Access Offers should be divided by the capacity credits allocated to generators in their first year. However, it is not unreasonable to expect minor changes in generators' certified capacity in the first few years after being commissioned for reasons other than network capacity availability or constraints. Capital contributions may consequently have been made to establish an amount of network capacity in the first year which may be unused in some years.</p> <p>Discussion with the IMO and SKM suggests an amendment is appropriate such that the capacity used for each generator in the divisor should be the quantity of certified capacity most recently assigned to the facility that is attributable to the capital contribution used to establish that network capacity.</p> <p>Clarification is required to confirm the divisor in the calculation of the average per unit capacity and that the sum of connection costs should include all of the relevant costs from capital contributions and Access Offers.</p>	<p>The IMO has amended the drafting to state that "<i>The quantity of Certified Reserve Capacity for a facility will be the level most recently assigned to that facility that is attributable to that capital contribution. Western Power may consult with the IMO to confirm the appropriate quantity of Certified Reserve Capacity for each facility.</i>"</p>