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REPORT DETAILS

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Wholesale Electricity Market: Request for Expressions of Interest for the 2012 Reserve Capacity Cycle

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Request for Expressions of Interest

The Independent Market Operator (IMO) is seeking Expressions of Interest for the provision of new generation and Demand Side Management (DSM) capacity within the South West interconnected system (SWIS) of Western Australia.

New facilities must be available for commercial service by 1 October 2014.

Proponents will be invited to apply for certification of Reserve Capacity for their proposed facilities in May 2012.

Proponents whose proposed facilities are certified may subsequently apply for assignment of Capacity Credits.

The total capacity required to meet peak demand, plus a reserve margin, will be determined through the Long Term Projected Assessment of Supply Adequacy (LT PASA), the results of which will be published in the Statement of Opportunities Report in June 2012.

Based on current information, including the IMO's most recent electricity demand estimates, there is an estimated excess in capacity of 284 MW for the 2014/15 Capacity Year.

Proponents who wish to submit an Expression of Interest are advised to read the Important Notice contained in Appendix 1 of this Request.

Queries and completed Expressions of Interest are to be sent to:

Acting Manager, System Capacity

Independent Market Operator PO Box 7096 Cloisters Square PERTH WA 6850 AUSTRALIA

Proposals can be submitted electronically to system.capacity@imowa.com.au

Proponents must include the Expression of Interest form, available in Appendix 2 or on the IMO website: (<u>www.imowa.com.au/eoi</u>) as part of their submission.

All Expressions of Interest should be submitted by **5.00pm Western Standard Time on Tuesday, 1 May 2012**.

Executive Summary

This document invites proponents to provide Expressions of Interest for the provision of generation and DSM capacity into the SWIS in Western Australia. It is the first step in the 2012 Reserve Capacity Cycle to secure new capacity that will be available for service from October 2014 through to October 2015.

Expressions of Interest (EOI) are invited from proponents for new generation and DSM capacity which will be available for commercial service from 1 October 2014 through 1 October 2015¹. Expressions of Interest are due to the IMO by 1 May 2012.

The main purpose of the Request for Expressions of Interest is to alert prospective investors to the Reserve Capacity Mechanism (RCM) and to enable proponents to provide information to the IMO on projects under consideration. Submitting an Expression of Interest will also ensure that the proponent receives all information and updates that are published in respect to the process, including the Reserve Capacity Information Pack.

In addition to submitting an Expression of Interest, project proponents are strongly encouraged to commence the processes required to secure access to the transmission system and to secure environmental approvals. Both of these processes are likely to be on the critical path of any new power project.

Based on the forecasts presented in the 2011 Statement of Opportunities, there is an estimated capacity surplus of 284 MW for the 2014/15 Reserve Capacity Year. Developers may still offer new capacity for certification during this Reserve Capacity Cycle, and under some conditions may be eligible to receive Capacity Credits for new facilities.

Energy sales within the SWIS, which covers the populous south-west portion of Western Australia, are expected to grow at approximately 2.9% per annum over the next decade, as projected in the 2011 Statement of Opportunities (SOO) forecasts. Growth in electricity peak demand is forecast at around 3.8% per annum for the 10% PoE (one-in-ten-year) scenario.

All demand forecasts in this report are taken from the 2011 SOO published by the IMO².

For further information on any aspect of the Reserve Capacity Mechanism, proponents are encouraged to contact the IMO directly at <u>system.capacity@imowa.com.au</u>.

Note that capacity payments for new facilities can commence from 1 June 2014, in accordance with clause 4.1.26(c) of the Market Rules.

The 2011 SOO is available at http://www.imowa.com.au/soo

Background to the Electricity Sector in Western Australia

Western Australia is geographically large, covering approximately one third of the Australian continent, and the electricity supply industry comprises a number of distinct systems serving the more populous areas. The two main systems are:

- the SWIS, supplying the south west of the State, extending north to Kalbarri, south to Albany and east to the Goldfields (shown in Figure 1 below); and
- the North West Interconnected System (NWIS), which supplies major towns in the Pilbara Region.



Figure 1: Western Australia and the South West Interconnected System

With an annual energy consumption of about 19,000 GWh, the SWIS is by far the largest electricity system in Western Australia and provides electricity to over 1,000,000 end-use customers, the majority of whom are located in the Perth metropolitan area.

This Request for Expressions of Interest, and the information provided in respect to the Wholesale Electricity Market (WEM), relates to the SWIS.

A key feature of the WEM, and one that distinguishes it from the National Electricity Market (NEM) operating in the eastern states of Australia, is the separate Reserve Capacity Mechanism (RCM). The RCM ensures that sufficient generation and DSM capacity is available to meet the overall SWIS forecast peak demand.

The RCM has provided positive outcomes for the Western Australian economy with more than 2,500 MW of new generation and DSM capacity having been committed over the past six years, predominantly from the private sector.

Power Stations and Fuel Supply

Western Australia possesses an abundant supply of fossil fuel resources, particularly coal and gas. In addition, Western Australia's generous renewable energy resources, such as solar and wind, provide opportunities for renewable energy projects. For example, dependent on location, wind farms operating in the SWIS achieve capacity factors of between 31% and 44%. Further, there are a number of locations throughout the SWIS suitable for generating electricity using other renewable energy resources, such as wave and biomass.

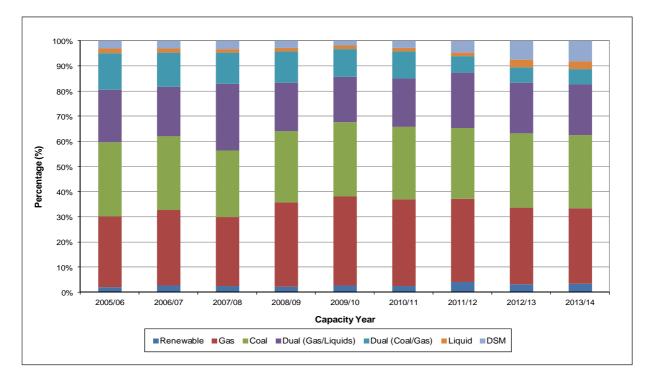
Further information on fuels and other energy resources can be found in the Australian Energy Resource Assessment, prepared by Geoscience Australia and the Australian Bureau of Agricultural and Resource Economics (ABARE)³, and in the 2011 SOO.

Figure 2 below shows the proportion of capacity by fuel type for the 2005/06 through to the 2013/14 Capacity Years. While there have been some changes to the mix of fuel types, the significant diversity of capacity has continued since the commencement of the WEM. Increases in generation have been experienced across each of the fuel types within the SWIS excluding dual coal/gas-fired capacity, which has reduced with the retirement of the Kwinana Stages A and B plant.

Figure 3 shows the proportion of capacity by Market Participant for the 2005/06 through to the 2013/14 Capacity Years. By 2013/14, the proportion of capacity provided by Verve Energy, the largest generator, is projected to reduce from 89% at market commencement to approximately 51.2% of the total SWIS capacity. The graph also demonstrates growth in the number of Market Participants providing capacity to the SWIS.

The provision of secure fuel supplies for power generation facilities is one of the critical elements to the continued reliability of electricity supply within the SWIS. Evidence of firm fuel supply contracts (including transport capability in the case of gas fuelled projects) must be provided for projects to have their capacity certified.

³ Available at <u>https://www.ga.gov.au/products/servlet/controller?event=GEOCAT_DETAILS&catno=70142</u>





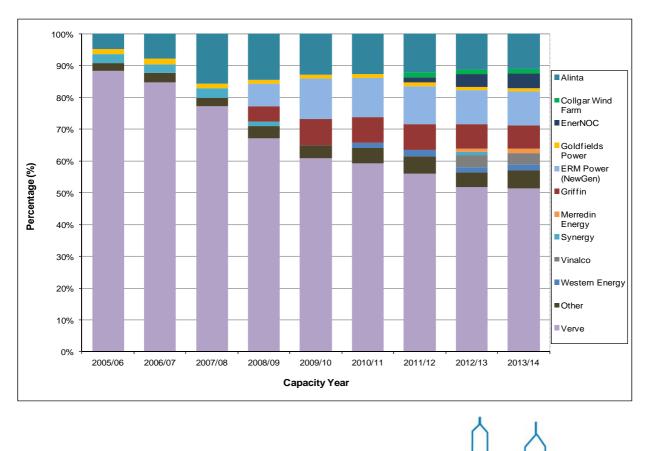


Figure 3: Percentage of Capacity Credits by Major Capacity Credit Providers

Future Electricity Demand

The maximum demand in the SWIS occurs in summer, with the peak strongly influenced by the specific weather circumstances. Forecasts of peak demand are prepared on the basis of three defined probability standards:

- A 10% probability of exceedance (PoE) forecast, which is one that is not expected to be exceeded more than once in every ten years;
- A 50% PoE forecast, which is not expected to be exceeded more than once in every two years; and
- A 90% PoE forecast, which is not expected to be exceeded more than nine times in every ten years.

The IMO prepares its demand forecasts, and calculates the Reserve Capacity Requirement, on a sent-out basis. This is consistent with the operation of the energy market. Consequently, the demand requirements for load that is supplied by on-site generation (Intermittent Loads) are not included within the demand forecasts. However, an allowance for these Intermittent Loads is included within the Reserve Capacity Requirement in accordance with the Market Rules.

The 10% POE system peak demand for 2014/15 is forecast at 5,219 MW and is expected to grow at around 3.8% per annum over the next ten years, as shown in Figure 4 below.

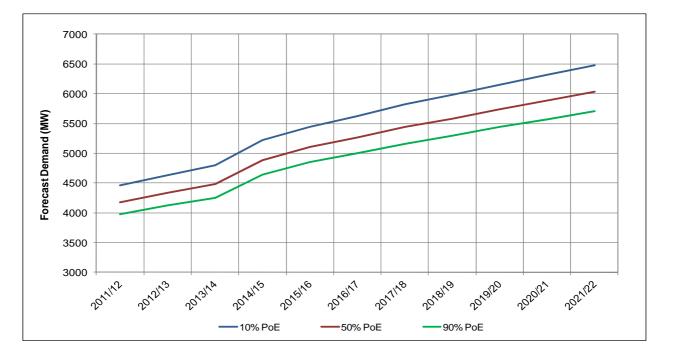


Figure 4: Forecast Maximum Demand (MW) – Expected Economic Growth

Electricity sales are forecast to grow at a lower rate to peak demand, with demand becoming more peaked. Based on expected economic growth forecasts, electricity sales are forecast to

grow at approximately 2.9% per annum on average over the next ten years. The forecast growth in sent out energy for a range of economic growth scenarios is shown below in Figure 5.

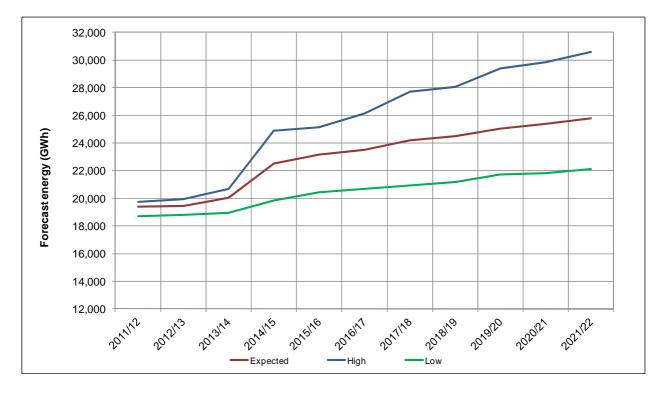


Figure 5: Forecast Sent-Out Energy (GWh)

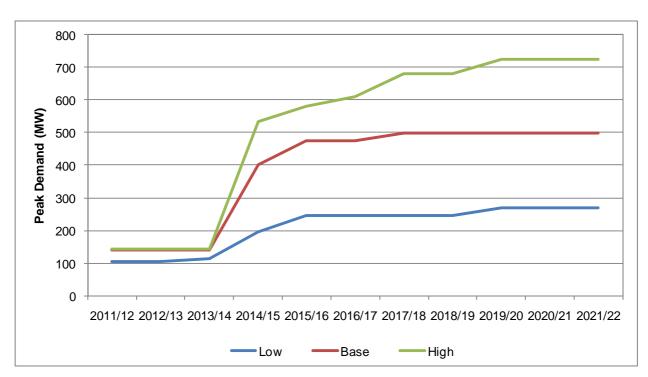
Figure 5 shows a significant difference between the energy forecasts for the Low and High economic growth scenarios. The predicted average annual growth in energy consumption is 1.7% for the Low scenario and 4.5% for the High scenario.

Growth in annual electricity consumption is driven to a large extent, by underlying economic drivers. A significant contributing factor is the variation in economic growth forecasts between the Low and High scenarios. Average annual growth in Gross State Product is forecast to be 2.7% in the Low case and 4.6% in the High case.

In addition, the IMO identifies new block loads through consultation with industry and includes allowances for these in the peak demand and energy forecasts for each of the three economic growth scenarios. Figure 6 below shows the allowance for new block loads included in the IMO's peak demand forecasts for the Low, Base and High economic growth scenarios.

As is shown in Figure 6, the IMO has allowed for nearly 500 MW of additional major block load capacity through to the 2021/22 Capacity Year in the base economic growth scenario. The majority of this capacity is associated with prospective magnetite new large block loads in the Mid-West and Great Southern regions. Further, the majority of the new load in the Mid West

region is dependent on the new Mid West Energy Project southern section, which is scheduled for completion in 2014.





More information on the IMO demand forecasts can be found in the 2011 Statement of Opportunities Report available on the following website: <u>http://www.imowa.com.au/soo</u>.

Quantity of Capacity Required

Preliminary estimates for the 2014/15 Capacity Year are that the Reserve Capacity Requirement will be 5,773 MW⁴. This is based on the current Planning Criterion which includes an allowance for capacity to meet forecast peak demand, a reserve margin demand from Intermittent Loads, and an ability to maintain frequency keeping capability.

Based on the Capacity Credits assigned for the 2013/14 Capacity Year, approximately 6,057 MW of capacity is expected to be in service for the 2014/15 Capacity Year⁵. This includes 5,557 MW of generating capacity and 500 MW of DSM capacity.

⁴ See Table 3 (page 43) of the 2011 SOO.

⁵ This estimate has been calculated from the Capacity Credits assigned to generation facilities for the 2013/14 Capacity Year minus an estimate of the likely reduction in Capacity Credits for Intermittent Generators following the implementation of Rule Change RC_2010_25. See

http://www.imowa.com.au/RC_2010_25 for more information on the new methodology.

Based on these estimates and the preliminary Reserve Capacity Requirement for 2014/15 published in the 2011 SOO, there is anticipated to be excess capacity of 284 MW above the requirement for 2014/15, as shown below in Figure 7.

Based on previous declarations by Market Participants, the IMO anticipates that all of the 6,057 MW of Reserve Capacity that is expected to be in service in 2014/15 will be provided through Market Participants indicating their intent to trade Certified Reserve Capacity bilaterally.

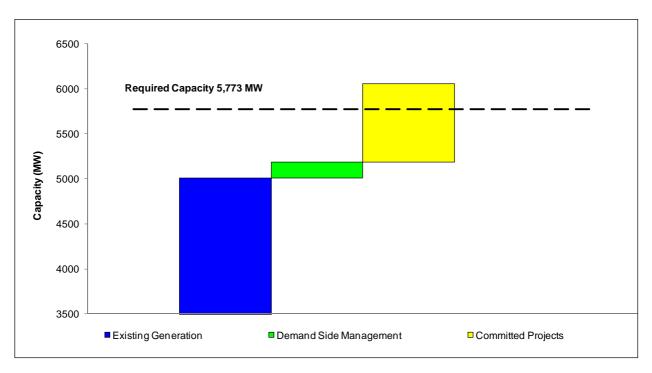


Figure 7: Opportunity for Investment - 2014/15

It is likely that the quantity of excess capacity will differ from the preliminary value presented here due to changes in forecast electricity demand, commitments to new plant that are currently being considered by Market Participants and/or new DSM initiatives. Proposed projects will be included in future determinations of the demand/supply balance based on data gathered through this Request for Expression of Interest process. These will be summarised within the 2012 Statement of Opportunities Report.

The Reserve Capacity Mechanism

Introduction

The first objective of the WEM is to "promote the economically efficient, safe and reliable production and supply of electricity and electricity related services in the South West interconnected system".

System reliability and security are of particular importance in an isolated system such as the SWIS, where it is not possible to draw power supplies from adjacent systems.

The RCM is designed to facilitate the procurement of adequate generation and DSM capacity. It incentivises investment by providing tangible value for the provision of capacity.

The RCM provides the opportunity for generators to enter contracts to supply their capacity to retailers or other wholesale electricity purchasers. However, Capacity Credit holders that do not secure bilateral contracts can receive payment for capacity from the IMO at an administered price. Also, in the event that the level of expected bilateral trades does not meet the capacity requirement, the IMO may conduct a Reserve Capacity Auction to secure additional supply.

The energy and capacity trading arrangements that may exist between buyers and sellers are shown in Figure 8. A summary timeline for the process is shown in Figure 9.

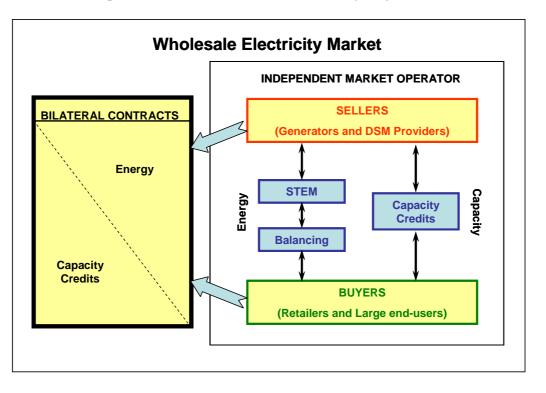


Figure 8: The Net Bilateral Market and Capacity Credits

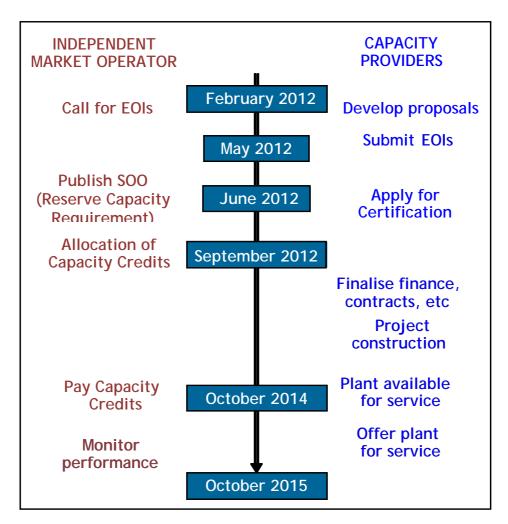


Figure 9: Timeline for Bringing New Capacity to the SWIS for 2014/15

Options that Proponents Can Offer

The third objective of the WEM is "to avoid discrimination in that market against particular energy options and technologies". Consistent with this, the RCM is open to all types of generation plant and DSM capacity provided that they can meet the timing restrictions set out in the Market Rules and meet all other requirements of the RCM.

Capacity Credits

A Capacity Credit is a notional construct unit of capacity that can be traded between Market Participants. Capacity Credits are assigned to individual generation and DSM facilities and are valid for a particular Capacity Year.

The IMO places obligations on retailers to purchase Capacity Credits based on their consumption at system peak times in the previous year. Each retailer will be obliged to secure

adequate Capacity Credits to meet its Individual Reserve Capacity Requirement (IRCR). Retailers can either purchase Capacity Credits through bilateral arrangements or through the IMO, as shown in Figure 8 above.

A Capacity Credit payment is made to generators and DSM providers in return for making their capacity available to the system. There are a number of obligations imposed on holders of Capacity Credits, the most significant being that capacity from a generation facility must be offered to the system at all times, unless the facility is undergoing an approved outage. In the event that capacity is not offered to the system, such as during a forced outage, the holder of the Capacity Credits is required to pay Reserve Capacity refunds to the market.

DSM facilities may place some limits on the availability of their capacity, in accordance with clause 4.10.1(f) of the Market Rules. DSM providers should note that the availability requirements in the Market Rules for DSM will be reviewed during 2012 by the Reserve Capacity Mechanism Working Group (RCMWG), which may recommend changes to the existing requirements.

In keeping with the overall design of the market, it is anticipated that a significant proportion of Capacity Credits will continue to be traded through bilateral contract arrangements, the terms and conditions of which are negotiated between the generators and retailers and may vary in term, price and quantity. Just as they may represent longer-term or short-term agreements, these contracts may also be for the supply of energy or capacity or both.

Any remaining Capacity Credits that are not traded through bilateral contracts will be bought and sold through the IMO.

Reserve Capacity Requirement

Each year, the IMO prepares an assessment of the annual capacity that it estimates will be required in the next ten years. This assessment determines the capacity required to meet the forecast system peak demand while ensuring that the system reliability criteria are met. This information is published in July each year within the SOO Report. The 2011 SOO Report is available on the IMO website at <u>www.imowa.com.au/soo</u>.

As indicated above, the IMO has estimated that 5,773 MW of generation and DSM capacity will be required during the 2014/15 Capacity Year.

Certification of Facilities

The reliability of the SWIS depends on generators and DSM providers delivering the capacity when it is required. The IMO undertakes a process of certification to confirm that:

• the facility will be able to deliver the quantity of megawatts which the Market Participant has applied for; and

• if the facility is yet to commence operation, it can provide capacity to the SWIS by the date claimed.

Certification is required to be secured each year in order for a facility to be able to apply for Capacity Credits.

From Tuesday 1 May 2012 through to Friday 29 June 2012, a Market Participant may apply to the IMO to have the capacity of its plant certified for the purposes of the RCM. The Market Participant must demonstrate that its facility will be able to deliver capacity into the SWIS throughout the 2014/15 Capacity Year. To be eligible for Certified Reserve Capacity, facilities must be available for commercial service by 1 October 2014.

The level of Certified Reserve Capacity granted to the facility will be the level of Capacity Credits that the facility may be assigned by the IMO; either through the bilateral trade declaration process or through the Reserve Capacity Auction if one is held.

Clauses 4.9 through 4.11 of the Market Rules describe the process for applying for and setting of Certified Reserve Capacity. Further information is provided in the *Market Procedure for: Certification of Reserve Capacity*, which is available on the IMO website at http://www.imowa.com.au/market-procedures.

Information that must be provided by the applicant for certification can also be viewed on the IMO website at <u>http://www.imowa.com.au/crc</u>.

Following the approval of Rule Change Proposal RC_2011_10 *Competitive Balancing and Load Following Market*, applicants for generation facilities with a rated capacity of 10 MW or greater must demonstrate that their facilities will satisfy the Balancing Facility Requirements in order to be assigned Certified Reserve Capacity. Further information on this new requirement is available in the Final Rule Change Report at <u>http://www.imowa.com.au/rc_2011_10</u>.

In addition to the standard mechanism for certification of Reserve Capacity, the Early Certified Reserve Capacity (ECRC) provisions in the Market Rules allow new projects with long lead times the ability to secure Capacity Credits earlier. Further information on ECRC and how it affects Capacity Credit allocations can be found in clause 4.28C of the Market rules and the 'Early Certified Reserve Capacity section of the IMO website (<u>http://www.imowa.com.au/crc</u>).

The information required to be submitted to the IMO with an application for certification of Reserve Capacity for facilities is listed in clause 4.10.1 of the Market Rules. Further details in relation to transmission network access, environmental approvals and fuel supplies are provided below.

Transmission Network Access

A proponent will be required to provide evidence of an Arrangement for Access or evidence that the Market Participant has accepted an Access Proposal from the relevant Network Operator made in respect of the facility. In order for a facility to be assigned Certified Reserve Capacity, this documentation must indicate that the facility will be entitled to have access within the timelines identified in the application for Certification of Reserve Capacity. The documentation must also indicate the level of unconstrained access and details of any constraints that may apply, as required by clause 4.10.1(bA) of the Market Rules.

The actual timeframe for a proponent to receive a letter of offer from the Network Operator, as is required under clause 4.10.1(bA) of the Market Rules, may vary depending on the project and the existing queue of applicants. In some instances, the amount of time it takes to receive access to the transmission system may be substantially longer than the two-year time horizon of the RCM. For this reason, the IMO strongly encourages project proponents to contact Western Power as early as possible to ensure their project can progress through the RCM.

Environmental Approvals

Clause 4.10.1(c)(ii) of the Market Rules refers to the environmental approval requirements and the need for project proponents to have arrangements in place when submitting an application for Certified Reserve Capacity.

Developers of generation facilities must refer their projects to the Environmental Protection Authority (EPA) as the first step in securing environmental approvals. The EPA provides a substantial amount of information on its website at <u>www.epa.wa.gov.au</u> and proponents are strongly encouraged to read this.

It should be noted that the EPA will require sufficient time to assess all documentation received from proponents and make a recommendation to the Minister for the Environment. The Minister will then require time to consider this recommendation and make a formal decision.

Evidence of fuel supplies

The IMO notes the importance of proponents securing and demonstrating adequate fuel supply and transport arrangements prior to applying for Certified Reserve Capacity for a Scheduled Generator. In order for a Facility to be assigned Certified Reserve Capacity, the IMO must have a reasonable expectation that the facility has access to sufficient firm and non-firm fuel supply and transport arrangements so that it can operate at its maximum output for 14 hours each day.

Assignment of Capacity Credits

Following successful certification, the IMO assigns Capacity Credits to facilities through a twostage process. The first stage is the bilateral trade declaration process, where each Market

Participant assigned Certified Reserve Capacity declares to the IMO its intent to secure bilateral contracts for trading its Reserve Capacity, or offers its Reserve Capacity into a Reserve Capacity Auction.

In respect of bilateral trade declarations, the IMO assigns Capacity Credits to facilities in accordance with a priority set out in the Market Rules. Capacity Credits are first assigned to all generators which are in existence, or are committed, and which have indicated their intention to bilaterally trade their capacity. If this quantity of capacity is sufficient to meet the Reserve Capacity Requirement, no further Capacity Credits are assigned. However, if the required capacity level has not been reached, the IMO will then assign Capacity Credits to facilities where the Market Participant has indicated its intention to trade capacity bilaterally, but the facility is not yet committed.

If further capacity is still required, the IMO will run a Reserve Capacity Auction. No Reserve Capacity Auction has been required since the commencement of the WEM.

Advice on how much of Certified Reserve Capacity will be traded bilaterally and how much will be offered into the auction needs to be made by Friday, 31 August 2012. At this stage, Market Participants are only required to declare that they intend to bilaterally trade their Capacity Credits and are not required to have bilateral contracts in place at the time of this declaration.

Payment for Capacity Credits

Market Participants that are assigned Capacity Credits may receive payments for these, either through bilateral contracts or through the IMO. Please note that the allocation of Capacity Credits does not guarantee that a facility will be dispatched in the energy market.

If it is necessary for the IMO to run a Reserve Capacity Auction, Market Participants who have indicated that they wish to enter the auction are able to bid any price between zero and the Maximum Reserve Capacity Price. For the 2014/15 Reserve Capacity Year the Maximum Reserve Capacity Price is \$163,900 per MW per year. The Reserve Capacity Auction will be cleared at a single price and this price will apply for all uncontracted Capacity Credits for the 2014/15 Capacity Year. This includes any Capacity Credits that have been assigned during the bilateral trade declaration process described above in the circumstances where these are uncontracted.

However, if a Reserve Capacity Auction is not held because enough capacity has been secured through bilateral trade nominations (as has been the case for each year to date), clause 4.29.1 of the Market Rules sets the price for all uncontracted Capacity Credits according to the following formula:

Reserve Capacity Price = MRCP x 85% x <u>Reserve Capacity Requirement</u> Total Capacity Credits assigned Table 1 shows the prices for Capacity Credits to 2013/14. The actual price of Capacity Credits for the 2014/15 Capacity Year will depend on whether a surplus is procured through bilateral trades, or if the Reserve Capacity Mechanism progresses to a Reserve Capacity Auction.

Start Date	End Date	Maximum Reserve Capacity Price (\$/MW/yr)	Capacity Credit Price (\$/MW/yr)	Capacity Credit Price (\$/MW/month)
1 Oct 2008	1 Oct 2009	\$122,500	\$97,834.89	\$8,152.91
1 Oct 2009	1 Oct 2010	\$142,200	\$108,458.57	\$9,038.21
1 Oct 2010	1 Oct 2011	\$173,400	\$144,235.38	\$12,019.62
1 Oct 2011	1 Oct 2012	\$164,100	\$131,804.58	\$10,983.72
1 Oct 2012	1 Oct 2013	\$238,500	\$186,001.04	\$15,500.09
1 Oct 2013	1 Oct 2014	\$240,600	\$178,476.69	\$14,873.06
1 Oct 2014	1 Oct 2015	\$163,900	TBA	ТВА

Table 1 Capacity Credit Prices in the Wholesale Electricity Market

The Capacity Credit payments will be made in twelve monthly payments equal to the number of Capacity Credits held by the Market Participant multiplied by the price per Capacity Credit as described above.

Reserve Capacity Auction Price Cap (Maximum Reserve Capacity Price)

There is a cap on the price of offers into the Reserve Capacity Auction known as the Maximum Reserve Capacity Price (MRCP). For this Reserve Capacity Cycle, the cap has been set at \$163,900 per MW per year.

The MRCP aims to establish the marginal cost entry of providing additional Reserve Capacity in each Capacity Year. It is established by undertaking a technical bottom-up cost evaluation of the entry of a theoretical 160 MW Open Cycle Gas Turbine (OCGT) generation facility entering the Wholesale Electricity Market (WEM) in the relevant Capacity Year.

The IMO is required, under Clause 4.16.9 of the Market Rules, to conduct a review of the methodology and process for determining the MRCP at least once in every five year period. The IMO undertook this review during 2010 and 2011 with the assistance of the Maximum Reserve

Capacity Price Working Group⁶. The review was completed in October 2011 following approval of a Procedure Change Proposal⁷.

Market Participants may offer plant into the Reserve Capacity Auction that has a higher capital cost than is used as the basis for calculating the MRCP, but their offers must still be at or below the level of the MRCP. It would be expected that such plant would seek to recover the balance of their fixed costs through selling electricity within the energy market.

Special Price Arrangements

If a Reserve Capacity Auction is held, new capacity that is cleared in that auction will have the option to accept a Special Price Arrangement. A Special Price Arrangement allows a Market Participant to receive the auction price, including an adjustment for inflation, for up to ten years from commissioning without being required to participate in the Reserve Capacity Auction again. This provides revenue certainty for new entrant generators.

If a Reserve Capacity Auction is held, a Market Participant who has been assigned Capacity Credits through the auction must nominate that it wishes to take up the option of the Special Price Arrangement by no later than Friday, 21 September 2012. Special Price Arrangements are only available for new plant if a Reserve Capacity Auction is held.

Obligations on Facilities Receiving Capacity Credits

All generation facilities that have been assigned Capacity Credits are obliged to make their capacity available to the market at all times. Generation facilities are required to demonstrate this by offering their capacity into the Short Term Energy Market.

Similarly, DSM facilities are required to make their capacity available to the market during the periods specified at the time of certification, in accordance with clause 4.10.1(f) of the Market Rules.

Apart from approved outage periods, a facility that fails to meet its availability obligation will be required to pay Reserve Capacity refunds to the market. While a DSM facility may specify lower availability, it is also required to pay Reserve Capacity refunds to the market in the event that it fails to fully satisfy a Dispatch Instruction from System Management. Reserve Capacity refunds are described in clause 4.26 of the Market Rules.

Facilities holding Capacity Credits are also required to:

• Submit to regular facility tests undertaken by the IMO;

⁶ More information on the Maximum Reserve Capacity Price Working Group is available at <u>http://www.imowa.com.au/mrcpwg</u>

⁷ More information on Procedure Change Proposal PC_2011_06 is available at <u>http://www.imowa.com.au/PC_2011_06</u>

- Where applicable, participate within the centralised maintenance planning arrangements; and
- Accept Dispatch Instructions from System Management.

Market Evolution – Potential Changes and Rule Improvements

The WEM has been in operation for five years and has achieved significant outcomes, particularly in providing incentives for increased private investment in generation capacity. The significant shift in the structure of the market means that the WEM can no longer rely on Verve Energy to be the sole provider of Balancing and Load Following Ancillary Services (LFAS).

In addition, the continuing strong demand growth in demand in Western Australia followed by the global financial downturn has clearly impacted on the electricity sector and operation of the WEM and has focused attention on some key aspects of the WEM.

This section outlines some of the key areas of reform underway in the WEM.

Note to potential investors: The IMO strongly advises all prospective capacity providers (either existing or new) to familiarise themselves with the market evolution initiatives that are underway.

Market Evolution Program (MEP)

Following work done by industry representatives on the Market Advisory Committee (MAC) in 2009 and the Verve Energy review that identified a series of issues with the existing WEM design, the Rules Development and Implementation Working Group (RDIWG) was convened in August 2010 to assess these issues and identify solutions.

The work of the RDIWG has supported the Market Evolution Program (MEP), which has involved the development of amendments to the Market Rules and market systems to provide:

- competitive Balancing and LFAS markets, which will promote economic efficiency by enabling greater Independent Power Producer participation in the provision of these services; and
- a more adaptable IT system supporting the current WEM.

The IMO Board has now approved Rule Change Proposal RC_2011_10, which contains the amendments to the Market Rules to implement the new arrangements⁸. Subject to Ministerial approval, the competitive Balancing and LFAS markets will commence operation on 1 July 2012.

More information on the MEP is available on the Market Evolution Program section of the IMO website⁹.

⁸ More information on the Rule Change Proposal is available at <u>http://www.imowa.com.au/rc_2011_10</u>.

Reserve Capacity Mechanism Working Group (RCMWG)

The Reserve Capacity Mechanism Working Group (RCMWG) has been constituted by the MAC to consider, develop and assess changes to the Market Rules associated with various issues that have been identified in relation to the Reserve Capacity Mechanism. The issues to be considered by the RCMWG are:

- The definition of capacity;
- Issues that impact surplus capacity:
 - The consistent capacity surpluses secured in the Wholesale Electricity Market;
 - o The pricing of capacity in oversupply conditions; and
 - The additional costs imposed on the market as a result of surplus capacity;
- Performance requirements for Reserve Capacity;
- The role of DSM in the RCM, including consideration of the availability limits for DSM;
- The fuel requirements imposed on generation capacity providers;
- The allocation of capacity costs to Market Customers;
- The impact of forecasting inaccuracy on the RCM;
- The alignment of the implementation of a dynamic Reserve Capacity refund regime and the potential changes to the RCM resulting from the deliberations of the RCMWG; and
- The timeline and scope of a periodic review of the RCM

The RCMWG held its first meeting on 15 February 2012, and expects to deliver its recommendations to the MAC by November 2012.

Potential Future Rule Changes

In addition to the areas highlighted above, a number of reviews within the WEM may lead to proposals to amend the Market Rules. These areas of review relate to:

- The methodology for allocating LFAS costs to loads and Intermittent Generators;
- Incentives for dual-fuel facilities;
- The five yearly review of the Planning Criterion and the process by which the IMO forecasts peak demand (to be completed in 2012); and
- Implementation of the recommendations as a result of the five yearly Outage Planning review with System Management.

For more information on these reviews please refer to the IMO website (<u>www.imowa.com.au</u>) or contact the IMO System Capacity team at <u>system.capacity@imowa.com.au</u>.

Proponent Requirements

Submitting an Expression of Interest

To submit an Expression of Interest, the proponent is required to develop an outline of a proposal for a specific generating plant, or a specific Demand Side Programme

The proponent must then submit an Expression of Interest by 5.00pm, Tuesday 1 May 2012 Western Australian Standard Time, as required by clause 4.1.5 of the Market Rules.

The Expression of Interest submission must also include a completed Expression of Interest Form which can be found in Appendix 2 of this request. A copy of this form is also provided in Microsoft Excel format on the IMO website (<u>www.imowa.com.au/eoi</u>).

Proponents who wish to submit an Expression of Interest are advised to read the Important Notice contained in Appendix 1 of this Request.

Expressions of Interest are to be sent to:

Acting Manager, System Capacity

Independent Market Operator P O Box 7096 Cloisters Square PERTH WA 6850 AUSTRALIA

Proposals can be submitted electronically to system.capacity@imowa.com.au

Details on the Market Rules can be found on the following webpage: <u>http://www.imowa.com.au/market_rules_overview</u>

Certification of Reserve Capacity

Applications for Certified Reserve Capacity may be lodged with the IMO from Tuesday 1 May 2012 until Friday 29 June 2012 in accordance with clause 4.9.1 of the Market Rules. In accordance with clause 4.9.3, a Market Participant applying for Certified Reserve Capacity must provide to the IMO the data specified in clause 4.10.1.

In the case of an application for Certified Reserve Capacity for an Intermittent Generator that is yet to enter service, the Market Participant must also provide to the IMO the independent expert report described in clause 4.10.3 of the Market Rules.

Procedures outlining the steps that proponents are required to follow are available from the IMO web site at <u>http://www.imowa.com.au/crc</u>. Potential investors are also advised to read the

'Guide for Investors and Developers" available on the IMO's website at <u>http://www.imowa.com.au/rc_process_overview</u>.

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2012 Reserve Capacity Mechanism - Timetable			
Tuesday	29 Feb 2012 ¹⁰	5.00PM	IMO publishes Request for Expressions of Interest (EOI)
Tuesday	1 May 2012	5.00PM	Close of EOI
Tuesday	15 May 2012	5.00PM	Announcement of the results of the EOI
Tuesday	1 May 2012	9.00AM	Participants may apply for Certification of Reserve Capacity
Monday	18 June 2012	5.00PM	IMO publishes the Statement of Opportunities
Monday	18 June 2012	5.00PM	IMO publishes the Reserve Capacity Information Pack on website
Friday	29 June 2012	5.00PM	Applications for Certification of Reserve Capacity close ¹¹
Friday	17 August 2012	5.00PM	IMO advises assignment of Certified Reserve Capacity
Friday	31 August 2012	5.00PM	Market Participants provide Reserve Capacity Security for new capacity that they intend to bilaterally trade
Friday	31 August 2012	5.00PM	Market Participants advise how much of their Certified Reserve Capacity will be traded bilaterally and how much will be offered into the auction
Monday	3 September 2012	5.00PM	IMO confirms to Market Participants the amount of Certified Reserve Capacity that can be traded bilaterally
Tuesday	4 September 2012	5.00PM	IMO publishes the Certified Reserve Capacity for each facility
Tuesday	4 September 2012	5.00PM	IMO advises whether the Reserve Capacity Auction is required or cancelled
Tuesday	4 September 2012	5.00PM	IMO assigns Capacity Credits (if Reserve Capacity Auction is cancelled)
Wednesday	5 September 2012	9.00AM	Lodgement of Reserve Capacity Offers opens (if auction required)
Friday	14 September 2012	5.00PM	Lodgement of Reserve Capacity Offers closes (if auction required)
Friday	4 September 2012	5.00PM	Market Participants provide Reserve Capacity Security for new capacity entered into the Reserve Capacity Auction
Monday	17 September 2012	5.00PM	IMO runs the Reserve Capacity Auction and publishes the results (if auction required)
Friday	21 September 2012	5.00PM	Market Participants advise IMO how many Capacity Credits each facility will provide and of any Long-Term Special Price Arrangements to be accepted (if auction required)
Monday	24 September 2012	5.00PM	IMO assigns Capacity Credits (if Reserve Capacity Auction is required)
Monday	24 September 2012	5.00PM	Market Participants may apply to the IMO for a recalculation of the amount of Reserve Capacity Security required to be held for a Facility (applications may be received after this date/time)

Table 2 Timetable for the 2012 Reserve Capacity Cycle

 ¹⁰ The date was extended from 31 January 2012 to 29 February 2012 following the publication of an extension notice on 30 january 2012, pursuant to clause 4.1.32 of the Market rules.
 ¹¹ Please note that this date changes following the final commencement of amendments arising from Rule Change RC_2010_14. For further information, see http://www.imowa.com.au/RC_2010_14.

Appendix 1 Important Information

- 1. Purpose
 - (a) The purpose of Expressions of Interest is to provide the Independent Market Operator (IMO) with an indication from existing and potential new Market Participants of the amount of new generation and new Demand Side Management capacity they are willing to offer to make available as Reserve Capacity.
- 2. Precedence
 - (a) Unless the context otherwise requires, the Market Rules take precedence over this Request for Expressions of Interest ("Request").
 - (b) Where any conflict occurs between the provisions of the Market Rules and this Request, this Request will if required be read down to resolve the conflict. If the conflict remains incapable of resolution by reading down, the conflicting provisions shall be severed from this Request without otherwise diminishing the enforceability of the remaining provisions of this Request.
- 3. Cancellation and Variation
 - (a) This Request has been prepared by the IMO using information available to the IMO as at 24 Feb 2012.
 - (b) The IMO reserves the right, at any time and from time to time, to cancel, vary, supplement, supersede or replace this Request or any part of this Request.
 - (c) If the IMO cancels, varies, supplements, supersedes or replaces this Request, then:
 - i. the IMO will publish a notice to this effect on its website (it is the Proponent's responsibility to check for such notices); and
 - ii. the Proponent shall not have any recourse against the IMO, the State of Western Australia, Minister, any person acting on behalf of the State of Western Australia, or Minister, any director, officer or employee of any of the preceding, or any adviser or consultant to any of the preceding ("Relevant Persons") whatsoever including for claims for any costs or expenses incurred up to and including the date that the Request or any part of this Request is cancelled, varied, supplemented, superseded or replaced.
- 4. Agreement by Proponent

In submitting a proposal, the person or persons proposing to provide Reserve Capacity (each a "**Proponent**") represents and agrees that:

- (a) (information true and correct) all information in its proposal is true and correct;
- (b) (comply with conditions) it will comply with clauses 1 to 6 of this Important Notice;
- (c) (IMO not bound) other than as specified in the Market Rules:
 - i. this Request does not confer any obligations on the IMO; and
 - ii. the IMO is not required to undertake any further act in relation to this Request, or any act in relation to a proposal;
- (d) (relies on own enquiries) it relies entirely on its own enquiries in relation to all matters in respect of this Request and the Market Rules;
- (e) (understood Request) it has examined and understood this Request, each addendum issued under this Request, the Market Rules and any other information available to the Proponent in respect to this Request;
- (f) (made reasonable enquiries) it has examined all information relevant to the risks, contingencies and other circumstances having an effect on its proposal which is obtainable by the making of reasonable enquiries, which enquiries the Proponent has made;

- (g) (does not rely on warranties) it does not rely on any warranty or representation of a Relevant Person;
- (h) (no warranty as to accuracy) it acknowledges and agrees that no Relevant Person makes any warranty or representation, express or implied, in respect of the accuracy, reliability or completeness of this Request or any addendum issued or other information provided under or in connection with this Request;
- (i) (no unlawful arrangement) it has not entered into and will not enter into any unlawful arrangement with any other person in respect of this Request;
- (j) (own cost and expenses) it will pay its own costs and expenses in connection with:i. the preparation and submission of its proposal; and
 - ii. any discussions, enquiries or negotiations with, or provision or consideration of further information to the IMO whether before or after the submission of any proposal; and
- (k) (liability) to the maximum extent permitted by law, no Relevant Person shall have any liability (whether arising from negligence, negligent misstatement, or otherwise) for or in connection with, or in connection with a person's use of or reliance on (including reliance on the currency, accuracy, reliability or completeness of), any statement, opinion, information or matter (express or implied) arising out of, contained in, derived from, or omitted from this Request.
- 5. IMO's rights
 - (a) After 5pm on 1 May 2012, the IMO may request additional information from the Proponent in relation to the content of the proposal and if so requested, the Proponent must promptly provide such information to the IMO.
- 6. Disclosure of proposal
 - (a) Subject to this clause, the provisions of the Freedom of Information Act 1992 (WA), and the provisions of the Market Rules, the IMO will not make public any information in a proposal that the Proponent expressly and reasonably nominates in its proposal as confidential, unless:
 - i. such information comes into the public domain other than by breach of this clause;
 - ii. the IMO is required by the ASX, court order, governmental agency, Parliament or a committee of Parliament, or law to disclose such information;
 - iii. it is necessary to disclose such information in relation to the discovery of documents, or any proceeding before a court, tribunal, ACCC, other governmental agency or stock exchange; or
 - iv.the IMO has written consent from the Proponent (which must not be unreasonably withheld) to disclose such information.
 - (b) The Proponent agrees and acknowledges that the powers and responsibilities of the Auditor General for the State under the Financial Administration and Audit Act 1985 (WA) are not affected in any way by this Request.
 - (c) By submitting a proposal, the Proponent releases each Relevant Person from all liability whatsoever for any loss, injury, damage, liability, costs or expense resulting from the disclosure of the proposal under this clause.

Appendix 2 Expression of Interest Form

PROPONENT DETAILS	
Name of proponent	
Contact person	
Contact person's position	
Address	
Phone	
Email	
Fax	

FACILITY DETAILS	
Name of Facility	
Location	
Is the Facility: (Please tick the appropriate option)	 An intermittent generator. A non-intermittent generator serving an intermittent load. A non-intermittent generator not serving an intermittent load. A form of demand side management.

FACILITY CAPACITY	
Maximum Capacity available (MW)	
For non-intermittent generators: capacity at 41°C (MW)	
For non-intermittent generators serving an intermittent load: capacity required to serve intermittent load (MW)	
For intermittent generators, anticipated Capacity Credit assignment (MW)	
For demand side management, expected hours of availability per year	

CONSTRUCTION AND APPROVALS	
Expected earliest date that the Facility will be available to be fully operational	
Offer for network access: (Please tick the appropriate option)	 Has been made by Western Power Networks. Has been applied for and is being processed. Has not been applied for.
Environmental approvals: (Please tick the appropriate option)	 Have been granted. Have been applied for and are being processed. Have not been applied for.

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Appendix 3 Results from Past Reserve Capacity Cycles

The following information is presented in accordance with clause 4.3.1(c) of the Market Rules. Table A1 details Capacity Credits information for the Reserve Capacity Cycles and Table A2 shows Availability Curve information.

Item	2011/2012	2012/2013	2013/2014
Reserve Capacity Requirement (MW)	5,191	5,501	5,312
Reserve Capacity Auction Requirement	No Auction	No Auction	No Auction
Capacity Credits Acquired by IMO (MW)	5,493.486	5,995.613	6086.829
Maximum Reserve Capacity Price (\$/MW/yr)	\$164,100.00	\$238,500.00	\$240,600.00
Reserve Capacity Price (\$/MW/yr)	\$131,804.58	\$186,001.04	\$178,476.69
Monthly Reserve Capacity Price (\$/MW/mth)	\$10,983.72	\$15,500.09	\$14,873.06

Table A1 Capacity Credit Information

Table A2 Availability Curve Data

Availability Curve Information	2012/13 (MW)	2013/14 (MW)	2014/15 (MW)
Market Rule 4.5.12(a):			
Capacity required for more than 24 Hours	4209	4390	4806
Capacity required for more than 48 Hours	4116	4280	4694
Capacity required for more than 72 Hours	4041	4202	4631
Capacity required for more than 96 Hours	4004	4149	4590
Market Rule 4.5.12(b):			
Minimum Generation Required	4280	4402	4828
Market Rule 4.5.12(c):			
Capacity associated with Availability Class 1	4280	4402	4828
Capacity associated with Availability Class 2	0	0	0
Capacity associated with Availability Class 3	0	0	0
Capacity associated with Availability Class 4	842	909	945

It is noted that the figures presented for each year are those used in that relevant Reserve Capacity Cycle. The latest Availability Curve can be found in the 2011 Statement of Opportunities Report.

Appendix 4 Glossary of Key Terms

Availability Class: Any one of four classes of annual availability of Reserve Capacity set out in clause 4.5.12(c) of the Market Rules, where each class corresponds to Reserve Capacity being available from a Facility for not more than a specified number of hours per year.

Availability Curve: A curve developed by the IMO under clause 4.5.10(e) of the Market Rules.

Balancing: The process for meeting supply and consumption deviations from contracted bilateral and STEM positions in each Trading Interval.

Bilateral Contract: A contract formed between any two persons (excluding the IMO and System Management) for the sale of electricity by one of those persons to the other.

Capacity Credit: A notional unit of Reserve Capacity provided by a Facility during a Capacity Year. Each Capacity Credit is equivalent to 1MW of Reserve Capacity. The Capacity Credits to be provided by a Facility are held by the Market Participant registered in respect of that Facility.

Capacity Year: A period of 12 months commencing at 8am on 1 October and ending at 8am on 1 October of the following calendar year.

Certified Reserve Capacity: For a Facility, and in respect of a Reserve Capacity Cycle, is the quantity of Reserve Capacity that the IMO has assigned to the Facility for the Reserve Capacity Cycle in accordance with clause 4.11 or clause 4.28B, as adjusted under these Market Rules including clause 4.14.8. Certified Reserve Capacity assigned to a Facility registered by a Market Participant is held by that Facility.

Demand Side Management (DSM): A type of capacity held in respect of a Facility connected to the SWIS; specifically, the capability of a Facility connected to the SWIS to reduce its consumption of electricity through the SWIS, as measured at the connection point of the Facility to the SWIS.

Dispatch Instruction: A direction from System Management to a generating Facility or Demand Side Management Facility to increase, decrease or otherwise vary its production or consumption of electricity.

Dispatchable Load: A Load, with a rated capacity of not less than 0.2 MW, through which electricity is consumed where such consumption can be increased or decreased to a specified level upon instruction to do so by System Management to the person managing the Load, and registered as such in accordance with clause 2.29.5(c) of the Market Rules.

Early Certified Reserve Capacity (ECRC): Reserve Capacity which is certified and assigned to a new Facility by the IMO for a future Reserve Capacity Cycle under clause 4.28C of the Market Rules.

Environmental Approval: In respect of a Facility is a licence, consent, certificate, notification, declaration or other authorisation required under any law relating to the protection or conservation of the environment for the lawful construction of the Facility or the development of the site on which the Facility is to be constructed.

IMO: The Independent Market Operator, established under the Wholesale Electricity Market Regulations to administer and operate the Wholesale Electricity Market.

Individual Reserve Capacity Requirement (IRCR): The MW quantity determined by the IMO in respect of a Market Customer, that represents that customer's contribution to total system load during peak times, in accordance with clause 4.28.7 and, if applicable as revised in accordance with clause 4.28.11.

Intermittent Generator: A Non-Scheduled Generator that cannot be scheduled because its output level is dependent on factors beyond the control of its operator (e.g. wind).

Intermittent Load: A Load that is normally served by an embedded generator.

Interruptible Load: A Load through which electricity is consumed, where such consumption can be curtailed automatically in response to a change in system frequency, and registered as such in accordance with clause 2.29.5(a) of the Market Rules.

Load Forecast: An expectation of the demand levels in the SWIS or in a region of the SWIS in future Trading Intervals.

Long Term Projected Assessment of Supply Adequacy (Long Term PASA): A forecasting study conducted in accordance with clause 4.5 of the Market Rules in order to determine the Reserve Capacity Target for each year in the ten-year forecasting horizon and prepare the Statement of Opportunities Report for a Reserve Capacity Cycle.

Long Term Special Price Arrangement: A Special Price Arrangement that applies for more than one Reserve Capacity Cycle.

Market Rules: The Wholesale Electricity Market Amending Rules relating to the Wholesale Electricity Market and to the operation of the SWIS..

Minister: The Minister responsible for administering the *Electricity Industry Act*

Network Operator: A person who registers as a Network Operator, in accordance with clause 2.28.2, 2.28.3 or 2.28.4 of the Market Rules.

Non-Dispatchable Load: A Load which is not a Dispatchable Load or an Interruptible Load.

Power System Adequacy: The ability of the SWIS to supply all demand for electricity in the SWIS at the time, allowing for scheduled and unscheduled outages of generation, transmission and distribution equipment and secondary equipment.

Power System Reliability: The ability of the SWIS to deliver energy within reliability standards while maintaining Power System Adequacy and Power System Security.

Power System Security: The ability of the SWIS to withstand sudden disturbances, including the failure of generation, transmission and distribution equipment and secondary equipment.

Reserve Capacity: Capacity associated with a Facility. Capacity may be:

- i. the capacity of generation systems to generate electricity and send it out into a network forming part of the SWIS; or
- ii. Demand Side Management, being the capability of a Facility registered by the Market Customer at a connection point to a Network forming part of the SWIS to reduce the consumption of electricity at that connection point.

Reserve Capacity Auction: The process for determining the Reserve Capacity Price for a Reserve Capacity Cycle and the quantity of Reserve Capacity scheduled by the IMO for each Market Participant under clause 4.19 of the Market Rules.

Reserve Capacity Auction Requirement: The quantity of Reserve Capacity, calculated in accordance with clause 4.15.2(b) of the Market Rules, which is the target quantity to be procured in a Reserve Capacity Auction.

Reserve Capacity Information Pack: A package of information, including the information described in clause 4.7.3 of the Market Rules, pertaining to a Reserve Capacity Auction.

Reserve Capacity Mechanism (RCM): The processes through which the IMO determines the required capacity to be available to the SWIS and ensures that this capacity is provided. The Reserve Capacity Mechanism is covered by Chapter 4 of the Market Rules.

Reserve Capacity Obligations: For a Market Participant holding Capacity Credits, the obligation to make capacity available to the SWIS, the quantity of which is determined in accordance with clause 4.12.1, clause 4.28B or clause 4.28C of the Market Rules.

Reserve Capacity Target: In respect of a Capacity Year, the IMO's estimate of the total amount of generation or Demand Side Management capacity required in the SWIS to satisfy the Planning Criterion for that Capacity Year determined in accordance with clause 4.5.10(b) of the Market Rules.

Scheduled Generator: A generation system that can increase or decrease the quantity of electricity it generates and sends out into a network forming part of the SWIS (subject to limits

on its physical capabilities) in response to instructions from System Management and is registered as such in accordance with clause 2.29.4(b) and (c) of the Market Rules.

Short Term Energy Market (STEM): A forward market operated under Chapter 6 of the Market Rules in which Market Participants can purchase electricity from, or sell electricity to, the IMO.

South West interconnected system (SWIS): Has the meaning given in the Electricity Industry Act.

Special Price Arrangement: An arrangement under clause 4.21 or 4.22 of the Market Rules whereby a Market Participant can secure a price for Reserve Capacity that may differ from the Reserve Capacity Price.

Statement of Opportunities Report: A report prepared in accordance with clause 4.5.13 of the Market Rules presenting the results of the Long Term PASA study, including a statement of required investment if Power System Security and Power System Reliability are to be maintained.

System Management: A segregated business unit of Western Power Corporation responsible for dispatching the power system.

Wholesale Electricity Market (WEM): The market established under Section 122 of the *Electricity Industry Act*.