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# Annual Wholesale Electricity Market Review

Submission to the Economic Regulation Authority

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# 1 Introduction

Western Power welcomes the opportunity to contribute to the review of the Wholesale Electricity Market in Western Australia's electricity industry.

Western Power's submission is structured in response to the questions raised by the Economic Regulatory Authority (the "Authority") in its Discussion Paper.

In recognition of the 'System Management' role Western Power provides to the electricity market, ensuring system security and supporting market efficiency, the submission includes responses separately addressing network management and system management perspectives.

Western Power recognises the nature and focus of this review as described in the Discussion Paper, and the submission is made in the context of a newly formed electricity market.

Western Power is open to discuss any issues the Authority may wish to raise, either upon receipt of this submission or at a later date.

## 2 Discussion Points

The following responds to questions raised in the Authority's discussion paper.

### **2.1 Given the current Wholesale Electricity Market design, the Authority invites comment on the extent to which the operation of the Reserve Capacity Mechanism is effective in achieving the objectives of the Wholesale Electricity Market.**

#### **2.1.1 Network Management**

Western Power considers that the two-year lead-time for the Reserve Capacity Process may not be adequate from a transmission network perspective as discussed in item 2.3.1.

In Western Power's experience, proponents often do not submit applications for connection to Western Power until late in the Reserve Capacity Process (i.e. in some cases, applications are submitted only a few months before an access offer is required). Due to the time required to process an application (up to 12 months, and longer in some complex cases), it may not be possible to provide such proponents with an access offer to meet the Reserve Capacity Process.

#### **2.1.2 System Management**

While the Reserve Capacity Mechanism (the "Mechanism") has been in operation for several years, the coming year will be the first true test of the Mechanism, as the Independent Market Operator (IMO) has responsibility for ensuring system capacity from 1 October 2007. Therefore, attempting to determine whether the Mechanism has met the Wholesale Electricity Market (the "Market") Objectives at this time is premature.

### **2.2 Bearing in mind the interaction of the capacity market and the energy market, the Authority invites comment on whether the current Wholesale Electricity Market provides adequate incentives for an efficient mix of generation plant.**

#### **2.2.1 Network Management**

No comment at this time.

#### **2.2.2 System Management**

The design of the Mechanism does not appear to distinguish between the types of capacity, nor provide incentives for one type of capacity over another.

The implications are not clear due to the infancy of the Market. Other aspects of the Market design may provide the correct incentives.

## **2.3 The Authority invites comment on whether the Wholesale Electricity Market adequately promotes efficient location of generation facilities and promotes the efficient development of transmission and distribution networks.**

### **2.3.1 Network Management**

Western Power considers that locational price signals are a function of the network, not the Market *per se*. Price signals provided by Western Power are:

- Capital contributions for network connections
- Transmission Use of System (TUOS) prices
- Loss factors (published by the IMO but calculated by Western Power using network data)

Of these, the cost of connection is usually the predominant locational price signal.

It is noted that the published loss factor at a specific location varies from year to year and is directly affected by a new connection established at that location. However, given that these changes can be predicted to a reasonable extent, loss factors continue to provide effective locational price signals.

Western Power believes that, in combination, capital contributions, TUOS prices and loss factors provide reasonably effective price signals leading to efficient outcomes in terms of location of new generation and the associated network investment.

The Authority identifies that proposed new generation facilities are required to have an access offer for network connection. This highlights the uniqueness of the WA market, in that, with very minor exceptions, generators are only connected to the network once the required firm network capacity is in place. This is required to avoid any network constraint, which may limit plant output. Therefore, the ongoing and dynamic network constraints, which govern operation of the National Electricity Market (NEM) and may influence decisions on plant location, do not occur in the WA Market.

Where the access is requested prior to Western Power provision of unrestricted access, the access proponent manages the risk. In these instances access contracts contain operating restrictions.

Currently, there is a significant risk that Western Power will not be able to build the infrastructure to allow unconstrained generation connection within the 2-year capacity auction window run by the IMO. The network currently does not have any spare capacity for any significant generation. The planning of the network responds to the additional generation requirements once the project becomes firm. This often does not provide sufficient time for completion of the connection.

Western Power has identified the need to review the investment triggers and resultant timing for investment. An option under consideration is the development of 'generation parks', for network facilities to be put in place to enable the connection of generation in those areas. This will require collaboration from industry and Government. Issues associated with fuel supply, transmission efficiency and environment will also need to be considered.

### **2.3.2 System Management**

No comment at this time.

**2.4 The Authority invites comment on whether the Wholesale Electricity Market adequately promotes investment in an efficient amount of generation capacity.**

**2.4.1 Network Management**

No comment at this time.

**2.4.2 System Management**

While it is recognised that the Market should not procure significant excess capacity, as this will not minimise the long-term cost of electricity supplied to customers [Market Rule 1.2.1 (d)], for the purposes of Power System Security, it is prudent to err on the side of caution. Thus, a marginal oversupply of capacity, would promote the safe and reliable production and supply of electricity [Market Rule 1.2.1 (a)]. Thus System Management believes that the Market adequately promotes investment in an efficient amount of generation capacity.

However, it should also be noted that investment in the transmission system must be made in parallel with investment in generation capacity.

**2.5 The Authority invites comment on whether there are other issues with the Reserve Capacity Mechanism that materially impact on the effectiveness of the Wholesale Electricity Market.**

**2.5.1 Network Management**

No comment at this time.

**2.5.2 System Management**

System Management submits that while there may be areas of actual operation of the Mechanism that require refinement, these can be addressed through the Rule Change process. In fact, due to the infancy of the Market, any perceived difficulties with the Mechanism may, in fact, be due to unfamiliarity, or process issues, as many aspects of the Mechanism have only been used once.

**2.6 Recognising that the Short Term Energy Market (STEM) is a net pool system, and that the Vesting Contract impacts on liquidity in the market, the Authority invites comment on any aspects of the STEM design that discourage Rule Participants from trading in the Wholesale Electricity Market.**

**2.6.1 Network Management**

No comment at this time.

**2.6.2 System Management**

No comment at this time.

**2.7 The Authority invites comment on the day-ahead feature of the Short Term Energy Market (STEM). In particular, does the day-ahead feature of the STEM discourage Rule Participants from trading in the STEM and would introducing two gate closures, or gate closures closer to real time, encourage greater participation?**

In the event the day-ahead arrangement is replaced by a real-time arrangement or the arrangement where the 'gate closure' time to offer and bid into the STEM is closer to real time events, the Authority invites comment on how the potential exercise of market power by larger participants could be mitigated.

**2.7.1 Network Management**

No comment at this time.

**2.7.2 System Management**

As the obligations of System Management are to implement the outcomes of the Market related functions, System Management feels that it is imprudent to comment on the economic outcomes of the STEM as opposed to a near Real-time Market.

However, it is important to note that a Real-time Market would involve significant changes to the existing Market Rules, processes and systems. In addition to effort, the cost would be significant, as would the functional implications upon System Management. Such a change may render obsolete the cost and effort that all Participants have contributed to the introduction of the current Market. Further, due to the size of the SWIS, such a change may not provide sufficient benefits to justify the cost and effort.

System Management has no comment on refining the Market timelines, other than noting that, due to the infancy of the Market, refinement at this time may actually be detrimental.

**2.8 The Authority invites comment on the effectiveness of the Independent Market Operator in carrying out its functions.**

**2.8.1 Network Management**

Western Power has observed that the IMO has some market characteristics, which differ from other Australian markets that may require further consideration. Although addressing WA's marketplace, they may be seen as a barrier to competition for retailers outside of WA, entering the marketplace. These include:

- *Market start time:* Western Power's access invoicing is based on midnight to midnight, however the customer transfer is deemed to have taken place 8 hours later at 08:00. In some cases the retailer will receive a bill from Western Power for a month ending midnight and a further bill one month later for 8 hours for the time the customer was still under the former retailers agreement. This characteristic also results in difference in energy amounts between the access bill and Market invoice.
- *Transmission Loss Factor (TLF) / TNI arrangement:* The IMO requires the TLF per NMI to be provided. The MBS delivery system was modified to ensure the TLF per NMI was passed onto the IMO. This format is specific to the WA market only.

- *Location number is WA specific:* Use of Lot Number is considered Australian Standard.

In addition, Western Power believe that the process and responsibilities for the determination of loss factors in the market place is not well understood. As a result Western Power regularly receive enquiries from Retailers in relation to the determination of loss factors for NMI's. It is the understanding of Western Power that Retailers require a solid understanding of this process to facilitate their own internal energy balancing reconciliation systems and processes. Western Power continues to provide assistance and redirect enquiries where appropriate.

### **2.8.2 System Management**

System Management has no comment on this matter, other than to note that System Management and the IMO have a very close working arrangement that is to the benefit of the Market, and that both organisations are striving for the Market to continue to be successful, and also for equality of all Participants.

## **2.9 The Authority invites comment on the effectiveness of the System Management in carrying out its functions.**

### **2.9.1 Network Management**

No comment at this time.

### **2.9.2 System Management**

System Management has no comment on this matter, other than to note that System Management has undertaken significant effort to fulfil its obligations under the Market Rules, and has been working with all Participants for a fair and practical operation of the SWIS. System Management values the education of all Participants, and would welcome any feedback in improving operations for the benefits of all Participants.

## **2.10 The Authority invites comment on any further steps that could be taken to assist Rule Participants in understanding the Market Rules.**

### **2.10.1 Network Management**

Western Power believe further training sessions similar to the Pre Market Training Sessions that were held in 2006 would be useful to assist understanding of all participants.

### **2.10.2 System Management**

System Management is committed to the education of all Participants. System Management has put significant effort into helping Participants understand the obligations created by the Market, and to meet those obligations without significant process changes.

In particular,

- System Management's Market Operations section constantly provides one-on-one training sessions with Participants regarding SMMITS. System Management has also incorporated comments to improve the effectiveness of SMMITS to greater meet the needs of Participants and the obligations of the Market Rules.
- System Management's Planning section has been working constantly to inform all Participants of the new planning requirements, and how these requirements fit the



needs of the Participant. Following comments by Participants, System Management has introduced refinements to the planning process to allow for smoother operation, which is in accordance with the Market Rules.

- System Management's Operational Control section has been working with all Participants and facilities to translate the obligations of the Market Rules into operational measures to allow for the safe and secure operation of the power system.
- System Management's Market Strategic Development section has been in constant contact with Participants to provide further education about specific obligations, and practical methods to demonstrate compliance with those obligations, which allow for the smoother operation of the power system. Market Strategic Development has also been working closely with the IMO to develop specific training sessions for Participants. The first training session, on the subject of compliance, was unfortunately postponed, due to a lack of Participant interest.

System Management values the education of all Participants, and will be continuing to assist Participants in understanding the obligations of the Market Rules. System Management would welcome any comments by Participants on how System Management can be of further assistance.

## **2.11 The Authority invites comment on any aspects of the participation of Demand-Side Management in the Wholesale Electricity Market that remain unclear to Rule Participants.**

### **2.11.1 Network Management**

Western Power supports the use and development of demand side options for meeting network requirements.

There is some ambiguity in Section 5 of the Rules in respect to the Network Control Service (NCS) procurement process in the following areas:

- *Overall process to secure services.*

While there is considerable detail around the Expression of Interest, assessment, tendering and contracting process, it would be useful to all parties if the Rules included some overall time bounds on the process. This could potentially add significant lead-times to the approval of major network augmentation projects.

- *Need for the Network Operator to submit a tender for a network option.*

It is unclear whether or not a Network Operator is required to submit a tender into the NCS procurement process for its network option. Given that NCSs are substitutes for network options, it is implied that network options are precluded from the NCS procurement process.

However, in clause 5.4.10, the commentary immediately following the heading of clause 5 and the commentary immediately following clause 5.4.8(a)ii. suggest that a Network Operator would be required to submit a tender for the network option if it believes the network option to be competitive with potential NCSs. It further suggests that the IMO would carry out the financial analysis comparing all tender responses (including the network option) and then potentially "accept several tender responses that together meet the requirement at the lowest total cost".

In arriving at the “lowest total cost of the tenders” it needs to be noted that the costs of network reinforcements, i.e. transmission and distribution, driven by the connection of generation proposals should be included.

- *NCS contract period.*

Clause 5.2.2 presently requires a minimum contract term of 10 years, with the IMO having the discretion to lengthen this period.

Western Power’s early experience indicates a strong need to facilitate shorter contract terms in order to provide the flexibility to minimize the overall cost of providing network services in particular locations. The optimum balance between the provision of short term NCSs and longer term network investments is extremely variable and very specific to individual locations.

### **2.11.2 System Management**

System Management feels that DSM has not been fully understood or explored by the Market.

While System Management appreciates the benefits of DSM, and recognises that it is a requirement for the safe and reliable supply of energy in the SWIS, it would be prudent to have a closer examination of the usage and obligations of DSM in the Market.

## **2.12 The Authority invites comment on the adequacy of the existing rule change process. In particular, the Authority is interested in whether or not the current process achieves an appropriate balance between cost, timeliness and transparency.**

### **2.12.1 Network Management**

No comment at this time.

### **2.12.2 System Management**

Due to the infancy of the Market it is difficult to determine whether the Rule Change process could be refined. Many Rule Changes that are currently proposed or being progressed, are reactive in nature, and are attempting to resolve inconsistencies or inadequacies in the Market Rules.

Thus far, the Rule Change process has not been given an opportunity to demonstrate its effectiveness. There are two processes: the standard process and the fast-track process. The standard process has significant periods of consultation for complex issues that have serious ramifications, while the fast-track process is designed for minor or urgent issues.

The IMO appears to be under pressure from many Participants to fast-track many Rule Change proposals; this is often due to the reactive nature of the proposals (ie attempting to urgently resolve an inconsistency in the Market Rules which is detrimental to Participants). The danger of this is that, due to the tight timelines of the fast-track process, insufficient review may be given to the proposals. This may result in further complications or the issue remaining unresolved. The IMO has attempted to resolve this difficulty by requesting that Participants discuss all proposals prior to formally submitting those proposals to the IMO. This is an extremely prudent approach, and appears to be working well.

It should be noted that in other jurisdictions, the Rule Change process can often last several years, and the number of Rule Changes proposed does not impose undue

burden on the administering body. It would be disastrous should the IMO be unable to determine the full consequences of Rule Change proposals were the current process to be varied or the number of proposals increased.

The Rule Change process has been proven to be effective. Amending Rules have been made, and some proposals, which would not have resolved the issue for which they were designed, were refined through the consultation process.

System Management believes that the Rule Change process, as with all aspects of the Market Rules, should be subject to an in-depth review, but that it would be imprudent to either hold such a review or alter the Rule Change process at this time.

**2.13 The Authority invites comment on any fuel supply constraints faced by Market Participants, and the impact that any such constraints have on the effectiveness of the Wholesale Electricity Market. In particular, what impact, if any, do fuel supply constraints have on the operation of markets for capacity and energy?**

**2.13.1 Network Management**

No comment at this time.

**2.13.2 System Management**

Fuel constraints can dramatically affect the security of the SWIS. In the last few months, during periods where peak loads are significantly lower than during the summer months, gas constraints have placed significant pressure on the operation of non-gas facilities. Effectively, during fuel supply constraints, the capacity available to the SWIS is reduced, sometimes to a level that can have significant operational impact.

While resolution of fuel constraints is a matter outside the scope of the Market, System Management notes that the Market assists this dilemma by providing capacity that utilises different types of fuel, effectively mitigating the risk, however there must be balance between the cost of mitigating the risk and security of supply.

**2.14 The Authority invites comment on the materiality of the financial impact of consequential outages.**

**The Authority also invites comment on the extent to which participants are able to manage their exposure to consequential outages through commercial arrangements. If participants are unable manage their consequential outages through commercial arrangements, the Authority invites comment on the impact of consequential outages on the effectiveness of the Wholesale Electricity Market.**

**2.14.1 Network Management**

Customers seeking connection to the network, are usually requesting a minimal type of connections, such as a single radial line to their operation (due to costs). Under these circumstances, it is unreasonable for customers to expect Western Power to bear the liability of consequential outages based on decisions, where an element of redundancy is not available.

Western Power understands the current rules stay silent on how to, if any, compensate market participants due to consequential outages. Where this has been raised by several market participants, then a mechanism to compensate market participants for consequential outages should be investigated.

### **2.14.2 System Management**

No comment at this time.

## **2.15 The Authority invites comment on whether the process for scheduling network outages affects the achievement of the objectives of the Wholesale Electricity Market.**

### **2.15.1 Network Management**

No comment at this time.

### **2.15.2 System Management**

Coordination of outages between Participants is an extremely difficult and time-consuming matter for System Management. System Management, being an entity ring-fenced from Western Power, fully understands the obligations imposed upon it, and has processes to ensure that all Participants are treated fairly. System Management will continue to reach a balance for all Participants.

In an effort to improve the operational effectiveness of the SWIS, and due to the sheer number and complexity of Network outages, System Management is re-designing the outage management system, as part of the SMMITS 2 project, to allow Western Power to improve the planning and coordination of Network outages.

## **2.16 The Authority invites comment on whether the confidentiality of information has impacted on the effectiveness of the Wholesale Electricity Market and, if so, how?**

### **2.16.1 Network Management**

Western Power is required to keep details of access applications and contracts, etc., confidential. Not being able to share some of the information with the IMO has been identified as a concern. This is particularly the case with information relating to operating restrictions, time to construct network connections and reinforcements, and derogations from the requirements of the Technical Rules.

Western Power is not confident that generation proponents adequately share this information with the IMO so that the IMO can gain a full appreciation of the potential impact on the market. Western Power believes that agreement on the types of information that Western Power and the IMO can share would be of great benefit to both parties, and the market.

### **2.16.2 System Management**

System Management strives for transparency, and aims to provide Participants as much information as possible, while maintaining confidentiality of information. Maintaining confidentiality of information has not hindered the operations nor the effectiveness of System Management.

## **2.17 The Authority invites comment on whether a more competitive process for the supply of ancillary services would promote the effectiveness of the Wholesale Electricity Market. In particular, do the current requirements under the Market Rules for an ancillary service contract**

## **prevent or deter participants from supplying ancillary services and, if so, how?**

### **2.17.1 Network Management**

No comment at this time.

### **2.17.2 System Management**

There are several types of Ancillary Services, all of which are currently provided by Verve Energy in accordance with Market Rule 3.11.7A. The main types of Ancillary Services are:

- Load Following Service;
- Spinning Reserve Service;
- Load Rejection Reserve Service;
- System Restart Service

Currently, the only budgeted Ancillary Service is the System Restart Service, which is provided by Verve Energy at a cost of \$250,000. System Management would give consideration to proposals for the provision of further System Restart Services.

Verve Energy currently provides Load Rejection Reserve Service. As the current cost to the Market for Verve Energy to provide this service is zero, System Management cannot procure this service at a lower price.

Load Following Service and Spinning Reserve Service are not budgeted, but rather are paid via the Market at the Marginal Cost Administrative Price. System Management estimates the Load Following Service and Spinning Reserve Service to be provided each Trading Interval, and dispatches Verve Energy facilities to ensure that a sufficient level of these facilities is available at all times.

Market Rule 3.11.8 indicates that System Management may enter into an Ancillary Service Contract with a Rule Participant other than the Electricity Generation Corporation where:

- (a) It does not consider that it can meet the Ancillary Service Requirements with the Electricity Generation Corporation's Registered Facilities; or
- (b) The Ancillary Service Contract provides a less expensive alternative to Ancillary Services provided by the Electricity Generation Corporation's Registered Facilities.

System Management continually reviews the provision of Ancillary Services, and, at this time, has determined that Verve Energy is meeting the requirements.

Under Market Rule 3.11.9, where System Management intends to enter into an Ancillary Service Contract, it must:

- (a) Seek to minimise the cost of scheduling and dispatching facilities to meet the Ancillary Service Requirements in each Trading Interval; and
- (b) Give consideration to using a competitive tender process, unless System Management considers that this would not meet the requirements of paragraph (a).

System Management believes that sufficient Ancillary Services are being provided by Verve Energy, and that, given the size of the SWIS and the infancy of the Market, it would not be prudent or beneficial to the Market for System Management to enter into an Ancillary Service Contract with a Participant other than Verve Energy. System

Management will however maintain its vigilance on the provision of ancillary services by Verve Energy.

**2.18 Authority invites comment on any specific events, behaviour or matters (not covered elsewhere in this Discussion Paper) that have impacted on the effectiveness of the market. In particular, the Authority invites comments on any specific events, behaviour or matters that are relevant to the achievement of the objectives set out in clause 1.2.1 of the Market Rules.**

**2.18.1 Network Management**

No comment at this time.

**2.18.2 System Management**

As has been commented previously, System Management believes that while the Reserve Capacity Mechanism is effective, it may not provide a mix of capacity appropriate to the needs of the SWIS.

In particular, due to the small size and isolated nature of the SWIS, the appropriate mix of peaking, mid-merit, and base-load plant is essential. As an example, at present there is in the order of 190 MW of wind capacity. During the overnight minimum loads this can represent 10% or more of the total capacity required.

Wind power is characterised by intermittent supply consisting of dramatic increases and decreases in output; changes of 30 MW per minute are not uncommon. Further, the output is erratic, meaning that within a Trading Interval the wind output can spike to full output and return to zero output several times. The mixture of high merit Verve Energy generation plant remaining on overnight has the least amount flexibility to cover the erratic output often required.

To maintain a Normal Operating State, with a frequency of 50 Hz, this behaviour must be countered by several facilities providing Ancillary Services. Consideration must be provided to the addition of further wind capacity in the SWIS, so as to avoid creating a potential unstable situation that may endanger power system security.

### 3 Further information

For further information on this submission, please contact:

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