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14 July 2008

Mr John Lillywhite
Wholesale Electricity Market
Economic Regulation Authority
6th floor, Governor Stirling Tower
197 St Georges Terrace
PERTH WA 6000

Dear John

System Management submission – Wholesale Electricity Market Report

Thank you for the invitation to comment on the matters raised in the Economic Regulation Authority's discussion paper of 5 June 2008 concerning the annual review of the Wholesale Electricity Market.

System Management has prepared a detailed submission in response, which is appended to this letter.

System Management is a ringfenced entity within Western Power, with particular functions conferred under the Wholesale Electricity Market Rules. Necessarily, given System Management's specific responsibilities, the views contained in this submission reflect the views of System Management, and are not intended to reflect the views of Western Power.

System Management's principal function in the Wholesale Electricity Market is the maintenance of power system security and reliability. Consequently, the comments on the matters raised in the discussion paper are from this perspective.

System Management is happy to further discuss any aspect of our submission with the ERA. Please direct any queries in relation to this submission to Alistair Butcher on 9427 5787.

Yours sincerely

Ken Brown
General Manager, System Management

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System Management

Comments on Economic Regulation Authority's 2008 Wholesale Electricity Market Effectiveness Review

Introduction

System Management is a ringfenced entity within Western Power with the functions conferred under clause 2.2 of the *Wholesale Electricity Market Amending Rules (September 2006)* (**Market Rules**).

System Management welcomes the opportunity to contribute to the review of the Western Australian Wholesale Electricity Market. System Management has structured this submission to respond to each particular point raised by the Economic Regulation Authority (**ERA**) in its discussion paper dated 5 June 2008.

The responses herein represent the view of System Management, and should not be regarded as the view of Western Power, which has the distinct function of "network operator" under the Market Rules.

Discussion Point 1

The Authority invites comment on the impact of fuel supply and fuel prices on the market. In particular:

- *to what extent, and in what way, do current issues in regard to fuel supply or fuel prices impact on long-term investment decisions in the market; and*

  System Management: Fuel constraints can impact upon choice of plant, and may influence the decision to invest in base load or peaking or mid merit. This may have an affect upon system security in the longer-term. If this becomes an issue over time, it is submitted that it may well be necessary to create a mechanism which incentivises certain types of investment decisions.

- *to what extent, and in what way, do current issues in regard to fuel supply or fuel prices impact on the day-to-day operation of the market, and outcomes in the market.*

  System Management: A further issue noted by System Management concerns fuel supply. The Market Rules require on-site storage of alternate fuels (such as distillate) sufficient to allow plant to run for 12 hours. There are further obligations in relation to re-supply. Whilst it is recognised that inventory imposes costs upon a participant's operations, 12 hours of on-site fuel supply would appear insufficient. It would appear preferable from the perspective of power system security to require participants to retain 24 hours of on-site fuel supply.

Discussion Point 2

The Authority invites comment on the impact of fuel constraints on the market. In particular:

- *to what extent, and in what way, do fuel constraints impact on the day-to-day operation of the market, and outcomes in the market;*
- *to what extent, and in what way, does the design of the market exacerbate problems caused by significant fuel constraints; and*

  System Management: In the SWIS security of fuel supply has a direct impact on the security and reliability of the power system. System Management, whose prime function is the maintenance of power system security and reliability, is sometimes limited in its ability to respond to emerging problems or intervene in market outcomes which produce sub-optimal dispatch situations.

  For example, the market design compels non-Verve Energy participants to produce in accordance with a resource plan that has been set the previous day. Participants may not deviate from this resource plan except in response to a dispatch instruction or with the notification of a forced outage.

  Resource plans derived during the previous day may no longer be achievable in, or appropriate to, a situation of significant fuel constraints, but the market design does not permit participants the flexibility to adjust in this eventuality. This is coupled with the fact that dispatch merit orders give a resource plan priority. Whilst System Management is empowered under a high risk or emergency operating state to dispatch outside of the merit order, there is a natural reluctance to interfere in the normal operation of Market Rules unless it is clear that power system security is impacted. System Management considers that the Market Rules should make provision for a "trigger" which allows resource plans or rebidding to be considered in certain, limited, circumstances.

- *do current issues in regard to gas supply interruptions deter participation in the STEM.*

  System Management: No comment is made.

Discussion Point 3

The Authority invites comment on the application process for network access offers. In particular:

- *at what stage during the process of planning a new facility do applicants approach Western Power, and to what extent do applicants make applications for network access in advance of the timing of the reserve capacity cycle due to the perception that the application process may take some time;*

  System Management: No comment is made.

- *to what extent has the timing of the application process affected participation in the reserve capacity mechanism for particular facilities;*

  System Management: No comment is made.

- *to what extent is the application process, including the timing of the application process, transparent; and*

  System Management: No comment is made.

- *if there is an issue with the application process, does the issue relate to the timing of the process, the transparency of the process, or both.*

  System Management: No comment is made.

Discussion Point 4

The Authority invites comment on whether the risk that a network connection will not be delivered on time impacts on investment incentives, including incentives to invest in new facilities on particular parts of the network.

System Management: From the outset, it is noted that a situation has not arisen where a delay to network infrastructure causes delay to new generation facilities.

However, the ERA poses the question as to whether delay in delivery of network connections will affect investment decisions, on the basis that delay could expose a market participant to an obligation to refund reserve capacity payments.

System Management considers that a delay in delivering necessary network connections would result in the relevant network circuit being deemed to be undergoing a "forced outage". This would mean that the delayed generation facility would experience a "consequential outage", and therefore not be required to refund capacity payments.

The "investment risk" is therefore limited to deliveries of energy, rather than to capacity payments. It is submitted that the risk to a participant from delays in energy delivery is more properly addressed through contractual mechanisms, and is not a particular feature of the wholesale electricity market.

Discussion Point 5

The Authority invites comment on the determination of connection charges by Western Power, and the impact that these connection charges have on the effectiveness of the WEM. In particular:

- *to what extent do connection charges influence long-term investment decisions;*

  System Management: No comment is made.

- *do connection charges provide appropriate locational investment signals; and*

  System Management: No comment is made.

- *is there sufficient transparency and predictability in the calculation of connection charges for participants to respond to the signals in making investment decisions.*

  System Management: No comment is made.

Discussion Point 6

The Authority invites comment on whether network planning processes are sufficiently responsive to developments in the WEM and whether network planning decisions are sufficiently transparent to participants.

System Management: No comment is made.

Discussion Point 7

The Authority invites comment on the extent to which the reserve capacity mechanism, along with other elements of the WEM, provides appropriate incentives for investment in a mix of new generation plant. The Authority is interested in specific factors that might have deterred potential new investment in the market.

System Management: In System Management's view, there are several factors that the ERA should bear in mind in considering the operation of the current reserve capacity mechanism.

- The first of these is related to timing. The reserve capacity cycle is approximately two years long, creating a disincentive for plant with longer lead-times to compete. Therefore the relatively constrained period of the reserve capacity mechanism may discourage an optimal mix of plant.

  From a system security perspective, it is vitally important that the reserve capacity mechanism provides incentives that promote a workable mix of generation options.

  System Management believes that the reserve capacity process does not necessarily promote a mix of generation options, nor does it seek to recognise the inherent costs of one type of generation over another. In particular, operational outcomes, such as the need to increase the ancillary service requirement, are not reflected. An example of this can be seen in the level of load following required in the SWIS, which has increased over the last several years due to the increasing penetration of intermittent generation.

- System Management has some concerns with the "orderliness" of participants straining to meet an arbitrary October deadline. This causes significant stress to limited resources within the participant, the IMO and System Management itself.

- A significant matter of concern for System Management is the "just-in-time" nature of the final deadline of 1 December for new plant to be commissioned. This means that new and unproven machines are relied upon to meet the expected load in the coming summer.

- New generation facilities often require major network reinforcement. This means that significant outage periods may be necessary which cannot always be accommodated or may affect existing participants.

Discussion Point 8

The Authority invites comment on the appropriateness of the mechanism for determining the reserve capacity price. In particular:

- *does the reserve capacity price provide appropriate investment signals;*

  System Management: No comment is made.

- *would investment signals be improved by a shift to a reserve capacity price that is determined using a mechanism more closely reflecting market outcomes;*

  System Management: No comment is made.

- *what, if any, barriers currently exist that would impede a shift to a reserve capacity price that is determined by the market.*

  System Management: No comment is made.

Discussion Point 9

The Authority invites comment on the extent to which the methodology for calculating reserve capacity refund payments promotes the market objectives, particularly in regard to reliability of supply. In particular:

- *to what extent do participants respond to signals provided by the structure of reserve capacity refund payments; and*

  System Management: The current refund regime provides a greater incentive for participants to make facilities available during summer peak, rather than at other times. When refunds are greatest, the incentive would appear to be prima facie higher for participants to return plant to service. However, System Management has not identified any appreciable change in behaviour by participants based purely on variable refund rates. Willingness to return plant to service rapidly does not appear affected by the variable refund rates at different times of the year.

  It is noted though, that there are periods during the year other than the summer peak when capacity availability is tight due to outages, whether planned or unplanned. The seasonally based refund rates within the Market Rules do not contemplate this being taken into consideration.

- *if reserve capacity refunds reflected their impact on the market, how would this be expected to affect compliance or incentives to participate in the reserve capacity mechanism.*

System Management: The seasonal linkage for reserve capacity refund payments does not necessarily create the right signals, in System Management's view. A capacity shortfall at any time of the year is unacceptable. Therefore it is uncertain what is meant by the statement of "if reserve capacity refunds reflected their impact on the market". An impact on power system security would surely be a better measure of the quantum of refunds, given the rationale of reserve capacity obligations is that facilities are available when called upon.

However, any recommendation by the ERA which more closely ties refunds with the effect of plant unavailability on the power system should be cognisant of the risk that is created. This risk is that there may be greater incentive for market participants to shield or hide forced outages than is currently the case. This is a risk of some importance to System Management which would be concerned about any recommendation which might create an inaccurate picture of power system security.

It is System Management's view that, in light of the current experience with the operation of the market, now is an appropriate time to review the reserve capacity refund mechanism and consider whether variable rates based on seasons is the best option. A working group under the auspices of MAC could be created to review this issue.

Discussion Point 10

The Authority invites comment on the effect of moving the STEM closer to real-time or of introducing multiple gate closures. In particular:

- *would this encourage greater participation in the STEM or improve outcomes in the STEM, including through improved price signals;*

  System Management: No comment is made. However, System Management refers to its earlier comments in relation to discussion point 2, where it is suggested that rebidding be authorised in certain limited circumstances. This may mitigate the inherent risk of day-ahead bidding where resource plans become infeasible during the trading day. Such a mechanism may also encourage greater participation in the STEM.

- *would the benefits to participants outweigh the costs to participants; and*

  System Management: There appears to be limited trading in the STEM at present. One must therefore question the need to progress changes to timing related to the STEM in the absence of neither market maturity, nor of significant consultation with industry.

- *what, if any, barriers are there to such a change and what do these barriers suggest for the timing of such a change.*

  System Management: A move to a closer to real-time STEM would require extensive planning, require significant investment (up to many millions), and would require a significant increase in staff numbers both for the IMO and for

System Management. Such a recommendation should not be made lightly and without extensive consultation with industry participants.

Discussion Point 11

The Authority invites comment on the extent to which Verve Energy's exposure to forecasting errors in the balancing market impacts on the effectiveness of the market.
The Authority invites comment on barriers to the introduction of competitive balancing, and what these barriers suggest for the shift to more competitive balancing arrangements.

System Management: A move to competitive balancing would require extensive planning, require significant investment (up to many millions), and would require significant increase in staff numbers both for the IMO and for System Management. Such a recommendation should not be made lightly and without extensive consultation with industry participants.

Discussion Point 12

The Authority invites comment on the delivery of ancillary services, particularly in regard to the competitive delivery of ancillary services.

System Management: Whilst competitive procurement of ancillary services is superficially attractive, a recognition of the complexity involved in identifying the need for these services is first essential. It is not simply a case of buying *x* quantity, but it is necessary to understand the nature of the service to be procured, any locational factors and technical and timing imperatives.

System Management is currently seeking expressions of interest for the supply of system restart or black start capability. A request for tender may follow this first stage procurement process. System Management is currently considering the need to pursue a similar procurement process for spinning reserve.

Discussion Point 13

The Authority invites comment on the impact that wind energy will have on the effectiveness of the WEM. In particular:

- *to what extent, if any, will additional wind energy impose costs on the market, and will these costs be borne by the wind energy facilities or by other participants; and*

System Management: The ERA is advised that greater penetration of wind energy in the market will have a consequential effect on the quantity of load-following ancillary service required.

Load following is a component of spinning reserve, and has increased from 30 MW (2006/07), to 50 MW (2007/08) and to 60 MW (2008/09), an increase which is largely attributable to an increase in the number of wind energy facilities which have entered the market during that period.

Load following is a component of spinning reserve, and the latter has a set quantity, with a set price and is borne by all participants. However, the increase in

the quantity of load following necessary to be supplied is not itself attributed to the participants responsible for the greater need.

Further, for system security reasons, greater penetration of intermittent generation facilities will result in a greater need for downward dispatch or even decommitment of intermittent or other SWIS generation facilities. The facilities in question will be paid not to generate, or not to generate to their full extent, and the additional dispatch costs will be borne by all market participants, rather than attributed to a particular class of participant. It may also mean that particular market participants may forego other benefits, such as renewable energy certificates.

- *do the existing arrangements for network connection charges provide signals to wind energy facilities that reflect the impact of these facilities on the market.*

  System Management: No comment is made.

Discussion Point 14

The Authority invites comment on the incentives for DSM to participate in the market. In particular:

- *what, if any, barriers exist that would prevent the participation of DSM that could otherwise provide capacity at a price competitive with new generation; and*

  System Management: No comment is made.

- *would an alternative structure for payments for DSM, or an alternative treatment of DSM within the market, encourage the participation of DSM in a way that promotes the market objectives.*

  System Management: No comment is made.

Discussion Point 15

The Authority invites comment on the rule change process and procedures, the consultation process for rule change proposals and the time taken to have a rule change proposal considered and finalised.

System Management: No comment is made.

Discussion Point 16

The Authority invites comment on whether System Management remaining within Western Power impacts on the effectiveness of the market and, if so, in what way.

System Management: Separating System Management from Western Power will lead to significant information disadvantages and dramatically increase costs for the Market. A separation of System Management from Western Power would in fact create market ineffectiveness, rather than further any market objectives.

The market design was predicated on minimising administrative costs for market participants. Hence System Management remained within the networks business – which has no commercial interest in the market – to retain the benefit of resources and facilities which would otherwise need to be duplicated, such as SCADA systems, control room and the planning function. In addition, it was recognised that highly technical skills residing within Western Power associated with system stability planning could not readily be duplicated.

Further, the critical factor considered by stakeholders when the market design was developed was that power system security cannot be compromised. By far the best method to achieve this most important of objectives is to keep the system operator and the networks business together. Indeed, extensive material was prepared to further the consideration of appropriate governance arrangements at the time the industry reforms were undertaken. System Management is happy to address particular aspects and features which might be unclear to the ERA.

By world standards, the SWIS is a very small system and just does not warrant the complexity of its existence outside the networks business, and the additional interfaces that would be required.

For example, generation dispatch cannot readily be divorced from bulk transmission control, nor from distribution control within an integrated networks business. Significant amounts of money would be required to duplicate control systems, and to provide a link to SCADA, which is owned by Western Power but is fundamental to the operation of the market. In fact, most of the approximately 25 staff performing system operation services within System Management also undertake network related functions. A staff split could not readily be achieved without significant duplication occurring.

Removal of the system operator from the networks business would also be at odds with the practice in other jurisdictions. Other jurisdictions which contain a single transmission business generally have the system operator within the networks business, which enables generation dispatch to occur efficiently with power system operations. The system operator remains in the networks business in such diverse jurisdictions as New Zealand, the UK, Ireland and a number of western European nations.

Further, it is surprising to note the ERA's comments regarding ensuring System Management's "ongoing independence". System Management is ringfenced from the networks business by virtue of statutory fiat, and ensures in all cases that outage planning (for example) is conducted in an impartial fashion. To provide assurance that this is the case, System Management is subject to at least annual audits by the Independent Market Operator, and has established detailed internal governance and compliance mechanisms. There have not been any transparency or conflict of interest issues noted with the operations of System Management with regard to Western Power. Therefore the incentive to remove System Management from Western Power does not appear to be driven from market necessity or good governance.

Further, System Management fails to understand what is meant by the perceived benefit of "critical mass", if joined with the IMO. Critical mass does not itself

present a benefit, nor has any reference been made as to how joining of organisations with such discrete, non-overlapping, functions would add to the attainment of the market objectives. And this is an important point which the ERA should take account of – the functions undertaken by System Management and the IMO are not common or overlapping, with the former responsible for system security and dispatch, while the latter is responsible for administering the market and undertaking financial settlements.

Put simply, System Management remaining within Western Power decreases market costs considerably and minimises duplication in a very small market. System Management does not see any compelling market benefit, nor overlapping function with the IMO which will produce any kind of efficiency were System Management to be joined with the IMO.

Discussion Point 17

The Authority invites comments on measures to improve price transparency in the market.

System Management: No comment is made.

Discussion Point 18

The Authority invites comments on what, if any, impact retail market arrangements have on the WEM, and what implications this has for the effectiveness of the WEM.

System Management: No comment is made.

Discussion Point 19

The Authority invites comment on the effect that the Ministerial Directions to Verve Energy and Synergy and the Vesting Contract have on outcomes in the market.

System Management: No comment is made.

Discussion Point 20

The Authority invites comment on the processes for planning the development of the market over the longer term. In particular:

- *to what extent do existing arrangements provide scope for, and transparency in regard to, the development of the market; and*

System Management: Existing arrangements provide little, if any, avenue for the development of the Market, with the focus of the Market Advisory Committee necessarily being on ad hoc changes to rules, rather than matters pertaining to broader market design.

System Management is greatly concerned that future developments, if not pursued in a broadly consultative fashion, could have a detrimental effect on the security of the SWIS.

System Management believes that the formation of an appropriate forum to oversee market development would be beneficial to the whole market. It is submitted that this mechanism would be most fruitful if it made provision for broader participation beyond the existing members of MAC.

- *what aspects, if any, of the development of the market should be addressed in a more systematic manner, and in what forum.*

  System Management: Throughout this submission System Management has made a number of constructive suggestions regarding matters which require further consideration in a broad and consultative forum.