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23 July 2010

Mr Greg Watkinson
Chief Executive Officer
Economic Regulation Authority
PO Box 8469
Perth Business Centre
PERTH WA 6849

Dear Mr Watkinson

**DISCUSSION PAPER: ANNUAL WEM REPORT TO THE MINISTER FOR ENERGY -
WESTERN POWER SUBMISSION**

Western Power welcomes the opportunity to contribute to the Economic Regulation Authority's (**Authority**) 2010 Annual Wholesale Electricity Market Report to the Minister for Energy.

In recognition of the fact that Western Power's System Management Division is "ring-fenced" from the rest of the organisation, this submission addresses relevant points from a network management perspective only. Responses relating to system management functions will be lodged with the Authority separately and directly from the System Management Division.

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.

Yours sincerely

MARK DE LAETER
ACTING CHIEF EXECUTIVE OFFICER

cc: Anne Hill, Acting Coordinator of Energy

2010 Annual Wholesale Electricity Market Report
to the Minister for Energy

Submission to the Economic Regulation Authority



23 July 2010

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1.0 EXECUTIVE SUMMARY

This submission is structured in response to points raised by the Economic Regulation Authority (**Authority**) in its 2010 Discussion Paper and provides further detail on Western Power's position with regards to the following matters:

- While recognising the Authority's concern regarding uncertainty about future policy on key issues, Western Power recommends that the development of a Wholesale Electricity Market (**WEM**) Future Strategy be reconsidered once the Strategic Energy Initiative has been finalised.
- Western Power recommends further consideration be given to increase incentives for third party proponents to explore and implement non-network solutions and address current barriers.
- Western Power supports net feed-in tariffs as a means of encouraging the increased generation of cleaner energy and more efficient behaviour at a residential level and recommends further research to better understand potential associated negative impacts on the management of the system.
- Western Power supports the introduction of a capacity credits allocation methodology for intermittent generation that better reflects the capacity available from this type of generation at times of peak demand.
- Western Power recommends the introduction of a mechanism to ensure suitable cost signals are transferred to intermittent generators to encourage solutions to intermittency issues and more "power system friendly" renewables.
- Western Power recommends developing and introducing a transmission headworks charge scheme in lieu of capital contributions, as a more effective way to recover transmission augmentation costs triggered by the connection of new generation to the grid.

2.0 INTRODUCTION

Western Power welcomes the opportunity to contribute to the 2010 Annual WEM Report to the Minister for Energy (**Minister**) in the context of Western Australia's electricity industry.

Western Power supports the decision of the Authority to focus on matters not previously considered in detail, rather than repeating issues that have been included in previous reviews or are being addressed in other current or upcoming reviews and processes. However, it should be noted that Western Power believes that issues covered in these other forums remain obstacles to the full achievement of the Wholesale Market Objectives and should continue to be monitored and/or resolved into the future.

As part of Western Power's contribution to the Minister's current Strategic Energy Initiative (**SEI**) we have developed a set of strategic directions based on our vision for Western Australia's long-term energy future. These incorporate a number of interrelated and interdependent reforms and principles which we believe will help achieve the strategic goals of the SEI: energy that is secure and reliable, competitive and cleaner.

These strategic directions are described in some detail in Western Power's submission¹ to the SEI Issues Paper. Briefly they are:

- Improving energy efficiency and energy conservation;
- Adopting an electricity pricing policy for Western Australia;
- Considering the transition to a constrained access network;
- Building a framework for "generation park" planning;

¹ A copy of our submission to the SEI Issues Paper is attached and can also be found on Western Power's website at http://www.westernpower.com.au/aboutus/sustainability/climateChange/Strategic_Energy_Initiative.html

- Preparing for the transition to electric vehicles;
- Developing distributed generation across the South West Interconnected System (**SWIS**); and
- Overcoming the challenges of intermittent generation.

Western Power encourages the Authority to refer to our SEI Issues Paper submission for further, in-depth discussion of these ideas which would assist in future improvements to the WEM. We intend to expand further on these issues in the next phase of the SEI development process.

In recognition of the fact that Western Power's System Management division is "ring-fenced" from the rest of the organisation, this submission addresses relevant points from a network management perspective only. Responses relating to system management functions will be lodged with the Authority separately and directly from the System Management Division.

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.

3.0 DISCUSSION POINTS

3.1 Strategic, policy or high-level issues that are impacting on the effectiveness of the Wholesale Electricity Market in meeting the Wholesale Market Objectives.

3.1.1 Electricity Pricing

Western Power acknowledges the significant steps the current State Government has taken towards ensuring electricity prices in WA reflect the true cost of generation and supply. Similarly we acknowledge that pricing has been canvassed in previous reviews, however, we highlight it again here as the fundamental issue hindering the achievement of a number of the Wholesale Market Objectives. In particular the objectives of encouraging competition, minimising the long-term (emphasis added) cost of electricity, and managing the amount of electricity used and when it is used cannot be fully addressed until cost reflective pricing is achieved. Cost reflective pricing is also an essential precursor to full retail contestability for the domestic market (removing the prohibition on other domestic retailers) and improving the energy efficiency of consumers.

Variable pricing (such as time-of-use, real time and tiered or inclining block tariffs), is a critical element to managing when energy is used and promoting the economically efficient supply of electricity in the SWIS. Efficiencies are gained by maximising the use of the existing electricity network infrastructure while delaying the need for further infrastructure investment. Advanced Metering Infrastructure (AMI), such as currently being trialled by Western Power as part of the Perth Solar Cities program will be required before variable pricing regimes can be widely deployed.

3.1.2 Need for a WEM Future Strategy

Western Power recognises the Authority's concern regarding uncertainty about future policy on key issues resulting from the parallel progression of multiple reviews² and the suggested need for a coordinated strategy to be put in place for the future development of the WEM.

Western Power looks forward to the SEI providing well considered and much needed direction for the industry while allowing the adaptability required when addressing future challenges, and providing a clear policy direction as the stimulus for change. Western Power suggests that such direction is required to support the development of a WEM Future Strategy to ensure it is aligned with the State's future energy policy direction.

Western Power recommends that the Authority consider the development of a WEM Future Strategy once the SEI process has been finalised.

² The SEI, Verve Energy Review, IMO Market Rules changes and the Generation Outlook

3.1.3 Increased incentives for non-network solutions

Another issue Western Power would like to raise under this discussion point is the lack of incentives available to potential proponents in terms of exploring and implementing non-network solutions. The current framework seems to impose a number of barriers (e.g. financial and process) on potential proponents that operate as a disincentive for the development and implementation of non-network solutions. Rules and requirements in place for connecting generators to the grid are intended to address major connections of traditional generation assets, however, they can be overly burdensome for smaller scale co-generation plants, for example, to the point that they become too difficult to warrant the allocation of resources.

Although incentives exist for Western Power to pursue non-network solutions under the current framework (e.g. D-factor) this does not compensate for the lack of incentives available to other proponents. The introduction of adequate incentives would enable Western Power to work with other proponents to develop adequate non-network solutions that may contribute to Western Power's ability to defer infrastructure expenditure.

Western Power would welcome opportunities to facilitate such a process and contribute to a collaborative effort with other market participants to look into and resolve this matter.

In this context, it is recommended that the Authority consider section 4.1 (*Improving energy efficiency and energy conservation*) of Western Power's submission to the SEI Issues Paper.

The Network Access Code, via the Regulatory Test and the New Facilities Investment Test (**NFIT**) provisions, requires Western Power to demonstrate that it will (has) efficiently minimise(d) costs in implementing a solution to remove a network constraint. Options considered must include non-network options. Both the Network Access Code and Market Rules contemplate the use of a "network control service" (NCS), provided by generation or demand management, as one such option for assessment in the investment decision making process. While it was originally envisaged that an NCS would be procured by utilising the Independent Market Operator (**IMO**) tender process under the Market Rules, the Market Advisory Committee has recently endorsed a model whereby Western Power directly manages the procurement process. Under this model, Western Power will enter into a contract with the successful tenderer for the provision of an NCS. Western Power is currently working to establish and implement an NCS procurement process, and is involved in determining amendments required to the Network Access Code and Market Rules.

3.2 Comment on the effectiveness of the Independent Market Operator, System Management and the Economic Regulation Authority.

Western Power has no comment to provide at this time.

3.3 Comment on the impact of feed-in tariff and renewable energy rebate/buyback schemes, as they relate to the efficiency, reliability and security objectives of the Wholesale Electricity Market.

In general Western Power supports net feed-in tariffs as a means of encouraging the increased generation of cleaner energy and more efficient behaviour at a residential level and welcomed the introduction of such a tariff for small scale residential renewable generation in Western Australia on 1 July 2010.

However, Western Power is mindful of implications in terms of increased small scale generation uptake and potential associated negative impacts on the management of the system. Therefore, we support further studies and research to better understand what these impacts might be (such as is occurring through our participation in the Perth Solar City program).

More particularly, Western Power is of the view that it is essential to implement measures to ensure that the net feed-in tariff does not provide undesirable incentives to consumers, such as encouraging low energy usage during the day and increased usage during the night to maximise

benefits derived from the tariff. This will have an overall negative impact by contributing to the evening peak demand period.

Western Power suggests that this could be remedied by coupling the net feed-in tariff with a time-of-use tariff providing appropriate signals to ensure a more even spread of consumption behaviour. In this context, it is recommended that the Authority consider section 4.2 (*Adopting an electricity pricing policy in WA*) of Western Power's submission to the SEI Issues Paper.

Now that the net feed-in tariff has been introduced, it has become essential to monitor consumer behaviour to identify other associated changes so that they can be addressed appropriately and quickly.

Issues resulting from the introduction of the net feed-in tariff may be exacerbated by the fact that current Renewable Energy Buyback Scheme customers are entitled to increase the size of their existing systems to take advantage of the tariff. This will undoubtedly encourage growth in the uptake of small scale renewable energy generation in the SWIS. It also highlights the importance of addressing resulting issues related to long term power system control and operation.

Western Power is of the view that it is highly likely that solar photovoltaic saturation will occur in parts of the SWIS, which will have a negative impact on power quality and system reliability. In order to gather data to be able to understand more fully the effects of such a situation, Western Power is currently developing a saturation trial in a part of Forrestfield within the Perth Solar City footprint. The results of this trial will be used to inform policy development in order to develop future mitigation options.

3.4 Comment on the Reserve Capacity Credit allocation to Intermittent Generators.

As a member of the Renewable Energy Generation Working Group (**REGWG**) (acting under the direction of the Independent Market Operator's Market Advisory Committee), Western Power currently participates in the assessment of the treatment of intermittent generation in the Reserve Capacity Mechanism, as well as related work identified in the Authority's Discussion Paper.

The IMO currently grants capacity credits to wind farms based on an average output over three years (actual output for existing plant or estimated for new capacity), which typically amounts to 37 per cent of installed capacity. In contrast, estimates produced by System Management and provided to the REGWG for consideration amount to 20 per cent of the installed capacity of a wind farm. Western Power supports introducing a capacity credits allocation methodology for intermittent generation that better reflects the capacity available from this type of generation at times of peak load.

Western Power strongly recommends that outcomes of the REGWG work³ be considered when developing the 2010 WEM Report.

As intermittent generation does not always operate at full capacity during peak demand times, the transmission capacity allocated to these generators is not being fully utilised as there is no reallocation of spare short-term capacity under the current "unconstrained" approach.

Western Power sees merit in a well planned, systematic and long term transition from the current "unconstrained" network access model to a "constrained" access model in order to optimise the economic return from investment in transmission and distribution networks. In this context, it is recommended that the Authority consider section 4.3 (*Considering the transition to a constrained access network*) of Western Power's submission to the SEI Issues Paper.

Finally, as operating a constrained network could reduce the capacity credits allocated to generation likely to be constrained during peak load times, Western Power suggests more work is required to determine capacity credit allocation in a constrained network, as well as the management of generation dispatch and fuel constraints.

³ A copy of the REGWG work can be found on the IMO website: <http://www.imowa.com.au/n139>

3.5 Comment on the existing and potential impact of intermittent generation on the Wholesale Electricity Market, including the need for cost reflectivity under the existing framework and Market Rules.

The following comments should be considered alongside comments made by Western Power under discussion point 13 of its submission to the 2008 WEM Report Discussion Paper. That submission outlined the impacts of increased penetration of intermittent generation on the management of an interconnected system and potential risks to the security and stability of supply.

While strongly supportive of the overall increase in grid connected renewable generation, Western Power seeks cooperative solutions to the system security challenges presented by increasing levels of electricity generated from intermittent sources. If the problems associated with intermittency can be resolved (for example through code changes) then these renewable technologies will be able to increase their market share without adversely affecting the security and reliability of the SWIS. If they can't, however, it will mean either the cost of providing a secure and reliable supply will be greatly increased or security and reliability will be compromised.

Western Power suggests that one resolution might be a mechanism to ensure costs associated with backup support are transferred to the intermittent generators which require these services. This will encourage solutions to intermittency issues and also encourage more "power system friendly" renewables of a non-intermittent or dispatchable nature.

In this sense, Western Power supports the development of a suitable strategy for the WEM based on a "causer pays" principle. Such a cost allocation principle would provide signals to intermittent generation operators and assist the reduction of reliance on other generation to provide ancillary services. This could also lead to new technologies being developed and implemented to reduce the impact of intermittent generation on the operation of the WEM.

Other potential options for resolving intermittency issues include:

- Smart Grid developments;
- Energy storage systems; and
- Increasing the diversity of energy supply methods.

In this context, Western Power has contributed to the recent extensive work by the Energy Supply Association of Australia (**esaa**) (much of which is summarised in the esaa's submission to the SEI Issues Paper⁴) and Australian Energy Market Commission⁵ and recommends that the Authority consider this work when developing its 2010 WEM Report as it is highly relevant to this area of concern.

We also recommend that the Authority consider section 4.7 (*Overcoming the challenges of intermittent generation*) of Western Power's submission to the SEI Issues Paper, and the work undertaken by the REGWG⁶, on which Western Power is represented, as both cover issues associated with the increased penetration of intermittent generation.

⁴ http://www.esaa.com.au/images/stories/policy_submissions/2010/20100311wa.pdf

⁵ *Review of Energy Market Frameworks in Light of Climate Change Policies*, September 2009
<http://www.aemc.gov.au/Market-Reviews/Completed/Review-of-Energy-Market-Frameworks-in-light-of-Climate-Change-Policies.html>

⁶ <http://www.imowa.com.au/n139>

3.6 Comment on the current framework for network access and the determination of capital contributions for augmentation to the shared transmission network provided by Western Power. In particular:

- **The impact that the current framework has on the effectiveness of the Wholesale Electricity Market;**
- **The impact on investment decisions, given the level of transparency and predictability in the current network access and connection charging regime; and**
- **The appropriate methodology for recovering transmission augmentation costs triggered by new generation in the South West Interconnected System.**

The Authority's Discussion Paper states that economic and best regulatory practice principles require capital contributions to be based on a transparent and easily understood methodology, which is stable and predictable.

Current provisions of the *Electricity Network Access Code 2004* constitute barriers to the achievement of these principles, as they are high level (e.g. NFIT), place an ex-post risk on Western Power with respect to capital investment, and directly link the capital contribution to the NFIT determination. In addition there is no guidance to the provisions, either in the Code, or in a separate official document.

The Code imposes limitations on the Contributions Policy, including the fact that the policy must not require a user to make a contribution in respect of any part of new facilities investment which meets the NFIT (sections 5.14(a)). This effectively means that an NFIT assessment is required in order to determine the appropriate capital contribution.

NFIT assessments require a rigorous process including a detailed demand-side analysis, commercial investment evaluation process, and a determination with respect to the likely incremental revenue. This can involve consideration of the likely timing of connection, likely duration of the new demand, and its stability.

Depending on the scale of the proposed connection, Western Power may also need to engage in complex economic modelling in order to ascertain whether the connection offers any market benefits. The estimated benefits then need to be tested in a public process and are likely to culminate in an NFIT pre-approval determination by the Authority.

This case-by-case approach to determining capital contributions can at times be cumbersome and time consuming, in contrast with a formulaic (or rules-based) approach that would offer the benefits of enhanced transparency (in terms of process) and predictability (in terms of outcome). However, as a formulaic approach has the potential to misallocate investment funds, it is a matter of how well alternative processes serve the Code objective of economic efficiency.

In this context, Western Power is continuously considering alternative processes and methodologies with a view to streamlining the NFIT process. However, this needs to be considered in collaboration with our stakeholders, and facilitated through amendments to the Code if required.

Western Power suggests that part of the solution may arise through changes in the Applications and Queuing Policy (**AQP**). For example, if information that could be used in an NFIT evaluation was provided by customers as part of an application, the processing time could potentially be reduced. Western Power is in the process of developing proposed revisions to the AQP after conducting stakeholder consultations on this issue. The proposed changes will be designed to reflect this principle. Once finalised, the proposed changes to the AQP will be forwarded to the Authority for consideration before the end of 2010. A final issue is the potential further delay (beyond the time required to obtain a Regulatory Test determination) imposed if Western Power elects to seek an NFIT pre-approval determination.

It should be noted that the significant write-down of Western Power's capital investment in the last access arrangement determination has resulted in Western Power being increasingly cautious with

respect to risking capital to connect new users. This risk associated with the NFIT ex-post provision of the Code is addressed through either seeking pre-approval of NFIT, which can take considerable time, or by placing the risk onto the applicant through commercial arrangements.

The need to obtain an NFIT pre-approval determination may impact on the required in-service dates submitted by customers. However, the absence of approved guidelines and supporting information about the best way to conduct the NFIT assessment in the current framework currently impacts the timeliness of these applications. It is anticipated that as the number of NFIT pre-approvals accumulates, the process and methodologies that should be employed and the circumstances in which they are applied will become more apparent to Western Power and its stakeholders.

In terms of recovering transmission augmentation costs triggered by new generation in the SWIS, Western Power supports investigating the use of a transmission headworks scheme in lieu of a capital contribution. This would allow the removal of deep connection constraints to provide increased certainty and transparency of connection costs to potential applicants. The investigation would need to examine many aspects of the scheme including, but not limited to, the relationship between the headworks charge and the application of NFIT.

This would also enable Western Power to plan for the removal of constraints, review options and determine pricing in advance of individual generation applications. The design of such a scheme would need to ensure that pricing locational signals are maintained and cross-subsidisation of customers and generators is avoided.

In summary Western Power is of the view that:

- Code provisions for NFIT need to be reviewed to provide for a transparent and easily understood methodology, which is stable and predictable.
- Capital contributions should not be so strictly linked to the NFIT determination. While it is recognised that the economic principle linking commerciality of an investment to the capital contribution is sound, the NFIT should be about ensuring the investment is efficient, and the capital contribution should reflect the principles defined in the contributions policy. Of course the contributions policy should reflect the principles defined in the second part of the NFIT. The process would be improved if the NFIT assessment for assets subject to a capital contribution was limited to just the efficiency limb of NFIT, in recognition that the capital contributions policy will ensure the appropriate capital contribution has been determined.
- The AQP needs to be revised according to the process currently underway.

4.0 CONCLUSION

In conclusion, Western Power welcomes the opportunity to participate in the 2010 WEM Report process. Considering the relatively short time that it has been operating, the WEM is performing well, however there are changes that can be made, as outlined above, that would assist in the market maturation process.

Fortunately, substantial reviews have already been undertaken which highlight these issues. Some review processes, most significantly the SEI, are still under development but should be completed by the end of this year.

The challenge then for the Authority is to take the work done in these review processes and use it to assist in the market evolution process so that the WEM can operate even more effectively into the future.

Western Power looks forward to being able to provide ongoing assistance in this process.