

6 January 2011

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Economic Regulation Authority  
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By email to: [publicsubmissions@erawa.com.au](mailto:publicsubmissions@erawa.com.au)

Dear Ms Walters

**Re: Regulatory Test Application - Western Power's Mid West Energy Project  
(Southern Section)**

Perth Energy appreciates this opportunity to provide comment on the proposal put forward by Western Power as part of its Regulatory Test Application for the Mid West Energy Project (Southern Section) (the Proposal). As one of the State's few integrated retailer/generators, Perth Energy is a major user of Western Power's transmission and distribution networks.

Perth Energy has had the opportunity to engage at several key milestones during the Western Power process to develop and submit this application. The openness of this engagement process has acted to reduce many of our concerns.

Within this submission we present our overarching views on the development of network regulation in the South West Interconnected Network (the SWIN) and address residual concerns relating to the Proposal itself.

**The Development of Network Regulation**

While supportive of this augmentation proposal by Western Power, Perth Energy notes the potential impacts of these capital expenditures on Western Power's Regulatory Asset Base and the flow on effects this will have on network Use of System (UOS) charges in the SWIN.

Deep connection costs are generally triggered when Western Power undertakes an augmentation to allow a new connection. The rules for how these costs are calculated and charged are contained within the Capital Contributions Policy of the Access Arrangement. We note that Capital Contributions seem to be more common for generation connections than large new load connections<sup>1</sup>. It could reasonably be argued that it is load growth that is

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<sup>1</sup> For example, the Authority allowed Western Power to include in its asset base the estimated \$28M cost of upgrading the Medical Centre substation to allow for load growth from QEII Medical Centre and surrounding areas, <http://www.era.wa.gov.au/1/88/1/Search.pm>, rather than insist the large loads in the area pay Capital Contributions.

triggering the need for wider network reinforcements – connection of additional generation is simply a function of the overall load growth.

In our view there is a philosophical debate to be had around Western Power's Capital Contributions Policy. The need for open debate on these matters has been raised before (both in consultation on the Western Power's Network Access Arrangement and in previous consultations on the setting of the Maximum Reserve Capacity Price (MRCP<sup>2</sup>)). An obvious solution is for Western Power to move to a two-fold charging policy:

1. shallow-only charging policy to include all deep connection costs in the Regulatory Asset Base, charging for these costs via normal UOS charges, if the main purpose of the connection is for general supply to the SWIN. This would facilitate a more level playing field for generators and take the concentrated deep connection cost factor out of the equation when considering a new project for general market supply.
2. Deep-connection charging policy to assign most of these connection costs to the User, if the main purpose of the connection is for the User's access.

In previous submissions to the Authority, we have put forward the view that Western Power holds all available information on a User applying for access and is in a unique position to assess the "main purpose" test in order to apply an appropriate charging policy. Western Power's expertise should be brought to bear on developing a set of criteria for this test. An example for a deep-connection charge to be applied is if the User is seeking access to effect supply to a single site that will account for more than 25% or 50% of total access capacity being sought.

Perth Energy also highlights the need for all augmentation projects undertaken on the SWIN to be subject to rigorous downward cost pressures. We identify the concern that the regulatory review process continues to ensure that all expenditures, which are recoverable through UOS charges, are prudent and have been subjected to appropriate commercial processes. We view the use of competitive private sector tenders for major construction and materials components as being essential. This requirement should not be waived for assets constructed by private sector companies when connected to the SWIN and should be reflected in Western Power's contract for those assets.

## **The Proposal**

The proposal entails the construction of a double circuit 330 kV transmission line from the Perth metropolitan area to Eneabba in the Mid West, and the interconnection of the existing 132 kV Three Springs substation with a new 330 kV Three Springs Terminal, to form a 330 kV transmission interconnection between Perth and the Karara mine site and to provide enhanced support to the 132 kV network north of Three Springs.

As part of an interim supply arrangement, it is proposed that KML construct:

- A new double circuit 330 kV transmission line from Eneabba to Three springs, initially operating at 132 kV;
- A new step up 132/330 kV transformer at Eneabba; and
- A new 330 kV transmission line from Eneabba to the KML Mine site (by way of Koolyanooka).

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<sup>2</sup> Reflecting the volatility that is experienced in the MRCP calculation as a result of significantly varying deep connection costs from one prospective generation site to another.

This new infrastructure will be fully funded by KML and is planned to be in service for approximately 18 months prior to the completion of the proposed Western Power 330 kV transmission line from Perth to Eneabba.

Perth Energy notes that upon completion of Western Power's proposed new transmission line from Neerabup to Eneabba, what will be the pre-existing KML transmission line will be connected through from Eneabba to Three Springs at 330 kV voltage.

This proposal will result in a substantial increase in the network capacity to Geraldton.

The project will also see a material component of the State's supply network independently constructed and operated. While this is not a unique circumstance in Western Australia, it is a significant advance to the previous Western Power build, own, operate model. We do note that while discussions are currently underway between Western Power and KML to develop an appropriate supply agreement, this matter remains outstanding at this point in time. Given this, we note that an element of uncertainty is introduced into the future contracting structure between KML and Western Power, which in turn introduces an element of uncertainty into the Western Power proposal itself.

### **The Regulatory Test**

Chapter 9 of the Electricity Networks Access Code 2004 (the Access Code) establishes the regulatory test that must be applied to proposals for major augmentations of a covered network. Specifically section 9.3 of the Access Code requires that "an assessment under Chapter 9 of whether a proposed major augmentation to a covered network maximised the net benefit after considering alternative options."

In Perth Energy's view the explicit purpose of the regulatory test is to determine whether a proposed major augmentation to the State's electricity supply infrastructure is the most efficient mechanism to meet system requirements, after due consideration of all other alternatives. In consideration of the alternatives, section 9 identifies the process to be followed by the proponent. This includes requirements for how the proposal is prepared and submitted and the determination of alternative options. Section 9.16(c) and Appendix 7 further define the manner in which the proponent undertakes its consultation process.

### **Consultation Process**

*The Authority has invited submissions from interested parties on whether Western Power:*

- *Gave all interested parties a reasonable opportunity to state their views on the major augmentation proposal and to propose alternative options.*
- *Had adequate regard to the views and alternative options that were submitted.*

As highlighted in our introductory comments, We commend Western Power for the consultation process adopted for this proposal. Perth Energy took the opportunity to attend the industry forums and to submit comments in writing during the process. Perth Energy found that the Options Paper and supporting documents released by Western Power were sufficient to support an investment of this nature. In our view Western Power met the consultation requirements established in Section 9.16 (c ) and Appendix 7 of the Access Code.

### **Identification of Alternative Options**

In its proposal, and the earlier Options Paper, a range of options were identified by Western Power for consideration. Western Power subsequently undertook an initial screening of the options, separating what were viewed by Western Power to be the viable and non viable options. The remaining technical options put forward by Western Power as viable were then subjected to more rigorous technical and financial assessment. The options considered were all transmission line reinforcements, reflecting the need to provide significantly greater capacity into a regional area with limited existing capacity. A range of voltages and configurations were assessed for the transmission line reinforcements.

It is noted that following the initial public consultation on this augmentation, Western Power received advice that the Regulatory Test may need to be expanded to include the proposed assets from Eneabba to KML. Western Power subsequently concurred with this advice, expanding the Regulatory Test to include these assets. Prior to submission of this proposal under the application, Western Power also incorporated further information received from stakeholders in response to the initial consultations in July 2010.

*The Authority has invited submissions from interested parties on whether Western Power has:*

- *Identified a relevant set of alternative options to the proposed transmission line; and*
- *Given reasonable consideration to the alternative options proposed by interested parties in the submissions made as part of Western Power's consultation process.*

In Perth Energy's view Western Power's proposal has adequately considered the options available. The options considered appear to be fair and reasonable, as do the costing of each option. Consideration of the advantages, disadvantages and risks associated with each option are balanced.

### **Assessment of Net Benefits**

Consistent with the requirements of the Regulatory Test, Western Power has assessed the options to identify the net benefits (Net Present Cost) that may potentially be derived from each. In undertaking its financial analysis, Western Power considered a range of load forecast scenarios (central, high and low load scenarios) over a 20 year period. Western Power noted that the central forecast incorporated only the loads associated with KML Stage 1 and the initial loads for the Oakajee Port and Rail and Geraldton Port Authority. Prospective loads in the Mid West were only incorporated into the high load scenario. Each of the scenarios were evaluated using the same input economic assumptions and load scenarios.

Western Power found that while each of the options analysed provided sufficient capacity to meet the central load forecast, there was a wide variation in the capacity provided by the options (ranging from 250 MW to 480 MW), with the preferred option, the 330 kV double circuit providing substantially greater capacity than any of the alternatives.

While the central load forecast scenario resulted in a comparatively small variation in the assessment of Net Present Costs between the options (a 10% variation with NPC ranging from \$401M - \$441M), it is perhaps not surprising that for the high load scenario the inherently greater capacity of the double circuit 330 kV option provided a substantially lower cost alternative (by at least 30% or \$137M in Net Present Cost terms compared with the next lowest alternative).



*The Authority has invited submissions from interested parties on whether the forecasting methods adopted by Western Power are consistent with good industry practice and form an appropriate basis for the consideration of alternative options for increasing capacity of the electricity system in the Mid West Region.*

Perth Energy has previously highlighted its concerns with the limitations of the Mid West transmission network. We view that as the electrical load continues to grow into the future, additional thermal constraints of the transmission lines to Geraldton as well as voltage stability issues will arise.

Various load forecasts have been undertaken by Western Power (and other industry participants) with the conclusion that significant increases in the load in the Mid West can be expected in the near future. Both the underlying natural load growth, resulting from expansion of existing activities and associated population growth and the development of major new block loads with their associated demand, will increase the demand considerably in the Mid West region. The economic development strategy of the Mid West is strongly supported by all levels of Government. Significant funds are proposed to be invested by Government and the Private Sector to facilitate the industrial development of the region.

An analogous region of Western Australia is the Pilbara Region. Development has proceeded based primarily on the growth of the iron ore and later the Liquid Natural Gas (LNG) industries. In 1995 there was an installed capacity of approximately 365MW of generation capacity in the Pilbara. Currently there is approximately 950MW on the Pilbara Network. This equates to a growth of 160% over a 15 year period. The Mid West is in a similar position to where the Pilbara was 15 years ago where large new mines are planned with associated developments required to the enabling market, regulatory and policy environments. With the prospective geographical size and variety of minerals available in the Mid West Region the potential electricity requirement could be much greater than currently envisaged. The mining projects envisaged in the Mid West will require reliable and affordable power. Without such an enabler, these projects will not proceed. It could further be argued that the delay already experienced in proceeding with developments in the Mid West has been caused in part by the lack of suitable energy infrastructure, and in particular by a failure to provide an appropriate electricity transmission network. Perth Energy views that the current network will not support either the new loads envisaged in the Mid West, nor would it support general electricity growth in the SWIN.

Perth Energy has previously highlighted the importance of the Mid West as a highly prospective area for new generators. In particular we highlight the Federal Government extension of the Mandatory Renewable Energy Target (MRET) legislation. This will translate into a renewable energy requirement of 4750GWh of renewable energy by 2020. It is anticipated that a significant proportion of the requirement will come from winds located in the Mid West. Additionally, there are other generation developments proposed for the Mid West. These projects are based on local fuel sources such as coal and gas, which are dependent on the new transmission line being constructed.

The risk of not proceeding with the immediate development of the Mid West Project, both as a result of the load forecasts (i.e. customer demand) and from the proposed generation opportunities, is lost investment worth potentially billions of dollars. The consequential impacts are also significant:

- Lost opportunity in regional development and employment;
- Forgone opportunities to reduce greenhouse emissions through lower emission and more efficient energy supply;
- Denying loads of choice of suppliers across the SWIN;

- Delayed Full Retail Contestability (FRC) as new supplies of energy for generation are unlikely to become available.

Perth Energy raises the issue that load forecasting is inherently probabilistic in nature. Over the course of time it has been found that load forecasting will inevitably produce low-side forecasts, particularly where commodity derived electricity demand is a large proportion of the load forecast. When commodity investments proceed the requirements are generally 'chunkier' and will be required sooner than was forecast to meet a window of opportunity in the world market. If the investment in infrastructure is not undertaken in a timely manner, there is a consequential loss to the whole economy from forgone growth, employment and output.

In view of the existing supply limitations and the above limitations of load forecasting, and having reviewed the information made available within the Western Power proposal (including the assumptions used by Western Power to construct its high, low and central scenarios) we accept that the forecasting methods adopted by Western Power are consistent with good industry practice and form an appropriate basis for the consideration of alternative options for increasing capacity of the electricity system in the Mid West Region.

*The Authority has invited submissions from interested parties on whether Western Power's feasibility analysis of alternative options is reasonable and robust; and whether Western Power has adequately justified the elimination of certain alternative options for reasons of technical infeasibility or the provision of insufficient capacity.*

*The Authority has invited submissions from interested parties on whether the approach applied by Western Power in the assessment of net benefits is appropriate.*

Perth Energy notes that Western Power has essentially assessed the proposed transmission line and viable alternative options on the basis only of costs. The rationale provided by Western Power is that all options deliver similar benefits to those who utilise the network.

The assessment of the Net Present Cost of each option appears to be fair and reasonable. Consideration of the advantages, disadvantages and risks associated with each option are balanced. We note the difficulty in quantifying the variable benefits to be ascribed to the different classes of network user from the augmentation options and the subjectivity likely to be brought to any assessment. We therefore view Western Power's simplistic approach of comparing Net Present Cost as being appropriate in the circumstances.

Perth Energy views that the recommended option, 330kv Double Circuit, balances the costs and risks and is supported as the best option. This option provides the lowest Net Present Costs for the High Load forecast case and is only 10% more than the Net Present Cost of the lowest cost option under the Central Case. This option has the ability to cater for most loads forecast in the foreseeable future. It will accommodate many generation options planned in the Mid West region and facilitate achievement of many of Government's environmental objectives.

Given Perth Energy's concerns as to the need to adequately invest in the Mid West to support industrial development and general load growth in the future, and reflecting our earlier comments as to the inherent limitations of load forecasting, Perth Energy is highly supportive of the selection of the 330 kV double circuit option by Western Power.

## **Concluding Comments**

Perth Energy is available to discuss any matter raised in this submission directly with the Authority. We look forward to engaging with the Authority, the Office of Energy and other key stakeholders to work towards a satisfactory resolution of the shortcomings we have identified within the current network regulatory regime.

Kind Regards



**KY CAO**  
**MANAGING DIRECTOR**