



Submission to the Economic Regulation Authority

SUPPLEMENT

to

MAJOR AUGMENTATION PROPOSAL (submitted 2 October 2007)

*330 kV Transmission Line and Associated Works in the Mid-West
Region of Western Australia*

DATE:

21 November 2007

DOCUMENT PREPARED BY:

Western Power
GPO Box L921, Perth WA 6842
ABN 18 540 492 861

safe reliable efficient

Contents

Contents	1
1 Introduction	2
2 Line Route Selection	2
2.1 Background	3
2.2 Consultation Process	3
2.3 Response to Letters to the ERA from Stakeholders	4
2.4 Preferred Option	4
2.5 Sustainability Assessment Peer Review	5
2.6 Information on “Straight Line” Option	5
3 ERA Issues Paper	5
4 PB Report	7
4.1 The robustness of supply and demand forecasts	7
4.2 The completeness of the range of alternatives	7
4.3 Robustness of the ‘net benefits’ analysis	9
5 Concluding Comments	9
Appendix 1: SKM Report – Executive Summary	10
Appendix 2: Western Power Frequently Asked Question for Stakeholders	11
Appendix 3: Information on ‘Straight Line’ Route	12
Appendix 4: Integral Sustainability’s Peer Review Report	13
Appendix 5: Community Engagement and Consultation Milestones	14
Appendix 6: Response to Stakeholder Letters to ERA	15
Appendix 7: Addendum to CRA Evaluation Report	16
Appendix 8: Addendum to HTC Due Diligence Report	17
Appendix 9: Technical Evaluation of Additional Alternative Reinforcement Options	18

1 Introduction

This document is provided as a formal supplement to Western Power's *major augmentation proposal* submitted to the Economic Regulation Authority on 2 October 2007 for the proposed 330kV transmission line and associated works in the mid-west region of WA.

Western Power has again used the services of Charles River Associates International Pty Ltd (CRA) and Hydro Tasmania Consulting (HTC) to provide expert advice on the economic and technical aspects of matters contained in this submission.

This submission comprises:

- 1) Comprehensive information about the line route selection process, including:
 - (a) A detailed report prepared by consultants Sinclair Knight Merz (SKM);
 - (b) An outline of key steps in the process;
 - (c) Responses to issues raised in letters to the ERA from stakeholders;
- 2) Western Power's response to a number of matters in the ERA's Issues Paper;
- 3) Western Power's response to a number of matters in Parsons Brinckerhoff Associates' report to the ERA, including evaluation of an additional alternative option;
- 4) Addendum to CRA's Evaluation Report; and
- 5) Addendum to HTC's Due Diligence Report.

2 Line Route Selection

Important note: *The matters in this document relating to line route selection apply only to the Eneabba-Moonyoonooka section of the line. The Pinjar-Eneabba section of line will utilise an existing line route and associated easements.*

Western Power, with the assistance of SKM, undertook a comprehensive investigation of line route options, including an extensive and thorough process of public consultation.

SKM's detailed report (3 volumes) is published on Western Power's website but was not included in the original submission. This document is now formally included in this supplement to the *major augmentation proposal*. The full document can be accessed at:

http://www.westernpower.com.au/mainContent/projects/currentProjects/eneabba/Final_Report.html

The Executive Summary is reproduced in Appendix 1 to this submission.

Other supporting information is included as follows:

Appendix 2 - Western Power Frequently Asked Question Document provided to all stakeholders and affected landowners (September 2007);

Appendix 3 – Information on 'Straight Line' Route;

Appendix 4 - Integral Sustainability's Peer Review report;

Appendix 5 - Community Engagement and Consultation milestones; and

Appendix 6 – Response to Stakeholder Letters to ERA.

2.1 Background

A total of 16 line corridor options were identified and comprehensively assessed with the assistance of stakeholders, including affected land owners and occupiers, government, industry and specialist groups.

The assessment used a “triple bottom line” (TBL) assessment methodology based on accepted sustainability principles. This is considered to be a “best practice” approach.

Sustainability Assessment

With the ratification of the UN ICLEI¹ TBL ('triple bottom line') standard for urban and community accounting in early 2007, this became the dominant approach to public sector full cost accounting (including economic, environmental, social and technical assessments). In 2004, the Department of the Premier and Cabinet for the Western Australian Government issued "The Sustainability Code of Practice for Government Agencies and Resource Guide for Implementation". The code states:

"The Government of Western Australia is committed to embracing sustainability as a fundamental driver towards a better future for all Western Australians." and "Clearly, government agencies have an important leadership role in delivering this goal through ensuring staff are encouraged to support sustainability and that sustainability informs planning, decision making and operations."

The code also specifically endorses the integration of the triple bottom line principles.

The corridor for the Eneabba to Moonyoonooka 330kv transmission line was chosen following a comprehensive Sustainability Assessment using a triple bottom line approach. Sustainability Principles for the corridor selection were developed with input from stakeholders including government, industry and specialist groups. The principles and criteria, agreed and rated by stakeholders in community workshops were used to assess and differentiate between the various corridor options. The full details of this process are provided in the attached SKM line route selection report.

2.2 Consultation Process

The role of stakeholders and details of the process of engagement are fully described in the SKM report (reference Section 4 in particular).

Key elements of the consultation process included:

- Three design parameter workshops were held in the Midwest and Perth to gauge initial high-level input into the entire project area including government authorities and departments and representative groups such as WA Farmers Federation, Local Shires, environmental groups and the Mingenew Irwin Group.

Of the 35 attendees, there were 5 (14%) representing agricultural interests and 9 (26%) local government representatives (some of whom were farmers).

¹ ICLEI was founded in 1990 as the International Council for Local Environmental Initiatives.

Western Power gave full consideration and regard to all opinions and information. This was in fact the purpose of these workshops. The information was included in the sustainability process that led to the identification of the 16 draft corridor options;

- Three community workshops were held in the Midwest to take comment, get input into project sustainability principles, into draft corridor options, and provide comment and mapping for the key constraints and opportunities in the project area.

Of the 131 attendees, there were 111 (85%) representing agricultural (farming) interests.

Western Power and Sinclair Knight Merz (SKM), its line route selection and sustainability assessment consultant, gave full consideration and regard to all opinions and information. This was the purpose of these workshops.

The community (not Western Power) determined the weighting (importance) of the social, environmental and economic sustainability principles at these workshops. The community then scored each principle. This information and mapping feedback was included in the sustainability process that contributed to the refinement of the 16 draft corridor options;

- Field officer Brian Logan met with 32 farmers (in groups and singly) after the Community Workshops. The information he obtained was also included in the corridor refinement process.
- Three special interest group (Aboriginal) workshops were held. The feedback and mapping in relation to heritage was incorporated into corridor refinement.
- Three sustainability assessment verification workshops were held with stakeholders and landowners who had already been involved in the process, to allow for comment and input into sustainability assessment scoring. Of these, 67% were farmers;
- Three information sessions to feedback the sustainability assessment results to the community, answer community queries and concerns, along with discussing the next steps, such as line route selection and a variety of investigations and surveys; and
- Numerous meetings were held throughout the entire process between potentially affected landowners and interested stakeholders with SKM and Western Power staff. This has included regular briefings with local politicians, Local Shires and interested individual landowners.

2.3 Response to Letters to the ERA from Stakeholders

Western Power takes this opportunity to provide a response to the matters raised in letters to the ERA from the following people:

- DC & BD Brindal, Affected landowner from Option 10, 13 August 2007.
- Mr G Snook MLA, Member for Moore, 14 August 2007.
- Mr Trevor De Landgraft, President WA Farmers Federation, 3 September 2007.

Western Power's responses are contained in Appendix 6.

2.4 Preferred Option

The assessment concluded that Option 10 was the optimum route choice, based on the agreed criteria.

Further detailed comments are provided below in relation to particular line route selection matters raised in the ERA issues paper.

2.5 Sustainability Assessment Peer Review

For further assurance, Western Power requested the company Integral Sustainability to conduct a peer review of the approach and methodologies applied in the line corridor selection process. The review had two main dimensions, namely:

- a technical review of the multi-criteria analysis (MCA) methodology used; and
- a review of the sustainability assessment approach taken in the context of international practice.

The report by Integral Sustainability is attached in Appendix 4. Integral Sustainability concluded:

"Western Power and SKM are to be commended on the corridor selection process. A sustainability assessment framework was utilised to assess and compare 16 potential transmission line corridors from Eneabba to Moonyoonooka in a highly consultative process."

Although the review does suggest that an alternative MCA technique may have been more appropriate, it also states:

"Very significantly for Western Power, alternative MCA analyses conducted as part of the peer review process demonstrated that despite the limitations of the analytical technique used, option 10 was clearly confirmed as being the best option."

2.6 Information on "Straight Line" Option

Understandably, some landowners potentially affected by the preferred transmission line corridor have expressed an interest in wanting the line to follow a straighter route, which could potentially be cheaper. Western Power has responded to this issue on several occasions and would like to reiterate that this is neither an optimum nor a practical option for a number of reasons.

Further detailed information on this matter is provided in Appendix 3.

3 ERA Issues Paper

Western Power provides the following responses and information to a number of items in the Issues Paper for which comment has been invited.

Item 21

Refer comments below in Section 4.1.

Item 35

In addition to the line route consultation (as described in Section 2 (above), Western Power conducted a public consultation process on technical aspects of the proposed augmentation and invited comments and submissions from interested parties on the proposal and alternative options. This process, and its outcomes, are detailed in the *major augmentation proposal*.

Western Power contends that, given the comprehensive engagement of landowners and other stakeholders in selection of the preferred line route, and the invitation for public submissions on alternative options to the transmission augmentation, all interested parties

were (clearly) provided with “a reasonable opportunity to state their views on the major augmentation proposal”.

Item 59 (points 1 & 2)

PB has affirmed in its report that the transmission augmentation options identified by Western Power represent a comprehensive set of options.

Particular related references are contained in the Executive Summary, Section 1.3 and Section 4 of PB’s report.

Item 59 (point 3)

Refer to comments in Section 2 above.

Item 68

Refer comments below in Section 4.1.

Item 70

It is noted that PB generally agree with Western Power’s assessment of each option, as evidenced by their comments in Table 2 of their report.

Item 74

It is noted that PB generally support Western Power’s assessment of each alternative option based on a net present cost and rank ordering approach.

The proximity of the proposed line route to existing and future users of the transmission line, both loads and generators, will influence the overall net benefits to users. This is factored into the line route sustainability assessment process itself. The results of this particular aspect of the assessment are shown in Appendix L of the SKM report.

Item 77

As illustrated in Appendix L of the SKM report, the assessed compensation to land owners and occupiers based on information provided to Western Power by the Valuer General’s Office is estimated to be in the order of \$2.5M for all options, with little or no material variation between options. Consequently, these costs are not of sufficient magnitude to affect the relative net benefits of the different options.

It is noted that, in Appendix A (a confidential appendix) of the *major augmentation proposal* submitted in October, Western Power has identified an amount of \$19.9M for “environmental services” associated with the preferred option. This amount includes the \$2.5M allowed for compensation (in the Eneabba-Moonyoonooka section of line), plus other associated land access costs including:

- Negotiation of detailed arrangements with owners/occupiers and ongoing liason;
- Acquisition of land and easements;
- Line route preparation (surveys, vegetation management, access);
- Management of construction issues.

This same total amount has been assumed for all the assessed options in the financial assessment.

4 PB Report

Western Power provides the following comments on a number of matters items in the PB report to the ERA.

4.1 The robustness of supply and demand forecasts

PB has suggested an alternative approach to forecasting. However, this is based substantially on continuation of historic load growth.

CRA has reaffirmed that the approach used by Western power results in, in their opinion, more realistic outcomes, given the unprecedented level of enquiries for new loads and major resource projects. Even under its lowest growth scenario (natural growth), Western Power data shows a need for 330kV augmentation by 2009/10, with limited potential to defer.

PB's suggested reduced forecast and consequential delay in reinforcement does not provide any certainty to the potential major regional block loads. Without reinforcement, the existing network cannot supply the needs of even one of the proposed major mining operations.

Further details of CRA's assessment are contained in their attached report in Appendix 7.

Important note: The forecasts provided in Western Power's *major augmentation proposal* were prepared in late 2006. It is noteworthy that the actual peak load in the mid-west area during the 2006/07 summer was 142.7 MW, compared with the forecast 132 MW i.e. an increase of 10.7 MW or 8% above the 2006 forecast. This would suggest that, if anything, Western Power's forecasts are conservative.

4.2 The completeness of the range of alternatives

PB has affirmed in its report that the transmission augmentation options identified by Western Power represent a comprehensive set of options. PB suggests that further consideration could be given to 132kV reinforcement options in conjunction with new anticipated generation, and some refinement of non-network options such as islanded operation and demand side measures such as interruptible contracts.

Alternative Options

Western Power has consequently undertaken the assessment of additional multiple 132kV network augmentation options with proposed generation at Dongara or Mungarra (4 x 42MW) and Eneabba (2 x 200MW). The additional options considered include:

- Option 2b: New ENB-GTN 132 kV line with local generation
- Option 2c: as for option 2b plus re-build PJR-RGN-CTB-ENB 132 kV line.
- Option 2d: as for option 2c plus rebuild NT-MUC-MOR-TS 132 kV line.

The findings of the technical assessment of these options are detailed in Appendix 9.

HTC was asked to validate Western Power's technical assessment of these cases and concluded that option 2d may be technically feasible to supply the central forecast demand up to 2014, in conjunction with an additional SVC – refer Appendix 2 for details.

However, CRA confirms that the cost of this option is substantially higher than the proposed 330kV augmentation – refer Appendix 1 for details.

Islanding Option

Two separate islanding scenarios have been alluded to. Firstly, islanding the whole Mid-West region from the SWIS at Three Springs, and secondly the development of a 3rd party transmission network.

Islanding the whole Mid-West region was considered under Option 11 in the *major augmentation proposal* but this scenario was discounted on the basis of non-compliance with Technical Rules and the Market Rules. Most fundamentally, the transmission network is a formally registered facility in Wholesale Electricity Market and creating an islanded portion of the network would fundamentally undermine the operation of the market. For example, Gindalbie made a Securities Exchange Announcement & Media Release on the 14 November 2007, stating it has reached a long-term agreement to purchase power from Verve Energy and is working with Western Power to establish connection to the SWIS. Islanding the Mid-West would obviously make this commercial arrangement unworkable.

An island supplying block loads on a 3rd party transmission system is a technically feasible alternative. However, there are no proponents of a private transmission system that have provided sufficient evidence of the likelihood of this option being successful. PB have stated that if such evidence cannot be provided then Western Power would be justified in assuming the prospective block loads will opt to connect to the Western Power grid. Even though there is no evidence of a private transmission network being developed, Western Power requested CRA to consider (at a high level) the likely economic costs which may be associated with such a development as could be required in the region (see section 4 of the CRA Addendum in Appendix 7). CRA concludes that the costs "are likely to be sufficiently high to render the proposal uneconomic".

Western Power consequently concludes that no islanding options are feasible for the envisaged development of the region.

Demand Side Management

The question has been asked if further demand side measures, such as interruptible contracts, could be found to enable delaying the project by one or more years.

CRA in its original review of the Western Power's *major augmentation proposal* stated:

"If Western Power were to implement DSM initiatives targeting all sectors in the NCR then 5% of peak demand would seem a reasonable working estimate of what could be achieved. A more modest program targeting just large commercial, industrial and mining customers, similar to the Peak Demand Saver, is likely to yield lower impacts."

Within a reasonable planning horizon, the regional peak demand is expected to more than triple. This is most substantially due to the expected connection of large industrial and mining loads and also generators. DSM at the retail level could consequently only be expected to have a minimal effect. Large loads such as mining operations can experience significant problems due to being tripped off such as having to restart mills and slurry

pipelines and, if tripped suddenly, large power stations risk significant damage to plant. Western Power's experience with large customers (particularly mining operations) is that they are very reluctant to enter into commercial interruptible arrangements with the level of reliability which could be expected.

Western Power believes there is no evidence to suggest that DSM can be effectively utilised in any customer group, either large or small, to the extent necessary to enable deferring the proposed major augmentation. Western Power consequently maintains its original position that DSM can not be used to defer the major augmentation without delaying the connection of new major customers.

4.3 Robustness of the 'net benefits' analysis

PB generally support Western Power's assessment of each alternative option based on a net present cost and rank ordering approach, noting that there are precedents for this approach in the National Electricity Market. PB also notes that Western Power has conducted a reasonable sensitivity analysis of input values.

However, PB points out that the relative fuel costs should be considered when comparing the 330kV and 132kV options. As described above, Western Power has subsequently evaluated 3 further 132kV options of which only 1 (Option 2d) met the requirements of the Technical Rules in the short term only. The cost of Option 2d alone is higher than that of the preferred option 1 and the assessment of differences in fuel costs is consequently not considered relevant.

5 Concluding Comments

Western Power trusts that the responses to the matters raised in the Authority's issues and the additional information provided in this supplementary submission demonstrate to the Authority's satisfaction that the proposed mid-west 330 kV transmission line satisfies the requirements of the Code for a major augmentation.

Appendix 1: SKM Report – Executive Summary

Appendix 2: Western Power Frequently Asked Question for Stakeholders

Appendix 3: Information on 'Straight Line' Route

Appendix 4: Integral Sustainability's Peer Review Report

Appendix 5: Community Engagement and Consultation Milestones

Appendix 6: Response to Stakeholder Letters to ERA

Appendix 7: Addendum to CRA Evaluation Report

Appendix 8: Addendum to HTC Due Diligence Report

Appendix 9: Technical Evaluation of Additional Alternative Reinforcement Options