

# Western Power's regulatory test application for the Picton South staged 132kV conversion

Issues paper

22 April 2020

Economic Regulation Authority

WESTERN AUSTRALIA

D213842

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## Invitation to make submissions

**Submissions are due by 4:00 pm WST, Friday, 8 May 2020.**

On 14 April 2020 Western Power submitted a regulatory test application for a proposed augmentation to the Picton South transmission network.

The ERA is seeking submissions from interested parties on the proposal. This paper identifies some of the issues the ERA will consider in its decision and is intended to assist interested parties to develop their submissions.

We would prefer to receive your comments via our online submission form <https://www.erawa.com.au/consultation>

You can also send comments through:

Email: [publicsubmissions@erawa.com.au](mailto:publicsubmissions@erawa.com.au)  
Post: PO Box 8469, PERTH BC WA 6849

Please note that submissions provided electronically do not need to be provided separately in hard copy.

All submissions will be made available on our website unless arrangements are made in advance between the author and the ERA. This is because it is preferable that all submissions be publicly available to facilitate an informed and transparent consultative process. Parties wishing to submit confidential information are requested to contact us at [info@erawa.com.au](mailto:info@erawa.com.au).

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# 1. Introduction

On 14 April 2020, Western Power submitted a regulatory test application for a proposed augmentation of the Picton South transmission network. The application was submitted under section 9.15 of the *Electricity Networks Access Code 2004*.

Before committing to this investment, Western Power must satisfy the regulatory test. This means Western Power must demonstrate to the Economic Regulation Authority that it has considered all reasonable alternative options, including non-network solutions such as demand-side management or generation, and that its proposed option maximises the net benefit to those who generate, transport and consume energy in Western Power's network.<sup>1 2</sup>

As part of its assessment of Western Power's proposal, the ERA is undertaking consultation with interested parties. The ERA has prepared this issues paper to help interested parties make submissions. In particular, the issues paper covers some of the significant issues the ERA must address to determine whether the regulatory test is satisfied, including:

- The requirements of the regulatory test under Chapter 9 of the Access Code.
- Key aspects of the proposed major augmentation.
- Western Power's public consultation process.
- The identification of alternative options.
- The assessment of net benefits of the proposed major augmentation and alternative options.

Western Power's proposal and associated documents are available on the ERA's website together with this issues paper.<sup>3</sup>

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<sup>1</sup> "Alternative options", in relation to a major augmentation, means alternatives to part or all of the major augmentation, including demand-side management and generation solutions (such as distributed generation), either instead of or in combination with network augmentation.

<sup>2</sup> "Net benefit" means a net benefit (measured in present value terms to the extent possible) to those who generate, transport and consume electricity in (as the case may be):

- (a) the covered network; or
- (b) the covered network and any interconnected system.

<sup>3</sup> <https://www.erawa.com.au/electricity/electricity-access/western-power-network/western-power-network-augmentations/2020-western-power-picton-south-staged-132kv-conversion-regulatory-test-proposal-by-western-power>

## 2. The regulatory test

The purpose of the regulatory test is to determine whether a proposed major augmentation to an electricity transmission and/or distribution network is the best way of overcoming constraints in the wider electricity system. The test considers other means of overcoming the constraints, such as alternative network investments, investment in generation or the management of electricity demand.

A service provider must not commit to a major augmentation before the ERA determines, or is deemed to determine, that the regulatory test is satisfied.

### 3. Regulatory test process

The process commences with the service provider submitting a “major augmentation proposal” to the ERA. This may occur either:

- Under section 9.10 of the Access Code, with the major augmentation proposal submitted as part of a proposed access arrangement, and the ERA’s determination of whether the regulatory test is satisfied forming part of the ERA’s decision on the proposed access arrangement.

or

- Under section 9.15 of the Access Code, with a major augmentation proposal submitted other than as part of a proposed access arrangement and the ERA’s determination on whether the regulatory test is satisfied being a determination separate from the approval proposal for a proposed access arrangement.

Western Power’s proposal has been submitted under the second of these two processes.

Section 9.16 of the Access Code establishes the requirements for a major augmentation proposal submitted to the ERA other than as part of a proposed access arrangement:

- 9.16 A major augmentation proposal submitted under section 9.15:
- (a) must describe in detail each major augmentation to which the major augmentation proposal relates; and
  - (b) must state that, in the service provider’s view, each proposed major augmentation maximises the net benefit after considering alternative options; and
  - (c) must demonstrate that the service provider has conducted a consultation process in respect of each proposed major augmentation which:
    - (i) included public consultation under Appendix 7; and
    - (ii) gave all interested persons a reasonable opportunity to state their views and to propose alternative options to the proposed major augmentations, and that the service provider had regard to those views and alternative options; and
    - (iii) involved the service provider giving reasonable consideration to any information obtained under sections 9.16(c)(i) and 9.16(c)(ii) when forming its view under section 9.16(b);

and
  - (d) must comply with the current requirements published under section 9.17 [and]
  - (e) may include a request that the Authority give prior approval under section 6.72 in respect of the new facilities investment for one or more proposed major augmentations.<sup>4</sup>

<sup>4</sup> As set out in section 1.3, “alternative options” means alternatives to part or all of the major augmentation, including demand side management and generation solutions (such as distributed generation), either instead of, or in combination with, network augmentation. “Net benefit” means a net benefit (measured in present value terms to the extent possible) to those who generate, transport and consume electricity in the covered network or the covered network and any interconnected system.

## 3.1 Satisfying the regulatory test

The requirements for major augmentation proposals submitted to the ERA outside the access arrangement process are set out in section 9.20 of the Access Code:

- 9.20 The test in this section 9.20 is satisfied if the Authority is satisfied that:
- (a) the service provider's statement under section 9.16(b) is defensible; and
  - (b) the service provider has applied the regulatory test properly to each proposed major augmentation:
    - (i) using reasonable market development scenarios which incorporate varying levels of demand growth at relevant places; and
    - (ii) using reasonable timings, and testing alternative timings, for project commissioning dates and construction timetables for the major augmentation and for alternative options;
- and
- (c) the consultation process conducted by the service provider meets the criteria in section 9.16(c).

## 3.2 Regulatory test assessment

Section 9.18 of the Access Code establishes the timeframes for a determination by the ERA on whether the regulatory test is satisfied or not satisfied:

- 9.18 The Authority must in respect of a major augmentation proposal submitted under section 9.15 make and publish a determination whether the test in section 9.20 is satisfied or not satisfied, and must do so:
- (a) if the Authority has consulted the public under section 9.19 – within 45 business days; and
  - (b) otherwise – within 25 business days, after receiving the augmentation proposal.

If the ERA has not published its determination within the time limits under section 9.18 of the Access Code, it is deemed, under section 9.22 of the Access Code, to have determined that the regulatory test is satisfied.

The ERA's role is to consider the information provided by a service provider in the major augmentation proposal and to determine whether the regulatory test set out in section 9.20 of the Access Code is satisfied. Section 9.21 of the Access Code places the onus on the service provider to demonstrate that the regulatory test is satisfied.

If the Authority is unable to determine whether the test set out in section 9.20 is satisfied or is not satisfied because the service provider has not provided adequate information (despite the Authority having notified the service provider of this fact and given the service provider a reasonable opportunity, having regard to the time periods specified in section 9.18, to provide adequate information), then the Authority may determine that the test in section 9.20 is not satisfied.

The ERA's role ends with the determination of whether the regulatory test is satisfied or not satisfied. If the latter determination is made, the ERA does not have a role to amend the major augmentation proposal or to make any determination on the alternative option that may maximise net benefits.

## 4. Western Power's proposed major augmentation

The Picton South network is a sub-network of the Bunbury load area and supplies approximately 46,000 residential, commercial, industrial and agricultural electricity customers across Picton and Augusta.

Western Power's options paper, published as part of its consultation process, describes some of the issues that it is seeking to address.

The Picton South network is one of the few remaining pockets of Western Power's network still operating at a 66 KV transmission voltage. A significant number of these assets are approaching or have already exceeded their expected replacement life, with many assets also in degraded condition, resulting in multiple safety, reliability of supply and system security risks that have triggered the need for network development within the Picton South region.<sup>5</sup>

The proposed augmentation comprises:

By 2022:

- Uprate of the Picton-Capel/ Westralian Sands 71 line to support future energisation at 132kV including:
  - Upgrade electrical fittings and post insulators to 132kV specification; and
  - 2.5km of earthwire along the Picton-Capel 71 and 72 line circuits.
- Transfer Westralian Sands 66kV tee-line from Picton-Capel/Westralian Sands 71 to Picton-Capel 72 transmission line via the construction of a new 3km 132kV rated (energised at 66kV) wood pole single circuit with 'Lemon' conductors.

By 2023:

- Extension of the existing 132kV busbar at Busselton substation, including a new 132kV disconnecter.
- Installation of a new 132kV Tx bay and 100MVA 132/66/22kV transformer at Busselton substation.

By 2024:

- Installation of a static and dynamic reactive support at Busselton substation including:
  - Install 1 x (+/-) 12MVAR of dynamic reactive support devices (i.e. STATCOM) and associated step-up transformer equipment.
  - Install 10MVAR capacitors and associated plant on 22kV tertiary winding of new Busselton 132/66kV transformer.

Western Power estimated nominal capital costs of \$38.2 million, inclusive of project on costs, risk allowances and escalation.

The proposed augmentation is the first stage of a longer-term strategy to develop the Picton South network. Western Power's proposal states that completing the first stage of work:

addresses the system security and supply risk to the Picton South region due to a single Picton terminal transformer contingency. The network will also achieve N-1 compliance and the maximum supportable demand at Busselton and Margaret River

<sup>5</sup> Western Power, 2020, *Major Augmentation Proposal Options Paper Picton South Transmission Reinforcement*, p. vii.

will increase from 46 MW to 70 MW to ensure the forecast demand is met over the long term.<sup>6</sup>

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<sup>6</sup> Western Power, 2020, *Major Augmentation Proposal Regulatory Test Submission Picton South Transmission Reinforcement*, p. 9.

## 5. Consultation undertaken by Western Power

### 5.1 Requirements of the Access Code

The requirements for Western Power to undertake public consultation on the major augmentation proposal are set out in section 9.16(c) of the Code:

- 9.16 A major augmentation proposal submitted under section 9.15:
- (c) must demonstrate that the service provider has conducted a consultation process in respect of each proposed major augmentation which:
    - (i) included public consultation under Appendix 7; and
    - (ii) gave all interested persons a reasonable opportunity to state their views and to propose alternative options to the proposed major augmentations, and that the service provider had regard to those views and alternative options; and
    - (iii) involved the service provider giving reasonable consideration to any information obtained under sections 9.16(c)(i) and 9.16(c)(ii) when forming its view under section 9.16(b);

Appendix 7 of the Access Code establishes the following requirements on Western Power when undertaking consultation on the major augmentation proposal:

- Publication of an invitation for submissions (section A7.6 of the Access Code).
- Specification of the length of time allowed for the making of submissions that must be at least 10 business days and no greater than 20 business days (sections A7.7 and A7.9 of the Access Code).
- Publication of submissions received (section A7.20 of the Access Code)

Appendix 7 also allows, but does not require, Western Power to:

- Produce and publish an issues paper examining the issues relating to the major augmentation proposal (section A7.4 of the Access Code).
- Consider any submissions made after the time for making that submission has expired (section A7.21 of the Access Code).

### 5.2 Consultation undertaken by Western Power

On 3 February 2020, Western Power published an options paper that included background on existing asset condition issues, peak demand forecasts and planning drivers for the Bunbury Load Area, specifically the Picton South sub-network.

The options paper described five alternative development strategies for the Picton South network, identified Western Power's preferred development strategy and provided analysis supporting this preference after considering a range of criteria that included net present cost.

Western Power held industry and community forums in Perth on 17 February 2020 and Bunbury on 19 February 2020 to provide further details to key stakeholders and allow for feedback on the proposal.

Western Power received four submissions during the public consultation period, which closed on 28 February 2020. Western Power included a summary of the feedback received in its public consultation process and its responses on each item in its proposal.

Western Power's proposal stated:

Following a comprehensive review of the submissions received, Western Power does not propose to make any modifications to the original recommendation (Development Strategy two) as outlined in the options paper.<sup>7</sup>

### Questions

The ERA invites 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.

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<sup>7</sup> Western Power, 2020, *Major Augmentation Proposal Regulatory Test Submission Picton South Transmission Reinforcement*, p. 9.

## 6. Identification of alternative options

### 6.1 Requirements of the Access Code

Under Section 9.16(b) of the Access Code, Western Power is required to have considered alternative options to the proposed staged 132kV of the Picton South network.<sup>8</sup>

### 6.2 Alternative options identified by Western Power

Western Power has considered five longer term development strategies for the Picton South network, as set out in Table 1. The proposed augmentation subject to this regulatory test application is the first stage of development strategy two.

The first three strategies follow a traditional network investment approach and are intended to convert the Picton South network to operate at 132kV. Options four and five combine non-network solutions with asset replacement and retention of the existing 66kV operating voltage and asset base.

**Table 1**      **Reproduction of Western Power’s financial assessment and network benefits<sup>9</sup>**

| # | Description   | Total NPC (\$M) | Asset Rationalisation –<br>Relative to Picton South 66kV asset base (+/) |         |         |            |              |              |                  | Max Supp. Demand | Strategic Alignment (Yes/No) |
|---|---|-----------------|--|---------|---------|------------|--------------|--------------|------------------|------------------|------------------------------|
|   |   |                 | STATCOI  | Capbank | Reactor | TerminalTx | SubstationTx | PrimaryPlant | TransmissionLine |                  |                              |
| 1 | Accelerated 132kV conversion                              | 156.1           | ↑<br>1   | ↑<br>2  | -<br>0  | ↓<br>1     | ↓<br>5       | ↓<br>75      | ↓<br>91km        | 84MW             | Yes                          |
| 2 | Staged 132kV conversion - Busselton terminal transformer  | 143.6           | ↑<br>1   | ↑<br>2  | -<br>0  | ↓<br>1     | ↓<br>5       | ↓<br>75      | ↓<br>51km        | 84MW             | Yes                          |
| 3 | Staged 132kV conversion - Picton terminal transformer     | 148.9           | ↑<br>1   | ↑<br>2  | -<br>0  | ↓<br>1     | ↓<br>5       | ↓<br>75      | ↓<br>51km        | 84MW             | Yes                          |
| 4 | Retain 66kV network – Procure NCS                         | 174.1           | -<br>0   | -<br>0  | ↑<br>1  | -<br>0     | ↓<br>3       | ↓<br>11      | -<br>0           | 76MW             | No                           |
| 5 | Retain 66kV network – Install additional reactive support | 161.5           | ↑<br>1   | ↑<br>2  | -<br>0  | -<br>0     | ↓<br>3       | ↓<br>11      | -<br>0           | 73MW             | No                           |

<sup>8</sup> “Alternative options” is a defined term in the Access Code and in relation to major augmentation, means alternatives to part or all of the major augmentation, including demand-side management and generation solutions (such as distributed generation), either instead of or in combination with network augmentation.

<sup>9</sup> Table 3.1 in Western Power’s Major Augmentation Proposal Regulatory Test Submission.

## Questions

The ERA invites submissions from interested parties on whether Western Power:

- Identified a relevant set of alternative options on the proposed augmentation.
- Gave reasonable consideration to the alternative options proposed by interested parties in submissions made as part of Western Power's consultation process.

## 7. Assessment of net benefits

Western Power describes its process for assessing net benefits as follows:

The five development strategies identified were evaluated based on the following selection criteria in addition to satisfying the network investment drivers:

- Lowest net present cost;
- Asset rationalisation aligned with Western Power's 66 kV asset strategy;
- Maximise the net benefit for network Users;
- Provides maximum additional capacity benefit to the Picton South subnetwork of the Bunbury load area;
- Robust against future variations in:
  - Electricity demand;
  - Estimated cost based on building blocks; and
  - Financial parameters used in Western Power's Investment Evaluation Model (IEM).

Development Strategy 2 is the recommended investment pathway that meets all the required performance standards and satisfies the selection criteria and investment drivers.<sup>10</sup>

### Questions

The ERA invites submissions from interested parties on:

- The reasonableness of the assumptions and approach applied by Western Power in the assessment of net benefits.
- Whether the preferred option selected by Western Power maximises the net benefit after considering alternative options.

<sup>10</sup> Western Power, 2020, *Major Augmentation Proposal Regulatory Test Submission Picton South Transmission Reinforcement*, p. 8.

## Appendix 1 List of Tables

**Table 1      Reproduction of Western Power’s financial assessment and network benefits**