Alternative Options Strategy

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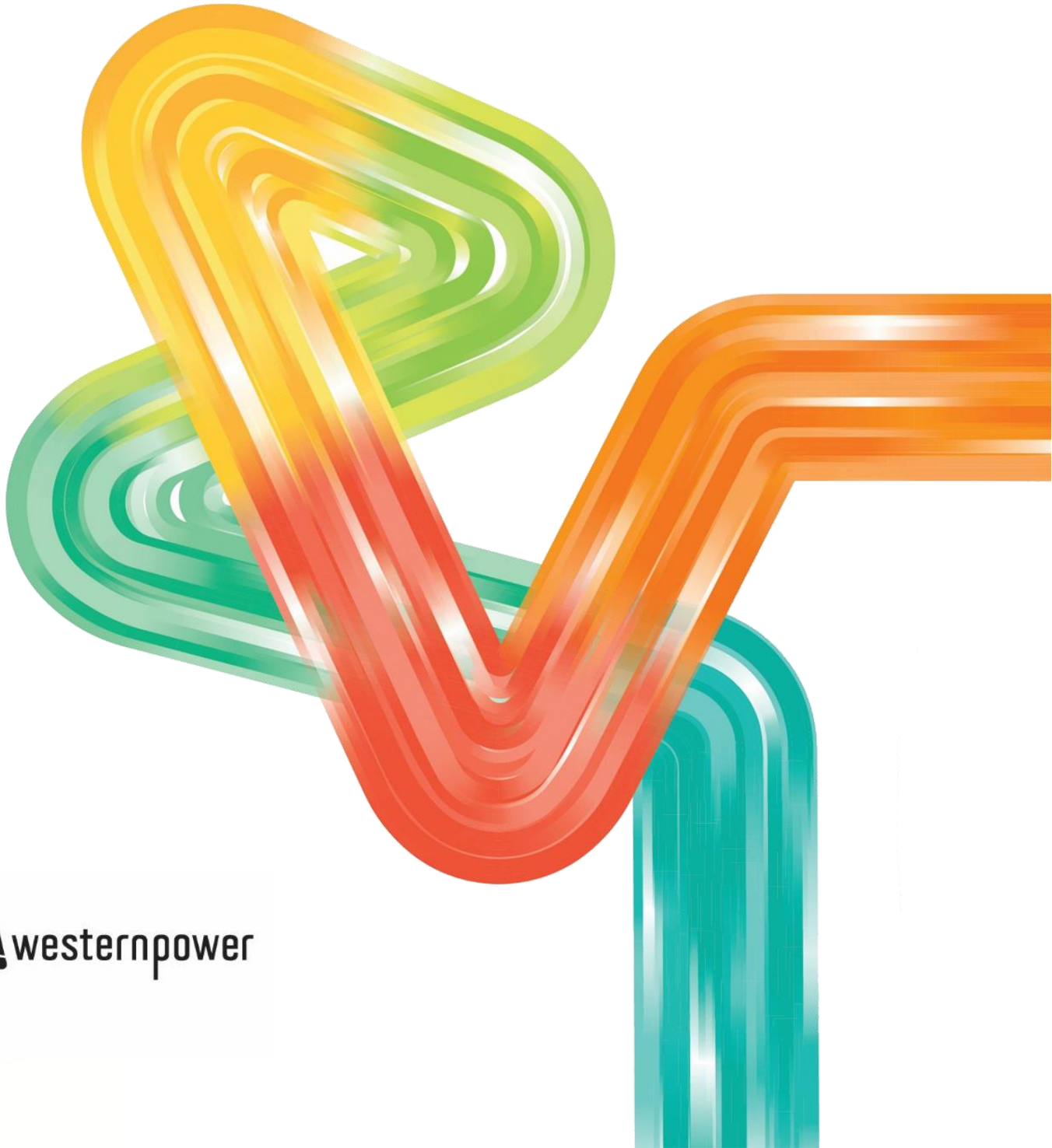

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Alternative Options Strategy 2021

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The information contained in the AOS is subject to biennial review. As required by section 6A.4(c) of the *Electricity Network Access Code 2004*, Western Power must review and publish a revised alternative options strategy by no later than 1 October, which must be updated at least once every 2 years.

Further Information can be found at:

www.westernpower.com.au/network-opportunity-map

Contents

Abbreviations

The following table provides a list of abbreviations and acronyms that have been used throughout this document.

Abbreviation	Meaning
PV	Photo-voltaic
SPS	Stand-alone Power System
Access Code	Electricity Networks Access Code 2004 and any amendments
NOM	Network Opportunity Map webpage www.westernpower.com.au/network-opportunity-map
AOS	Alternative Options Strategy (this document)
NSP	Network Service Providers
NOM2021	Network Opportunity Map 2021 document on NOM webpage
kVA	kilo Volt Amps
kWh	kilo Watt hours

1. Introduction

Western Power strives to be a community-oriented organisation that provides a safe, reliable and efficient electricity supply to Western Australians. Western Power's approach to alternative options aims to promote efficient investment in, and efficient operation and use of, electricity assets for the long-term interests of consumers.

Alternative options play a critical role in ensuring that Western Power harnesses the potential value of its customer base and 'non-network' technologies in meeting its obligations to maintain electricity supply in an economically efficient manner, while enhancing customer choice and maintaining power system quality, reliability, security and safety.

While the historical annual growth rate of peak demand on Western Power's network has slowed, there are nevertheless emerging limitations on the transmission and distribution networks that arise over the five-year outlook and beyond.

The increasing penetration of photo-voltaic (**PV**) systems has resulted in a reduction in daytime load and lowered network utilisation. However, the penetration of PV systems has not reduced the residential evening peak. Without proper coordination, the increasing PV penetration will create challenges on multiple fronts such as power quality performance, reliability performance, network control and operations and lower network utilisation due to lower network transported energy level during daytime hours.

These challenges present increased opportunities for the deployment of alternative options. Opportunities for alternative options may arise as a way of managing the increased uncertainty facing network service providers and avoiding investment in significant network augmentations which may become stranded in a relatively short period of time.

There is significant benefit to be gained in utilising existing and emerging technology for network application in the form of microgrids, stand-alone power systems (**SPS**), renewable based distributed generators, and load shifting to manage peak and low demands which will assist in:

- reducing asset replacement volumes
- limiting the size of the network to efficiently service our customers
- maintaining or improving network security and reliability
- lowering network expenditure.

Western Power is committed to continue developing its capability in the delivery and implementation of measures that will avoid the construction of costly new network infrastructure, whilst concurrently improving asset utilisation. This requires an ability to not only reduce load at peak demand times, and increase load at system low demand times, but also to accommodate increasing amounts of non-dispatchable renewable generation.

1.1. Context

On 18 September 2020, the Electricity Networks Access Code 2004 (**Access Code**)[1] was amended to include Chapter 6A which sets out requirements on Western Power which include establishing a Network Opportunity Map (**NOM**) and an Alternative Options Strategy (**AOS**).

Western Power is required to publish a NOM by 1 October each year in accordance with Chapter 6A, "Alternative options", of the Access Code. As required by section 6A.4(c) of the Access Code, Western Power must review and publish a revised AOS by no later than 1 October, which must be updated at least once every 2 years.

The definition of "alternative options" in the Access Code is, as at 18 September 2020, as follows:

> *"alternatives to part or all of a major augmentation or new facilities investment, including stand-alone power systems, storage works, demand-side management and generation solutions (such as distributed generation), either instead of or in combination with network augmentation."*

This AOS is to be read in conjunction with the NOM[2]. The first iteration of NOM will take form of a webpage on Western Power's public website.

1.2. Purpose

The Network Opportunity Map has three distinct purposes:

- To provide a snapshot of the challenges, risks and constraints emerging on the network over the planning period (5 years) and in the foreseeable long term (10 years);
- To give all customers, industry and market participants an opportunity to anticipate network needs and proactively take part in providing alternative solutions to those traditionally available to Network Service Providers (**NSP**);
- To outline how Western Power will seek out, evaluate and engage with the interested parties in developing alternative solutions to network constraints.

The purpose of this Alternative Options Strategy is to give potential service providers of alternative options with the following information as required by section 6A.5 of the Access Code:

(a) a description of how the service provider will investigate, develop, assess and report on potential alternative options including references to the network opportunity map (if relevant);

(b) a description of the service provider's process to engage and consult with potential providers of alternative options to determine their level of interest and ability to participate in the development process for potential alternative options;

(c) an outline of the process followed by the service provider when negotiating with providers of alternative options to further develop potential alternative options;

(d) an outline of the information a provider of alternative options is to include in a proposal for alternative options, including, where possible, an example of a best practice alternative options proposal;

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1 https://www.wa.gov.au/sites/default/files/2020-09/Electricity%20Networks%20Access%20Code%20-%20Unofficial%20Consolidated%20Version%20-%2018%20September%202020.pdf

2 https://www.westernpower.com.au/network-opportunity-map

(e) an outline of the criteria that will be applied by the service provider in evaluating alternative options proposals including by reference to the network opportunity map (if relevant);

(f) an outline of the principles that the service provider considers in developing the payment levels for alternative options;

(g) a reference to any applicable incentive schemes for the implementation of alternative options and whether any specific criteria is applied by the service provider in its application and assessment of the scheme;

(h) worked examples to support the description of how the service provider will assess potential alternative options in accordance with paragraph (a) above;

(i) a hyperlink to any relevant, publicly available information produced by the service provider;

(j) a model alternative option service contract that provides a framework agreement for the service provider to negotiate alternative options;

(k) the amount of alternative options costs incurred since publishing the previous alternative options strategy;

(l) a description of how parties may be listed on the vendor register; and

(m) the service provider's contact details.

1.3. Network description

Descriptions of Western Power's transmission and distribution networks are provided in the Network Opportunity Map 2021 (**NOM2021**) document, available on the NOM webpage under Related Info.

2. Objective

The key objective of this Strategy is to support the proactive engagement between Western Power and the market to seek least cost solutions to network issues in order to keep network costs as low as possible for customers.

The above objective is consistent with Western Power's Corporate Strategy. Our 10-year strategy will assist the 2.3 million Western Australians who want more **reliable** and increasingly **renewable** electricity at a **fair price**, **keeping costs low** and for us to manage a robust network that supports future economic opportunities and **jobs** in our State.

The objective also supports Western Power's Grid Strategy which has the high-level objective to:

> *"Manage systems across their lifecycle to deliver an optimal balance of cost, performance and safety while satisfying short and long-term expenditure constraints and minimising constraints on customer choice."*

3. Development of potential alternative options

Western Power continually assesses the current and projected performance of the network from asset condition, reliability, voltage, utilisation, protection and power quality points of view.

Performance is assessed against network and asset objectives, Technical Rules[3], expected generation scenarios, capacity, power quality, reliability, condition of the existing assets, forecast of the future performance and other relevant requirements. The output of this step is a list of network capability and asset issues that need to be addressed.

Following the identification of the issues, Western Power develops a series of options to address the emerging issues and limitations in the network. The option analysis includes an assessment of 'traditional' network options and alternative options. A description of the end-to-end network planning process is provided in the NOM.

It is important that Western Power's options analysis is supplemented by seeking alternative options from potential providers. Hence, a key outcome of the planning process is a list of potential opportunities which are published annually in the NOM. This list provides providers with notification of potential opportunities so that they can begin to proactively develop alternative solutions to those traditionally pursued by Western Power to address network issues.

When it is necessary to begin detailed planning to address a specific network issue(s) in order to meet the required date of need (i.e. required in-service date or RIS), Western Power will commence a procurement process (which may start with requesting expressions of interest or proceed straight to a request for proposal/tender) by providing details on Western Power's NOM web page[4]. Details will include a procurement package with information for potential providers to assess the network support required and develop initial proposals. The procurement package will also be provided directly to potential providers who have already registered via the Alternative Options Vendor Register (please refer to section 13 of this Strategy).

Key steps in the notification of opportunities for, and procurement of, alternative options are shown in Figure 3.1.

Vendor Participation Pipeline

Figure 3.1: Vendor participation pipeline

Providers are welcome to contact Western Power to discuss information in the NOM and their initial thoughts on proposals to address network issues. Western Power's contact details are set out in Section 14 of this Strategy. Providers are encouraged to register to receive communications from Western Power

[3] Approved Technical Rules - Economic Regulation Authority Western Australia (erawa.com.au)

[4] https://www.westernpower.com.au/network-opportunity-map

regarding opportunities to provide alternative solutions by completing the vendor registration form on the NOM web page. Please refer to section 13 of this Strategy for details.

4. Process for engaging and consulting with potential providers of alternative options

As part of the process outlined in Section 3, Western Power has set up an Alternative Options Vendor Register (Register) by which parties can register to be notified of developments relating to network planning and expansion. Please refer to section 13 of this Strategy.

All parties on the Register will be invited to submit proposals in response to an alternative options procurement event which detail their solutions for addressing network issues when requested by Western Power.

Western Power will contact the interested parties to progress the procurement event as outlined in section 3 of this Strategy.

5. Process for negotiating with providers of alternative options

The following describes, at a high level, the process for negotiating with providers of alternative options during a procurement event.

Contract negotiations include:

- Commercial departures from the Terms and Conditions of the request for proposal/tender;
- Technical departures from the Technical Specification or Scope;
- Normalisation of proposal pricing;
- Any other relevant issues.

The Western Power negotiation team will identify issues that require further discussion with the short-listed vendor/tenderer(s). All negotiations will be documented and a record of proceedings agreed by both parties.

Should negotiations with a vendor/tenderer(s) be successful to the negotiation team's satisfaction, the team will recommend that a contract be entered into. Should negotiations with any vendor/tenderer(s) not be successful, the negotiation team may recommend selecting another vendor/tenderer(s) for further consideration, or the procurement process may be terminated and Western Power may then proceed to implement a network solution.

6. Information to be included by a provider in a proposal

6.1. Technical and pricing information

Providers should submit a detailed submission to assist Western Power in the assessment of alternative options. The information required to be included by providers in their proposals will be set out in a procurement package. Information required typically includes:

- Proponent name and contact details;

- An opening statement that describes the proposal and the extent to which it addresses the identified need as set out in the procurement package;
- For submissions involving installation of products or technology, a technical description, including but not limited to:
    - Location;
    - Size of the load reduction/increase (as applicable), or additional supply capacity offered;
    - Electrical layout schematics (if applicable);
    - Network connection requirements (if applicable);
    - Contribution to power system security or reliability;
    - Contribution to power system fault levels and load flow and stability studies (if applicable);
    - The operating profile of the proposed solution;
    - Reliability of the proposed solution;
    - How each of these matters is consistent with the Western Power technical specification/scope and statutory requirements[5];
- Implementation timeline and key milestones;
- Measurement and verification procedures;
- Proposed operational and contractual commitments, including financier commitments;
- Itemised investment proposal including but not limited to:
    - Cost of solution (e.g. $/**kVA**, $/**kWh**, etc.) to reduce/increase (as applicable) demand;
    - Customer incentive payment scheme (if applicable)
- Potential risks associated with the proposal and comparison with the risks associated with the deferred augmentation, and any actions that can be taken to mitigate these risks. This should address the risk of not meeting the demand requirement and how any penalties for non-supply will be addressed;
- Testimonials; and
- Any other information requested by Western Power.

Western Power will review each alternative option proposal and may seek further information from the proponent to better understand the design of the proposed solution and its impacts on the network and other network users.

The Access Code requires Western Power to provide, where possible, an example of a best practice alternative options proposal. Western Power will endeavour to provide such an example in future versions of this Strategy.

6.2. Safety, environmental and other considerations

At Western Power, we pride ourselves on the way we respect and take care of each other and our community; key to this is our Safety First value. It's non-negotiable - put simply, if it's not safe we don't do it.

[5] Some, but not all, of these standards and requirements can be found at: https://www.westernpower.com.au/industry/manuals-guides-standards/ . Specific requirements will be set out in the Western Power technical specification/scope for each procurement event.

Western Power will only engage in products and services which have been subjected to robust risk management processes and can demonstrate risks are managed to ALARP[6]. We expect product design to ensure inherent safety and apply human factor considerations to the associated installation and maintenance requirements. As a minimum, the delivery of services must be in accordance with Western Power's Safety, Health and Environmental requirements for Contractors and the related Health and Safety management procedures.

In addition to site specific environmental management measures, general environmental considerations for alternative options include asset placement and retrofitting within established urban areas and communities, management of soil and groundwater impacts, noise emittance and associated abatement measures, fire risk management including hazard separation, visual amenity land impact, and end of life recycling are all crucial components in the design and planning of distribution storage options across the network.

Western Power's environmental management procedures and guidance notes, including the safety, health and environment requirements for contractors guideline outline Western Power's expectations when planning a project. With an emphasis on sustainable delivery of whole system optimisation, it is an expectation that the aforementioned considerations will accompany alternative options proposals presented to Western Power.

Further information for suppliers on safety, environmental and other considerations can be found on Western Power's website[7].

6 As low as reasonably practicable

7 https://www.westernpower.com.au/suppliers/

7. Criteria to be applied to evaluate alternative options proposals

The objective of the assessment process is to select the vendor/tenderer(s) whose offer best satisfies the selection criteria and represents best value for money for Western Power.

The vendor/tenderer(s) will be ranked against a series of weighted selection criteria as outlined in the below example. The criteria and their weightings are carefully selected to reflect the critical requirements of the procurement event and the projects for which alternative options services will be sourced.

[EXAMPLE ONLY]

Mandatory Criteria

Statement of Criteria:	**Weighting %**
Safety, Health and Environment	PASS/FAIL

Technical Qualitative

Statement of Criteria:	**Weighting %**
Compliance with Technical Specification	
Technical Quality Assurance and Management.	
Total	

Qualitative Assessment

Statement of Criteria:	**Weighting %**
Relevant Experience & Track Record	
Capability & Capacity	
Quality Management System	
SHE performance	
Programme Strategy	
Local Content	
Total	

Vendor/tenderer(s) that are not technically compliant will not proceed to the Qualitative Assessment. The Qualitative Assessment will be used to qualify vendor/tenderer(s) to short-listing.

Shortlisted tenderers/vendor(s) may then be invited to take part in presentations and a due diligence review.

The due diligence review may include:

- Financial due diligence
- Reference checks
- Site audits
- Overall risk assessment of the proposal.

The Quantitative Assessment will take the form of a value for money assessment. Value for money is a key Western Power objective to ensure that when purchasing products or services we achieve the best possible outcome for every dollar spent. This is achieved through assessing the overall costs and benefits to

Western Power and the community, considering price, economic, environmental and social benefits, rather than simply selecting the lowest purchase price.

An outline of a simple worked example of the assessment of potential alternative options is provided in Appendix A.

8. Principles considered in developing the payment levels for alternative options

The following key principles will be considered in developing the payment levels for alternative options:

- In assessing the overall costs and benefits to Western Power and the community, the value for money assessment will focus on the best outcome considering price, economic, environmental and social benefits, in addition to qualitative, risk and technical requirements of both network and alternative options. The assessment will include consideration of the annual deferral value of the network option proposed by Western Power (please refer to the NOM for further details).
- The Access Code contains a number of tests to assess the prudence and efficiency of capital and operating expenditure[8]. These tests apply to network and alternative option solutions equally and will be applied to ensure that investments are economically efficient and provide the best value to customers.

9. Applicable incentive schemes for the implementation of alternative options

At the time of writing this Strategy, there were no applicable incentive schemes for the implementation of alternative options. Western Power will publish details of any applicable schemes in future versions of this strategy and/or on the NOM web site.

10. Publicly available information on alternative options

The following information relevant to alternative options is publicly available:

Network opportunity map: www.westernpower.com.au/network-opportunity-map

11. Model alternative option service contract

A model alternative option service contract, that provides a framework agreement for Western Power to negotiate with a provider for the provision of alternative options, is available on the NOM web page.

12. Amount of alternative options costs incurred since publishing the previous alternative options strategy

As this is the first version of the Alternative Options Strategy, this section was not applicable at the time of writing. Future versions of the Strategy will provide the required information. It is envisaged that this report will be also used to cover off on any outstanding reporting requirements under items 6A.5(a) and where required, item 6A.2(k)(ii).

8 Sections 6.40, 6.41 and 6.51 of the Access Code

13. How to be listed on the vendor register

Western Power's vendor register is an engagement facility by which parties can register to be notified of developments related to network planning and expansion, and associated opportunities to provide alternative options. In conjunction with information in the NOM2021 and on the NOM web page, the vendor register will also enable Western Power to provide reports on potential alternative options directly to those registered.

Parties wishing to register can find the Vendor NOM Register on Western Power's web site via the following link: www.westernpower.com.au/network-opportunity-map

14. Western Power's contact details

Western Power's contact details for enquiries relating to alternative options and this Strategy are as follows:

- Head office: 363 Wellington Street, Perth WA Australia 6000
- Postal address: GPO Box L921, Perth WA Australia 6842
- Email address for alternative options enquiries: Network.Opportunities@westernpower.com.au
- Telephone: 13 10 87
- Web site: www.westernpower.com.au/contact-us/ or www.westernpower.com.au/network-opportunity-map
- Enquiries sent by post are to be addressed to the Head of Grid Transformation.

Appendix A – Worked example of the assessment of potential alternative options

An outline of a simple worked example to support how Western Power will assess potential alternative options is provided in this Appendix. More detailed worked examples are expected to be provided in future versions of this Strategy. Please contact Western Power for any queries relating to this example. Contact details can be found in Section 14 of this Strategy.

Following the receipt of submissions from vendors in response to a procurement event, the submissions will be assessed against the criteria in Section 7 of this Strategy, noting that the criteria in Section 7 are generic and specific criteria will be set for each individual opportunity. In the example below, for simplicity, it is assumed that only one alternative option submission has met the criteria and it is then assessed against network options (again, for simplicity, it is assumed that only one viable network option exists).

A typical summary of an options assessment found in a Western Power business case is as follows[9]:

Table: Summary of Options Analysis

#	Option	Net Present Cost ($M)	Nominal CAPEX Cost ($M)	Nominal OPEX Cost ($M)	Technically feasible & meets all assessment criteria	Mitigates network risk	Deliverable by required date
1	Do nothing	Not financially assessed	Not financially assessed	Not financially assessed	✗	✗	✓
2	Network option (e.g. Build a new zone substation by summer 2022)	30	20	Nil	✓	✓	✓
3	Alternative option (e.g. Demand management by summer 2022 and network option as per Option 2 deferred by one year to summer 2023)	25	Nil	0.2	✓	✓	✓

Although Option 2 and Option 3 both meet the requirements of the assessment criteria, it is noted that the investment pathway associated with Option 3 has a lower Net Present Cost (NPC) than Option 2.

Therefore, Option 3 is the recommended option.

[9] All values in the table are hypothetical and are for illustrative purposes only.