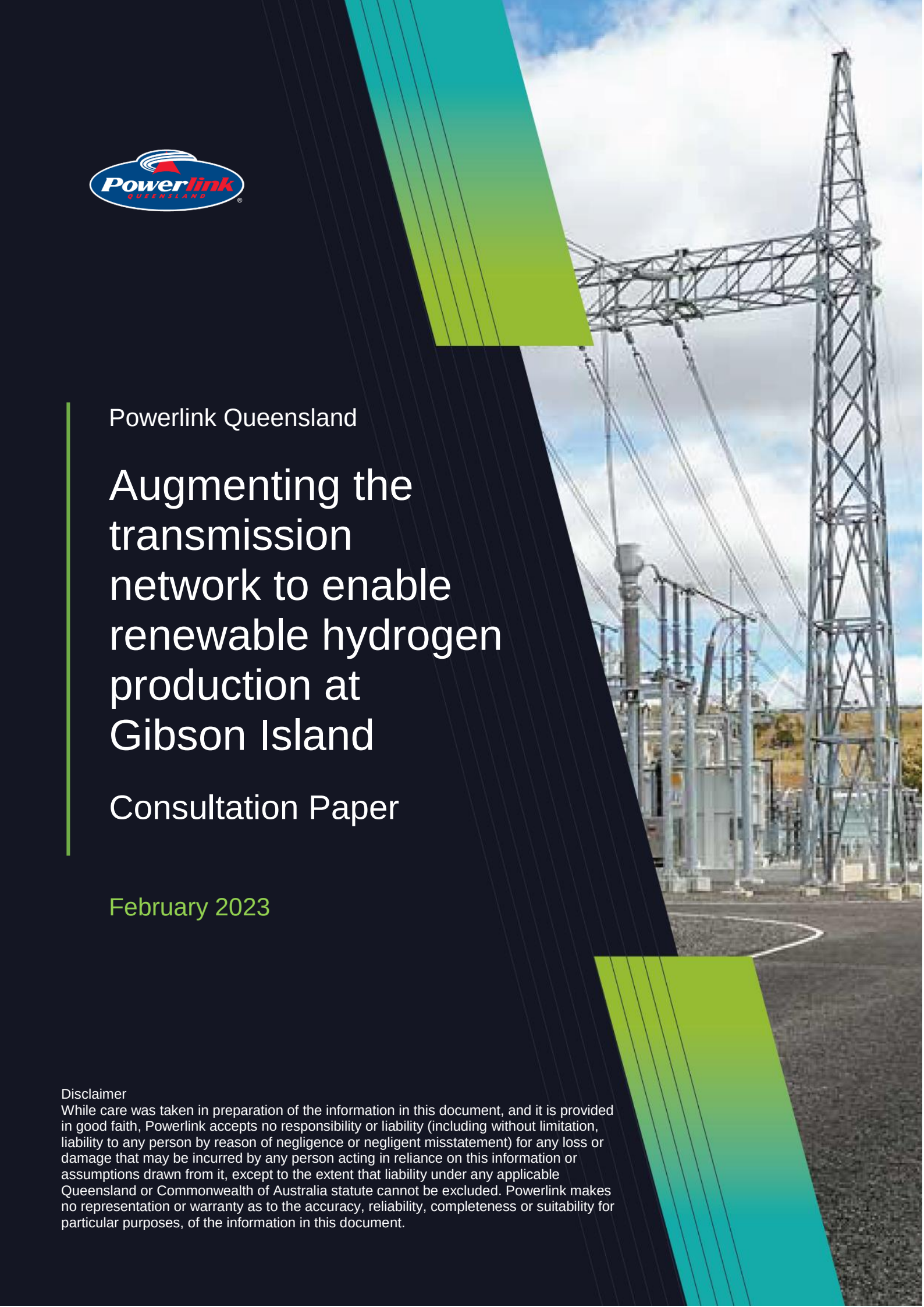


Powerlink Queensland

Augmenting the transmission network to enable renewable hydrogen production at Gibson Island

Consultation Paper

February 2023

Contents

KEY HIGHLIGHTS

- The landscape of the energy system in Queensland is shifting to one underpinned by clean, sustainable and affordable renewable energy. A new industry based on hydrogen is also emerging in Queensland.
- This consultation provides details of, and calls for submissions on the proposed transmission network augmentation scope of works required to enable the anticipated production of renewable hydrogen at Gibson Island.
- As the proposed developmental works will be paid for by the project proponent, Fortescue Future Industries (FFI), Powerlink is undertaking a funded augmentation consultation in accordance with the National Electricity Rules (Rules).
- It is anticipated that the proposed development of renewable hydrogen production at Gibson Island could
  - support customers and the community by delivering positive social, environmental and economic benefits
  - help safeguard manufacturing jobs in Queensland in the context of the changing energy system landscape
  - more broadly deliver benefits to Queenslanders by contributing to the development of cutting-edge technology and new low-carbon domestic export markets as part of the global energy transformation
  - support Queensland's development as an emerging hydrogen superpower
  - act as a catalyst for the anticipated decarbonisation of ammonia manufacturing facilities and other processes at Gibson Island
  - potentially bring about opportunities to provide a low-carbon fuel supply to the Port of Brisbane, Brisbane Airport and other heavy transport users.
- This Consultation Paper, published in conjunction with the Notice of Consultation, commences the first stage of the consultation process.
- Submissions in relation to this consultation are welcomed by COB Friday, 10 March 2023.

1 Purpose and scope of this consultation

A funded augmentation[1] is a transmission network augmentation for which the Transmission Network Service Provider (TNSP), such as Powerlink Queensland (Powerlink) is not entitled to receive regulated revenue[2]. Given the Powerlink scope of works required to enable the production of renewable hydrogen at Gibson Island includes a transmission network augmentation, and as funded by the proponent, FFI, these works are considered to be a funded augmentation under the Rules. Details of the funded augmentation process are discussed in Section 4.

For clarity, this consultation falls outside the bounds of the Regulatory Investment Test for Transmission (RIT-T) due to the external nature of the funding provided. Unlike the RIT-T, a funded augmentation consultation does not require a cost-benefit analysis to justify the project nor does it seek non-network or alternate solutions to replace or defer the proposed augmentation given the funding source.

[1] Refer to definition of 'funded augmentation' in Chapter 10 (Glossary) of the Rules.
[2] Further information about regulated revenue is available at Understanding Transmission Pricing on Powerlink's website.

Powerlink is required to and welcomes the opportunity to undertake a public consultation in relation to the proposed transmission network augmentation which will be conducted in accordance with the criteria and procedures set out in Sections 5.18 and 8.9 of the Rules.

Powerlink has published a Notice of Consultation (Notice) "Augmenting the transmission network to enable renewable hydrogen production at Gibson Island" to the Australian Energy Market Operator (AEMO), Registered Participants and interested parties (Consulted Persons) which includes a detailed description and technical details of the proposed funded augmentation.

The purpose of this Consultation Paper is to inform stakeholders and customers of the project and the matter for consultation.

> The matter for consultation is to call for submissions in relation to the scope of works for the proposed funded augmentation of Powerlink's transmission network, based on the information presented in this Consultation Paper.

2 Introduction

The landscape of the energy system in Queensland is moving rapidly to one underpinned by clean, sustainable and affordable renewable energy. A new industry based on hydrogen is also emerging in Queensland and a number of businesses have publicly committed to decarbonisation of existing fossil fuelled operations, either through electrification or clean fuel substitution.

Potential developments associated with hydrogen and electrification are anticipated to be significant in Queensland, and Powerlink's transmission network is expected to play a central role in enabling the development of both domestic and export hydrogen markets and the decarbonisation of industry. Given the proximity of rich solar and wind renewable generation and availability of port facilities, Queensland is well positioned for a future that produces and exports large-scale renewable hydrogen as a global and seaborne energy product.

2.1 Powerlink recognises the importance of engaging with customers

Powerlink recognises the importance of engaging with a diverse range of customers and stakeholders who have the potential to affect, or be affected by, Powerlink activities and/or investments. In particular, Powerlink works collaboratively with its Customer Panel in the normal course of business.

Powerlink's Customer Panel[3] provides a face-to-face opportunity for customers and consumer representative bodies to give their input and feedback about Powerlink's strategic direction, decision making, processes and methodologies. It also provides Powerlink with a valuable avenue to keep customers and stakeholders better informed, and to receive feedback about topics of relevance. While maintaining confidentiality and for transparency Powerlink will provide updates to the Customer Panel throughout this consultation process.

3 A range of benefits are anticipated as a result of the development of Gibson Island

Gibson Island is located in the Brisbane River, close to the eastern coastal Brisbane suburbs of Pinkenba and Hemmant (refer to Figure 1) and is approximately 3km from Powerlink's Murarrie Substation. The proposed project at Gibson Island may include a new approximately 500MW hydrogen electrolysis facility to produce renewable hydrogen, potentially housing one of the largest electrolysers in the world should this eventuate. An associated hydrogen feasibility study announced

[3] Refer to the Customer Panel page on Powerlink's website.

in October 2022 has been welcomed by the Queensland Government, and has received funding support for completion of Front End Engineering Design (FEED) activities from the Australian Government via the Australian Renewable Energy Agency (ARENA).

Connection to Powerlink's transmission network by means of a network augmentation is required to allow electricity produced by renewable generation to power the proposed project.

Figure 1 Gibson Island, Brisbane

(1) As shown on the FFI website

It is anticipated that the proposed development of renewable hydrogen production at Gibson Island could

- support customers and the community by delivering positive social, environmental and economic benefits
- help safeguard manufacturing jobs in Queensland in the context of the changing energy system landscape
- more broadly deliver benefits to Queenslanders by contributing to the development of cutting-edge technology and new low-carbon domestic export markets as part of the global energy transformation
- support Queensland's development as an emerging hydrogen superpower
- act as a catalyst for the anticipated decarbonisation of ammonia manufacturing facilities and other processes and industry at Gibson Island
- potentially bring about opportunities to provide a low-carbon fuel supply to the Port of Brisbane, Brisbane Airport and other heavy transport users.

More information on the Gibson Island renewable hydrogen project, the potential for decarbonisation of local heavy industry and support offered by ARENA as part of ARENA's Advancing Renewables Program, is available on FFI's dedicated project website.

4 Description of the proposed augmentation works

The proposed scope of works for the augmentation to enable renewable hydrogen production at Gibson Island includes:

- construction of approximately 3km of double circuit 275kV overhead transmission line
- 2 x 275kV bay works at Powerlink's Murarrie Substation
- establishment of a two-breaker switchyard at Gibson Island
- associated protection, control and communication works at Gibson Island Substation including remote ends.

Works are expected to commence in Quarter 3 2023 with completion by February 2025.

An overview of the proposed augmentation is shown in Figure 2. Details of the proposed network topography are shown in Figure 2.

Figure 2 Overview of the proposed augmentation to provide connection to Gibson Island

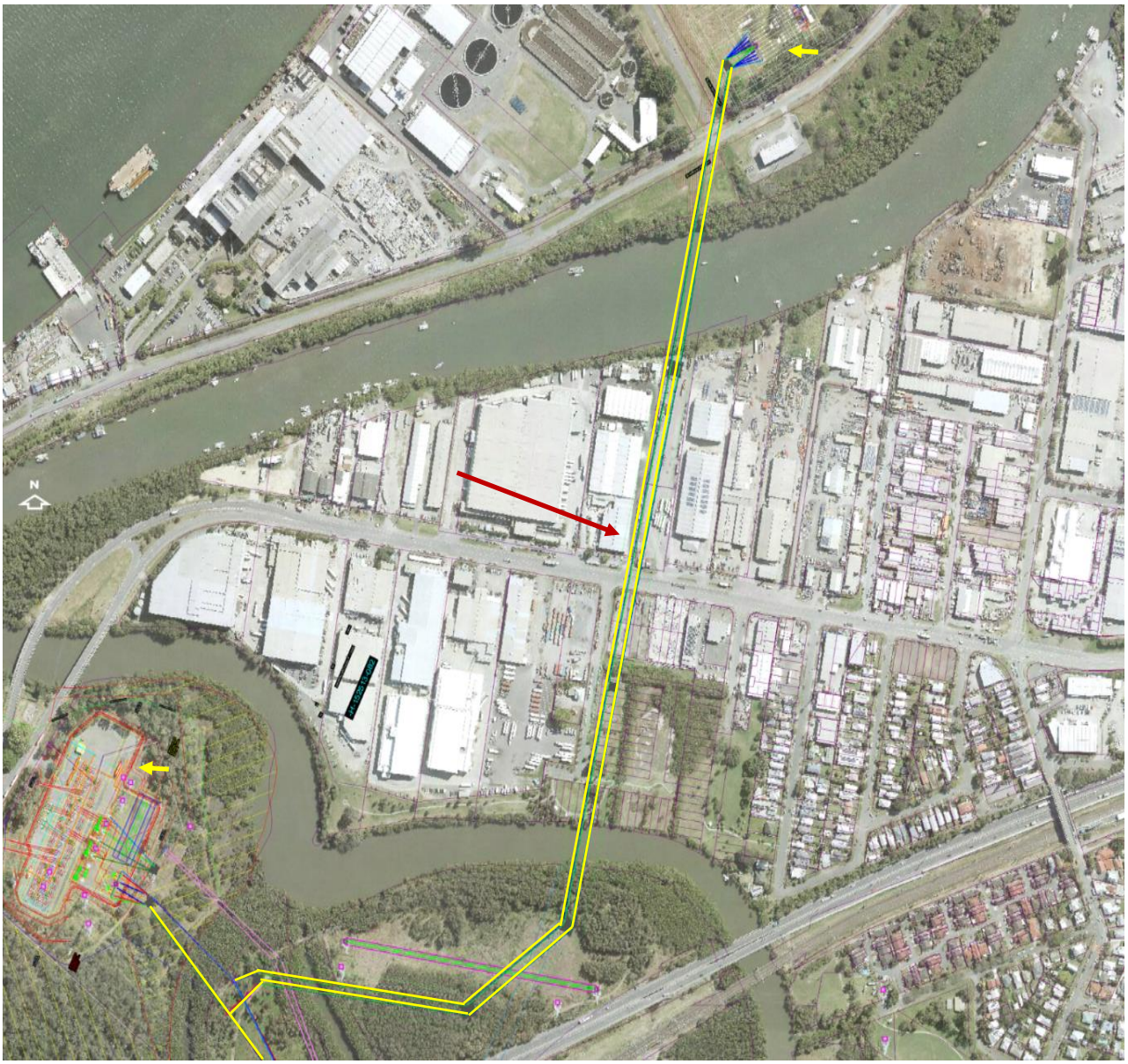
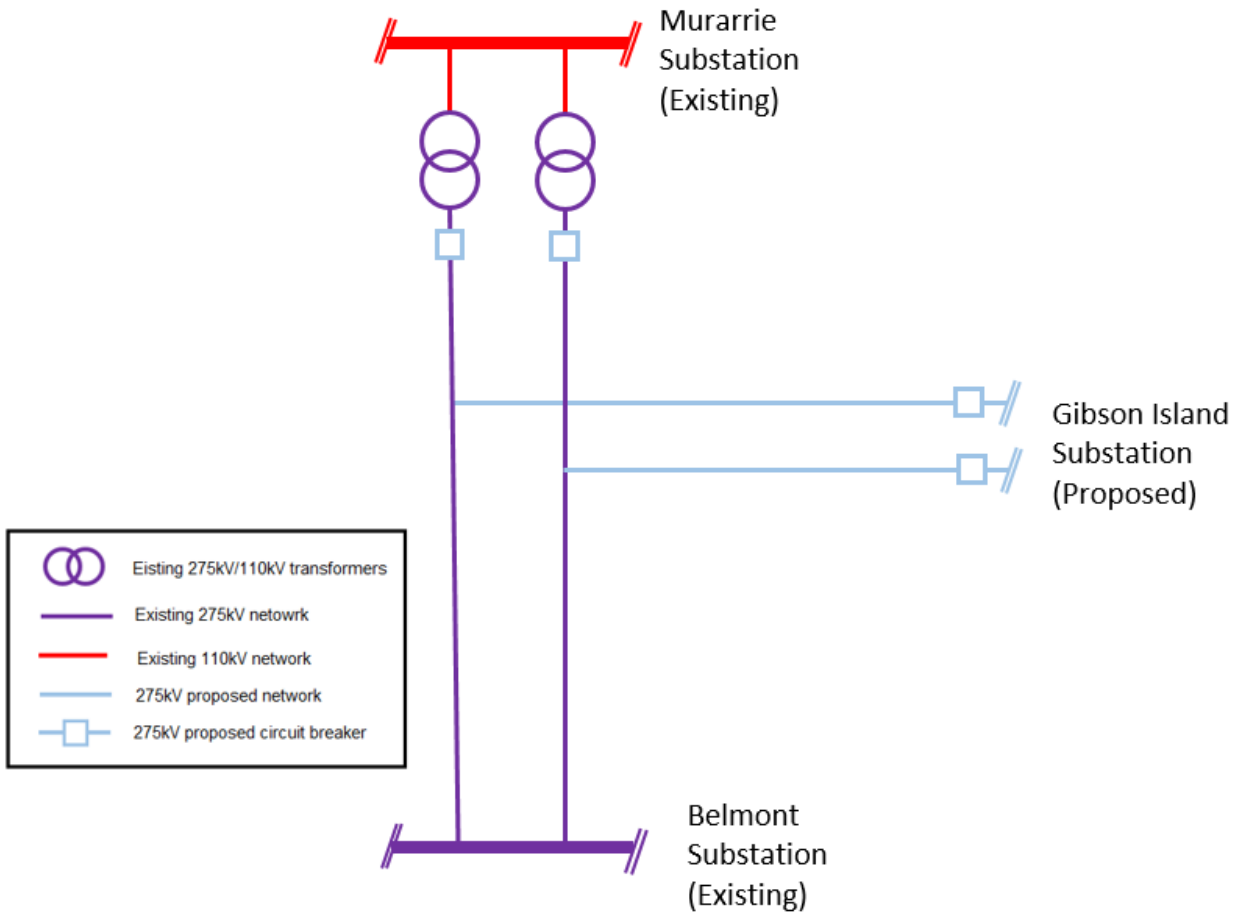


Figure 3 Proposed transmission network topography



4.1 The proposed augmentation maintains existing compliance obligations

Powerlink considers the proposed augmentation does not result in non-compliance with obligations in relation to other Transmission Network Users under the Rules[4]. It is anticipated that the proposed transmission network augmentation will deliver value to Transmission Network Users[5] and the broader community generally by facilitating the development of renewable large-scale hydrogen production and drive economic growth in the State.

4.2 Assessment of inter-network impacts

Powerlink considers the proposed augmentation will not result in a material inter-network impact[6] based on AEMO's criteria[7] and discussion with Transgrid. As a result, an augmentation technical report from AEMO is not required for this consultation[8].

[4] Clause 5.18(b)(2) of the Rules
[5] Refers to those parties such as customers, generators and Network Service Providers directly connected to the transmission network, defined in Chapter 10 (Glossary) in the Rules.
[6] Clause 5.18(b)(3) of the Rules
[7] Section 5.7.7 of the Rules
[8] Clause 5.18(b)(3) of the Rules

5 Powerlink has commenced the first stage of consultation

This Consultation Paper, in conjunction with the Notice, commences Powerlink's consultation process for the proposed funded augmentation and is being undertaken in accordance with the Rules Consultation Procedures[9]. Powerlink as the consulting party must consider all valid submissions within the periods noted in Appendix 1. This consultation is an iterative process and Powerlink will publish draft and final reports including summaries and discussion on:

- the submissions received and any subsequent meetings between Powerlink and stakeholders;
- material issues raised;
- the conclusions and any decisions made regarding the funded augmentation; and
- procedures followed in considering the matter.

6 Lodging a submission with Powerlink

Submissions should be presented in a written form and clearly identify the author of the submission, including contact details for subsequent follow up.

As submissions will be made public, any commercially sensitive material, or material that the party making the submission does not want to be made public, should be clearly identified.

Consulted persons, as part of their submissions, may request a meeting with Powerlink to discuss the matters under consultation. In response to any meeting request, Powerlink must hold the meeting within a reasonable timeframe, conduct another form of consultation if Powerlink reasonably considers that form of consultation is more appropriate in the circumstance, or advise the party making the request why it is not practicable to hold a meeting or other form of consultation.

Powerlink may also publish the details of matters discussed as a result of meeting with Consulted Persons.

Submissions close at 5pm on Friday, 10 March 2023.

Please address submissions to:

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Manager Portfolio Planning and Optimisation
Powerlink Queensland
PO Box 1193
VIRGINIA QLD 4014
Tel: (07) 3860 2111

Submissions can be emailed to: networkassessments@powerlink.com.au

6.1 Consultation process

The consultation process and anticipated timeframes are outlined in Table 1.

Table 1: Consultation process	Date
Publication of Notice and Consultation Paper	6 February 2023
Closing date for submissions in response to the Notice and Consultation Paper	10 March 2023
Publication of Draft Report	April 2023
Publication of Final Report	June 2023

Powerlink reserves the right to amend the timetable at any time.

[9] Refer to the standard rules consultation procedure in Section 8.9 of the Rules.

6.2 Appendix 1: Funded augmentation consultation process