

Arche Energy Pty Ltd

ἀρχή the source of action

Alpha town reinforcement

Waratah Coal Pty Ltd

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Confidential

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2 Introduction

Waratah Coal Pty Ltd is developing the Galilee Power Project (an ultra-supercritical base load power plant located approximately 30 km North West of the town of Alpha in Central Queensland). The Galilee Power Project will connect to the Powerlink system through a network that will be constructed, owned and operated by an independent network service provider (NSP), the Galilee Transmission Connection NSP.

Conversations with the Barcaldine Regional Council and other local stakeholders indicate that the quality of power supply to the region does not meet community expectations. Council is of the (not unreasonable) view that, if a power station is to proceed, then the quality of power supply to the town should also improve.

Waratah Coal is willing to construct a new line between the power station and the town in order to improve the quality of power supply to the town.

Ergon Energy is the distribution network service provider (DNSP) that owns and operates the distribution network in, and around, Alpha.

3 Purpose

The purpose of this paper is to set out a process that might be used to allow the network connection to be made.

4 Background

Power to the Alpha, Jericho, Barcaldine, Longreach and Blackall regions (The Barcaldine System) is distributed through a major Ergon Energy substation at Barcaldine.

The Barcaldine system is supplied by a single circuit 132 kV feeder owned by Ergon Energy (shown in Figure 1 below). This 132 kV feeder originates at Powerlink's 275 kV Lilyvale substation (near Tieri) and also supplies Clermont and surrounding communities.

Powerlink's Lilyvale substation is connected to the balance of the Powerlink network by a series of transmission lines. These links are shown in Figure 1, and include transmission lines to the power stations of Central Queensland (Stanwell, Callide and Gladstone).

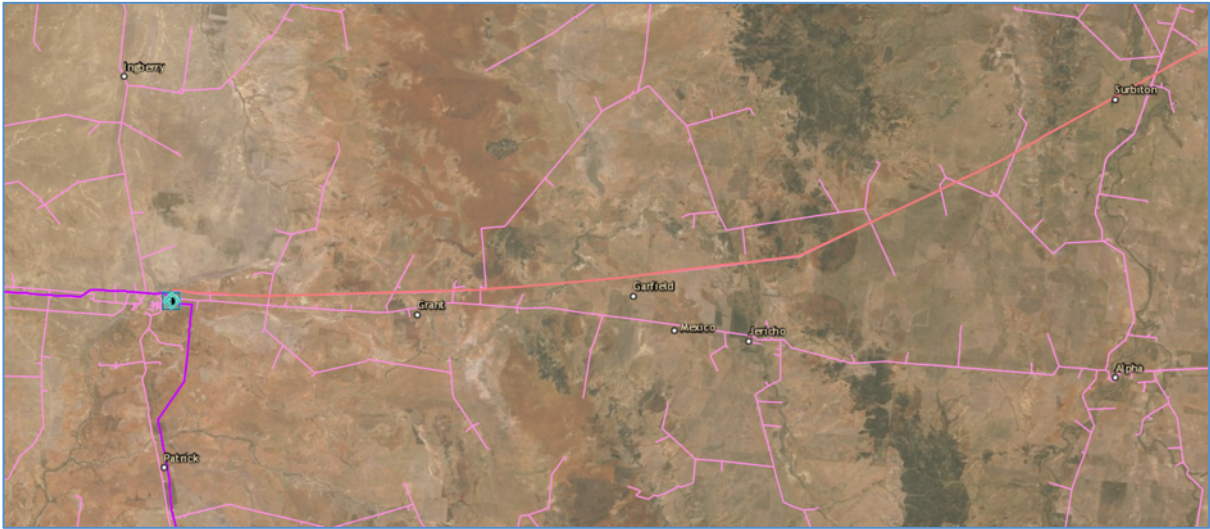


Figure 2: Ergon Energy distribution network between Barcaldine and Alpha²

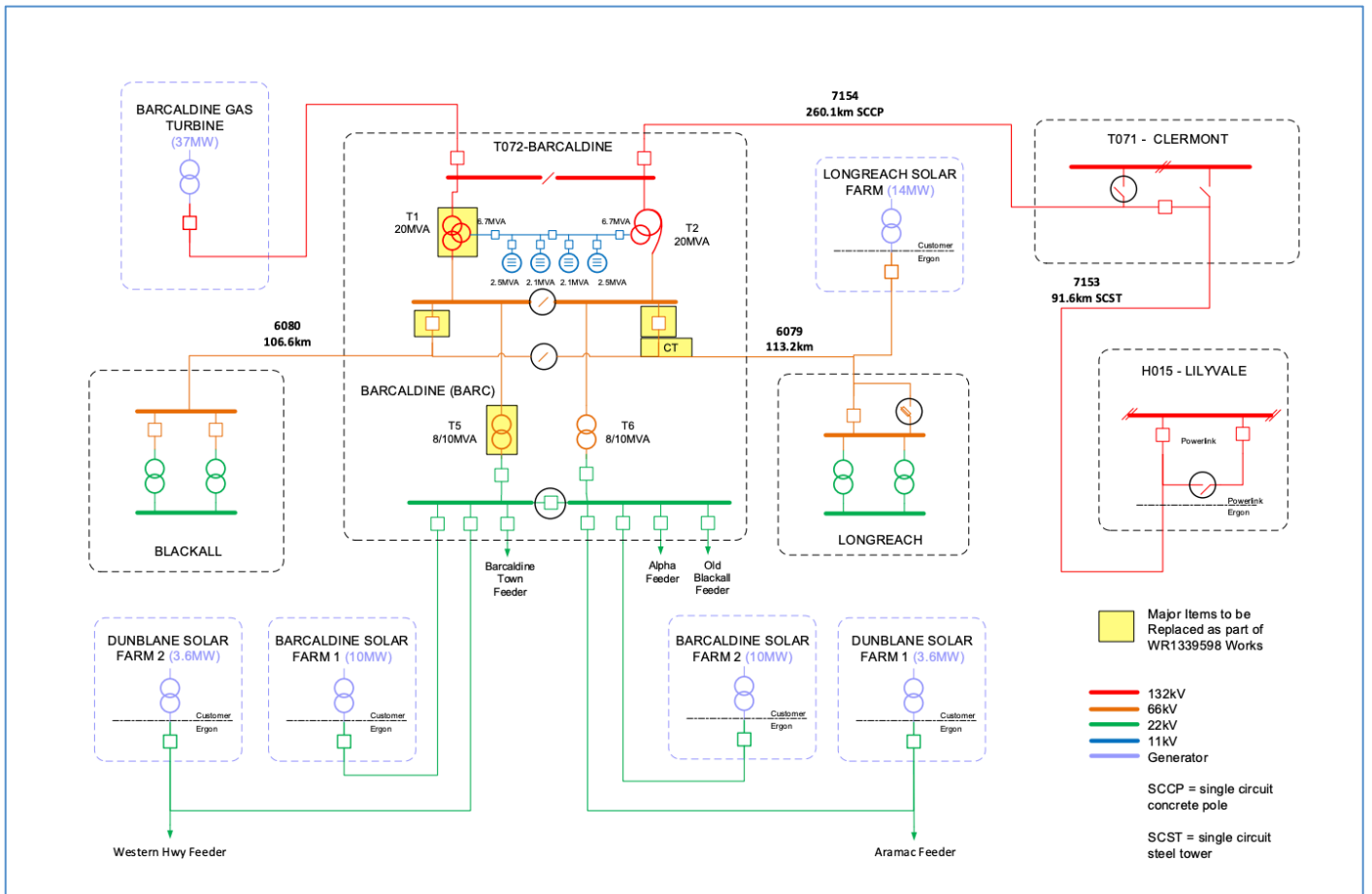


Figure 3: Barcaldine Substation and Central West area sub-transmission network³

² <https://www.ergon.com.au/network/network-management/future-investment/distribution-annual-planning-report/dapr-map-2019>

³ Ergon Energy, "Reliable Provision of Electricity to the Barcaldine, Longreach and Blackall area", 30 June 2020.

A stand-by generator appears to be connected to the Ergon 22 kV system off Saltbush Road. It is understood that this generator is used by Ergon to 'peak lop' (that is supply additional power locally when local demand exceeds local capacity).



Figure 4: Standby generator connected to the Alpha 22 kV system⁴

Ergon are required to invest in the network in such a manner that the minimum service standards (MSS) are met. The MSS are set by the Queensland Competition Authority. The MSS for 2019-2020 (long rural feeders – Ergon) are:

- 7.4 interruptions per customer per annum, and
- 964 minutes (16 hours) per customer per annum.

The MSS are significantly less onerous for rural communities supplied by long feeders than they are for urban areas. By comparison, the MSS for the Brisbane CBD are:

- 0.15 interruptions per customer per annum, and
- 15 minutes per customer per annum.

⁴ Photo taken July 2020.

Ergon are required to undertake an annual review of performance and assess the network's ability to meet the MSS over upcoming years in their distribution annual planning report (DAPR). The 2019 DAPR does not indicate that investment in the network is required to meet the MSS over the report's five year planning period (July 2020 until June 2024). However, it is noted that Ergon triggered the regulatory investment test (RIT-D) process for the replacement of a transformer and other equipment at Barcaldine in June 2020 as a result of the analysis of condition monitoring data⁵.

5 Disparity between MSS and customer requirements

For a community served by a long rural feeder, the minimum service standards (MSS) are substantially less onerous than those for the Brisbane CBD. For any customer, 7.5 interruptions per year is significantly more of an imposition than one interruption every 6-7 years. A sixteen hour outage means a loss of a day's trade and/or the loss of the content of a freezer. In this context, it is not unreasonable for a customer served by a long rural feeder (particularly a commercial customer holding refrigerated stock), to be generally dissatisfied with the quality of power supply; notwithstanding that the MSS are met.

Ergon's revenue is set by the Australian Energy Regulator (AER) on the basis of a regulated Weighted Average Cost of Capital (WACC) applied to Ergon's Regulated Asset Base (RAB). In order to maintain lower electricity prices, Ergon is prohibited from investing in the network beyond what is necessary to meet the MSS or as otherwise approved by the AER.

Effectively there is a situation, not uncommon in regional communities, whereby the standard of supply and allowable level of investment set by the regulatory process is below the level expected by the community.

⁵ Ergon Energy, "Reliable Provision of Electricity to the Barcaldine, Longreach and Blackall area", 30 June 2020.

6 Connection of new loads and network augmentation

Connection of new loads, other than domestic and small commercial loads, that trigger network augmentation (such as the camp and possibly the airport) generally require that the developer make a contribution to the cost of new capital works required to provide the load. The contribution amount would typically cover the incremental cost of supplying the new load without compromising supply quality to existing customers.

If Waratah were to make an application to connect the camp to the Ergon system, Ergon would likely seek a capital contribution to augment the distribution system.

Load growth that occurs as a result of new small customers (e.g. single residences or small businesses) and changing consumer demand (e.g. installation of new air conditioners) is managed through the annual planning process. If the annual planning process indicates that network augmentation is required and the investment is greater than \$6M, then the Regulatory Investment Test for Distribution (RIT-D) process is triggered.

The RIT-D process is set out in Figure 5.

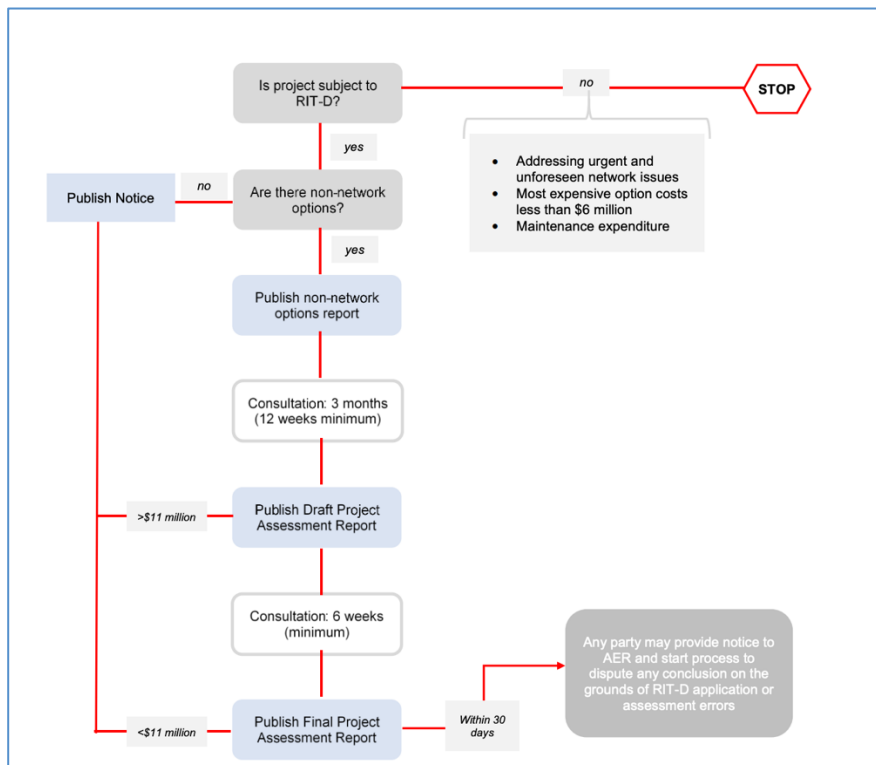


Figure 5: RIT-D process⁶

⁶ Ergon Energy, "Reliable Provision of Electricity to the Barcardine, Longreach and Blackall area", 30 June 2020.

7 Waratah's plan to improve the quality of supply to Alpha

Waratah Coal intends to construct the Galilee Power Project, which will be a high efficiency, low emissions power plant connected to Lilyvale Substation. The connection to Lilyvale substation will be through a dual 330 kV transmission line, which will be operated as an unregulated connection by a private Network Services Provider (Galilee Transmission Connection NSP). Galilee Transmission Connection NSP will also own and operate the network that will feed the coal slurry pipeline and construct a substation near the power project (Galilee Substation) in order to act as a regional hub for future network development.

Waratah proposes that the Galilee Transmission Connection NSP will also construct a 22 kV connection between the Galilee Substation and a new substation near Alpha. This connection will supply the camp and will be available to provide a second source of supply to the Alpha township.

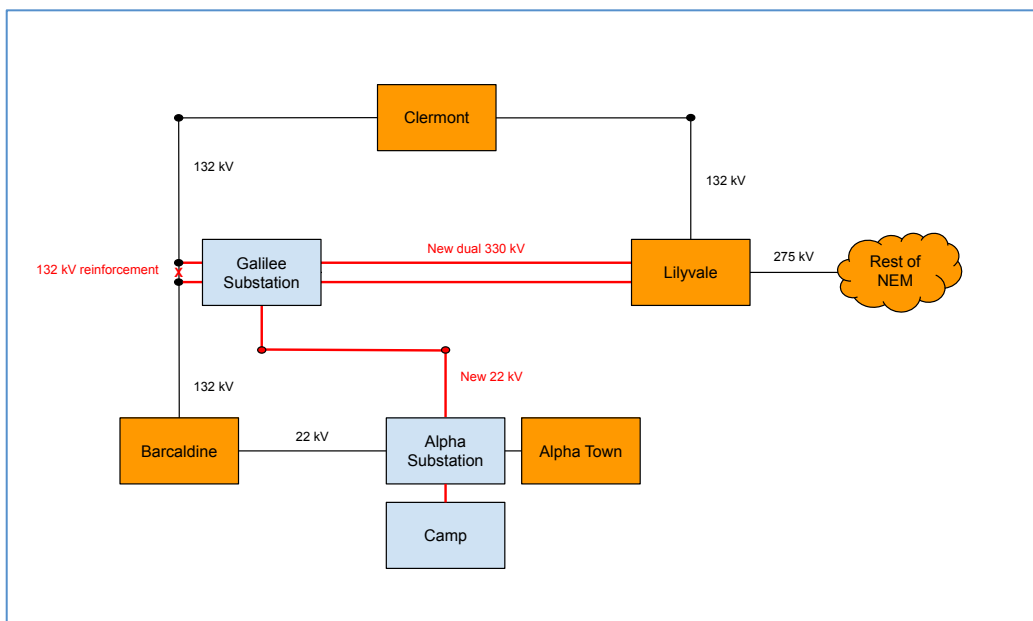


Figure 6: Waratah's proposed connection and augmentation concept

Regional supply to all of the existing networks (Longreach, Barcaldine, Blackall, Alpha, Clermont) connected through the Barcaldine Substation will improve due to the interconnection on the 132 kV system. This interconnection will reduce the region's reliance on the single circuit link from Lilyvale.

The capacity and quality of supply to Alpha will improve due to the second source of supply feeding into the new substation.

8 Regulatory process

Galilee Transmission Connection NSP will be a registered Network Service Provider. As such, it will be entitled to make an application to connect to the Ergon distribution system as an NSP to NSP connection under Rule 5.3 of the National Electricity Rules. Ergon would then be obligated to offer Galilee NSP a Connection Agreement. Galilee NSP and Ergon would then negotiate a connection agreement.

As the connection will be from an unregulated network and would be paid for by the Galilee Transmission Connection NSP (Waratah Coal), our preliminary understanding is:

- the cost of the connection would be born (largely) by the Galilee Power Project and the Galilee Coal Project through connection fees paid to the Galilee Transmission Connection NSP,
- the RIT-D process would not apply (as there would be no capital investment by the DNSP on the prescribed network),
- Ergon would not pay transmission use of system charges (TUOS) for the use of the connection/s; however, the connection agreement may allow Ergon to pass on the benefit of reduced TUOS fees charged by Powerlink.

The above is a preliminary understanding; Arche Energy recommends that this understanding is confirmed by a qualified Solicitor experienced with Queensland Energy Law and the National Electricity Rules.

Galilee Transmission Connection NSP or Ergon may later choose to apply the RIT-D to the connection as the Galilee Transmission network grows; this would convert the connection (or part of the connection) into a regulated asset. In this case, Ergon would pay TUOS to Galilee Transmission Connection NSP for the use of the connection/s. Ergon might choose this path as a lower cost network augmentation option to address future supply reliability constraints. Galilee Transmission Connection NSP may choose this path in order to access a lower risk, regulated income stream over its network as the network develops.