Regulatory Investment Test for Distribution (RIT-D)

Reliability Corrective Action

Condition-Based Pole Remediation

Notice of No Non-Network or SAPS Options

16 February 2026

ERGON ENERGY NETWORK

Part of Energy Queensland

1 INTRODUCTION

1.1 Purpose

Ergon Energy Corporation Limited (Ergon Energy) has determined on reasonable grounds, in accordance with clause 5.17.4(c) of the National Electricity Rules (NER), that there is no non-network solution or a stand-alone power-system (SAPS) option that is a potential credible option, or that forms a significant part of a potential credible option, for RIT-D condition based pole remediation project that would address the identified need.

This notice sets out the reasons for this determination, including any methodologies and assumptions used. Ergon Energy publishes this notice in accordance with clause 5.17.4(d) of the NER.

1.2 About Ergon Energy

Ergon Energy is part of Energy Queensland and manages an electricity distribution network which supplies electricity to more than 765,000 customers. Our vast operating area covers over one million square kilometres (around 97% of the state of Queensland) from the expanding coastal and rural population centres to the remote communities of outback Queensland and the Torres Strait.

Our electricity network consists of approximately 160,000 kilometres of powerlines and about one million power poles, along with associated infrastructure such as major substations and power transformers.

We also own and operate 33 stand-alone power stations that provide supply to isolated communities across Queensland which are not connected to the main electricity grid.

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2 IDENTIFIED NEED

Ergon Energy manages a population of over 982,000 poles constructed from a diverse range of materials including various timber species, metal, concrete, and composite, due to historical construction practices. Approximately 19% of these poles are over 50 years old, with an additional 5% reaching that age within the next five years.

The Queensland *Electrical Safety Act 2002* (the Act) places the primary electrical safety duty on a person conducting a business or undertaking, who must ensure the business or undertaking is conducted in a way that is electrically safe. Ergon Energy is required to operate its network in a way that is compliant with this duty.

Under section 44 of the Act, the Minister may make a code of practice that states a way of discharging a person's electrical safety duty. A code of practice is a practical guide to achieving the standards of electrical safety required under the Act and the Electrical Safety Regulation 2013.

The Electrical Safety Code of Practice 2020 - Works[1] (ESCOP) gives practical advice on ways for an electricity entity[2] to manage electrical safety risks associated with earthing systems, underground cable systems, and supporting structures for overhead lines forming parts of the works of an electricity entity.

Section 5 of the ESCOP sets down the principles and minimum requirements for maintaining the supporting structures for overhead lines. Section 5.1 states that an electricity entity should have a maintenance system that achieves a minimum three-year moving average reliability against the incidence of failure of 99.99 per cent a year.

Further, the ESCOP states that an electricity entity should develop a periodic maintenance program to deliver this reliability level and that an entity's inspection program should ensure it meets its safety obligations.

Historical unassisted annual pole failure data for Ergon Energy in Figure 1 indicates compliance with ESCOP thresholds until 2017/18. However, unassisted failures began breaching the ESCOP limit of 97 pole failures per year from 2018/19 and in the last financial year the failure rate hit a new high of 125 failures.

[1] Available at: https://www.worksafe.qld.gov.au/__data/assets/pdf_file/0019/18343/es-code-of-practice-works.pdf

[2] Ergon Energy is an electricity entity for the purposes of the Act and the ESCOP.

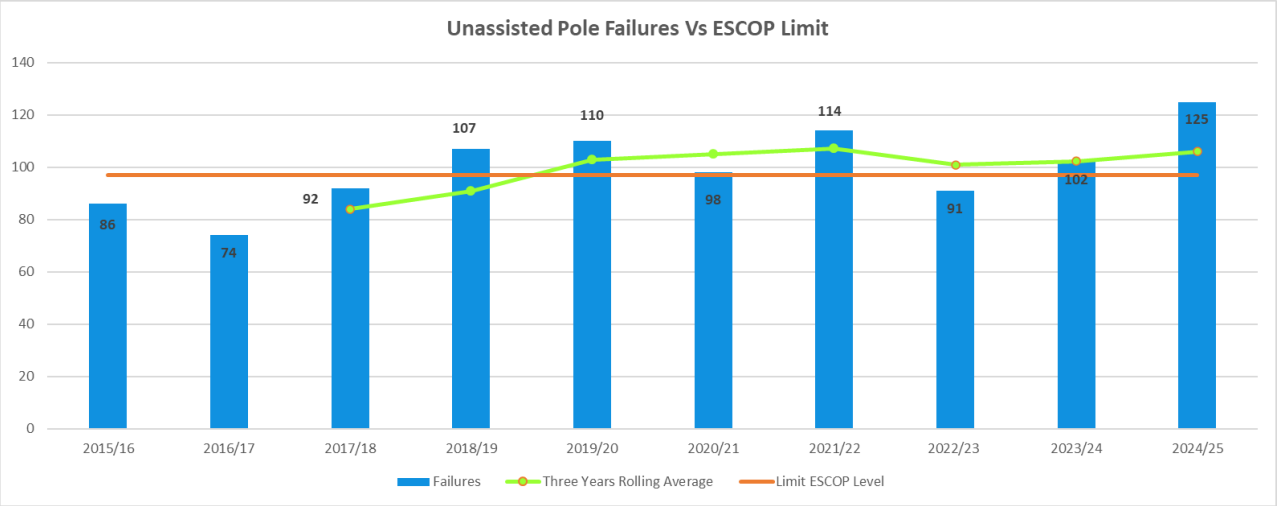

Figure 1: Annual Unassisted Pole Failures - Ergon Energy

Based on the root cause analysis of this increased incidence of failure, Ergon Energy revised its pole serviceability assessment program in 2019. The application of the revised program has resulted in the identification of a higher number of pole defects, specifically related to new generation treated softwood poles under 50 years of age.[3]

Ergon Energy has been undertaking a condition-based pole remediation program to replace/strengthen identified defective wooden poles for the purpose of meeting the safety and service standards in the Act and the ESCOP.

If Ergon Energy does not invest to address this identified need, the reliability failure rate of poles throughout Ergon Energy's network would increase exponentially. According to our internal Condition Based Risk Management (CBRM) modelling, the annual failures are estimated to increase from 125 in 2024/25 to 275 by the end of 2030, which will present an unacceptable safety and reliability risk to the community and a breach of our regulatory obligations. The impact or consequences of a pole failure may include:

- Network outages
- Injury or fatality
- Damage to other Ergon Energy plant and equipment
- Damage to third party assets
- Starting a fire
- Financial impacts for outage penalties
- Emergency replacements

[3] This is due to inherent weaknesses and less durability of soft wood compared to hard wood poles (that have higher strength, durability and longer expected life around 60-70 years). However, installation of hard wood poles is no longer sustainable environmentally due to slow production of these poles constrained by slow natural growth.

- Toxic waste disposal and environmental remediation costs.

2.1 Technical Characteristics of the Identified Need

Technical characteristics of the identified need are in Table 1 below:

Table 1: Technical characteristics requirements

Description	Applicability Remark
Size of load reduction or additional supply	Not applicable
Location	Throughout Ergon Energy's network
Contribution to power system security or reliability	Maintaining the reliable supply to customers in accordance with Ergon Energy's regulatory obligations
Contribution to power system fault levels	Not applicable
Operating profile	Compatible with Ergon Energy's current operating environment

3 POTENTIAL CREDIBLE OPTIONS IDENTIFIED

Ergon Energy has considered all options that could reasonably be classified as a credible option without bias to energy source, technology, ownership and whether it is a network option, a non-network solution or a stand-alone power system (SAPS) option.

Ergon Energy has not identified any viable non-network solutions that will provide a complete or a hybrid (combined network and non-network) solution to address the identified need. The strengthening of defective poles through nailing is the only other option for pole remediation to delay the replacement for another 15-20 years. The use of nailing already occurs in Ergon Energy and pole replacements are only progressed where nailing will be ineffective due to the poor condition of defective poles.

Ergon Energy identified and evaluated four potential credible network options that would address the identified need, as follows:

- Base Case – AER Alternate Forecast: 10,000 poles remediation/year with replacements comprising 80% wood and 20% composite poles.
- Option 1 – 13,000 poles remediation/year with replacement comprising 80% wood and 20% composite poles**.**
- Option 2 – 13,000 poles remediation/year with replacement comprising 100% composite poles.
- Option 3 – 13,000 poles remediation/year with replacement comprising 50% wood, 30% concrete and 20% composite poles.

Options 2 and 3 were not considered preferable due to their higher cost impact on customers and lower overall benefits compared to Option 1. While their Net Present Value (NPV) already indicates reduced benefits, both options also carry additional disadvantages that further diminish their viability:

- Option 2 faces practical challenges due to the slow production rate of composite poles, which is expected to improve over time but remains a significant constraint currently. Additionally, disposal solutions for composite poles are still in early development stages, as outlined in Section 3.2 – Circular Economy Considerations.
- Option 3, which involves concrete poles, present increasing public safety risks over time. As concrete is poor conductor initially but with deterioration in structural integrity overtime reduces the original resistivity, leading to higher conductivity. Consequently, these poles pose a greater safety risk during insulation/insulator breakdown incidents compared to wood and composite poles.

3.1 Preferred Option

Option 1 is the preferred option as it delivers long-term cost efficiency and provides an estimated $90 million customer benefit, compared to the base case AER alternate forecast, as it is estimated it will reduce unassisted pole failures, maintaining it around current rate, meaning associated risks are significantly lower compared to the base case option.

Additionally, the adoption of composite poles alongside wooden poles is an emerging/current approach driven by the declining commercial availability of timber. Around 20% of forecasted replacements will use composite poles, specifically targeted for areas more susceptible to termite damage or extreme weather compared to the rest of the network.

Composite poles provide extended asset life and can reduce material costs over time, supporting their increased adoption across our network.

3.2 Circular Economic Consideration

End-of-life disposal of composite poles presents additional challenges, requiring more complex processing due to lack of circular economic solutions including extremely slow decomposition rate during land fill, that can offset some cost and environmental benefits. Ergon Energy is advancing initiatives to ensure compliance with environmental and regulatory obligations, including minimising environmental impact during disposal of composite poles that align with industry standards and legislative requirements. This work will be undertaken in collaboration with suppliers and manufacturers.

It is noted that disposal of traditional wood poles is relatively straightforward and has minimal or negligible environmental impact. In comparison, concrete pole disposal presents moderate challenges (recyclable/reusable up to some extent) and costs, falling between wood and composite poles in terms of environmental impact, circular economic solutions and complexity.

4 SOCIAL LICENCE AND COMMUNITY ENGAGEMENT

4.1 Social Licence

Ergon Energy is prepared to address social licence requirements promptly and will manage them on a case-by-case basis as part of the Ergon Energy Community Engagement Framework which is integrated into the program's workflow to ensure the best outcome. To date, Ergon Energy has not

identified any social licence issues that have influenced the evaluation or selection of credible options to address the identified need.

4.2 Community Engagement

All the potential credible options are pole remediation programs, which seek to replace existing poles in their current locations. This program will not extend into new areas of the community and will be entirely contained within existing pole locations. It is therefore not expected to cause any increased disruption to the community at large. As a result, Ergon Energy has not identified any community stakeholders who might reasonably be expected to be affected by the development of this program. While Ergon Energy does not anticipate any community stakeholder concerns, should any be identified, these would be addressed as part of the Ergon Energy Community Engagement Framework which is integrated into the program's workflow.

5 RATIONALE THAT THERE IS NO VIABLE NON-NETWORK OR SAPS OPTIONS

5.1 Methodologies and Assumptions

To be considered viable, any non-network option would need to meet the following technical requirements:

Table 2: Technical Requirement Considerations

Technical Requirements Description	Applicability Remark
Adequate Load Capacity	The condition-based pole remediation program is widespread across the entire Ergon Energy network and no specific areas or customers are targeted.
Location Specific application	
Contribution to Network security/reliability	
Compatibility with fault level requirements	
Appropriate operating profile	

5.2 Consideration of Non-network Options

Potential credible options must be technically and commercially viable and must be able to be implemented in sufficient time to address the identified need.

Ergon Energy has assessed potential non-network solutions and has determined that no non-network or SAPS options would be suitable to address the identified need or form part of the solution to address the identified as shown in Table 3 below.

Table 3: Non-Network Options

Options Descriptions	Consideration Remark
5.2.1 - Network Load Control	All these options were considered to address the identified need. However, Ergon Energy has determined that none of these options are commercially or technically viable and does not consider any non-network option capable of avoiding the need to undertake network replacement expenditure. The identified need is widespread across the entire Ergon Energy network and nonspecific areas or customers are targeted. Due to the scale of the identified need, the cost of non-network options that would enable poles to be decommissioned rather than replaced would be excessively expensive compared to the proposed network options. Effective pole replacement is necessary to maintain network reliability and resilience, and to ensure that Ergon Energy is compliant with applicable regulatory instruments, including power system performance and supply standards.
5.2.2 - Demand Management Programs	
5.2.3 - Demand Response Arrangements with Customers	
5.2.4 - Increased Generation/Supply Options	
5.2.5 - Customer Call Off Load (COL)	
5.2.6 - Customer Embedded Generation (CEG)	
5.2.7 - Large Scale Customer Generation (LSCG)	

5.3 Consideration of SAPS Options

Ergon Energy considers that no SAPS option represents a credible standalone solution, nor part of a hybrid (combined network and non-network) option, to address the identified need.

Removal of powerlines is only feasible where an alternative source of supply (e.g. SAPS) is viable for all affected customers. SAPS solutions, particularly on single wire earth return (SWER) networks, were reviewed. The current pole remediation program is based on a condition-based defect identification process with remediation targeted in a specified time frame as per defect category (P1 - 30 days/P2- 6 months). Installation of a SAPS within that timeframe is not practically feasible due to long planning process requirements. Key barriers include:

- **Regulatory Constraints:** The current Queensland regulatory framework does not permit Ergon Energy to disconnect customers from the distribution network and serve them via SAPS.
- **High Opex and Capex Cost:** A typical small SAPS installation (including Civil, Battery, Diesel Generator, Inverter, Solar panels and Electronics) costs just under $600k compared to under $8,000 for a wooden pole replacement. Furthermore, a SAPS has a shorter life expectancy (~20 years) compared to a pole (~45–50 years), resulting in a higher long-term cost.

Additionally, regular inspection/testing and maintenance opex costs for a SAPS option would be significantly higher than annual maintenance/inspection costs for a powerline.

- **Financial Modelling Comparison**: NPV modelling was performed for a hypothetical situation assuming a 50 pole SWER line replaced by Ergon Energy's standard SAPS system. The NPV modelling indicated that:
    - A SAPS installation returns a total negative NPV of $1.058M in comparison to negative NPV of $0.29M for a condition-based pole remediation program.
    - The NPV for a SAPS is significantly more negative in both capex (3.5 times) and opex (4.5 times) compared to a condition-based pole remediation program.
- **Customer Consent Requirements:** Removal of shared lines requires Explicit Informed Consent from all affected customers. Gaining unanimous consent is difficult. Using a comparative survey from another DNSP, only ~40% of surveyed customers in Essential Energy's 2024–29 proposal indicated interest in SAPS. Similar sentiments are expected in the Ergon Energy network.
- **Footprint and Site Constraints:** Even with consent, customers may lack adequate space to accommodate SAPS infrastructure.

For the above reasons, Ergon Energy has determined that no SAPS option is commercially and technically viable. Additionally, a time-frame constraint further complicates the pursuit of a feasible solution.

Despite these limitations, Ergon Energy remains committed to using SAPS where it presents the most viable option - particularly in rural areas with high costs to serve or access/reliability challenges.

6 CONCLUSION AND NEXT STEPS

Ergon Energy has concluded that there would not be a non-network solution or SAPS option that is a potential credible option, or that forms a significant part of a potential credible option, to address the identified need. Ergon Energy publishes this Notice of No Non-network or SAPS as per NER clause 5.17.4 (d).

The next step in the RIT-D process is for Ergon Energy to be publish a Draft Project Assessment Report.