



420 Flinders Street, Townsville QLD 4810
PO Box 1090, Townsville QLD 4810

ergon.com.au

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Kathie Standen
Executive General Manager
Consumers, Policy & Markets
Australian Energy Regulator
GPO Box 3131
Canberra ACT 2601

email: kathie.standen@aer.gov.au

Dear Ms Standen

Ergon Energy's waiver application against the Australian Energy Regulator's Ring-fencing Guidelines – five new energy storage devices

Under the *National Electricity Rules* (NER) Ergon Energy Corporation Limited (Ergon Energy) must comply with the Australian Energy Regulator's (AER) Electricity Distribution Ring-fencing Guideline (the Guideline).¹ The Guideline, permits Ergon Energy to apply for a waiver of the legal separation obligations. Ergon Energy is seeking a waiver for five new energy storage devices under the streamlined waiver process.

Ergon Energy looks forward to providing continued assistance to the AER in considering our attached application. Should you require additional information or wish to discuss any aspect of this application, please do not hesitate to contact myself, or Alena Christmas, Policy and Regulatory Reform Specialist, on [REDACTED]

A handwritten signature in black ink, appearing to read 'N Roscoe'.

Digitally signed
by Nicola Roscoe
Date: 2022.01.12
12:39:01 +10'00'

Nicola Roscoe
GM Strategy and Regulation
Telephone: [REDACTED]
Email: Nicola.Roscoe@energyq.com.au

Encl: Ergon Energy's streamlined waiver application

¹ Clause 6.17.2.

New Energy Storage Devices Waiver Application

This application is for DNSPs who wish to apply for a waiver of its obligation under clause 3.1 of the Electricity Distribution Ring-fencing Guideline in respect of a New Energy Storage Device and believe they meet the criteria for a streamlined waiver as set out in Explanatory Statement to the guideline (Version 3). If applying for a waiver of obligations other than clause 3.1, a full waiver assessment process will be needed.

Please attach any relevant documents.

Applicant Information

1	Name(s)	Ergon Energy Corporation Limited (Ergon Energy)
2	Project description	<p><i>Please provide a short summary of the battery project, including information about the number, size, and location of the batteries, and details of the services (e.g., voltage support, FCAS, or storage) that the batteries are expected to provide. Please identify which party will be providing each service and explain how the network and other services provided by the battery relate to each other. Further information and specific details can be included in an attachment.</i></p> <p><i>Please state the full legal names of any other entities that will be using the battery capacity e.g., community groups, RESPs, suppliers, retailers. Please describe the contractual relationship with each party.</i></p> <p>Installation of five battery energy storage systems (BESS) at various locations on the Ergon Energy distribution network to test network use cases and National Energy Market (NEM) participation through a market partner.</p> <p>Size: 4 MW / 8MWh</p> <p>Location: Beach Holm, Townsville, Tanby, Yeppoon, Kleinton, Toowoomba, Urangan, Hervey Bay, and Windermere, Bundaberg.</p> <p>Refer to Attachment A for additional site details.</p>

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Reason for waiver

Details of services and parties:

Ergon Energy will use the BESS for common distribution services in areas of high distributed energy resource (DER) penetration.

Ergon Energy Queensland Pty Ltd (Ergon Energy Retail) was successful in being chosen as the retailer partner for the trial after Ergon Energy issued a public tender which complied with the Ring-fencing Guideline's discrimination obligations. Ergon Energy Retail was selected as the retail partner as it was the sole applicant to a publicly advertised invitation for expressions of interest.

Ergon Energy Retail will use the additional storage capacity for participation in the NEM. Ergon Energy Retail's use of the excess capacity will be constrained by dynamic operating envelopes set by Ergon Energy which prioritise network needs.

Under the proposed arrangement, Ergon Energy will test how the BESS will charge during the day to 'soak up' large volumes of solar PV export and in doing so, support the security and reliability of supply to Ergon Energy's customers through, among other things, supporting network voltage, the provision of phase balancing and testing the reduction in minimum and maximum demand. The stored energy in the systems will then be available for use by Ergon Energy Retail in accordance with the terms of an arms-length commercial arrangement, for participation in wholesale energy arbitrage, ancillary services, and other emerging markets, further benefiting consumers through lower overall energy costs.

Please provide the rationale for supplying excess capacity of the battery to third parties. Please also provide, for each battery, an estimate of the expected annual utilisation of the battery capacity for each different service identified above. This should include an indicative estimate of energy volume in kilowatt hours and capacity in kilowatts for each service by time of use over a representative summer and winter time period.

Rationale for supply excess capacity to third parties

The goal of the trial is to gain knowledge about how to maximise the overall benefits of BESS taking into account commercial

considerations, cost allocation, risk apportionment and varying chronological and geographical benefits a BESS can offer when when operated with a third party within a network dynamic operational envelope.

Exploration of distribution network connected BESS is warranted due to the unprecedented adoption of roof top solar photovoltaic (PV) and its effect on minimum demand. Minimum demand on our network is falling at a fast rate than the rate at which peak demand has grown, signalling the criticality of the minimum demand challenge and the need to explore every credible means for an efficient resolution of the problem. These challenges to our network and the power system as a whole, were recently acknowledged by AEMO in its 2021 Electricity Statement of Opportunities (ESOO), including the need for accelerated complementary market-based and operational support to address the risks to security and reliability of the power system. BESS will play an integral part in addressing these risks.

There is currently an under-investment by market participants in distribution connected energy storage. This is particularly the case in more geographically dispersed locations, such as those across the Ergon Energy distribution area, where markets are less likely to establish than in other, more densely populated areas. There are a range of other potential distribution connected BESS ownership models, including behind the meter, community funded, and commercial DNSP owned. However, the commerciality of such investments is largely dependent on the ability to value stack services using the assets, and unfortunately the models for value stacking are immature and the trade-offs largely unknown at present.

The proposed waiver will enable Ergon Energy to gain valuable learnings into the customer, system, and overall societal benefits of a currently immature value stacked energy storage market. Ergon Energy is of the strong view, that considering the size of, and urgent need for, energy storage, all models should be understood and explored, with the learnings shared publicly to support the development of innovative energy storage markets.

Estimate of the expected annual utilisation of the battery capacity

The utilisation of the BESS for each service will be a learning of the trial. One of the goals is to develop knowledge about how the asset value can be maximised by multiple parties. The knowledge about when and how services could be offered by various parties and the trade-offs for providing those services will be a feature of the trial outcomes.

4 Period of the waiver

What is the proposed start date of the waiver? - What is the proposed end date of the waiver?

If the proposed end date is a date later than the end of the DNSP's next regulatory control period, please provide supporting information about the life of the relevant battery assets.

Ergon Energy proposes that the waiver commences immediately upon commissioning of each BESS and expires on 30 June 2035, which closely aligns with the estimated life of the BESS.

Supporting information for waiver application

This section is to provide information that will assist the AER's assessment of whether the benefits outweigh the costs for the battery project.

5 Costs if waiver not granted

Please state and provide details of the costs of complying with the ring-fencing guideline if the waiver is not granted, both for the DNSP and for consumers, including non-financial costs. Please include details of the extent to which the battery capacity will still be installed without the waiver, and of how (if at all) the DNSP would use the battery in the absence of the waiver.

If the waiver is refused, Ergon Energy would be unable to proceed with the trial as planned. While it would be able to use the BESS

6 Benefits if waiver granted

for distribution services it will not be able to use the BESS to the fullest extent possible, that is, provide additional “other services”.

In the absence of an established value-stacked market, investor hesitancy will likely hinder the establishment of a market in time to address the impacts of rapidly declining minimum demand on the security and reliability of our network. Overarchingly, refusal of the waiver would result in:

- the benefits described in section 6 below not being realised
- market benefits, through shared trial learnings, not being realised; and
- alternative solutions to address the challenges associated with increasing minimum demand into the future, needing to be delivered as part of Ergon Energy’s common distribution services.

This would result in ongoing tension between higher energy prices for customers and poorer network performance in the long term.

Please state and provide details of the benefits, including non-financial benefits, that are likely to result from the granting of the waiver (and, particularly from the supply of the excess capacity by the DNSP to a third party), both for the DNSP and for consumers.

Please provide a clear and detailed explanation of how granting the waiver would contribute to the achievement of the National Electricity Objective.

We are particularly interested to understand if there are additional benefits the battery may provide for consumers experiencing vulnerabilities. Please describe.

The National Electricity Objective is to promote efficient investment in, and efficient operation and use of, electricity services for the long-term interests of consumers of electricity with respect to:

- price, quality, safety and reliability and security of supply of electricity; and
- the reliability, safety, and security of the national electricity system.

The Energy Security Board has acknowledged the need for regulatory arrangements to evolve to support the impacts of two-way energy flows on the ability of networks to transport and deliver electricity safely, securely, and reliably.

We consider a trial of BESS utilisation for both distribution services and other services would produce the following benefits:

- The ability to test solutions for key concerns raised by customers in relation to excess solar on the distribution networks. Such solutions may include a 'solar sponge' tariff which will encourage distribution network utilisation during the daytime period as a mitigant to emergent system impacts caused by increased solar PV generation. Additionally, there may also be opportunities for retailers to develop customer product offerings with any contracted excess capacity. This will inform engagement on the 2025-2030 Tariff Structure Statement.
- The provision of robust and beneficial evidence to inform the development of a mechanism to allocate costs and prevent cross-subsidisation taking into account future variations in use. As noted by the AER in its Draft electricity distribution Ring-fencing Guideline Explanatory statement, there is currently no well-established approach for how much of a battery asset should be assigned to the RAB where it is not intended solely for network services. As also noted by the AER, batteries are a new technology where the potential split between use for network distribution services and other contestable services is currently unknown and the use of a particular battery may well change over time.

While mitigation of the risks to the safety and reliability of the Ergon Energy network is a key driver for our proposal, we acknowledge

that there is currently no explicit prohibition on DNSP investment in energy storage for network support, nor is it imperative that DNSPs own the storage used to provide such support. Given this, despite the forecast risks to the security and reliability of the Ergon Energy network due to rapidly declining minimum demand, the central driver of our waiver proposal is not to address an imminent locational risk on our network. Rather, the waiver will enable us to gain valuable learnings into the customer, system, and overall societal benefits of a currently immature value stacked energy storage market, that includes DNSP owned storage. Importantly, we consider that Ergon Energy's ownership of the BESS can demonstrate through trial learnings:

- the shared value of DNSP connected energy storage to a hesitant market
- de-risking entry for private investors; and
- informing regulatory decisions to support the creation of a deep and liquid energy storage market.

Evidence demonstrating that the risk of cross subsidisation is sufficiently addressed or does not arise

Applications that sufficiently address risk of cross subsidisation or where the risk does not arise could be eligible for the streamlined waiver process.¹

7 Cost Allocation²

Please provide the total cost of the battery project.

Please provide details of how the cost of the battery project is being funded, including (as relevant) the amounts that are being funded by: opex; capex; DMIA; grant; other external funding (please describe).

What cost allocation method is the DNSP proposing to use to allocate costs between the DNSP's own uses of the battery capacity and the supply of the excess capacity to a third

¹ AER, *Electricity Distribution Ring-fencing Guideline – Explanatory Statement (Version 3)*, p 29-31.

² For information on cost allocation methods, see AER, *Electricity Distribution Ring-fencing Guideline – Explanatory Statement (Version 3)*, p 35-36.

8 Process to engage third party suppliers of network services³

party. How will the risk of cross subsidisation be addressed? Will the battery assets be included in the RAB? If yes, please provide details of the extent to which this will occur.

The cost of the BESS amounts to \$40 million and is wholly funded by Energy Queensland Limited, Ergon Energy's parent company. The assets will, therefore, be excluded from Ergon Energy's regulated asset base and classified as unregulated assets. Accordingly, any associated ongoing costs will also be excluded from Ergon Energy's regulatory operating costs consistent with the principles of our approved cost allocation methodology.

What is the process for testing the market for third-party suppliers for network support? Please describe the process undertaken, if a specific process was undertaken in relation to the network need addressed by these batteries and provide links or documents as supporting evidence.

Our demand management program demonstrates there is currently no established market for distribution connected batteries nor a market for utilising behind the meter batteries for network support. Both Ergon Energy and Energex, have repeatedly tried to engage the market via mechanisms such as our online rewards maps.⁴ Ergon Energy has also engaged the market directly, via our Demand Side Engagement Register, to request quotation for non-network services as an alternative to network investment for 20 feeders, where the estimated cost of addressing the identified need fell below the threshold at which a RIT-D is required. While we have received some market response, we have been unable to contract any energy storage due to a combination of lack of interest, absence of commercial value, the targeted nature of the distribution needs and the associated network requirements. Our request to engage with the market for these services, and equally

³ AER, *Electricity Distribution Ring-fencing Guideline – Explanatory Statement (Version 3)*, p 34-37.

⁴ <https://www.ergon.com.au/network/manage-your-energy/reward-programs/cashback-rewards/search-incentives>
<https://www.energex.com.au/home/control-your-energy/cashback-rewards-program>

9 Any other information

that of our counterpart DNSP, Energex, who has had similar response outcomes, remain active in the market.

Given the current lack of a market for distribution connected energy storage, and the barriers to any rapid advancement of such a market, Energy Queensland has recently procured five BESS for connection at strategic locations within the Ergon Energy distribution network. Those BESS are the subject of this waiver application.

The locations in which the BESS will be connected have been selected based on having high, and forecast to increase, local DER penetration, and the absence of any near-term augmentation drivers. This, coupled with the fact that the BESS are not being funded through charges for standard control services, ensures the arrangements sit outside of the RIT-D provisions in the National Electricity Rules. This is reflective of Ergon Energy's commitment to compliance with the RIT-D and our continued commitment to partnering with the market for the provision of non-network alternatives, including energy storage, to address identified needs on our network.

Please provide any additional information that you would like considered as part of your application. This could include, for example, details of any additional measures to reduce any identified risks with the project, and of stakeholder engagement undertaken.

Please also describe any unique features associated with this project and any broader observations about the costs and benefits to the project.

The learnings from the proposed trial will be shared to inform the development of markets for the provision of these services including through, evidence based regulatory change necessary to give effect to such markets as required. Specifically, through this trial we are seeking evidence of:

- Whether distribution connected batteries effectively value stack all the upstream benefits such as frequency

response, generator ramping, transmission investment offsets, and voltage stability, while operating within distribution network envelopes and maintaining a safe, reliable distribution network.

- The role of dynamic operating envelopes to support DER operation within local level and overall system constraints, and the commercial benefits they provide to third parties.
- Whether batteries can contribute to deferred network augmentation in areas of high solar penetration, including avoiding the need to build our distribution network to allow energy flow into the transmission network during peak PV export, only to return at time of peak demand.
- The extent to which distribution connected batteries can reduce network losses by storing energy generated locally.
- The level of capacity required to fulfil network service requirements, when that capacity is likely to be required, and therefore what the nature of excess capacity is likely to be. Importantly, these insights will be of benefit, not only to Ergon Energy, but to the development of contestable markets for the provision of value stacked energy storage services.
- Whether installing batteries in the distribution network at scale (i.e. in modules greater than the current network need) is the most beneficial outcome.
- The customer benefits that distribution owned batteries can provide when taking into account the operational practices and policies of batteries owned and operated by the distribution business and the impacts this has on the ability to stack commercial market values under the existing and potential future market frameworks.
- Trade-offs that distribution connected batteries will need to manage to effectively support distribution, transmission, and generation needs while operating within the confines

of distribution network limitations, especially dynamic operating envelopes, and voltage constraints.

- How the impacts of transmission and distribution use of system charges on distribution connected batteries impacts the overall economic benefit, which will inform future tariff development when customers transition from being load only to load and dispatchable generation.
- The potential barriers to installing batteries in the distribution network, including council approvals, access to land, logistics, and community acceptance.
- How connection policies, connection standards and processes can be improved to integrate energy storage more efficiently and expeditiously into the distribution network in a safe and commercially viable manner.

Please note that, if approved, the following conditions are likely to apply:

- Ex-post public sharing of information about the battery (e.g., location(s), size, status of the project (trial or full scale roll out), intended purposes and uses, approved cost allocation method, and a key contact for external stakeholders if they wish to discuss the project further) and any useful learnings from the battery usage that will support the battery market.
- Provide on an annual basis a comparison of the uses (volume and frequency) of the battery that confirms the different uses of the battery (e.g., that was provided in the application), and an explanation of any differences between the two. The independent assessor, as part of annual ring-fencing compliance assessment to confirm the comparison is accurate.
- If some of the cost of the battery is included in the RAB, as part of annual ring-fencing compliance assessment, the independent assessor to verify that the cost allocation method in the waiver has been applied between the services/uses.

Appendix A – Site Details

Site 1

Location: Beach Holm, Townsville

Customer numbers, Feeder (2020): 725

Customer numbers, Zone Substation (2020): 7270

Total PV Capacity Feeder (2020): 1.7MW

Total PV Capacity Zone Substation (2020): 17.8MW

Peak Demand Feeder (2020): 2.8MW

Peak Demand Zone Substation (2020): 23.5MW

Minimum Demand Feeder (2020): -0.66MW

Minimum Demand Zone Substation (2020): -2.3MW

Site 2

Location: Tanby, Yeppoon

Customer numbers, Feeder (2020): 1980

Customer numbers, Zone Substation (2020): 5325

Total PV Capacity Feeder (2020): 2.4MW

Total PV Capacity Zone Substation (2020): 8.5MW

Peak Demand Feeder (2020): 3.9MW

Peak Demand Zone Substation (2020): 11.8MW

Minimum Demand Feeder (2020): -0.04MW

Minimum Demand Zone Substation (2020): -0.2MW

Site 3

Location: Kleinton, Toowoomba

Customer numbers, Feeder (2020): 1280

Customer numbers, Zone Substation (2020): 3600

Total PV Capacity Feeder (2020): 3.5MW

Total PV Capacity Zone Substation (2020): 8.2MW

Peak Demand Feeder (2020): 4.3MW

Peak Demand Zone Substation (2020): 11.4MW

Minimum Demand Feeder (2020): 0MW

Minimum Demand Zone Substation (2020): -1MW

Site 4

Location: Urangan, Hervey Bay

Customer numbers, Feeder (2020): 1750

Customer numbers, Zone Substation (2020): 14260

Total PV Capacity Feeder (2020): 4.8MW

Total PV Capacity Zone Substation (2020): 25.8MW

Peak Demand Feeder (2020): 4MW

Peak Demand Zone Substation (2020): 30MW

Minimum Demand Feeder (2020): -0.9MW

Minimum Demand Zone Substation (2020): -1.5MW

[Site 5](#)

Location: Windermere, Bundaberg

Customer numbers, Feeder (2020): 250

Customer numbers, Zone Substation (2020): 6600

Total PV Capacity Feeder (2020): 0.6MW

Total PV Capacity Zone Substation (2020): 13MW

Peak Demand Feeder (2020): 0.9MW

Peak Demand Zone Substation (2020): 14.2MW

Minimum Demand Feeder (2020): -0.6MW

Minimum Demand Zone Substation (2020): -1.9MW