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25 July 2023

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Dear Ms Jolly

Ergon Energy's waiver application against the Australian Energy Regulator's Ring-fencing Guidelines – Microgrid and Isolated Systems Test Facility

Under the *National Electricity Rules* (NER), Ergon Energy Corporation Limited (Ergon Energy Network) must comply with the Australian Energy Regulator's (AER) Electricity Distribution Ring-fencing Guideline (the Guideline).¹ The Guideline permits Ergon Energy Network to apply for a waiver of the legal separation obligations and the functional separation obligations related to branding. Ergon Energy Network is seeking these waivers to expand the use of the Microgrid and Isolated Systems Test (MIST) Facility beyond its current use for Ergon Energy's isolated systems.

Under the Guideline's clause 5.3.3, the AER may, in its absolute discretion, grant an interim waiver. Ergon Energy Network would also appreciate the AER exercising this option to enable the MIST Facility to expand the scope of its operations, as described in the waiver application, as soon as possible. This would help avoid delays for projects receiving funding via the Queensland Government's Microgrid Pilot Fund² and the Australian Government's Regional and Remote Communities Reliability Fund,³ for whom the MIST Facility can provide valuable testing, modelling and simulation capabilities.

Ergon Energy Network looks forward to providing continued assistance to the AER in considering our enclosed application. Should you require additional information or wish to

¹ Clause 6.17.2.

² <https://www.epw.qld.gov.au/about/initiatives/queensland-microgrid-pilot-fund>

³ <https://business.gov.au/Grants-and-Programs/Regional-and-Remote-Communities-Reliability-Fund-Microgrids>

discuss any aspect of this application, please do not hesitate to contact myself, or Alena Christmas, Manager Regulation, on 0429 394 855.

Yours sincerely

A handwritten signature in blue ink, appearing to read 'N. Roscoe', written in a cursive style.

Nicola Roscoe

A/Executive General Manager Regulation

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Encl: Ergon Energy Network's waiver application



Ergon Energy Ring Fencing Waiver Application

In relation to MIST Facility services

25 July 2023



Part of Energy Queensland

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Ergon Energy’s Ring-fencing waiver application

1. INTRODUCTION

Ergon Energy Corporation Limited (Ergon Energy) is a subsidiary of the Energy Queensland Group and is a Queensland Government Owned Corporation. Ergon Energy builds, operates and maintains an electricity distribution network and supplies electricity to more than 750,000 customers over a vast operating area covering one million square kilometres – around 97 per cent of the state of Queensland. Ergon Energy’s supply area covers the expanding coastal and rural population centres to the remote communities of outback Queensland and the Torres Strait. There are over 150,000 kilometres of power lines and approximately one million power poles in the Ergon Energy distribution network, along with associated infrastructure such as major substations and power transformers.

Ergon Energy owns and operates 33 isolated power stations that are predominantly diesel fired. Those power stations support 39 communities across far western Queensland, through the cape and across 16 islands of the Torres Strait. Ergon Energy also has 35 networks (including Mt Isa-Cloncurry), that support the provision of distribution services for these isolated communities. Figure 1 shows the remote locations of the isolated power stations owned and operated by Ergon Energy for the benefit of electricity customers within those isolated communities.



Ergon Energy’s Microgrid and Isolated Systems Test (MIST) Facility is in Cairns, Queensland. The MIST Facility was opened in 2021 and is designed to advance the development and uptake of new technologies for power generation and electricity distribution supply, by leveraging state-of-the-art equipment and testing capabilities. The Facility cost approximately \$6.4 million to construct and was funded under the agreement between Energy Queensland and Queensland Government for the delivery of electricity network services to regional Queensland.

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Increasingly, these isolated networks will need to be energised through a combination of customer-owned rooftop solar PV, and centralised renewable energy sources.

To date, the MIST Facility has been delivering services that support the safe and reliable supply of the Isolated Networks and facilitating the renewable energy transformation. The MIST facility has already been used to test control systems, energy storage and renewable generation integration scenarios for the benefit of customers in the isolated networks.

The MIST Facility is not part of Ergon Energy's regulated distribution network assets. Rather it is physically located within a dedicated isolated networks depot that serves as a major hub for designing and testing, manufacturing and fabrication, and maintenance operations for services provided to support the isolated networks. It is therefore an asset integral to and inseparable from the unregulated isolated networks part of Ergon Energy. However, third parties could visit the MIST Facility safely because it has an access point separate to the rest of the depot.

The Facility is expected to play a critical role in the decarbonisation of the isolated networks, as Energy Queensland has been directed by the Queensland Government, as part of its Queensland Government's Queensland Energy and Jobs Plan¹ to update Ergon Energy's Isolated Networks Strategy 2030 with a clear focus for clean energy for remote and First Nations communities. More information on the facility is available at Appendix A.

This ring-fencing waiver application is concerned with the possible expansion of the MIST Facility's operations to offer services beyond Ergon Energy's isolated networks.

2. MIST FACILITY CAPABILITY

At present, the MIST Facility provides a range of modelling, equipment testing, systems development and integration capabilities to assist Ergon Energy in providing services relating to the isolated networks in Queensland.

Based on the MIST Facility capabilities, it could provide the use of the MIST Facility to a wider range of clients beyond the isolated networks that are provided by Ergon Energy. The technical capabilities of the MIST include:

- integrated high-speed monitoring system for fast and configurable data capture and analysis;
- advanced power system and control system modelling and simulations, and providing Hardware in the Loop (HIL) testing;
- simulation testing for inverter and battery systems up to 30kVA;
- product stress testing of new technologies for grid-connected and off-grid equipment;
- Distributed Energy Resource (DER) integration testing for the modern power system, including solar, Battery Energy Storage Systems (BESS), diesel, hydrogen, etc.;
- testing of design and control strategies of detailed microgrid systems;
- LV switchboard-based multiple stress testing of new technologies for grid-connected and off-grid equipment; and
- training services linked to its test laboratory.

¹ Action 3.5: Clean energy for remote and First Nations communities, Queensland Energy and Jobs Plan

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Ergon Energy is seeking a waiver such that other parties can also use the MIST Facility through hiring the Facility and associated technical support. Ergon Energy understands and appreciates the potential harm that could arise if cross-subsidies were allowed to occur and is intent on ensuring no cross-subsidies would be permitted if the waiver is approved by the AER.

3. RING FENCING COMPLIANCE

On 18 December 2017, the AER granted Ergon Energy a waiver from the legal and functional separation obligations under clauses 3.1 and 4.2 of the Guideline² to allow Ergon Energy to continue to own and operate the isolated networks plus the Mount Isa-Cloncurry distribution network using its offices, staff, branding and promotions until 30 June 2025, or until there is a change in regulatory arrangements.

At present, the MIST Facility is restricted to the provision of isolated network services for which Ergon Energy has a ring-fencing waiver granted by the AER. That is, Ergon Energy cannot offer standalone contestable electricity services based on the capability of the MIST Facility.

These restrictions stem from the AER's Distribution Ring-fencing Guideline, which in simple terms has two key requirements:

- a DNSP may only offer distribution services to customers, and
- a DNSP must not discriminate in favour of an affiliated entity.

It is the first of these two requirements that restricts the use of the MIST Facility from offering contestable electricity services. This requirement aims to prevent harm to Ergon Energy's regulated distribution network customers, or the market more generally, in the event of cross subsidies occurring between Ergon Energy's regulated and unregulated services.

Ergon Energy is committed to compliance with the Distribution Ring-fencing Guideline. Consistent with this commitment, Ergon Energy supports the granting of ring-fencing waivers by the AER where appropriate. That is, if the harms that ring-fencing is designed to prevent can be avoided or adequately managed, certain restrictions imposed by the Guideline can be relaxed.

In this ring-fencing waiver application, we have sought to explain how an expansion of the MIST Facility's operations could deliver benefits to electricity consumers. Further, that doing so would not adversely affect competitive markets offering services like those that could be offered through the MIST Facility. In our view, this will result in better achievement of the National Electricity Objective (NEO) and delivery of electricity services that are in the long-term interests of electricity consumers. In this regard, Ergon Energy is seeking a ring-fencing waiver in relation to the obligation to legally separate services that could be offered using the capabilities of the MIST Facility from Ergon Energy's DNSP providing distribution network services.

Clause 5.2 of the Ring-fencing Guideline provides that an application for a waiver must contain the following information and materials necessary to support the application:

- (a) the obligation in respect of which the DNSP is applying for a waiver;
- (b) the reasons why the DNSP is applying for the waiver;

² Version 2, which was published in October 2017.

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- (c) details of the service, or services, in relation to which the DNSP is applying for the waiver;
- (d) the proposed commencement date and expiry date (if any) of the waiver and the reasons for those dates;
- (e) details of the costs associated with the DNSP complying with the obligation if the waiver of the obligation were refused;
- (f) the regulatory control period(s) to which the waiver would apply;
- (g) any additional measures the DNSP proposes to undertake if the waiver were granted; and
- (h) the reasons why the DNSP considers the waiver should be granted with reference to the matters specified in clause 5.3.2(a), including the benefits, or likely benefits, of the grant of the waiver to electricity consumers.

The remainder of this waiver application addresses each of these Guideline requirements as they relate to the provision of MIST Facility's services by Ergon Energy.

4. DESCRIPTION OF WAIVERS BEING SOUGHT

Ergon Energy is seeking a waiver from the requirement for legal separation of a DNSP from an entity offering non-distribution services under clause 3.1(b)³ of the Guideline. If granted, this waiver would allow Ergon Energy to offer contestable electricity services to the market, based on the capabilities of the MIST Facility. That is, the waiver would allow Ergon Energy to offer a non-distribution service, based on the technical capability of the MIST Facility as described in Section 2 above.

In addition, Ergon Energy is seeking a waiver from the functional separation obligations in regard to branding of services offered using the MIST Facility under clause 4.2.3⁴ of the Ring-fencing Guideline. This waiver would enable Ergon Energy to offer MIST Facility services under its own brand name. The MIST Facility is fundamentally concerned with the delivery of services by Ergon Energy, and the use of the MIST Facility is a key business group within Ergon Energy.

These waivers are required in order to expand the use of the MIST Facility beyond its currently exclusive use in regard to Ergon Energy's isolated networks.

The MIST Facility contributes to isolated network services provided by Ergon Energy across regional Queensland. Under the current regulatory arrangements, including existing ring-fencing waivers, there are no cross subsidies between the regulated and isolated network services that utilise the MIST Facility. Costs incurred by the MIST Facility are not recovered from Ergon Energy's regulated electricity distribution customers in accordance with the AER-approved Cost Allocation Method (CAM). Isolated network costs are partly recovered through retail charges from customers of Ergon Energy's isolated networks also in accordance with the CAM.

In regard to branding, Ergon Energy appreciates that branding restrictions are designed to prevent confusion from consumers around the nature of service being offered by a DNSP. In particular, it

³ The legal separation obligation under clause 3.1(b) of the Guideline provides that a DNSP may provide distribution services and transmission services but must not provide 'other services'.

⁴ The functional separation obligations under clause 4.2 of the Guideline provide that a DNSP may not use the same branding for both regulated and unregulated services.

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may be unclear to some customers whether a service is subject to price and quality regulation, as is the case for most electricity distribution services offered by Ergon Energy. The services to be offered by way of the MIST Facility would be used by sophisticated customers, typically businesses also involved in the energy transition. These businesses will be well informed and can be expected to understand the difference between regulated and unregulated electricity services. For this reason, the branding restrictions around MIST Facility-related services are not warranted.

To be clear, Ergon Energy is not seeking waivers from the staff sharing and co-location restrictions in the Ring-fencing Guideline. Ergon Energy is satisfied that it can operate within the requirements of the Distribution Ring-Fencing Guideline in regard to these issues. That is, staff of the MIST Facility will either not have access to 'ring-fenced information', or if they do, the nature of the information will be added to Ergon Energy's ring-fencing information disclosure register and will be made available to anyone seeking access to that same information.

Proposed waiver commencement date and expiry date

Ergon Energy proposes that the waiver commences upon being granted and expires on 30 June 2035. A longer expiry period is being requested given the life of the asset and aligns with Australian and Queensland Government's target to meet net zero. While we appreciate the AER has a view that ring-fencing waivers should not extend beyond the next regulatory control period, we do not consider that it is in the interests of customers and the market more generally. Transitioning to net zero is one of the greatest challenges, which calls for a complete transformation with the energy sector being at the forefront. The MIST Facility can assist in this transition. We anticipate that the waiver would be extended unless there are significant and unforeseen changes to the circumstances relating to the provision of services by the MIST.

Potential costs if waiver application is not granted

As previously noted, the MIST Facility contributes to unregulated isolated network services. None of these costs are recovered from Ergon Energy's regulated customers, nor do any of the MIST Facility assets form part of Ergon Energy's regulatory asset base (RAB). However, it has available capacity to provide inputs to Energex, Ergon Energy's regulated business, other Network Service Providers and to offer contestable electricity services in the wider market for electricity services. In this regard, the costs that Ergon Energy will bear if the waiver is not granted relate to the opportunity cost of under-utilising a capability that can contribute to the evolution of the energy sector and adoption of new renewable technologies and associated products/services that can benefit Australian electricity consumers in the long term. The provision of a waiver would also reduce the up-front and ongoing legal and administrative costs associated with establishment of a separate legal entity to offer services utilising the MIST Facility.

The MIST Facility is well positioned to contribute to the energy transition to renewable and decentralised energy sources and is a key to enable deployment of technologies at scale. If a waiver is not granted, this potential will not be realised. These costs are not easily identified. However, it is apparent that testing, modelling, and experimentation of the technologies that will underpin a net-zero and decentralised energy system is an important aspect of the energy transition in Australia. There are relatively few organisations capable of providing these services at present, as noted in the market scan in Appendix B.

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Regulatory control periods to which the waiver would apply

It is proposed the waiver would apply for the remainder of the current regulatory control period (2020-2025), the 2025-2030 and the 2030-2035 regulatory control periods to align with the AER's service classification decisions.

Ergon Energy also recognises that this time frame would allow relevant market developments to be assessed to ensure that no competitive harms may emerge in relation to the MIST Facility.

Additional measures in support of waiver

Ergon Energy will continue to apply its AER approved CAM in relation to the MIST Facility. The CAM sets out how we allocate costs towards the provision of services. As previously noted, the MIST Facility itself does not form part of Ergon Energy's RAB. This should assist in addressing concerns about cross subsidisation of the MIST Facility.

In addition, Ergon Energy proposes that the MIST Facility would offer services to the market on a non-discriminatory, open access basis. Ergon Energy considers that this open access policy is an important way in which it can demonstrate that it is not favouring its contestable business or causing market harm.

Reasons why waiver should be granted

The waiver would enable the capability of the MIST Facility to be made available to customers across Australia. As noted in the market scan, these services are not readily available at present. These services are valuable in assisting the Australian economy to decarbonise as part of the energy transition across Australia. Any potential harms, such as those the Ring-fencing Guideline is designed to avoid, can be avoided through mechanisms described above.

Clause 5.3.2(a) of the Guideline provides that the AER, in assessing a waiver application and deciding whether to grant a waiver or refuse to grant a waiver, must have regard to the National Electricity Objective (NEO), which 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.

Both elements of the NEO are of importance in considering this waiver application.

5. POTENTIAL ADDITIONAL BENEFITS TO CONSUMERS AND ELECTRICITY NETWORKS

As previously noted, the MIST Facility contributes to unregulated services offered by Ergon Energy, through its 33 isolated micro-grid systems (consisting of both generation and network assets) across 39 Queensland communities where it is providing both the generation and distribution network services.

Ergon Energy considers that the MIST Facility has strong potential to deliver benefits beyond its isolated system electricity consumers to Australian electricity consumers. Improved knowledge and application of new and enhanced products/services relating to renewable energy integrations, particularly in the more remote fringe of grid regions, has the potential for significant savings as alternative and cheaper options can replace costly traditional network solutions. In addition, technology evolutions in the fringe of grid are often a precursor to evolutions in the wider grid, for examples, microgrids to support remote tourist townships might later be mirrored within NEM areas

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as communities wish to become more self-sufficient with community batteries and shared generation resources.

The foregone benefits arise from missed opportunities for market participants with specific commercial or research interests in fringe-of-grid network supply, standalone power systems and microgrids, to utilise the spare capacity of the MIST Facility. This includes providing services to Energex, Ergon Energy regulated business and any other DNSP, or the market more generally.

In this way, the wider use of the MIST Facility has the potential through enabling innovation to improve the reliability and security of supply of electricity in Queensland and the NEM, particularly in remote and isolated regions, consistent with achieving the NEO. This in turn would contribute to reducing the price and improving quality of service in these regions, as well as providing a decarbonisation dividend.

Retaining MIST within Ergon Energy provides stronger potential for it to serve a broader range of electricity market participants whether it be distribution networks or entities offering services to end-customers in retail electricity service markets.

6. CONCLUSION

Ergon Energy submits that its waiver application promotes the NEO, avoids cross subsidisation by ensuring regulated distribution network operating and capital resources are not being used to provide unregulated services and does not result in discrimination.

In granting the waiver from the legal and functional separation obligations of the Guideline, Ergon Energy considers that there will be no harm to electricity consumers.

Rather, the MIST Facility is fundamentally a modelling equipment testing, systems development and integration facility which would operate with an open access policy that would enable incorporation of new renewable technologies into electricity distribution networks or the creation of new electricity retail market services, which are in the long-term interests of Australian electricity consumers.

In relation to potential discrimination that the Distribution Ring-Fencing Guideline seeks to prevent, Ergon Energy considers there is no potential for discrimination because of the open access nature of the MIST Facility. Yurika, as Energy Queensland's contestable services business and a related electricity services provider to Ergon Energy, will receive no special advantage in utilising the Facility.

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Appendix A – MIST Facility’s Technical Capabilities

The MIST is designed to provide three main capabilities:

- low voltage power testing (up to 1MVA) in both grid-connected and off-grid scenarios;
- advanced modelling and simulation using a real-time digital simulator (RTDS) and power amplifier; and
- centre for knowledge sharing and upskilling.

Figure 1 shows a basic overview of the MIST electrical connection and the possible various new technology devices. MIST is also linked to the Innovation Lab, which is an existing laboratory that has operated over 10 years in testing small inverter and battery systems to improve Australia Standards and drive product improvements.

MIST is operated by highly experienced engineers and technicians, who have over 10 years’ experience in electrical device testing and new technology integration.

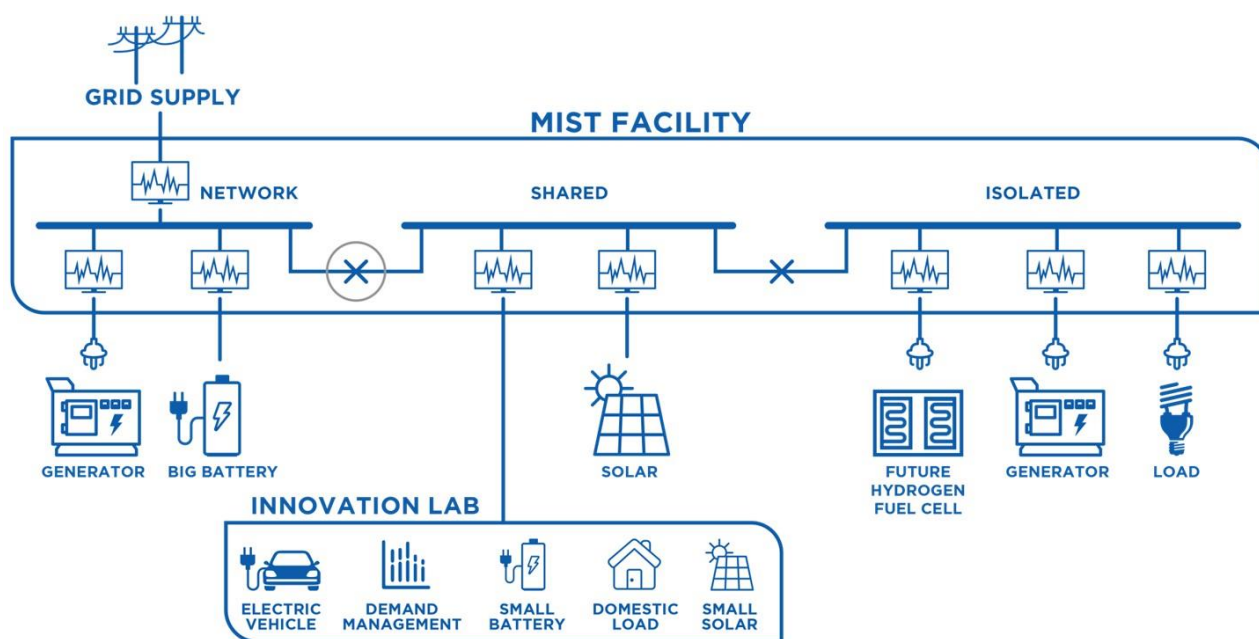


Figure 1 – Overview of electrical equipment that can be connected to the MIST for testing purposes

Table 1 shows a summary of MIST capabilities, expertise and focus areas, including example applications and scenarios.

MAJOR INFRASTRUCTURE	EXPERTISE / FOCUS AREAS
MIST located at major Cairns’ hub which services all regional Isolated Power Systems	Unifying our extensive field expertise with advanced engineering to decarbonise
Purpose-built high-power LV electrical switchboard for multiple device testing	Product stress testing of new technologies

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MAJOR INFRASTRUCTURE	EXPERTISE / FOCUS AREAS
Full 1MVA export connection for synchronous generator and inverter-based connections	DER integration testing for the modern power system, including solar, BESS, diesel, hydrogen, etc.
Integrated high-speed monitoring system for fast and configurable data capture and analysis	Improving the veracity of device simulation models and electrical performance
On-site energy resources available for different configurations, including diesel engines, BESS and solar PV.	Leveraging the unique skillsets of utilities to further develop the technologies
Real time digital simulator (RTDS) and linear power amplifier	Advanced power system and control systems simulations, and providing Hardware in the Loop (HIL) testing
Training facility linked to the test laboratory	Upskilling of the power industry to be ready for the Australian energy transition.

Table 1 – Summary of MIST capabilities and focus areas

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Appendix B – Results of market scan

To address the concern about potential market harms, Ergon Energy has undertaken a scan of the Australian market for electricity network-focussed equipment testing and research service providers that are comparable to the MIST Facility.

The market scan indicates that there is currently no entity in the Australian market supplying a comparable utility-sized testing facility like the MIST Facility. Most of the existing market participants are University-based energy laboratories, with some electricity networks or their related contestable entities, offering a small number of comparable services.

The University of Queensland's Power and Energy Systems group is the only Queensland facility that offers microgrid simulations like the MIST Facility, although it lacks the regional community focus that MIST offers. Enerven's microgrid prototype service only has a presence in South Australia and these projects are in the form of trials rather than a laboratory setting like the MIST Facility.

Based on the market scan, Ergon Energy considers that the market for MIST Facility's services currently is still in its early stages and beginning to display signs of future potential. However, it is currently characterised by relatively few participants with widely different service offerings. Given this relatively early stage of the market's development, it is difficult to see how the MIST Facility will harm competition because of the differentiated services currently offered in the market.

Rather, the MIST Facility is more likely to enable other distribution networks with a rural focus to test possible non-network solutions for fringe-of-grid regions. Further, existing, or new market participants with end-customer facing products/services could use the MIST Facility to develop new or enhanced products/services in these regions or more broadly. In other words, the Facility has the potential to enable growth in contestable retail electricity services markets.

Since the MIST Facility began its operations, numerous entities have approached Ergon Energy with interest in the facility's capabilities including universities, the National Battery Testing Centre, power electronic inverter equipment manufacturers, power industry consultants, and state and local Government departments.

Finally, given the up-front cost of the MIST Facility, it is not clear that there are significant financial barriers to entry to the equipment testing market that the Facility operates in, such that the Facility offering services on an open access basis is highly unlikely to foreclose market entry to other market participants.