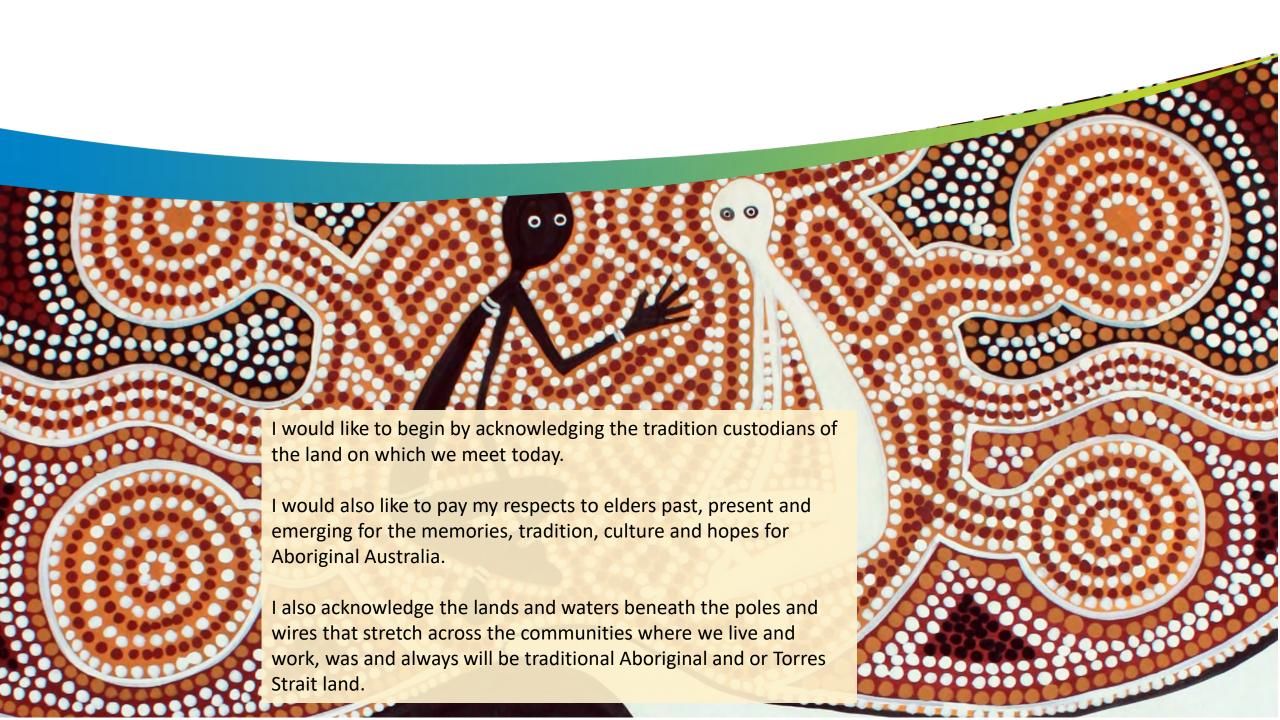
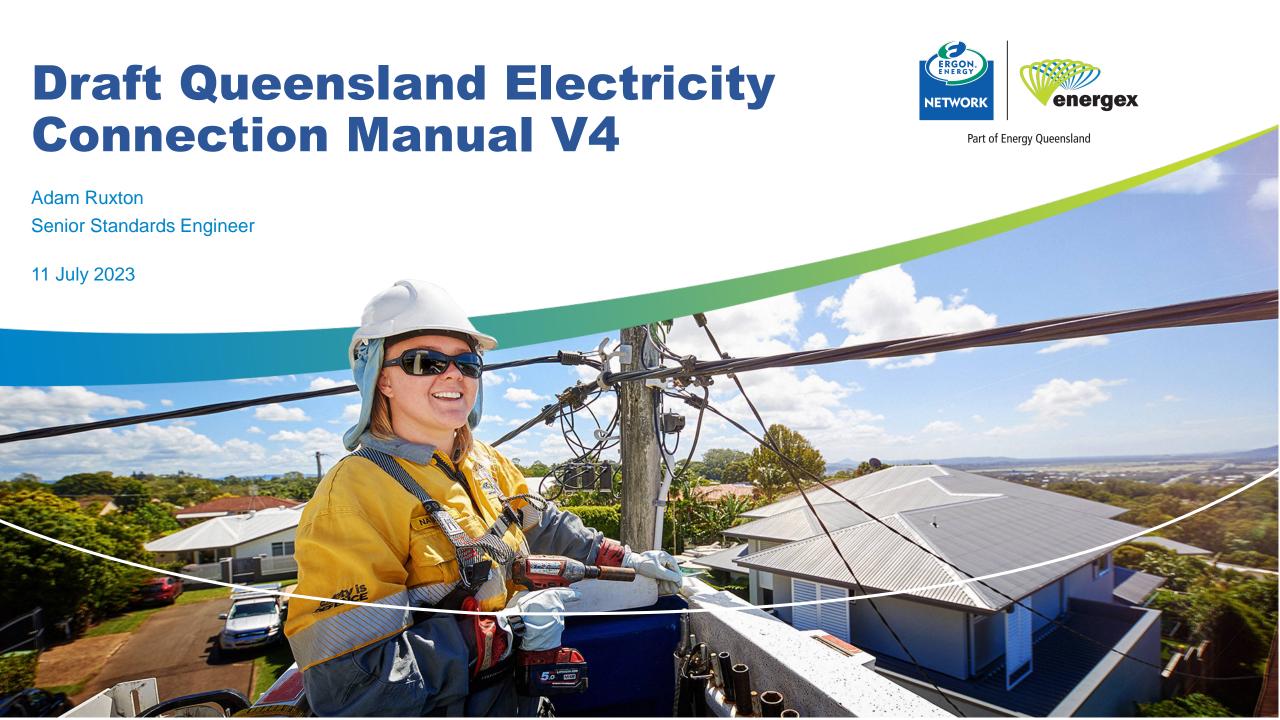
Energy Queensland Energy Academy 2023





Agenda

ltem	Responsibility	Duration	
QECM V4 Upcoming Release	Adam Ruxton	35-45 minutes	
Dynamic Customer Connections - Enabling Dynamic Capability	Alex Guinman	10-15 minutes	
Energex/ Ergon BAU POEL Inspections – 1 August Go Live	Dewang Bhargav and Payton Luxton	10-20 minutes	
Customer Operations Tips & Tricks	Avalon Mears and Bianca Leishman	10 minutes	



Adam Ruxton

Senior Standards Engineer
Generation and Customer Standards



Connecting our future

Modern electricity solutions

Smarter buildings and communities

Changing expectations for electricity needs. More complex electrical systems with integrated EVSEs and ESS, automated switching and local control.



Increased DER

Dynamic connections, including an increase in flexible loads





Improving and securing safer outcomes



Interacting in new energy markets

Using consumer owned new energy tech to access energy market opportunities and to provide system support services.

What the future holds for connections to the Qld DNSPs





Customers are active participants



Multi-directional



Decentralised



Market-driven regulation



Intelligent Grid



Many renewable energy producers

Stage 1 Consultation April 2022



Consultation Questions

- Do you support our proposed approach for updating the QECM?
- Are there any specific areas of the QECM that you feel could be improved?
- Do you support the proposed transition plan from the QEMM to the MIR?
- Please provide any feedback that you think will assist us in developing service and installation rules to best support Queenslanders meet our future connection needs?



Focus areas

Modifying existing installations

Improved "clarity" of compliance requirements

Meter board locations

Review and clarify meter board location requirements



Property poles

Support new inspection requirements for private property poles & alignment with current safety practices

Additional DNSP Service Points

Align with current policy for allocation of additional DNSP service points.

Electric vehicle charging

Enable and support the safe and sustainable integration of EV charging infrastructure

Queensland Energy & Jobs Plan Alignment

The updated QECM will help facilitate implementation of key deliverables in the QEJP under Focus area 2: Empowered households & businesses, by supporting:

- Smart meter device roll-out.
- Smart connections and network access for New Energy Tech, including EV charging infrastructure in buildings.
- Dynamic connections for customers
- Provision of an updated technical and connection manual (QECM)

QECM V4 Document Content Summary

Preliminary

- 1 Introduction
- 2 Definitions and abbreviations
- 3 Relevant rules, regulations, standards and codes
- 4 Connection activities

Meter board

- 9 Network device and metering general requirements
- 10 LV connected network device and metering requirements
- 11 HV connected metering requirements

В

Electrical

- 5 General connection and supply requirements
- 6 OH connection and supply requirements
- 7 UG connection and supply requirements
- 8 Electrical installation requirements

Operate

12 - Testing and commissioning

D

13 - Operations and maintenance

Appendix

Appendix A: QECM

drawings

Appendix B: Activities requiring approval

Appendix C: Model

standing offer

Appendix D: Static data

and information

Appendix E: Dynamic data

and information

Appendix F: Compliance

checklists

Appendix G: Isolated

networks

Appendix H: Specification for metallic enclosures for direct connected metering

installations

Appendix I: Controlled tariff requirements

Appendix J: Alterations of existing connections

Appendix K: Stakeholder interactive diagrams for connection participants

Appendix L: DNSP service

area map

Appendix M: Card operated meter service

areas

Appendix N: DNSP contact

details

New active device management EVSE options

Clause 8.10.4 Dynamic

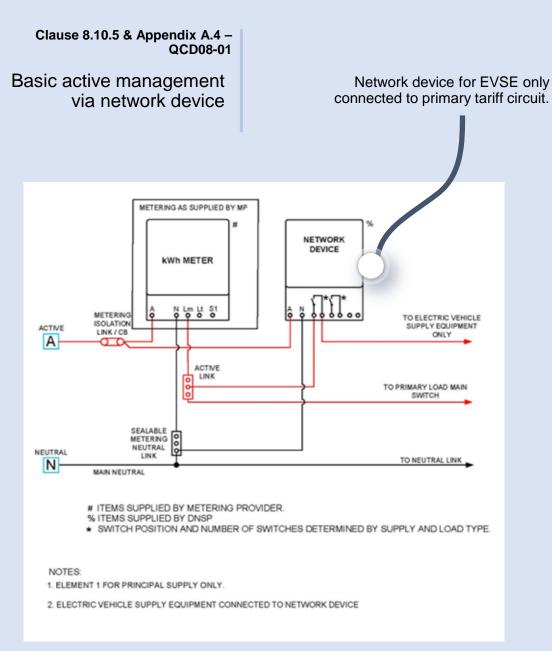
Dynamic EVSE



- CSIP-AUS capable directly or via a third party.
- Limits based on aggregate import: Dynamic operation shall meet fixed, minimum dynamic and maximum dynamic import limits based on aggregate import of all load at DNSP service point.
- V2G EVSE dynamic connection options are managed under EG connection standard requirements.

Table 43 Dynamic EVSE limits

	Fixed <i>import</i> limit / minimum dynamic import limit	Maximum dynamic import limit
single-phase	≤ 4 kW	≤ 15 kW
two-phase	≤ 4 kW	≤ 10 kW/phase
three-phase	≤ 4 kW	≤ 15 kW/phase



Note - Clauses apply to Customer's with connection points with 100 A per phase only.

Meter board locations

Clause 9.8.2

Meter board location requirements for domestic premises

9.8.2 Meter board location requirements for domestic premises

For single or multiple *domestic premises*, a *meter board* shall be installed in a location compliant with clause 9.8.1.1 and the additional requirements in Table 52:

Table 52 Meter board location requirements for domestic premises

Domestic premises meter board location options			>0.5 ha
(a)	on the side of the main building of the <i>premises</i> facing a street from which there is a pedestrian access	Yes	Yes
(b)	at the front property boundary facing road reserve recessed so that no part of the <i>electrical installation</i> is within road reserve	Yes	Yes
(c)	within the first 2 m along an adjacent side of the main building of the <i>premises</i> to (a)	Yes	Yes
(d)	where the main entrance to a <i>domestic premises</i> is on the side of a <i>premises</i> the meter board may be installed on the adjacent side of the <i>premises</i> to (a) no further than 1.5 m beyond the main entrance	Yes	Yes
(e)	accessible by a motor vehicle	No	Yes

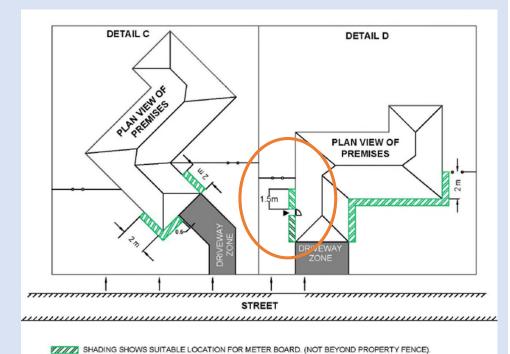
Note 1 – Representative diagrams of *domestic premises* meter board location options can be seen in drawings QCD09-02 and QCD09-03.

Note 2 – For alterations of *electrical installation* involving the *meter boards* see clause 4.9 and Appendix J for further information.

Appendix A – QCD09-02

ENTRANCE/FRONT DOOR

Acceptable location of meter board single domestic (extract)



Appendix J - Alterations

Major alterations for domestic switchboards installed before 2015

Appendix J: Alterations of existing connections (normative)

Table 69 Alterations of existing connections

Category	Alteration works	Major ^{1,3} alteration	Minor ² alteration
Multiple	Connect additional phases	Yes	No
Point of attachment	Relocate	Yes	Yes where relocated for safety only and no other alteration works undertaken
Consumer mains	Replace	Yes	No
Meter panel	Works on meter panel where panel not housed in enclosure	Yes	No
	Replace meter panel when meter enclosure not replaced	No	Yes
Meter enclosure	Replace	Yes	No
	Relocate	Yes	No
Metering	Change from direct connect to CT metering	Yes	No
	Change from CT to direct connect metering	Yes	No
	Customer request to change meter	No	Yes
	Add new meter, point of attachment and/or connection point at multiple premises	Yes	No
	Additional tariff requested	No	Yes
	Load centre change	No	Yes
Solar IES	Connect	Yes	Yes
			where no asbestos in <i>meter board</i> , hinged panel, meter isolation link and metering neutral link.

Note 1 – Where a *Proponent* with *consumer mains* on pole undertakes alteration works classified as a major alteration, the *DNSP* service point shall be relocated to a location compliant with this *manual*.

Note 2 – Where a single *Proponent* of a multiple *domestic* or *non-domestic premises* connection requires works that fall under minor alterations in clause 4.3.2.2 and is unable to gain support from the body corporate to upgrade metering, they may install a second *meter board* directly next to existing non-compliant meter panel.

Note 3 – For single and multiple domestic premises with an existing connection established prior to 2015 undertaking major alteration works under clause 4.3.2.1 and Appendix J:

A Proponent may:

- (i) Locate the meter board within the first 4 m along an adjacent side of the main building of premises, where the meter board was connected in this location in the initial connection and it is not located in an unsuitable location under clause 9.7.1.2.
- (ii) Relocate the *meter board* to a location within the first 4 m along an adjacent side of the main building of *premises*, where there is a permanent structural obstruction on side of *premises* (such as windows) preventing installation within 2 m and it is not located in an unsuitable location under clause 9.7.1.2.

Appendix J - Alterations

Major alterations for domestic switchboards installed before 2015

Note 3 – For single and multiple domestic premises with an existing connection established prior to 2015 undertaking major alteration works under clause 4.3.2.1 and Appendix J:

A Proponent may:

- Locate the meter board within the first 4 m along an adjacent side of the main building of premises, where the meter board was connected in this location in the initial connection and it is not located in an unsuitable location under clause 9.7.1.2.
- (ii) Relocate the *meter board* to a location within the first 4 m along an adjacent side of the main building of *premises*, where there is a permanent structural obstruction on side of *premises* (such as windows) preventing installation within 2 m and it is not located in an unsuitable location under clause 9.7.1.2.

Clause 9.8.1.1 – (Meter board)
Location requirements
Minimum distance for
locating a meter board from
a trafficable area (extract)

Table 50 Minimum distance for locating a meter board from a driveway edge or trafficable area

Property type	Minimum distance (mm)	
Residential ²	600	
Other	1000	

Note 1 - the minimum distance is measured from the face of the closed meter board in any direction.

Note 2 – multi-residential may require a minimum distance of 1000 mm where a large switchboard is installed.

Additional DNSP service point

- Approval required: for provision of additional DNSP service point
- Updated for alignment: QECM has been updated to demonstrate minimum requirements to ensure alignment with DNSP Connection Policy, National Electricity Rules and safety requirements.
- Change to classification: The provision of additional DNSP service points is no longer governed by urban or rural classifications.
- Further development works: We will be further investigating options for additional DNSP service point provision, including safety and statutory considerations. These activities will continue beyond publishing of QECM V4.

Clause 5.6.2

Multiple distribution transformers (extract)

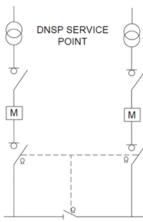


Figure 1 General arrangement of multiple DNSP service point with bus-tie interlocking

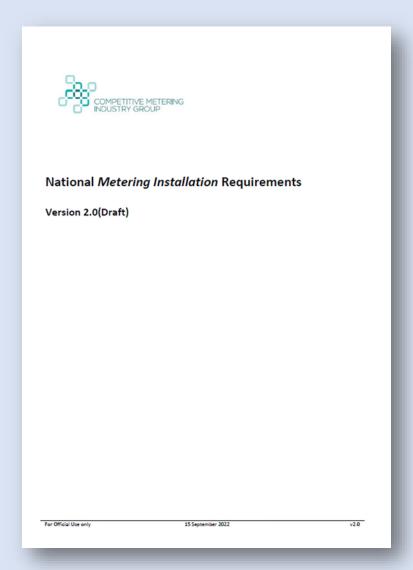
Clause 5.2.5

Provision of an additional DNSP service point (extract)

Table 14 Requirements for options for additional LV DNSP service point

Option	Max no. of DNSP service points	Total number of transformers supplying premises	Distance between additional DNSP service points	Electrical installation requirements
LVXSA	no more than 1 every 200 m along Customer's property alignment	Number of transformers, based on site specific determination by <i>DNSP</i> Transformer supply may not be dedicated to premises.	≥ 200 m between DNSP service points, measured along the Customer's property alignment	Load supplied is ≥ 100 m from any building supplied by the DNSP service point Load supplied is ≥ 50 m from any electrical installation supplied by the DNSP service point No interconnection permitted between electrical installations as per clause 5.6.2.
LV2SB	2	2 dedicated transformers with equal rated capacity	Adjacent in common easement	The DNSP service points shall supply separate buses of the same main switchboard, installed in a switch room. The buses shall meet the requirements for multiple transformers in clause 5.6.2.
LV3S	3	3 dedicated transformers with equal rated capacity	Adjacent in common easement	The DNSP service points shall supply separate buses of the same main switchboard, installed in a switch room. The buses shall meet the requirements for multiple transformers in clause 5.6.2.

National Metering Installation Requirements (MIR)







National requirements

Requirements developed and consulted by Competitive Metering Industry Group (CMIG). Increase industry opportunity by leveraging national standards

Provision of services

Energex and Ergon Energy Network have limited responsibility for metering services. Metering Providers are best placed to develop and support metering standards





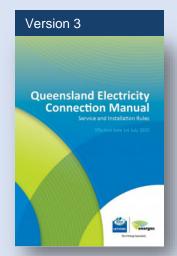
Revised for consultation

The MIR has been further revised with industry and a new draft v2.0 produced for consultation with the Competitive Metering Industry Group.

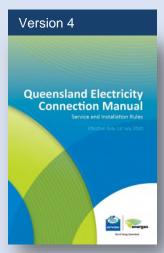
Due to transitional arrangements, there are duplicated elements between MIR and QECM V4. There will be further consideration on minimum requirements for DNSP specification in future revisions of QECM.

Planned document changes

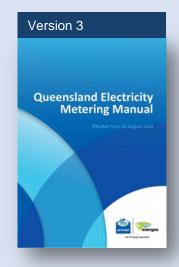
Connection requirements







Metering requirements











Part of Energy Queensland





Feedback Form: Queensland Electricity Connections Manual - Version 4 (QECM V4) Draft

Feedback on Ergon Energy Network and Energex's proposed QECM V4 can be provided by filling out the table below and emailing it to standardsfeedback@energyq.com.au. Please ensure all fields are completed for each proposed change to be considered.

Clause Number (eg. 2.6)	Heading (eg. Unmetered supplies)	Comments (Detail why you consider a proposed change is required)	Proposed Change (Provide alternative wording for the proposed change)	Attachments (Reference any attachments to support the proposed change)

Consultation feedback

To access the draft QECM:

www.talkingenergy.com.au/qecm2023

Consultation feedback closes: 21 July 2023

To submit proposed feedback to QECM use the template on Talking Energy and email to:

standardsfeedback@energyq.com.au

To submit proposed feedback to MIR use the <u>template</u> on Talking Energy and email to:

paul.greenwood@vectormetering.com







Consultation Activities

April 2022

Stage 1 Consultation Paper

July 2022 - May 2023

QECM drafting and internal consultation

June – July 2023

- <u>Draft QECM V4</u> with 4 weeks consultation
- <u>Draft MIR</u> with 4 weeks consultation by CMIG
- Industry webinar

August 2023

Industry notifications about release and transition plan

September 2023

Industry briefing sessions on QECM V4

Consultation feedback

To access the draft QECM:

www.talkingenergy.com.au/qecm2023

Consultation feedback closes: 21 July 2023

To submit proposed feedback to QECM use the template on Talking Energy and email to:

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To submit proposed feedback to MIR use the template on Talking Energy and email to:

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Dynamic Connections



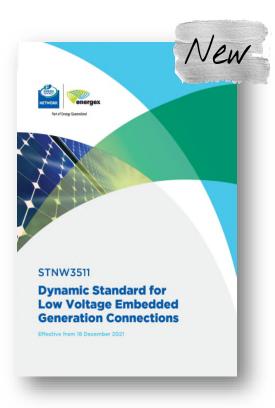




What is a Dynamic Connection

Dynamic





- New smarter connection option for solar PV, Battery and EV charging installations.
- Allows customers to export more energy.
- Ensures Ergon and Energex maintain a safe and reliable network.

Registration

Communication network to receive signal.

Registration with our utility server required to have

Dynamic Connections

Inverter has a two-way communication link with the distribution Distribution Network

Energex and Ergon Energy Network continually monitor the for calculating amount of customer's excess energy is for calculating amount of customer's excess energy is

Fixed limits

For loss of communications, fixed limit equal to the

Dynamic Limits

Dynamic export and import limits within a range. The inverter will receive a signal that allows the system to maximise the export, based on available network capacity.

Overview Video



g BENEFITS

Dynamic limits

Variable export and import limits to optimise DER interaction with the grid to allow for greater export for customer

New connection options

Larger capacity limits for solar and batteries on single phase with 10kVA of PV and 10kVA batteries permitted.

Social options

Supporting greener future and safe reliable supply for all **Oueenslanders**

Access to new markets

Supporting customers to access new and emerging energy markets





Why we have introduced Dynamic Connections

The export constrained

Negotiated with partial- or zero- export offers

New Technology

Those who want the latest opportunities and to be ready for any future changes.



We are working to enable PV, batteries and V2G connected to the network and ensure that customers are able to interact with the grid.

Dynamic is optional for customers applying for EG systems less than 1500kVA

NB: Reduced dynamic export levels may apply in locations where there are very high levels of solar PV already installed in the neighbourhood, or where we have limited monitoring of the network.

Customer FAQ's

Is Special Equipment Required?

Yes. A compliant inverter or gateway device is required.



How do I apply for my customer?

Please choose as an option in the portal, similar to existing process for EG systems. Fees will apply.

How do I commission the equipment?

Please refer to guidance provided by the manufacturer of the inverter or gateway device.



How does inverter or gateway get certified?

Please request of copy of the <u>Smart Energy Profile (SEP2) Client Handbook</u> and follow the steps to become a compliant provider.

Which connection standards apply?

For systems under 30kVA - STN3510

Dynamic Standard for Small IES

Connections (PDF 836.1 kb)

For systems 30kVA to 1500kVA - STNW3511

Dynamic Standard for LV EG

Connections (PDF 1.1 mb)



What about sites with multiple DER?

Support for multi-inverter configurations varies between manufactures. All DER needs to be compliant with connection standards and capacity s aggregated at the site.



Further Information Available

Dynamic Connections

Energex website - <u>Dynamic Connections for energy exports</u>

Ergon website – <u>Dynamic Connections for energy exports</u>

For standards feedback:

standardsfeedback@energyq.com.au

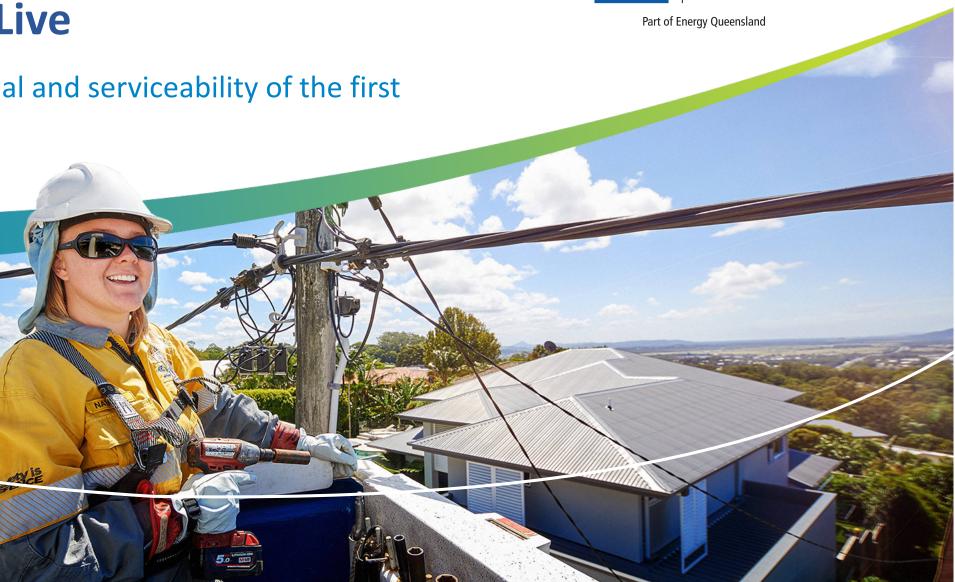
Please encourage your suppliers to get their relevant equipment certified



Energex/ Ergon BAU POEL Inspections 1 August Go Live

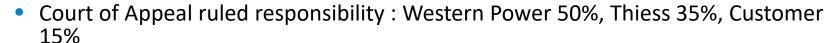






Background and Context

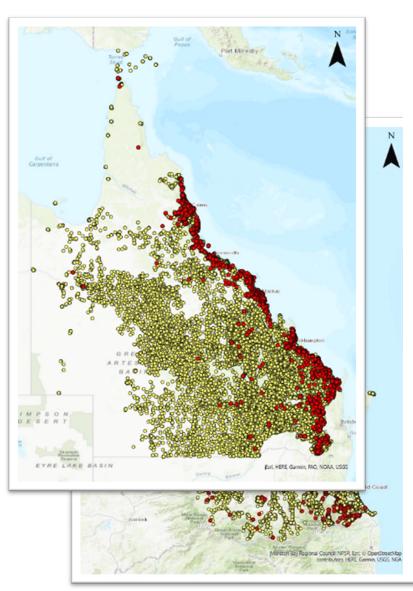
- January 2014 Parkerville bushfire Western Australia
 - Private point of attachment pole failed, igniting bushland.
 - 392 hectares of land burnt, 57 properties destroyed.
- Supreme Court ruled responsibility: Thiess 70%, Customer 30%



- The court said Western Power had a duty to take "reasonable care to avoid or minimise the risk of injury" to people, and loss or damage to their property from "the ignition and spread of fire in connection with the delivery of electricity" through its distribution system.
- "Western Power breached that duty of care by failing to have a system for undertaking the periodic inspection of wooden point of attachment poles owned by consumers and used to support live electrical apparatus," it said.
- Based on the Court of Appeal decision, Energex and Ergon network commenced a trial in 2022 to undertake visual and serviceability inspection of 8,000 first private property poles across Queensland.



Private Property Pole Serviceability Inspection Trial 2022



- From Feb-Oct 2022, Energy Queensland completed a trial program to undertake both visual and serviceability inspections of 8,000 Energex (3,500) and Ergon Network (4,500) first property poles.
- Poles were selected to include:
 - Differing pole types
 - High risk Bushfire areas
 - Population density
 - Differing biodiversity regions
 - Coastal location (</> 30km from Coast)
 - Special locations e.g. schools, post office, public areas
- The key deliverable from the trial was to collect data to provide a statistically representative sample of first Private Property Poles that would be analysed, risk assessed and subsequently used to inform future inspection programs.

What We Found When We Dug



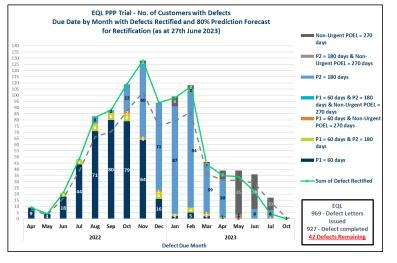
The outcome of these inspections determined:

- Poor overall 'health' of first private property poles, and
- Higher customer pole defect rate than the network pole defect rate

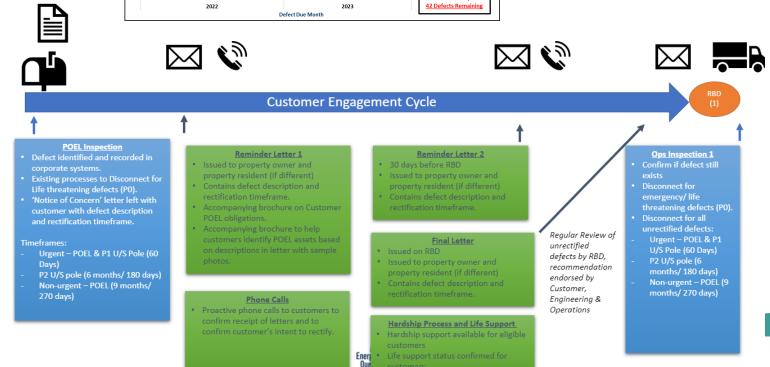
Energex/ Ergon BAU POEL Inspections - 1 August Go Live

- From August 2023, Energex/ Ergon Network will begin carrying out both a visual and serviceability inspections of the first property pole (known as the point of attachment pole) and all attached Privately Owned Electric Lines (POEL) assets.
- The aim of this inspection program is to enhance community safety, to ensure the safety of the electricity network, and manage bushfire risk.
- Landowners have a responsibility to undertake cyclic inspections of any privately owned 'poles and wires' and to carry out necessary repairs or maintenance. Our inspections are supplementary to the existing responsibilities of the landowner.
- The landowner remains legally responsible for rectifying any defects found on the point of attachment through our inspections. We will disconnect customers for safety, if they fail to have their defects rectified by the required by date.

Customer Engagement Process



Over 80% of defects are rectified by customers before the required by date!



What You Can Expect

You can expect:

- To be engaged by customers as their qualified electrical contractor to repair identified defect/s. The landowner will be provided with specific timeframes to repair their defect/s depending on the severity of the defect. We need your support in helping our customers rectify the works in the required timeframes.
- A potential increase in local staffing requirements due to the scale of the inspection program. You may also see an increased demand for new poles and other components needed for the works.
- To provide a Electrical Work Request (EWR) for customer requested pole repairs to arrange for Energex/ Ergon Energy Network to relocate services to the new pole.
- To provide a Certificate of Testing and Compliance to the customer for any electrical work completed. The customer will need to provide this to Energex/Ergon Energy Network in order to confirm the defects have been addressed.



Key Contacts

Customer Asset Team

Open hours: 7am - 5pm

Phone: 1300 743 268

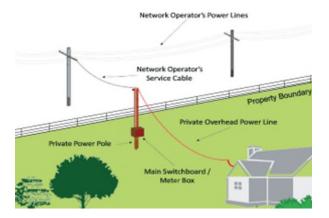
Email: CustomerAssets@energyq.com.au

Questions



What is a private property pole?

- A private property pole is a pole that was erected within a property's boundary by the landowner, probably when they first had the power connected. Ergon Energy/Energex's electricity network connects to these poles to supply a home or other buildings on the property.
- The connection point to our network, or Point of Attachment, can be located on the first private property pole, usually within 20 metres of the property boundary. The poles can look like the 'poles and wires' on the street, and are typically made of timber, concrete or steel.



• Further information on property poles can be found in the Queensland Electricity Connection Manual (July 2020) – search 'property pole'.





Customer Operations – who are we and what do we do?

Top Tips for the Portal

- Which Browser are you using? Be sure to use Google Chrome to optimise your experience!
- Take the Mobile Version of the portal for a spin! Log in through your mobile device to submit anywhere!
- Make sure you do a Full Log Off to end your session and to ensure a cleaner Log In next time.
- If having issues with CX/EWRs, use a fresh copy rather than a copied version from previous submission

Handy tips to get your job scheduled efficiently

- It's really important to respond to requests for further information in a timely manner. Delays in doing so may prevent your job from being scheduled or issued to field for completion.
- Make sure to contact the Contractors Hotline (located on the website under Electrical Contractors page) rather than General Enquiries to contact a rightly skilled person.
- You have to make the correct selections in the Portal for the job type required. Making incorrect selections and noting in the Additional Information field does not work and will cause delays.

Friendly Reminders

- A Supply Upgrade will always supersede a POA relocation and if a supply upgrade is required a CX application with this option needs to be submitted. Most EWRs will link to a POA relocation CX and this doesn't mean that it's correct. If you are ever increasing the amps or phases on network side you require a Supply upgrade CX with the correct bundling options of additional works.
- Always ensure the **phases/amps information** on your EWR matches the CX application as this is what has previously been approved. This will also eliminate delays with having to re-submit your paperwork.
- If you require a Primary Fuse Upgrade or have completed a Mains Connection Box replacement please submit an EWR for Primary Fuse Upgrade. Please note, this EWR type cannot be used to request Point of Attachment relocations.

Friendly Reminders

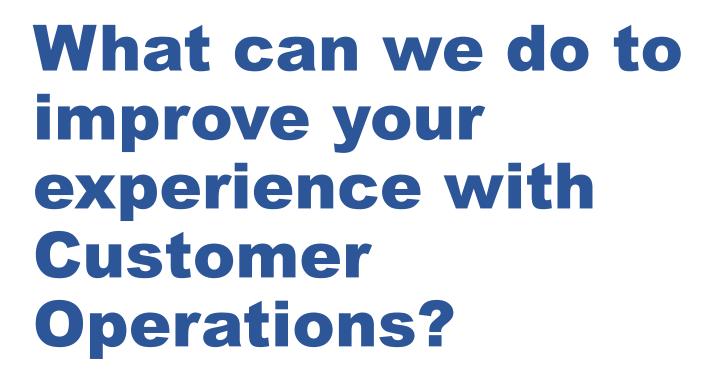
- Supply Upgrade EWRs with the Category of 'Connection / Supply' are required on any upgrade or downgrade on a customer service line where the fuses or phases are changing. Meter only upgrades or downgrades will require an EWR with a Category of 'Metering'.
- If you know that the supply is not available for what you are requesting remember to tick the box advising that Supply is not currently available on the Connect and application will be assessed. If this is not ticked then the request will go through as a Basic Connect and will cause further delays in the long run.
- The secondary service of "**Drop and Re-erect Service**" only needs to be selected when you require our crews to make 2 site visits to drop and re-erect the service line.
- Traffic control permit approvals and timeframes vary from council to council. We proactively work
 with these external parties often in an attempt to keep these processing times manageable.

'How To' Guides & Resources

User guides and training materials can be found online on both the Ergon Energy Network and Energex Websites under Portal Help.

Document name		Published
Connect Application User Guide	3.2 mb 🕹	23 Mar 2022
Connect and EWR Portal Statuses	225.9 kb 🕹	1 Mar 2020
Connect and EWR Service Selections	484.5 kb ₫	1 Mar 2020
Enquiry User Guide	1.2 mb	21 Apr 2021
Eirst time subscription Group Manager or Member	2.6 mb	8 Mar 2021
How to Register	1.5 mb 🕹	8 Mar 2021
■ MyEWR	2.5 mb 🕹	21 Apr 2021
₩ MyHome	<u>1.9 mb</u> ≛	21 Apr 2021
<u>MyProfile</u>	2.5 mb 🕹	21 Apr 2021
Unmetered Supply and Public Lighting Connect Applications	3.4 mb 🕹	21 Apr 2021

Do	cuments	Published
HOF	How to Register User Guide (PDF File, 832.0 kb)	27 Apr 2021
HOF	Updating MyProfile User Guide (PDF File, 1.3 mb)	27 Apr 2021
POF	Electrical Work Request (EWR) User Guide (PDF File, 1.0 mb)	6 Jul 2021
HOP	Connect Application User Guide (PDF File, 3.6 mb)	27 Apr 2021
POP	Liability Claims User Guide (PDF File, 1.2 mb)	27 Apr 2021
HOE	Claims User Guide - Contractor Fees (PDF File, 474.4 kb)	27 Apr 2021
HOF	EWR and Connect statuses (PDF File, 163.2 kb)	1 Mar 2020
HOE	Which EWR needs a Connect Application (PDF File, 145.3 kb)	12 Feb 2021
POF	EWR Secondary Services (PDF File, 193.7 kb)	8 Mar 2021





Thank you for your attendance at the Energy Queensland Energy Academy 2023.

Any final questions in the Q&A and chat will be recorded and passed along to the relevant department.

If you have any follow ups for the presenters please send your enquiry to:

customeradvocacy@energyq.com.au