15 March 2019

Mr Andrew Truswell
Director
Australian Energy Market Commission
PO Box A2449
Sydney South NSW 1235

Dear Mr Truswell

EMO0036 Updating the Regulatory Frameworks for Embedded Networks – Draft Report

Energy Queensland Limited (Energy Queensland) welcomes the opportunity to provide comment to the Australian Energy Market Commission, on its draft report related to the Regulatory Frameworks for Embedded Networks. This submission is provided by Energy Queensland, on behalf of its related entities Energex Limited (Energex), Ergon Energy Corporation Limited (Ergon Energy), Ergon Energy Queensland Limited (Ergon Energy Retail) and Yurika Pty Ltd (Yurika).

Energy Queensland has addressed the questions raised in the Consultation Paper in the attached submission.

Should you require additional information or wish to discuss any aspect of this submission, please do not hesitate to contact myself or Alena Chrismas on (07) 3851 6784.

Yours Sincerely

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Encl: Energy Queensland's submission

Energy Queensland Submission on the Australian Energy Market Commission's

Draft Report - Updating the Regulatory Frameworks for Embedded Networks

Energy Queensland Limited

15 March 2019

About Energy Queensland

Energy Queensland Limited (Energy Queensland) is a Queensland Government Owned Corporation that operates a group of businesses providing energy services across Queensland, including:

- Distribution Network Service Providers, Energex Limited (Energex) and Ergon Energy Corporation Limited (Ergon Energy);
- a regional service delivery retailer, Ergon Energy Queensland Pty Ltd (Ergon Energy Retail); and
- affiliated contestable businesses, Yurika Pty Ltd, which includes Metering Dynamics Pty Ltd.

Energy Queensland's purpose is to "safely deliver secure, affordable and sustainable energy solutions with our communities and customers" and is focussed on working across its portfolio of activities to deliver customers lower, more predictable power bills while maintaining a safe and reliable supply and a great customer service experience.

Our distribution businesses, Energex and Ergon Energy, cover 1.7 million km^2 and supply 37,208 GWh of energy to 2.1 million homes and businesses. Ergon Energy Retail sells electricity to 740,000 customers.

The Energy Queensland Group also includes Yurika, an energy services business creating innovative solutions to deliver customers greater choice and control over their energy needs and access to new solutions and technologies. Metering Dynamics which is a part of Yurika, is a registered Metering Coordinator, Meter Provider, Meter Data Provider and Embedded Network Manager. Yurika is a key pillar to ensure that Energy Queensland is able to meet and adapt to changes and developments in the rapidly evolving energy market.

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1 Introduction

Energy Queensland Limited (Energy Queensland) welcomes the opportunity to provide comment to the Australian Energy Market Commission (AEMC) on its *Draft Report – Updating the Regulatory Framework for Embedded Networks* (the Draft Report). This submission is provided by Energy Queensland, on behalf of its related entities Energex Limited (Energex), Ergon Energy Corporation Limited (Ergon Energy), Ergon Energy Queensland Limited (Ergon Energy Retail) and Yurika Pty Ltd (Yurika).

In response to the AEMC's invitation to provide comments on the Draft Report, Energy Queensland has focused on responding to the key recommendations in the Draft Report that impact our portfolio entities.

Energy Queensland does not agree with the AEMC's view, that additional costs imposed on parties within embedded networks as a result of the regulatory changes proposed are minor, relative to the claimed consumer benefits arising from the increased regulatory oversight. Through our regulated portfolio businesses we have a detailed understanding of the cost of compliance and the importance of that cost not outweighing the benefits to consumers it seeks to achieve. Given this understanding we are concerned that in order to comply with this framework there will be costs imposed on businesses operating in embedded networks, which could exceed the benefits accruing to embedded network customers.

In addition, it is not clear how creating new roles in a framework in which one entity can hold multiple roles, will increase retail competition to embedded network customers. Energy Queensland is firmly of the view that, to the extent the transition of embedded networks regulation into the national regulatory framework is on the basis of increased consumer protections and benefits, the framework to support this should not inadvertently create anti-competitive outcomes by allowing the re-integration of multiple functions into one entity. This is particularly the case given any such re-integration would appear inconsistent with the required divisions in the broader market. For example, a National Electricity Market (NEM) Retailer at the parent connection point could also hold multiple roles within an embedded network.

Our detailed views and explanations on some of the AEMC's draft positions are outlined in section 2. Energy Queensland is available to discuss this submission or provide further detail regarding the issues raised should the AEMC require.

2 Specific comments

2.1 New Roles

Embedded Network Service Provider (ENSP)

Energy Queensland is concerned that the advantages and efficiency gains currently provided under the existing exemptions framework for embedded networks will be eroded by uplifting embedded networks into the national framework. It is likely that the proposed framework will impose additional costs on customers within the embedded network and it is not clear how benefits to consumers outweigh the increase in costs.

Furthermore, the likely additional costs of compliance may increase the incentive for embedded networks to disconnect from the interconnected grid. Should they do so, they would shift to a yet to be determined regulatory framework for third party stand-alone power systems. With rapid technology changes occurring in the industry, this is a likely near-term risk. While it is clear that the Draft Report has been motivated by changes in the market for embedded networks in the last few years, it is unclear how the imposition of the proposed framework will apply in likely future scenarios.

Energy Queensland is also concerned with the proposal that each embedded network has a defined geographical area. Specifically, given our understanding that it may be possible for 'pancaked' networks to share geographical areas or connection points, we are not sure how this proposal could work. As an alternative, the AEMC could consider defining embedded network areas electrically, on the basis that connection points are defined by the physical electrical network components, that is, the low voltage terminals of the transformer. Under such an arrangement, the potential process to register could include the following steps:

1. Determine customer electrical connection points;
2. Embedded network areas agreed;
3. National Metering Identifiers (NMIs) allocated; and
4. Metering equipment installed.

Exempt ENSP

Energy Queensland notes that an exempt ENSP will be required to register with the Australian Energy Regulator (AER) and comply with conditions as determined by the AER. It is not clear in the Draft Report what obligations will apply for an exempt ENSP and off-market child customers. We would welcome clarity from the AEMC on this matter.

Off-market retailer

Energy Queensland is concerned that with the likely increase in operating costs placed on embedded network businesses, customers in embedded networks will experience little, if any, benefit by way of reduced electricity costs. For example, the AEMC recommends that the off-market retailer will purchase electricity from the NEM retailer to on-sell and the subsequent price offered to customers in embedded networks could include both the NEM retailer and the off-market retailers' margins. Further, the creation an off-market retailer role that has NEM responsibilities such as appointing the Metering Coordinator (MC), Meter Data Provider (MDP) and Metering Provider (MP) will increase compliance costs, which will be passed onto customers.

We suggest, similar to what applies now; large customers should appoint their own MCs, with off-market retailers only appointing MCs for small customers. The AEMC in their Expanding Competition in Metering and Related Services Final Rule Determination recommended that the question of whether small customers should have the ability to appoint their own MC should be reviewed three years after the commencement of the new Chapter 7 of the National Electricity Rules (NER), once the market has had a chance to develop.[1] We support this approach and consider it should be consistently applied under the new embedded networks framework.

We also consider it reasonable that an off-market retailer is not required to provide data to the Australian Energy Market Operator (AEMO) for non-market settlements. This is because aggregated billing information is provided at the parent connection point.

[1] https://www.aemc.gov.au/sites/default/files/content/ed88c96e-da1f-42c7-9f2a-51a411e83574/Final-rule-determination-for-publication.pdf

2.2 Network exemptions framework

Under the proposed network exemptions framework, the AEMC recommends amending the definition of distribution system to ensure that some activities are explicitly excluded where there is no benefit in regulating these activities. Despite these amendments, Energy Queensland considers that the amended definition is not clear. For example, whether the incoming sub-mains or outgoing service wiring is part of the distribution systems, but the metering installation wiring is not.

In addition, the definitions of *Exempt Embedded Network Service Provider* and *Exempt Network Operator* require clarification. The definition of *Exempt Network Operator* refers to a person who engages in the activity of owning, controlling or operating a transmission system or distribution system under a network exemption, whereas the definition of *Exempt Embedded Network Service Provider* refers to Exempt Network operator just for the purpose of owning, controlling or operating a distribution system. This requires drafting clarification.

2.3 Retail Authorisation and exemption regime

Energy Queensland is concerned that one party could potentially hold a number of different roles under the proposed framework. For example, a NEM retailer for the parent connection point could also be the on-market child retailer, the ENSP and the off-market child retailer. This could create an arrangement where the new regime will in fact not create market competition. Instead, there is the potential for vertically integrated arrangements with both contestable and non-contestable elements within embedded networks that could decrease the level of competition. There should be some clear limitations that are consistent with those of the broader market to ensure consistency and no unintended consequences.

2.4 Application of modified connections framework

The proposed framework fails to recognise the potential complexity of its application. For example, a ‘pancaked’ embedded network where a connection application is received within an embedded network for a non-registered embedded generator. There is a concern that information flows both upstream and downstream between parties, including the applicable DNSP, are not clear, and that a lack of participant obligations in this scenario may lead to system security issues on the interconnected grid.

Currently, where embedded networks owners wish to make changes to their load or embedded generation connection requirements within the embedded network that are above existing contractual arrangements, the embedded network owner consults with the DNSP. Under the existing framework Energy Queensland's DNSPs, Ergon Energy and Energex adopt the following approach for connections within embedded networks:

- Load connections within embedded networks are contracted to a maximum current rating (A). If the embedded network wishes to increases this rating, they need to apply to the DNSP and it will be treated as a connection alteration. If this rating exceeds the DNSP's asset ratings, such as the dedicated or shared transformer rating, then the assets will need to be upgraded and the embedded network will pay, where relevant, for the cost of this upgrade in accordance with the DNSPs AER approved connection policy.
- Embedded generating systems within embedded networks are contracted to an aggregated kVA or kW rating, where the nameplate rating of all embedded generating systems regardless of technology or operation type are aggregated. This aggregated rating along with the connection voltage (high or low) determines the applicable standards for the connection of the embedded generating system. Where embedded generating systems are aggregated within an embedded network, the DNSP will consider the technical impacts on the DNSP's assets upstream of the connection point and general power system operation, including:
    - asset ratings – power lines and cables, transformers;
    - protection systems – design and operation;
    - voltage rise, fluctuation, distortion; and
    - power system and stability.

  Further, connection applications are reviewed for compliance with technical standards[2] and systems with aggregate capacities greater than 30 kVA to include comprehensive submissions with single line diagrams and technical settings and require the submission of compliance reports completed by a Registered Professional Engineer in Queensland.

[2] Technical standards relate to the size of and voltage of connection to the distribution network. For Ergon Energy and Energex, these include: Connection Standard for Micro Embedded Generating Units (0 - ≤30 kVA); Standard for Connection of Embedded Generating Systems (>30 kW to 1,500 kW) to a Distributor's LV Network; and Standard for Connection of Embedded Generating Systems to a Distributor's HV Network.

Given this approach, Energy Queensland is concerned that other interconnected grid users, for example, TNSPs, DNSPs, and 'pancaked' embedded networks, will not have the visibility of connections within embedded networks and therefore there is an increased risk for system stability and security issues. We suggest that the AEMC consider these issues prior to releasing the Final Report.

In addition, Energy Queensland is concerned that the application of performance standards to exempt networks has resulted in DNSPs not having visibility and a role in determining the performance standards to apply. The performance of the DNSP's network at the parent connection point is critical to assessing whether a generating system is likely to pose undue risk to power system security or reliability. A clause similar to 5.3.5(d)[3] of the NER could be modified to apply to an ENSP when making a connection offer to ensure some ability for a DNSP to assess/negotiate performance standards at the connection point.

In this regard we reiterate our comments made to AEMO in response to its paper, *Emerging Generation and Energy Storage in the NEM*, that there may be a risk that an exempt manager is not able to identify non-compliant generators on their exempt network and whether in such cases, the connecting NSP would be empowered to disconnect the entire exempt network, which could affect more than one party, which may or may not be the cause of the problem. This same issue would extend to the registered ENSP. Energy Queensland seeks clarity on how this risk would be mitigated in the extreme scenario of there being a dependent major Frequency Control Ancillary Services/Energy Storage Systems plant connected on the embedded network.

2.5 Network Billing

We note the AEMC identifies DNSPs as a potential party that could undertake this function. Energy Queensland does not support DNSPs undertaking any network billing

[3] So as to maintain levels of service and quality of supply to existing Registered Participants in accordance with the Rules, the Network Service Provider in preparing the offer to connect must consult with AEMO and other Registered Participants with whom it has connection agreements, if the Network Service Provider believes in its reasonable opinion, that compliance with the terms and conditions of those connection agreements will be affected, in order to assess the application to connect and determine:
(1) the technical requirements for the equipment to be connected;
(2) the extent and cost of augmentations and changes to all affected networks;
(3) any consequent change in network service charges; and
(4) any possible material effect of this new connection on the network power transfer capability including that of other networks.

functions within the embedded networks framework. Further, we consider that the proposal to expand the embedded network manager (ENM) role to include network billing services in legacy embedded networks and increase the AEMO accreditation processes, could accelerate the exit of ENMs as the complexity and costs associated to offer services become too onerous. The proposed framework should create the right balance between increased costs and facilitating customers' access to retail competition.

2.6 Market and systems integration

The new framework proposes to extend the metering framework in Chapter 7 of the NER to embedded networks. Energy Queensland is concerned as this may add an extra level of complexity. Requiring the appointment of a MC, MDP and MP to all child NMIs where some of these arrangements currently do not exist in embedded networks, will be a complex process. As suggested in Section 2.1 of this submission, to limit some of the compliance costs, large customers should be able to appoint their own MC, whereas off-market retailers should be responsible for appointing the MCs for small customers.

When contemplating transitioning legacy embedded networks to the new framework, changing metering in existing buildings from non-NEM to NEM compliant metering has a number of issues, such as:

- physical space as NEM metering installations are generally larger than non-NEM metering installations;
- asbestos meter panels and switchboards;
- location and access to metering equipment is not acceptable;
- security of metering installation not acceptable;
- current transformers (CTs) and voltage transformers (VTs) forming part of the metering installation are not NEM compliant; and
- switchboards / meter panels and CT enclosures not compliant with NEM or jurisdictional rules, procedures or practices.

Upgrading these existing installations for off-market child customers could incur significant costs and disruption to customers that may be satisfied with the existing low cost on-selling arrangements.

It is also likely that additional systems and business processes will be required to be amended to cater for new roles and transactions, exacerbating the issue around the costs associated with the proposed new framework.

2.7 Consumer protections

Currently, Energy Queensland's DNSPs, Ergon Energy and Energex, notify all affected customers of a planned interruption. For this purpose, the affected customer is the customer at the NMI associated with the connection to the distribution network. Therefore, as DNSPs Ergon Energy and Energex have no details of a customer or their retailer past the parent connection point. In addition, where a customer 'opts out' of the embedded network, we create an additional NMI and treat this additional NMI as a separate connection to the distribution network. Both this customer and their retailer are notified of the planned interruption on the basis that they are considered to have a separate connection to the distribution network.

We note that the AEMC is recommending under the new framework that the DNSP or retailer at a parent connection point planning the interruption to supply must notify the ENSP and the retailers at each affected child connection point. In facilitating this recommendation, we assume that the relevant market procedures documents will be updated to ensure that the timeframes are practical and workable. For example, Metering Service Providers (MSPs) are required to replace/repair malfunctioning meters within specific timeframes. To complete this, planned interruptions are required and this could be related to a parent or child metering installation. The MSP would need to request the DNSP, ENSP or retailer to request the planned interruption as relevant. It is extremely important that in subsequent consultations to support the Final Report that proper analysis occurs and that the relevant parties, such as the DNSP, retailer or ENSP, have the visibility to ensure compliance with the proposed planned interruption requirements.

Finally, there is the potential for significant system changes to ensure compliance with the increase in obligations under the new framework. These additional system changes will take time to implement. Accordingly, sufficient time will be required to update systems to support the new arrangements.