

26 April 2019



Mr John Pierce  
Chairman  
Australian Energy Market Commission  
PO Box A2449  
SYDNEY SOUTH NSW 1235

Dear Mr Pierce

**Coordination of generation and transmission investment (CoGaTI) – access and charging (EPR0073)**

Energy Queensland Limited (Energy Queensland) appreciates the opportunity to provide a submission to the Australian Energy Market Commission (AEMC) in response to the the *CoGaTI implementation – access and charging* consultation. Energy Queensland’s responses to the issues raised by the AEMC in its consultation paper and supplementary information paper are provided in the attached submission.

The purpose of the AEMC’s consultation is to seek stakeholder feedback on changes that may be required in relation to:

- how generators access the transmission network and how congestion is managed; and
- the current transmission use of system charging arrangements.

It is intended that the AEMC will provide a report to the COAG Energy Council by December 2019 that will recommend a set of regulatory reforms to the current transmission access and charging regimes.

Energy Queensland acknowledges that the scope of the CoGaTI review focusses on the coordination of future transmission and generation investment. However, it should be noted that Queensland is also experiencing significant growth in large-scale embedded generation connecting to the distribution networks. Given the impacts of generation on the operation of the distribution networks and potential for congestion issues (which are similar those experienced at the transmission level), Energy Queensland recommends that:

- there should be consistent arrangements, as far as is technically and economically practicable, for generation connecting at both the transmission and distribution network levels;
- any proposed reforms at the transmission level should take into consideration any flow-on impacts on distribution networks; and
- more detailed financial modelling and analysis should be undertaken across a wide range of scenarios to ensure there are no unintended consequences for customers, transmission network service providers, distribution network service providers or generator proponents.

Should you require additional information or wish to discuss any aspect of Energy Queensland's submission, please do not hesitate to contact me on (07) 3664 4970 or Charmain Martin on (07) 3664 4105.

Yours sincerely



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# Energy Queensland

## Submission to the Australian Energy Market Commission

### CoGaTI implementation – access and charging

Energy Queensland Limited

26 April 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 business, Yurika Pty Ltd (Yurika).

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 experience.

Our distribution businesses, Energex and Ergon Energy, cover 1.7 million km<sup>2</sup> 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 the new energy services business Yurika which will provide customers with greater choice and control over their energy needs and access to the next wave of innovative technologies and renewables.

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# 1. Introduction

On 1 March 2019, the Australian Energy Market Commission (AEMC) published a consultation paper on CoGaTI implementation – access and charging (consultation paper). The consultation paper forms part of the second Coordination of generation and transmission investment (CoGaTI) review and will inform the AEMC's biennial report to the Council of Australian Governments (COAG) Energy Council on the potential need for changes to the transmission planning and investment decision-making frameworks. The AEMC's inaugural review, which was completed in December 2018, made recommendations for changes to the way in which investment in transmission and generation is coordinated to assist with the actioning of the Integrated System Plan.

The consultation paper focusses on changes that may be required in relation to:

- how generators access the transmission network and how congestion is managed; and
- the current transmission use of system charging arrangements.

It is intended that the AEMC will provide a report to the COAG Energy Council by December 2019 that will recommend a set of regulatory reforms to the current transmission access and charging regimes.

The AEMC has requested that interested parties make submissions on the reforms proposed and issues raised in the consultation paper by 26 April 2019. Energy Queensland's comments in response to the consultation paper are provided in sections 2 and 3 of this submission.

As the AEMC subsequently published the CoGaTi implementation – access and charging supplementary information paper (supplementary information paper) to provide additional context for stakeholders, Energy Queensland has also included comments on the additional information provided in the supplementary information paper in section 4.

We are available to discuss this submission or provide further detail regarding the issues raised.

## 2. General comments

Energy Queensland is a Queensland-based energy business that delivers electricity to its customers via an integrated business model that enables enhanced flexibility and choice in the energy market. Since the inception of the organisation on 30 June 2016, Energy Queensland has worked collaboratively to form the largest electricity distribution company in Australia whilst also operating its retail business and establishing an affiliated contestable energy services business. Energy Queensland is focussed on effectively leveraging its diverse capabilities across the portfolio to support the prosperity of Queensland communities through the provision of safe, secure, affordable and reliable energy.

The Australian electricity industry has been undergoing significant and disruptive change over recent years, impacting all levels of the supply chain. A key component of the evolving energy landscape is the increasing domination of renewable generation (primarily wind and solar photovoltaic) and a corresponding decline in traditional coal and gas-fired generation. Distribution network service providers (DNSPs), such as Energex and Ergon Energy, are already actively responding to the technical impacts of these changes, with one of our key forward planning strategies being to enable greater integration of new technologies into the network while ensuring the ongoing reliability and security of supply.

The uptake of large-scale embedded generation on distribution networks is, in many cases but most particularly in Queensland, continuing at a rate and volume greater than that experienced by the corresponding transmission network. Regional and rural Queensland, in particular, have seen significant growth over the last three years in the number of large-scale generation connections, largely attributable to the State's high solar irradiance, the available and affordable land mass and Queensland's renewable energy target. Energy Queensland currently has a pipeline of more than 1.2 gigawatts (GW) of committed renewable generators connecting to its networks and renewable generator connections are expected to continue to increase, with forecasts suggesting that by 2030 there could be as much as 8.3 GW of renewables connected in Queensland to achieve the State's renewable energy target. A significant proportion of those generators will be connected to Energy Queensland's distribution networks.

Energy Queensland acknowledges that the scope of the CoGaTI review focusses on the coordination of future transmission and generation investment. However, it should be borne in mind that increased embedded generation within the distribution network not only affects the operation of network assets and the ability to maintain system strength and voltage regulation but also gives rise to congestion issues in a manner similar to that of generation connecting at the transmission level. For these reasons, it is important that any review of generator access and charging reforms should take into consideration

embedded generation connecting within a distribution network and without direct access to the transmission network. With the continued growth in the numbers of generators connecting to Australia's networks, differentiating between generation in the transmission and distribution networks is no longer meaningful.

Further, given the complexity of the matters under consideration and potential impacts on market investments, Energy Queensland considers more detailed financial modelling and analysis should be performed across a wide range of scenarios to ensure there are no unintended consequences for customers, transmission network service providers (TNSPs), DNSPs or generator proponents.

Energy Queensland looks forward to participating further in the consultation process on this matter.



### 3. Detailed comments

AEMC Question	Energy Queensland Response
QUESTION 1: Phasing of Access Reforms	
1. Is our proposed approach to phasing access reforms appropriate?	Energy Queensland does not have any concerns with the AEMC’s proposal to adopt a phased approach to access reforms.
2. Are the number and nature of the phases appropriate? How might access reform be phased differently?	As noted in section 2 above, Energy Queensland considers that a key element missing from the scope of the AEMC’s review is consideration of consistent arrangements (as far as is technically and economically practicable) for generation connecting at both the transmission and distribution network levels.
3. What interactions with other market design reforms throughout the sector, and the energy transformation more generally, should be considered when developing and assessing transmission access reforms?	<p>Energy Queensland considers the AEMC should take the following factors into consideration when developing and assessing access reforms:</p> <ul style="list-style-type: none"> <li>• <b>Five minute settlement:</b> We concur with the AEMC’s comments in the supplementary information paper regarding five minute settlement and its potential to resolve certain issues associated with disorderly bidding behaviour. We also acknowledge that dynamic regional pricing may further assist in addressing other types of disorderly bidding behaviours.</li> <li>• <b>Marginal loss factors:</b> It will be important to understand how marginal loss factors interact with dynamic regional pricing, given that a reduced marginal loss factor may, to a certain extent, encourage increased load at locations that have a transmission constraint due to generation. Further, Energy Queensland supports the development of a common marginal loss factor methodology across the National Electricity Market (NEM).</li> </ul>

AEMC Question	Energy Queensland Response
	<ul style="list-style-type: none"> <li>• <b>Existing generation:</b> As decisions to invest in existing generation assets were made based on certain demand and pricing assumptions, an evaluation of how their return on investment may be impacted by dynamic regional pricing may be required.</li> </ul>
<p>4. What should be taken into account when considering how to transition to these new arrangements?</p>	<p>Energy Queensland does not have any concerns with transitioning to these new arrangements insofar as they result in a scenario where end-use customers are not worse off and impacts on existing investments are taken into consideration.</p>
<p>QUESTION 2: Phase 1: Dynamic Regional Pricing</p>	
<p>1. What is the nature of the risk on generators from being settled at the dynamic regional price in the event of congestion? To what extent is this risk different from (and greater or less than) the current risk to generators of being constrained off/down in the event of congestion? What impact may these changing risks have on the contract market, both in terms of products, liquidity, and risks businesses are exposed to?</p>	<p>A key consideration is that earning revenue from congestion can be analysed, with factors such as generator capacities and other committed generation in the area being known. Further analysis is therefore required as to how the dynamic regional pricing framework can have sufficient definition to allow these calculations to be made by generation participants well in advance.</p>
<p>2. Is generator capacity an appropriate metric on which to allocate the settlement residue which arises from dynamic regional pricing? If not, what alternative metric should be used? Which particular measure of capacity should be used (e.g. nameplate capacity, maximum output in previous X years)? How might the use of capacity or another metric create distorted</p>	<p>Energy Queensland considers the measure of generator capacity that should be used is “registered export capacity” in conjunction with the volume of output physically possible at the time (e.g. a solar farm that does not export at night). Using historical data to allocate the settlement residue with the dynamic regional pricing would not be appropriate due to the influx of new generation and the impact of variables, such as weather conditions, on the output of renewable generators.</p>

AEMC Question	Energy Queensland Response
incentives for generators and/or storage devices?	
3. Should storage, when importing from the grid, be settled at the dynamic regional price? What might the effects of this be?	Energy Queensland is of the view that importing from the grid should be incentivised when there is excess generation being constrained due to upstream feeder constraints. An attractive dynamic price would optimise the use of the system, as highlighted in figure B.5 of the consultation paper. However, the value in offering this beneficial pricing to storage only, rather than including all loads and potential flow-on impacts to the distribution network, is unclear.
4. What issues or unintended consequences might arise?	Further clarity is required as to how generators will receive the information needed to make an appropriate bid under dynamic regional pricing.
5. What are the nature and extent of implementation costs, such as system changes (e.g. settlement reallocations), that would be required to implement phase 1?	Energy Queensland does not have any comment on implementation costs at this stage.
<b>QUESTION 3: Information from Dynamic Regional Pricing</b>	
1. What information is likely to be revealed through dynamic regional pricing?	It is anticipated that dynamic regional pricing may increase visibility of congestion caused by generation as opposed to constraints based on maximum loads.
2. How valuable is the information from dynamic regional pricing likely to be in the various transmission planning processes? Will it have other uses?	Energy Queensland considers that while transmission entities are not required to plan for generation throughput, there may be limited value in information from dynamic regional pricing. Such a significant change can also have major impacts on the market and options for refining the revenue recovery models of TNSPs and DNSPs should also be considered. Energy Queensland is of the view that more detailed information and modelling is required to determine how dynamic regional pricing will operate in practice as well as the flow-on

AEMC Question	Energy Queensland Response
	impacts to the distribution network and market customers.
3. How should the information revealed by dynamic regional pricing be revealed to the market?	Dynamic mapping that reflects the pricing and considered zones would be beneficial.
4. How might AEMO, TNSPs and the AER integrate the information into their processes?	Energy Queensland considers the development of incentive maps to illustrate areas with excess generation capacity may potentially be of use. These maps should be linked to the Integrated System Plan and include embedded generation within distribution networks.
5. Should the rules be modified to require these parties to take this information into account, and if so, how?	Energy Queensland highlights that generation congestion is currently occurring in the distribution network and that the impacts of any proposed rule changes on the transmission network must take into consideration the flow-on impacts on the distribution network.
<b>QUESTION 4: Generators Fund Transmission Investment</b>	
1. What issues and considerations should the AEMC take into account when developing and assessing phase 3?	<p>Under phase 3 there is the potential for larger generators, who have greater access to capital, to dominate access to the market. This may result in perverse outcomes such as increased generation costs in situations where long-term fuel costs may be cheaper for smaller generators.</p> <p>Additionally, generation use of system should also be considered as an alternative to or as part of the firm access framework.</p> <p>Energy Queensland also considers it important that the access framework should be consistent (as far as is technically and economically practicable) for both transmission and distribution connected systems. Therefore, a more detailed study into the flow-on impacts on the distribution system is required.</p>

AEMC Question	Energy Queensland Response
<b>QUESTION 5: Access Reform Timeframes</b>	
1. Are the timeframes suggested for the access reforms appropriate?	Energy Queensland does not have any comment regarding the proposed timeframes at this stage.
2. Is the timing of the phases appropriate?	Energy Queensland does not have any comments with respect to the timing of the phases at this stage.
<b>QUESTION 6: IR-TUOS</b>	
1. How should IR-TUOS be refined?	Energy Queensland does not have any comments regarding how IR-TUOS should be refined at this time.
2. What are the answers to the specific questions raised above, or how might the AEMC go about answering these questions?	The benefit for allocating costs according to average load is unclear. While it is beneficial to allow generation to dispatch when it is low-priced, the effects on the transmission or distribution network in terms of maintenance costs and asset life must also be taken into consideration.
3. What other considerations should the AEMC take into account when refining IR-TUOS?	Energy Queensland has no further comment on IR-TUOS.
<b>QUESTION 7: TUOS Framework</b>	
1. What insights do you have with regard to the above components of TUOS which you consider the AEMC should take into account when assessing TUOS reform?	Energy Queensland reiterates that any changes to IR-TUOS, TUOS and regional pricing should take into account the need for equity across the NEM as well as the potential impacts of generators connected to the distribution network. The impacts on generators that are a significant distance from major load centres, for example generators connected to the transmission or distribution network in Far North Queensland delivering energy into New

AEMC Question	Energy Queensland Response
<p>2. What other components of TUOS should be considered?</p>	<p>South Wales, also requires consideration and holistic economic analysis.</p> <p>Network support payments paid by TNSPs to embedded generators for services that reduce the need for the TNSP to augment the shared transmission network and avoided TUOS payments paid by DNSPs to embedded generators for decreasing the DNSP's use of the transmission network at peak times should also be considered as part of the AEMC's review. While existing arrangements may have been appropriate when large generators typically connected to the transmission network, Energy Queensland considers it is timely for these arrangements to be reconsidered with the proliferation of embedded renewable generation now connecting within distribution networks.</p> <p>TUOS arrangements may also require review to account for situations where the volume of generation being fed upstream from the distribution network to the transmission network introduces congestion and the need for transmission investment.</p>
<p><b>QUESTION 8: TUOS Reform Timeframes</b></p>	
<p>1. Are the timeframes suggested for the TUOS reforms appropriate?</p>	<p>Energy Queensland does not have any comment on the suggested timeframes at this stage.</p>

## 4. Additional comments on Supplementary Information Paper

Section	Energy Queensland comment
2.1.3 Outages	<p>Energy Queensland is of the view that the information provided in the supplementary information paper is overly simplistic and does not fully consider the complexities of both the distribution and transmission networks and the high proliferation of generation sources. For example, the suggestion that maintenance of a solar generator should occur at night to minimise shortfall costs for the generator, may lead to increased costs for all other network users due to higher maintenance costs for TNSPs and DNSPs, increased safety considerations and risks for workers and network outages for other customers with equal but different network access requirements.</p> <p>It should also be noted that the requirement to provide information on the timing of planned outages through AEMO’s network outage scheduling tool and in 13 month plans does not currently apply to DNSPs (although an outage coordination process has been developed for both loads and generators).</p>
2.1.5 System Strength	<p>Energy Queensland is supportive of the concept that investment in a shared, larger synchronous condenser or other stability mitigation measure may be more efficient than multiple small synchronous condensers being built for the purposes of system strength remediation. It is also appropriate that TNSPs, who are responsible for system strength, are able to recover costs under standard planning practices. However, a sensitivity analysis should be performed on the contingency and redundancy provisions that a single (or few larger) units would require as compared to smaller distributed system strength supporting units and subsequently the topological evolution that the grid is undergoing.</p>
2.1.6 Connection enquiries 2.1.7 Generators sharing the costs of transmission infrastructure or	<p>Energy Queensland does not agree that firm transmission access will necessarily improve sharing and cooperation and instead may lead to anticompetitive practices. For example, some parties may seek to “block out” network access for an extended period of time prior to connecting, thereby effectively limiting new generation</p>

Section	Energy Queensland comment
renewable energy zones	connections and contributing to other network constraints in the longer term. Generators are essentially in competition with each other to secure the best dispatch price and so are not necessarily incentivised to cooperate. This factor, along with increased visibility of competing generators (including cooperative system strength remediation), may drive the desired outcome without the risk of “reserving capacity”.
2.2.3 ESB’s post-2025 work	Energy Queensland is supportive of holistic market reform to address issues such as frequency deviation, efficiency of investment, reliability and system strength to ensure optimal cost outcomes for customers. At the same time, it will be important to ensure that network risk is balanced with customer expectations and that customers (including existing generation and load) are not disadvantaged due to any proposed reform.
3.1.2 What is the likely impact on contract liquidity of the access reform?	Energy Queensland supports reform that provides more investment clarity to registered generators and registered loads. However, care should be taken to ensure that these reforms do not impose additional costs on other participants.
3.1.3 Would access reform apply to distribution networks as well as transmission?	<p>The volume of generation connecting to the Queensland distribution networks suggests that priority should be given to including distribution networks as part of the AEMC’s considerations.</p> <p>In this regard it is important to note there are currently no assets classified as “dual function assets” in the distribution network assets of Energy Queensland. While Energex and Ergon Energy do have assets that would otherwise meet the definition of “transmission network” assets under the National Electricity Rules (the Rules), a derogation under Chapter 9 provides that transmission network assets can only be those assets owned by Powerlink in Queensland. There is little difference at a technical level between a generator connecting into the transmission network versus the distribution network in many cases. Consequently, the existing delineation between generation connecting to the transmission network and generation connecting to the distribution network can, at times, lead to confusion in the market. To minimise any further confusion and/or inappropriate misalignment between registered participants, Energy Queensland considers that any significant changes to the</p>



Section	Energy Queensland comment
	Rules relating to transmission connected systems must also trigger consideration of any necessary changes for distribution connected systems (under both Chapter 5 and Chapter 5A) where it makes reasonable technical and economic sense to do so.
3.3.2 How will firm transmission access take account of system security?	Any approach to firm transmission access should be carefully considered to avoid “gaming” of the access regime and ensure generation shortfall is not a future consequence.
3.3.3 Will firm transmission access result in higher cost transmission investment?	Energy Queensland is generally supportive of building increased transmission strength / capacity in targeted areas to incentivise generation investment within the framework of the Integrated System Plan.