

7 November 2024



Ms Anna Collyer
Chair
Australian Energy Market Commission

Project Reference Code: ERC0399

Dear Ms Collyer

Consultation Paper – Real-time data for consumers

Energy Queensland Limited (Energy Queensland) welcomes the opportunity to provide comment to the Australian Energy Market Commission (AEMC) in response to its Real-time Data for Consumers Consultation Paper.

The attached submission is provided by Energy Queensland, on behalf of its related entities, including:

- Distribution network service providers (DNSPs), Energex Limited (Energex) and Ergon Energy Corporation Limited (Ergon Energy Network);
- Regional service delivery Retailer, Ergon Energy Queensland Pty Ltd; and
- Affiliated contestable business, Yurika Pty Ltd and its subsidiaries, including Metering Dynamics Pty Ltd trading as Yurika Metering.

Energy Queensland strongly supports the accelerated rollout of smart meters by 2030 and understands the benefits such meters will bring to market participants and the distribution network. We acknowledge that reform is essential to achieve the Queensland Energy and Jobs Plan's target of one hundred per cent penetration of smart meter devices with appropriate data sharing arrangements by 2030.

We are supportive of initiatives which provide customers with the data necessary to understand and make decisions with respect to their energy use. While we support the premise of consumer access to real-time data, we are concerned that the benefits will accrue to a relatively small cohort of consumers who are proactively engaged in seeking to understand their energy usage and who are also in a position to respond to the information that such access will provide.

On the flipside, the costs seem likely to be borne by all electricity consumers, regardless of whether they benefit from such access. We encourage the AEMC to strongly consider

whether benefits to some, outweigh costs to all and whether a user pays framework might be more equitable.

Further, in addition, or in place of, access to real-time data, we are of the view that the benefits of clearly presented, day-behind, market data from easy to access apps and portals would benefit a large number of customers at a small relative cost and hence we encourage the AEMC to consider how this existing data can be used to its full potential.

We would also like to draw attention to the potential complexity involved in implementing a real-time access framework. We acknowledge that the Consumer Data Right (CDR) and banking portals enable customers to access real time data. However, CDR data that is provided is for the day preceding the request. Further, banking data is held centrally by banks, does not need to be backhauled remotely from separate locations to fulfill data requests, and does not change every five minutes. This highlights the technical challenge which would be created for the energy sector in enabling real time access to data.

Further, there are a number of other elements to consider from an industry perspective, including, but not limited to:

- the costs of delivering metering services;
- the type of data captured by smart meters;
- the protection systems within smart meters;
- the processes to transfer this data to meter data systems; and
- the processes and obligations regarding data validation.

Facilitating real-time data access is expected to be a costly technical undertaking requiring significant resourcing and effort and cannot be delivered without significant expenditure by retailers and their metering partners. Telecommunications costs alone will be a significant cost component in metering charges with data to be collected 288 times per day (every five minutes), while processing and storing data is an enormous, complex, and expensive undertaking.

Enabling real-time data is not a requirement of the Minimum Services Specification of smart meters and has not been contemplated by many metering service providers. We expect most of the existing smart meter fleet in use today will require modification or replacement of the existing meter or communications modem to enable real-time data provision. Smart meters installed prior to the implementation of five-minute settlement are unlikely to meet the requirement to deliver data in five-minute increments and will need to be replaced to enable this service.

Energy Queensland's more detailed comments in response to the questions posed in the Consultation Paper are set out in **Attachment A**. Neither this letter nor our enclosed comments contain confidential information.

Should you require additional information or wish to discuss any aspect of this submission, please do not hesitate to contact me at the contact details below or Mark Simpson on 0467 837 450.

Yours sincerely

A handwritten signature in blue ink that reads "Alena Christmas".

Alena Christmas
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Enc: Attachment A - Energy Queensland's comments on the AEMC's consultation questions

Energy Queensland Limited

Response to AEMC Consultation Questions - Real-time data for consumers

Consultation Question	Energy Queensland Comments
<p>Question 1: What are the benefits of improving access to real-time data?</p> <p>a) What are the anticipated use cases of real-time data?</p> <p>b) What is the value of the benefits that flow to consumers?</p>	<p>Energy Queensland understands that the availability of real-time energy data has the potential to provide benefits to some consumers. However, it is likely, at least for the foreseeable future, that consumer benefits will be limited to a small cohort of proactive consumers who:</p> <ul style="list-style-type: none">• own customer energy resources (CER);• are sufficiently engaged; and/or• can modify their usage to take advantage of price signals. <p>For those consumers who are not actively engaged, there does not appear to be any significant benefit for general consumers to have access to their real time smart meter data. For those sufficiently engaged, we broadly consider the potential benefits to be:</p> <ul style="list-style-type: none">• Home energy usage awareness and monitoring• Reduction of energy bills and carbon footprint• Understanding demand (kW) and time of use energy load profiles• Facilitating the reviewing of tariff options, particularly demand and time of use energy-based tariffs• More detailed energy insights• Fault detection and prevention, including through alert notifications of unexpected usage and/or loss of solar generation• Connected devices for home energy management• Improving home protection and vulnerable people care• EV smart charging optimisation

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	<ul style="list-style-type: none"> • Solar PV optimisation. <p>We note that the first five of the above benefits could equally be delivered by day-behind market data that is currently available. Some work would be required to ensure this data was presented in an easy to understand format and is easily accessible (and downloadable) via an app or portal.</p> <p>For networks, benefits may include:</p> <ul style="list-style-type: none"> • Automated and behavioural demand response • Calculation of network state (used to generate dynamic operating envelopes with flexible export/import limits) • Increased network visibility.
<p>Question 2: What are the costs of improving access to real-time data?</p> <p>a) What are the types of costs that would be incurred to improve access?</p> <p>b) What is the magnitude of these costs?</p> <p>c) Who would incur these costs?</p> <p>d) Do the benefits of improving access to real time data outweigh the costs?</p>	<p>We are of the view that the potential or likely costs of implementing this proposal are difficult to determine. We note that there has been no economic assessment of the proposal to determine the expected costs of implementing and operating the technical solution, nor the likely or potential benefits. We suggest that such an undertaken might benefit this rule change proposal.</p> <p>In relation to distribution network service providers (DNSPs), Energy Queensland considers that costs incurred by DNSPs would depend upon the requirements imposed on DNSPs to implement an improved access framework.</p> <p>In relation to costs to Retailers, metering service costs are driven by regulatory requirements set out in the minimum service specification (MSS). If the MSS is expanded to include more functionality, then this change may lead to higher metering costs which will likely be recovered via retailer tariffs. However, we note that this capability has not been deployed anywhere at scale and, due to its inherent complexity, we expect that any assessment could also significantly underestimate the actual costs to implement the proposal.</p> <p>In relation to metering service providers, the costs associated with improving access to real-time data would likely be significant due to the gap in the current minimum functionality specification to deliver data in real-time (5-minute intervals). Significant investment would likely be required to support this capability. Without confirmed specifications, it is difficult to calculate the increase in costs to deliver real-time data. However, as a guide, we have assessed at a high level the following associated costs that would need to be considered:</p>

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- Additional hardware & software changes
- Data storage costs
- IT changes to support framework
- Telemetry (the process of recording and transmitting data from the meter)
- Depending on the use case, communications network carrier costs are estimated as follows:
 - 1) Ad hoc access (less than 100 times/year) to gather real time data greater than \$3.00 per meter/pa
 - 2) Continuous access (where data is collected every 5 min 24 x 7 x 365) the incremental costs is greater than \$30/meter/pa.

Costs may be kept to a minimum if data is provided direct from headend systems or devices attached to them that could extract the data without the need for application of data validation, estimation and substitution metrology procedures, or storage as opposed to significantly higher if these were required.

Energy Consumers Australia (ECA) rule change request, proposes that consumers should not pay additional charges for access to smart data, however, this would likely be detrimental to the financial sustainability of the metering service provider if they were not able to pass on the costs.

As noted against consultation Question 1, Energy Queensland is generally of the view that the benefits of access to real-time data would accrue to a relatively small cohort of consumers. As a result, it seems likely that the costs of implementation may exceed the overall benefits, with the benefits being enjoyed by only a small number of consumers, but the costs likely to be recovered from all consumers regardless of whether they benefit from this proposal or not.

While the benefits of real time data may only accrue to a small number of customers, the benefits of clearly presented, day-behind market data, from easy to access app and web portals would benefit a large number of customers and would have a small relative cost.

Consultation Question	Energy Queensland Comments
<p>Question 3: Do metering parties currently have a competitive advantage?</p> <p>a) Do you agree with the proponent that metering parties have a competitive advantage in providing services not related to their core functions of settlement, billing and maintenance?</p> <p>b) How would any competitive advantage impact the costs of new energy services to consumers?</p>	<p>Energy Queensland does not agree that metering parties have a competitive advantage in providing services not related to their core functions of settlement, billing and maintenance and disputes the suggestion metering service providers are seeking a monopoly on data. We are of the view that there are existing service providers, beyond metering service providers, that are already providing services that can already deliver real-time data for the benefits described in the paper, with their own hardware/software solutions. If real-time data is provided to all consumers without cost, it may have negative consequences on the existing competitive market.</p>
<p>Question 4: Do DNSPs need more than PQD to improve network planning and operation?</p> <p>a) Do the benefits of improving DNSP access to real-time data outweigh the costs?</p> <p>b) What are the use cases for DNSPs and other network planners to have access to real-time data other than advanced PQD?</p>	<p>Energy Queensland is of the view that DNSPs would benefit from receiving data other than power quality data (PQD). For DNSPs, we are of the view that the benefits of improved real-time access to data outweighing the costs. We are of the view that use cases for real-time data other than advanced PQD include:</p> <ul style="list-style-type: none"> • Neutral fault detection - Analysis by Energex and Ergon Energy Network found that nearly two-thirds of shocks to customers from neutral faults occurred within a few days of the neutral breaking. With data delivered only once every 24 hours, a large portion of customers will receive a shock before the first delivery of data. With real-time data, Energex and Ergon Energy Network can respond instantly to neutral faults, resulting in lower customer shock and tingle rates. • Dynamic Connections via Dynamic Operating Envelope (DOE) for CER - Energex and Ergon Energy Network are deploying a sophisticated Distributed Energy Resource Management Systems (DERMS) which will provide a DOE to customers' inverters every five minutes in response to the current network state. For example, when the local network is lightly loaded, the DERMS will allow dynamic PV customers to export a greater amount. A critical input into the DERMS' ability to understand the network state is real-time

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	<p>visibility over the network, provided by readings from customer meters. Data that is 24 hours old is of limited use in understanding the current state of the network to maximise the capacity allocated to customers with dynamic connections.</p> <ul style="list-style-type: none"> • Outage management - The current process for responding to outages is customer-driven and relies on customers calling Energex or Ergon Energy Network to report they have lost supply. In more rural and isolated areas these periods between the start of an outage and notification from a customer can be extended. Real-time data from meters will allow DNSPs to proactively and promptly respond to outages, reducing the time customers are without supply. • Transformer load management and dynamic ratings - Real-time visibility of transformer load, through aggregation of smart meter data, will allow DNSPs to dynamically exceed the rating of transformer load for short periods thereby deferring network augmentation costs. • Dynamic voltage management - More accurate switching of tap changers at substations or feeders in response to live customer voltages at the end of the feeder
<p>Question 5: Who should have a right to real-time data in the NER?</p> <p>a) Should consumers, their authorised representatives or any other party, including DNSPs, have a right to access real-time data?</p>	<p>Should the AEMC conclude that there is quantified net benefit to all consumers accessing real-time data at no direct cost, Energy Queensland is supportive of consumers, their authorised representatives and DNSPs having a right to access real-time data subject to controls and procedures put in place to manage confidentiality, privacy, security, safety, and the hardware and software integrity of the meters, including a clearly defined and standardised framework with an appropriate mechanism to recover associated costs from consumers.</p> <p>DNSPs will require some level of awareness of the real-time power flows across their networks. Considering the proportion of renewables sitting behind customer meters on the low voltage network, it is to be expected that real-time data from at least a portion of these meters will be required to ensure that a minimum level of real-time grid visibility is achieved to ensure the ongoing secure operation of the network.</p>
<p>Question 6: How should real-time data be defined?</p>	<p>Energy Queensland generally agrees with the ECA’s proposed definition of real-time data and customer power data. However, we would like to note that, if customer power data is to be defined as PQD, the AEMC’s currently proposed definition of PQD (as set out in the Accelerating smart meter deployment rule change) as voltage,</p>

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<p>a) Do stakeholders agree with the proposed definition of real-time data and customer power data?</p> <p>b) What should be defined and/or further expanded in AEMO procedures?</p> <p>c) Should data be validated or not?</p>	<p>current and power factor would most likely be uninformative and confusing to a customer. Power consumption in kW may be more helpful including the direction, that is whether the premises is exporting or importing.</p> <p>The question of instantaneous versus average PQD measurements has also been discussed as part of the accelerated smart meter deployment rule change regarding DNSP access to Basic PQD. Instantaneous PQD readings every 5-minutes are not representative of the average power consumed/exported over the 5-minute interval and may capture momentary spikes or dips (e.g. the moment a kettle is turned on or a motor starts). This misalignment of instantaneous PQD with billing data which aggregates power used over a 5-minute interval may make it more challenging for customers to interpret and reconcile. Energex and Ergon Energy Network have previously highlighted the merits of average data measurements for DNSP use cases of smart meter data.</p> <p>Further, we are of the view that the proposed definition does not deal with the provision of consumption data or the monetisation of this data through application of Retailer tariffs which would provide the most use to general population in seeking to better understand and manage energy use.</p> <p>The definition of real-time data should be defined clearly in the National Electricity Rules (NER). The Australian Energy Market Operator’s (AEMO) procedures should also specifically address:</p> <ul style="list-style-type: none"> • A clear framework for provision of real-time data including the responsibilities of respective market participants, standardised format and transmission fields. This should also include an appropriate mechanism to pass associated costs on to customers given the materiality of these costs. • Appropriate lead times (6+ months) of any proposed changes (firmware & software only) and/or format of real-time data. • If changes are to occur to the defined framework that these be aligned to the existing AEMO framework for compliance system changes to minimise disruptions. <p>We do not consider that it is necessary for data to be validated. Validating data may not be required for revenue grade metering and could increase costs significantly and/or impact the ability to provide data in real time. Validated data is currently only required for settlement and billing and takes time, whereas, we expect that the purposes for which this data is to be used does not require the precision afforded by validated data.</p>

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<p>Question 7: How should real-time data be accessed and shared?</p> <p>a) Do parties, other than metering service providers, need to locally connect directly to the meter to access real-time data? If so, what changes are needed to enable this?</p> <p>b) Are there alternative data sharing arrangements that should be enabled by a rule change, if made?</p>	<p>Energy Queensland considers that providing local direct data access carries considerable security risk for meters and metering data. This includes:</p> <ul style="list-style-type: none"> • Managing control and unrestricted access via the meter port. • Control in the ability to turn the data on/off. • Allowing consumers access to the meter to access real-time data will inhibit the MP’s ability to maintain the integrity of the smart meter and provision of data and create potential cyber security implications. • Exposing the general public and authorised representatives who may not be electrically trained to potential electrical safety hazards associated with switchboards. <p>We are of the view that the existing Retailer and customer/customer authorised representative relationships, should be maintained. This avoids the unnecessary and unsafe practice of allowing untrained people to physically access smart meters and switchboards, thus avoiding potential safety impacts.</p> <p>We would like to note that this concept was raised previously in the AEMC’s Power of Choice review, final report¹ and a requirement to enable local data access (physical or wireless) was considered for the smart meter specification in the related metering rule change.² However, at that time, the AEMC discarded the idea of a meter specification which included local data acquisition to limit costs for retailers, providers, and customers.</p>
<p>Question 8: Who should bear the costs of accessing real-time data?</p> <p>a) Should all consumers bear the cost of accessing real-time data?</p>	<p>As stated above, Energy Queensland is of the view that currently only a small cohort of consumers are likely to benefit from access to real-time data. However, we note, under the current rule change proposal, that it seems likely that, ultimately, all consumers would have to be responsible for any additional costs, either directly or indirectly.</p> <p>Should the AEMC conclude that the benefits of data access for all customers outweigh the costs, we would prefer an on-demand model of services (or a user-pays model), where consumers/authorised representatives who want access to real-time data should pay for it, as opposed to smearing the costs across all consumers who may not be</p>

¹ AEMC, p76, Power of choice review - giving consumers options in the way they use electricity, <https://www.aemc.gov.au/sites/default/files/content/2b566f4a-3c27-4b9d-9ddb-1652a691d469/Final-report.pdf>

² AEMC, National Electricity Amendment (Expanding competition in metering and related services) Rule 2015, <https://www.aemc.gov.au/sites/default/files/content/ed88c96e-da1f-42c7-9f2a-51a411e83574/Final-rule-determination-for-publication.pdf>

Consultation Question	Energy Queensland Comments
<p>b) What would be the benefits of a dispute resolution framework and how should it operate?</p>	<p>interested in accessing their real-time data. We anticipate that, should the significant costs of this proposed initiative be passed to Retailers, these costs would be recovered via retailer tariffs.</p> <p>We are also of the view that it is important that there is a dispute-resolution framework. Energex and Ergon Energy Network have experienced difficulties in negotiating access to data. In addition to price, one of the biggest barriers to an agreement has been around terms of access. These include terms regarding warranties, termination, and disclosure to third parties that were entirely unreasonable or unworkable. A dispute resolution process would help ensure that terms are fair, reasonable and non-discriminatory.</p> <p>A dispute resolution framework could follow that of similar commercial contracts: mandatory mediation, followed by mandatory arbitration by a third-party dispute resolution body. Access to arbitration is important as it ensures a resolution is reached.</p>
<p>Question 9: What changes would be required to ensure interoperability?</p> <p>a) Would changes to the minimum services specification requirements be the most effective way to ensure interoperability of real-time data?</p> <p>b) Would any other changes be required to facilitate interoperability, for example, changes through device standards?</p>	<p>Energy Queensland is of the view that changes would be required to ensure interoperability and that any such changes should adopt appropriate international standards. Additionally, we consider it is worth noting that to enable interoperability will require considerable collaboration between retailers and technology providers. It is our understanding that the AEMC has previously considered this concept³ but that it was abandoned due to complexity and lack of agreement between stakeholders.</p>

³ <https://www.aemc.gov.au/markets-reviews-advice/implementation-advice-on-the-shared-market-protoco>

Consultation Question	Energy Queensland Comments
<p>Question 10: Do existing arrangements sufficiently protect consumer privacy and maintain cyber security for any real-time data framework?</p> <p>a) Would any additional consumer privacy and cyber security protections be required if a real-time data framework were implemented?</p> <p>b) Do you consider other work programs could provide any additional protection required, such as the Roadmap for CER Cyber Security?</p>	<p>Energy Queensland provides no comment.</p>
<p>Question 11: What other changes would be required to enable a real-time data framework?</p> <p>Would any other changes be required, for example to clarify data and storage arrangements or to</p>	<p>Energy Queensland would like to note that enabling a real-time data framework would likely require industry agreement on arrangements, including standards, for the provision of customer energy data, the development of compliant hardware by at least some vendors (depending on the agreed arrangements and standards), and changes to process and systems changes to enable and support them. The lead time for this would be considerable.</p>

Consultation Question	Energy Queensland Comments
implement relevant best practice features from other frameworks?	
<p>Question 12: Do you agree with the proposed assessment criteria?</p> <p>Are there additional criteria we should consider or criteria included here that are not relevant?</p>	<p>Energy Queensland generally agrees with the proposed assessment criteria but we would also provide the following comments.</p> <p><i>Assessment criteria 1: Outcomes for customers</i></p> <ul style="list-style-type: none"> • As stated above, we are of the view that only a small cohort of consumers will be interested in accessing real-time data. As such, we query whether access to real-time data will lower electricity bills or place downward pressure on bills, especially if a majority of customers are not actively engaging or responding to their real-time data. • Further, we propose the below additional criteria for consideration: <ul style="list-style-type: none"> • Financial impact to market participants and their ability to pass on associated costs to the users given the likely material increase in costs associated with provision of real-time data to consumers. • Lead time for development from meter suppliers (hardware, firmware, software) and upgrades to Metering Coordinators/Retailers to support new technology. • Consideration of use cases and what percentage of consumers may want data relating to these use cases rather than a one size fits all approach to ensure prudent investment and not burdening all customers with unnecessary costs. This would determine whether the benefits outweigh the financial, time and effort costs.