



13 June 2017

COAG Energy Council Secretariat  
GPO Box 797  
Canberra ACT 2601

[energycouncil@environment.gov.au](mailto:energycouncil@environment.gov.au)

Dear Secretariat

**Cost Benefit Analysis of options to collect and share information about small scale battery storage – Consultation Paper**

Ergon Energy Corporation Limited (Ergon Energy) and Energex Limited (Energex) welcome the opportunity to provide comment to the Council of Australian Governments (COAG) Energy Council regarding its Consultation Paper on the Cost Benefit Analysis to collect and share information about small scale battery storage.

This submission, which is available for publication, is provided by Ergon Energy and Energex as distribution network service providers operating in Queensland.

Should you require additional information or wish to discuss any aspect of Energy Queensland's submission, please do not hesitate to contact either myself on (07) 3851 6416 or Trudy Fraser on (07) 3851 6787.

Yours Sincerely

A handwritten signature in black ink, appearing to read 'Jenny Doyle'.

Jenny Doyle  
General Manager Regulation and Pricing  
Telephone: (07) 3851 6416  
Email: [jenny.doyle@energyq.com.au](mailto:jenny.doyle@energyq.com.au)

Enc: Ergon Energy and Energex joint submission

# Cost Benefit Analysis of options to collect and share information about small scale battery storage

Joint response to the  
COAG Energy Council's  
Consultation Paper

13 June 2017



Part of the Energy Queensland Group



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## 1 INTRODUCTION

Ergon Energy Corporation Limited (Ergon Energy) and Energex Limited (Energex) welcome the opportunity to provide comment to the Council of Australian Governments Energy Council on its Cost Benefit Analysis of options to collect and share information about small scale battery storage Consultation Paper (the Consultation Paper).

This submission, which is available for publication, is provided by Ergon Energy and Energex as distribution network service providers (DNSPs) operating in Queensland.

Ergon Energy and Energex are committed to providing:

- safe, reliable and affordable electricity supply;
- a great customer service experience;
- customers greater control over their energy consumption;
- efficient and sustainable energy solutions; and
- access to the next wave of energy linked innovative technologies and renewables.

As global leaders in the research of energy storage systems and their integration into electricity networks, we strongly support the development of a national storage register. The expected wide-scale uptake of energy storage will create a number of significant risks and value opportunities across the entire electricity supply chain. As such, we consider the establishment of an energy storage register will enable effective and safe planning, management and operation of the distribution network.

As members of the Energy Networks Australia (ENA), the peak national body for Australia's energy networks, Ergon Energy and Energex have also contributed to and are supportive of the issues raised in the ENA's submission.

Ergon Energy and Energex are available to discuss this submission or provide further detail regarding the issues raised, should the AEMC require.

## 2 KEY MESSAGES

Ergon Energy and Energex note that Jacobs was asked to consider 4 options for a national battery storage register, including:

1. A national register administered by the Australian Energy Market Operator (AEMO) with system data collected from installers
2. A national register administered by the Clean Energy Regulator (CER) with system data collected from installers
3. Enhancing existing systems where DNSPs continue to collect data and transfer this information to AEMO who would then host a central database
4. Base Case (status quo) option.

However, option 3 was not explicitly quantified in the study on the basis of it being prohibitive in cost. Ergon Energy and Energex do not support the position that option 3 is prohibitive in cost and we strongly recommend that this option is quantified further. In particular, we note that DNSPs already do and will continue to collect a large amount of the required data and would therefore consider these cost to be incurred regardless of which option is chosen. We recognise that these costs will vary with each individual DNSP, as each business will have progressed their systems to different stages. As such, we suggest the true costs associated with enhancing existing systems should be considered as somewhere between that suggested by Jacobs and an incremental amount. Regardless, Ergon Energy and Energex do not consider these to be prohibitive as suggested by Jacobs.

While Ergon Energy and Energex support DNSPs as the collection vehicle, we also prefer a central registry, and to this extent we support AEMO as the host of the data registry. As AEMO will also be a primary user of the data being collected, it would appear to be cost effective and efficient to also host the register. To the extent that there is no net benefit to DNSPs and no incentive for installers to provide information to DNSPs on non-grid connected batteries, this data may be more effectively collected directly by AEMO. Notwithstanding, we recognise that further data collection requirements will necessitate standardisation of state-based safety legislation.

Ergon Energy and Energex have addressed the specific questions raised in the Consultation Paper in Section 3 below.

### 3 TABLE OF DETAILED COMMENTS

Consultation Paper Feedback Question	Ergon Energy and Energex response
<b>Issue 1 – Database hosting options</b>	
<p>1. Which of the advantages and challenges listed in Table 1 and Table 2 provide the most compelling reasons for choice of host? Why? Which host would stakeholders prefer? Why?</p>	<p>Ergon Energy and Energex consider that existing capabilities within AEMO and their need for the most granular data for NEM planning purposes positions AEMO as the host of choice. However, we also consider that enhancing existing DNSP systems to facilitate their continued collection of the data and its transfer to AEMO is likely to be a cheaper and more efficient option, which was unfortunately not assessed in detail in the CBA. Furthermore, we recommend that DNSPs integrate the grid connection process and the collection of solar / battery details to streamline the connection process. This will also provide a single touch point for installers and timely collection of data for DNSPs. Please refer to our comments in section 2 above.</p>
<p>2. Can stakeholders identify any other challenges or advantages for each option?</p>	<p>A further advantage of option 1 is that it doesn't introduce an additional party when AEMO already require the information themselves.</p> <p>Ergon Energy and Energex have identified the following additional challenges with option 2:</p> <ul style="list-style-type: none"> <li>• The CER collection process duplicates the DSNP process of collecting the data as part of the connection process.</li> <li>• The CER will require a means to transmit battery data to a DSNP so they are aware of the installation in case they haven't received a valid application for it.</li> <li>• The current approach by CER for managing solar photovoltaics (PV) often results in overestimation of the total installed capacity of solar PV as it also records panel array upgrades or replacements. It is likely that this will also occur for batteries.</li> <li>• Maintaining the accuracy of the data by notifying any changes over the life cycle of the battery, for example when a storage system or component is replaced due to a failure or upgrade, or there is a change of ownership at the premise (for the purpose of notifications such as manufacturer recalls). By using the DNSP as the collector of the data and AEMO as the host, the data could be linked to a NMI and could therefore distinguish between upgrades, replacements and new installations as part of the connection process.</li> </ul>



Consultation Paper Feedback Question	Ergon Energy and Energex response
<b>Issue 2 – Information requirements</b>	
<p>3. Do stakeholders see a more efficient approach for collecting information from this wider set of equipment categories?</p>	<p>As noted above, Ergon Energy and Energex consider that the most efficient option would be to utilise existing processes established by DNSPs as they are required as part of the grid connection processes. Furthermore, any investments required to improve capture, storage and transfer systems will be marginal and are expected to be required as part of the emerging and future DNSP role (i.e. the distribution system operator function under the network transformation roadmap<sup>1</sup>).</p> <p>An information gap that currently exists is the battery make/certification list similar to that which exists for inverters and made available by the Clean Energy Council (CEC). A similar list would be required and would allow all DNSPs to use common battery make codes which link to more detailed data and technical specifications which will be of use to parties such as emergency response agencies (for example, manufacturer information on chemical handling). An example of this list is the BatteryFinder widget produced by GlobalRoam. However we note that such a list should be maintained and made available by a party independent of commercial interests, such as the CEC.</p> <p>Ergon Energy and Energex would support an independent party such as the CEC establishing and publishing a list of products with exporting limitations, where an installer could select the approved product as part of the connection application. This would further streamline the connection process.</p> <p>While differences between the information collected by DNSPs was raised as a concern in the cost benefit analysis, this is necessary regardless and could be resolved by agreeing on a common dataset, including format, which the DNSPs must capture to feed into the national register.</p>
<p>4. Do stakeholders agree on the required degree of information needed and the need for various stakeholders to access the data shown?</p>	<p>This system will need to capture changes over time as systems are replaced, updated or increased in capacity.</p> <p>In general the residential battery range will be from 24-48V DC. Due to a higher safety risk, a separate category could be established for larger battery systems (e.g. 600V DC).</p> <p>DNSPs may also collect other associated data (e.g. length of consumer mains, conductor type, and number of phases to grid connected inverter) to identify network impacts as part of network connection process.</p>

<sup>1</sup> CSIRO and Energy Networks Australia 2017, *Electricity Network Transformation Roadmap: Final Report*.

Consultation Paper Feedback Question	Ergon Energy and Energex response
<b>Issue 3 – Change to regulations</b>	
5. Are there any other regulations that would require amendment? Is it possible to quantify the cost of a single regulatory change?	Data collection and enforcement powers will be required to be implemented through amendment to state-based safety legislation. In Queensland, this would be pursued through the <i>Electrical Safety Regulation 2013</i> . Ergon Energy and Energex suggest that a harmonised approach is taken to each jurisdictional legislative change.
6. Are there any issues with changing these regulations to capture batteries?	Ergon Energy and Energex suggest that the length of time required to modify and approve legislation is an impediment as these devices are being installed now. However, we recognise that subordinate legislation such as a regulation may be amended more easily and expeditiously than an Act. Therefore, as noted above, we consider that an amendment to the <i>Queensland Electrical Safety Regulation 2013</i> would be most appropriate for this purpose.
<b>Issue 4 – Data collection costs</b>	
7. Do the time estimates and other assumptions in Table 6 seem to be reasonable? If not, are you able to provide evidence to more appropriate estimates?	<p>Ergon Energy and Energex agree the time estimates and data collection costs are generally reasonable. However, we question whether even if a DNSP is still using paper based connection notices (NB this is not the case in Queensland), that this would continue to be required if AEMO or CER were capturing the data instead, unless AEMO is to become the connection portal for all micro embedded generators as well. If AEMO is only capturing battery installations, it will be conflicting to manage and result in a poorer experience for the installer, as well as the DNSP. We also consider it highly unlikely that any modern DNSP would still be using paper forms or could reasonably expect to still be using paper forms in the next 2 years.</p> <p>Further, we consider that hardware development and data collection system development costs appear to be on the low side. As such we suggest that a more detailed review is required based on further scoping of requirements.</p>
<b>Issue 5 – Quantitative benefits</b>	
8. Are any of the quantitative benefits or the assumptions or approach underlying their evaluation questionable? If so, why?	Ergon Energy and Energex consider that the power system security values appear very low.



Consultation Paper Feedback Question	Ergon Energy and Energex response
<b>Issue 6 – Qualitative costs and benefits</b>	
<p>9. Are stakeholders able to provide data or case studies that would support the quantification (in monetary terms) of any of these costs and benefits listed above?</p>	<p>In addition to those benefits listed, we consider that there are additional benefits, such as academia, which have not been assessed. Specifically, having this data (collated at a suburb level) is of significant benefit to economic, social and engineering researchers. This has been demonstrated from other datasets such as the CER PV list; the PVOutput.org site; or appliance data reports from Smart Grid Smart City.</p>
<p>10. Are any of the quantitative benefits questionable? If so, why?</p>	<p>Ergon Energy and Energex do not agree with the minimal benefit included for improved safety of line workers. As most batteries will be installed with multi-mode inverters that have the ability to supply circuits when the battery loses grid supply and still meet anti-islanding requirements, it is unknown whether the house circuits are still live after the grid has been shut off. This is particularly important in disaster response activities such as after a cyclone. We currently issue media advice to customers to shut down solar PV systems prior to such an event if possible to avoid generating power back into a damaged network and to ensure that accredited installers or licenced contractors are engaged to reconnect the system. While this advice is published on our websites, it cannot be guaranteed that it has been actioned.</p>
<b>Issue 7 – Conclusion</b>	
<p>11. Would a new data collection app be appropriate if it was designed to streamline time taken to fill in forms? Or would industry have a preference to use existing industry developed apps? What advantage do industry developed apps offer?</p>	<p>Ergon Energy and Energex support industry developed apps as a tool which all DNSPs should be using for residential and small – medium enterprise connections. The app would be of greater value if it was integrated with the online connection portals of the individual DNSPs. One unified data catchment process would give the greatest economies of scale. Notwithstanding, it is likely that each DNSP would require an individual process given the differences in each businesses’ system and the need for the app to work alongside the online option.</p>