

Our ref: 41150335
Contact: Jai Thomas (08 9326 6109)

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Attention: COAG Energy Council Secretariat
GPO Box 9839
Canberra ACT 2601

Via email: energycouncil@industry.gov.au

363 Wellington Street
Perth WA 6000
GPO Box L921 Perth WA 6842

T: 13 10 87 | Fax: 08 9225 2660
TTY 1800 13 13 51 | TIS 13 14 50

Electricity Networks Corporation
ABN 18 540 492 861

enquiry@westernpower.com.au
westernpower.com.au

Western Power submission to COAG Energy Council Consultation Paper - *Stand-alone energy systems in the Electricity Market*

Western Power is grateful for the opportunity to comment on the *Stand-alone energy systems in the Electricity Market Consultation Paper* (the Paper) published by the COAG Energy Council on 19 August 2016.

Western Power is a Western Australian State Government-owned corporation that connects more than one million customers via the Western Power Network, located in the South West of Western Australia¹. The Western Power Network forms the vast majority of the South West Interconnected Network (SWIN), which together with all of the electricity generators, comprises the South West Interconnected System (SWIS).

The Paper refers to, and seeks comment on, a range of potential ownership models that may emerge for the delivery of microgrids and Stand-alone Power Systems (SPS) to both existing and new customers. The scope of the Paper includes possible regulatory oversight requirements for the range of ownership models, including where a Distribution Network Service Provider (DNSP) might seek to use emerging technology to deliver a microgrid or stand-alone power system as an alternative to traditional network investment.

Western Power notes that the current National regulatory framework functionally prevents the use of non-interconnected microgrids and SPS in delivering regulated network services. This fundamental regulatory barrier, which is not acknowledged in the Paper, arises because of the definition of *distribution service* in the National Electricity Rules (NER).

Together with the related definitions of *distribution system* and *network*, the NER could imply that services provided by means of certain assets may not qualify for classification as a *distribution service* if they:

- are not used to convey or control the conveyance of electricity; or
- do not connect a premises to a distribution network.

¹ It is noted that the scope of the Paper does not extend to Western Australia. However, while Western Power is currently regulated by the Western Australian Economic Regulation Authority, the Western Australian Government is in the process of implementing reforms that would, among other things, bring regulation of Western Power under the auspices of Chapter 6 of the National Electricity Rules. This includes regulation by the AER, with Western Power's first intended Regulatory Control Period (RCP1) under the NER commencing 1 July 2018.

If a technology option does not satisfy these conditions, it is then up to the Australian Energy Regulator (AER) to interpret whether the option is provided “in connection with” the distribution system” and so whether the related service is a distribution service. There is considerable uncertainty about the application of this expression towards options involving new technology solutions. The proposed rule seeks to remove this uncertainty.

If a service does not qualify for classification as a distribution service, it cannot be economically regulated. This means that a DNSP cannot recover regulated revenue for that service.

To this end, Western Power has proposed a change to the National Electricity Rules to cater for the DNSP deployment of SPS and disconnected microgrids, within the existing regulatory framework.² The rule change proposal to the Australian Energy Market Commission (AEMC) seeks to expand the definition of *distribution service* in the NER, to facilitate the selection of non-interconnected technology options, such as microgrids and SPS, in order to efficiently meet existing supply obligations.

Western Power’s proposal to the AEMC takes a rules-based approach to resolution of the barrier identified, and demonstrates consistency with the National Electricity Law (NEL), as opposed to any requirement for changes to the NEL, which would be outside of the scope of the AEMC’s rule-making powers. However, pending the outcome of the rule change process overseen by the AEMC, it may be prudent for COAG to consider any changes to the NEL that might be required to facilitate the deployment of SPS and microgrids as an efficient alternative to traditional network investment.

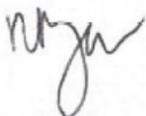
Western Power notes that the Paper refers to regulatory challenges for the network led model (page 11), and appears to imply that network businesses lack the incentives to pursue such systems. Again, the barrier is more fundamental in that the practical application of the NER currently precludes it.

Western Power notes that the scope of the Paper does not include individual customer systems. Western Power considers that these systems should be included in scope, as deployment of these systems is highly likely to emerge as the dominant model for existing fringe of grid customers in the short to medium term.

For example, Western Power estimates that individual SPS could be deployed as a more efficient service to approximately 2,702 Western Power customers over next ten years, resulting in a net benefit of \$388m compared to replacing existing network assets.³ Similar benefits could be achieved in other remote regions within the NEM, such as Queensland, New South Wales, Victoria South Australia and Tasmania.

Western Power has provided responses to questions raised in the Consultation Paper as Attachment A. For further information on this submission, please contact Jai Thomas on (08) 9326 6109 or at jai.thomas@westernpower.com.au.

Yours sincerely



Noel Ryan
Economic Regulation Manager

² <http://www.aemc.gov.au/Rule-Changes/Alternatives-to-grid-supplied-network-services>

³ Indicative modelling by Western Power has found that the use of SPS would result in a net present value saving of \$388m over 50 years compared to replacing existing network assets.

Attachment A: Response to consultation questions

Consultation questions	Western Power response
<p>What objectives, beyond the Energy Council’s general objective, should be held in mind in addressing regulatory arrangements for stand-alone systems?</p>	<p>The National Electricity Objective (NEO) is an appropriate guiding objective for the assessment of regulatory arrangements for SPS, noting that any DNSP-led model would be required to demonstrate alignment to the NEO.</p>
<p>What is an appropriate definition for our purposes?</p>	<p>The Paper proposes the following definition:</p> <p><i>A stand-alone energy system could be defined as an energy system that is not connected to the interconnected national electricity system as defined under the NEL.</i></p> <p>Western Power supports this definition in principle for non-interconnected systems, however notes that this definition may require expansion where non-NEM connected jurisdictions enter the national regulatory regime under the NEL. For example, the term <i>local electricity system</i> is currently proposed as the equivalent term for the application of the NEL and NER in Western Australia, under the electricity market reforms currently being progressed by the WA Government⁴.</p> <p>The Paper also notes the US Department of Energy’s definition: <i>A microgrid is a group of interconnected loads and distributed energy resources within clearly defined electrical boundaries that acts as a single controllable entity with respect to the grid. A microgrid can connect and disconnect from the grid to enable it to operate in both grid-connected or island-mode.</i></p> <p>The US DoE definition is appropriate for grid-connected micro-grids. However, the definition does not cater for microgrids that are not connected (and are in fact independent small networks or individual systems).</p> <p>As a result, use of a single definition for both scenarios may deliver similar uncertainty for consumers and potential proponents that currently prevails. Western Power recommends that a minimum of two definitions be developed – one for Microgrids that are connected (the US DoE definition is appropriate) and one for non-connected Microgrids (the COAG proposed definition is appropriate).</p>
<p>What are the different regulatory issues which arise from stand-</p>	<p>Grid connected systems are likely to be generally catered for within the regulatory framework, subject to further amendments identified</p>

4

[http://www.parliament.wa.gov.au/Parliament/Bills.nsf/003B5D7348CF977C48257FD9003EBCFE/\\$File/Bill189-1.pdf](http://www.parliament.wa.gov.au/Parliament/Bills.nsf/003B5D7348CF977C48257FD9003EBCFE/$File/Bill189-1.pdf)

Consultation questions	Western Power response
<p>alone systems that are connected to the grid versus those that are not?</p>	<p>by the AEMC as an outcome of its review into the <i>Integration of Energy Storage</i> in December 2015⁵. The embedded network framework may be applicable where the microgrid is centrally managed by a third party under a parent-child style metering arrangement.</p> <p>Non-grid connected systems are not catered for within the national regulatory framework – either those systems purchased by individuals, groups, communities or co-operatives, and in the case of DNSPs seeking to install such systems as an alternative to traditional network poles and wires renewal. As such, the regulatory framework either requires expansion to accommodate the identified scenarios, or a bespoke set of regulatory arrangements is likely to require development.</p> <p>Customers that are not covered by the existing regulatory framework would likely expect treatment consistent with grid-connected customers, including performance standards and reliability.</p> <p>In the absence of consistent service obligations for non-connected customers, provision of appropriately detailed information to customers should be mandated, articulating the unique characteristics of the electricity service arrangement they are entering into.</p>
<p>Are there any other potential business models we should consider?</p>	<p>A policy position on non-DNSP models should be sufficiently broad as to encompass both current business models, and those that emerge in the future.</p> <p>Western Power notes that the scope of the Paper does not include individual customer systems. Western Power considers that these systems should be included in scope, as deployment of these systems is highly likely to emerge as the dominant model for existing fringe of grid customers in the short to medium term.</p>
<p>What are the unique regulatory challenges presented by each ownership model?</p>	<p>As noted, the DNSP-led model requires an amendment to the NER to facilitate the use of non-connected microgrids and SPS. This is the basis of Western Power’s NER rule change proposal to the AEMC - http://www.aemc.gov.au/Rule-Changes/Alternatives-to-grid-supplied-network-services.</p> <p>The proposed change is intended to allow for the existing customer protection measures and price setting mechanisms to be applicable to DNSP deployed systems.</p>

⁵ <http://www.aemc.gov.au/Major-Pages/Technology-impacts/Documents/AEMC-Integration-of-energy-storage.-final-report>

Consultation questions	Western Power response
<p>Are some ownership models more closely aligned with the National Electricity Objective than others?</p>	<p>Western Power considers that regardless of the ownership model that is delivered, the facilitation of SPS where they are a least-cost alternative to network investment is most closely aligned to the NEO – whereby efficient investment is able to realised where currently it is prevented.</p> <p>Western Power notes in the rule change proposal to the AEMC that:</p> <p><i>This rule change request is more likely to contribute to the achievement of the NEO than the status quo by providing DNSPs with the flexibility to invest in the most efficient means of meeting their regulatory obligations and licence requirements. Permitting DNSPs to use new technologies as they become available will allow the most efficient option to be identified, resulting in:</i></p> <ul style="list-style-type: none"> • <i>Lower costs to DNSPs in the NEM, and so lower prices for consumers over the long term; and</i> • <i>Potentially a more reliable and safer supply of electricity to customers in the NEM.</i> <p><i>The proposed rule change is also consistent with important principles underpinning the NER; that is:</i></p> <ul style="list-style-type: none"> • <i>it is the service or outcome that should be regulated to encourage the most efficient outcome, not the asset; and</i> • <i>the NER should be technology neutral and not promote one solution over another.</i> <p><i>The proposed rule is not constrained to a single technology type. Rather, the proposed rule has been drafted in such a way so as to allow as wide a group of technology types as possible. It is not possible to know what technologies may become available over the medium and long term. Providing a robust set of rules that are sufficiently flexible to remain relevant and appropriate in the future will avoid costly delays associated with future rule change requests.</i></p> <p><i>The proposed rule does not pose a barrier to the competitive provision of services by third parties. The proposed rule is limited to circumstances where DNSPs must undertake investment in order to meet regulatory obligations. It does not preclude DNSPs from going to the market to appoint a third party services provider, where appropriate and efficient to do so.</i></p>
<p>How would the discipline of price and service competition be maintained on stand-alone power infrastructure providers, given customers would not be able to switch retailers in the event they</p>	<p>In the case of DNSP deployed SPS, the rule change proposed by Western Power does not seek to alter the opportunity for the customer to access a competitive retail offer. The system would be catered for through network tariffs, with the expenditure approved within the DNSP regulatory capex and opex allowance.</p>

Consultation questions	Western Power response
became dissatisfied with energy prices and/or customer service?	Any system deployed would be included in the DNSPs jurisdictional service standard performance metrics and the application of the Service Target Performance Incentive Scheme.
What contractual relationships should exist, and to what extent should they be regulated, between parties involved in the supply of the services of stand-alone systems?	Under the DNSP-led model, the contractual arrangements for the SPS customer, both with the DNSP and the appointed Retailer, would be catered for within the contractual regime applicable (including regulatory oversight) for customers within the network area.
How can the incentives of the procurers of stand-alone systems be aligned with the end use customers they will serve?	Under the DNSP-led model, the regulatory incentive schemes, expenditure forecast assessment guidelines and the nature of ongoing supply obligations should facilitate appropriate procurement outcomes.
How would we ensure that the public is protected against unreasonable rates, bad service, and negligence that results in safety or human health risks? For instance, would the ACL protections be sufficient for customers on stand-alone systems?	This is not an issue under the DNSP-led model
What would become the equivalent of a “retailer of last resort” in the event that an energy services company, delivering stand-alone power solutions, became insolvent? For example, should an insurance scheme or similar be considered for stand-alone system providers/operators in the event of insolvency?	This is not an issue under the DNSP-led model
What dispute resolution arrangements should be put in place for customers and should they be energy only dispute resolution or connected to broader tenancy/ownership arrangements?	This is not an issue under the DNSP-led model - existing dispute resolution arrangements would prevail
What hardship and financial support provisions should apply to stand-alone energy customers?	Under the DNSP-led model, customers would continue to have access to any applicable hardship programs that are in place.

Consultation questions	Western Power response
<p>How should the service standards that apply to each stand-alone energy system be decided?</p> <p>How will we ensure that customers are making fully informed decisions about the reliability standards and service quality of the energy services provided through a stand-alone energy system?</p>	<p>Under the DNSP-led model, service standards for SPS are defined by the relevant customer category within jurisdictional service standard instruments. Further, service performance would be incentivized via the Service Target Performance Incentive Scheme (STPIS) applicable to the DNSP.</p> <p>In addition, for individual systems, system design should align with relevant Australian Standards (AS4509 – stand-alone power systems).</p> <p>In practice, DNSPs will specify systems to meet their service standard obligations and comply with technical standards. This will be achieved via the functional and technical specifications defined by the DNSP at procurement, as well as ongoing maintenance according to the DNSPs asset management practices.</p> <p>Under a DNSP-led model that is “opt-in”, customers will require engagement and information to agree to the provision of SPS as an alternative to network supply. However, the service standard obligations outlined previously should form the basis of minimum performance standards discussed with customers.</p> <p>Under a DNSP led model, either “opt-in” or at the discretion of the DNSP, once a system is installed, customers will have access to both existing service standard obligations and customer protections (including complaint processes) should the DNSP service not be in line with these obligations.</p> <p>In practice, many SPS candidate customers exist in low-density areas where network supply characteristics can be less reliable than concentrated locations such as metropolitan areas. As such, in many cases, consideration of SPS by candidate customers could be reasonably expected to improve reliability performance relative to the existing supply.</p>
<p>Under what governance framework will decisions about reliability versus cost trade-offs be made?</p>	<p>For existing DNSP customers, service, reliability and cost trade-offs are dealt with via the regulatory determination process, and underpinned by the applicable customer protections. It is expected these would continue under the DNSP-led SPS model.</p>
<p>How and by whom should standards be enforced?</p>	<p>As above</p>
<p>Should some obligation to supply apply in an area where a stand-alone system is in place?</p>	<p>Under the DNSP-led model, if the microgrid is delivered across multiple sites at scale, then the obligation to supply is effectively catered for within the new connection framework. Capital contributions for new customers may be payable in line with the framework.</p>

Consultation questions	Western Power response
	<p>In some jurisdictions, an enhanced obligation to connect is delivered via jurisdictional instruments. In Western Australia, the obligation to connect exists where a customer is located within 100m of the existing network. This may be appropriate for community-scale microgrids, but would be inappropriate for individual systems.</p> <p>For individual SPS, the obligation to supply should only relate to the location of the interconnected network, not the individual system.</p>
Who should be the responsible party if an obligation to supply is put in place in a stand-alone system area?	Under the DNSP-led model, the obligation to supply should fall to the DNSP.
What regulatory barriers exist to third parties supplying stand-alone energy solutions?	Under the DNSP-led model, third-party provision of SPS would be facilitated during procurement by the DNSP – SPS could in theory be provided by third-parties via a range of direct sale (DNSP ownership), leasing or fully-serviced procurement models.
How should the regulatory framework ensure that a stand-alone power system is considered as an option where this is the most efficient way to provide energy services?	<p>With the expansion of the RIT-D to include replacement expenditure, as well as the applicable incentive schemes, the regulatory framework is adequate to deliver appropriate consideration where the cost threshold of a RIT-D is surpassed.</p> <p>For individual replacement activities, the RIT-D may not capture the opportunity unless multiple sites are aggregated across a program of work. However, the intent of the regulatory framework to drive appropriate consideration of such options, including the applicable incentives, should facilitate the appropriate options assessment by DNSPs.</p> <p>In terms of the actual ability to deliver on the least cost option, as described earlier, a fundamental barrier exists in the Rules. Western Power has proposed a rule change to the NER to facilitate the deployment of least cost options that the rules currently prevent.</p>
What elements of the national framework are potentially applicable to stand-alone energy systems?	Under the DNSP-led model, Western Power’s rule change proposal intends for the national framework to largely apply in full.
Are the existing connection frameworks adequate for stand-alone energy systems?	<p>Yes - under the DNSP-led model, customers seeking to receive power supply at an unpowered site would continue to be catered for under the Connection framework when considering grid connection, including for connection into a community-scale microgrid.</p> <p>Consideration of alternative SPS options such as a non-DNSP supply model is then a customer choice, as it has been in recent years as the cost profile and technology capability has improved.</p>

Consultation questions	Western Power response
In what circumstances should or could a stand-alone system become subject to economic regulation?	The DNSP-led model proposed would be economically regulated as part of regulated network services under the NER
How should a regime for economic regulation – if any – be structured to address stand-alone systems?	No incremental additional cost would be envisaged for the DNSP-led model.
Should price regulation extend to the entire cost of energy services for customers of stand-alone systems?	Under the DNSP-led model, price regulation is dealt with via the application of the existing regulatory framework.
Should stand-alone systems that have a grid connection be treated as embedded networks for metering and settlement purposes?	<p>Yes. In some circumstances, the application of the embedded network framework will be appropriate, whereby the arrangement behind a parent connection points meets the definition of embedded network in the NER:</p> <p><i>A distribution system, connected at a parent connection point to either a distribution system or transmission system that forms part of the national grid, and which is owned, controlled or operated by a person who is not a Network Service Provider.</i></p>
In what circumstances should a decision to establish a stand-alone system be regulated? Who by? And what justification should be provided to the regulator?	<p>Western Power’s rule change proposal is presented as a DNSP-led model with the customer’s right to opt-out (and subsequently retain a grid-connected supply). Western Power’s experience through its customer research and during engagement on its existing SPS pilot project has demonstrated that the majority of customers identified as SPS candidate sites would be likely to opt-in when offered an SPS under the DNSP-led model.</p> <p>Pending consultation on the proposed rule change, an alternative scenario might see the DNSP have sole discretion as to how to most efficiently meet an existing service obligations.</p> <p>Justification under the DNSP model should follow the RIT-D process or where below the threshold, be covered by appropriate investment governance arrangements.</p>
What principles should be adopted in determining the need for and nature of any new regulatory arrangements that will apply to stand-alone energy systems?	Any change to the existing regulatory framework should be guided by the National Electricity Objective, and use principles such as those included in the Council of Australian Government’s <i>‘Best Practice Regulation – A Guide for Ministerial Councils and National Standard Setting Bodies’</i> .

Consultation questions	Western Power response
<p>What would be the appropriate balance between a strong reporting and compliance regime and a flexible regulatory framework?</p>	<p>Under the DNSP-led model, the existing reporting and compliance obligations should be utilised as necessary. Any additional requirements within these obligations should be flexible to reflect the scale and scope of the activity.</p>
<p>Of the various issues raised in this paper, which areas and potential market failures have the highest risks and should be prioritized in terms of regulatory interventions and reforms?</p>	<p>It is recommended that barriers to the DNSP-led model be resolved as soon as possible, given the inherent network investment challenge that exists in many fringe networks and the near-term opportunities present as emerging technology costs decline.</p>

