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## Distribution Market Model Approach Paper

Jemena Electricity Networks Vic Ltd (**JEN**) welcomes the opportunity to respond to the Australian Energy Market Commission's (the **Commission**) Distribution Market Model approach paper.

The purpose of the Distribution Market Model review is to examine how distributed energy resources might evolve at the distribution level, and whether changes to regulatory framework, distribution system operation, and market design are needed to enable this evolution in a manner that is consistent with the National Electricity Objective.

The approach paper discusses the role of distribution network service providers (**DNSPs**) and the functions they perform including network planning, development, ownership and operation and poses the question whether "*it is not necessary for a single entity to perform all of these functions*"<sup>1</sup> [Emphasis added]. JEN considers that this fundamental market structure review could have significant consequences if not considered appropriately, for example, it may be inefficient or new risks may arise if the distribution functions mentioned above are split. Whilst the review is yet to run its course, in our view the distribution system functions should remain with the DNSPs.

The approach paper also predicts an increase in the amount of distributed energy resources and that there may be a need to establish a market platform as a mechanism to support uniform market access to customers, aggregators and the distribution system.<sup>2</sup> In considering the best way to manage the platform, the approach paper questions whether a single body take on responsibility or whether responsibility is devolved and performed in a tiered manner. Irrespective of the option selected, DNSPs must be closely involved in the development of any market platform to ensure it minimises impacts and also delivers network benefits.

Finally, the Commission has asked a number of specific questions in the approach paper, our responses are set out in **Attachment 1** to this submission.

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<sup>1</sup> AEMC Distribution Market Model, Approach Paper, p 9

<sup>2</sup> Ibid, p 16.

If you have questions about this submission, please contact Siva Moorthy on (03) 9173 8774 or at [siva.moorthy@jemen.com.au](mailto:siva.moorthy@jemen.com.au).

Yours sincerely

*[signed]*

Matthew Serpell  
**Asset Regulation & Strategy Manager**

## Attachment 1

Questions	JEN responses
<p>Question 1: Do stakeholders agree with these definitions or have any views on the project scope as a result of these definitions?</p>	<p>The approach paper defines<sup>3</sup> the terms ‘distributed energy resource’ as an integrated system of <i>smart energy equipment</i> co-located with consumer load and states that it behaves like a dispatchable generator that is co-located with a consumer<sup>4</sup>. The Commission characterises distributed energy resource as an integrated system ‘co-located with a consumer load’. We believe distributed energy resources should <i>not</i> be limited to those that are ‘co-located with a consumer load’. For example, a solar farm may not have a consumer load but may have battery storage and the smarts to respond to wholesale price signals.</p> <p>The definition seems to indicate that the smart functionality is located within the energy equipment, however, it is also possible for the ‘smart’ to reside in the system that integrates the energy equipment. A Virtual Power Plant is a good example of a <i>smart integrated system</i>. We believe the definition should focus on the ‘smartness’ of integrated systems rather than the equipment itself.</p>
<p>Question 2: Do stakeholders support this project scope? Is there anything that has not been flagged for consideration that should be? Is there anything that should be excluded from the project scope?</p>	<p>Yes, JEN supports the Commission’s project scope.</p> <p>JEN suggests the project scope also explore allocation of costs of dealing with the technical impacts caused by distributed energy resources between consumers with and without distributed energy resources. The costs of resolving technical impacts discussed in chapter 4 of the approach paper can be significant, and we are keen to ensure fair allocation of shared costs.</p>
<p>Question 3: Are there any other elements of a DNSP’s role or current responsibilities that should be considered?</p>	<p>The approach paper states “The essential role of a DNSP is to convey and control the conveyance of, electricity from transmission networks or embedded generators to end-use customers. They perform a number of functions to fulfil this role, including network planning, development, ownership and operation, <i>although it is not necessary for a single entity to perform all of these functions</i>”.<sup>5</sup> [emphasis added]</p> <p>JEN believes it may be inefficient to split the above distribution functions and risks will increase. However, we agree with increase distributed energy resources and distributed generation; there may be</p>

<sup>3</sup> AEMC Distribution Market Model, Approach Paper, p 2.

<sup>4</sup> Ibid, p 7.

<sup>5</sup> Ibid, p 9.

Questions	JEN responses
	<p>a need to establish a market platform to support uniform market access to customers, aggregators and the distribution system.<sup>6</sup> Such a market platform may be provided by a single body or devolved and performed in a tiered manner. More debate needs to take place on the market design before JEN is in a position to form a view, however, there needs to be strong evidentiary basis for making significant changes to the role of DNPS and ensure that any changes are proportionate.</p>
<p>Question 4: Are there any aspects of the regulatory framework that are not set out in sections 2.3 or 2.4 but which should be considered through this project?</p>	<p>JEN considers the section 2.3 and 2.4 covers the key aspects of the regulatory framework that requires consideration through this project. However, we make the following observations on the discussion related to service classification.</p> <p>Distributed energy resources can be used to help DNPSs meet their regulatory obligations to provide a safe and reliable supply of electricity to consumers, instead of the traditional method of supplying electricity via the distribution network. Distributed energy resources are becoming a cost-effective substitute to grid-supplied electricity to customers particularly at the edge of the network in rural areas. Accordingly, we believe the Commission should clarify in the National Electricity Rules that efficient capital and operating expenditure proposals associated with distributed energy resources deployed for supply of electricity to consumers can be classified as standard control services. This issue is related to the alternatives to grid-supplied network services rule change request referred to in A.1.4 of the approach paper.</p>
<p>Question 5: Should the coordination of distribution systems with distributed energy resources be centralised under the direct control of one body? Or should it be devolved and performed in a tiered manner?</p>	<p>JEN agrees that as distributed energy resources and distribution generation becomes more widespread and two-way electricity flow increases, there will be a growing need for the operations of distribution systems to be more actively managed and coordinated.</p> <p>While it may be efficient to centrally coordinate transmission network operations under AEMO, it is neither practical nor efficient to centralise coordination of distribution system operation (as distinct from market operations) under the direct control of one body as there are some key differences between electricity distribution and transmission networks.</p> <p>This difference is noted in the approach paper. Distribution networks typically have an order of magnitude more lines, transformers and connection points than transmission networks; and distributed</p>

<sup>6</sup> AEMC, *Distribution Market Model Approach Paper*, 1 December 2016, p 16.

Questions	JEN responses
	<p>energy resources and distributed generation are more numerous (as there are millions of residential and small business consumers with solar PV systems) compared to only few hundred transmission-connected generators and loads.<sup>7</sup></p> <p>The essential role of a DNSP is to convey and control the conveyance of, electricity from transmission networks or embedded generators to end-use customers.<sup>8</sup> It includes network planning, augmentation, maintenance and operation. An important role of a DNSP is to connect distributed energy resources, distributed generators and customer loads, which involves network planning.</p> <p>To provide connection services efficiently and promptly, it is important to for a single entity to perform network planning and connections. Split responsibilities of these functions would be inefficient. Accordingly, JEN considers DNSPs are best placed to manage network planning, maintenance and operations efficiently.</p> <p>The approach paper notes that over the long term there needs to be a market platform that supports uniform market access to customers, aggregators and the distribution system.<sup>9</sup> Such a market platform may be provided by a single body or devolved and performed in a tiered manner. At this stage, JEN does not have a view on the market design.</p>
<p>Question 6 Do stakeholders agree with the Commission's framework and these principles of good market design? Is there anything that the Commission has missed, or is unnecessary?</p>	<p>We agree with the Commission's principles.</p> <p>We wish to emphasise principle (3)—regulate to safeguard the safe, secure and reliability supply—for its relevance to distribution network where customers' electrical equipment are directly connected to the distribution network. Ensuring network safety is an important role that DNSP currently performs. The safety aspect needs to be given high priority when framework changes are being considered to encourage the uptake of distributed energy resources.</p>
<p>Question 7 Are there any other issues the Commission should have regard to in</p>	<p>No.</p>

<sup>7</sup> AEMC, *Distribution Market Model Approach Paper*, 1 December 2016, p 4.

<sup>8</sup> Ibid, p 9.

<sup>9</sup> Ibid, p 16.

Questions	JEN responses
considering possible market design options?	
Question 8 Do stakeholders agree with the Commission's assessment of the technical impacts of distributed energy resources set out above in sections 4.1 to 4.8?	Apart from <i>voltage stability</i> — which is more relevant for high voltage distribution networks — the <i>voltage quality</i> is important for the low voltage networks where the majority of customers' equipment is directly connected. Steady state voltage level will affect the longevity and performance of customers' electrical equipment, <i>voltage imbalance</i> will affect the longevity of customers' three-phase equipment.
Question 9 Do stakeholders agree with the Commission's preliminary assessment of these opportunities, and possible solutions to address the technical impacts of distributed energy resources?	Yes.
Question 10 Do stakeholders have any initial views on who should be responsible for managing these opportunities or implementing possible solutions to the technical impacts?	As the technical impacts of distributed energy resources are on the distribution network, DNSPs are in the best position to implement possible solutions to the technical impacts. Where market-based solutions are used, DNSPs would need to be involved closely to ensure the solutions minimise impacts to the network and also deliver network benefits.