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Electricity Authority

By email: [submissions@ea.govt.nz](mailto:submissions@ea.govt.nz)

Dear Electricity Authority

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## ENABLING MASS PARTICIPATION IN THE ELECTRICITY MARKET: CONSULTATION PAPER

Wellington Electricity Lines Limited (**WELL**) welcomes the opportunity to respond to the Electricity Authority's (**the Authority**) consultation paper on enabling mass participation in the electricity market.

WELL considers the existing regulatory framework is well-placed to ensure any benefits of mass participation are realised as electricity markets continues to evolve. This submission, however, highlights some of the challenges of managing the impacts of mass participation while maintaining a safe and reliable network.

WELL also supports the Electricity Networks Association (**ENA**) submission, and considers this submission provides additional context.

### Efficient pricing signals

WELL supports the Authority's role in promoting competition in, reliable supply by, and efficient operation of the electricity industry for the long-term benefit of consumers. A key component of promoting competition is ensuring efficient pricing signals.

Throughout 2016, the Authority outlined its expectation that all electricity distribution businesses (**EDBs**) publish a plan for introducing efficient pricing structures before 1 April 2017. This reflected the Authority's stated concern that current pricing arrangements may not be encouraging consumers to use technology in ways that have long-term benefits for all consumers.

On 1 April 2017, WELL published its future pricing roadmap. This roadmap highlighted WELL's intention to continue moving towards cost-reflective pricing by introducing price signals that clearly identify time periods when the network has capacity for more demand (and when it does not).

### Maintaining network reliability

In the future, owners of distributed energy resources will seek to capture multiple value streams. Individuals may take it upon themselves to maximise this value or allow aggregators to operate assets on their behalf. There is no guarantee, therefore, that these resources will be operated to optimise network benefits. For example, owners of distributed generation may choose to provide wholesale arbitrage opportunities and not network support services.

There is also the matter of consumers who will not own or operate distributed energy resources and their expectation that the quality of supply is not impacted by the operation of these resources. This raises questions around the need for network companies performing a distribution system operator role to ensure network supply can be appropriately maintained. This will need to be supported by standards to operate effectively in a similar manner to that of the national grid.

In this context, the consultation paper presents a simplistic view of the impact of mass participation on network reliability. That is, the consultation paper states that due to competition in network services, there is no longer a need for EDBs to own and control assets to support network reliability.<sup>1</sup> In the absence of network control, distributed energy resources may also be operated in a manner that results in the networks thermal and voltage limits being breached. The consequences of overloading the network or intermittent export may include:

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<sup>1</sup> Electricity Authority, Enabling mass participation in the electricity market, 30 May 2017, p. 19.

- excessive sagging of lines and overload of equipment, potentially giving rise to fire starts if contact with vegetation occurs or loss of life if an overloaded line contacts structures, vehicles or members of the public;
- increased customer outages as areas of the low voltage network protected by fuses breach the ratings of those fuses, causing outages until the fuse is replaced;
- inefficient use or loss of existing load control initiatives that currently operate to help avoid peak demand constraints on the network;
- overload driven failure of underground cables, disconnecting sections of the network; and
- reduced asset lifetime driven by higher than recommended loading resulting in reduced supply reliability and higher network costs.

While contracts can mitigate certain risks associated with network limits being breached, the full extent of these consequences may be difficult to contract-away. As noted earlier, there is no guarantee that priority use will be offered by all aggregators or in all circumstances. Similarly, EDBs may not be a party to all contracts, or be aware of the location or nature of contracts between buyers and sellers of electricity services.

#### **Network expenditure**

The consultation paper recognises that high volumes of distributed energy resources are expected to result in expenditure to accommodate two-way flows of electricity.<sup>2</sup> Accordingly, facilitating mass participation in electricity markets is also expected to increase network costs (either as capital expenditure for network solutions, or operating expenditure for non-network alternatives), which will ultimately be passed onto all customers.

#### **Conclusion**

For the reasons stated above, WELL considers the existing regulatory framework is already well-placed to ensure any benefits of mass participation are realised. The Authority, therefore, should allow existing rules and processes to continue until tangible evidence exists that demonstrates a regulatory failure.

If the Authority has any queries regarding WELL's submission, please do not hesitate to contact Jeff Anderson, Regulatory Projects Manager, at [janderson@welectricity.co.nz](mailto:janderson@welectricity.co.nz).

Yours sincerely



Greg Skelton  
**CHIEF EXECUTIVE OFFICER**

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<sup>2</sup> Electricity Authority, Enabling mass participation in the electricity market, 30 May 2017, p. ii.

Question	Comment
1 What is your view of the potential competition, reliability and efficiency benefits of more participation?	WELL supports competition and participation that delivers better value for consumers and where health and safety is not compromised. WELL cautions against over-simplifying the challenges of facilitating increased participation and competition while maintaining a safe and reliable network. In particular, reliability and safety benefits will be dependent on network control and how well various participants and their devices are integrated with the distribution network platform. What is clear though is that the distribution network will play a significant role in facilitating increased participation and choice for consumers and the management of their energy needs and preferences.
2 What is your view of the opportunities to promote competition and more participation in the electricity industry?	The opportunities already exist and market players are developing more services for consumers. WELL notes that efficient pricing structures and sound and secure technologies that are fit for purpose will be key factors for promoting mass participation. The existing regulatory framework is already well equipped to provide efficient pricing, and the Authority should allow these processes to continue and technologies to develop until tangible evidence exists that demonstrates a regulatory failure.
3 What other issues might inhibit efficient mass participation? Please provide your reasons.	Mass participation may not be efficient or effective if there is a lack of guidance around how to participate for new entrants or if rules and regulations are unduly onerous. Getting this balance right will be important to successful increased participation in the market.
4 What is your view of the opportunities for network businesses to obtain external help to provide aspects of the network service using competition or market mechanisms?	<p>This already exists and as such is nothing new for network businesses. The potential reasons for possible issues outlined by the Authority in the paper are theoretical and do not seem to be based on any tangible fact. WELL already uses extensive third-party services to provide network services where it is efficient to do so. In particular where it is more efficient to procure a service from a third party, WELL considers there are already sufficient regulatory incentives to drive this behaviour through the Commerce Commission's economic regulation. Accordingly WELL already operates a largely outsourced business model for services to help operate and manage the network.</p> <p>The Authority should be careful in promulgating the idea that there will be cost savings for consumers as this has not yet been determined. It is possible that reduced capital expenditure could be offset by increased operating expenditure necessary to integrate new technologies with the existing distribution network. Equally the EA appears to focus solely on possible savings from reduced network expenditure without acknowledging that consumers will still have a cost to bear for new technologies.</p>
5 What do you think are the main challenges to be dealt with to increase the use of competition in supplying network services? What are your reasons?	The question is a little misleading. The evolving competitive market will support network services. As outlined in the body of this document, in the context of distributed energy resources, integrating this infrastructure into network processes to ensure the safe and reliable provision of electricity will be challenging and critical to get right.

6	What is your view on whether open access is required and what would be the elements for an effective open access framework?	<p>Open access already exists and consumers will need a reliable distribution network platform over which to transact and manage their energy needs. As noted in other parts of this submission, ensuring participation is managed efficiently to avoid causing unintended network or health and safety issues is critical to enabling successful participation by many.</p> <p>This may require network companies to operate a distribution system operator function, similar to the national grid to manage generation to load (or storage) to maintain current quality of supply levels.</p>
7	How effective are the existing arrangements for open access? What are the problems?	No significant issues.
8	What type of distributor behaviours and outcomes should the Authority focus on to understand whether changes are required to support open access?	The Authority should concentrate on outcomes for consumers and this will drive the right areas of focus across the market rather than narrowly focus on one part of the supply chain.
9	What changes to existing arrangements might be required to enable peer-to-peer electricity exchange?	Mechanisms such as use of system agreements already exist but may need to be modified to better enable mass participation. This will likely be driven by technology solutions, including the upgrade or replacement of current smart meters, supported by simple and effective participation guidance. The reconciliation and management of two way power flows needs to be considered carefully in a manner that both enables participation and effectively manages network operational risk.
10	What are the costs and the benefits of enabling peer-to-peer electricity exchange?	There may well be increased costs (including outages) for maintaining and operating networks when multiple distributed generating devices are employed across the network and the need to ensure health and safety is not compromised. Consumers could benefit by optimising the value of these new technologies, helping to lower their costs.
11	What is your view of the possibility for, and impact of, any current or future blurring of participant type? What are your reasons?	Until the market evolves further it is not yet clear whether there will be an issue or not
12	What types of participation are or might be prevented because the party is not recognised as a participant? What are the potential impacts?	Until the market evolves further it is not yet clear whether there will be an issue or not
13	What challenges might new forms of generation, such as virtual power plants, or small and dispersed generators, face in entering the market?	See other answers. Facilitating new participants in a controlled and efficient manner will be critical.
14	What changes might be required to the rule book to facilitate the emergence of virtual power plants or demand response?	It is too early to be able to specify what may need to change.
15	Would the functioning of the market for hedges and PPAs and the availability of finance be improved if there were greater transparency of long-term prices and greater standardisation of terms and conditions for long-term contracts?	No comment

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