



Enel X
Level 8, 17 Murphy Street
Thorndon, Wellington, 6011
New Zealand
T +64-4-909-7546
www.enelx.com/nz/

MDAG, Electricity Authority

Submitted by email: mdag@ea.govt.nz

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Dear MDAG

RE: MDAG 100% renewable electricity supply – Issues paper

Thank you for the opportunity to provide feedback on the MDAG's issues paper on 100% renewable electricity supply.

Enel X works with commercial and industrial energy users to develop demand-side flexibility and offer it into wholesale capacity, energy and ancillary services markets worldwide, as well as to network businesses. Enel X has been offering customer load into the instantaneous reserve (IR) market in New Zealand since 2009.

This short submission provides Enel X's views on matters raised in the supporting paper, *Demand side flexibility in the wholesale electricity market under 100% renewables*. We have four points to make:

1. We agree with the MDAG's assessment of the importance of demand-side flexibility (DSF) in supporting a 100% renewable power supply. We strongly agree with the point made in paragraph 1.12(iii), which is that a key driver of the uptake of DSF opportunities will be the magnitude of the total benefit that can be accessed across all potential value streams. The ability to value stack brings lower per-unit costs to DSF aggregators and greater benefits to consumers, and thereby encourages uptake of DSF opportunities.
2. The paper appears to only contemplate wholesale market participation by DSF occurring through retailers' demand bids into the energy market. However, in Enel X's experience operating in many global markets, demand bidding approaches have failed to see any meaningful uptake. This is certainly the case for NZ's dispatchable demand framework and the NEM's scheduled load framework. This is because participating customers must be spot-exposed and have the sophistication and stability of operations to accurately forecast and hedge their load. As a result, demand bidding approaches are only suitable for customers whose demand is very predictable and whose sophistication and risk tolerance is such that they are willing to take on spot price exposure and engage in derivative trading. In Enel X's experience, this works for some customers, but not the vast majority of commercial or industrial loads, or smaller customers. It's not yet clear whether the "dispatch-lite" product will address these issues sufficiently to see greater uptake.
3. In Enel X's view, the more effective way to bring DSF into the wholesale market, and where other markets have seen more success, is to separate load flexibility from retail and allow third parties to sell demand reductions (or "negawatts") directly to the wholesale market. Separating load flexibility from retail means consumers can remain on the fixed price variable volume contracts that they prefer, but also access the value associated with the portion of their load that is flexible. Under a negawatt trading approach, retailers or independent aggregators participate on the supply side of the wholesale market by offering to sell demand reductions for a price. They compete alongside generation and, if dispatched, reduce demand by the offered quantity and receive the spot price for that capacity. This type of model was recently introduced

into Australia's NEM. The introduction of the mechanism was a recognition that there are limits to retailer-driven DSF, and that a demand bidding approach was unlikely to encourage much participation. While market designs vary, Japan, Singapore, and all FERC-regulated wholesale markets in the USA support DSF through negawatt trading approaches. We encourage the MDAG to consider a negawatt trading model as a complement to demand bidding to maximise the uptake of DSF in the wholesale market.

4. The paper expects most DSF capacity growth to come from the residential sector as consumers gradually upgrade their appliances to smart ones. However, we encourage the MDAG to not underestimate the existing DSF capacity in the C&I sectors. Enel X has a 180MW portfolio of C&I customer load participating in the instantaneous reserve markets today. A considerable portion of this is well suited for wholesale market participation, if the right incentives and market design are in place.

We look forward to ongoing engagement with the MDAG as it progresses this important work. If you have any questions or would like to discuss this submission further, please do not hesitate to contact me.

Regards

Claire Richards
Manager, Industry Engagement and Regulatory Affairs
claire.richards@enel.com