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MDAG, Electricity Authority

Submitted by email: MDAG@ea.govt.nz

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Dear MDAG

RE: Price discovery in a renewables-based electricity system: Options Paper

Thank you for the opportunity to provide feedback on MDAG's options paper on price discovery in a renewable-based electricity system.

Enel X works with commercial and industrial energy users to develop demand-side flexibility (DSF) 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 submission sets out our feedback on the options identified for increasing DSF and the associated questions posed (questions 7-9). We agree with MDAG's assessment of the benefits of encouraging greater DSF. Customers will play an increasingly important role as the industry transitions to a renewables-based electricity system. It is important to have the frameworks in place soon to enable this to happen.

There are several barriers to DSF that we consider aren't fully addressed by MDAG's preferred options. These are:

- Flexibility services can only be offered by a retailer, but flexibility and retail services have very different characteristics. For example, DSF requires a long-term commitment by both the flexibility service provider and the customer to install the necessary hardware and software to enable DSF. In contrast, retail contracts are typically short term. As well as preventing third parties from offering services, this poses a barrier to retailers offering DSF due to the risk of not being able to recover their costs if the customer switches retailer.
- Retailers don't have a commercial incentive to offer flexibility because it doesn't suit their business model and it is not their core business. The preferred options identified by MDAG focus on regulatory solutions to force retailers to offer flexibility, such as requiring retailers to offer DSF-rewarding tariffs. We are concerned that this approach will have limited effectiveness without addressing the core of the problem, which is one of misaligned incentives.
- Existing options for customers to provide DSF, namely being spot-exposed, only suit a small cohort of very large, energy-savvy customers. A large amount of education and upskilling is required for customers to participate in this way. This is a significant barrier for many customers.

We consider the fastest way to make a meaningful level of DSF available is to:

1. make flexibility services party-agnostic and so remove barriers to third party specialists offering flexibility services, and
2. introduce a mechanism that makes it easier for a greater number of customers to offer flexibility.

Together, we consider these options will provide the necessary incentives and competitive pressure for DSF services to be developed and offered to customers, and for customers themselves to be incentivised to participate.

A mechanism like a negawatts scheme provides the necessary long-term commitment that is required to de-risk and so incentivise DSF. While somewhat complex to implement, the benefits are wider than simply the amount of megawatts participating in the scheme. In Australia, for example, retailers have begun offering more flexibility products since the Wholesale Demand Response Mechanism (WDRM) was introduced. Arguably without the introduction of additional competition for flexibility services that WDRM enabled, retailers would be making more limited progress.

A Reliability and Emergency Reserve Trader-style mechanism is a good stop-gap measure to quickly bring flexibility into the market at times when it is most needed. It is also simpler to implement than a negawatt scheme and helps to shift customers along the DSF maturity curve.

A number of MDAG’s preferred options would complement a negawatts scheme, including greater transparency of network tariffs, information for customers, and hedging products. Without a mechanism that enables greater participation in DSF, the benefits of these options may be limited to a small cohort of customers.

The remainder of this submission responds to the specific questions posed by MDAG in respect of DSF and comments on each of the options proposed. If you have any questions or would like to discuss this submission further, please do not hesitate to contact me.

Regards

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7. Do you agree that, weighing costs and benefits, our preferred options in Table 12 above are likely to best address the demand-side flexibility issues described in this chapter? If not, why not?

Option		Comments
C1	Monitor provision + uptake of DSF-rewarding tariffs	<p>As noted in the options paper, a lack of suitable retail tariffs is a key barrier to customers providing DSF. Without appropriate price signals in place to reward customers for providing DSF, they have no incentive to do so. While monitoring the provision of DSF-rewarding tariffs and potentially requiring retailers to offer DSF tariffs is one means of addressing this issue, it doesn’t get to the heart of the problem: that without competition in providing flexibility services, retailers do not have a natural incentive to offer them. As such we are concerned that these mechanisms will not have the desired impact.</p> <p>Since the inception of the wholesale electricity market, there haven’t been any significant regulatory barriers to retailers offering their customers DSF services. However, under the traditional retail model, retailers have an incentive to maximise the customer’s consumption, not minimise it, and thus are only likely to offer or allow DSF activities if it is in their commercial interest. It may be in a retailer’s commercial interest to offer DSF to the extent that it offsets their exposure in the wholesale market. However, some retailers choose to hedge that risk via other means, including through vertical integration. This limits their incentive to promote DSF.</p> <p>Even if retailers are required to offer DSF tariffs, there is no guarantee that they will encourage their customers to take them up e.g. by making the terms and conditions unattractive or not marketing them.</p> <p>In addition, a significant amount of education and trust is required for customers to be comfortable with offering flexibility services. Third party aggregators have a stronger incentive to support customers and provide them with the confidence to participate as it’s their core business. Retailers do not have the same level of experience in offering flexibility services, and not all retailers have the level of trust required for customers to allow their operations to be interrupted.</p> <p>As noted in our response to the Issues Paper, the more effective way to promote DSF is to separate load flexibility from retail and allow third parties to offer DSF.</p> <p>We agree that imposing a sunset date on the use of profiling will assist in sharpening incentives for some retailers to offer DSF to the extent that they are not fully hedged. However, for retailers that are vertically integrated, this option may not lead to significant change in behaviour.</p>
C2	Sunset profiling if smart meters in place	
C3	Require retailers to offer DSF tariffs	
C4	Develop standardised shape-related hedge	<p>We agree that developing standardised shape-related hedge products to reward DSF will be a useful measure to help manage uncertain revenue streams and so provide customers with greater confidence</p>

	products to reward DSF	that they will be able to recover the costs of providing DSF. However, under currently available mechanisms for offering DSF, only a small number of large, energy-savvy customers that are comfortable with being spot-exposed will be positioned to make use of these products. We consider the benefits of these products would be greater if combined with a negawatts scheme that could expand DSF participation.
C5	Provide significant funding for pilots/trials to kick-start dynamic tariff use	While we support funding trials in principle, we note the focus of the discussion is on funding the development of novel tariffs to support DSF. There is a broader role for funding pilots and trials to support the development and acceleration of DSF markets. For example, in Australia Enel X has worked with ARENA to demonstrate how demand response can play a role in stabilising the grid in extreme peaks. ¹ These types of programmes not only demonstrate the benefits of DSF and highlight how DSF can be incorporated into systems, but they also provide participating customers with a better understanding of how DSF can work for their business and the necessary confidence and trust to continue to provide DSF.
C6	Use Customer Compensation Scheme (CCS) to reward DSF	The CCS was designed for a specific purpose that is triggered in the event that hydro storage drops below a certain level. This is very different from incentivising customers to provide DSF on an ongoing basis. As such, we do not consider the CCS to be a fit-for-purpose mechanism for promoting DSF.
C7	Negawatt scheme for wholesale market	<p>As noted above, Enel X remains sceptical that retailers have the right incentives to offer and market DSF services. In our view, a negawatt scheme that allows third parties to offer DSF is the most effective mechanism to introduce sufficient competition to get meaningful uptake of DSF.</p> <p>Most retail contracts are fixed price. A negawatt scheme provides an opportunity for these customers to offer flexibility. Customers could become spot-exposed, however this requires a high level of sophistication to manage, and is very risky for a business. A negawatt scheme opens up DSF to a larger section of the market.</p> <p>We note MDAG’s concerns about the cost of implementing such a scheme, and that some jurisdictions have viewed such schemes as transitional. However, MDAG also acknowledges that negawatt schemes were introduced to compensate for a perceived market failure.² It is not clear that the options preferred by MDAG are sufficient to address any similar market failure in the New Zealand market.</p> <p>While the Wholesale Demand Response Mechanism (WDRM) in Australia is still relatively new, since its implementation the market</p>

¹ For further information see <https://arena.gov.au/projects/enel-x-demand-response-project/>.

² MDAG, Library of Options, 6 December 2022, p.44.

		has seen retailers starting to introduce DSF options for their customers. These off-market programs are offered within retail contracts and so are not visible to the market through WDRM, and have occurred despite retailers arguing vociferously against WDRM. Arguably, without the introduction of WDRM and the ability of third-party aggregators to compete to provide flexibility services to customers, retailers would still have made limited progress in this area.
C8	FSR - improve DSF visibility and remove Code barriers	Enel X supports removing barriers to DSF participation wherever possible. We also recognise the need for the system operator to have a degree of visibility over DSF. We encourage consideration of innovative, low-cost approaches to improving visibility so as not to impose costs that make DSF less attractive or viable for customers.
C9	FSR - accelerate new ancillary services for DSF uptake	<p>We note MDAG’s general support for including DSF in the design of any new ancillary markets, but the view that it isn’t currently a priority due to low anticipated value.</p> <p>We certainly support the design of any addition ancillary markets including a role of DSF. While the anticipated benefits from other sources of instantaneous reserves may currently exceed those available from distributed energy resources, this will not always be the case.</p> <p>We note that Australia is introducing new markets for very fast frequency response (<1 second) to complement its existing frequency control ancillary services markets. All of these markets allow participation by independent aggregators of demand response, which has been a key driver of competition and lower prices.³</p>
C10	Procurement process for high-scarcity DSF (RERT)	<p>We consider a RERT-style approach has merit. Different loads have different abilities to provide DSF based on characteristics such as notification requirements, the length of time DSF can be provided and the time required between providing DSF. This means that some types of load are more suited to providing DSF on an infrequent basis, while others can participate more regularly.</p> <p>In Australia, Enel X has a portfolio of over 100 MW of flexible load providing RERT. We have demonstrated, via ARENA-funded trials over three years, that flexible demand is an effective tool for providing emergency reserves.</p>

³ See the Australian Energy Market Operator, Quarterly Energy Dynamics Q1 2018, p.13, which observed that: additional supply from demand response was one of the contributors to lower FCAS prices in Q1 2018 compared to Q4 2017; combined with the Hornsdale Power Reserve (battery), demand response displaced higher-prices supply from existing technologies; and increased competition, including from demand response, coincided with a reduction in the price offers from some existing providers.

		We encourage MDAG to consider prioritising a RERT mechanism to help shore up reliability, at least as a stop-gap measure until a permanent market-based solution is implemented.
C11	Ensure distribution pricing reflects network needs	<p>We agree there is value in exploring the role of network tariffs to signal congestion in distribution networks and reward DSF through lower network charges. However, while retailers are the coordination point for wholesale and network charges, we do not consider that retailers have the necessary incentives to assist customers in minimising their overall bill via DSF. As discussed above, their business model is not aligned with helping customers reduce demand, and network charges are typically just passed through to customers.</p> <p>For example, some network companies, such as Powerco and Unison, offered a pricing structure to their larger C&I customers that reflected the Regional Coincidental Peak Demand price signal. However, our understanding is that retailers just passed this on to customers without any effort to educate customers on how they could reduce it.</p> <p>Third party intermediaries can have a role here in assisting customers to manage their overall bill. This is the case in Australia, where demand tariffs are common for C&I customers and third-party intermediaries supply the necessary hardware, software and support to manage costs. These types of business models should similarly be encouraged in NZ rather than relying on retailers to provide these services.</p> <p>An additional requirement for ensuring distribution pricing reflects network needs is that the retailer should pass these pricing structures through in a transparent way. This will allow the customer or any third-party aggregator to optimise wholesale market outcomes while minimising network charges. Where wholesale and network price signals don’t align, the customer or their DSF provider would make the choice that best suits the customer, creating a price discovery mechanism for each service.</p>
C12	Investigate extending LMP into distribution networks	At this stage we consider extending locational marginal pricing into distribution networks to be unnecessarily complex. Network constraints could be managed more simply through price signals embedded in tariff structures.
C13	Provide info to help large users with upcoming DSF investment decisions	We support these initiatives, but are concerned that they will be of limited value without additional mechanisms to encourage the development of DSF.
C14	Provide info to help domestic customers with DSF decisions	

8. What is your view of the proposed sequencing and timing of measures to improve demand-side flexibility?

Enel X agrees with the factors that MDAG has taken into account in informing the sequencing and timing of measures to improve DSF, namely the potential net benefit, likely lead time to implement and whether it’s useful for the transition. We would add an additional criterion – prioritising options that are relatively simple and low cost for consumers to participate in. This will provide an opportunity for customers to build understanding and comfort that they can offer, and benefit from, DSF. More complex markets can then be introduced as customers’ use of DSF matures.

9. What, if any, other options should be considered to improve demand-side flexibility?

Enel X continues to support a negawatt scheme for the reasons discussed above.

More generally, Enel X would support options that have the following characteristics:

- **Separate the delivery of retail and flexibility services.** The delivery of DSF services should be separated from the delivery of retail services. That is, the party offering flexibility from a demand-side resource should not have to be the retailer supplying energy to that resource. Separating retail services from other services allows specialist flexibility providers to develop more targeted products, with customers benefiting from access to a wider suite of services, greater competition and additional revenue streams.
- **Revenue certainty.** To participate in DSF schemes, customers need confidence that they will be able to recover the costs associated with installing the necessary hardware and software for providing DSF. This could be achieved via a combination of measures such as ensuring the costs required to participate in a scheme are as low as possible, likely revenues are relatively predictable, and that the scheme is not a one-off so that customers can recover the costs over multiple years.
- **Allow value stacking across markets.** DSF shouldn’t unnecessarily be locked out of markets. The more opportunities customers have to offer DSF, the more likely the benefits of doing so will outweigh the set-up costs and so the greater possibility for participation. Of course, customers won’t necessarily be able to offer DSF across multiple markets at the same time, but they should be able to offer flexibility into the markets where it is most valued.