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Electricity Authority

Enabling mass participation in the electricity market.

emhTrade is an active participant in the New Zealand electricity markets. We are a Certified Reconciliation Participant and launched New Zealand's first peer to peer electricity platform, P2 Power last year. We are continuing to develop this product and will likely be seeking to expand our platform both in New Zealand and in overseas markets in the near future.

Whilst we don't think there are any fundamental impediments in New Zealand to mass participation, there are some improvements within the current regulatory framework that should be considered by the Authority. Our thinking stems from the following observations regarding mass participation:

- Mass participation will require processes running at a scale that can only be facilitated by a data-driven, automated approach. Enforcing existing rules around data quality, particularly in the registry, and 'finishing the job' in regards to the Retail Data Project would be the most cost effective means for the Authority to facilitate mass participation at this point.
- The benefits of mass participation most obviously accrue in the form of load shifting and demand response. Without transparent, transact-able forward price signals for the *shape* of load, there is no reliable signal in regards to investment in demand response and mass participation. Currently there is no liquid market for shaped risk and we see no clear path from the Authority to change this aside from the introduction of a cap. However, as the cap product has no support from incumbent gentailers due to their vertically integrated position, it is unlikely to provide robust investment signals without further intervention from the Authority.
- The fundamentals of the sharing economy are key to the uptake of mass participation. The reason the sharing economy has emerged in so many industries is that it allows greater utilisation of what would otherwise be excess capacity; whether that be in accommodation, vehicles, labour or other resources (Airbnb, Uber, Taskrabbit etc). Whilst it may be beyond the remit of the Authority's Statutory Objective, and is likely beyond the scope of this consultation, we have some concerns that network businesses may not have an efficient level of incentive to utilise assets (either their own or their customer's) to full capacity in as timely a manner as possible. To be clear, this is a potential issue with the regulatory framework rather than any of the firms operating within that framework.

More detailed answers to the specific questions on the consultation paper are provided below. If you would like any further information regarding this submission, please don't hesitate to contact me.

Yours Faithfully,

Stuart Innes.

What is your view of the potential competition, reliability and efficiency benefits of more participation?

Mass participation has the potential to create significant benefits to all three limbs.

What is your view of the opportunities to promote competition and more participation in the electricity industry?

The foundation is there for these opportunities to become a reality. Clean data, and clear price signals, both in the forward markets and for network pricing are the only pieces of the puzzle that are missing. There may or may not be immediate value in mass participation but this will be resolved by market forces.

What other issues might inhibit efficient mass participation? Please provide your reasons.

In our view there are no huge barriers in the current regulatory framework. If there is value in mass market participation it can and will happen. There are issues that are unresolved but are being considered already by the Authority and we'd prefer that resource was allocated to fixing these issues rather than looking to make any other significant changes at this stage. These are:

- The quality of data provided to the Registry by participants, including manual ad-hoc processes that are outside the Code (for example the emailing of consumer information as devised by the switching retailers forum). The penalties for poor data quality in the Registry should be far higher than is currently the case - there is essentially no deterrent or incentive to improve currently.
- The lack of recognition of electronic customer authorisation for third party access to consumption data by the majority of retailers. Whilst we have supported taking market based approach to this issue in the first instance, it is now clear that there is an inefficient equilibrium that needs to be resolved by stipulating in the Code what constitutes valid authorisation.
- The potential that network businesses' commercial incentive to seek the benefits of mass participation, and encourage this through price signals and other means is not at an efficient level due to the nature of Price Quality Regulation. This is likely beyond the scope of the Authority's work, but needs to be considered as a key issue that may be hampering the uptake of mass participation.

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?

Network businesses' activity to do this has historically included the offering of controlled rates to consumers and the management of hot water cylinders. Some firms have also implemented demand charges for the mass market, although to date these have suffered from poor communication with end users and issues with retailers bundling away these signals.

As consumer investment changes, the benefit to be gained from the efficient utilisation of assets will become even more significant. There are some key issues emerging that need to be addressed by network businesses:

- The risk of under-utilised capacity in the future if consumers become more efficient or adopt solar plus storage
- Exposure to sudden growth in EV use, which is likely to be clustered on the network and somewhat unpredictable.
- Network impacts from the mismatch of solar PV generation and demand.

However the opportunity to influence demand (or net supply) peaks is also increasing with new consumer technologies.

Market mechanisms can provide an efficient tool for network businesses that can benefit from shifting load (i.e. from demand peaks and/or into solar generation peaks) by connecting mass

market consumers with the local constraints of the network where there is value to be shared by deferring investment.

Mass market participation platforms will be the conduit for these signals. It needs to be recognised that price signals may change their form by the time the consumer sees them, but the if the signal is there from the network business, there is an incentive on intermediaries and retailers to achieve the behavioural outcomes that are signalled as valuable by those prices.

Some new consumer assets can also offer services that are beneficial to network performance (eg inverters and energy storage). Market based mechanisms can incentivise and fairly reward consumers for making their assets available, resulting in better utilisation of network and consumer assets.

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?

Price Signal Granularity:

Virtually all of the conversations around new technology in the energy industry relate to load shifting (with the exception of solar, although we could also call the solar conversation one of storage economics). In financial terms, storage and load control are akin to options. Very much the symmetrical opposite to peaking plant, a capital investment is made in return for the option to exercise storage/load shifting capability from time to time.

As most readers will be aware, the value of an option increases with price volatility. The case for investment in peaking plant that supports the grid in times of stress can be more easily made if price volatility reflects that market stress. If peaking plant could only receive an annual average daytime price when it ran, there would be no viable business case to invest.

The same issue arises when considering the investment in new technology, whether that be storage or demand response platforms. These technologies have the ability to respond for short periods in near real time, and their capital cost reflects those features. Currently, network price signals are at a significantly less granular level than the capability of these technologies. This is in effect averaging away the volatility in signal (both temporally and geographically) that would make investment in these technologies viable.

As the industry considers moving toward more cost reflective network pricing, we should be aiming to create price signals that are congruent with the features of the technologies that we are trying to enable. Anything less would be a significant under-achievement by the industry and would delay the viability of new technologies. If we can send clear, granular signals about the cost of distributing energy, and combine these with the clear, granular signals coming from the energy market, we will see a much more rapid uptake of technology, the benefits of which will be shared across the entire supply chain, to the ultimate benefit of the consumer.

Revenue Recovery Risk:

Whilst some network businesses are actively promoting demand based charges, these are often being 'bundled away' by retailers. The primary reason for this in our view is that the revenue recovery risk is being passed to consumers (albeit often absorbed by retailers) in the form of wash-ups that cannot be easily communicated. Fundamentally, this is an issue with the Price Quality Framework.

It is our strong view in all aspects of the market that the most efficient outcome will occur when the party best placed to manage a risk is the party that ultimately takes the risk. In regards energy, this creates a requirement for liquid risk management markets. In terms of network revenue recovery, there is a strong argument that network businesses should take that risk, or there should be some other mechanism within the framework that reduces the risk rather than simply giving it to retailers and expecting them to push it through to consumers.

Is there a price structure alternative whereby the consumer/retailer pays more but gets certainty? What is that certainty worth to the network business, the retailer and the consumer?

We are eager to work with network businesses to help develop the platforms required to achieve the behaviours and technology investments required to run efficient networks in New Zealand.

What is your view on whether open access is required and what would be the elements for an effective open access framework?

We see open access as critical to the promotion of competition, be it in retailing, aggregation, or the provision of network services. The time is upon us where there are viable alternatives to the traditional means of providing distribution services. Indeed, some network businesses are already utilising distributed generation and storage solutions to supply rural customers.

The key element to open access is open competition in the provision of services and outcomes.

How effective are the existing arrangements for open access? What are the problems?

We have some concerns at present in that there are network businesses that have subsidiaries engaged in non-regulated businesses that are providing network services. If trials and contracts for services are being awarded by network businesses without appropriate tendering processes, there is a potential issue in that the services are unlikely to be the best in terms of cost and quality, and there may also be long term distortion of the emerging network services markets.

What type of distributor behaviours and outcomes should the Authority focus on to understand whether changes are required to support open access?

The provision of network services to related companies should be closely scrutinised. We would expect that networks services companies should be operating under strong ring-fencing principles. Furthermore, if it is found that services are being provided to related companies on favourable terms or without proper and competitive tendering processes, that legal separation should be considered.

What changes to existing arrangements might be required to enable peer-to-peer electricity exchange?

We have already built and deployed a functioning peer-to-peer electricity exchange. In principle there is no need for participants in this exchange to be customers of the same retailer. Multi-retailer support is a feature that is feasible under the current regulatory framework and is one that we have discussed with other retailers.

We don't believe there is any need for change to facilitate P2P in the electricity market. Indeed, it would be more valuable to ourselves and other parties considering entering this space to have regulatory certainty, rather than the uncertainty and cost associated with changes. Especially any move toward a full bilateral physical market rather than a gross pool market.

What are the costs and the benefits of enabling peer-to-peer electricity exchange?

As stated above, our view is that P2P electricity (and other related services) is already enabled under the current Code and Regulations. The uptake of P2P models will be based on the cost and benefit to consumers and participants through market mechanisms.

Making significant changes to further enable P2P would risk undercutting the investment that has already been made by a number of potential players (including ourselves) and send a signal to future innovators and new entrants that the regulator may be a competitor rather than facilitator. The long term impact of this would be to reduce the likelihood of the emergence of new technology and business models.

What is your view of the possibility for, and the impact of, any current or future blurring of participant type? What are your reasons?

This seems like a low impact issue, however the implications in terms of regulatory overhead to 'micro participants' should be considered.

What types of participation are or might be prevented because the party is not recognised as a participant? What are the potential impacts?

We have previously raised concerns with the Authority that the Reconciliation Participant audit process does not cover financial risk management at all. Participants, or at least those that purchase from the Clearing Manager are required to undertake a quarterly stress test. There is a growing number of parties that are not participants but which are taking price risk with potentially low understanding of the implications of that risk. Furthermore, there are potential legal issues around these parties purchasing risk management contracts. It seems perverse that a non-participant can take spot price exposure yet does not have to undertake a risk management exercise as simple as a stress test, nor can they participate in risk management markets.

What challenges might new forms of generation, such as virtual power plants, or small and dispersed generators, face in entering the market?

The fact that despite the intentions of the retail data project, the lowest cost way to obtain consumption data from potential customers is to become a retailer and acquire those customers. Clearly this is not an appealing or efficient proposition for a new entrant to the market.

What changes might be required to the rule book to facilitate the emergence of virtual power plants or demand response?

The Code should stipulate what constitutes 'authorisation' by a consumer for a retailer to release, in a timely manner, that consumer's consumption data. Such authorisation should be demonstrable by a third party service provider through entirely electronic means (as is the case for electronic direct debits, credit history checking, and other similar services). It is not practicable for start-ups and new entrants to have to take these matters to the Privacy Commissioner to be resolved, which has resulted in an equilibrium whereby none of the benefits of the Retail Data Project are being realised.

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?

Yes, although seeking longer term price signals is a second order problem at this stage. The most pressing issue is that there is no liquid market for the shape of load and therefore no price signal for those considering investing in demand response/virtual power plants etc. Whilst progress is being made toward the listing of a cap product on the ASX, initial feedback from vertically integrated incumbents suggest that there will be little support for providing this price signal by the majority of the market.

EBD price structures have only a very short term visibility thus it is difficult to deduce what the long term value of a demand response platform might be. We would like to work more closely with EDBs in order to ascertain whether the services that we can offer would be of long term value.