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Commerce Commission
Wellington
By E-Mail: infrastructure.regulation@comcom.govt.nz

Re: Submission on the default price-quality paths for EDBs from 1 April 2025

Dear Ben

This submission is on the default price-quality paths for electricity distribution businesses (EDBs) from 1 April 2025.

Counties Energy Limited (CEL) is a consumer-owned EDB that is price-exempt. However, CEL utilises the Commerce Commission (Commission) Excel default price-quality paths (DPP) model to calculate CEL's default price path to provide guidance when setting line prices. This is then validated separately with external consultants preparing an independent CEL DPP.

CEL has, and continues, to focus on innovation including real-time LV visibility across its network and the development of a Distributed System Operator. CEL is also actively seeking to support consumers in energy headship with a range of programmes and new initiatives such as community solar schemes. This work, and international developments, demonstrates some key technology developments that are occurring and in addition to a general innovation process should have targeted funding in the DDP4 methodology. This allowance for EDB innovation programmes would be in: (1) DSO; (2) Low voltage visibility; and (3) energy hardship.

1. DSO network utilisation efficiency gains

The scale of decarbonisation is significantly larger than currently evident, with New Zealand's petroleum energy consumption double that of electricity. It also offers significant benefits to consumers given that, and because EVs are a fraction of the cost to operate compared to combustion vehicles and households spend 25% more on transport fuel than electricity[1]. As this transition is occurring now, EDBs need to invest in technology and processes to manage the transition.

This provides a unique opportunity for EDBs to make a step change in efficiency through increased network utilisation. This is because distribution networks are designed to supply peak demands that occur infrequently during cold winter weather events on weekday evenings[2], for nearly 99% of the time significant spare distribution capacity exists. However, EDBs need to be incentivised to invest in technology as it takes

[1] Statistics New Zealand average weekly household expenditure for the year ending June 2019.
[2] When home heating demand increases while there is commercial and industrial demand.

time, and involves financial risk, in order to enable them to obtain the future benefits that may be five to ten years away. In particular, CEL believes that this requires EDBs to develop DSO capability to manage DER. The benefits will be long-term through the deferment of capital investment obtained through the better utilising of the existing network capacity. The Commission's views that EDBs will be incentivised through cost is unrealistic as any savings will be over future multi regulatory periods.

2. Efficiency gains through data transformation

CEL started investing in low voltage visibility through deploying smart meters, and a smart meter communication network, nearly ten years ago. This investment, coupled with developing a big data platform and customer outage app, has enabled widespread network efficient and customer communication improvements. CEL is now looking to follow WEL Networks with the implementation of 5 minute metering as this technology is now developing rapidly in the following areas:

Fault identification

A number of companies[3] have developed algorithms that can identify network faults using 5-minute meter data. Examples of the network faults that can be identified include loss of neutral, line down, loose connection and blown HV fuse detection, but the list is long and growing. Also, high impendence fault direction can be determined which is a safety mechanism for the community and staff working on the network.

Enabling a DSO

To enable a DSO EDBs will require 5-minute near real-time meter data for network asset dynamic operating envelopments to manage thermal and voltage constraints down to LV circuit level. This would enable accurate forecasting of constraints and DER flexibility and behaviour so that DERs can be appropriately dispatched for CEL to manage the constraints. This enables improved asset utilisation, which reduces capital expenditure through delaying capital investments.

Network planning

Using 5-minute ICP voltage data to correctly associate ICPs to phases and to transformers for network mapping . This is critical in ensuring correct network mapping for ADMS, outage planning and notifications and for checking transformer loadings. The associations can then be continuously updated overtime.

In addition, this enables load capacity ratio and peak load duration ratio monitoring so that EDBs can accurately map out capital expenditure on the LV network because of demand growth through the likes of EV charging uptake. For operational teams there is also the ability for LV circuit mapping validation to determine open points on the LV network. Currently, the industry lacks visibility of LV open points.

3. Energy efficiency to alleviate energy hardship

CEL does not believe that EDBs would be incentivised to invest in energy efficiency under DPP4 because in practice energy efficiency to reduce peak demands is not effective. This is because of the well-known phenomenon of the clawback of the energy efficient savings. The clawback occurs as the household continues to use the same amount of power but have an improved quality of life. For example, installing

[3] Companies used in New Zealand includes Future Grid, Hiko and Gridsight.

additional home insulation often does not reduce power consumption, but instead the homeowner can afford to heat more of their home.

However, this improvement to the homeowner is why CEL supports energy efficiency because it does enable those in energy hardship to have a warmer drier home. There is no energy efficiency market in educating, and providing support, for those in energy hardship and to enable this market there should be an allowance for price non-exempt EDBs to have energy efficiency programmes for those EDBs wanting to support consumers in energy hardship. This should be an allowable expenditure up to a set percent of total distribution revenue, which CEL suggests should be around 0.1%.

Aligning DDP incentives to EDB innovation investments

CEL's experience with business casing technology innovation investments such as smart metering is that the benefits are hard to quantify and occur cumulatively over a long period of time. Furthermore, as the technology matures unexpected benefits occur as other companies leverage the technology such as the availability of detailed LV data. This is difficult to align with the DPP4 methodology that is focused on incentives that drive efficiency gains through cost reductions involving existing practices that need to be recovered over a short timeframe. Possibly the Commission considers how funding could cover multiple regulator periods and be funded capped through a per ICP amount or as a proposed percentage of allowable revenue as opposed to a $150k cap or requirement for a CCP application.

In addition, the Commission may not appreciate the timeframes to go from a concept to Board approval then to construction before benefits start accruing. For instance, once the DDP4 methodology is approved non-exempt EDBs can then commence planning for innovation programmes that will likely take at least 12 months to go from concept, to obtaining vendor quotes then to a business case that obtains Board approval. Once the capital expenditure is approved the equipment will be ordered and then take 18 months or longer[4] to arrive and then a further 12 months to implement. So three and a half years to implement an innovation investment, which is 70% through the DPP period. Consequently, possibly the DDP methodology could consider specific areas for innovation incentives where the incentives are long-term with both the EDB and consumers equally sharing in both the risk and long-term benefits.

I would be happy to discuss any aspect of this submission.

Andrew Toop
General Manager Commercial

[4] Most network and metering equipment now has a lead-time of 18 months or longer.