COUNTIESPOWER

23 October 2018

Miriam R Dean CNZM QC
Chair
Electricity Price Review
15 Stout Street
PO Box 1473
Wellington 6140

By email: c/o energymarkets@mbie.govt.nz

Dear Miriam,

This letter has been prepared in response to the release of the Electricity Price Review First Report for Discussion. It supports the official submission from Counties Power.

Review

Counties Power welcomes the review as we believe the current industry structures no longer meet the needs of consumers as the energy sector becomes increasingly more technology focused and greater permissiveness on participation in innovation is required. Many of the current demarcations within the industry, are, in the opinion of Counties Power, unnecessary hurdles to innovation and too much time is diverted to finding ways around and through a construct designed for a different time and reality to better service our customers and communities.

For Counties Power, our role is straight forward, and we are clear on who and what we are:

Who are w

- We're a full-service electricity distribution network company spanning the southern Auckland and northern Waikato region.
- We are more than a traditional electricity distribution company, but a full-service energy solutions company offering bespoke energy services including new subdivision work.
- We're powering one of the fastest growing areas in the country with large scale greenfield residential and industrial development sites throughout our region.
- Our industrial load is forecast to increase by 220 percent over the next five years alone.
- There will be 45,000 new dwellings (which is the size of Tauranga) in our area by 2034 and we will transform from a mainly rural network to a large urban network.
- We have, and are building, for this future growth and energy decarbonisation, with higher distribution and sub-transmission networks (New Zealand's largest 22kV distribution network and new 110kV subdivision network).
- We are planning to invest nearly twice our RAB into our network over ten years.

- We are our community - we're 100 percent consumer-owned - delivering returns back to our consumers and partnering in the best interests of our community and environment.
- We find ways to keep service levels high and reduce prices for our consumer – Counties Power has either held line prices or the distribution component of the lines prices for four years in a row.
- We have a 90+ year partnership as a key business in our community, we are a $300m company with revenue of $70m, giving back more than $10m per year to our community.
- We foster collaboration and work closely with our partners, which include both gentailers and EDBs.
- We're at the forefront of our industry in smart meter coverage, smart grid, big data, cloud computing, customer outage apps and grid scale battery trial.
- We're nimble and develop high tech solutions to meet customer needs, we are ambitious, agile and adaptable.

We are bold in our aspirations and back ourselves to deliver. We offer something different due to our ability to be flexible, agile and innovative on a different scale. Our goals are high, we do what we do with excellence and pride and with our community always at the centre. We unreservedly welcome the working relationship and information sharing we have with Vector who provides leadership and share research and innovative ideas in a very, very different, Auckland city environment. There is a place and need for difference, we do not believe a 'one size fits all model' for EDBs offers a solution because EDBs need to deliver specific solutions to their customers.

One very well publicised example of this was the April 2018 storm. As a region with over 95% smart meter penetration, owned by Counties Power and communicating in real-time to a big data platform, we have the technology available to offer a fast, efficient response during all outages. The lack of access to this data, to manage public safety and restore networks, has been publicly acknowledged as a barrier for other EDBs.

As part of our processes, we engage with our stakeholders after storm events – we hold stakeholder forums to allow a two-way flow of information and offer a level of confidence in our response protocols and support systems.

We respond effectively and efficiently for the 42,000 homes, farms and businesses we supply. We are investing to deliver high power quality for the large residential development underway and the major industrials flocking to the Pokeno and Drury South region. We are emerging as an export region for high value milk products and are investing to ensure that this sector is successful.

Partnerships and efficiency

Counties Power believes that efficiency gains will be most greatly gained through partnerships throughout the industry supply chain rather than a mindset that 'bigger is better'. For Counties Power the partnership approach in the supply chain has been very successful with Mercury in the deployment of its smart meters, with Mercury's metering arm Metrix being the interface with retailers and running the smart meter communication headend. A similar partnership is developing with Genesis Energy, with a partnership to investigate a grid scale battery including testing new models like energy

arbitrage. Thirdly, Counties Power has partnered with the electricity billing company Axos Systems to form the big data company Ampli Limited.

Innovation

Counties Power is of the firm view that there is no room for patch protection or demarcation when it comes to the right and responsibility to be innovative. Innovation is not a commodity, it is a necessary enabler to create a more technologically responsive, consumer focused energy sector. Anything other than the democratisation of innovation is, in our opinion, a failure to create the richness of ideas for future consumers that require New Zealand solutions. Innovation thrives when offered air – demarcating, and for the avoidance of doubt, ring-fencing, will stifle and inhibit the generation of ideas, skills and possibility.

Counties Power, as a forward looking EDB, is already engaged in innovative developments for our consumers. We are trialing a grid scale battery, developing economic solar solutions with developers, developing New Zealand's most advanced smart grid and forming a big data company with a leading billing software developer. We welcome an environment that gives air and accelerates this innovation.

Technology and Digitalisation

An open opportunity to innovate embraces the need to also democratise the enablers, namely access to data. Like innovation, Counties Power proposes that data is also not a commodity but is a necessary enabler to safely and appropriately explore, improved outcomes for customers. The old saying "knowledge is power", while said in a different generation, is never as true as it is now and access to data is at the heart and will determine accountabilities and opportunities in the best interests of NZ. The continued fall in the cost of processors and new cloud computing technology is driving the wave for big data analysis and artificial intelligence that is a growing reality. Counties Power believes that this technology is the greatest driver for improved customer services and reducing prices rather than the predominantly hardware view of the regulators.

All emerging technological and digital advances (AI, deep learning, algorithms et al) require data to be effective. We welcome the panel to define the approach to data and also define the necessary process to define safeguards for data owners - advances in new energy sources and services must be appropriately managed and responsibly developed.

There are emerging international examples (notably in the health-care sector) of effective management of access to data, maintaining respect for privacy and transparency but also allowing technology advancement. The recent Royal Commission on Artificial Intelligence, UK, proposes an approach to the setting of ethical standards and monitoring in the health industry which we believe holds merit to guide a similar approach in the energy sector. We would welcome a government led process to define the guidelines for the use of data in the energy sector as such an approach will be applicable across sectors

Finally, Counties Power respects the process and integrity of the current review. Our submission provides the necessary highlights and high-level response to the questions posed by the panel. As a member of the ENA, we respect the views representing the industry and are in support of the majority

of the ENA submission. Where we do have a different opinion, this is included in our individual submission.

We are more than willing to provide further insights and support the panel where possible to assist.

Yours sincerely

Judy Nicholl
Chief Executive
Counties Power Limited

COUNTIES POWER SUBMISSION

23 October 2018

Electricity Price Review

Secretariat, Ministry of Business, Innovation and Employment

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Opening statement

Electricity is an essential service for households because it enables the core human requirements of cooking, washing and heating and in the future, it will expand to include transport. For businesses it is an equally essential service to be able to operate. Consequently, it is more than a tradable commodity and all participants in the electricity market should be compelled to act not just in the interest of shareholders but also to fulfil this social requirement. This is aligned to Counties Power's core values driven by its ownership structure, and the benefits of this structure should be recognised in the Electricity Pricing Review. Policies and practices delivered through an "Energy-care" philosophy will become synonymous with the concept of "health-care" as we know it – as an important metric of community and society's wellness.

In addition to being consumer centric, Counties Power, and many other consumer owned EDBs, are important drivers of regional economic growth. We are the face of development and service, and we partner with confidence.

In Counties Power's region, this has involved significant focus on supporting a growing value-add, export focused industry in large scale infant formula plants, with two plants operating, one being constructed and a fourth being planned. In addition, Counties Power is reticulating Auckland's largest industrial greenfield site at Drury South and investigating opportunities for large scale solar arrays and windfarms.

Contact details

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Summary of questions

Part three: Consumers and prices

Consumer interests

1. *What are your views on the assessment of consumers' priorities?*
Counties Power agrees with the findings of the report and would add that in Counties Power's region there is a clear connection to being in energy hardship and being in a home that lacks insulation. This can be demonstrated through the large scale residential developments in Counties Power's territory, with house prices between $750k and $1.4m. These houses are unlikely to be occupied by households in hardship[1] and are insulated to the latest building standards. On average such homes use around 6,200kWh per annum. This is considerably lower than electricity consumption in existing older homes, with Counties Power's overall average household energy use sitting at 7,700kWh per annum. Counties Power's position is that addressing poor insulation and heating options in older homes is where the Panel should focus to resolve energy hardship and support advances on current government initiatives to this end. Counties Power believes that existing retail products do not cater well for customers in energy hardship and, above all, those in extreme energy hardship because of the lower returns retailers can earn from this customer segment[2]. Retailers should be designing new products like, for example, prepaid tariff plans. Counties Power has a prepaid tariff that has zero fixed fees and is a lower cost option[3] for the average Counties Power household (and they still receive the Counties Power discount). Despite this, and of concern, less than 1% of Counties Power's consumers are on a prepaid tariff, which compares to the telecommunication mobile market where around 40% of mobile users are on a prepaid tariff. Key to this low uptake is the lack of products available to homeowners with only one retailer offering a prepaid product and using Counties Power's prepaid tariff option.

2. *What are your views on whether consumers have an effective voice in the electricity sector?*
Counties Power agrees that parts of the electricity sector are complex and this makes it difficult for consumers to understand. Counties Power's experience is that this applies equally to the management and industrial electricians of large industrial and commercial companies, who generally have limited understanding of the sector. We are frequently the interpreters or translators of how the industry works and the options and approach that will best suit each customer. Consumer owned EDBs, like Counties Power, provide an effective mechanism for consumers to have a voice through consumer elected Trustees. For Counties Power, this voice has resulted in the Company investing in new technology to improve communication to customers during power outages, increasing resources to speed up the process for new power connections and a focus on power reliability with new investments planned to improve power quality. Given that many consumers don't benefit from being within a consumer owned EDB, other mechanisms are required. To this end, Counties Power believes that the most practicable, and efficient, mechanism to give consumers, and specifically New Zealanders, a voice in these areas is through industry regulators. Counties Power

[1] This is because of the high cost of ownership and the associated high rental costs.

[2] Returns are reduced because of issues such as bad debt.

[3] Counties Power's prepaid prices could be reduced further if was only applicable to urban consumers and household had controllable electric hot water.

believes that the EA's TPM proposals illustrate that the EA, under its current mandate, is arguably not acting on behalf of New Zealanders, and instead has a focus on market efficiencies that can result in benefits to local and international shareholders above New Zealanders.

Counties Power engages with its customers post the delivery of service, which includes:

- A monthly survey on Counties Power's performance by surveying a sample of customers that have interacted with the company on faults, inspections and other EDB services (e.g. cable location, transport of high loads) over the previous month;
- A biannual sample survey, alongside the monthly surveys, to further check alignment of investments into the network with customer needs and regional growth; and
- Counties Power has also recently engaged with customers following a planned shutdown to gauge insight into how customers prefer to be advised and what information is most helpful for them and have improved processes following feedback.

Power reliability is key for consumers, so Counties Power has undertaken the following to ensure customers have an effective voice in how Counties Power manages communications in a power outage:

- An outage app trial was undertaken involving consumers on both a rural and an urban feeder to improve the app's messaging and design to meet consumer needs. This has enabled Counties Power to have the most advanced outage app in the industry; it enables two-way communication and timely outage information using smart meter data and updates from fault crew.
- Counties Power met with stakeholders post the storm events of 2018 (January and April) which included representatives from local councils, civil defence, fire and emergency and local businesses. Counties Power also facilitated an industry wide workshop (comprising retailers, metering companies, Vector and Counties Power), which was the first of its kind, to identify opportunities for better communications to better support customers in future large-scale outages. This workshop identified the value of cross-functional discussion when the customer is at the heart of the discussion and especially, the importance of network meter data (i.e. non-consumption meter data, which included loss of power signal from the meter).

3. *What are your views on whether consumers trust the electricity sector to look after their interests?*

Counties Power, and all EDBs, are arguably the face of the industry because it is the lines crews who deliver in person the service to customers, and for outages caused by storm events this can be any hour of the day. Our fault and construction crews are highly visible, and provide professional service, confidence and reassurance to people day in and day out. Public safety is a high priority for Counties Power and we place our customers at the heart of our business - particularly in interactions with the public in outage situations.

Counties Power, as a consumer owned EDB, builds trust through our local ownership structure. Trustee elections are highly contested, and our elected trustees are highly visible, and well-known figures in the local community who act as an additional conduit to ensure both board and management are aware of customer concerns. Secondly, as a consumer owned EDB we build trust as we operate on values which see us act in the interest of consumers. This is evident in the consumer owned EDB opposition to the EA's TPM proposal, which was to protect EDBs consumers from an increase in their prices because of higher Transpower pass-through costs.

Prices

4. *What are your views on the assessment of the make-up of recent price changes?*
Counties Power would agree with the findings for the period from 2004 to 2018. However, the conclusion that distribution charges for residential customers increased 400% between 1990 and 2004 is highly questionable because in 1990 retailer and distribution functions were combined throughout the country in regional power companies. At the same time, ECNZ combined transmission and around 95% of generation plus they managed risks including hedging. ECNZ then charged an average energy price to power companies that they easily passed on to consumers. Counties Power suspects that the 400% finding was based on reported electricity company data of 'distribution and maintenance costs', which excluded costs like head office and interest costs. To test this, Counties Power has taken Electricity Supply Association of New Zealand (ESANZ) statistics, which reported distribution and maintenance costs as being a weighted $0.0108 per kWh across all power companies for the year ending March 1993. Once other costs are included such as interest and head office[4] costs then the distribution proportion of the final delivered energy price is 30%[5]. This percentage of the final electricity price is close to the current price, which would indicate that there has not been a 400% increase in distribution costs. While there may have been some changes in the way distribution prices were allocated to consumer groups this would have applied equally to the retail component because retail and distribution were, as mentioned above, combined within the 49 power companies.

5. *What are your views on the assessment of how electricity prices compare internationally?*
The EPR report shows that New Zealand's electricity prices compare very favourably in the OECD (figures 9 and 10)***)***. What is not evident from the graphs is the level of central and local government financial support to reduce generation costs in OECD countries, as there is no government support in New Zealand. Furthermore, there are inherent factors increasing New Zealand's electricity cost including. Firstly, the country's low population density requires a large rural distribution network that increases prices for all consumers, and secondly, a long and costly transmission network to connect large scale South Island generation to the large upper North Island population and industrial centre. In addition, prices are also higher because of New Zealand's small-scale generation base. Isolation and heavy reliance on hydro power with limited storage capability results in a cost to all consumers for holding additional dry-year reserve generation plus lost hydro generation from having to spill water to maintain higher average damn levels.

[4] As noted above, power companies simply passed on average energy prices from ECNZ, so there was not substantial retail overhead.

[5] Weighted average delivered energy price across all power companies was $0.0955 divided by the weighted average combined distribution, interest and head office costs of $0.0282 per kWh

6. *What are your views on the outlook for electricity prices?*

Counties Power believes that electricity prices will likely rise to fund the significant increase in renewable generation that is required by 2050. Figure 27 (p179) of Electricity Pricing Review report shows a doubling of the required electricity demand. For this to occur, investments in new large-scale generation will be required and new solutions, such as pumped hydro, will be required to balance out the timing difference from when renewable power is generated and when it is required.

Added to this mix is the effect of climate change on the inflows into the South Island damns that will increase the risk of insufficient hydro generation. This may require the country to hold greater dry-year thermal generation reserves or maintain high damn water levels that will increase spill, which in turn means that there is less hydro generation available.

Offsetting some of the increases will be lower transmission and distribution prices on a per kWh hour basis because of better utilisation of these assets. Currently, distributors and Transpower must build assets for the very high peaks that occur during winter weekdays when a cold front moves over the country. The new load from decarbonisation of the economy will not be weather driven and will occur evenly throughout the year including overnight. This will result in distributors and Transpower being able to recover fixed costs over a greater electricity volume, hence distribution and transmission prices will reduce.

Affordability

7. *What are your views on the assessment of the size of the affordability problem?*

Counties Power acknowledges that there is an issue of affordability. We also note that the EPR Report makes minor mention of the fact that Counties Power, and many other consumer owned line companies pay out an annual discount that helps alleviate energy hardship. No other companies within the sector make such payments.

For the average Counties Power household, this is a $220 discount[6] and is paid in late November through to early December. This increases with the amount of line charges paid so that larger households using more power get a greater discount. This is valued and welcomed by our consumers in the pre-Christmas period when greater demands on household finances are often prevalent.

[6] This is 19.5% of the household's line charges during the year.

8. *What are your views of the assessment of the causes of the affordability problem?*

New Zealand's electricity prices, as shown in the EPR Report, are below the OECD average. What the report does not show is that New Zealand homes are in the top quarter in OECD for electricity consumption[7]. This reflects the poor insulation of much of New Zealand's housing stock, and poor heating options.

Consequently, a key cause of energy hardship is the poorly insulated housing stock and availability of energy efficient heating options. This can be seen in New Zealand's sole reason for incurring a winter peak in demand, and high winter heating costs, being for residential space heating (there is a small amount of additional lighting required but this is decreasing with LED lights).

While there are measurable, energy efficiency related metrics, Counties Power recognises that affordability for some homes will not be resolved merely through greater insulation. Poverty and energy hardship has many roots and causes, and Counties Power supports initiatives to assist with understanding the issues and developing improved government policies to reduce household hardship.

9. *What are your views of the assessment of the outlook for the affordability problem?*

If current trends continue, there will be an increasing affordability divergence within New Zealand, as high decile homes will increasingly live in new well insulated homes, with heat-pumps and energy saving devices like LED lighting. Households in energy hardship are likely to live in rented accommodation, and because the landlord does not directly benefit from the investment it is likely that these homes will be the last to have heat-pumps and LED lights installed[8]. Added to this, electricity prices will increase because greater electricity demand (from the electrification of transport and industrial heating) will require new higher cost generation.

This is not unique in New Zealand and flows through to transport affordability as well, with low decile homes more likely to be driving inefficient vehicles, resulting in high petrol costs that in turns results in these households paying an unfairly high percentage of roading costs. This is because part of the petrol costs includes revenue gathering for the National Roads Fund, and inefficient vehicles pay a greater contribution to the National Roads Fund despite the vehicle incurring no more additional road costs than a fuel-efficient vehicle. The current high purchase price of electric vehicles will exacerbate this situation plus electric vehicle owners will likely benefit from lower electricity prices because of the off-peak power being used (several retailers already offer special electric vehicle tariffs[9]).

[7] https://www.eranz.org.nz/fileadmin/user_upload/ERANZ-_electricity_prices_in_NZ_-_an_historical_and_current_context_-_June_2017.pdf

[8] The Residential Tenancies (Smoke Alarms and Insulation) Regulations 2016 is limited to floor and ceiling insulation.

[9] https://www.flickelectric.co.nz/wellington-ev-tariff, https://www.meridianenergy.co.nz/your-home/pricing-and-rates/electric-car-plan

Summary of feedback on Part three

10. *Please summarise your key points on Part three.*

- Counties Power's position is that poor insulation and heating options in older homes is where the Panel and industry could make permanent improvements in reducing energy hardship in New Zealand. Counties Power recommends that an energy hardship levy is introduced on a similar basis to the Telecommunication Development Levy.
- Counties Power believes existing distribution and retail products do not cater well for customers in energy hardship and new prepaid distribution and retail electricity tariffs are required. Counties Power already has a prepaid tariff with zero fixed charges that offers savings for an average household in the Counties Power region.
- Consumer owned EDBs, like Counties Power, provide an effective mechanism for consumers to have a voice through consumer elected Trustees. This has resulted in Counties Power implementing services, making reliability investments and holding its price beyond what would be required if the Company was non-exempt from price-quality regulation.
- Significant consumer trust is built from fault and construction crews that are highly visible, and provide service, confidence and reassurance to people day in and day out.
- Counties Power disagrees that distribution charges for residential customers increased 400% between 1990 and 2004 because in 1990 retailer and distribution functions were combined throughout the country in regional power companies. Using ESANZ data from 1993 it appears that as a percentage of the final price, EDB prices are similar to those in the early 90s.
- Counties Power acknowledges that there is an issue of affordability and believes that consumer owned EDB discounts are one of the few mechanisms that currently helps address this issue, and this should be recognised in the EPR Report.

Solutions to issues and concerns raised in Part three

11. *Please* briefly describe any potential solutions to the issues and concerns raised in Part three.

Potential solutions to energy hardship are as follows:

- Counties Power agrees with the report that additional hardship is occurring because customers are not on the most favourable tariff. Counties Power has analysed its customer base and is aware that 23.7% of residential consumers are on the incorrect tariff. Counties Power would recommend that there is a requirement under the Electricity Industry Participation Code that on 1 April[10] each year all retailers are compelled to switch consumers to the customer most financially favourable tariff option.
- Retailers and distributors should be required to develop new prepaid pricing options for residential consumers[11] in conjunction with social agencies like the Salvation Army and Work and Income. Plus, there should be a requirement that retailers can't refuse to accept a household on a prepaid plan.
- To address the existing poorly insulated and heated housing stock, Counties Power would recommend an energy hardship levy is setup to fund large scale home insulation and heating programmes. This should target all homes built prior to 2008 in low social-economic areas, and for retirees and people whose circumstances require them to be home based.

[10] New retail prices are normally published on 1 April next year, so that they tie into new 1 April EDB line prices.

[11] Retailers should not be able to refuse to place customers on a prepaid tariff.

This levy should be recovered by the System Operator through the wholesale market so that all industry participants pay their share of the socialised costs. Similar levy arrangements are in place such as the Telecommunication Development Levy that is levied on all telecommunication users and has proved valuable for regional development. This is an example of where this approach has achieved the desired outputs.

- Lastly, increased home energy efficiency building standards, and heating standards, are required. A well-designed house that maximises winter solar gain, with European levels of insulation, would require little heating given New Zealand's temperate climate. Longer-term, this would reduce peak winter demands and reduce the requirements for new distribution, transmission and generation investments.

Part four: Industry

Generation

12. *What are your views on the assessment of generation sector performance?*
Counties Power agrees with the findings in the report.

13. *What are your views of the assessment of barriers to competition in the generation sector?*
Counties Power agrees with the findings in the report.

14. *What are your views on whether current arrangements will ensure sufficient new generation to meet demand?*
Consumer owned EDBs are an important investor currently and in future new generation opportunities. Counties Power commenced the initial work on the consented Awhitu windfarm several decades ago. Consumer owned companies are a natural fit for large scale renewable generation because such projects require large land areas, and so landowner agreement and support. This is easier to achieve where the landowner sees the benefits going back to their local community. Consequently, restrictions on the quantity of renewable generation allowable by EDBs through section 76 of the Electricity Industry Act 2010 should be removed. This would encourage a large segment of the electricity industry, with strong balance sheets, into the future generation market which requires significant investment to meet greenhouse gas emission targets, increase the liquidity of the hedge market, increase generation competition and to keep electricity generation prices low for households. Given the scale of such projects EDBs would not be able to utilise their monopoly benefits to obtain a competitive advantage. Counties Power believes that most electricity retailers would support Counties Power's position, with Counties Power already obtaining support in principle from one large gentailer.

Retailing

15. *What are your views on the assessment of retail sector performance?*
Counties Power agrees with the findings in the report.

16. *What are your views on the assessment of barriers to competition in retailing?*
Counties Power agrees with the findings in the report.

Vertical integration

17. *What are your views on the assessment of vertical integration and the contract market?*
No comment.

18. *What are your views on the assessment of generators' and retailers' profits?*

No comment.

Transmission

19. *What are your views on the process, timing and fairness aspects of the transmission pricing methodology?*

The EA commenced the TPM review in 2011 and seven years on the issue still hasn't been resolved because of an extremely poor consultation process. This has created investment uncertainty for distribution, generation and energy intensive industry in New Zealand's largest population and commercial centre, which is currently experiencing high economic growth. Counties Power believes that this needs to be corrected urgently through transferring responsibility for transmission and distribution pricing, which includes setting the TPM, from the Electricity Authority (EA) to the Commerce Commission.

Distribution

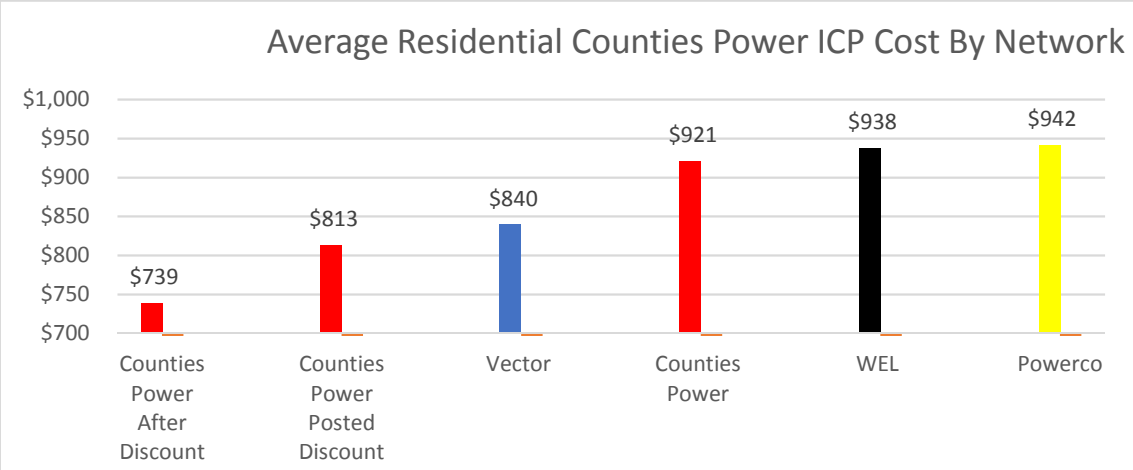
20. *What are your views on the assessment of distributors' profits?*

The EPR Panel needs to consider cashflows, as well as profits. Specifically, the level of cashflows back to shareholders and level of reinvestment into network infrastructure. For Counties Power, as with many consumer owned EDBs, the EPR Report does not show that nearly all Counites Power's profit is reinvested into its network, with the difference being a discount to consumers. Very little cash is paid as dividends and so for Counties Power, and other consumer owned companies, there is no requirement for regulatory gaming (e.g. no gain in an over-forecast of future expenditure requirements to enable higher prices).

The Panel should compare this to non-consumer owned EDBs, where it is likely to find significant cash going back to shareholders. Furthermore, many of these non-consumer owned EDBs are either on a customised price-quality path, or are seeking a customised price-quality path, in order to fund additional investments into the network on the back of higher consumer electricity prices.

Counties Power also has a significant requirement for new investment of nearly twice RAB over ten years, but rather than increasing prices, has for the last four years either had a zero-price increase (held both the transmission and distribution components) or held the distribution component of the lines charge. Holding prices, despite large capital requirements, is driven by Counties Power's consumer ownership.

This stance has resulted in Counties Power having lower line charges than much larger lines companies, including WEL Networks and Powerco. The graph below is a comparison of the costs for an average Counties Power house using the lines prices from three neighbouring EDBs. Vector's prices are also higher once Counties Power's annual discount is included. Furthermore, Powerco's residential prices are set to increase further under their customised price-quality path.



21. *What are your views on the assessment of barriers to greater efficiency for distributors?*

Price structures

Counties Power implemented mass market time-of-use (TOU) tariffs on 1 April 2016, following substantial retailer consultation. This followed a large investment in smart meters, which not only resulted in shortlisting for a Deloitte Energy Excellence Award (https://www.energyawards.co.nz/finalist/2016/energy-project-of-the-year/counties-power) but has also resulted in the highest concentration of a single smart meter type on an EDB network.

Of concern, retailers have been unable, or unwilling, to take up the TOU tariff. Counties Power then aligned its TOU tariffs to Vector's TOU tariff structure (including time periods) so retail TOU billing developed for the Vector network could be easily used on the Counties Power network. Unfortunately, the uptake of TOU tariffs has remained low with only two retailers and around 50 consumers using the new TOU tariffs.

Efficiency pressures, business size and meter data

Counties Power agrees with the focus on EDB efficiency to reduce costs but disagrees with how this efficiency will be gained. Work undertaken by EDBs in power line fault situations and construction is where most of the efficiency gains will be found, as opposed to network core systems (Ford didn't make a significant efficiency gain in building the Model T through improving his office functions). Consequently, Counties Power believes that assuming there are efficiencies to be gained as an automatic output through increased EDBs size is wrong. While this may incrementally spread the network core systems across a larger customer base, the same number of crews are required to build and maintain the lines.

Furthermore, there are many business examples where the theory of economies of scale and centres of excellence as a natural outcome of amalgamation are not realised. What does result, is greater distraction of management time, disillusioned customers and unwieldy bureaucracies.

Consequently, the main efficiency gains will be through improved utilisation of fault and construction crew. Counties Power believes that in this respect there are significant efficiency gains through new technology that improves fault and construction crew efficiency. To this end Counties Power has implemented New Zealand's most integrated smart grid network and developed the INDI (Infrastructure and Network Data Interface) platform, which brings together instantaneous information on all customers (aka Internet of Things), GPS vehicle locations, field staff mobile devices, Google Maps and GIS infrastructure data. INDI utilises leading technology including Big Data and Cloud Computing and was short-listed in the 2017 Deloitte Energy Awards for this technology

(https://www.energyawards.co.nz/finalist/2017/innovation-in-energy-award/counties-power).

The value of this system can be seen in the April 2018 storm, where Mercury in their annual shareholder address stated "Counties [Power] can identify in six seconds when an individual meter fails to have electricity, and then initiate appropriate communications to customers and maintenance contractors to remedy the situation. Counties Power did tremendously well in managing the recovery from the April storm, though you probably didn't hear about it. They had invested in technology, processes and partnerships in a customer-centric way." (https://issuu.com/mercurynz/docs/287633/20). In addition to large scale faults, other examples of using this technology is to improve the deployment of fault crew, identify dangerous electricity faults within the home and improve the delivered voltage. Significant future advances will occur in this space, with new technology like augmented reality and artificial intelligence, which is a development wave that is exciting as Counties Power innovates such technology for our region as part of our customer-centric approach.

In addition, releasing this requirement for smart data analysis, Counties Power jointly with Axos Systems Limited formed big data company Ampli Limited[12]. Subsequently, Ampli has undertaken big data analysis for many lines companies including combining social-demographic and electricity consumption data analysis for the Electricity Networks Association. Counties Power's industry leadership illustrates that EDB size is not a determinant in the development of this new wave of technology, however, this technology is more easily financially justified where the EDB has fault and construction crews in-house. Where EDBs outsource fault and construction crew, the focus is on reducing the contract price and there is far less financial incentive on the EDB to develop new technology.

22. *What are your views on the assessment of the allocation of distribution costs?*

Counties Power, as do all EDBs, allocates infrastructure costs to those customers that use the infrastructure. Counties Power recognises that businesses require greater network connection capacity and so SME tariffs are higher than residential. For many larger commercial and industrial customers, they connect using just the high voltage distribution network so are not allocated the costs of the extensive low voltage infrastructure.

While it may appear that this results in higher residential charges on a $ per kWh basis, this is in large part because commercial and industrial customers better utilise the network capacity they pay for. This is because they consume electricity at an even rate for a longer period of time, with very large industrial customers consuming power over a 24 hour period and households only requiring significant capacity for space heating on cold winter days while they are cooking (an analogy is that industrial customers pay for the larger pipe that they use but because they use the pipe more continuously they end up paying less on a per volume basis).

Urban-rural costs

Counties Power believes that the restriction of not being able to have a price difference between urban and rural is creating the greatest difference in EDB prices and is resulting in the urban poor paying higher prices to the benefit of the agricultural sector.

To illustrate, the EPR Panel has anecdotally provided an example of two households in close proximity supplied by different EDBs, but where there is a large difference in EDB line prices. At the same time there is clear evidence that EDB costs and so prices are driven by their average consumer density and terrain. It is, therefore, likely in the example provided that one property was in a mainly rural network and the other in a mainly urban network. If an urban and rural pricing differential was allowed, then urban

[12] http://www.ampli.co.nz/

houses in a mainly rural EDB would pay for the costs of supplying an urban area and these costs would likely be similar between networks. This would result in the adjacent urban houses paying approximately the same line charges.

Secondly, while there may not be urban to rural cross-subsidisation occurring, it can be said that the low social economic urban areas are paying a greater share than other urban areas. Given that the rural areas tend to be commercial farming operations, this effectively means those urban customers in energy hardship are paying (along with other urban consumers) an unfair cost allocation to lower the prices of electricity supply to the agriculture sector.

EDB smart grid cooperation

Six EDBs[13] formed the metering company SmartCo, approximately seven years ago, and this company has been deploying smart meters throughout New Zealand. As in Counties Power's region, the smart meter deployments will form the basis of the future smart grids.

23. *What are your views on the assessment of challenges facing electricity distribution?*

The electrification of transport is occurring quicker in New Zealand compared to the uptake of solar arrays. This is evident with an exponential growth of electric vehicles which now number 10,000 compared to 7,000 solar arrays. High petrol prices, no solar subsidies, a deceleration in installed solar costs[14] and significant reductions in electric vehicles[15] will see this divergence continue for the foreseeable future.

Unlike space heating or solar, transport electricity demand will be highly predictable because travel distances across a large population base are static across an average working week[16]. This is important, because predictability will mean the existing distribution network can be upgraded on existing design principles to meet this demand. It will also be self-funding because it will result in a significant increase in revenue into the electricity industry from the petroleum industry. Consequently, Counties Power believes that EDBs will be able to accommodate this future within the existing framework. In Australia, which has the highest percentage of home solar arrays in the world, EDBs are operating traditional distribution networks[17], with most Australian states having very low penetrations of smart meters.

This said, in terms of systems to integrate future technology Counties Power's smart grid and INDI platform are well placed to manage a scenario where instead of a large electric vehicle uptake there is a large home battery and solar uptake. Counties Power's leadership in this area demonstrates that this integration will not be an issue of EDB size.

[13] Alpine Energy, Counties Power, Electricity Invercargill, Network Tasman, The Power Company and WEL Networks.

[14] Panel costs are coming down at a slower rate (panel efficiency gains to convert solar energy into electricity) and at the same time increasing health and safety requirements are increasing installation costs.

[15] Greater EV manufacturing scale, manufacturing competition and reducing battery prices will see EV prices reducing rapidly.

[16] Weekday travel distances are dependent on the distance travelled to work.

[17] Small urban pockets within Australia have solar arrays on around 80% of houses that remain connected to traditional distribution networks.

Summary of feedback on Part four

24. *Please summarise your key points on Part four.*

- Consumer owned EDBs are an important investor in future generation and a natural fit for large scale renewable generation given the need for landowner agreement. Consequently, restrictions on the quantity of renewable generation allowed by EDBs through section 76 of the Electricity Industry Act 2010 should be removed.
- When looking at EDB profitability, the EPR Panel needs to consider cashflows as well as profits. What is not evident in the EPR Report's analysis is that Counties Power's profits, and non-taxed cashflows, are nearly all reinvested into its network, with the difference being a discount to consumers.
- Counties Power believes that assuming there are efficiencies to be gained as an automatic output through increased EDB size is wrong. EDB efficiency gains will be through better utilisation of fault and construction crew and requires investment in new technology. To this end, Counties Power has implemented New Zealand's most integrated smart grid network and developed a new platform, INDI.
- Regarding distribution prices, Counties Power believes that the restriction of not being able to have a price difference between urban and rural customers is creating the greatest difference in EDB prices and is resulting in the urban poor paying higher prices to the benefit of the agricultural sector. Furthermore, this sends the incorrect price signals to consumers in remote areas that would be more economically serviced using alternatives to traditional power lines.

Solutions to issues and concerns raised in Part four

25. Please briefly describe any potential solutions to the issues and concerns raised in Part four.

Potential solutions to concerns in Part four:

- A common cost allocation model should be developed for all EDBs. Counties Power believes that there are enough similarities that a common cost allocation model would work nationally.
- All EDBs should be required to offer a national standard TOU mass market tariff to lower the cost for retailers to enter the market and enable retailers to offer a standard product across the country. This standardisation could initially follow Transpower's four transmission areas.
- There should be a requirement on metering companies to deploy smart meters to all customers on a network where they are the largest smart meter owner. Furthermore, the meter owners should be required to install, or have a path to upgrade, their smart meters to enable the Internet of Things communications. This will be the platform for future smart grids that drives efficiencies into the distribution sector and enable future widespread distributed generation.
- EDBs should be able to invest, and undertake research, into new technology such as the use of blockchain technology for peer-to-peer trading. Further removal of barriers for EDBs to operate in the retail sector would be beneficial given the low level of research being undertaken by the sector. Counties Power has always sought to be an industry leader[18], but there must be a commercial driver for such investments.
- Counties Power recommends that the requirement for averaging pricing between urban and rural be removed. This would send the correct pricing signals for remote

[18] Winner of the Deloitte Energy awards fir innovation in electricity in 2013 https://www.energyawards.co.nz/finalist/2013/innovation-in-electricity-award/counties-power plus Counties Power is trialling one of New Zealand's largest grid scale batteries with Genesis Energy.

consumers to look at alternative electricity supply, which long-term will lower the electricity prices for all consumers.

Part five: Technology and regulation

Technology

26. *What are your views on the assessment of the impact of technology on consumers and the electricity industry?*
The biggest impact to consumers will be both the availability of data and how this data is utilised, and this is already occurring. Counties Power makes its customer outage data available to customers through an app (https://app.countiespower.com/), which allows customers to report back faults, request near real-time information on fault repairs and allows the easy observation of fault areas. Counties Power will be looking to expand the information available to consumers. The other technology mentioned in the report will likely be less disruptive and more routine than expected. For instance, industry switching to electricity process heating when the technology and economics allow will occur over an extended period of time as businesses upgrade boilers. For electric vehicles, Counties Power believes that it is unlikely that homes would use the electric vehicle battery to supply power to the house. This is because the battery would be subject to warrantee and the ten-year replacement of the car battery would be the most expensive vehicle maintenance cost. Greater use of the battery would shorten its life because car battery life is dependent on the number of charge and discharge cycles[19].

27. *What are your views on the assessment of the impact of technology on pricing mechanisms and the fairness of prices?*
Counties Power agrees with the findings in the report but would go one step further on the main cost of supply being in winter peak period, to say that for most EDBs this peak period would be for a limited number of days during winter and not on every winter day. As a percentage of time, the time period for EDBs peaks is just 1% of the year (as measured by the Transpower coincidental transmission peaks). Going forward, for greater cost reflective pricing, the pricing needs to be more targeted so that those consumers who choose to consume more over that 1% then pay more and those who want a saving (or rebate) reduce demand over this time. EDBs could use apps, like Counties Power's outage app, to inform customers when this peak occurs and then rebate them if they use less than the allocated amount. Counties Power believes technological/digital innovation is likely to offer further options to advantage consumers.

[19] Counties Power is running a trial of a grid scale battery and 1kWh batteries behind the meter. A significant cost in the operating of the batteries are the losses incurred in charging and discharging, which are around 8% for the grid scale battery and 18% for the 1kWh battery behind the meter.

28. *What are your views on how emerging technology will affect security of supply, resilience and prices?*

The EPR Report is silent on the impact of IoT, Big Data and Cloud Computing, which is new technology already being used by a number of electricity sector companies including Counties Power. This is in part because the deployment of meshed smart meters is one of the first widely deployed mass market IoT technologies. Going forward, this IoT platform will be the basis of advances in Artificial Intelligence and continued improvements and cost reductions driven by increased processor capability.

However, the implementation of the emerging technology mentioned in the EPR Report may well be driven by overseas companies like Google, Amazon and Apple. Once the economics improve then finance funding could occur that accelerates the uptake. For EBDs, this would inject new demand and revenue into existing infrastructure rather than competing with distribution networks.

Regulation

29. *What are your views on the assessment of the place of environmental sustainability and fairness in the regulatory system?*

Historically, there appears to be a lack of a concerted action by government[20] to reduce greenhouse gases in the electricity sector and the energy industry in general. Given the future impacts of climate change, the reduction of greenhouse gases should be an environmental sustainability objective of the regulatory system. Counties Power also supports wider outcomes that advance environmental sustainability.

Regarding a fairness objective, given that this is more of a subjective goal, Counties Power would not support this being included into the regulatory system unless able to be included without ambiguity in our application. Furthermore, the underlying issue is household hardship and so Counties Power believes that the EA and Commerce Commission be required to pursue initiatives that prioritise household consumers over business consumers. Government policies should always work for the benefit of New Zealanders and supporting business consumers through ensuring market competition, reliability and efficiency is just a means for this to occur not the end objective.

30. *What are your views on the assessment of low fixed charge tariff regulations?*

Approximately 40% of Counties Power's consumers are on the low fixed tariff, with this number growing quickly given the growth of new homes on the Counties Power network. In addition to new houses, households that rely on gas home and hot water heating also benefit from the low fixed charge.

While Grey Power may oppose the removal of the low fixed charge regulations, it is likely that many of their members are worse off because of the LFC. This is because retirees, being at home for longer periods of time, require electrical space heating for longer time periods compared to working families. For these retirees the LFC results in them paying higher charges because EDBs are unable to introduce cost reflective pricing options with higher daily fixed charges. The higher daily fixed charge would also smooth out the winter charging peak[21], which would enable easier home budgeting to reduce situations

[20] Counties Power would question why the government is still allowing the continued construction of thermal generation plants and the continued reticulation of natural gas in residential developments (given that reticulated gas increases greenhouse emissions and provides no additional services to that provided by electricity).

[21] The higher household peak winter bills are in part driven by the recovery of fixed distribution costs through a consumption charge. Given that most of the consumption is in winter, this results in a higher proportion of the distribution fixed costs being recovered in winter.

in which untenable choices have to be made between nourishment, warmth and cleanliness.

31. *What are your views on the assessment of gaps or overlaps between the regulators?*

Counties Power is agnostic on whether there should be one or two regulators and instead is more concerned around the functions of the regulators. Especially, the role of the EA should be narrowed to managing the electricity market, and distribution and transmission pricing functions be transferred to the Commerce Commission. The Commerce Commission's five-year vision aimed "towards making New Zealanders better off"[22] is more attuned to obtaining better pricing outcomes for households in the transmission and distribution networks compared to the EA that is focused on efficient markets. This has been evident through the TPM process, where the EA proposals would have resulted in a significant wealth transfer from upper North Island homes to a few corporations.

In addition, the Commission is well placed to expand its management of the Input Methodologies. This provides the Commission the ability to expand on the existing understanding. This would allow the EA to focus on the electricity market, where they are well regarded.

32. *What are your views on the assessment of whether the regulatory framework and regulators' workplans enable new technologies and business models to emerge?*

EDBs need to invest in new technologies to increase uptake, obtain cost effective alternatives to traditional line builds for uneconomic customers and to support research and development. There should be no room for patch protection or demarcation when it comes to the right and responsibility to be innovative. Innovation is not a commodity, it is a necessary enabler to create a more technologically responsive, consumer focused energy sector.

Regarding solar, the lack of solar subsidies has resulted in a slow uptake of solar arrays despite New Zealand homes consuming more electricity than the industry average. This is because solar electricity is generated at a time when it is not required, and the buy-back rate is set at the wholesale energy price and not the delivered electricity price. Developing an economic solution for New Zealand households requires research and development and EDBs have a responsibility and accountability to advance this research to deliver for our communities. To this end, Counties Power is investigating economically viable solar models for KiwiBuild homes using small scale solar and the hot water cylinder as a thermal battery.

Counties Power is also concerned about the EA's default terms and conditions for agreements between EDBs and retailers. Such default terms would result in EDBs being unable to negotiate specific terms for their network requirements because retailers will simply opt for the default terms across all networks. Furthermore, this approach by the EA is heavy handed given that nearly all EDBs have agreements based on the EA's model agreement.

[22] https://comcom.govt.nz/__data/assets/pdf_file/0033/79881/Commerce-Commission-Our-Vision-and-Strategy-2017-2022.pdf

33. *What are your views on the assessment of other matters for the regulatory framework?*

Consumer voice

Consumers in consumer owned EDBs do have a strong voice in the community. This voice is likely to be stronger in the small EDBs, where the EDBs are a part of the community and the elected trustees are well known local figures and who appoint Directors from diverse backgrounds, location and experience, to provide professional governance. As this mechanism is not available to consumers across the country, Counties Power agrees with the EPR Report that the regulators should ensure consumer representation on advisory groups.

Authority's functions

Counties Power agrees with the EPR Report that the EA's twin roles of developer and enforcer of rules is not desirable. Counties Power believes that this has resulted in the EA not providing a clear mandate to EDBs on issues such as cost reflective pricing, where the EA advised on how to avoid LFC charges. At the same time, this twin role appears to embolden the EA and results in protracted disputes, which have been evident through the TPM process.

Summary of feedback on Part five

34. *Please summarise your key points on Part five*.

- Counties Power believes that the biggest impact to consumers will be both the availability of data and how this data is utilised, and that other technology mentioned in the report will likely be less disruptive and more routine than expected.
- The EPR Report is silent on the impact of IoT, Big Data and Cloud Computing, which is new technology already being used by a few electricity sector companies including Counties Power. Going forward, these technologies will be the basis of advances in areas such as artificial intelligence that will drive future improvements in reliability and efficiencies.
- Regarding a fairness objective, the underlying issue is household hardship and so Counties Power believes that the EA and Commerce Commission be required to purse initiatives that prioritise household consumers over business consumers. Government policies should always work for the benefit of New Zealanders and this should be recognised above businesses.
- The role of the EA should be narrowed to managing the electricity market, and distribution and transmission pricing functions be transferred to the Commerce Commission. The TPM processes has highlighted significant failings especially compared to the price-quality path work undertaken by the Commerce Commission.
- EDBs need to invest in new technologies to increase uptake, obtain cost effective alternatives to traditional line builds for uneconomic customers and to support research and development. There should be no room for patch protection or demarcation when it comes to the right and responsibility to be innovative. Innovation is not a commodity, it is a necessary enabler to create a more technologically responsive, consumer focused energy sector.

Solutions to issues and concerns raised in Part five

35. *Please briefly describe any potential solutions to the issues and concerns raised in Part five.*

- A transfer of transmission and distribution pricing responsibilities from the EA to the Commerce Commission.
- Changes to section 15 of the Electricity Industry Act and section 52C of the Commerce Act, to ensure that the EA and Commerce Commission pursue initiatives that prioritise household consumers over business consumers. This will direct the regulators to give a voice to consumers in a complex market for an essential service.
- Revoke the low fixed charge regulations to enable improved cost reflective distribution pricing to be replaced by an energy hardship levy to reduce power bills through reducing electricity consumption for those households facing energy hardship.
- Ensure that EDBs are able to obtain and use meter network data and that meter owners work with EDBs to create smart grids.