23 October 2018

Electricity Price Review
Secretariat, Ministry of Business, Innovation and Employment
15 Stout Street
PO Box 1473
Wellington 6140

By email: energymarkets@mbie.govt.nz

ORION SUBMISSION ON THE ELECTRICITY PRICE REVIEW FIRST REPORT

1 Orion New Zealand Limited (**Orion**) welcomes the opportunity to comment on the "Electricity Price review – First Report for Discussion" (the **report**) published by the review panel on 30 August 2018.

2 The bulk of our submission is in the form provided by the review which is attached as an Appendix. However we also have some more general comments.

3 The Electricity Networks Association (ENA) has also made a submission. We endorse the ENA submission. Our submission focuses on areas which the ENA does not cover or which we consider merit particular emphasis.

The bigger picture

4 Before delving into the detail of the report, we want to stress the significance of the renewables based electrification opportunity available to New Zealand over coming decades. We are in the very fortunate position of being able to materially reduce our greenhouse gas emissions and reduce our total energy costs (including transport) for New Zealanders at the same time. Achieving this goal will require significant investment across the supply chain and by customers. The government has the opportunity to set the scene for this investment by committing to regulatory settings that acknowledge the trade-offs inherent in economic regulation. These are captured well in the purpose statement of Part 4 of the Commerce Act.

The low fixed charge regulations must go

5 The regulations have had their day and should be revoked. The review should recommend this.

6 The regulations have the following undesirable features:

- They are misdirected. They tend to benefit the wealthy and do not clearly benefit those in hardship, and the magnitude of any benefit will only accidentally align with need.

- If these regulations remain, low income households are likely to see their costs increase as technology is adopted by those who are better off.

- They constrain new and better forms of pricing.

- They impose unnecessary costs on participants, and these costs are recovered from customers.

- They distort investment incentives costing New Zealanders significant amounts

- They make publication of prices and price comparisons more difficult than they need to be.

- They constrain retailer business models.

- They reduce retailer margins from low users. Reduced margins might seem like a good thing, but this may contribute to the apparent 'two-tier' pricing structure by creating a group of customers that retailers are, understandably, less likely to either acquire in the first place, or seek to retain if they switch.

7 For us the only question that remains is how we transition away from these regulations. This in our view requires a combination of a reasonable length of time – we suggest five years – and a definite end date – say 31 March 2025. There may also be a place for revoking aspects of the regulations with immediate effect for certain types of customer, for example those with distributed generation. An early decision is urgently needed to minimise impacts above.

8 We provide considerably more comment on the regulations in our response to question 30 in the appendix.

High level findings

9 The reports initial findings are that, overall, prices are currently at a reasonable level, with no excessive profits. With respect to distribution and transmission specifically we agree with this assessment, and given the nature of regulation under Part 4 it is hard for it to be otherwise. We have no particular insight into the outcomes in other parts of the supply chain, but there do seem to be some areas where further work could provide better insights. We do note, however, that some of these are the subject of current investigations by the Electricity Authority.

Affordability and hardship

10 We agree that, despite prices being at a reasonable level overall, some consumers are not able to afford energy. This has adverse consequences for health and wellbeing of New Zealand's most vulnerable. The question then is what can be done about this, and by who?

11 We must first though acknowledge what has been and is being done. This includes:

- the government's winter energy payment: this cuts to the chase by providing not just welcome relief for many in hardship, but a clear indication that the amount required to address hardship is material indeed

- initiatives to improve the quality and in particular the energy performance of new and existing housing

- ERANZ's excellent project to ensure that the dots associated with medically dependent customers are properly joined up, especially with respect to the role of health providers (not specifically a hardship example, but more an example of how it can take contributions from players outside the industry to achieve a good outcome)

- the "What's my number" campaign which, while it might not have reached everyone, and is arguably due for a review, has devoted considerable resource over an extended period to promoting the benefits of shopping around. Awareness of this is high.

12 **What more can be done?**

1. **improve our understanding of why some customers in hardship do not choose a cheaper supplier: given the savings that often appear to be available, this would appear to be the most obvious quick-win**

2. **provide better access to the information and tools that support customer choice: the better resourced in our society may have lost sight of the fact that not everyone is tech savvy or has ready access to the internet**

3. **provide better advice to customers in hardship on how they might use energy more wisely, or choose the right pricing plan given how they use energy**

4. **review, as recommended by the report, distributor cost allocations between residential and other customer groups.**

13 The last of these is clearly a distributor job, ideally in conjunction with the review secretariat or MBIE to ensure a shared understanding. We can also collaborate on 2 and 3 by helping identify and document the choices that are available to retailers as they craft their offerings to customers.

Concluding remarks

14 Thank you for the opportunity to make this submission. Orion does not consider that any part of this submission is confidential. If you have any questions please contact Bruce Rogers (Pricing Manager), DDI 03 363 9870, email bruce.rogers@oriongroup.co.nz.

Yours sincerely

Rob Jamieson
Chief Executive

Appendix: Orion's responses to the questions in the submission form

SUBMISSION FORM

How to have your say

We are seeking submissions from the public and industry on our first report into the state of the electricity sector. The report contains a series of questions, which are listed in this form in the order in which they appear. You are free to answer some or all of them.

Where possible, please include evidence (such as facts, figures or relevant examples) to support your views. Please be sure to focus on the question asked and keep each answer short. There are also boxes for you to summarise your key points on Parts three, four and five of the report – we will use these when publishing a summary of responses. There are also boxes to briefly set out potential solutions to issues and concerns raised in the report, and one box at the end for you to include additional information not covered by the other questions.

We would prefer if you completed this form electronically. (The answer boxes will expand as you write.) You can print the form and write your responses. (In that case, expand the boxes before printing. If you still run out of room, continue your responses on an attached piece of paper, but be sure to label it so we know which question it relates to.)

We may contact you if we need to clarify any aspect of your submission.

Email your submission to energymarkets@mbie.govt.nz or post it to:

Electricity Price Review

Secretariat, Ministry of Business, Innovation and Employment

15 Stout Street

PO Box 1473

Wellington 6140

Contact details

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Use of information

We will use your feedback to help us prepare a report to the Government. This second report will recommend improvements to the structure and conduct of the sector, including to the regulatory framework.

We will publish all submissions in PDF form on the website of the Ministry of Business, Innovation and Employment (MBIE), except any material you identify as confidential or that we consider may be defamatory. By making a submission, we consider you have agreed to publication of your submission unless you clearly specify otherwise.

Release of information

Please indicate on the front of your submission whether it contains confidential information and mark the text accordingly. If your submission includes confidential information, please send us a separate public version of the submission.

Please be aware that all information in submissions is subject to the Official Information Act 1982. If we receive an official information request to release confidential parts of a submission, we will contact the submitter when responding to the request.

Private information

The Privacy Act 1993 establishes certain principles regarding the collection, use and disclosure of information about individuals by various agencies, including MBIE. Any personal information in your submission will be used solely to help develop policy advice for this review. Please clearly indicate in your submission whether you want your name to be excluded from any summary of submissions we may publish.

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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?*

We agree sustainability is becoming more important for some consumers. This may not be such a high priority for those that cannot afford energy. With an increasing sustainability focus the transition will need to be managed carefully as there will be trade-offs between sustainability and cost.

The sustainability opportunity offered by a renewables based energy transformation is significant and a "whole energy" view is necessary.

2. *What are your views on whether consumers have an effective voice in the electricity sector?*

With respect to retail, choice exists between suppliers but it appears that transparency and access to appropriate information for making energy choices may be a barrier for customers that needs to be explored and improved upon.

This access to information issue is not solely confined to information on retail pricing options. It also needs to be to information households require to make informed investment decisions. Take solar as an example, where EECA's solar calculator is a valuable impartial tool that consumers can access to make an informed investment decision, as opposed to perhaps sales information that many consumers receive.

We note though that even this calculator fails to recognise sufficiently that electricity tariffs are likely to change in the future and on the balance of probability any network/retail pricing subsidy that is currently afforded to those with solar is likely to be reduced with time – thereby making the solar payback longer. This is an example of the kind of 'industry knowledge' which needs to be conveyed to customers if we wish customers to make wise investment decisions and have long term trust in the industry.

With respect to distribution and transmission, customer engagement regarding the cost / quality trade-off is a critical aspect of the regulatory regime. It is challenging to present what can be very technical information to consumers in a way that enables informed decisions, but significant effort is going into this, both in New Zealand and internationally.

Internationally others are investigating and trying new models for improving the ability for consumers to have a voice in infrastructure, an appropriate example being the Water sector in Australia and the UK- their use of citizen's juries, customer challenge groups and consumer advisory panels. The ENA and many distributors are currently exploring these approaches and sharing their findings with others. Orion has established a standing Customer Advisory Panel that has provided us with insights, as well as undertaking surveys and customer workshops.

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

The review indicates that "New Zealand consumers have greater trust in their retailers than in Australia." The New Zealand situation appears better than in other overseas jurisdictions. Our view from our own research is that the majority of our customers do trust us as a distributor. Our research indicates that 67% of our customers agree that Orion acts in the interests of local residents. We agree there is more work to be done here. In particular, gaining a deeper understanding of what the components of trust are and what these mean for consumers in our context and in relation to the service we provide. Increasing customer awareness of what we do is one element of this future work.

Prices

4. *What are your views on the assessment of the make-up of recent price changes?*

We do not believe that 1990 is a meaningful starting point for the review analysis as the industry structure and regulatory settings were different then.

We believe a focus on the period since (and including) 2000 is preferable, since over this period the fundamental industry structure has been fairly static (i.e. post the split of retail and distribution).

We agree with the panel that prices are, now, reasonable overall, particularly in the transmission and distribution sectors, even if within that overall picture there are clear affordability issues for some. The key part of the report from that perspective is cost allocation. See further comments on that below in response to question 22.

In relation to the detail of historical pricing analysis, we have the following comments:

- Much of the analysis is about prices but actually reports average cost (charges) per kWh. We note the underlying trend of reducing residential consumption which, with unchanged input costs and prices, will, by simple arithmetic, increase the average charge per kWh.
- Industrial can probably be safely ignored, as it is dominated by the aluminium smelter, and will almost entirely exclude distribution, which is judged to be the cause of the different tracks of commercial and residential (see Figures 5 and 7).
- For small connections (say <=15kVA), the panel could usefully seek to identify whether residential prices are different to, and particularly higher than, commercial prices. If they are not, then different average costs will just reflect different customer consumption attributes.
- We note in this regard that Figure 8 shows similar "Commercial" and "Residential" distribution charges (there looks from the chart to be roughly 2 cents per kWh difference). If this difference was split (the charges made the same) it might save the typical residential customer $80 per year, a number close to that arrived at by another method in the cost allocation section of the report. We note that the definition of "Commercial" in Figure 8 will likely include some large consumers that do not use the LV network, so the difference in average charges is likely to be overstated.

5. *What are your views on the assessment of how electricity prices compare internationally?*

We agree with the assessment, but we do not believe this is a particularly important finding. Electricity is largely non-tradeable and usually regulated, so comparisons across countries are likely to reflect variations in those inputs rather than provide any strong indication about reasonableness of prices in any particular country.

Much more important is whether prices in NZ are reasonable overall given costs in NZ, and the report indicates that this is the case. We agree with that assessment.

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

On one hand a number of technology changes seem set to drive down costs in some parts of the supply chain.

On the other hand greater penetration of a number of technologies is likely to involve increased investment by distributors, initially in the LV network. The extent of that investment will to some extent reflect the way the operation of the technologies is coordinated.

Much more importantly though, we believe an energy rather than an electricity perspective is the right one. Electrification of transport offers an enormous opportunity to reduce consumer spending on petroleum products (i.e. lifecycle costs of running a vehicle), while at the same time contributing to significant reductions in New Zealand's emissions. This substitution of fossil fuels for electricity will result in a net reduction in energy costs overall on an individual basis.

Given this we believe that any review on affordability should not examine future electricity pricing in isolation – a more holistic whole of energy pricing examination needs to occur. An isolated examination of electricity pricing may result in counterproductive measures that slow the uptake of EVs, and hence force up total household costs.

In terms of the outlook for the costs faced by lower income consumers, as the paper notes (p29), there is some risk that the impact of some new technologies is borne disproportionally by them. In our view this is more likely to be the case if the low fixed charge regulations remain in place. More generally, policy makers need to support a 'New Zealand Inc.' perspective to new technology, acknowledging both the clear advantages, but also the winners and losers.

With respect to EVs though, we suspect that as the international market matures the price of second hand EVs in NZ will reduce both in absolute and relative terms. The benefits of EVs will, in due course, be available to all New Zealanders.

Potentially even more beneficial, is the prospect of autonomous EVs which might render the notion of mass vehicle ownership a thing of the past.

Affordability

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

We agree that energy affordability is an issue for a sector of the community. We are open to discussing and exploring ways that we (as a distributor) might contribute to alleviating energy hardship other than our existing and long standing sponsorship of Community Energy Action (a Charitable Trust which works with the low income and others to lower their electricity bills and increase warmth in their homes).

Overall we are not well positioned to comment on the size of the problem of energy affordability, but we are supportive of ensuring costs are managed and available efficiencies are found.

However we note the report finds that, overall, prices are reasonable.

Specifically the report finds that around 6% (103,000) households spend 10% or more of their income on energy (electricity, gas and firewood), and are thus experiencing energy hardship.

This, reasonably in context, excludes household spending on energy for transport. But in the wider context, and as noted above, transport expenditure is very relevant to the medium term energy affordability outlook.

It would be useful to know what amount of cost reduction (or additional income) would be necessary to lesson energy hardship. On average, residential customers are paying around $2,000 per year on their electricity account. What annual level would be affordable?

We note in this regard that the government's winter energy payment initiative is set at around $700 per year (from winter 2019, for a couple). This is a very significant amount (about equal to Orion's annual distribution charge to an average residential customer), and it would be useful to know what impact it is expected to have on reducing the number of households experiencing hardship.

Other useful additional analysis would establish whether, to what extent and why the low affordability households find it relatively difficult to switch. This could include:

- they are less likely to be marketed to in the first place, and
- when they do try to switch, they are not accepted because they fail a credit check. We suspect it would not take too many occurrences of that to discourage a future switching attempt.

Further analysis could also look at how affordability varies by region or other attributes. There is significant variation across the country in both electricity prices and incomes, suggesting that there may be areas where affordability is materially worse (or better) than the overall 6% of households. A start is made on this in Figure 12. We note the biggest single factor is geographical area.

We are not sure of the source of the statement on page 25 that: "our analysis shows energy hardship grew significantly between the late 1990s and the early 2010s" or why that particular period was chosen. PWC analysis of Stats NZ HES data commissioned by ENA shows roughly the same proportion of weekly household income being spent on electricity in 2015/16 (2.09%) as in 2003/04 (2.12%). This implies factors other than electricity costs are the cause of hardship.

We are supportive of a more all-encompassing "energy affordability" approach being taken. For instance, of the 6% of households experiencing "energy" hardship, it would be interesting to know what they spend on petrol/diesel for transport (particularly as many have older, less efficient vehicles). And if significant, whether the government's winter energy payment initiative could, as a voluntary option for these households, be somehow channeled to providing EVs to these households. This may in fact result in greater overall energy cost savings for these households, thereby reducing hardship.

What are your views of the assessment of the causes of the affordability problem?

In terms of the way affordability is calculated, as a percentage of household income, low income may be at the root of the issue.

Focusing just on electricity does limit the levers that can be pulled to save customers money – and it may not make electricity much more affordable and we discuss this in question 22. An energy focus would provide the ability to save more.

We agree that lower income customers may pay higher costs for the same amount of energy – due to foregone prompt payment discounts and disconnection / reconnection fees and possibly less access to the competitive market - but it could be that the reason they face those costs is because of affordability. Low income customers cannot afford to pay on time despite the high cost of not doing so - not the other way around.

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

Regarding changes to price structures (p29), we believe any material change will create winners and losers – including some who are in the hardship group - but we doubt it will have much impact on affordability overall, particularly not in the short term.

However, we reiterate our comments elsewhere in this submission about how there is a real opportunity to improve affordability of New Zealand's wider energy needs while also reducing our carbon footprint, and specifically by way of electric vehicles. We are focused on supporting that opportunity by timely and prudent investment. Indeed it would be a shame if New Zealand failed to grasp a near-unique opportunity to address both energy affordability and climate change.

Summary of feedback on Part three

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

1. We agree sustainability is becoming more important for some consumers. This may not be such a high priority for those that cannot afford energy.

2. With respect to retail, choice exists between suppliers but it appears that transparency and access to appropriate information for making energy choices may be a barrier for customers that needs to be explored and improved upon.

3. More work is required on gaining a deeper understanding of what the components of trust are and what these mean for consumers in our context and in relation to the service we provide.

4. We agree with the panel that prices are, now, reasonable overall, particularly in the transmission and distribution sectors, even if within that overall picture there are clear affordability issues for some. The affordability issue may be more linked to an income issue.

5. In terms of the outlook for the costs faced by lower income consumers, as the paper notes (p29), there is some risk that the impact of some new technologies is borne disproportionally by them. In our view this is more likely to be the case if the low fixed charge regulations remain in place.

6. Transport expenditure is very relevant to the medium term energy affordability outlook. We believe, given the advent of EVs, that it's unwise to examine future electricity pricing in isolation – a more holistic whole of energy, including transport, pricing examination needs to occur. Otherwise counterproductive measures that slow the uptake of EVs, and hence force up total household costs, may result while also undermining New Zealand's climate change goals.

Solutions to issues and concerns raised in Part three

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

The low fixed charge regulations should be repealed.

Please refer to our cover letter and the ENA submission for other suggestions.

Part four: Industry

Generation

11. *What are your views on the assessment of generation sector performance?*

We agree with the assessment.

12. *What are your views of the assessment of barriers to competition in the generation sector?*

We consider that there are few barriers. We see no reason to be concerned that additional grid scale generation will not be built at an appropriate time.

13. *What are your views on whether current arrangements will ensure sufficient new generation to meet demand?*

Key challenges will be:

- coordination of a very large (aggregate) amount of non-dispatchable small scale generation, particularly at times when grid generation is, consequently, low.
- whether investment in peaking generation to support short term variations and dry year management will be forthcoming in an energy only environment, and particularly when the beneficiaries might not be participants (a potential free-riding problem)

We also note, as the report does, that the need for additional generation, and the type of generation required, is hugely dependent on when EVs will be charged. Consequently rather than having focus on 'can we build enough generation', the focus should be how can we avoid the need for most of this generation in the first place.

As Concept Consulting noted in 'Driving Change' report referenced in the paper, this involves shifting EV charging to low load periods **and** smoothing out start times for EV charging. If as an industry we can achieve these dual charging objectives, total energy costs for consumers will be lower, environmental gain will be achieved, and the need for angst over 'can new generation be delivered' greatly reduced.

Retailing

14. *What are your views on the assessment of retail sector performance?*

We note continued interest from new retailers wishing to access our network. Signing up is a quick and a low-cost process for both parties. We have yet to see an exit due to financial failure.

While we have no direct information of our own, we are not surprised at suggestions that there is a two-tier market, although we do not think it is accurate to characterise this an "emergence" (p37). We are also not sure that it is unique to electricity.

By any measure the 'incumbent' market share on our network has reduced considerably over time, and some of the most aggressive price offers over the years have come from other large retailers. We think an important piece of analysis is to try and establish the relationship between the affordability problem identified in the paper and the group of customers who do not or cannot switch. How big is the overlap?

We think it likely that at least some customers who have trouble paying for electricity do not do so well from the competitive market. As noted above, we hypothesise this is a result of:

- Not being actively sought out by other retailers
- When these customers do get to the point of deciding to switch they fail a credit check.

In our view, some of the commentary on the retail market risks placing too much emphasis on pure price competition, and less on the variety of service offerings. For example retailers such as Flick with their spot priced based offering and weekly billing, and Trustpower offering a number of services bundled together. There is a risk of dumbing down pricing approaches to make comparison easier in such a way that innovation is stifled.

Figure 16 is interesting. If we understand it correctly it suggests that the highest price retailer is not, on average, the incumbent, and by quite a margin. We urge caution in using the lowest cost supplier as a reference point, as in a competitive market this could always represent the 'investment' stage of any new retailer where they are just seeking to build market share. It does not necessarily indicate anything about whether any other retailer's prices are in any sense too high.

Figure 17 is also interesting. Although a relatively small sample, it establishes that retail operating costs (which are largely unrelated to consumption) are large, and with no obvious material differences between entrants (e.g. Pulse) and established players (e.g. Trustpower). We make a number of observations:

- Where an entrant can materially lower these costs, they will gain a competitive advantage
- The interaction with the low fixed charge regulations may make it difficult for retailers to recover these costs from low users, which will squeeze margins and might incentivise them not to acquire, or happily shed such customers if they can.

Such a high level of fixed costs may help explain a two–tier market as it creates a situation where a retailer might be prepared to acquire or retain customers at near marginal cost.

15. *What are your views on the assessment of barriers to competition in retailing?*

We consider there are few if any barriers to entry based on our interaction with new retailers.

Regarding the concerns, captured in the description of the ERANZ position that "lack of standardisation in distributor's contract terms and price structures raised costs for retailers and hinder competition." we can only say, as the report notes, that this is not something that entrants raise with us as a barrier, and nor is it substantiated by our experience. We now have contracts with 30 retailers, with 7 new retailers signing up in the last twelve months. The sign up process typically takes only a few days, most of it taken up with document delivery.

Where a retailer chooses to trade nationally (and they do not have to) then there will be costs associated with getting to understand and accommodate each distributor's arrangements and processes. We believe the variety of those arrangements is overstated, but in any case there are at least two models by which retailers can manage these costs:

- Partner with other retailers to share these costs
- Operate as a "tier 2" retailer where the "tier 1" retailer establishes the system and processes for dealing with multiple distributors

In any case, and in the context of the retailers operating costs captured in Figure 17 of the report, we doubt the costs of dealing with any distributor diversity is significant. If a *national* retailer had (or plans to have) 10,000 customers (which looks low), and must have an additional FTE to deal with the complexity (at $100,000 per year, which seems high) then that works out at only around $10 per customer per year.

We also note there are now considerably more embedded networks than there are EDBs.

Vertical integration

16. *What are your views on the assessment of vertical integration and the contract market?*

We note that the last industry review did seek to reduce the local dominance of the then SOE generator-retailers via physical asset reallocations and virtual asset swaps.

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

The apparent 'two-tier' market does seem to merit some further investigation.

Transmission

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

Our views have been conveyed on a number of occasions and at length over the six years that the Electricity Authority's current review has been running. In short:

- The Authority has not established that there is a material problem with the current TPM (and the Authority's own modelling indicates that grid investment decisions have generally been good ones)
- The proposed solution (beneficiaries-pay) is unlikely to change future grid investment decisions, and cannot change past ones,
- There has not been an adequate response to very broad submitter concerns about the proposals. This has exacerbated the timing problem as there seems to have been no development of a shared understanding.

Fairness is an elusive concept as pretty much everyone would rather someone else paid for the grid, and pretty much any change to the TPM will change how much the various parties pay. However the Authority's review has not been about fairness but efficiency, which is understandable given its statutory objective.

If it is judged unfair that significant recent grid investments are being paid for by non-beneficiaries, a simpler solution, so-called 'tilted postage stamp' pricing, is available.

Distribution

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

The structure of regulation of non-exempt distributors under part 4 of the Commerce Act makes it all but impossible for medium to long run profitability to exceed regulatory WACC. On that basis profits are reasonable.

With regard to the issue of the potential for distributors to cross-subsidise any competitive businesses they own from their monopoly network business, we believe the dangers are currently being over estimated.

Also, it is important to recognise that any discussion regarding investment by the distribution industry in EV chargers is quite different to discussion about investment in behind the meter batteries or solar, given the clear and well recognised 'chicken and egg' problem of EV chargers and range anxiety. By lumping all new technology together in the one 'cross-subsidisation' argument, we are likely slowing the uptake of EVs, to the detriment of customers and broader sustainability goals.

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

Price structures

Regarding pricing, most of the potential efficiency gains arise from dynamic efficiency of wider-economy investment rather than sectoral efficiency. For example, distribution pricing needs to change to ensure that the benefits of consumers investing in PV (in particular, but also batteries) are better aligned with the network cost savings that result.

We agree with the paper in that we think distribution pricing should more accurately reflect the costs of distribution networks. We also think prices need restructuring in time to catch a wave of investment starting to build. Orion is quite unique within the distribution industry in that we already have time of use pricing, and not flat rate pricing, in our network area. This experience, coupled with research we have undertaken, tells us that simple TOU pricing will not work long term given the likely EV penetration rates beyond 2030.

Determining an appropriate pricing approach that will work when EV penetration increases to around 20% of the vehicle fleet is a critical future efficiency issue. If we do not solve that issue then grid stability, sourcing new generation and electricity affordability will become even bigger issues than they are today. (For reference on how simple TOU pricing will create such issues we refer you to Concept Consulting's 'Driving Change' report.)

Efficiency/Business size

Regarding scale, we believe that it is important to consider the role that density plays. For example, many of the highest cost distributors are low density (ICPs per km of network). Density is not something that can be addressed by scale.

Some of the smaller distributors may have relatively high overhead type operating expenditure, but such distributors are usually consumer-owned (and exempt from Part 4 price-quality regulation) so it would appear that consumers are well placed in such cases to make the trade-off between higher cost (and prices) and the possible local benefits of this expenditure.

We also consider that when discussion of amalgamation or sharing of services occurs, too much emphasis is placed on day-to-day financial efficiency. We consider a greater emphasis needs to be placed on resiliency, particularly given New Zealand's inherent natural hazards risk, and the benefit that comes from automated, large, diversified systems and skills being spread across many personnel. Having the resources to cope and withstand a large scale disaster should form a greater part of the amalgamation/sharing services discussion.

Metering Data

We agree with the paper that "metering data should be readily available on reasonable commercial terms so distributors can properly manage their networks, including making decisions about maintenance and upgrades and managing power outages more promptly".

In this regard we support and welcomed recent advice from ERANZ that distributors can access ICP power quality info (where it is available) directly from metering equipment providers.

We also see some merit in the paper's suggestion of an open-access regime for meter data with standardised terms and conditions for all parties, potentially in the form of a virtual central repository for metering data. Access to usage data will undoubtedly assume increasing importance as emerging technology penetration increases.

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

Using kWh consumption as a measure of the fairness of cost allocations is itself unfair when kWh is seldom a cost allocator. This is effectively how the *primae facie* unfairness of existing cost allocations is established in Figure 3 of the technical paper. We also believe the information disclosure basis of this analysis will further overstate the difference given that a significant amount of business GWh is delivered to customers that do not use the LV network.

We believe it would be more useful to analyse actual distribution **prices** that apply to residential and business customers, and that are otherwise electrically similar (say single phase, 60 Amps).

We note that not all distributors make a distinction between residential and business customers. This is reflected in the technical report analysis which is limited to 17 EDBs. We are not sure what the implications of the analysis are for the 12 EDBs that do not make the distinction.

The method used identifies the very wide range between incremental and standalone cost. On that basis there could be much greater reallocation of cost than the $90 per year mooted in the paper, for example as set out Table 2 in the technical paper. In other words, assuming it is agreed that reallocation should occur, it is hard to work out what the right reallocation is.

We also note the following:

- Affordability and hardship are not just concerns of residential customers.
- Additional costs for business will find their way through to consumers as higher prices for other goods and services, but in a very non-transparent way. The redistribution effect of that is very hard to work out, but we note that, generally speaking, those on low incomes spend a higher proportion of their income than those on high incomes. For cost reallocation to provide an overall benefit to those in hardship requires this wider economic rebalancing to work out in a particular way. Considerable further analysis would be required to demonstrate that this is likely.
- Without wishing to trivialise a number like $90 per year, in the context of the level of hardship, this is quite small given that:
  - The winter energy payment is set at $700 per year
  - $90 per year would take the percent of income for someone paying $2000 per annum and at the 10% hardship threshold down to 9.6%.
- Given that more than 90% of residential customers do not meet the hardship standard, a cost reallocation approach will inevitably advantage a very large number of customers who are not in hardship. In other words, this would not be a well targeted 'intervention'.
- Having different prices for residential and business customers at connections that are electrically similar may have unintended consequences.

Further comments on the methodology in the technical paper discussion of cost allocation

We are concerned that the technical paper contains errors that need correcting. As noted above, the technical paper compares actual cost allocations with what in effect is a volume-based allocation, and finds differences. We do not consider that these differences should be taken to mean that one group is charged more or less than they should be charged.

The technical paper states (page 9) that "costs associated with shared network assets are common distribution costs", and goes on to define these as "non-peak-demand-driven". This is incorrect. Many of our shared assets are sized to meet peak demand, in fact, only shared assets are sized to meet coincident peak demand. More importantly none of our assets are sized to meet GWh consumption, and nearly all of our costs are asset related.

The paper goes on to refer to "assets and ... costs that are not common, such as those for power lines dedicated to a large factory or connecting remote customers" and talks about allocating these on the basis of contribution to system peak demand. This is not the approach that we take in our pricing

methodology as system peak does not drive this investment - anytime maximum demand of the customer does.

Page 12 then states that "the remaining non-system demand-driven network costs are largely shared network assets." The reverse is true - as you move closer to the customer you find assets that are less driven by the system peak demand (and more driven by individual demand) and are less shared.

The paper suggests (page 11) that it is "impossible to determine the exact proportions of costs being allocated to residential and business customers" where there is a general category. This implies that there is some underlying allocation that can't be worked out or is being concealed. The reality is quite different, as no allocation between the two is being done at all, the amount each group pays simply relates to the applied chargeable quantities rather than the cost allocation.

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

We agree the landscape in which the sector is operating is changing as customers make new choices.

Electrification, for example of transport, is likely to require new investment by distributors and a new way of pricing to avoid new greater peaks occurring. Settling on a pricing structure that works given emerging technology, and which doesn't create even greater affordability issues, is one of the key challenges facing the industry.

Other challenges involve the coordination of DERs and the maintenance of stability with them on the system. Relevant here are considerations like:

- LV network information and monitoring – access to metering data is desirable to reduce customer costs
- Changes to systems / processes that monitor the state of the network.
- Integration of artificial intelligence
- How do people decide when to charge and discharge batteries (Including EVs) and make the trade-offs in a manner that is both easy and doesn't lead to frustration at not being able to make the best economic choice all of the time (i.e. trying to predict forward pricing is inherently difficult)
- How is the combined impact of those decisions managed, and by who?
- What do the new "worst days" look like? Is it now a sunny summer afternoon when everyone is on holiday but their PV keeps generating? Or is it a day when, due to simple time of use pricing, a large instantaneous amount of EV charging is required which results in grid stability issues?

Summary of feedback on Part four

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

1. We consider that there are few barriers to competition in the generation sector.
2. We note continued interest from new retailers wishing to access our network. Signing up is a quick and a low-cost process for both parties. We have yet to see an exit due to financial failure. We now have contracts with 30 retailers, with 7 new retailers signing up in the last twelve months.
3. The apparent 'two-tier' market does seem to merit further investigation.
4. The Authority has not established that there is a material problem with the current TPM.
5. Resiliency needs to be a greater part of any distributor efficiency/shared services discussions – focus shouldn't be only on day-to day financial efficiency.
6. Given that more than 90% of residential customers do not meet the hardship standard, a cost reallocation approach will inevitably advantage a very large number of customers who are not in hardship. In other words, this would not be a well targeted 'intervention'.
7. Settling on a pricing structure that works given emerging technology, and which doesn't create even greater affordability issues, is one of the key challenges facing the industry.
8. Other challenges involve the coordination of new technology and the maintenance of stability with them on the system.
9. Access to non-kWh metering data should be readily available to distributors, on reasonable commercial terms, so they can properly manage their networks thereby maintaining supply reliability and lowering investment requirements/customer costs.

Solutions to issues and concerns raised in Part four

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

Refer to our cover letter and the ENA submission.

Part five: Technology and regulation

Technology

25. *What are your views on the assessment of the impact of technology on consumers and the electricity industry?*

We agree that lower cost distributed generation and storage, together with electric vehicles, is likely to transform NZ's electricity and energy landscape. Our belief is that electric vehicles are likely to be the technology that most impacts the distribution industry in the medium term. Our view is based on:

- The future large scale generation mix does not envisage a significant portion of solar in New Zealand.
- Solar for a large number of residential homes is not likely to have less than 10 year payback periods for a considerable period of time. Although peer-to-peer trading may bring forward the rate of adoption, realistically it will take some years to work through peer-to-peer trading issues. Also, whilst not wishing to minimise 'duck curve' issues and safety issues, solar, in NZ at least, does not present the same range of issues that EVs could present
- We note the recognition of the declining value of solar in other markets, as lack of inertia and intermittency in the generation mix is recognised
- In-home batteries remain very uneconomic and the advent of peer-to-peer trading and vehicle-to-grid charging remove many of the advantages of in-home dedicated batteries
- EVs are now widely predicted to become the dominant form of new car sales globally in the 2030's. All major Japanese car manufacturers are now predicting this.
- EVs add load, which necessarily means additional generation and distribution investment. Peak loading levels could increase significantly as a result of EVs.

As a distributor our main interest in emerging technology is in the impact of these on network investment and operation, with a particular focus on the LV network where we have traditionally (and reasonably) taken a largely set-and-forget approach.

We believe most of the value in small scale solar generation is in the energy market, and that energy prices should form the basis of that investment decision. We do not believe solar of itself provides any material distribution network benefits.

Batteries can potentially provide benefits across the supply chain, and they may provide a distribution benefit, although most of this benefit will come if they are charged from the grid – off peak - on the worst days. We note that coordinated management of energy storage, in the form of hot water heating load management, has, for decades, helped defer network investment.

26. *What are you views on the assessment of the impact of technology on pricing mechanisms and the fairness of prices?*

We believe it is important to start from an accurate description of the status quo. For most residential customers in NZ that is one of the following:

- A 'two meter' setup where one meter measures 'uncontrolled' consumption, while the other mentions 'controlled' consumption that can be turned off and on at the discretion of the distributor. The distribution price for controlled consumption is typically materially less than that for uncontrolled consumption
- A 'single meter' or 'inclusive' arrangement, where part of the total load can be turned off and on by the distributor, with the single price being somewhat lower than the uncontrolled price, and
- Some form of TOU pricing, where there is a single meter with multiple registers, the most common being day/night.

While the first two of these can be characterised as flat rate, there are good reasons for this in the context of historical use of load management. Specifically, it is very hard to achieve a favourable outcome with respect to load management (one that supports lower investment and lower cost) unless the storage that underpins it is subject to central coordination, and that tends to require a flat rate so that the customer is indifferent to when that load management occurs. This admittedly leaves the "uncontrolled" portion over which a customer might exercise discretion, but:

- no matter how this is structured, if it is kWh based it is difficult to avoid an excessive reward to PV, and
- many TOU structures could incentivise investment in batteries (or charging of EVs) that simply shifts the peak, with no reduction in costs.

Overall, the key reason why consumption based charges are too high is that fixed (or other forms of non-consumption-based charges) are too low. This can only be addressed by the revocation, or significant amendment, of the low user fixed charge regulations together with a fundamental shift in the way consumers see the service being provided. Revocation, or significant amendment, of the low user fixed charge regulations is a necessary step to address pricing fairness issues.

Longer term, the key pricing issue for the industry is how we manage to achieve the dual aims of:

- shifting EV charging to low load periods. This being either the night time period, or day time (should uptake of solar result in a concerning 'duck curve')
  and
- smoothing out the start time for EV charging.

Simple time-of-use pricing achieves the first aim but not the second. Simple time-of-use pricing is therefore not an option long term. The problem with it being that a large number of EVs will all start charging at exactly the same time – namely the start of the low rate period – causing significant voltage and capacity issues. This issue would be further heightened, and brought forward, if vehicle-to grid charging eventuates.

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

The vast majority of the paper's focus in this section was on residential solar. We believe this isn't appropriate as our own view is that EVs are the technology likely to have the biggest impact on the electricity sector in the medium term. However, given the unknown future, a more balanced consideration of the variety of new technology emerging is useful.

A balanced consideration would reveal that for the security of supply question at distribution level, the largest impact is likely to be at the low voltage network level. This is regardless of the type of new technology – i.e. solar, in-home batteries and EVs will all impact the low voltage network.

Thus, additional monitoring and understanding of low voltage networks, including access to non-kWh smart meter information, will be key to ensuring security of supply.

In broad terms, the key impacts of each technology will be:

- a significant amount of PV on the system could create voltage stability issues
- batteries offer opportunities to contribute to system stability, particularly if they are coordinated
- a significant amount of EVs on the system could create voltage and capacity stability issues. A large number of EVs charging at peak is likely to create capacity issues and a large number of EVs starting charging at the beginning of a low rate TOU period is likely to create both voltage and capacity issues.

Each of the above issues is manageable but it needs industry coordination, effort and investment.

With regard to price impact:

- significant EV usage, if the dual charging objectives referred to our response to Q26 eventuate, will result in:

  a) lower total energy costs for customers. It is estimated that switching to driving an EV rather than a petrol/diesel vehicle will save customers around $2,500 in total cost per annum (this incidentally is more than the average total electricity bill of a household customer currently).

  b) lower customer average electricity cost per kWh consumed. EVs are likely to improve the utilisation of the electricity system given EVs are a relatively stable year round load.

- the existing management of load through ripple control (primarily via control of hot water cylinders) is of significant benefit to overall affordability. It is very important that the gains made in coordinated load management are not lost as the impact of emerging technology increases. In fact this should be embraced as a foundation approach toward control and coordination of emerging technology where possible. Any loss of current load management will result in unavoidable investment in network reinforcement which is detrimental to affordability.

- significant PV is likely to drive down energy prices when output is high and demand is low. This will probably also influence price outcomes when PV is not generating, as asset owners may seek to recover costs over shorter time frames. In other words we may see different patterns of price variation, and perhaps greater price volatility.

Regulation

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

Renewables underpin both New Zealand's current generation and potential energy transformation, and the regulatory system must recognise that. However, it isn't clear what difference it makes to sector regulation as opposed to wider economic regulation, for example a well-functioning and effective ETS.

Fairness is a somewhat more elusive concept, with reasonable people taking very different views to the fairness of the status quo and any proposals to change it. The TPM process over the last 6 years has indicated this clearly.

If fairness at customer level is to play a stronger role, then regulators will probably need to provide guidance about how this is to be implemented. We note that few other goods and services have "fairness" based pricing.

At an aggregate level, prices that reflect prudent costs are inherently fair.

One area that the regulatory system could support environmental sustainability is by regulatory settings that allow seeding of the market at an initial stage for sustainability based projects with consumer benefits. Such incentives could also support research and development along with greater focus on innovative approaches. This is similar to the work Transpower did in the 1990's that led to the wholesale energy market.

For example, regulatory settings do not allow distribution companies to look at the overall energy bill of the consumer as opposed to the somewhat narrow confines of the 'electricity bill'. Previously this narrow focus wasn't really an issue, however with the advent of new technology and in particular EVs, it does beg the question as to whether a narrow focus may prohibit network companies from working with others to lower the total energy cost to households through increasing the early uptake of EVs.

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

In our view the regulations are the single largest impediment to making pricing better for everyone and for keeping energy costs down. The regulations should be revoked as soon as possible.

We do not agree with the Electricity Authority perspective that the regulations are not an impediment to implementing better pricing.

As the paper notes, the regulations help some in hardship - and some who are wealthy - while increasing hardship for others. What is more, the amount of assistance inherent in the regulations for any particular household is purely a function of the level of consumption, it has nothing at all to do with hardship and need. It is random.

It is not even possible to be sure that the regulations benefit customers using less than the threshold amount (8,000kWh per year for most of the country, 9,000 in the lower South Island). Figure 30 in the report shows how this happens: there is a range of consumption below 8,000kWh, and down to around 6,500kWh, where the annual bill is higher on low user pricing than it would be on the "Assumed plan if no regulation".

As well as technical issues, the regulations present a social policy perspective which is out of date. Even if one assumes the regulations were effective in their day (2004), technology has moved on, and now threatens to interact with the regulations in ways that reward energy generation instead of energy conservation, and increase hardship for some as new technology is deployed by others.

As well as revocation of the regulations there actually needs to be a positive government endorsement (perhaps via a GPS) of pricing that is much less consumption-based.

At a retail level, the regulations effectively mean that retailers must make lower margins off low volume customers than they do off high volume customers. This is because the 15 cents per day that they typically get in revenue (the distributor usually gets the other 15 cents) is so much less than their largely fixed cost to serve. We believe this will be a factor in retailer acquisition and retention strategies and will explain some of the areas where switching rates seem low, or win back opportunities are not exercised. This also has an impact on entrant retailer business models. For example Energy Club's 'at cost plus a membership fee' idea cannot have a club fee that is the same for everyone if it is more than 15 cents per day. More generally, those retailers who want to be transparent with customers over supply costs cannot be fully so – for example they must express metering 'costs' to customers as cents per kWh, when that is not in fact how metering costs are charged to retailers.

We fully appreciate that revocation of the regulations is a major, but essential, step, and we recommend that this be phased in over time to allow considered development of any offsetting assistance initiatives. The very random impact of the regulations in terms of the direction and magnitude of the benefits at individual consumer level guarantees that the impacts of revocation will also be random.

However, the announcement of the revocation of the regulations, even with full effect not until some future date, would send the clear message to anyone considering investment in PV that the gain is much less than the 30 cents per kWh they might be seeing currently, and more like the energy cost avoided: much less than 10 cents per kWh at current prices.

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

We believe MBIE is well placed to monitor this.

In our experience the two sector specific regulators – The Commerce Commission (for Part 4) and The Electricity Authority, tend to stay in their lanes.

There are boundary issues in some specific areas – the TPM is one example – the Authority believes pricing can improve grid investment, but how those decisions are made is actually an IM process overseen by the Commission. More generally, the Authority does not always appear to be cognisant of how Part 4 works. In our opinion the regulation of price sits more comfortably with the Commission.

In terms of process, the Commission runs transparent processes, within binding timeframes and produces decision papers with clear reasoning. By contrast the Authority sometimes runs processes that are less well scoped, appear suddenly after apparent recesses, become ongoing rather than time bound and at times do not address their position with respect to counter views from submitters.

Regarding the specific example of a distributor selling batteries at a discounted price to households in return for the ability to control them, we agree this is a hypothetical risk if the 'discount' is not available to third parties. However we note that distributors have been controlling energy storage in the form of hot water for decades (with the customer's agreement and with some form of discount) without owning the hot water cylinders, or even the equipment at the customer's house that enables the control.

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

We see some regulatory threats to good economic outcomes based on too sharp a boundary being drawn around the regulated business.

We believe the Commerce Commission acknowledges this tension in a positive way in its work.

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

We have some sympathy for the view that regulatory processes may struggle to keep up with the pace of change. But good regulation requires considered and consultative processes.

Perhaps there needs to be recognition that certain regulatory projects should not start, or should not proceed, if there is a reasonable prospect of the context changing significantly over the likely consultation period. We note that in only a few years many have gone from contemplating the death spiral of transmission and distribution networks to contemplating the challenge of investing in them to support electrification and emissions reduction.

Summary of feedback on Part five

33. *Please summarise your key points on Part five.*
1. We agree that lower cost distributed generation and storage, together with electric vehicles, is likely to transform NZ's electricity and energy landscape. 2. In our view the low fixed charge regulations are the single largest impediment to making pricing better for everyone. The regulations should be revoked. 3. Any loss of our current position with respect to load management will result in unavoidable investment in network reinforcement which is detrimental to affordability. 4. One area that the regulatory system could support environmental sustainability is by regulatory settings that allow seeding of the market at an initial stage for sustainability based projects with consumer benefits. 5. In terms of process, the Commission has more transparent processes than the Authority. In our opinion the regulation of price sits more comfortably with the Commission.

Solutions to issues and concerns raised in Part five

34. *Please briefly describe any potential solutions to the issues and concerns raised in Part five.*
Refer to our covering letter and the ENA submission.

Additional information

35. *Please briefly provide any additional information or comment you would like to include in your submission.*

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