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Electricity Networks Association of New Zealand
Level 5, Legal House
101 Lambton Quay
PO Box 6140
Wellington, New Zealand
By email: submissions@electricity.org.nz

SUBMISSION on
"New Pricing Options for Electricity Distributors" Discussion Paper

1. Introduction

Thank you for the opportunity to make a submission on the review of the New Pricing Options for Electricity Distributors discussion paper. This submission is from Consumer NZ, New Zealand's leading consumer organisation. It has an acknowledged and respected reputation for independence and fairness as a provider of impartial and comprehensive consumer information and advice.

Contact: Sue Chetwin
Consumer NZ
Private Bag 6996
Wellington 6141
Phone: 04 801 2071
Email: sue@consumer.org.nz

2. Overview

Our views on new pricing options for electricity distributors are set out in section 3. We requested feedback on the new pricing options set out on the discussion paper via an online poll. A selection of the 362 responses we received are included in section 3.

If you require any further information, please do not hesitate to contact me.

Yours sincerely

Sue Chetwin
Chief Executive

3. Our members' views

We are pleased the ENA is consulting on new distribution pricing options. In our view, the move towards more "cost-reflective" lines charges is a salient issue facing electricity consumers.

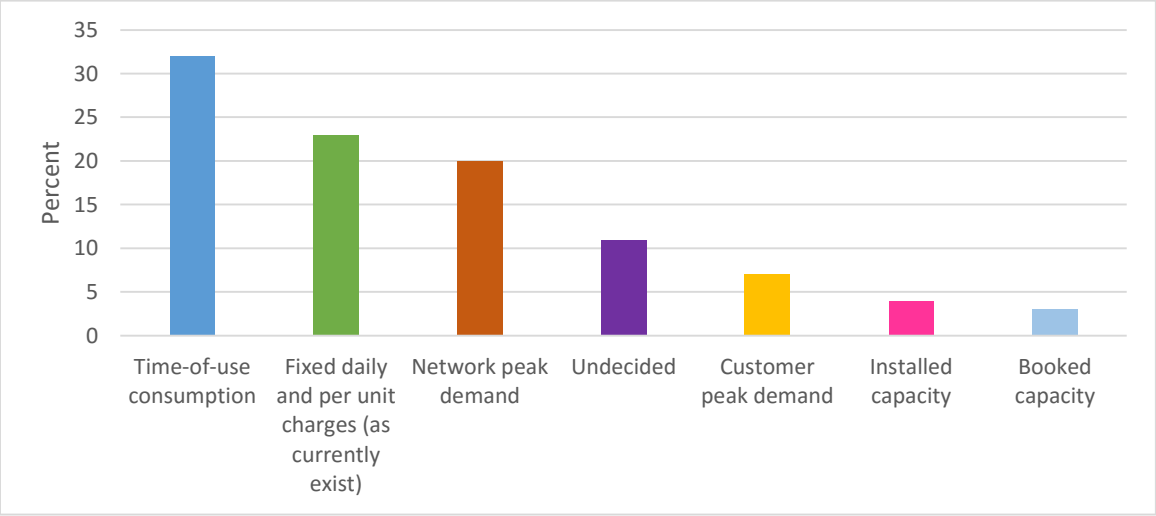
If implemented properly, the new pricing options could empower consumers to reduce their bills and use emerging technologies in a way that benefits all New Zealanders. However, if communication is poor and the new pricing structures are rolled out without adequate safeguards to prevent bill shocks, the changes have the potential for serious adverse consequences, especially for vulnerable consumers. Our latest cost of living survey, the results of which are due to be published next month, found the price of power was the biggest cost of living concern among consumers.

In light of the gravity of the issue, we asked our members for feedback on points raised in the ENA's discussion paper. We put together an article for our website (see Appendix A) outlining why some lines companies want new pricing arrangements, with an explanation of the five pricing options outlined in the consultation paper.[1] We embedded a poll in the article asking which option readers *most* preferred and asked for any comments they had on the proposed options.

The results of the poll provide a snapshot of members' views. While there's likely to be a selection bias towards more engaged, informed consumers, the responses provide useful insights about tariff preferences. The remainder of this section summarises the poll results and extracts selected comments in support of each pricing option. Section four sets out our position in light of these views.

3.1 Summary of results

Of the 344 respondents, 66% preferred one of the five pricing options outlined in the discussion paper, with 23% opting for the status quo (fixed daily and per-unit charges) and 11% undecided. About a third (32%) favoured time-of-use consumption, with network peak demand the next most popular at 20%. Customer peak demand drew 7% support, while the least popular options were installed capacity (4%) and booked capacity (3%).



[1] https://www.consumer.org.nz/articles/new-line-charges-proposed

Figure 1 - preferred distribution pricing options as percentage of total respondents.

3.2 Time-of-use pricing

Respondents who preferred time-of-use (TOU) pricing cited its simplicity as one of the main reasons for their support. The following commenter believes TOU represents a good compromise between cost-reflectiveness and ease-of-understanding. However, they acknowledge metering and billing infrastructure may not be up to the task of supporting a widespread rollout of TOU lines charges, especially in rural areas with poor GSM coverage.

> *It's essential that consumers understand the way they are charged. If they don't, they can't choose to respond in ways that can reduce the cost of provision of electricity and their own costs. So a simple model is important. However, the charging scheme must also provide incentives for usage that reduces the cost of provision, especially the "peak demand" problem. Time-of-use consumption is a reasonable compromise between these two needs. An issue to be considered is whether current "smart" meters can provide this functionality in rural areas that don't have cellphone coverage. The lines cost is especially significant in these areas but I suspect that the currently installed meters can't do 30min billing if there is not cellphone coverage (and no other meters within "Wireless Sensor Network" range).*

Others told us of their preference for TOU in lieu of their current pricing structure, in the following case the controversial network demand charging used by The Lines Company:

> *Any change would be better than the terribly unfair regime in use by the Lines Co. Why should I pay a line charge based on usage during a two-hour period in mid-winter when our three grandchildren are staying and we have to heat bedrooms, cook in the oven and probably use the clothes dryer. Sure during that period I allegedly use a lot of electricity but when the family leaves we revert to the frugal couple we are and try not to use any major electrical appliance during the critical Lines Co defined periods. In the meantime, we therefore pay at the rate for 12 months that was established during an abnormally high use period. There has to be a better fairer way.*

Emerging technologies, including solar photovoltaic (PV) panels, electric vehicles and large-scale home battery storage, figured prominently in responses. This member believes TOU pricing is the best way to enable efficient cost recovery in a grid with increasingly distributed generation. They also raise the important point that reliable, instantaneous and easy-to-understand two-way communication between distributor and consumer is essential for any TOU (or indeed any of the proposed pricing options apart from installed capacity).

> *We really need to anticipate the future on this one. With electric vehicles becoming more popular, PV panels becoming very cheap, and local battery storage (e.g. Tesla Powerwalls) on the point of economic viability, it's clear we're moving from a small number of big generators to a distributed system with a large number of small storage units and modest generators. The grid (and generating capacity) needs to respond to these challenges and reflect the costs of services offered. Time of use consumption with smart meters seems the best way of doing this. The important*

thing here is that consumers must know the instantaneous consumption cost so they can modify their behavior accordingly. Allied to this is a change to the generation model so multiple PV systems can feed into the grid and be adequately rewarded when supplying power at times of high demand.

3.3 Fixed daily and per unit charges (as currently exist)

The comment below echoes our main concern about new distribution pricing structures. This reader correctly observes if the status quo fixed daily/per unit charges are removed overnight and replaced with one of the proposed new pricing structures, vulnerable people are the most likely to experience bill shocks. This is because those on low incomes generally have "peaky" electricity demand and less ability than wealthier consumers to shift their consumption patterns. Reasons for this include reliance on portable resistance electric heaters instead of more efficient fixed forms of heating, along with large families, especially those with young children.

The current system is the best for low income/high use users such as young families. We have to think about such people if we are to maintain fairness in our society, they could be seriously disadvantaged by the other options …(the current system is not the best for myself as a work-from-home single person who could manipulate my usage to benefit from the other systems).

Others said many of the proposed new pricing structures would require precise forecasting/planning of power use, which again would be more difficult for the least-advantaged consumers.

There is nothing, absolutely nothing wrong with the current scheme. The cost of distribution gets spread over all users thus the most equitable solution for all. Options like installed capacity or booked capacity will be hard to work as people's demands change or they move house. The biggest issue would be forecasting your power needs which would be akin to forecasting the weather; near impossible.

A common theme is the new pricing options seem to be weighted in favour of the interests of the lines companies. There was a notable lack of sympathy for lines companies, especially those that aren't community owned. This is understandable in a market where electricity prices have risen by 46% in real terms since 2000, and in light of the recent controversy over alleged poor infrastructure maintenance by some lines companies.

The following commenter suggests owners of small-scale distributed generation (DG) pay a rebate to compensate for any cross-subsidisation from non-DG households, a similar approach to that employed by Unison, rather than having all consumers adjust to new charging structures. They also raise the issue that comparing electricity plans on Powerswitch could become much more difficult if a suite of new lines charging options were introduced.

All the proposed network pricing options seem designed to benefit lines companies, especially the non-community 'trust' ones, at the expense of the consumer. The options seem crude, with the only given being higher prices. One simple answer would seem to be for PV and other off-grid generators, which have a grid connection, to pay an imputed charge to compensate for the lines subsidy received. And of course What's My Number and Powerswitch, designed to give consumers power over

electricity charges choices, would have to be completely re-vamped or abandoned. And there's nothing about commercial/industrial consumers in the proposals.

Some members didn't favour the 'status quo' but thought it premature to institute new pricing structures at a time when the electricity market may look radically different in 10 years, as reflected in the following two comments:

Modifying pricing options now is an interim measure at best and short-sighted at worst. Battery options are improving and costs are decreasing. As properties move off grid network costs will increasingly be shared across fewer customers anyway (and many of the remaining customers will use less electricity as efficiencies continue to improve). The market will look radically different within 10 years, let alone 30. None of the presented [options] appear to deal with a reducing number of consumers.

This review doesn't seem to take into account the impending arrival of domestic electricity storage options for solar panel generated electricity. Owners of these systems will presumably argue for reduced Transpower and lines charges which will shift the cost to those without solar energy - again lower and fixed income people such as retirees, pensioners and beneficiaries.

3.4 Network peak demand

We were surprised to see 20% of respondents preferred network peak demand (NPD) above other options. Those in support of NPD appear to be consumers who support user-pays pricing and favour user-pays for other utilities.

As might be expected, a greater number of commenters in favour of NPD were engineers and/or had worked in the energy industry, who were drawn to the idea of congestion charging as a "fair and efficient" cost recovery mechanism. The following comment from is typical – they are a customer of The Lines Company so have experience with a form of NPD (critical peak) and like this structure as it makes their household more conscious of their peak loads and enables them to spread that load throughout the day.

As a 43 year customer of The Lines Company (and its precursor Waitomo Electric Power Board) I have experience of the Network Peak Demand system for charges. It is pleasing to see the rest of the industry is beginning to 'wake-up'! I have had no difficulty identifying with the superior benefits of such a system compared to traditional pricing methods. Accordingly, I have not only been in agreement with the change, but also have been made conscious of the peak loads our household places on the local network and stimulated to reduce that load when practical/convenient.

3.5 Customer peak demand

Only 7% of readers named customer peak demand pricing as their preferred option. Some readers said they liked this option as it offered the perceived advantages of NPD but also allowed consumers to decide when their peak demand occurred, while removing the penalty for those who couldn't defer consumption at times of network peak demand. One member commented:

[I prefer] Customer peak demand or time of use or network peak, as consumers can at least influence the fee if they are careful. Installed capacity seems unfair on renters who can't change this.

3.6 Installed/booked capacity

Installed and booked capacity pricing was the least popular approach in our poll, drawing only 4% and 3% of votes respectively. Comments in support of booked capacity were mainly from low users, either retired couples or those who use gas for space/water heating and cooking. The following user likes booked capacity but remains wary they may exceed their booked power usage if they have an instance of unexpected electricity demand.

As a "low user" with almost all heating and cooking with gas, booked capacity is an obvious choice. However, I don't want to lose the use in emergency/gas failure of a 6Kw instant water heater or the ability to plug in a small welder if needed.

Others told us that its similarity to broadband/phone plan pricing swayed their vote in favour of booked capacity:

Booked capacity is easily understood because of the similarity to telecommunications charging.

The lone comment in favour of booked capacity cited the lack of cellphone coverage in their area, but added they'd like a smart meter and suggested power line communications be used in lieu of GSM:

The installed capacity is the only option that will work where we live. There is no mobile phone reception in our bay (Marlborough Sounds), therefore smart meters do not work. Without a working smart meter our power consumption per half hour cannot be recorded. What is needed is smart meters that pass their information via the electricity lines and do not rely on mobile phone connections.

3.7 Undecided or no selection

A number of those who were undecided or had no preference named their experience with, or reports about, The Lines Company's network pricing arrangements as the reason for their scepticism about new pricing options. The following two comments typify these views and illustrate how network pricing alone, especially if implemented poorly, will be unsuitable for a significant proportion of consumers.

If anyone wants to know how the alternatives work, they need only look to The Lines Company in the King Country where a peak demand pricing model has been in place for 10 years. It has depressed the area, economically and socially, creating a Them & Us environment with people dependent on electricity only, paying transmission charges in excess of any electricity charges they pay, and often 2x as much.

Other readers said they needed to see a more concrete analysis of how each new pricing option would affect their bill before making a decision. For a significant proportion of consumers, even a slight bill increase could have a major impact, as illustrated by the comment below:

> *I NEED to see some actual $ figures for how these would affect us before I'd be willing to definitively choose but I think my first choice (based on the info provided above) would probably be status quo and second choice would probably be network peak demand. Our power bill is already a huge strain on our finances and anything that could make this worse is scary!*

Some readers thought electricity, as a necessity, was a public good - generation, transmission, distribution and retail needed to be handled in the same way as drinking water or transport infrastructure:

> *Electricity is a necessity, and should be State controlled, priced, and universally fair and reasonable.*

4. Our position

Our views on the proposed new pricing structures for distribution are as follows:

- We are concerned changes could unfairly impact consumers who are unable to shift their electricity demand to take advantage of the new price structures, especially those on low and/or fixed incomes.
- Even if these, or other consumers experience lower annual power bills, this could easily be negated by unexpectedly higher power bills during winter which could have serious consequences for those who spent the greatest proportion of their income on power.
- The serious issues observed with The Lines Company's network pricing arrangement mean we are opposed to any lines company offering it as their sole pricing option.
- Distribution companies need to have robust two-way communication for getting tariff information to consumers instantaneously, especially for TOU and network pricing arrangements.
- Our preference is for distributors to offer a suite of charging options for consumers, including a legacy option fixed/variable charge option.
- Changes to tariff structures need to occur gradually, accompanied by safeguards to prevent bill increases for those who spend the greatest proportion of their income on power.
- Before they're instituted, lines companies and retailers have an obligation to provide customers with a detailed overview of how any new pricing structures will affect their bills throughout the year.

APPENDIX A – New Lines Charges Proposed article and poll

NEW LINES CHARGES PROPOSED

Lines companies want to change the way you pay for power. This could have a major impact on your bill, so we want to hear your thoughts.

In 2015, Kiwi households forked out an average of $2101 on electricity, but where does all that money end up?

The largest slice goes to generation: the hydro dams, wind turbines and thermal power stations that produce your electricity, which receive about 30 cents of every dollar paid for power.

But close behind is the cost of building and maintaining the distribution network connecting your home to the national grid, about a quarter of every bill. The national grid is the high voltage transmission network that moves power from generators to load centres (heavy industry and local substations), while the distribution network consists of the overhead lines and underground wires that deliver power to your home.

Part of the remainder of your bill goes to Transpower (9.9%), which operates and maintains the national grid. The rest goes to your electricity retailer (16.2%), GST (13%), metering costs (3.4%), and a market governance/services levy (0.8%).

New Zealand's distribution networks are operated by 29 lines companies owned by a mixture of trusts (the majority), public listings, shareholder co-operatives, and local bodies. They're each responsible for the network in certain areas of the country. As they're a natural monopoly – there's no local competition – 17 of them are regulated by the Commerce Commission (the other 12 are exempt from regulation as they're consumer-owned, which generally means they're operated by a trust where returns are given back to consumers through an annual payment discount).

Recently, the Electricity Authority has been thinking about how to encourage lines companies to efficiently recover their costs. In a market where electricity prices have risen by more than 46% in real terms since 2000, you'd be forgiven for thinking "cry me a river". But they have a point: without change, there's a risk many of us will end up paying more than our fair share of lines charges.

The problem

Currently, most consumers pay their lines company fees via a fixed daily charge and a component of their per unit charge. Those fees cover the national grid and local lines charges. If you used more electricity during the year, the lines company would get more revenue. The trouble is the cost of operating the lines running to your home has nothing to do with the amount of energy you use.

Consider a local lines company supplying power to two households: a family where both parents work and the kids are at school during the day, and a retired couple on a fixed income who rent their home.

The retired couple are likely to have a steady power consumption throughout the day. Their instantaneous demand is unlikely to rise above 4kW: the cost of running a heat pump, TV, cooktop and a few lights simultaneously.

In contrast, the working family are likely to use little or no power during the day, but once they come home they're cooking, showering, blasting heaters and watching telly all at once. They could use up to 8kW for an hour or two during winter evenings.

Despite very different consumption patterns, it's conceivable both households could use similar amounts of power each year. So they'd pay the same amount to the lines company.

However, the cost of building and maintaining the network supplying both properties depends on the maximum power demand expected on the network at any one time. The wires required to supply the working family on a cold winter evening need to be much thicker than those for the retired couple, while the transformer on their power pole will also need to be twice as big.

With the current lines charging scheme, the working family aren't paying their full share – they are being subsidised by the retirees.

If the family invest in solar panels and an electric vehicle, it gets worse for the retirees. The solar panels will reduce the family's consumption during the day, but on cold winter evenings, when their power use peaks, their solar panels won't be generating. They'll be paying less towards their lines, but they'll still need the same network capacity.

Plugging in their electric vehicle as soon as they arrive home at night would increase their peak consumption even further, meaning the lines company may need to upgrade the network. The cost of this upgrade will be shared between the retired couple and the family through increased power prices, even though the retirees are placing no extra demand on the network.

On a macro scale, if large numbers of homes invest in solar PV systems and current lines charging arrangements remain in place, then they'll pay lower lines charges while requiring the network to be maintained at the same level. The lines company will then need to hike charges for everyone, in effect everyone else would subsidise the lines charges of solar homes.

However, we are concerned the move to new lines charging arrangements could adversely affect some consumers, especially those on low incomes who spend a large proportion of their income on electricity and rely on inefficient plug-in electric heaters. On cold winter evenings (when network demand is highest) their lines charges could increase significantly under new pricing structures, causing serious bill shocks – see our submission on the EA's earlier distribution pricing review for more information.

The solution?

The Electricity Networks Association (ENA, the lines company lobby group) has put forward five new pricing options:

- Time-of-use (TOU): lines charges vary based on the time of day, with higher lines charges during peak times for the networks. Smart meters enable TOU lines charges to vary every half hour based on network congestion.

- Customer peak demand or anytime maximum demand (AMD): adjusts lines charges based on a consumer's maximum all-at-once power consumption at any period during the day. So even if your maximum all-at-once consumption occurs off-peak this is what your lines charge will be based on.
- Network peak demand: similar to customer peak demand, this measures your maximum power consumption at any one time, but only during times when there's high demand on the network. This means you'll pay more if you run several devices simultaneously, for example a heat pump, washing machine and oven, at peak times.

- Installed capacity: charges are based on the maximum installed capacity at your property, literally the size of the main fuse on your home's incoming power supply. You can't use more power at any one time than the capacity you've prepaid for without tripping the fuse.
- Booked capacity: also called nominated capacity, this is analogous to the way most of us pay for telecommunications services, with a maximum upload/download speed and caps on the amount of data or minutes we're allowed each month. For electricity you'll agree a maximum instantaneous power consumption with your lines company, which is likely to change from period to period as your demand varies with the seasons.

Note: the changes being made to the distribution charges are, with one exception, those to the retailers, rather than to customers. Retailers are responsible for determining how the costs of distribution services are passed on to their customers, as lines charges are only one component of the total electricity bill. Retailers will develop pricing, packages and services off the back of these new distribution charges. Some will offer direct "pass-through" of the charges, and others will bundle and package to provide a different service. In one instance (The Lines Company, which services the King Country region), consumers are currently billed directly for their lines charges.

The technology and systems required for these new pricing structures will require further development. As a result, there will be a transition phase as new distribution prices are rolled-out across the country. Some networks may also choose not to change their pricing structures depending on their network needs.

What do you think?

We'd like to hear your thoughts on which, if any, of the above pricing options you'd prefer (we've also included the current status quo option as "Fixed daily and per unit charges").

Which one of the following electricity network (lines) pricing options do you most prefer?

- Time-of-use consumption
- Installed capacity
- Booked capacity
- Customer peak demand
- Network peak demand
- Fixed daily and per unit charges (as currently exist)
- Undecided

Please enter any other comments you have on the proposed network pricing options.