

A close-up photograph of a person wearing an orange high-visibility safety jacket. The person is holding a blue pen and writing on a white sheet of paper that is part of a clipboard. The background is blurred, suggesting an outdoor setting. The text 'Northpower' is overlaid in the top right corner, and 'Pricing Roadmap 1 April 2022' is overlaid in the bottom right corner.

Northpower

Pricing Roadmap
1 April 2022

1 Introduction

Our pricing strategy is to transition network pricing to be appropriately cost reflective and responsive to the evolving market and the changing ways that consumers are using electricity.

Our pricing roadmap sets out how we are going to implement our strategy:

#	Action	Status
1	Test and Learn: research cost reflective pricing options, engage in stakeholder consultation, implement trials.	Complete
2	Strategy: update our pricing strategy to reflect the cost reflective pricing principles.	Complete
3	Pricing Structures: review and implement updated pricing structures.	95% complete
4	Pricing Methodology: review and implement changes to pricing methodology and supporting modelling.	Complete (but ongoing)
5	Phased implementation: phase price point changes to mitigate the impact on consumers and avoid bill shock.	In progress
6	Review: consider the effectiveness of pricing strategies, new technology, and how we can further our pricing reform	Ongoing

2 Test and learn

Consumers

In 2018 we consulted with our consumer owners regarding how we could implement cost reflective pricing. We found that while consumers were interested in lower cost electricity, they did not want to change how they used it. In particular, they did not want to have to *think* about how they used electricity – they simply want it there when they turn the light switch on.

The outcome of the consultation was that any new pricing structures had to be clear, understandable, and able to be responded to by consumers in the event they were passed through. We also needed to take them on the journey of *why* pricing reform was necessary and *how* it would benefit them, to address their hesitation towards change.

Retailers

We also consulted retailers, who are our direct customers, and upon whom we rely to provide the data for billing. Without retailer cooperation, it is impossible to implement cost reflective pricing.

Retailers were reluctant to implement change, and to provide the data required to complete analysis, set prices, and bill new pricing structures. Most were clear that they do not for the most part see that consumers want cost reflective pricing, and therefore indicated they were unlikely to pass it through to consumers.

Analysis

We also conducted analysis into the customer level impact of pricing change, in the event it was passed through. We assessed that, while we were only recovering the same amount of revenue, re-distributing this revenue would create 'winners' and 'losers'. We decided that phasing of changes would be a key change management strategy, to mitigate the impact on consumers, and give them time to adjust their behaviours. However signalling the changes early was also important, so that consumers could consider the impact of pricing changes on investment decisions that could potentially be inefficient.

Outcome

As a result of our research we developed the following principles which governed our approach to implementing cost reflective pricing:

1. Changes needed to be phased to mitigate the impact on consumers in the event prices were passed through.
2. Price structures needed to be clear, understandable, and able to be responded to by consumers in the event they were passed through.
3. Change needed to be accompanied by messaging which conveyed *why* and *how* pricing was changing.

3 Strategy

Following the research phase, we developed a new pricing strategy:

Our pricing strategy is to transition network pricing to be appropriately cost reflective and responsive to the evolving market and the changing ways that consumers are using electricity.

4 Pricing Structures

4.1 Residential and General

In 2018 we assessed the various cost reflective pricing structures identified by the Electricity Networks Association and used in other jurisdictions, to identify the best options which would meet the above principles.

We considered a number of pricing structures, including Customer Peak Demand, Network Peak Demand, Installed Capacity, and Nominated Capacity. We assessed these options against a number of criteria, including their ability to:

- Manage peak loads
- Improve utilisation of network assets
- Signal the best time to charge EVs
- Ensure all consumers contribute fairly to fixed and variable costs
- Reduce incremental cost to consume electricity
- Reduce undesirable cross subsidies
- Give consumers the ability to manage their bill (where retailers pass through transparently)
- Be simple for consumers to understand
- Manage our revenue risk.

Demand based pricing

Demand based pricing is not easily for customers to understand or respond to. Consumers are attuned to thinking about their total electricity consumption, not how many appliances they have on at once. One instance of turning on their oven at the same time as their air conditioning or electric car could send their lines charges soaring. They can't easily tell what their demand is at any time without installing specialist equipment. We also weren't able to get data to bill this option, as smart meters generally do not collect capacity demand data, or measure consumption in intervals more frequently than 30 minutes.

Capacity based pricing

Installed capacity pricing was also not suitable for a number of reasons. Unlike with fibre by comparison, there is no electronic way to control a customer's available capacity. It requires a truck roll to change the fuse in the pillar or on the power pole. It would incentivise customers to reduce their fuse size to reduce their lines charges, which would make blowing a fuse more likely, and replacing a fuse requires a truck roll. Also, some customers have a 2 phase or 3 phase connection to balance the load particularly outside of urban areas, and there is no practical way to limit these customers to the equivalent of a standard 1 phase connection. It would be unfair to charge them for 2 phases simply because of a network requirement to balance load. In addition, we don't hold complete data on installed fuse sizes, and checking the capacity of all fuses across the network would be expensive and impractical, requiring an outage. As such, this option was also ruled out.

Time of Use pricing

We selected Time of Use as our preferred cost reflective pricing methodology following feedback that this option was preferred by consumers and retailers, that it was the easiest option for consumers to understand and respond to (in the event retailers passed it through) and the most practical option for retailers to implement.

It enables us to increase prices at times when there is congestion on the network, and reduce them at times when there is plenty of capacity. This sends a price signal to transfer load outside of congestion periods, and incentivises growth in consumption at times when there is no incremental cost for us to deliver the additional energy.

For example, it enables us to set the off-peak price at nil, because there is no incremental cost for us to deliver energy at that time. This incentivises electric car owners to charge off-peak when there is plenty of capacity in the network, and no cost for us means no cost for them.

It also enables us to set higher prices during peak times, to signal that if you wish to consume at that time we might need to upgrade the network. You can choose to consume at those times, pay the additional cost, and we will upgrade the network. Or you can choose to shift your consumption, which will result in both you and us saving money.

Implementation

We selected Time of Use pricing in 2018 as our preferred cost reflective pricing methodology for residential and general consumers. We then implemented a trial in 2019, and after its success, rolled out Time of Use pricing to all consumers in 2020.

The time-bands for peak, shoulder, and off-peak were selected based upon the times that peaks occur on our network, and the times that the majority of RCPD peaks fall within (transmission charges being a significant variable cost). While transmission charges will switch from a variable to a fixed cost once the new TPM is implemented, as our network peaks and the RCPD peaks generally align, we do not expect material changes to our time-bands. We also aligned our time bands with Top Energy, to provide consistency and efficiencies for retailers operating across Northland.

Time of Use pricing is now mandatory for these consumers where the customer has a communicating smart meter and the retailer is capable of providing us with data in a time-sliced format so that we can bill the retailer using Time of Use. This pricing only relates to how we charge the retailer; retailers are able to determine what and how they charge consumers.

4.2 Large Commercial & Industrial

We reviewed our Large Commercial and Industrial pricing structures in 2020, and decided to implement new structures which were more cost reflective. This means that:

- Customers with a dedicated transformer would be charged a capacity charge, reflecting the network capacity made available to them (and generally requested by them at time of connection) irrespective of their utilisation of that connection.
- High voltage customers would be charged a slightly lower capacity charge, reflecting the lower cost incurred by the network from not having to provide them with a distribution transformer. The capacity charge reflects the network capacity available to them.
- Customers on shared transformers can opt for either a capacity or Time of Use based kWh based pricing structure.

Broadly customers with dedicated assets are now charged based on the capacity available to them through those assets. This is cost reflective because our costs do not change whether they have high or low utilisation of those assets.

4.3 Very Large Industrial

Our Very Large Industrial consumers (consumers with significant load and/or dedicated assets) are charged on the basis of the specific assets deployed to provide services to them. As this was already very cost reflective, we have not made any significant changes to their pricing structures.

5 Pricing Methodology

5.1 2020 review

In 2020 we had our Pricing Methodology reviewed by an external economist, who largely agreed with our approach (noting it had not yet been updated to align with the structure suggested in the Authority’s 2019 practice note) but proposed a change to the allocator that we use to allocate non-asset related fixed overhead costs, which was previously allocated using an arbitrary estimate.

To determine a more appropriate allocator, we reviewed three options and selected peak demand as the most appropriate allocator, that was least likely to result in distortionary outcomes:

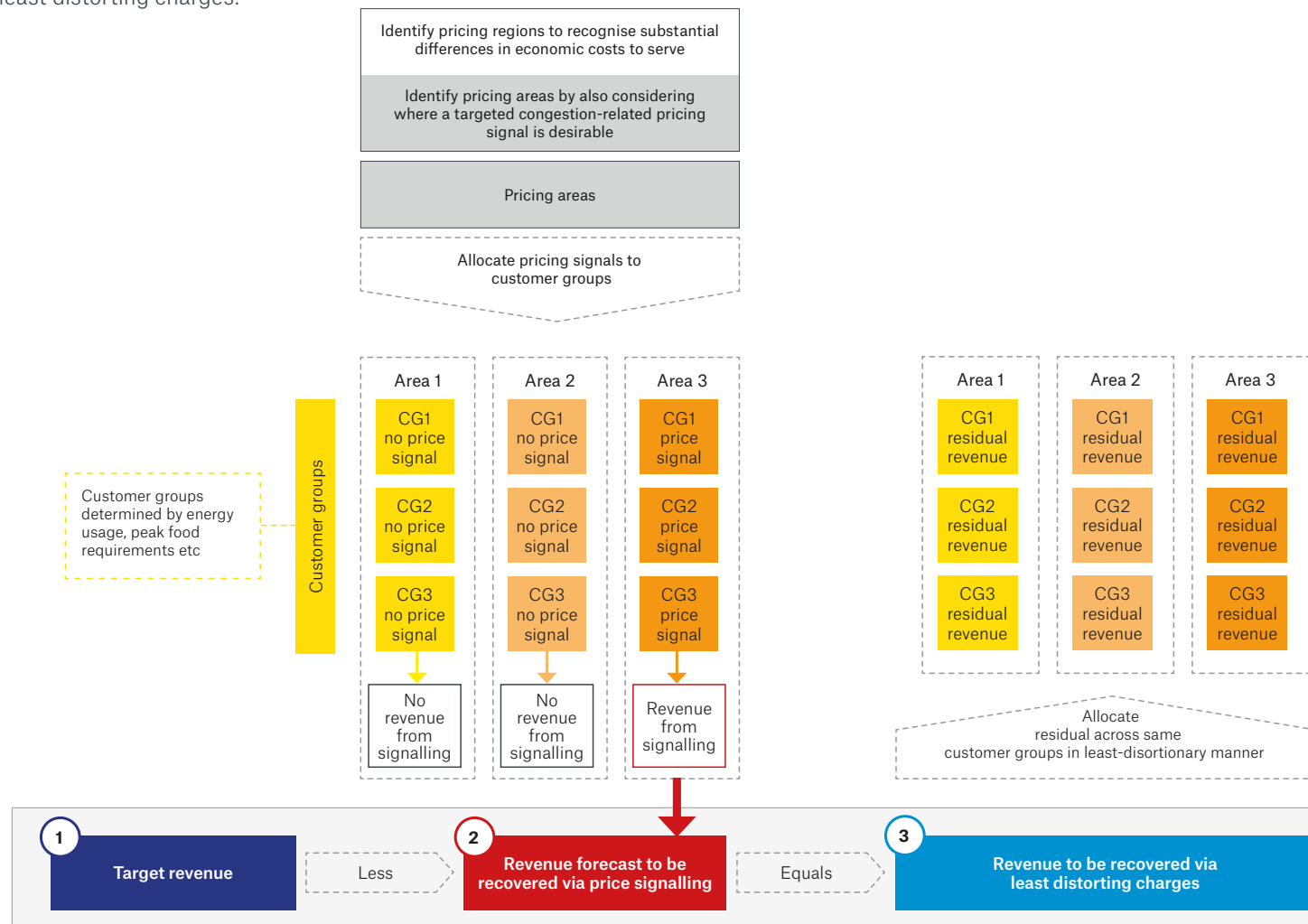
Number of ICPs	We have 6 very large industrial consumers who (pre-Refinery model change) represent on average 42% of the peak demand on our network and 48% of the electricity consumed. These customers and their associated assets demand significantly more dedicated Network engineering, operations and management resource and support than an average consumer or business. As such, we considered number of ICPs would under-allocate cost to large consumers.
MWh consumption	As we do not sell energy across our network, we considered MWh consumption would over-allocate cost to large consumers.
Peak demand (adopted)	This was adopted as it most closely correlates with the service we provide (distribution is a pipe or capacity service as opposed to the sale of energy). Further, we considered this was most likely to result in non-distortionary outcomes.

This change in allocator in line with Pricing Principles has had the effect of re-allocating costs from mass market consumers to large industrials. We are phasing the change over 5 years, to mitigate the impact on consumers. 2022/2023 is the second year of the phased implementation.

5.2 Change in model

We have this year changed our approach to cost allocation, to follow the approach proposed by the Electricity Authority in its draft 2021 practice note. Under this approach, we determine our target revenue, and then forecast the revenue to be recovered through price signalling. The residual revenue is recovered via the least distorting charges.

However, we also continue to employ a phased implementation approach to mitigate the impact on consumers, as outlined below. As such, final prices may not always perfectly reflect the cost allocation model.



6 Phased Implementation

We are cognisant of the impact of price shock on consumers from changing prices too quickly, but equally we are concerned as to the risk of uneconomic outcomes if we do not change prices. In particular, there is a risk that if consumers do not receive cost reflective pricing signals (or it is not signaled how prices are changing) and they make uneconomic investments in alternate technologies, they will subsequently be adversely impacted when prices do change.

As such, we are phasing our price changes over time to mitigate the impact on consumers, but will also signal how pricing is changing. Our general approach is to phase changes over 5 years, and this aligns with the time period introduced to phase out the LFC regulations. We have already commenced phasing most changes, while consumers subject to the LFC regulations will see their changes commence this year.

There are two types of price changes which require phasing:

- 1). **Fixed/variable prices:** fixed prices need to increase, and variable prices decrease, to reflect the fixed cost nature of the service we provide. This enables consumers to tap unutilised capacity in the network at little to no additional cost. Outside of residential where the LFC regulations apply, we began implementing these changes in 2019/2020 and will continue until they reflect our cost structure.
- 2). **Peak/shoulder/off-peak prices:** peak prices need to increase, and off-peak prices need to decrease. We had been phasing in these changes over time to mitigate the impact on consumers, but as few retailers are passing these charges through, we see minimal risk of impact on consumers. As such, we have ceased to phase these changes and will adjust the prices to their cost reflective differential this year.

7 Review

We continually review our pricing structure to improve cost reflectivity, and keep up with market developments. We are also looking at guidance from the Electricity Authority and industry developments both in New Zealand and globally.

While we have implemented ToU, we don't see this as the end point for the evolution of pricing. However, we expect that further change will be triggered by technological development and new markets, which enable consumption devices to respond in real time. For example, pricing might dynamically change in real time based on congestion, and your electric car might automatically respond to those pricing signals (and the time you have indicated you wish to depart) to determine the best time to charge. Based on consumer feedback, we do not see how dynamic price signals can realistically be responded to manually by consumers, so we see further cost reflective pricing reform being largely contingent on the further development and adoption of technology to automate demand management.