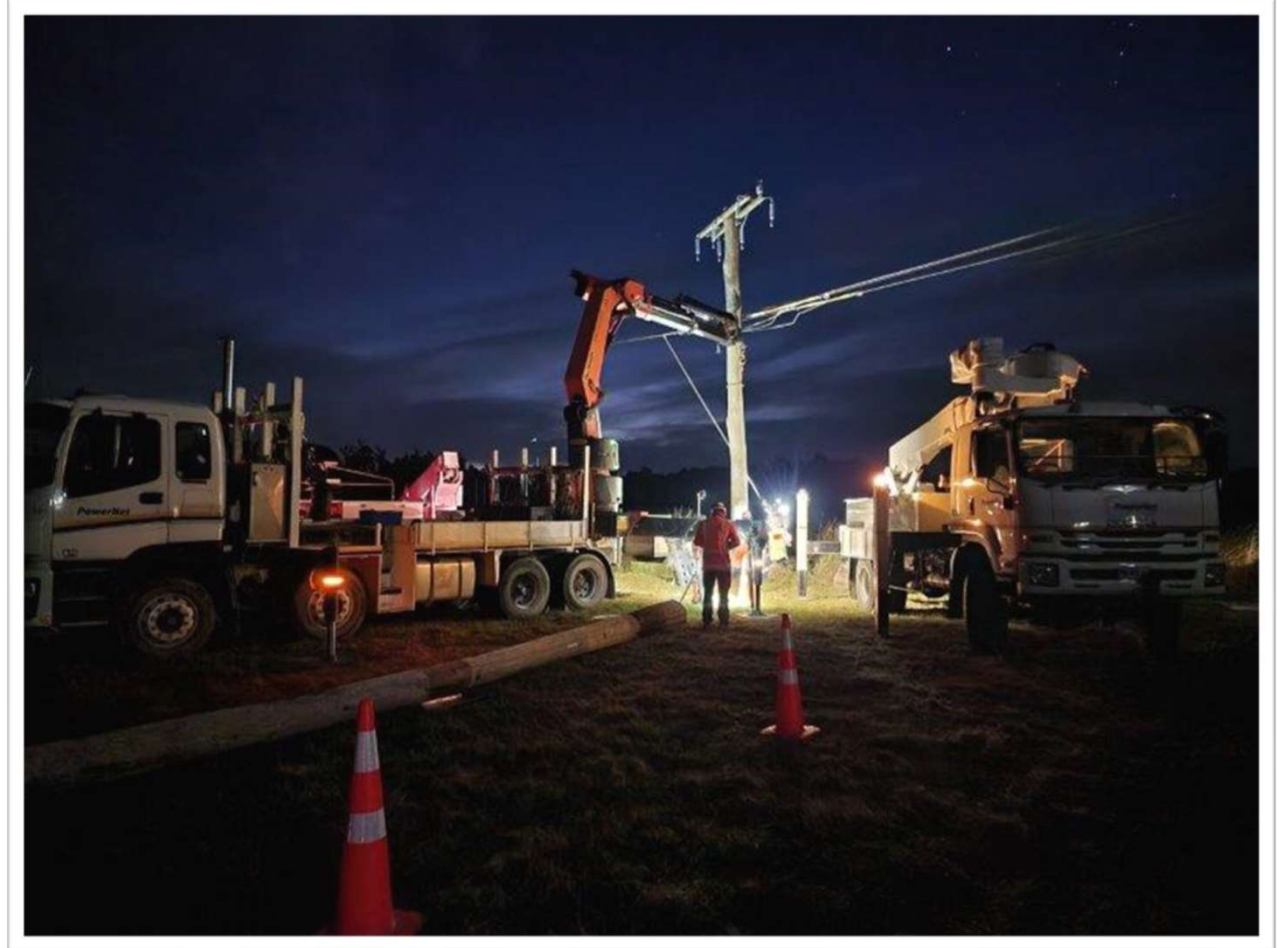




Distribution pricing roadmap

June 2023



Price reform to support future electricity trends

OtagoNet Joint Venture (OJV) is working towards distribution prices that send better signals about the cost of using our network. Doing this can help keep distribution costs and prices down in future, by providing consumers with incentives to use electricity networks more efficiently, reducing or delaying the need for additional investment.

OJV's annual target revenue is set to recover the costs of owning and maintaining the network and must be compliant with the Commerce Commission's Default Price-Quality Path Determination. The Commission's Determination effectively sets a cap on OJV's revenue. The revenue requirement is then used to determine price levels.

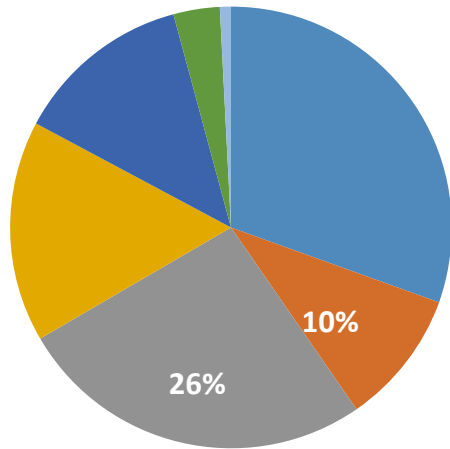
While the company's total revenue is driven by its cost assessment, the focus of pricing reform is ensuring not only that the level of prices and revenues are cost-reflective, but also that price structures signal underlying cost drivers. Ensuring that price signals are accurate will become even more important in a future context where electricity is likely to be used and generated differently than it has in the past.

This roadmap has been prepared to provide the Electricity Authority, electricity retailers and consumers an understanding of what changes we have made to our pricing structures and how we plan to continue to monitor and evolve our pricing to meet the ever-changing environment.

Our role in delivering electricity

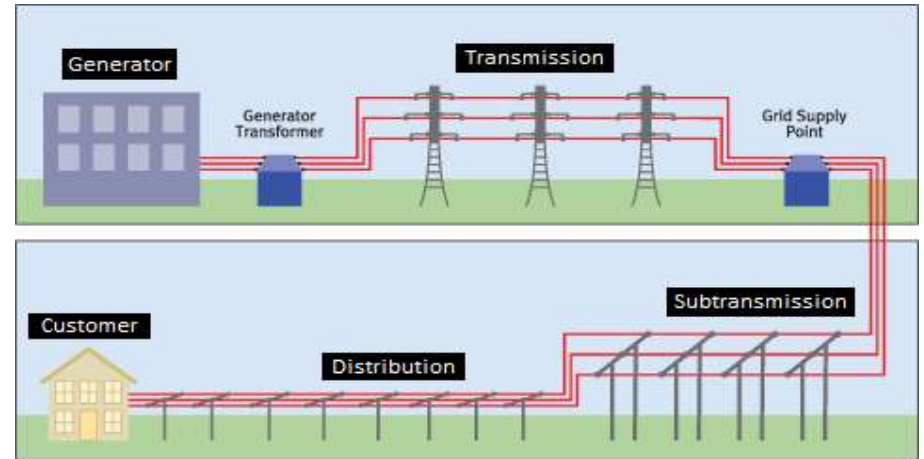
As an electricity distributor, we are responsible for distributing electricity from the transmission network grid exit points (GXPs) through local medium and low voltage networks to electricity consumers. Increasingly, distributors are also re-distributing electricity generated by consumers on their network from DG (Distributed Generation).

Components of total retail price



Source: Electricity Authority

- Generation
- Transmission
- Distribution
- Retail
- GST
- Metering
- Governance & Market Services



Our prices recover the cost of: (1) our distribution network; and (2) the national transmission grid. Charges from Transpower to distributors for the use of the national grid are passed to retailers in the form of a combined network charge.

Electricity retailers determine how to package these charges together with the energy, metering and other retail costs when setting the retail prices that appear in consumers' power accounts.



Residential & General consumer pricing - OtagoNet

Our pricing to residential and general customers includes a daily charge and a usage charge (per kWh)

Service based daily charges

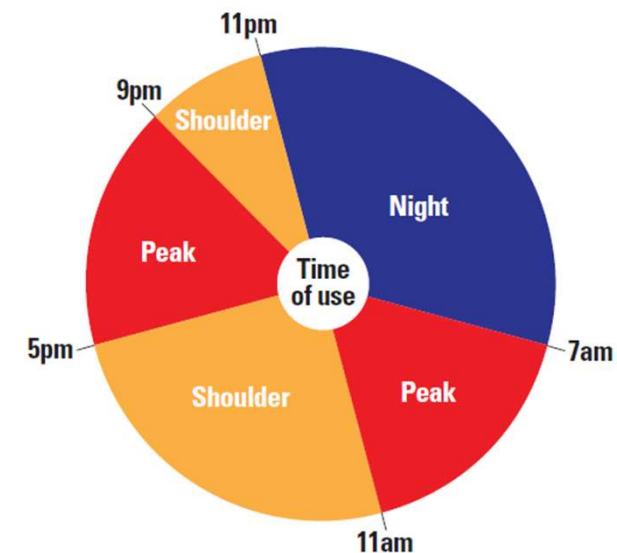
Daily charges vary according to:

- **Capacity:** Charges apply per kVA, with the minimum capacity being 10 kVA.
- **Low user:** Whether the customer qualifies as a residential Low User (less than 9000 kWh p.a.). Regulations limit the daily fixed charge to Low User.

New Time-of-Use structure

Usage (kWh) charges vary according to the time of day

TPC introduced a time-of-use structure from 1 April 2022 to move to more cost-reflective pricing, with the peak, shoulder and off-peak times shown below. Our time-of-use pricing rewards customers for shifting usage to off-peak periods.



Residential & General consumer pricing - Lakeland

Residential: service based daily charges

Daily charges vary according to:

- **Capacity:** 8kVA or 15 kVA for residential connections
- **Low user:** Whether the customer qualifies as a residential Low User (less than 9000 kWh p.a.). Regulations limit the daily fixed charge to Low User.

Residential: seasonal usage charges

Usage (kWh) charges vary according to:

- **Season (summer/winter):** The seasonal energy price component for residential consumers provides a strong signal that the network reaches its highest demand levels in Winter.
- **Controlled load:** Controlled kWhs (eg, hot water) are priced lower than uncontrolled kWhs to reflect the cost savings that can be made by shifting load from busy network times to periods when the network is experiencing lower demand.

OtagoNet

General: service based daily charges

- **Capacity:** For General consumers connected to the Lakeland network there is a daily charge which varies according to the capacity of the connection.

General: demand charge

- **Control Period Demand:** General consumers connected to the Lakeland network face a Control Period Demand charge which is calculated annually based on network peak times .



Individually priced consumers

Pricing approach

Pricing for Individual customers on the Lakeland network is considered to be reasonably cost reflective. As a result, changes to the way in which prices are determined for these customers is not anticipated in the near future.

There are a number of consumers for which we calculate an individual connection-specific line charge. These connections are currently required to have half-hour or time-of-use meters, including kVA maximum demand registers. In most cases, these installations have contract capacities in excess of 100kVA.

We calculate the individual prices every year and apply them as a daily charge plus a Day usage charge. These prices are calculated based on four factors - the radial distance from the zone substation, the contract capacity of the installation and the number and size of transformers used to supply them. Specific measures used in the individual price calculations include:

- The Contract Capacity kVA (kW) of the installation
- Peak demand kVA (kW) (0700-1100 hours and 1700-2100 hours, each weekday during sub-transmission peak months of individual grid exit points)
- The Peak energy MWh. (0700-1100 hours and 1700-2100 hours, each weekday during sub-transmission peak months)
- The Winter Day energy MWh. (0700-2300 hours, May to September)
- The Summer Day energy MWh. (0700-2300 hours, October to April)
- The Total energy for the 12 month period MWh.

Evaluation of existing price structure

Due to their size, these consumers have a higher impact on the network design and operation and therefore their geographic location is taken into account when calculating their individual line charges. Customers who are supplied closer to zone substations and Grid Exit Points use less of the network; individual line charges can reflect this. This also provides a signal for future investment and through the correct pricing discourages network by-pass.

From 1 April 2023, we changed the way that we pass through transmission charges to reflect the new Transmission Pricing Methodology. Previously we had passed through most transmission charges through a coincident peak demand charge that applied during Transpower's 100 highest peaks for the lower.

The future recovery of the individual line charges is to progressively recover more of the costs through the fixed daily charge.

Our pricing reform progress

In our 2020 roadmap, we identified two key challenges: (a) how to improve time-of-day signals regarding peak times on the network that are likely to drive future investment; and (b) ensuring that recovery of costs that are not demand-driven do not distort usage.

We identified Phase 1 of pricing reform to be TOU implementation related to challenge (a) and a later Phase 2 to address challenge (b). Since then, we have made substantial progress by:

- Completing Phase 1 through implementing a TOU pricing structure for OtagoNet residential and general connections from 1 April 22.
- Entering Phase 2 through:
 - Rebalancing fixed and variable prices for residential customers in both the OtagoNet and Lakeland regions, so that a greater proportion of cost is recovered from fixed charges. Our ability to address this objective has been aided by the phase out of the LFC regulations over a 5-year period that commenced from 1 April 2022.
 - Changing the way that we pass through transmission charges, so that allocations to customer groups and individual customers are no longer based on regional coincident peak demand. OtagoNet has accordingly increased the proportion of revenue from individually-priced customers that is collected through a fixed charge, and has reduced variable charges.
- Identifying the next two phases of our pricing reform program

Pricing reform roadmap

Phase 1: Implement TOU pricing structure

Complete for OtagoNet

1. Consultation
2. Billing engine
3. TOU pricing model
4. Model consumer impacts
5. Communication with retailers and consumers
6. Address contractual and technical issues
7. Implementation - 1 April 2022

Phase 2: Rebalance fixed and variable charges

In progress: 2022 to 2027

1. Pass through of TPM pricing to individual customers - complete
2. Price rebalancing according to LFC phase-out - ongoing

Phase 3: Refine peak TOU signals

Upcoming: 2023 to 2025

1. Assess consumer response to peak TOU price signals
2. Use information on expected network congestion and investment to guide peak price levels

Phase 3: Pricing innovation to support decarbonisation

Upcoming: 2023 onwards

1. Develop EV pricing options
2. Examine more targeted price signals (if required)
3. Review capital contributions approach

Phase 1: Implement TOU pricing structure

Our Installed Capacity and completed implementation of Time of Use pricing for OJV residential and general consumers provides a structure for passing signals to consumers on the difference in economic costs by time of consumption.

This structure has the following benefits:

- ✓ Signals times during the day when the network is at peak loading and times when there is spare capacity in the network.
- ✓ Provides choice for customers on when and how much they pay for their electricity, by providing lower charges at shoulder and night times.
- ✓ Provides an incentive for load shifting out of peak times will help avoid or delay expensive network upgrades keeping the costs down for everyone.
- ✓ Is more easily understood by customers than other cost reflective pricing structures (such as demand charges).
- ✓ Is flexible to adapt to the changing electrification environment we are facing.
- ✓ With Installed Capacity and TOU we can adjust our cost recovery between fixed and variable charges to align to our expected costs and investments.

Phase 1: Implement TOU pricing structure

In the Lakeland region, seasonal pricing provides a strong signal that the network reaches its highest demand levels in Winter. The mass deployment of smart meters opens up opportunities to provide signals about what time of day peaks are most likely to occur, and there is potential to implement TOU pricing in the Lakeland region in future. To date, OJV's focus has been on the task of TOU implementation in the other areas of its network as part of PowerNet's broader initiative to apply TOU pricing to the GXP-billing networks that it manages. Lakeland is an ICP-billing network, which means that TOU implementation has different billing requirements, for example.

General consumers connected to the Lakeland network already face a cost-reflective pricing structure (capacity + demand charges). As a result, it is not anticipated that the pricing structure for these connections will be altered in the near future.

Phase 2: Rebalance fixed and variable charges

Our ongoing rebalancing of fixed and variable charges better reflect costs and will reduce distortions

- Our costs are largely fixed and use of the network outside of peak times has little effect on required investment. By shifting cost recovery from usage charges to fixed daily charges and introducing TOU pricing, customers will pay less to use electricity, particularly outside of peak periods.
- We have been rebalancing fixed and variable prices according to the phase-out of the LFC regulations and will continue to do so.
- The TPM has been revised to remove overly strong peak signals and recover a greater proportion of transmission grid costs through charges that are essentially fixed. We have changed the way that we allocate costs to customer groups and to Individually Priced customers. We have accordingly increased the proportion of transmission charges that are recovered through fixed charges from Individually Priced customers.

Phase 3: Refine peak price signals

We will refine peak charges to better reflect the level of congestion and consumer response

- As TOU beds-in on the OJV network, we will observe the extent to which these signals are visible to consumers (whether TOU is passed through to retailers), and to what extent consumers choose to respond. This will inform our assessment of how strong peak signals should be.
- We will also further examine optimal peak pricing levels, informed by the level of congestion and the extent of planned investment to address forecast demand growth. This could include, for example, developing Long-Run Marginal Cost estimates to inform pricing.

Phase 4: Innovative pricing

Examine other pricing mechanisms that could be offered to support decarbonisation loads

EV pricing options

EV uptake is currently low in OtagoNet's network regions but will accelerate. EVs have the potential to have large impacts on network demand with sufficient adoption, triggering greater investment. This effect will be greatest on the suburban low-voltage (LV) network in built-up urban and semi-urban areas. The upstream medium voltage (MV) network generally has sufficient capacity to allow for the forecast increases in load from EVs.

TOU pricing provides one way to encourage EV users to charge during off-peak periods. To complement TOU and Installed capacity pricing, an additional pricing option for EV users could be a controlled load connection. Similar to hot water load control, customers would pay a lower charge for a connection that has reduced availability during peak periods. This could be more efficient than TOU because it would only suppress demand when the network is congestion.

More targeted pricing signals

Other innovative pricing or rebate structures could be explored as add-ons to the existing pricing structure to provide more locationally-specific signals of congestion, if required in future.

Phase 4: Innovative pricing

Examine other pricing mechanisms that could be offered to support decarbonisation loads

Review capital contributions approach

We expect to conduct a review of OJV's capital contributions methodology within the next 2 years.

We assess First Move Disadvantage (FMD) issues on a case-by-case basis but expect to review our approach as part of our capital contributions methodology review.

About OtagoNet JV

OJV owns the electricity distribution network in the lower south-eastern part of the South Island (the Otago Region) and a small network in the Frankton area of Queenstown (the Lakeland network).

The Otago area covers 14,000 square kilometres and stretches from Owaka in the south through to Shag Point in the north and Lawrence in the west but excludes Dunedin city, Mosgiel and Port Chalmers. Through the 4,400 kilometres of lines, the Otago network delivers electricity to approximately 15,500 homes and businesses and has the lowest density (customers per kilometre of line) of any electricity network in New Zealand.

The Lakeland Region is a rapidly growing network in the Frankton area of Queenstown. The network consists of around 20 kilometres of underground cable supplying a mix of approximately 4,200 commercial and residential customers. Lakeland is supplied by the Transpower Frankton GXP and has one 23 MW zone substation.

Large consumers within OJV's network area include sheep, beef and dairy farming, extensive meat and dairy processing, forestry and timber processing and gold mining. Most of the large and small towns in the service area are rural service towns, except for Frankton which is a tourism service town.

OJV contracts PowerNet Limited to manage the network assets of OJV in accordance with a Network Management Agreement. PowerNet is an incorporated joint venture owned by TPCL and EIL. The Network Management arrangement allows OJV to achieve cost efficiencies, as a number of overheads can be shared across the networks managed by PowerNet (TPCL, EIL, OJV and ESL). This arrangement also enables alignment in pricing strategy across these networks.

