



Eastland
Network

Pricing Methodology

For the year commencing 1 April 2022



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1. Introduction

Eastland Network operates the electricity distribution network for Gisborne and Wairoa regions, delivering electricity to approximately 25,700 homes and businesses.

In addition to maintaining the distribution network (the poles, wires and underground cabling), since 2015, we also own and operate the region's high voltage electricity transmission network, which are the 110kV steel pylons and poles. These assets now form part of our subtransmission system and connect our region to the national grid operated by Transpower.

Other than Gisborne and Wairoa, Eastland Network supplies a remotely populated region of the East Coast of the North Island, a combined land area of 11,952km². As a result, Eastland's consumer density is amongst the lowest in New Zealand. Low density networks typically require a higher level of assets per consumer than would be the case in higher density networks.

Eastland Network also supplies one of the lowest social-economic regions, which means that consumers ability to pay high electricity prices is limited. At the same time, Eastland's consumers face one of the highest retail electricity prices in New Zealand.

The average consumption by Eastland Network consumers is amongst the lowest in the country, reflecting the low socio-economic circumstances for consumers, and the absence of a large industrial consumer base. Large industrial consumers typically carry a large proportion of subtransmission costs, hence in our case, the burden of subtransmission assets falls on small commercial and domestic consumers.

Given these factors, historically Eastland Network has sought to minimise its investment in subtransmission assets that provide redundancy (i.e. network security); rather, we have provided subtransmission security through lower cost generation alternatives. The consequence of this practice has been that Eastland has maintained reasonable line charges a per consumer basis despite its very low customer density.

This document sets out Eastland Network Limited's (Eastland) pricing methodology for the line charges in effect from 1 April 2022. This document aims to provide an understanding of how Eastland's prices are determined.

Each year Eastland is required to publish a pricing methodology that complies with the Electricity Distribution Information Disclosure Determination 2012.

Prices are set to recover the economic costs of owning and operating the Electricity Distribution Network that conveys electricity throughout the Gisborne and Wairoa districts. The economic costs include the recovery of the costs of operation plus an appropriate regulated return on investment (cost of capital). Eastland also aims to develop economically efficient pricing to ensure that Eastland is able to invest in its network over time at an appropriate level and also so that consumers are able to consider the value they receive when considering alternatives.



2. Pricing Strategy

Eastland Network's pricing strategy is cost reflective pricing supporting transition to a net zero-carbon economy. Our pricing will look to balance cost reflectivity with other factors such as socio-economic situation in Te Tairāwhiti and reflecting the varying quality of service across our network. Our pricing should encourage electrification of transport, development of energy storage and Distributed Energy Resources (DER) and electrification of industrial processes. While this strategy is consistent with prior years, our execution of it has evolved and developed as demonstrated through the implementation of first stage of Pricing Reform in 2021.

As part of our journey to adopt increasingly cost reflective pricing, we have introduced a new 'Time of Use' pricing structure effective from 1 April 2021. This pricing structure has rolled out mandatory Time of Use (TOU) pricing across mass market and low capacity commercial customers with consistently communicating smart meters. TOU tariffs introduce higher prices during peak times of the day when the network is more congested, and lower rates during off peak times when there is plenty of capacity in the network. This indicates to consumers that consuming electricity off peak may reduce or delay investments into network assets and shares this benefit with consumers who consume off peak.

In selecting Time of Use pricing, we considered several pricing options, 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 electric vehicles (EV), better ensuring all consumers contribute fairly to fixed and peak costs, giving consumers the ability to manage their bill (where Retailers pass through directly and transparently), being simple for consumers to understand, managing our revenue risk and finally the electricity market readiness. After years of planning, research and consultations we established that TOU is the most appropriate option right now.

While current TOU pricing offers consumers the ability to reduce their electricity bill by shifting some electricity use from peak to off-peak times as well as encouraging take-up of new technology, we recognise that TOU pricing is only a stepping stone to a more cost reflective pricing model. Eastland Network will observe the wider electricity arena and the Electricity Authority and Electricity Network Association guidance and be prepared to implement more cost reflective pricing, e.g. demand or capacity based. It is unlikely that demand based or capacity based pricing for mass market will be considered by many networks in New Zealand in the next 5 years.

As part of our pricing strategy, Eastland Network will relook at density based pricing. We removed density based pricing in 2020 to reflect the fact that areas with lower densities, while having higher cost per connection, experience significantly higher outage time due to their remoteness. We will continue developing cost reflective pricing that will take into consideration both connection density and quality of service.

Electricity Authority has announced a 5-year plan to phase out Low Fixed Charge (LFC) regulation. As a result, we have increase fixed charge for our low user domestic customers from 15c to 30c from 1 April 2022. Our intention is to remove Low user domestic tariff once the 5-year phase out window elapses.

As the majority of our costs are fixed in nature (more than 90%), meaning that they do not vary based on how much electricity our consumers use, we will continue moving towards higher proportion of distribution charges being fixed. As we still would like to keep the ability to send TOU price signal, we currently deem 70-80% fixed as a reasonable target.



With a high take up of roof solar panels on our network (circa 20% annual increase), there is an increase of cross-subsidy from connections without solar generation. Even though variable charge based on kW rating of solar panel installed seems like a solution to this cross-subsidy problem, it is widely believed in the industry that such charge would result in undesirable reduction in solar panel installations. As we increase proportion of fixed charges and as low fixed charge is phased out, this cross-subsidy issue will reduce and so will the need for PV panel variable charges. We will continue to review this area and look for alignment with other EDBs.

In order to prepare for electrification of transport in Te Tairāwhiti, we are looking to recommend Controlled tariff to be the main tariff used by EV users, i.e. all EV chargers should be on ripple relays (to be driven by Connection Standards and keeping Controlled tariff the cheapest option available).

Following implementation of SAP as our ERP, we are now looking to complete a review of our cost of supply model in 2022 and specifically look at value of assets by feeder and by region, maintenance costs by assets, by feeder and by region, review of overhead cost allocation, review of transmission cost allocation.

As new Transpower's pricing methodology comes into effect from 1 April 2023, Eastland Network will review transmission costs allocation.

2.1 Roadmap

Eastland Network pricing roadmap focused over the past 5 years on implementing a first stage of the Pricing Reform. Time of Use pricing reform was implemented for mass market effective from 1 April 2021.

New strategy roadmap focuses on fine tuning the newly implemented pricing structure, increasing cost reflectivity and keeping moving network pricing in the direction as set out in our strategy statement.



Strategy Roadmap - 5 year plan

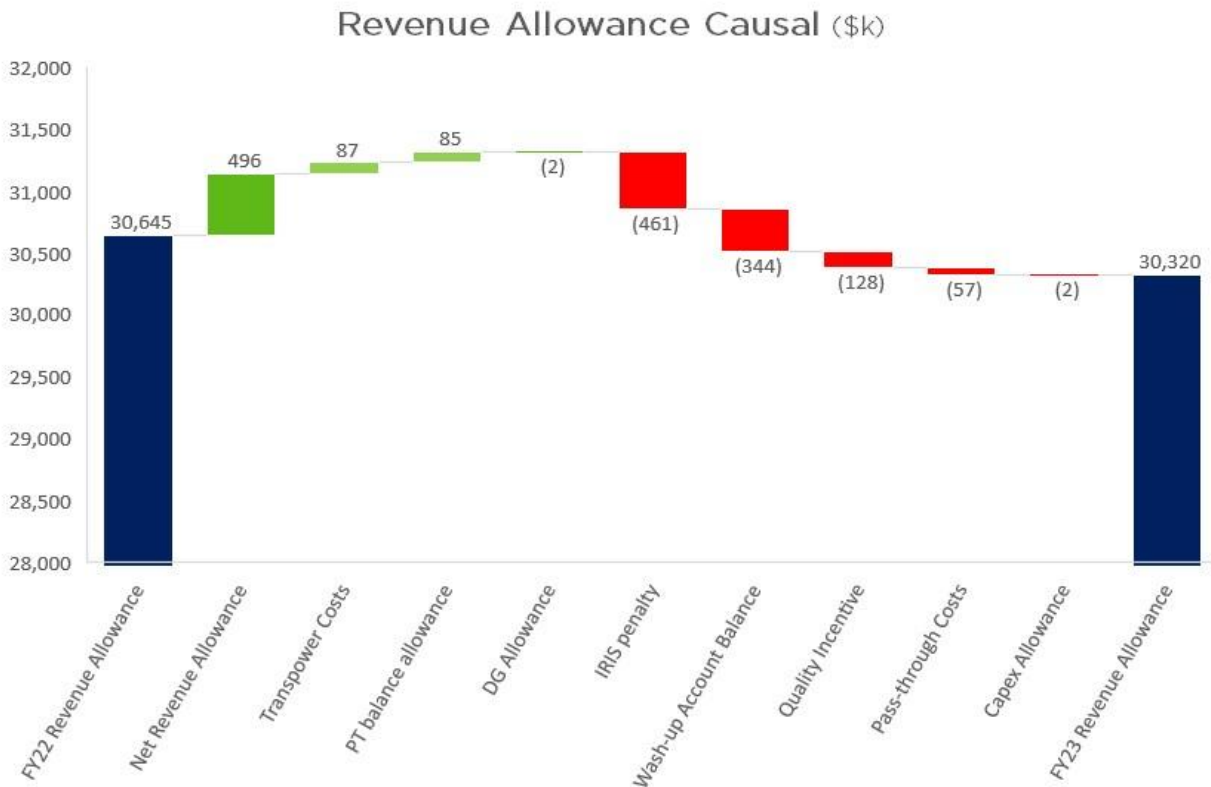
Activity	Objective	Timing
1 Time of Use Pricing Reform implementaion	To introduce Time of Use pricing structure for mass market and low capacity commercial connections.	Completed 2021
2 Post Pricing Reform implementaion review	Review desired outcomes of newly implemented TOU pricing structure. Review of peak and off-peak differentials. Review of periods. Review of structure.	Completed 2021 – 2022
3 Review Cost of Supply Model	Review value of assets and cost of maintenance by region and allocation per tariff category. Review tariff categories and review allocation of overheads, pass-through and recoverable costs, e.g. transmission costs.	2022 – 2023
4 Solar generation cross subsidy review	To review the cross-subsidy problem between connections with and without solar generation. Review pricing of other EDBs for national alignment.	2022 – 2023
5 Implement quality of service and connection density into pricing model	Eastland Network removed density based pricing in 2020 based on a rationale that lower density areas while having higher cost per connection receive materially different level of service. We will look to include this into the model, which may see re-introduction of density based pricing with a quality level overlay.	2023 – 2024
6 Increase fixed proportion of prices	Continue moving towards higher proportion of distribution charges being fixed. Currently 70-80% fixed seems as an appropriate target.	2022 – 2026
7 Transition of Low Fixed Charge customers to higher fixed charge	Phase out low fixed charge as per LFC regulation 2021 amendment. Removal of LFC tariff after 5 year LFC phase out window.	2022 – 2026
8 EV and battery tariff	To investigate and implement tariff to incentivise network control over EV chargers and home battery systems.	2023 – 2027

3. Target Revenue

Target Revenue is calculated as a sum of Forecast Net Allowable revenue, Forecast Pass-through Cost, Forecast Recoverable Costs, Prior period wash up and Pass-through balance allowance. The table below shows the components of Revenue Allowance for Eastland Network for the 2022/23 pricing year. Despite increases in price path allowances for revenue (+2%), Network costs for 2022/23 are forecast to decrease due to IRIS and quality adjustments and prior period wash-up adjustment, resulting in the Forecast Allowable Revenue to reduce by 1.1% year on year.

Table 1: Revenue Allowance

Revenue Allowance (\$000)	FY22 DPP3 P2	FY23 DPP3 P3	Delta %
Forecast Allowable Revenue	30,645	30,320	-1.1%
Forecast Net Allowable Revenue	24,497	24,993	+2.0%
Forecast Pass-through and Recoverable Costs	6,234	5,670	-9.0%
Pass-through Balance Allowance	(85)		
Wash-up adjustment		(344)	



3.1 Pass through and Recoverable costs

Pass through and recoverable costs are costs that are permitted under the DPP regulations to be passed through directly to consumers.

3.1.1 Pass-through costs

Pass-through costs are defined under clause 3.1.2 of the Electricity Distribution Services Input Methodologies Determination 2012 (Input Methodologies). These are costs that outside the control of Eastland Network and are associated with the supply of electricity distribution services. These costs include

- rates on system fixed assets payable to a local authority;
- levies payable
 - under section 53ZE of the Commerce Act 1986;
 - under regulations made under the Electricity Industry Act 2010; and
 - by all members of the Electricity and Gas Complaints Commissioner Scheme.
- Ministry of Business, Innovation and Employment levies and Electricity & Gas Complaints Commission levies.



Table 2: Pass-through Costs

Pass-through Costs (\$000)	FY22 DPP3 P2	FY23 DPP3 P3	Delta %
Forecast Pass-through Costs	473	416	-12%
Rates on Network Assets	346	280	-19%
MBIE & EA Levies	127	136	+6.9%

3.1.2 Recoverable costs

Recoverable costs are defined under clause 3.1.3 of the Electricity Distribution Services Input Methodology Determination 2012.

There are a number of costs specified in the Input Methodologies. Those applicable to the prices for Eastland for the 2022/23 year are:

Table 3: Recoverable Costs

Recoverable Costs (\$000)	FY22 DPP3 P2	FY23 DPP3 P3	Delta %
Forecast Recoverable Costs	5,760	5,255	-8.8%
Transpower Interconnection charge	5,242	5,321	+1.5%
Transpower Connection Charge	253	261	+3.2%
Transpower New Investment Charge	75	75	-
Distributed Generation Allowances	405	402	-0.7%
FENZ Levies	31	31	-
IRIS	(280)	(741)	+165%
Quality Incentive Allowance	112	(17)	-115%
Capex allowance	(77)	(79)	+3%

3.1.2.1 Transpower Charges

Transpower charges are comprised of three charges, connection charges, interconnection charges and customer investment contract charges.

Connection charges are an annual amount based on the connection assets used by Eastland at the point of connection to the transmission grid. Eastland's point of connection is the Tuai GXP.

Interconnection charges are a fixed rate per unit (kW) of network demand during any of the Transpower regional co-incident peak demand (RCPD) periods. RCPD periods are the 100 highest half hourly coincident peaks for any one of the four transmission regions. These peaks are measured over a 12 month period from September to August. The interconnection rate is multiplied by the kilowatt demand during each of the 100 RCPD periods in the previous year. The Transpower interconnection rate for the 2022/23 year is \$96.89/kW (2021/22 - \$98.07/kW).

The customer investment contract charges relate to metering assets that were installed as part of the acquisition of assets by Eastland Network from Transpower on 31 March 2015.



3.1.2.2 Distributed Generation Allowance

Distributed generation is electricity generation that is connected to a distribution network. A distributed generation allowance is defined in the Electricity Distribution Services Input Methodologies Determination 2012 as

“any positive allowance for costs incurred and amounts payable, or negative allowance for amounts receivable, in relation to avoided transmission charges arising from distributed generation ...”

The regulations set out in the Electricity Distribution Services Default Price-Quality Path Determination 2020, allow a distribution company to recover the costs of avoided transmission from its consumers and/or electricity retailers via line charges.

Any distributed generation allowance made must be paid in accordance with the Pricing Principles in Schedule 6.4 of The Electricity Industry Participation Code 2010. Clause 2 of this schedule states that charges to Distributed Generators are

“... to be based on recovery of reasonable costs incurred by a distributor to connect the distributed generator ... and must include consideration of any identifiable avoided or avoidable costs”

Accordingly, where a generator provides an alternative to Transpower’s transmission services, the benefit of avoided transmission charges will be passed through to the generator. The value of such benefit is based on the assessed impact that these alternatives have had on GXP load profiles both in terms of demand and kWhs and will be calculated in a similar method to Transpower’s transmission pricing methodology. The connection of generators to Eastland’s network, and the charge/rebates applicable are subject to Eastland review on a case-by-case basis.

The maximum potential for reduction in Transpower charges is dependent on operating assets in co-ordination with Eastland’s load management and any other party’s capability. The level of risk sharing between providers will be subject to contracted terms between parties.

It should be noted that the generator can equally be Eastland, a retailer, or other independent party, however, the capacity requirement is capped at Eastland determined targets. Where there is a choice of alternatives, preference will be given to the least cost solution to Eastland on offer at the time of commitment. As with Transpower new investment agreements, the commitment will be locked in for an agreed period and not subject to optimisation.

Avoided Interconnection Charges

Investment that reduces the regional co-incident peak demand at a GXP will be recognised as a reduction in Transpower interconnection charges provided that solution is transmitting electricity during an RCPD period. The avoided cost of interconnection charge is calculated as the reduction in Eastland’s RCPD due to the contribution from Distributed Generation. The kW’s produced during an RCPD period is multiplied by the current Transpower Interconnection rate. The Interconnection rate for the 2022/23 year is \$96.89/kW.

Avoided Connection Costs

A generator that increases the capacity of the distribution network may be recognised as an alternative to a Transpower upgrade of connection assets. There will be a benefit to consumers over the Transpower solution if that capacity can be delivered on a more economically-efficient basis.



The avoided cost of connection charge is the total amount of connection charges that have been avoided due to the presence of Distributed Generation on Eastland Network's network. Connection charges may be avoided either by:

- Avoiding a new transmission connection asset; or
- Avoiding an existing transmission connection asset.

The amount of avoided connection charge is calculated based on the value of new transmission connection asset projects and/or existing transmission connection assets that have been avoided. The value of new transmission connection projects is converted to an avoided connection charge using Transpower's current pricing methodology for connection assets. The value of existing connection assets that are avoided is calculated based on the most recent connection charge (for the assets avoided) inflated to current costs. Avoided charges payable to the generator are capped so that the generator earns no more than their weighted average cost of capital on invested assets.

3.1.2.3 Fire and Emergency New Zealand Levies (FENZ)

Fire and Emergency New Zealand Levies are a new recoverable cost introduced in the amendments to the Input Methodologies in 2019.

3.1.2.4 Incremental Rolling Incentive Scheme (IRIS)

The IRIS scheme provides incentives for EDBs to control costs. Where expenditure deviates from the Commerce Commission forecasts, penalties or rewards are imposed. For the 5 year period from 1 April 2015, Eastland operating expenditure was above the Commission's forecasts, consequently, penalties of \$741k have been imposed for the 2022/23 pricing year. This amount has been deducted from allowable revenue calculations for the 2022/23 pricing year. This penalty is \$461K higher than in the pricing year 2021/22.

3.1.2.5 Quality Incentive Allowance

The Quality Incentive Allowance is an incentive scheme that rewards or penalises those electricity distribution businesses that over or under achieve against set quality targets.

During the 2020/21 year, Eastland's assessed quality results fell within the limits set by the Commerce Commission but exceeded its quality targets. This means that under the quality incentive scheme allowable revenue is decreased by \$17k for the 2022/23 pricing year.

3.2 Network Maintenance, System Operations & Network Support, Business Support, Depreciation and Taxation

The revenue requirement components including, network maintenance, system operations & network support, business support, depreciation and taxation are based on budgeted regulatory costs for the 2022/23 period.

3.3 Return on Investment

Return on investment revenue provides a return on investment to network owners and is determined as the product of regulated asset value at the beginning of the financial year plus regulated deferred tax and the weighted average cost of capital (WACC).

$$ROI = (RAB + RDT) \times WACC$$

Where -

ROI - Return on Investment

RAB - Regulated Asset Base at the beginning of the pricing year



RDT - Regulated Deferred Tax as calculated in accordance with the clause 2.3.7 of the Input Methodology Determination 2012.

WACC - Weighted Average Cost of Capital

The weighted average cost of capital for the 2020 - 2025 pricing years has been determined by the Commerce Commission as 4.23%¹, however, the price path threshold creates a cap on this return and the actual return on investment may vary from this.

¹ 67th percentile estimate of post-tax WACC - *Electricity Distribution Services Default Price-Quality Path Determination 2020 [2019] NZCC 21*;



4. Pricing Changes

Eastland Network - Price Changes FY23 vs FY22					
Price Tariff	Consumer Group	Charge Type	Apr-22	Apr-21	Delta %
DOMLFC	Domestic Low User	Fixed Daily Charge	0.3000	0.1500	+100%
		Consumption Uncontrolled	0.1237	0.1442	-14%
		Consumption Controlled	0.1050	0.0759	+38%
		Peak	0.1770	0.2074	-15%
		Off Peak+Night	0.0957	0.1157	-17%
DOMSTD	Domestic Standard	Fixed Daily Charge	2.0000	1.9576	+2.2%
		Consumption Uncontrolled	0.0469	0.0528	-11%
		Consumption Controlled	0.0260	0.0294	-12%
		Peak	0.0778	0.0897	-13%
		Off Peak+Night	0.0309	0.0359	-14%
COM0050	Commercial (<50kVA)	Fixed Daily Charge	2.3000	2.2019	+4.5%
		Consumption Uncontrolled	0.0400	0.0474	-16%
		Consumption Controlled	0.0241	0.0284	-15%
		Peak	0.0674	0.0807	-16%
		Off Peak+Night	0.0270	0.0323	-16%
COM0100	Commercial (50 to 100kVA)	Fixed Daily Charge	8.3500	7.7684	+7.5%
		Consumption Uncontrolled	0.0524	0.0643	-19%
		Consumption Controlled	0.0345	0.0423	-18%
		Peak	0.0931	0.1141	-18%
		Off Peak+Night	0.0373	0.0457	-18%
COM0300	Commercial (101-300kVA)	Fixed Daily Charge	16.0000	15.6289	+2.4%
		Consumption Uncontrolled	0.0414	0.0507	-18%
		Consumption Evening Peak	0.0375	0.0460	-18%
		Consumption Morning Peak	0.0350	0.0429	-18%
		Consumption Off Peak	0.0278	0.0340	-18%
		Consumption Night	0.0154	0.0188	-18%
COM0500	Commercial (301-500kVA)	Fixed Daily Charge	32.0000	29.3636	+9.0%
		Consumption Evening Peak	0.0375	0.0460	-18%
		Consumption Morning Peak	0.0350	0.0429	-18%
		Consumption Off Peak	0.0278	0.0340	-18%
		Consumption Night	0.0154	0.0188	-18%
COM1000	Commercial (501-1000kVA)	Fixed Daily Charge	50.0000	45.4660	+10%
		Consumption Evening Peak	0.0375	0.0460	-18%
		Consumption Morning Peak	0.0350	0.0429	-18%
		Consumption Off Peak	0.0278	0.0340	-18%
		Consumption Night	0.0154	0.0188	-18%
COM4500	Commercial (1001-4500kVA)	Fixed Daily Charge	140.0000	113.6647	+23%
		Consumption Evening Peak	0.0366	0.0449	-18%
		Consumption Morning Peak	0.0343	0.0420	-18%
		Consumption Off Peak	0.0274	0.0335	-18%
		Consumption Night	0.0150	0.0184	-18%
COM6500	Commercial (4501-6500kVA)	Fixed Daily Charge	200.0000	172.9834	+16%
		Consumption Evening Peak	0.0366	0.0449	-18%
		Consumption Morning Peak	0.0343	0.0419	-18%
		Consumption Off Peak	0.0274	0.0335	-18%
		Consumption Night	0.0150	0.0184	-18%
GEN0500	Generation (301 to 500kVA)	Fixed Daily Charge	20.2074	20.2074	-
GEN1000	Generation (501 to 1000kVA)	Fixed Daily Charge	30.4809	30.4809	-
GEN4500	Generation (1001 to 4500kVA)	Fixed Daily Charge	76.6858	77.4477	-1.0%
GEN6500	Generation (4501 to 6500kVA)	Fixed Daily Charge	104.9645	106.0789	-1.1%
	Consumption Uncontrolled	0.0309	0.0382	-19%	
DUML	Distributed Unmetered	Fixed Daily Charge/fixture	0.0608	0.0609	-0.2%
		Consumption Uncontrolled	0.0729	0.0872	-16%
STLGM	Street lights metered	Fixed Daily Charge/fixture	0.0665	0.0620	+7.3%
		Consumption Uncontrolled	0.0729	0.0872	-16%
OTH0003	Low Capacity (<3kVA)	Fixed Daily Charge	0.4918	0.4741	+3.7%
		Consumption Uncontrolled	0.1042	0.1276	-18%



4.1 Domestic Customer Price Changes

Domestic – Low user (<8,000kWh)

The government is phasing out low fixed electricity pricing plans across New Zealand, starting from 1 April 2022. The change was a key recommendation of a 2019 independent panel review of electricity prices.

The review found low fixed charge regulations were poorly targeted and resulted in a number of unintended consequences, such as shifting costs to households with low incomes and high electricity use.

The change means that the electricity sector can implement fairer pricing plans for distributing electricity, which will ultimately help networks manage the load more efficiently during peak times.

The changes to the regulations resulted in the fixed charge increasing from 15c to 30c. However, due to the reduction in the network forecast allowable revenue and increases in kWh consumption, we could reduce the variable rates and thus reducing the price shock to this consumer group.

DOMLFC	kWh	New	Old	Delta
Min	2,000	\$346	\$305	+13.6%
Average	5,200	\$726	\$705	+2.9%
Max	8,000	\$1,057	\$1,055	+0.2%

Originally communicated prices in February 2022 changed in late April due to a different interpretation of Electricity (Low Fixed Charge Tariff Option for Domestic Consumers) Regulations 2004 by Eastland Network from the Electricity Authority. We changed our prices to be aligned with the Authority's interpretation. While this has not changed an average person's annual bill, it has lowered the uncontrolled, peak and off-peak tariffs by 9% and increased the controlled tariff by 45% to achieve compliance with the regulation.

An average low user domestic consumer (5,200kWh) will see their network charges go up by 2.9% or \$21 per annum. While the average increase for a LFC customer is only 2.9%, the 900 customers that consume around 2000kWh will see charges go up by 14% or \$41 pa.

We believe this is unavoidable but would note that many of these LFC customers are not those suffering from energy poverty.

TOU pricing (as introduced 1 April 2021) means that a customer can see a variance to the above average reduction based on when they consume electricity and whether their current retailer passes distribution charges directly through to the customer (most retailers still aggregate their distribution charges).

Prices for peak and off-peak were set so that a consumer with standard electricity consumption profile (based on Eastland network profile) will pay the same as a customer on an anytime rate. Whether customer is on a flat rate or TOU rates depends whether they have a smart meter installed (circa 71% ICPs do) and if the retailer can access reliably the HH data (about 5% smart meters is expected to be exempt).

A standard customer uses 35% of electricity during peak periods on a weekly basis. A customer can save on network charges (based on standard profile and average consumption) by shifting a discretionary load to off-peak periods during weekdays or to the weekend (depending on their retailer plan).

Conversely, a peaky consumer (i.e. consumer who consumes more electricity during peaks than the average customer) may see a higher increase on their annual bill.



Domestic - Standard users (>8,000kWh)

Prices for higher user domestic tariff or non-residential consumers (e.g. holiday homes) were set in a way to achieve 8,000kWh pivot point, while maintaining cost reflective fixed charge.

Due to increases in kWh consumption of domestic customers and lower need for low user cross-subsidy as a result of LFC regulation changes, prices have decreased for an average high consuming customer (9,300kWh) by -2.9% (\$33 per annum). Holiday homes with lower consumption (2,000kWh) will see a nominal increase of 0.6% (\$5 per annum) increase on their distribution charges. Given that holiday homes consume electricity often during off-peak periods, charges to the retailer will likely be lower than those shown in table below.

In alignment with our Pricing strategy, Eastland Network has further increased fixed charges (+2.2%), while more than offsetting this by reducing variable charges by circa 12%. This is to increase the proportion of fixed charges to reflect the fact that most network costs are fixed.

Residential customers with consumption over 8,000kWh will benefit from switching to Domestic standard user tariff (DOMSTD) as they will benefit from lower variable charges. Should consumption exceed 20,000kWh, such consumers would be switched to low capacity commercial tariff (COM0050) to benefit from even lower variable rates.

DOMSTD	kWh	New	Old	Delta
Min	2,000	\$812	\$807	+0.6%
Pivot point	8,000	\$1,058	\$1,085	-2.4%
Average	9,300	\$1,112	\$1,145	-2.9%
Max	20,000	\$1,551	\$1,639	-5.4%

4.2 Commercial Customer Price Changes

Fixed charges increased for all commercial and industrial connections increased between 2-23%, while variable rates decreased by circa 18%. As with domestic tariff changes, this increase in fixed charges is done in alignment with Eastland Pricing strategy and the variable charges reduction is mostly a result of reduced cross-subsidisation due to LFC regulation change and increase in energy consumption by the commercial and industrial sector.

Commercial (<50kVA)

COM0050	kWh	New	Old	Delta
Min	2,000	\$911	\$888	+2.6%
Average	7,800	\$1,117	\$1,132	-1.3%
Pivot point	20,000	\$1,550	\$1,645	-5.8%
Max	50,000	\$2,617	\$2,908	-10.0%

The low capacity commercial tariff COM0050 was introduced in 2021 to make a clear distinction between small businesses and domestic connections in our pricing structure.

COM0050 has 15% fixed charge than standard commercial tariff to reflect the higher cost associated with the higher capacity electricity distribution equipment. There has been a 4.5% increase in the fixed charge year on year in alignment with Eastland Network pricing strategy to increase proportion over revenues from fixed charges. This was more than offset by 16% reduction in variable rates resulting in an average charge reduction of 1.3%. Higher consuming connection will see a higher benefit of 2022-23 price changes, while low consuming ICPs (2000kWh) will see an increase in distribution charges.



Home businesses that would qualify for domestic tariff (DOMSTD) will benefit from COM0050 tariff once consumption exceeds 20,000kWh.

An average low capacity commercial customer (7,800kWh) will see \$15 decrease on their annual distribution charges.

Commercial (50 to 100kVA)

COM0100	kWh	New	Old	Delta
Min	20,000	\$4,096	\$4,121	-0.6%
Average	61,000	\$6,244	\$6,758	-7.6%
Max	300,000	\$18,768	\$22,125	-15.2%

Prices for commercial and industrial connections with capacity between 50 and 100kVA will go down on average -7.6% and an average connection (61,000kWh) will see \$514 decrease on their annual distribution charges.

Fixed charges increased 7.5%, while variable rates decreased 18%.

Commercial (101-300kVA)

COM0300	kWh	New	Old	Delta
Min	30,000	\$6,294	\$6,261	+0.5%
Average	200,000	\$8,867	\$9,411	-5.8%
Max	600,000	\$14,922	\$16,825	-11.3%

Prices for commercial and industrial connections with capacity between 101 and 300kVA will go down on average -5.8% and an average connection (200,000kWh) will see \$544 decrease on their annual distribution charges.

Fixed charges increased 2.4%, while variable rates decreased 18%.

Commercial (301-500kVA)

COM0500	kWh	New	Old	Delta
Min	30,000	\$12,501	\$11,723	+6.6%
Average	450,000	\$23,996	\$25,796	-7.0%
Max	1,400,000	\$49,996	\$57,628	-13.2%

Prices for commercial and industrial connections with capacity between 301 and 500kVA will go down on average -7.0% and an average connection (450,000kWh) will see \$1800 decrease on their annual distribution charges.

Fixed charges increased 9%, while variable rates decreased 18%.

Commercial (501-1000kVA)



COM1000	kWh	New	Old	Delta
Min	300,000	\$26,462	\$26,649	-0.7%
Average	1,230,000	\$51,919	\$57,815	-10.2%
Ovation	4,000,000	\$127,743	\$150,645	-15.2%

Prices for commercial and industrial connections with capacity between 501 and 1000kVA will go down on average -10.2% and an average connection (1,230,000kWh) will see \$5896 decrease on their annual distribution charges.

Fixed charges increased 10%, while variable rates decreased 18%.

Industrial (1001-4500kVA)

COM4500	kWh	New	Old	Delta
Connection 1	2,500,000	\$118,076	\$123,521	-4.4%
Connection 2	10,000,000	\$319,005	\$369,622	-13.7%
Connection 3	14,000,000	\$426,168	\$500,875	-14.9%

Network charges for industrial customers under tariff category COM4500 tariff will go down by circa 4% to 15%.

Fixed charge increased by 23%, while variable rates decreased 18%.

Industrial (4501-6500kVA)

COM6500	kWh	New	Old	Delta
Connection 4	6,420,125	\$249,558	\$279,150	-10.6%

The commercial customer on COM6500 tariff will see their network charges go down by 10.6% year on year.

Fixed charge increased by 16%, while variable rates decreased 18%.

Generation (4501 to 6500kVA) - Waihi

GEN	kWh	New	Old	Delta
Matawai		27,990	28,268	-1.0%
Waihi	120,000	42,020	43,303	-3.0%

The distribution charges for hydro schemes Waihi and Matawai reduced slightly, mostly due to change in LFC regulation and reduced cross-subsidy to the domestic market.

Metered Streetlights and Unmetered Load

DUML	kWh	New	Old	Delta
Total	1,541,712	227,146	249,381	-9%
STLGM	kWh	New	Old	Delta
Total	47,939	6,844	7,303	-6%



Streetlights and unmetered load tariffs will see charges drop by 6-9% mostly due to reduction in variable charge. This is mostly due to reduced need for cross-subsidy to domestic low users as LFC regulation is being phased out.

5. Consumer Groups

Consumers are grouped according to their assessed capacity requirements. Using their installed fuse rating or transformer capacities, where transformers are dedicated to supply of an individual consumer, recognises that as consumer capacity requirement increases; the value of assets employed to supply consumers also increases.

Eastland separates consumers into domestic consumers, commercial consumers and other (low capacity 3kVA, unmetered load and streetlights).

An installation only qualifies for the domestic Low Fixed Charge (LFC) tariff DOMLFC tariff if it satisfies the following:

- It is the consumer's primary and permanent place of residence. Thereby excludes: Holiday homes, shearers' quarters, separately connected outbuildings, premises that constitute any part of premises described in the Residential Tenancies Act 1986.
- No other person permanently residing in these premises is claiming primary domestic residence at another site whether on Eastland Network's distribution system or elsewhere in New Zealand.
- The connection does not supply electricity for any Non-Domestic, Business, or Commercial activity. Therefore, metering and electricity consumption must be for Domestic reasons only (i.e. mixed end use of electricity reverts to Non-Domestic supply).
- Does not exceed the following current limits:

1 Phase	Up to 62 amps
2 Phase	Up 42 amps per phase
3 Phase	Up to 32 amps per phase
- Annual consumption is less than 8,000kwh per annum.

For the avoidance of doubt, a person cannot have multiple primary places of residence eligible for the Electricity (Low Fixed Charge Option for Domestic Consumers) Regulations 2004.²

All consumers wishing to change from a standard to the LFC tariff will be required to make a declaration and provide supporting documentation such as appearing on the local electoral roll.

Eastland Network applies Time of Use tariffs to all consumers who have a reliably communicating smart meter. These TOU tariffs enable consumer to manage their loads more effectively and take advantage of a cheaper off-peak tariff.

² See Eastland Network Ltd Tariff definitions, terms and conditions of supply attached to the 2022/23 schedule of prices.



6. Cost Allocation

The Eastland Network cost of supply model is used to determine the revenue requirement by consumer group that is necessary to efficiently allocate costs and reflect the actual cost of its services.

Allocators

Eastland Network's cost of supply model (COSM) contains the following input assumptions and statistics for the purpose of cost allocation. Eastland Network used the following statistics to allocate costs to consumer groups. This data was updated for the 2022/23 year.

Table 4: Cost Allocators

Cost Allocation				
Price Category	ICP Count	Consumption kWh	Capacity incl DG Installed kVA	Average RCPD Contribution
DOMLFC	13,300	70,305,591	399,000	657,314
DOMSTD	7,025	61,784,630	210,750	210,611
COM0050	4,596	39,523,204	229,800	217,406
COM0100	432	26,201,635	43,200	3,064
COM6500	1	6,420,125	6,500	121
COM4500	3	24,288,544	13,500	179
COM0300	112	22,410,441	33,600	450
COM0500	21	9,488,553	10,500	193
COM1000	24	29,557,513	24,000	450
OTH0003	82	208,908	246	5
DUML	174	1,541,712	2,682	56
STLGM	32	47,939	459	10
GEN1000	0	-	6,000	
GEN4500	1	-	4,500	
GEN6500	1	120,000	6,500	
	25,804	291,898,794	991,237	1,089,859

6.1.1 ICP's

ICP forecasts are derived after considering expected changes during the forthcoming pricing year. This data is based on historical averages plus or minus any forecast changes we are aware of.

6.1.2 kWhs

Forecast Annual kWh use is based on historical averages plus or minus expected changes as a result of growth, weather patterns and economic conditions.

6.1.3 Installed KVA

Installed KVA is based on fuses installed or transformer capacity if a dedicated transformer is installed.



6.2 Allocation of Revenue Requirement

Following the determination of the allocators, the revenue requirement, comprised of distribution and transmission requirements, is allocated between consumer groups.

The total revenue requirement (as depicted in table 1) has been allocated to consumer groups using the allocation methodology set out in the paragraphs which follow. A summary of the final allocation is shown in Appendix 2.

Eastland Network allocates much of its asset-based costs on the basis of capacity installed. This is to reflect the view that there is little growth in the Eastland Network region and that Eastland Network's costs are driven by long lasting assets and therefore largely fixed. It is also a reflection that electricity distribution assets have been built to meet the capacity requirements at a connection point irrespective of the actual volume of energy used.

Eastland Network have allocated transmission costs to consumer groups using a close approximation to the methodology set out in Transpower's transmission pricing methodology. Interconnection charges are allocated to consumers based on their estimated share of total co-incident peak demand on Eastland's network. Connection costs are allocated on the basis of capacity to reflect the assets owned and operated by Transpower are built for a particular capacity within the region.

Pass through costs are allocated on the basis of either capacity or ICP depending on whether the costs relate to assets built or overhead costs.

System Maintenance is allocated 80% based on capacity and 20% ICP. While these costs are largely driven by assets built, there is also some element of overheads which should be allocated on the basis of ICP count. The 80/20 split is a best estimate.

Target return on investment and depreciation have been allocated to consumer groups based on capacity.

Table 5: Cost Allocation by Category

Cost Category	Allocator
Transmission costs - Variable	RCPD
Transmission costs - Fixed Component	Capacity
Pass-through costs	Capacity or ICP
System Maintenance	Capacity 80%, ICP 20%
Business Support	ICP
System Operations & Network Support	Capacity or ICP
Taxes	ICP
Depreciation	Capacity
Return on Capital	Capacity



7. Price Structure

The current pricing structure (introduced in 2021) makes a clear distinction between domestic, commercial & industrial consumers and other connections, which includes tariffs for unmetered load, streetlights and low capacity connections (e.g. pumps).

2022-2023 Pricing Structure	
Price Tariff	Consumer group
Domestic Consumers	
DOMFLC	Domestic Low User
DOMSTD	Domestic Standard User
Commercial and Industrial Consumers	
COM0050	Commerical & Industrail (<50kVA)
COM0100	Commerical & Industrail (50kVA- 100kVA)
COM0300	Commerical & Industrail (101kVA- 300kVA)
COM0500	Commerical & Industrail (301kVA- 500kVA)
COM1000	Commerical & Industrail (501kVA- 1000kVA)
COM4500	Commerical & Industrail (1001kVA- 4500kVA)
COM6500	Commerical & Industrail (4501kVA- 6500kVA)
GEN0500	Generation (<500kVA)
GEN1000	Generation (501kVA- 1000kVA)
GEN4500	Generation (1001kVA - 4500kVA)
GEN6500	Generation (4501kVA- 6500kVA)
Other Consumers	
OTH0003	Other Low Capacity (<3kVA)
DUML	Unmetered load (lights,Pay&display, CCTV)
STLGM	Metered Street lights

Eastland uses ICP billing for charging end consumers, however Eastland does not charge all consumers their true cost of supply due to a number of factors including:

- Low Fixed Charge regulations which restrict the level of domestic fixed charges;
- Balancing higher cost per ICP in lower density areas with lower quality of service in these areas;
- The complexity, and potential arbitrary results in determining individual costs of supply;
- The desire to make the tariff schedule administratively simple;
- The desire to manage rate shock;
- Revenue constraints imposed by the Commerce Commission Default Price Path Determination 2019

The implication is that for some consumer groups the target return on investment component of the revenue requirement is not fully recovered.

7.1 Low User Fixed Charges

Since 2004 the low user fixed charge regulations have capped fixed distribution charges to domestic consumers. These charges were fixed at 15 cents (excl GST) per day and due to an amendment to the regulation in 2021, from 1 April 2022 these charges will increase by 15c for the next five years



until the regulation is dissolved. This fixed charge component is less than that determined by the Eastland Cost of Supply Model described earlier. As such, the remainder of the fixed cost allocated to LFC consumers is necessarily recovered through variable charges. Accordingly, the variable charges for LFC consumers are much higher than the variable charges for standard users. Standard users instead have higher fixed charges and therefore lower variable charges.

Lower consumption driving variable rates are also available for those consumers that allow Eastland to switch their hot water off during peak times of network use. Controlled rates are priced at discount to any other tariff to provide an incentive to allow Eastland Network control of hot water. This effectively shifts consumption to periods outside of peak network demand.

Electricity delivered to consumers via controlled metering allows Eastland to switch off load via ripple control to appliances connected to the controlled meter during periods of peak electricity demand. The price reduction is achieved through the reduction in peak period demand which drives transmission interconnection charges.

Transmission costs that have been allocated to domestic consumers are recovered predominantly through variable charges with a small portion recovered through fixed daily charges. Transmission charges have been structured in the same manner as distribution charges.

Originally communicated prices in February 2022 changed in late April due to a different interpretation of Electricity (Low Fixed Charge Tariff Option for Domestic Consumers) Regulations 2004 by Eastland Network from the Electricity Authority. We changed our prices to be aligned with the Authority's interpretation. While this has not changed an average person's annual bill, it has lowered the uncontrolled, peak and off-peak tariffs and increased the controlled tariff to achieve compliance with the regulation, specifically to ensure a person on 100% uncontrolled load does not pay more on LFC domestic tariff than a standard domestic customer with an annual consumption of 8,000kWh.

7.2 Time of Use Charges

Eastland Network used to have Time of Use (TOU) tariffs available only to large consumer with capacity over 201kVA.

From 1 April 2021, newly introduced TOU pricing structure enables all residential and commercial consumer groups with communicating smart meters to be on TOU pricing. TOU tariffs introduce higher prices during peak times of the day when the network is more congested, and lower rates during off peak times when there is plenty of capacity in the network. This indicates to consumers that consuming electricity off peak may reduce or delay investments into network assets and shares this benefit with consumers who consume off peak.

Consumers may need to ask for a smart meter to be installed and/or change to a retailer that offers TOU tariff with a direct pass through of network charges.

There is a default (flat/anytime) tariff and peak and off-peak tariffs under all tariff codes (with exception of high capacity commercial tariffs 101-6500kVA:COM0300, COM0500, COM1000, COM4500, COM6500). Default (uncontrolled) tariff will be used when an exemption applies.

Eligibility for the default (uncontrolled tariff) will be applied when:

- Consumers do not have communicating smart meters that record consumption data in 30 minute time periods needed to calculate ToU prices
- ICPs have intermittent or stopped communications
- Retailers do not have smart meter agreements with meter providers



- Retailers need validation process and billing system upgrades to process half hour consumption data needed to calculate ToU prices

Prices for peak and off-peak were set so that a consumer with standard electricity consumption profile (based on Eastland network profile) will pay the same as a customer on a flat rate. Whether customer is on a flat rate or TOU rates depends whether they have a smart meter installed (circa 71% ICPs do) and if the retailer can access reliably the HH data (about 5% smart meters is expected to be exempt).

Based on actual consumption observed on our network, a standard domestic customer uses 35% of electricity during peak periods.

The differential between peak and off-peak tariff has been set so that across all tariff consumer groups the incremental charge covers a cost of 1MW/4MWh battery (c\$3m). Domestic customers contribute 67% to this via their peak charges. Eastland Network has been observing a significant increase in demand over the past couple of years (7% year on year) and will lose N-1 security during peaks over the next year or two. An investment into either an industrial scale battery, a diesel generator or a peaking plant will be a necessary step.

Peak and off-peak period for domestic customers and lower capacity commercial and industrial connections (COM0050, COM0100) are following

Peak: 7:00-11:00, 17:00-21:00 (Monday – Friday)
Off-peak: 11:00-17:00, 21:00-7:00, Weekends

High capacity commercial tariffs (COM0300, COM0500, COM1000, COM4500, COM6500) use more granular TOU pricing, i.e. morning peak, evening peak, off-peak and night.

Evening Peak: 17:00 - 21:00
Morning Peak: 07:00 - 12:00
Off-peak: 12:00 - 17:00 & 21:00 - 23:00
Night: 23:00 - 07:00

While Eastland Network has considered demand and capacity based pricing for the mass market, TOU pricing is currently considered to be the best option considering the state and preparedness of the New Zealand electricity market, while still sending pricing signals based on time periods when capacity in parts of the network is approaching upper limits.

7.3 Distributed Generation

7.3.1 Connection charges

Distributed Generation pricing is determined in accordance with distributed generation pricing principles contained in Schedule 6.4 of Part 6 of the Electricity Industry Participation Code 2010.

Distributed Generation connection tariffs are capacity based and comprise a Fixed Distribution charge only. A variable distribution component for energy flow from the generation installation through the distribution network is not charged. Similarly fixed and variable Transmission charges are not applied to Distributed Generation that do not export to the transmission grid. This pricing means that the Distributed Generator, (based on generation capacity) is charged only for the distribution assets employed to connect and distribute energy produced. Therefore in accordance with the distributed generation pricing principles, distributed generators are charged no more than the incremental cost of connection to the network.



7.3.2 Distributed Generation Allowance

In accordance with Part 6 of the Electricity Industry Participation Code Eastland makes payments to distributed generators for Avoided Cost of Transmission (ACOT). Annually these payments are based on the generators actual contribution to the reduction of transmission charges. The reduction in Transmission charges is calculated as a reduction in interconnection charges. Interconnection charges are calculated on Eastland's contribution to the 100 peak regional demand periods. Consequently, any reduction during a regional peak demand period will reduce interconnection charges for Eastland Network. If a distributed generator has provided energy into the network which reduces Eastland networks' demand during a regional peak period, this benefit of reduced charges is transferred to the distributed generator as required under the distributed generation pricing principles. The Electricity Authority's December 2016 decision following a review of the Distributed Generation Pricing Principles removes the requirement to pay ACOT to distributed generators unless Transpower confirms such grid support is actually provided by the generator. In August 2018, the Electricity Authority published a list³ of distributed generation in the lower North Island that contributes to alleviating constraints in the national grid. Included on the list were all distributed generation in the Eastland region. Consequently, Eastland will continue to pay ACOT to those existing generators who currently receive ACOT.

As set out in the Eastland Connection and Operation of Distributed Generation Policy, where a Distributed Generator provides proven and long-term benefits to the distribution network, such as improvement of security of supply, Eastland may contract with the distributed generator to pay for any service they provide.

Payment for Reduction of Losses is not made, as the benefits are realised by the energy retailer and are passed on to end users. In addition, due to the varying load conditions typical in the distribution network, the assessment of the physical losses applicable to a single installation is typically complex, and as such Eastland does not financially recognise the reduction of losses.

7.4 Non-Standard Contracts

Eastland Network has no non-standard contracts with retailers.

8. Distribution Loss Factors

Line losses are determined as the metered energy (in kWh) measured by the metering equipment at each ICP multiplied by the appropriate loss factor. This calculates the equivalent energy at the GXP supplying that ICP for the purposes of the reconciliation agreement and the registry. The loss factor (appearing below) into which each ICP falls will be determined by the point within the distribution network voltage at which the metering for that ICP takes place, together with the particular circumstance of supply.

The allocation of losses is not a contracted line function service and Eastland does not charge specific recoveries for losses.

Loss factors applicable to Eastland changed from 1 April 2015 as a result of the acquisition of Eastland transmission spur assets from Transpower. This is because the metering point for

³ [List of distributed generation eligible for ACOT in the lower North Island](#)



Transpower changed from three GXP's to one GXP. Eastland have picked up the losses that were previously factored in Transmission into its Distribution network.

The undermentioned Loss Factors are applicable to all time periods, at the GXP.

Loss factors applicable to Eastland Network:

- 400V connected supplies (LV Low Voltage) 1.1023
- 11kV connected supplies (HV High Voltage) 1.0803

Loss adjustment factors are reviewed annually and may be amended by Eastland from time to time, to ensure that they reflect unaccounted for energy on the distribution network as accurately as possible. These have not changed for the pricing year 2022-23.

9. Consumer Feedback

Each year Eastland commissions a survey seeking the views of consumers. The survey focuses on the network service, our prices, customers' behaviour around shifting discretionary consumption switching retailers, uptake of solar panels and electric vehicles and electrification of industrial heat processes. The key conclusions of the September-October 2021 survey are:

- Customers still consider keeping the power on and getting it back on quickly as the most important part of our service.
- Wairoa is still more sensitive to line charges than Gisborne.
- 25% of our customers are aware we introduced Time of Use pricing for domestic customers.
- 3 of our large industrial customers are looking at electrifying process heat in the next 5 year and further 3 after that.
- 43% of Gisborne domestic customers have never changed their electricity retailer.
- There has been an increase of customers willing to shift load off-peak to save money. Almost 80% of domestic customer would consider this option.
- There has been a reduction in people considering an installation of rooftop solar panels. The interest is still significant with almost 50% of domestic customers considering this option over the next 10 years.
- There has been no or little change in people's willingness to buy an EV. 60% of surveyed domestic customer said they would never buy one.
- Majority of large industrial customers are interested in energy audits and energy cost reduction project and would engage Eastland to manage it.

9.1 Importance of electricity distribution service

Industrial customers regard keeping the power on all the time as most important, with getting the power back on quickly if it goes off as a clear second choice. Third choice was evenly split between keeping line charges low, not having the lights dimming and sufficient notice of planned shutdowns.

Gisborne mass-market customers regard keeping the power on all the time as most important. Second most important is evenly split between getting the power back on quickly if it goes off and keeping line charges low. Interestingly enough, keeping the power on all the time was also the third most important aspect, suggesting some confusion between continuity and restoration.



Similar to 2020, Wairoa mass-market customers proved to be mixed, with the most important attribute being split amongst keeping the power on, keeping line charges as low as possible, and getting the power back on quickly. Similarly, the second most important attribute was split between getting the power back on quickly and keeping line charges as low as possible.

It would appear that Wairoa mass-market customers are more price sensitive than Gisborne, and possibly that low line charges are more important than keeping the lights on.

9.2 Eastland Network performance

Industrial customers have a range of views at how good Eastland is at keeping the power on and getting the power back on, ranging from Excellent to Poor with a skew towards Very Good. There were insufficient responses to form a robust view of how well Eastland is keeping line charges low and not having the lights dimming.

Gisborne mass-market customers have a range of views on how well Eastland is keeping the power on, from Excellent to Poor but with a skew towards Excellent. Similarly, there are a wide range of views on how well Eastland is at keeping line charges low clustered around Good. Views on how well Eastland gets the power back on range from Excellent to Average with a skew towards Very Good.

Wairoa mass-market customers' views on how well Eastland is keeping the power on range from Excellent to Poor with a skew towards Excellent. Similarly, views on how well Eastland gets the power back on range from Excellent to Average with a skew towards Good. Views on keeping line charges low range from Excellent to Poor, with a strong cluster in the middle from Very Good to Average.

9.3 Awareness of Time of Use pricing for domestic customers

In April 2021 Eastland Network introduced Time of Use pricing for domestic customers with a communicating smart meter.

We have included a question in 2021 survey to gauge awareness of this pricing structure change so we can understand the likelihood of impact on customer behaviour.

Only 25% of valid responses from the Gisborne mass-market and 28% of the valid responses from the Wairoa mass-market are aware of Eastland's domestic ToU pricing.

9.4 Electrifying of industrial process heat

As New Zealand is progressing toward net-zero carbon economy, more and more commercial and industrial customers are expected to electrify their heat processes.

Out of 8 responses from large commercial and industrial customers where this question is applicable, quarter have already electrified their heat processes and the rest is divided equally between within 5 years and more than 5 years.

9.5 Changing retailers

Research shows that people who switch electricity retailers regularly save money. With more than 20 retailers operating in Tairāwhiti, this question was trying understand the switching patterns and general customer engagement with electricity.



Most large industrial customers' have changed retailer within the last 5 years.

Gisborne mass-market customers are the least engaged with 43% never having changed their retailer and only 28% changing in the last 5 years.

In Wairoa mass-market 43% have change their retailer in the last 5 years and 18% have never changed their electricity retailer.

9.6 Consumer appetite to alter consumption pattern

None of the large industrial customers can shift their consumption to off-peak periods, with common themes being that most of their load is chilling (and is therefore already 24 hours) of that they operate 2 and 3 shifts during harvest seasons.

The Gisborne mass-market shows a slight skew towards being able to easily shift consumption.

Similarly, the Wairoa mass-market also shows a slight skew towards being able to easily shift consumption.

9.7 Likely installation of solar panels

Most large customers (77%) appear very unlikely to install rooftop solar at their plant within the next 10 year with majority looking at 2-5 years window.

Gisborne mass market has lower skew to installing rooftop solar panels than Wairoa, where over half of the domestic customers surveyed consider the installation within the next 10 years.

9.8 Likely purchase of an electric car

There is a definite interest amongst large customers of buying an electric car (presumably as an office run-about) within 2 years.

Similar to the 2020 survey, both the Gisborne and Wairoa mass markets have a definite skew towards never buying an electric car with Wairoa showing more resistance to EV shift.

10. Uneconomic Bypass

Uneconomic bypass will occur where the charges from Eastland Network are high enough to drive consumers to seek alternative options and the alternative option bears costs for the consumer but does not reduce costs of the same magnitude for the network. Uneconomic bypass will occur where the cost to a consumer of the alternative is lower than the price the network charges but higher than the incremental cost to the network of supplying the customer.

The incremental costs of supplying each new connection is very difficult to quantify. Networks are built to have some spare capacity therefore the cost for each additional new connection would be minimal until such time as a step change in capacity is required. Eastland Network's pricing reflects a smoothed approach to capacity increases as the Eastland Network area has had flat demand for many years with relatively few additional connections each year. Where capacity increases are required for specific customers, capital contributions are required to pay for the additional capacity to reflect the cost drivers at a specific point where there is minimal or no benefit to existing



customers. If there are benefits for other customers, this is reflected in the amount contributed so that the costs are spread across all customers that benefit. However, those specific costs are not reflected in the Eastland Network pricing schedule but are treated separately on a case by case basis.

The decreasing cost of emerging technologies such as solar and batteries is likely to encourage uneconomic bypass by some residential consumers. This is due to high variable charges enforced on the industry by the Low Fixed Charge regulations. As LFC regulation is phased out over the next five years, variable charges for most Eastland customers should significantly reduce.

Other risk of uneconomic bypass could come from large customers who could potentially connect directly into the Transmission network, however Eastland Network views this risk to be highly unlikely as there are currently no consumers (existing or potential) of sufficient scale or close enough to Transmission lines to enable them to connect directly to Transpower's transmission lines. With the transfer of the Transpower assets to Eastland Network this possibility is now even more remote.



Appendix 1 - Pricing Principles

Information Disclosures require Eastland Network to demonstrate consistency with the pricing principles published by the former Electricity Commission in 2010, adopted by the Electricity Authority, and updated in 2019.

Principle A

Prices are to signal the economic costs of service provision, including by:

- i. being subsidy free (equal to or greater than avoidable costs, and less than or equal to standalone costs);
- ii. reflecting the impacts of network use on economic costs;
- iii. reflecting differences in network service provided to (or by) consumers; and
- iv. encouraging efficient network alternatives.

As Electricity distribution networks make very long-term decisions regarding investment in assets a prudent planning margin is built into assets installed to enable additional small increments to be gradually added until such time as new investment in infrastructure is required.

“The planning margin is necessary given the very long lead-time to increase supply capacity in respect of 110kV Substations and 110kV transmission lines. Having headroom in the capacity is considered to be of particular importance in the Gisborne region given the unpredictability in growth associated with wood harvesting and related industrial activity⁴.”

Consequently short-term incremental costs are minor or nil.

Where long-term incremental costs are incurred these costs are included in prices over the life of the assets. As there is little growth in the Eastland region, this is considered appropriate. Where there are areas of significant growth and corresponding constraints on the network, those requiring additional capacity are typically required to provide some capital contribution for the additional investment incurred. These additional investments are quite localised and therefore easily attributable to customer requests. As pricing for these localised areas are not easily separated from general pricing, capital contributions are appropriate. The value of these contributions will assist the customer to determine whether an alternative supply is a more beneficial solution for them and reduces the chance of cross-subsidies.

The standalone price is the cost of a consumer obtaining electricity from an alternative source. However, as distribution costs are only approximately 43%⁵ of the total cost of a power bill in the Eastland region, the cost of energy and retail margins will also influence the customer’s decision.

Currently Eastland’s pricing is heavily influenced by regulation and in particular the pricing structure has been developed to comply with the Electricity (Low Fixed Charge Tariff Option for Domestic Consumers) Regulations 2004 whereby fixed charges are limited to 30c per day for pricing year

⁴ Extract from Eastland Network Limited Asset Management Plan

⁵ [Quarterly residential sales-based electricity cost](#) - March 2019; Ministry of Business, Innovation & Employment



2022-23. Consequently, the remainder of the domestic revenue required is received through variable (c/kWh) pricing. While historically, this variable pricing has had the effect of allowing customers to reduce their power bills through energy efficiency initiatives, new opportunities to reduce usage are being achieved through the instalment of small scale generation such as solar panels on rooftops. This is becoming more prevalent as the price of solar and batteries reduce. However, the cost of these alternatives have not yet reduced to the point where standalone is more economic than connection to the network. However, the high variable charge for domestic connections encourages inefficient investment in these types of technologies. Until such time that household scale electricity storage is cost effective, reliance on network delivered energy will still be required during seasonal & peak times.

Eastland Network's tariff structure divides customers according to capacity thereby signalling the economic cost of service provision based on capacity.

Eastland Network introduced from 1 April 2021 Time of Use (TOU) for all consumers with communicating smart meter in addition discounted controlled load tariffs for residential consumers. These tariffs allow the customer or the network to reduce load during peak periods and consequently the consumer is rewarded with cheaper rates during off peak times.

Principle B

Where prices that signal economic costs would under-recover target revenues, the shortfall should be made up by prices that least distort network use.

This principle is based on Ramsey pricing where prices are inversely adjusted according to their elasticity of demand. That is, prices are higher for those customers who are less likely to change demand as a result of price changes.

The difficulty of applying this principle in practise is that a) it works to the detriment of socially deprived domestic consumers as their demand is generally the least elastic; and b) obtaining reliable price elasticity information regarding various groups of customers is extremely difficult.

An alternative to this is to measure elasticity over time intervals rather than by customer groups⁶. It would be expected that peak periods during the cold winter evenings would be the least elastic and consequently prices during peak periods could be set to recover any shortfall in revenues from efficient incremental cost pricing.

Eastland has implemented Time of Use (TOU) pricing to all residential customers alongside larger commercial customers from 1 April 2021 as a step to managing peak loads on the network. Eastland recognise that there are no capacity constrains in many areas of the network, however overall the network has been observing a significant increase in demand over the past couple of years (7% year on year) and will lose N-1 security during peaks over the next year or two. An investment into either an industrial scale battery, a diesel generator or a peaking plant will be a necessary step and we prepare for further electrification of transport, heating and industrial heat.

Principle C

Prices should be responsive to the requirements and circumstances of end users by allowing negotiation to:

⁶ *Regulation of the Power Sector, Springer-Verlag London 2013, Edited by Ignacio J Perez-Arriaga*



- i. reflect the economic value of services; and
- ii. enable price/quality trade-offs.

Eastland Network is willing, if the situation warrants, to discuss alternative arrangements with customers whose connections are remote and costly to maintain. Eastland does provide some flexibility with regard to capital contributions for new connections to counter uneconomic bypass. This enables Eastland and their customers to negotiate price-quality trade-offs. Eastland Network has recently starting working on moving some remote customers outside the main networks to microgrids.

There are no current or future planned industrial operations of sufficient scale and close enough to a GXP to connect directly to the Transmission grid. Large-scale off-grid alternatives are also not currently an economic alternative to connection to the distribution network.

Eastland Network owns multiple diesel generator to secure power supply to remote locations on its network during maintenance and network faults. These generators provide security of supply at a significantly lower cost than building additional overhead lines.

Eastland Network also requires installation of load control relays for all new connections to enable demand response on its network which is implemented regularly during daily peak periods. Where the relays are owned by Eastland Network, the cost to maintain and replace the relays are also borne by Eastland Network thereby ensuring load control is available as a tool for demand response.

Principle D

Development of prices should be transparent and have regard to transaction costs, consumer impacts, and uptake incentives.

Development of prices is disclosed in this document which is publicly available. Tariff categories have been updated twice over the past few of years (2020 and 2021), but impact on consumers remained of significant importance as Eastland Network prepares for electrification transport and industrial processes. Eastland is consistently reviewing its pricing strategy to address progression towards net zero carbon economy. This strategy and change process will involve considerable engagement with end consumers, retailers, regulators and other key stakeholders.

Electricity distribution prices in the Eastland Network region are applicable to both the Wairoa and Gisborne networks and are the same across all retailers. This allows for simplicity across both regions and provides a level playing field for all retailers within the Eastland region.



Appendix 2 – Consumer Group Target Revenue Allocation

Eastland Network - Revenue by Tariff category

Price Category	Consumer Group	ICPs/ fixtures*	Consumption kWh	Forecast revenue \$
DOMLFC	Low User Fixed Charge	13,300	70,305,591	9,791
DOMSTD	Standard Domestic	7,025	61,784,630	7,669
COM0050	Capacity (0 to 50kVA)	4,596	39,523,204	5,401
COM0100	Capacity (101 to 300kVA)	432	26,201,635	2,685
COM0300	TOU - Demand (201-300kVA)	112	22,410,441	1,427
COM0500	TOU - Demand (301-500kVA)	21	9,488,553	505
COM1000	TOU - Demand (501-1000kVA)	24	29,557,513	1,247
COM4500	TOU - Demand (1001-4500kVA)	3	24,288,544	804
COM6500	TOU - Demand (4501-6500kVA)	1	6,420,125	250
GEN4500	Assessed Capacity (1001 to 4500kVA)	1	-	28
GEN6500	Assessed Capacity (4501 to 6500kVA)	1	120,000	42
DUML	Distributed Unmetered	174 (5171*)	208,908	36
STLGM	Street lights metered	32 (138*)	1,541,712	227
OTH0003	Low Capacity (0 to 3kVA)	82	47,939	7
		ICPs	25,804	291,898,794
		Fixtures*	5,309	

* Fixtures are only applicable to DUML and STLGM tariffs and relate to street lights, decorative lights, pay&display machines and CCTV cameras



Appendix 3 - Pricing Schedule

Eastland Network Schedule of Charges						
Price Tariff	Tariff Code	Consumer Group	Charge Type	Distribution Charge	Transmission Charge	Total Charge
DOMLFC	DOMLFCF		Fixed	0.2587	0.0413	0.3000
DOMLFC	DOMLFCU	Low fixed charge	Uncontrolled	0.1137	0.0100	0.1237
DOMLFC	DOMLFCF	domestic customers	Controlled	0.0997	0.0053	0.1050
DOMLFC	DOMLFCP	<8,000kWh	Peak	0.1600	0.0170	0.1770
DOMLFC	DOMLFCO		Off Peak+Night	0.0889	0.0068	0.0957
DOMSTD	DOMSTDF		Fixed	1.2635	0.7365	2.0000
DOMSTD	DOMSTDU	Standard domestic	Uncontrolled	0.0388	0.0081	0.0469
DOMSTD	DOMSTDC	customers >8,000kWh	Controlled	0.0208	0.0052	0.0260
DOMSTD	DOMSTDP		Peak	0.0640	0.0138	0.0778
DOMSTD	DOMSTDO		Off Peak+Night	0.0254	0.0055	0.0309
COM0050	COM0050F		Fixed	1.5635	0.7365	2.3000
COM0050	COM0050U		Uncontrolled	0.0320	0.0080	0.0400
COM0050	COM0050C	Commerical customers	Controlled	0.0189	0.0052	0.0241
COM0050	COM0050P	<50kVA + Domestic	Peak	0.0536	0.0138	0.0674
COM0050	COM0050O	>20,000kWh	Off Peak+Night	0.0215	0.0055	0.0270
COM0100	COM0100F		Fixed	5.8585	2.4915	8.3500
COM0100	COM0100U	Commerical customers	Uncontrolled	0.0467	0.0057	0.0524
COM0100	COM0100C	<100kVA	Controlled	0.0308	0.0037	0.0345
COM0100	COM0100P		Peak	0.0829	0.0102	0.0931
COM0100	COM0100O		Off Peak+Night	0.0332	0.0041	0.0373
COM0300	COM0300F		Fixed	11.3019	4.6981	16.0000
COM0300	COM0300U	Commerical customers	Uncontrolled	0.0367	0.0047	0.0414
COM0300	COM0300EP	<300kVA	Evening Peak	0.0336	0.0039	0.0375
COM0300	COM0300MP		Morning Peak	0.0313	0.0037	0.0350
COM0300	COM0300OP		Off Peak	0.0248	0.0030	0.0278
COM0300	COM0300N		Night	0.0138	0.0016	0.0154
COM0500	COM0500F		Fixed	23.1734	8.8266	32.0000
COM0500	COM0500EP	Commerical customers	Evening Peak	0.0336	0.0039	0.0375
COM0500	COM0500MP	<500kVA	Morning Peak	0.0313	0.0037	0.0350
COM0500	COM0500OP		Off Peak	0.0248	0.0030	0.0278
COM0500	COM0500N		Night	0.0138	0.0016	0.0154
COM1000	COM1000F		Fixed	36.3329	13.6671	50.0000
COM1000	COM1000EP	Commerical customers	Evening Peak	0.0336	0.0039	0.0375
COM1000	COM1000MP	<1000kVA	Morning Peak	0.0313	0.0037	0.0350
COM1000	COM1000OP		Off Peak	0.0248	0.0030	0.0278
COM1000	COM1000N		Night	0.0138	0.0016	0.0154
COM4500	COM4500F		Fixed	105.8323	34.1677	140.0000
COM4500	COM4500EP	Commerical customers	Evening Peak	0.0328	0.0038	0.0366
COM4500	COM4500MP	<4500kVA	Morning Peak	0.0306	0.0037	0.0343
COM4500	COM4500OP		Off Peak	0.0245	0.0029	0.0274
COM4500	COM4500N		Night	0.0135	0.0015	0.0150
COM6500	COM6500F		Fixed	148.0008	51.9992	200.0000
COM6500	COM6500EP	Commerical customers	Evening Peak	0.0328	0.0038	0.0366
COM6500	COM6500MP	<6500kVA	Morning Peak	0.0307	0.0036	0.0343
COM6500	COM6500OP		Off Peak	0.0245	0.0029	0.0274
COM6500	COM6500N		Night	0.0135	0.0015	0.0150
GEN0500	GEN0500F	Generation <500kVA	Fixed	20.2076	0.0000	0.0000
GEN1000	GEN1000F	Generation <1000kVA	Fixed	30.4809	0.0000	0.0000
GEN4500	GEN4500F	Generation <4500kVA	Fixed	76.6858	0.0000	76.6858
GEN6500	GEN6500F	Generation <6500kVA	Fixed	104.9645	0.0000	104.9645
GEN6500	GEN6500U		Uncontrolled	0.0309	0.0000	0.0309
OTH0003	OTH0003F	Low Capacity <3kVA	Fixed	0.3679	0.1239	0.4918
OTH0003	OTH0003U		Uncontrolled	0.0924	0.0118	0.1042
DG		Distributed Generation	Fixed	0.0000	0.0000	0.0000
DUML	DUMLF	Distributed Unmetered	Fixed (per fixture/day)	0.0454	0.0154	0.0608
DUML	DUMLU	Load	Uncontrolled	0.0410	0.0319	0.0729
STLGM	STLGMF	Street lights metered	Fixed (per fixture/day)	0.0511	0.0154	0.0665
STLGM	STLGMU		Uncontrolled	0.0410	0.0319	0.0729



Appendix 4 - Glossary

AMP	Asset Management Plan
Avoided Cost of Transmission (ACOT)	A reduction in the transmission costs payable by distributors to Transpower (usually in the context of embedded generation).
Code	Electricity Industry Participation Code 2010 and subsequent amendments.
Commission	Commerce Commission
Consumer	A person or an entity whose electricity installation is connected to the electricity network.
Controlled	An option where consumers elect to have part of their electricity supply subject to interruption at Eastland's discretion. The most common example is control of electrically heated hot water.
COSM	Cost of Supply Model
Demand	Electricity load, measured in either kW or kVA, usually averaged over a half-hour period.
Distributed Generation	Generating plant that is electrically connected to a distribution network.
Distribution Business (EDB)	An entity other than Transpower which owns an electricity network other than an embedded network. Often denoted as an Electricity
Domestic	Any person who purchases or uses electricity in respect of their home. Home means the premises used or intended for occupation principally as a place of residence.
DPP Regulations	Electricity Distribution Services Default Price-Quality Path Determination 2015.
EA	Electricity Authority
EGCC	Electricity & Gas Complaints Commission
FENZ	Fire and Emergency New Zealand
GXP	Grid Exit Point. The point at which Eastland Network connects to the National Grid.
Half-hour metered	An ICP with metering that records electricity consumption in half-hour intervals.
ICP	Installation Control Point. An individual connection to an electricity distribution network
IRIS	Incremental Rolling Incentive Scheme
Input Methodology	Electricity Distribution Services Input Methodologies Determination 2012.
kVA	Kilovolt-amp. Measure of total apparent power.
kW	Kilowatt. Measure of true power.
kWh	Kilowatt-hour. Rate of energy flow.
LFC Regulations	Electricity (Low Fixed Charge Tariff Option for Domestic Consumers) Regulations 2004.



MBIE	Ministry of Business, Innovation and Employment
Power factor	kW/kVA
Principal Place of Residence	In the context of clause 3 of the Electricity (Low Fixed Charge Tariff Option for Domestic Consumers) Regulations 2004.
PV	Photovoltaics
RCPD	Regional Coincident Peak Demand. Customer off-take at the Tuai Grid Exit Point (GXP) during a regional peak demand period
Residential Consumer	A consumer at a residential ICP which satisfies the definition of “domestic premises” in Section 5 of the Electricity Industry Act 2010
The Code	Electricity Industry Participation Code 2010.
TOU	Time of Use



Appendix 5: Directors' Certification


Schedule 17: Certification for Pricing Methodology Disclosures

Clause 2.9.1

We, Mataruken Mahuika and Jon Edmund Nichol, being Directors of Eastland Network Limited certify that, having made all reasonable enquiry, to the best of our knowledge:

- a) The following attached information of Eastland Network Limited prepared for the purposes of clauses 2.4.1 to 2.4.5 of the Electricity Distribution Information Disclosure Determination 2012 in all material respects complies with that determination.
- b) The prospective financial or non-financial information included in the attached information has been measured on a basis consistent with regulatory requirements or recognised industry standards.


.....
Director


.....
Director

.....
Date 23/3/23

End of document

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