



Eastland
Network

Pricing Methodology

For the year commencing 1 April 2020



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Glossary

AMP	Asset Management Plan
COSM	Cost of Supply Model
Distributed Generation	Generating plant that is electrically connected to a distribution network.
Domestic	A domestic customer is defined in the Eastland Network Tariff definitions and terms and conditions of supply.
DPP Regulations	Electricity Distribution Services Default Price-Quality Path Determination 2015.
EA	Electricity Authority.
EGCC	Electricity & Gas Complaints Commission.
GXP	Grid Exit Point. The point at which Eastland Network connects to the National Grid.
Input Methodology	Electricity Distribution Services Input Methodologies Determination 2012.
LFC Regulations	Electricity (Low Fixed Charge Tariff Option for Domestic Consumers) Regulations 2004.
MBIE	Ministry of Business, Innovation and Employment.
RCPD	Regional Coincident Peak Demand. Customer off-take at the Tuai Grid Exit Point (GXP) during a regional peak demand period
The Code	Electricity Industry Participation Code 2010.
TOU	Time of Use.

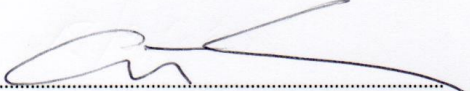
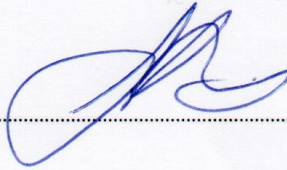


Certification for Year-beginning Disclosures

Clause 2.9.1

We, Anthony Trevor Army and Jon Edmund Nichols, 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, 2.6.1, 2.6.3, 2.6.6 and 2.7.2 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.
- c) The forecasts in Schedules 11a, 11b, 12a, 12b, 12c, and 12d are based on objective and reasonable assumptions which both align with Eastland Network Limited's corporate vision and strategy and are documented in retained records.


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Date: 18th March 2020



Introduction

This document sets out Eastland Network Limited's (Eastland) pricing methodology for the line charges in effect from 1 April 2020. 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 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. Target Revenue

Target Revenue is calculated as forecast costs (including tax) plus a return of capital (Depreciation) plus a return on capital. The table below shows the components of Forecast Target Revenue for Eastland Network for the 2020/21 pricing year. Costs for 2020/21 are forecast to increase, however price path constraints only allow for a small fraction of that increase to pass through to customer prices.

Table 1: Target Revenue

Target Revenue (000's)	2020/21
Pass-through Costs	491
Recoverable Costs	4,755
Total Recoverable & Pass-through Costs	5,246
System Maintenance	5,304
System Operations & Network Support	2,282
Business Support	3,859
Total Operating Costs	11,445
Taxes	1,859
Depreciation	7,157
Return on Capital	4,288
Total Revenue Requirements	29,995
Less Other Income	(348)
Less Price Path Constraints	(721)
Target Revenue	28,926



2.1 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.

2.1.1 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's)	2020/21
Rates on Network Assets	347
Levies	144
Total Pass-through costs	491

2.1.2 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 2020/21 year are



Table 3: Recoverable Costs

(000's)	2020/21
<i>Transpower charges</i>	5,445
<i>Transpower Customer Investment Contract</i>	89
<i>Distributed Generation Allowance</i>	264
<i>Fire & Emergency Services Levies</i>	28
<i>Incremental Rolling Incentive</i>	(1,301)
<i>Quality Incentive Allowance</i>	229
<i>Total Recoverable Costs</i>	4,755

2.1.2.1 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 2020/21 year is \$98.39/kW (2019/20 - \$109.38/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.

2.1.2.2 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 2020/21 year is \$98.39/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.



2.1.2.3 Fire and Emergency New Zealand Levies

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

2.1.2.4 Incremental Rolling Incentive Scheme (IRIS)

The IRIS scheme provides incentives for EDBs to control costs. Where expenditure deviates from Comcom forecasts, penalties or rewards are imposed. For the year from 1 April 2015, Eastland operating expenditure was above Comcom forecasts, consequently, penalties of \$1,301k have been imposed for the 2020/21 pricing year. This amount has been deducted from allowable revenue calculations for the 2020/21 pricing year.

2.1.2.5 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 2018/19 year, Eastland's assessed quality results fell within the limits set by the Commission. This means that under the quality incentive scheme allowable revenue can be increased by \$229k for the 2020/21 pricing year.

2.1.2.6 Avoided Costs of Transmission (ACOT)

In the previous 5 years, Eastland was permitted to include ACOT of \$3.745m per annum in its recoverable costs. These were costs avoided when Eastland purchased the Transmission assets in 2015. These avoided costs are no longer permitted to be recovered from regulated pricing revenue.

2.2 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 2020/21 period.

2.3 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).

$$\text{ROI} = (\text{RAB} + \text{RDT}) \times \text{WACC}$$

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.

3. Pricing Methodology Changes

For the 2020/21 pricing year, Eastland have chosen to change their pricing by:

- removing the distinction between high and low density customers and amalgamating these two customer groups

Removal of the High and Low Density distinction is to simplify our pricing structures for retailers. It is also a reflection of the fact that more populous parts of the network enjoy faster restoration times due to the shorter distances it takes to travel to faults from the depot. Eastland consider that removal of the separate pricing is a compromise that balances out the cost of supply and service levels for the two customer groups.

- removing the night tariff for non-TOU customers with a supply capacity of less than 300KVA

The night tariff for mass-market consumers has historically been available to those customers that had fixed wire night store heaters. These heaters consumed energy over night during times of low energy usage and this pricing tariff reflected the off peak use. This tariff has been unavailable to new customer for many years now and only about 30 customers remain on this tariff option. As we have no transparency to these customers retail prices, we are no longer confident that this night rate is still being passed through to consumers. Consequently, this pricing will not be available to any customer from 1 April 2020. These appliances will no longer be subject to load control and will be available 24 hours per day.

- The tariffs for the customer groups in the 4 - 30KVA category will be called the Low User and the Standard tariffs.

This is to more closely align with industry terminology and easily distinguish between those consumers who are eligible for the Low User Fixed Charge (LFC) Pricing tariff and those who do not meet the criteria. This terminology should cause less confusion for those consumers who have holiday homes.

Eastland Network have always offered the LFC tariff to any residential household that was their permanent and primary place of residence regardless of the volume of energy consumed. As a result, the point at which consumers benefit from being on the LFC tariff has historically been set at a quite a high volume of consumption. Over recent years Eastland have become aware of retailers pricing practices of moving those customers whose consumption is greater than 8000 kWhs per annum to the Standard tariff. This is despite the fact the Eastland continue to give the retailer the benefit of the LFC pricing. Consequently, Eastland have adjusted the Standard 30KVA pricing tariff so that the benefit of being on the LFC tariff beyond consumption of 8000kWh per annum is longer available and those residential customers that consume more than 800kWhs per annum would benefit from moving to the standard tariff.

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



4. Price Changes

Total electricity network prices will decrease to the amount permitted under the regulated price path by the Commerce Commission. Price changes range from a decrease of -58.4% to an increase of 1.0%. Eastland have chosen to not reduce fixed daily rates but to apply the reduced prices to the variable component of pricing. The only exception to this is the Standard 30kVA tariff which has had the fixed daily rate reduced so that consumption over 8000 kWh would benefit from being on the Standard tariff rather than the LFC tariff.

The LFC and Standard tariff below 30kVA, have decreased from between -58.42% to 0%. Most residential consumers will be on either one of these tariffs. For the LFC tariff, the fixed charge has not been decreased as this figure is being held artificially low by the LFC regulations. However, the variable charges of the LFC tariff have decreased by more than 16% from the previous year. The 30KVA standard tariff has larger decreases to give effect to the changes discussed in the previous Section 3.

Distribution prices (including distribution pass-through & recoverable charges) for 2020/21 have changed by between -52.3% and an increase of 1.0%. Allowable revenues set by the Commission every 5 years has decreased for the year commencing 1 April 2020. This is largely due to the decrease in the WACC returns applicable for the pricing period for which Eastland's revenues are set. Further reductions that have been included are due to the IRIS penalties being imposed from this 2020/21 pricing year.

Transmission prices have changed by between -75.0% and a 0% change. This is due to decreased charges from Transpower and because ACOT of \$3.745m for the acquisition of transmission assets is no longer permitted.

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 in the 4-30KVA capacity group into those eligible for the Low Fixed Charge (LFC) tariff and those who are not.

An installation only qualifies for the LFC 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 also have a Time of Use Tariff group. This tariff is available to consumers who have a capacity requirement of greater than 201kVA. This tariff is available to consumers, who are still relatively low energy consumers by non-domestic levels, but are able to manage their loads more effectively and take advantage of a time of use tariff. Consumers on this tariff must have a meter capable of providing half-hourly consumption data.

Accordingly, Eastland employs the following consumer group classifications for consumers:

Low Fixed Charge	0 - 30kVA
Standard Low capacity	0-3kVA (Street lighting)
Standard	0 - 30kVA
Standard	31 - 100kVA
Standard	101 - 300kVA
TOU	201 - 300kVA
TOU	301 - 500kVA
TOU	501 - 1000kVA
TOU	1001 - 4500kVA
TOU	4501 - 6500kVA
Generation	301 - 500kVA
Generation	501 - 1000kVA
Generation	1001 - 4500kVA
Generation	4501 - 6500kVA

Within the Low Fixed Charge and Standard groups, consumers are also offered reduced pricing for load control. Other non-generation consumers have reduced pricing available to encourage use off-peak.

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

² See Eastland Network Ltd Tariff definitions, terms and conditions of supply attached to the 2020/21 schedule of prices.



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 2020/21 year.

Table 4: Allocators

Price category	ICP's	kWhs	Installed KVA	Avg RCPD Contribution
STD0003	262	912,985	786	70
LFC0030	14,727	71,736,504	441,810	657,314
STD0030	10,069	89,850,080	302,070	428,018
STD0100	383	25,218,019	38,300	3,064
STD0300	91	16,665,394	27,300	438
TOU0300	9	2,893,306	2,700	13
TOU0500	20	9,085,336	10,000	193
TOU1000	24	28,118,563	24,000	450
TOU4500	3	23,530,281	15,500	179
TOU6500	1	13,489,532	4,500	121
GEN0500	0	0	0	0
GEN1000	6	0	6,000	0
GEN4500	1	0	4,500	0
GEN6500	1	0	6,500	0
Totals	25,597	281,500,000	883,966	1,089,860

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 1.

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 overhead which should be allocated on the basis of ICP. 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

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;
- 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;
- There must be a smooth price transition between standard consumer groups;
- Recognition of the higher levels of reliability in high density areas



- Revenue constraints imposed by the Commerce Commission Default Price Path Determination 2012

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 at 15 cents (excl GST) per day. 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 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 to provide an incentive to allow 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.

7.2 Standard Charges

Eastland consider it important to set prices in such a manner that price stability and certainty is achieved. Business consumers typically make long term investment decisions based on cost inputs (including electricity) and this is factored into price determination. Eastland therefore tries to limit rate shocks for business consumers and as such are bound by legacy pricing in this regard.

Where non-TOU customers have load control installed and make that available to Eastland Network for the purposes of managing peak loads on the electricity system, Eastland offers reduced pricing.

Currently a Time of Use (TOU) tariff is available only to large consumers that have a capacity requirement greater than 201kVA and TOU metering. These connections tend to have high load factors and have less opportunity to vary load during production hours. As such TOU consumers prefer a higher level of fixed charging which consequently results in reduced peak demand signalling. This reduces the sensitivity of total charges to variation in consumption, which is predominantly outside of peak times, and reflects the decision to recover the majority of non-domestic costs through fixed charges. Some peak signalling is retained in the variable charges to encourage demand side management. It follows that, non-domestic consumer group variable prices decrease as the capacity of the consumer group increases.



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.

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



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 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

- | | |
|---|--------|
| • 400V connected supplies (LV Low Voltage) | 1.1051 |
| • 11kV connected supplies (HV High Voltage) | 1.0822 |

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.

9. Non-Standard Contracts

Eastland Network has no non-standards contracts with retailers.

10. Consumer Survey

Each year Eastland commissions a survey seeking the views of consumers, last year the survey focussed specifically on pricing. The key conclusions of the December 2019 survey are

- All market segments regard keeping the power on and getting the power back on as the most important attributes of line services, although keeping the power on has become an invisible given. This appears to be a constant response over time.
- Most large industrial customers believe Eastland is very good at keeping the power on, and at getting the power back on.
- Almost all industrial and mass-market customers would prefer to pay about the same to have about the same reliability.
- Flicker seems to have become an increasing problem for some large industrial customers since the 2018 customer survey.



- Large industrial customers are unwilling to change shift their consumption to night time (they have generally already shifted as much consumption to night time as they can), whilst about at least some mass market respondents would consider shifting consumption to night time.
- The number of large industrial customers who would consider third-party interruption of non-critical appliances has increased sharply since the 2018 customer survey.

11. 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. Eastland is reviewing its options to move towards more innovative pricing structures which are more reflective of the cost of providing lines services, however it is expected that the process of change will take place over a number of years. Eastland will endeavour to engage with customers and key stakeholders during the next 12 months.

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.

12. Pricing Principles

Information Disclosures require Eastland Network to demonstrate consistency with the pricing principles published by the Electricity Commission in March 2010 and adopted and amended by the Electricity Authority from time to time.



12.1 Principle A

Prices are to signal the economic costs of service provision by

“(i) being subsidy free (equal to or greater than incremental costs, and less than or equal to standalone costs), except where subsidies arise from compliance with legislation and/or other regulation.

(ii) having regard, to the extent practicable, to the level of available service capacity

(iii) signalling, to the extent practicable, the impact of additional usage on future investment costs.”

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 15c per day. 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.

⁴ *Eastland Network Limited Asset management Plan – 2018 to 2028, Pg 170*

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



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

Eastland Network provides Time of Use (TOU) to larger consumers and 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 peak times.

12.2 Principle B

Where prices based on 'efficient' incremental costs would under-recover allowed revenues, the shortfall should be made up by setting prices in a manner that has regard to consumers' demand responsiveness, to the extent practicable.

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 currently makes available Time of Use (TOU) pricing to larger commercial customers who have TOU metering installed which reduces peak loads on the network however as TOU pricing is not yet available for domestic customers, there is no recovery of any reduction in revenue during these peaks but is smoothed across all time periods for domestic customers. TOU pricing is not yet available for domestic connections due to the unavailability of accurate data across all consumers in this category but it is being considered as an option in the near future as the rollout of smart meters in the Eastland region gains more coverage.

12.3 Principle C

Provided that prices satisfy (A) above, prices should be responsive to the requirements and circumstances of stakeholders in order to:

- i. discourage uneconomic bypass;
- ii. allow for negotiation to better reflect the economic value of services and enable stakeholders to make price/quality trade-offs or non-standard arrangements for services; and
- iii. where network economics warrant, and to the extent practicable, encourage investment in transmission and distribution alternatives (e.g. distributed generation or demand response) and technology innovation

As there is sufficient infrastructure and capacity on the Eastland Network to cover current needs, the incremental cost of providing additional energy will be minimal. Therefore for the vast majority of

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



customers, if they should disconnect from the network and incur the costs of an alternative supply arrangement it will be economically inefficient. However, in some cases there will be small pockets of rural and isolated customers where bypass will be economically efficient but there is likely to be a trade-off between efficiency and reliability. Further as the cost of connection to the network is currently less than the stand-alone cost of an alternative supply, Eastland considers there to be little economic incentive to bypass the network. However, with the decreasing price of solar and battery technology, Eastland has noticed an increase in the partial bypass of electricity supply on its network. This issue has been raised by the Electricity Authority⁷ and as a result, Eastland network is in the process of developing more cost reflective pricing options to avoid the issue of cross-subsidies for those who have solar generation by those that don't. New pricing options are expected to be implemented in the next pricing period commencing 1 April 2021.

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.

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 has contractual arrangements with a related generator to provide large diesel powered generation to remote locations on its network. These generators provide security of supply at a significantly lower cost than building additional overhead lines. A comparison is undertaken each year to determine the costs saved by the network and costs incurred by the generator and avoided costs are paid to the generator provided that the benefits received are greater than the costs of the generator.

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.

12.4 Principle D

Development of prices should be transparent, promote price stability and certainty for stakeholders, and changes to prices should have regard to the impact on stakeholders.

Development of prices is disclosed in this document which is publicly available. Tariff categories have remained unchanged for a number of years with relatively small increases year on year. Eastland Network is in the process of developing a pricing strategy to address concerns regarding emerging technologies. This strategy and change process will involve considerable engagement with end consumers, retailers, regulators and other key stakeholders.

12.5 Principle E

Development of prices should have regard to the impact of transaction costs on retailers, consumers and other stakeholders and should be economically equivalent across retailers

⁷ Implications of evolving technologies for pricing of distribution services – Consultation paper; Electricity Authority 3 November 2015



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. Eastland Network will continue to review the number of price categories it has and will attempt to rationalise tariffs as it is able to.

Eastland Network is currently reviewing its pricing structure with a view to developing a simpler pricing and where possible, closer alignment with other electricity distribution businesses. The aim of this exercise is to reduce complexity and therefore costs for all stakeholders however, greater alignment is more likely to occur with the implementation of cost reflective pricing options in 2021.



Appendix 1 – Consumer Group Target Revenue Allocation

2020/21 Pricing Year

Price Code	Consumer Group	ICP No's	Kwh per annum	Total Revenue (\$000s)
LFC0030	Low Fixed Charge (0 to 30kVA)	14,727	71,736,504	10,141
STD0030	Standard (0 to 30kVA)	10,069	89,850,080	11,074
STD0100	Standard (31 to 100kVA)	383	25,218,019	2,651
STD0300	Standard (101 to 300kVA)	91	16,665,394	1,360
TOU0300	TOU (201-300kVA)	9	2,893,306	184
TOU0500	TOU (301-500kVA)	20	9,085,336	516
TOU1000	TOU (501-1000kVA)	24	28,118,563	1,321
TOU4500	TOU (1001-4500kVA)	3	24,179,463	903
TOU6500	TOU (4501-6500kVA)	1	12,840,350	478
GEN0500	Generation (301 to 500kVA)	-	-	-
GEN1000	Generation (501 to 1000kVA)	6		67
GEN4500	Generation (1001 to 4500kVA)	1		28
GEN6500	Generation (4501 to 6500kVA)	1		43
STD0003	Low Capacity (0 to 3kVA)	262	912,985	159
		25,597	281,500,000	28,926



Appendix 2 - Pricing Schedule

Lines Charges and Forecast Volumes for the 2020/21 Pricing Year

Price Code	Consumer Group	Charge Type	ICPs	Units days/kWH	Prices		
					Distribution	Transmission	Total
LFC0030	Low Fixed Charge (0 to 30kVA)	Fixed Daily Charge	14,727	365	0.1125	0.0375	0.1500
LFC0030	Low Fixed Charge (0 to 30kVA)	Consumption Uncontrolled	-	52,883,819	0.1368	0.0119	0.1487
LFC0030	Low Fixed Charge (0 to 30kVA)	Consumption Controlled	-	18,852,685	0.0717	0.0063	0.0780
STD0030	Standard (0 to 30kVA)	Fixed Daily Charge	10,069	365	1.2211	0.7365	1.9576
STD0030	Standard (0 to 30kVA)	Consumption Uncontrolled	-	74,368,751	0.0364	0.0096	0.0460
STD0030	Standard (0 to 30kVA)	Consumption Controlled	-	15,481,329	0.0237	0.0062	0.0299
STD0100	Standard (31 to 100kVA)	Fixed Daily Charge	383	365	5.2768	2.4915	7.7683
STD0100	Standard (31 to 100kVA)	Consumption Uncontrolled	-	24,487,172	0.0558	0.0069	0.0627
STD0100	Standard (31 to 100kVA)	Consumption Controlled	-	730,847	0.0363	0.0045	0.0408
STD0300	Standard (101 to 300kVA)	Fixed Daily Charge	91	365	10.9307	4.6981	15.6288
STD0300	Standard (101 to 300kVA)	Consumption Uncontrolled	-	16,652,384	0.0449	0.0056	0.0505
STD0300	Standard (101 to 300kVA)	Consumption Controlled	-	13,010	0.0296	0.0036	0.0332
TOU0300	TOU (201-300kVA)	Fixed Daily Charge	9	365	18.2181	7.8301	26.0482
TOU0300	TOU (201-300kVA)	Consumption Evening Peak	-	497,786	0.0406	0.0047	0.0453
TOU0300	TOU (201-300kVA)	Consumption Morning Peak	-	786,928	0.0377	0.0044	0.0421
TOU0300	TOU (201-300kVA)	Consumption Off Peak	-	974,482	0.0295	0.0035	0.0330
TOU0300	TOU (201-300kVA)	Consumption Night	-	634,109	0.0154	0.0019	0.0173
TOU0500	TOU (301-500kVA)	Fixed Daily Charge	20	365	20.5369	8.8266	29.3635
TOU0500	TOU (301-500kVA)	Consumption Evening Peak	-	1,417,231	0.0406	0.0047	0.0453
TOU0500	TOU (301-500kVA)	Consumption Morning Peak	-	2,328,650	0.0377	0.0044	0.0421
TOU0500	TOU (301-500kVA)	Consumption Off Peak	-	2,965,133	0.0295	0.0035	0.0330
TOU0500	TOU (301-500kVA)	Consumption Night	-	2,374,322	0.0154	0.0019	0.0173
TOU1000	TOU (501-1000kVA)	Fixed Daily Charge	24	365	31.7988	13.6671	45.4659
TOU1000	TOU (501-1000kVA)	Consumption Evening Peak	-	4,648,381	0.0406	0.0047	0.0453
TOU1000	TOU (501-1000kVA)	Consumption Morning Peak	-	6,753,656	0.0377	0.0044	0.0421
TOU1000	TOU (501-1000kVA)	Consumption Off Peak	-	8,860,377	0.0295	0.0035	0.0330
TOU1000	TOU (501-1000kVA)	Consumption Night	-	7,856,148	0.0154	0.0019	0.0173
TOU4500	TOU (1001-4500kVA)	Fixed Daily Charge	3	365	79.4969	34.1677	113.6646
TOU4500	TOU (1001-4500kVA)	Consumption Evening Peak	-	3,991,306	0.0400	0.0046	0.0446
TOU4500	TOU (1001-4500kVA)	Consumption Morning Peak	-	5,623,520	0.0371	0.0043	0.0414
TOU4500	TOU (1001-4500kVA)	Consumption Off Peak	-	7,483,839	0.0295	0.0034	0.0329
TOU4500	TOU (1001-4500kVA)	Consumption Night	-	7,080,798	0.0155	0.0018	0.0173
TOU6500	TOU (4501-6500kVA)	Fixed Daily Charge	1	365	120.9841	51.9992	172.9833
TOU6500	TOU (4501-6500kVA)	Consumption Evening Peak	-	1,982,665	0.0400	0.0046	0.0446
TOU6500	TOU (4501-6500kVA)	Consumption Morning Peak	-	3,211,407	0.0371	0.0043	0.0414
TOU6500	TOU (4501-6500kVA)	Consumption Off Peak	-	3,943,396	0.0294	0.0034	0.0328
TOU6500	TOU (4501-6500kVA)	Consumption Night	-	3,702,883	0.0155	0.0018	0.0173
GEN0500	Assessed Capacity (301 to 500kVA)	Fixed Daily Charge	-	-	20.2074	-	20.2074
GEN1000	Assessed Capacity (501 to 1000kVA)	Fixed Daily Charge	6	365	30.4809	-	30.4809
GEN4500	Assessed Capacity (1001 to 4500kVA)	Fixed Daily Charge	1	365	77.4476	-	77.4476
GEN6500	Assessed Capacity (4501 to 6500kVA)	Fixed Daily Charge	1	365	117.8653	-	117.8653
STD0003	Low Capacity (0 to 3kVA)	Fixed Daily Charge	262	365	0.3313	0.1422	0.4735
STD0003	Low Capacity (0 to 3kVA)	Consumption Uncontrolled	-	912,985	0.1108	0.0140	0.1248
			25,597	281,500,000			



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Eastland Network Ltd, 172 Carnarvon Street
PO Box 1048, Gisborne 4040, New Zealand

Tel 06 869 0700 | Fax 06 867 8563 | info@eastland.nz | eastland.nz