



Pricing Methodology 2018 - 2019

*For Line Charges, effective 1 April 2018 to 2019
(Pursuant to Electricity Information
Disclosure Requirements)*

www.topenergy.co.nz

TOP ENERGY[®]
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1. Introduction

Top Energy Limited (Top Energy) is the electricity distribution network in the Mid and Far North of the Northland region. The network distributes some 326,000,000 kWh of electricity to over 31,500 electricity consumers, who also own the company through the Top Energy Consumer Trust (TECT).

This pricing methodology document describes our key considerations and approach to setting distribution prices effective 1 April 2018. It also sets out our plans and pricing strategy.

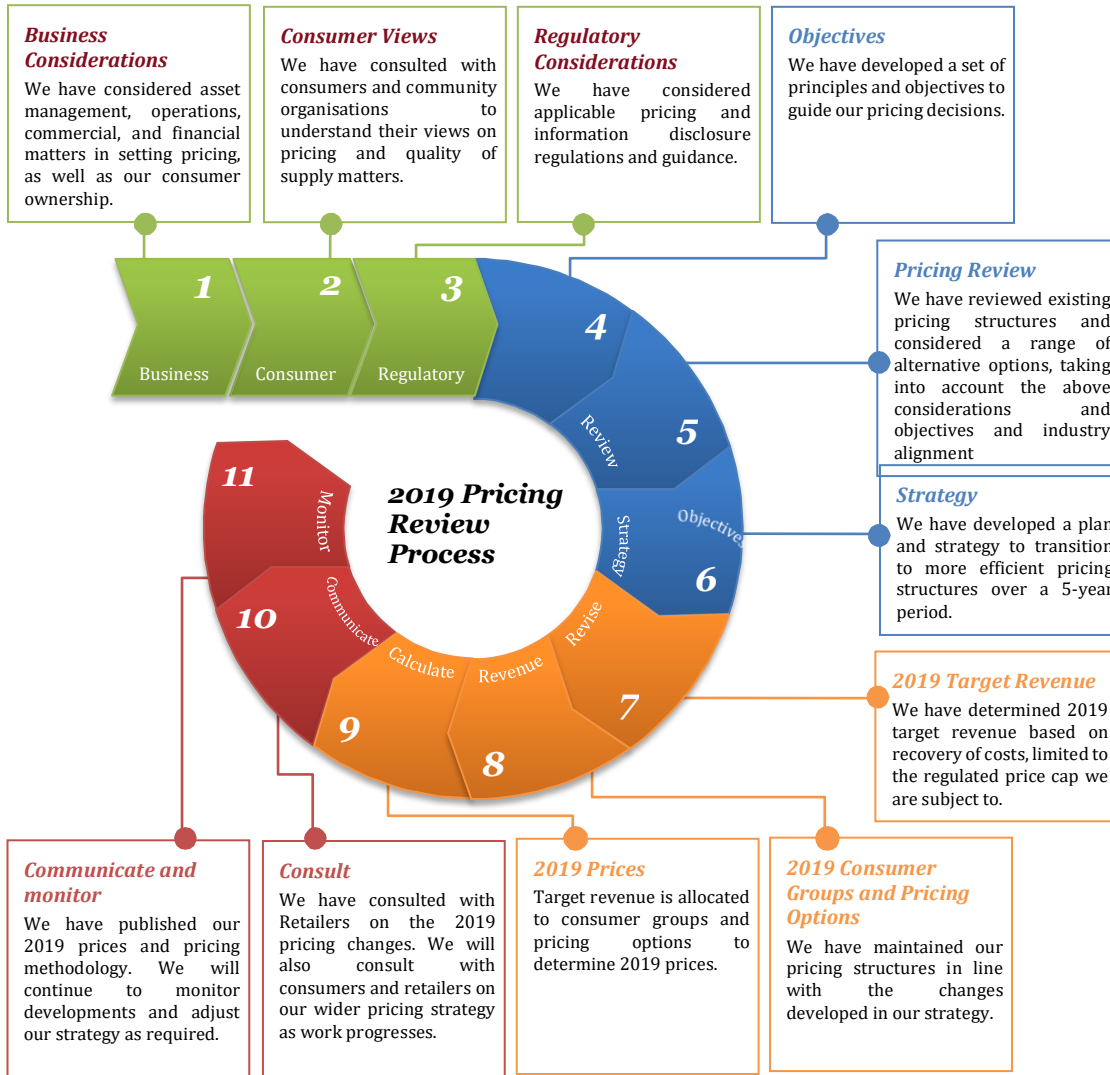
The pricing methodology is structured as follows:

- **Section 2** summarises our approach and key decisions for setting prices in 2018-19
- **Section 3** summarises key considerations we have taken account of in making decisions on pricing
- **Section 4** details our principles and objectives, recent review, and plans and strategy for pricing
- **Section 5 to 7** provides further detail on how prices are set, including:
 - how target revenue is determined
 - key decisions on consumer groups and available pricing options
 - how target revenue is allocated to each consumer and price option
- **Appendix 1** provides director certification of this pricing methodology
- **Appendix 2** provides a glossary of common terms used in this document
- **Appendix 3** maps compliance against section 2.4 of the ID Determination
- **Appendix 4** describes how this pricing methodology is consistent with the Electricity Authority's pricing principles published in February 2010
- **Appendix 5** details distribution prices that will apply from 1 April 2018

2. Summary of how prices are set

2.1. Process for setting prices

The following diagram illustrates Top Energy’s process for reviewing and setting prices in 2018-19.



2.2. How prices are calculated

Prices have been set to recover our 2018-19 target revenue. Target revenue is calculated to recover our forecast costs but is limited by a price cap determined by the Commerce Commission. Unit prices (comprising a daily fixed charge and/or a consumption-based variable charge) are calculated for each pricing option we offer by allocating target revenue:

- directly to a consumer, where costs are known for specific consumer groups
- using cost allocators for shared costs, which are based on consumer numbers or usage characteristics.

Figure 1 illustrates how target revenue is allocated to consumer groups and prices.

Figure 1: Calculation of prices



Notes: UM: Unmetered, IND: Industrial, DG: Distributed Generation

2.3. Key changes to prices in 2018-19

We have continued the focus on our pricing methodology over the past few years. A review of our pricing approaches was commenced in 2014 followed by incremental changes which opened up TOU periods for more consumers. In 2016 and 2017, following consultation with key stakeholders, we improved the efficiency and effectiveness of our pricing by achieving alignment with the industry with reference to the ENA's Distribution Pricing Guides (August 2015 and revised September 2016). This will also enable us to start to collate data through the continual roll-out of smart meters from a consistent base and over a longer time period to support any future changes.

This year we are not introducing any significant changes to our price structure. However, the discount paid by Top Energy has been changed from discretionary to a post discount and included in the price schedule. Distribution prices have increased by 9.6% on average to recover allowable revenues permitted under the price cap regulation. These increases will be recovered mostly through an increase in variable charges and the balance through fixed charges for larger commercial customers. The fixed charge for Residential and General Users remains unchanged. Industrial (IND) consumers will continue to be assessed based on specific assets used. Overall prices have increased by 7.0% taking into consideration the reduction in pass-through costs. Appendix 5 provides further detail on prices.

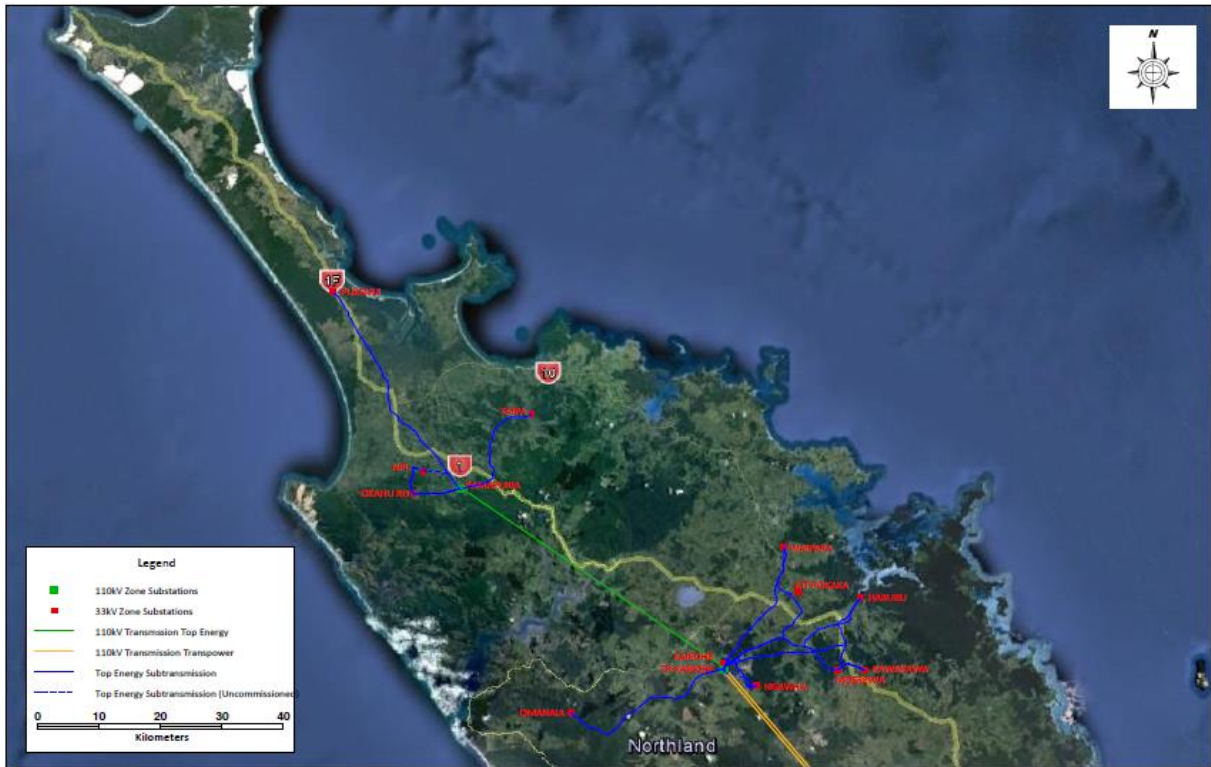
3. Pricing considerations

3.1. Business considerations

Top Energy is the local electricity distribution network in the Mid and Far North of the Northland region. Top Energy's network begins in Hukerenui, approximately 25km north of Whangarei and ends at Te Pahi, 20 km south of Cape Reinga. It spans from the East Coast to the West Coast. The supply area is sparsely populated with no dominant urban centre and is recognised as one of the more economically depressed areas of the country.

The company is an integral part of the Far North community. It is owned by its customers through TECT. Consumer trust ownership means that surpluses not required for the operation and development of the network are returned to consumers via sales discounts on electricity bills and through a dividend to TECT. Top Energy also employs more than 165 people and is one of the largest employers in the Far North.

The utilisation of the network is heavily weighted towards small consumers, representing 99% of connections and over 78% of maximum demand. This is evidenced by the fact that average consumption is the one of the lowest in the country at 10,166 kWh/consumer. Top Energy's pricing structures are therefore strongly focussed on the needs of the residential and general consumer groups, with only a few large connections.



The network receives supply from the national grid at the Kaikohe substation and from local generation at Ngawha. The Kaikohe substation supplies the southern part of the network directly, with the northern part of the network supplied from a single transmission circuit to Kaitiaki. Electricity is then distributed to consumers across long distribution feeders supplied from a limited number of zone substations.

This configuration is a legacy of a network design focused on providing electricity to a sparsely populated, economically deprived area, at a time when cost rather than reliability was the main driver for network development. Over 35% of Top Energy's lines were originally built using subsidies provided by the Rural Electrical Reticulation Council (RERC). This levy assisted post-war farming development in remote areas and enabled the supply of electricity to consumers located in sparsely populated rural areas, which would otherwise have been uneconomic to service.

The original network infrastructure was also developed at a time when Kaikohe and Kaitiaki were the dominant urban centres. This is no longer the case, with growth now occurring in the Bay of Islands and Kerikeri as well as the East Coast peninsulas. This is where the existing infrastructure is weakest.

Many existing lines now require extensive rebuilding and refurbishment. Many assets are located in sparsely populated rural areas which are uneconomic in some circumstances. However, Top Energy is required by legislation to maintain supply to consumers that were connected to these lines prior to 1993.

Within this environment, Top Energy has had to invest to meet both growth in new areas, while maintaining an appropriate level of service in existing high-cost network areas. The costs of these investments need to be reflected in prices going forward.

3.2. Consumer views

To inform our decisions regarding the above investments, in 2009 Top Energy consulted with consumers on our proposed network developments and consumer expectations for prices and the quality of service they receive. This was completed via a telephone survey.

The survey results established that 80% of consumers wished to see network reliability improve. There was overwhelming support from community organisations for the construction of a second 110 kV circuit to secure the electricity supply to the Kaitaia region. Accordingly, we embarked on a programme to improve security of supply in which we will invest around \$185 million by 2024; the single largest expansion in the history of the network.

Previously, Top Energy has completed an annual telephone survey to obtain customer preferences for a range of electricity supply and pricing matters. The views expressed in these surveys suggest that customers have seen the improvements from the first stages of the capital investment programme and that there is ongoing support for continuing to improve security of supply. Last year the customer telephone survey focused on emerging technologies, alternative energy sources (including the alternative of going off-grid) and the emerging re-integration of lines and energy. The results of the consumer's surveyed revealed that:

- 90% of consumers perceive their current supply reliability to be acceptable or better than acceptable (2015 = 93%)
- 60% of consumers would be interested in using a power advisory service through Top Energy to find the cheapest retail deal with only 6% of those willing to pay for the service
- The portion of consumers considering alternative energy sources dropped to 27% (2015 = 50%) and when asked if they were considering going "off grid", 16% said yes.

This year, we conducted a targeted telephone survey on customers preferences for improving the 110kVA supply to Kaitaia. Kaitaia is currently supplied by a single 110kV line that was purchased from Transpower, and which Top Energy has been planning to complement by building a second separate 110kV line. In the past the existing 110kV line has required 1 planned outage per year for essential maintenance, however the declining acceptability of live-line work will now require up to 4 planned outages per year. This increased number of planned outages has prompted Top Energy to consider diesel generators as an alternative due to ongoing delays in obtaining land access.

The results of the surveys revealed that:

- The recent planned nine-hour shutdown caused little or no inconvenience to the permanent residence and essential services market segments, but did disrupt a distinct number of industrial and tourism customers
- Most customers believe that diesel generators are an acceptable short term or long-term alternative to building a second line
- More customers than not are prepared to pay a small amount extra to have only 1 planned shutdown per year instead of up to 4.

To compliment the telephone survey, Top Energy ran focus groups with customers in Kerikeri and Kaitaia. The focus groups included 6-8 representative Top Energy customers and provided in-depth discussions with customers on their views about the electricity sector, different pricing structures to recover distribution costs and Top Energy. The focus groups were conducted in conjunction with the Electricity Network Association (ENA) which had completed similar focus groups in Auckland and Christchurch. This provided a benchmark against other customer views in NZ.

The key customer insights from the focus groups were:

- Top Energy customers are more engaged with electricity than groups in Christchurch and Auckland primarily due to higher cost
- Customer understanding that higher distribution costs are due to lower population, relative remoteness and high relative infrastructure needs
- Higher electricity costs, combined with lower incomes, appear to drive a number of cost saving behaviours and consideration of electricity alternatives including solar and gas. High upfront costs and long payback time has limited uptake
- Low Fixed Charge Tariff (LFCT) was thought to be targeted at elderly and / or those living alone. The number of customers on the LFCT in the Top Energy network was higher than expected
- Top Energy has a strong local brand. We are perceived as being highly responsive in emergency situations, solid community involvement and contribution, and highly visible in the community

3.3. Regulatory considerations

The annual surveys and focus groups continue to assist us in our review of our current pricing and future developments.

Top Energy is subject to regulations which influence our pricing decisions as well provide guidance on how prices should be set. These are summarised in Figure 2.

The Commerce Commission determines an annual cap on lines charge revenue which it considers is sufficient to recover our reasonable costs, as well as an appropriate return on investment. In an open letter, dated 9 November 2017, the Commission outlined their priorities for the electricity distribution sector for 2017/18 and beyond. The key priorities are:

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1. Greater understanding about the performance of infrastructure industries with asset management as a key area of focus
2. Making information about infrastructure industries accessible to a wider audience and
3. An increasingly efficient and effective process for assessing price-quality path proposals by regulated suppliers.

Top Energy meet with the Commerce Commission as part of their fact-finding sessions and look forward to further discussions.

We must also publish a range of information on our prices and pricing methods. This pricing methodology is prepared pursuant to these requirements (see Appendix 3).

The Electricity Authority's pricing principles and information disclosure guidelines also provide useful guidance on setting economically efficient prices. We have considered the extent to which our pricing methodology aligns with these principles in Appendix 4.

Figure 2: Summary of relevant regulations

Regulation	How this affects Top Energy's prices
Electricity Distribution Services Default Price-Quality Path Determination 2015 (DPP)	Prices must not exceed allowable revenues determined by the Commerce Commission
Section 2.4 of the Electricity Distribution Information Disclosures Requirements (ID)	Requires Top Energy to publish certain information on prices and pricing methods
Distribution Pricing Principles and Information Disclosure Guidelines (Pricing Principles)	Provides guidance on: <ul style="list-style-type: none"> • economic principles and market considerations for setting prices • information that should be made available to support pricing methodologies
The Electricity (Low Fixed Charges Options for Domestic Consumers) Regulations 2004 (LFC Regulations)	Requires Top Energy to offer a price option to domestic consumers that has a fixed daily price not exceeding 15 cents.
The Electricity Industry Participation Code, Part 6 - pricing of distributed generation.	Limits prices for distributed generation to the incremental costs of connecting generation to the network, considering any avoided costs.
The Electricity Industry Participation Code, Part 12A.	Top Energy must consult with retailers in relation to any changes to pricing structures.

3.4. Stakeholder (Retailer) considerations

In accordance with the requirements of the Electricity Industry Participation Code, Top Energy has engaged with all retailers that have connections on our Network when we have intended to make changes to our pricing structures. In early November 2017, Top Energy notified all retailers, that have connections on our Network, that one closed pricing code with 75 customers will be discontinued and that Top Energy are not introducing any significant changes to our price structure on 1 April 2018. Based on Retailer Feedback Top Energy has delayed discontinuing the closed Pricing Code to 1 April 2019. This will enable Retailers to manage the transition with customers.

In addition to this formal notification, Top Energy has engaged stakeholders through attendance at industry workshops (e.g. Joint Distributor and Retailer workshop on pricing reform in July 2017 run by the Electricity Networks Association (ENA) and Electricity Retailers' Association of New Zealand (ERANZ)), informal discussions with retailers, or when new retailers sign up for a Use of System Agreement. Two new retailers started trading on the network in the last year taking the total number of retailers to 21.

4. Pricing Decisions

4.1. Pricing objectives

Top Energy has adopted the following six pricing objectives, informed by the above considerations:

1. Prices provide an adequate return to the shareholder within the restrictions of the Commerce Commission's price control regime
2. Prices are economically efficient, transparent, and simple to understand, but also recognise the socio-economic needs of consumers and the region
3. Prices reflect a fair and efficient allocation of cost, regardless of actual volumes of electricity consumed
4. Prices provide consumers with opportunities to significantly reduce their charges where they are able to make changes in their usage of the network to reduce Top Energy's long run costs
5. Price stability and certainty is maintained by signaling changes in advance and by transitioning these changes over an appropriate timeframe to avoid price shock
6. Prices do not differentiate urban and rural consumers

These objectives are informed by the key considerations discussed in the previous section, including business considerations, consumer feedback, industry and regulatory guidance (in particular the Electricity Authority pricing principles).

Trade-off exists across these objectives which must be balanced. Our current focus in meeting these objectives is:

- To allocate costs fairly between consumer groups
- To establish a range of price options that reflect consumer requirements

- That prices reflect the potential demand and capacity required by consumers
- To comply with regulatory requirements
- To appropriately recover pass through costs
- To achieve a rate of return acceptable to shareholders.

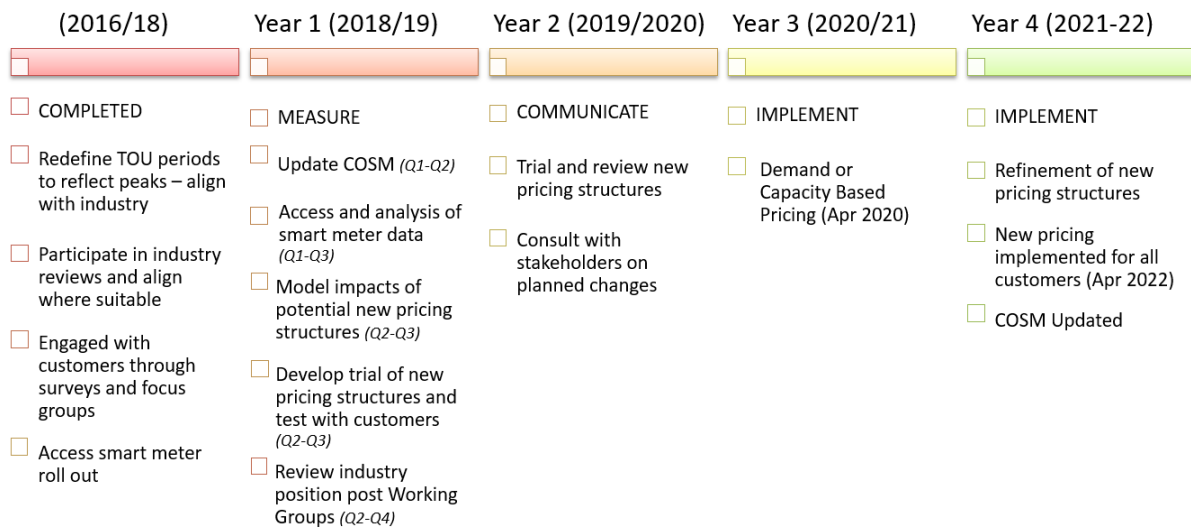
4.2. Five-year pricing strategy

Top Energy developed a plan and strategy to progress the key findings from the 2014 pricing review and to transition to new pricing structures by 2020. Last year this was extended to 2021 due to a longer assessment period being required to ensure that any changes are aligned with the requirements of the wider industry and the regulators. In addition, a slower rollout of smart meters across the Network has meant that the data required to make decisions is just becoming available. Top Energy is still working towards the 2021 timeline for initial implementation of new pricing structures. The timeframe to develop and implement these changes is considered appropriate, factoring in:

- The need to collect and analyse available pricing and billing information
- New consumer insights and pricing applications made available by the roll out of smart meters (note: that now with 50% of smart meters currently installed up from 45% 12 months ago and 14% two years ago, a reasonable amount of data is just becoming available to enable work on understanding trends and usage patterns)
- Upcoming pricing guidance expected to be provided through:
 - The Electricity Authority's review of electricity distribution pricing regulations, low user fixed charge regulations including clarification on the published guidelines, and DG pricing
 - The Electricity Network Association's (ENAs) ongoing work stream to evaluate network pricing solutions and implementation considerations. Top Energy is represented on the ENA working group
- Consultation with consumers and retailers
- Sufficient time to transition prices to avoid price unreasonable shock to individual consumers.

The following table highlights the journey that has been completed to date and the planned approach to achieve Top Energy's objective of demand and/ or capacity-based pricing by 2021.

Figure 3: Top Energy’s pricing strategy



It is difficult to quantify the impact of these changes at this stage. We plan to provide further information on how consumers will be impacted along with the resources required to implement as our review progresses. Availability of half hour data is essential for this analysis and trialling of new pricing structures. Top Energy will be working with Retailers to enable this.

In October 2016 the Electricity Authority outlined their expectations that distributors would publish their plans for adopting efficient price structures. The plans are to include information that signals to stakeholders, including retailers and consumers, the distributor’s goals and timeframes including:

- A clear outline of the process the distributor will adopt, including the nature of the consultation that will be undertaken with retailers and other stakeholders
- A timeline with the key milestones
- Discussion of distributor resourcing implications including how resources will be allocated.

In last year’s pricing methodology Top Energy’s roadmap, that was provided to the EA, was published. An updated version, submitted to the EA, is outlined in the table below showing progress and key timelines

Figure 4: Top Energy’s future pricing roadmap

Roadmap Stages	Activities	Timeline (Pricing Years)					
		2017/18	2018/19	2019/20	2020/21	2021/22	2022/23
1. Initiate pricing reform							
Problem identification & Discovery		C					
Define overall objectives for reform	Set overall goals including target dates or date ranges	C					
Develop strategy to deliver reform	Develop ideas on how to go ahead (including long list of future pricing options if available)	C					
Communicate	Prepare and publish future pricing roadmap, include reasoning and why it's important	C					
Identify challenges	eg. resourcing implications, billing systems, EIEPL file formats, AMI penetration and technology, accessing data	C					
Customer consultation	Customer focus groups on potential future pricing options in collaboration with the ENA	C					
Consult retailers	Socialise ideas & plans with retailers		X				
Establish high level plan	Gain commitment to reform, agree plan, allocate resources		X				
Gather basic data for analytics	What do we need to know to progress reform (eg. AMI penetration, customer groups)		X				
Define pathway	Prepare final strategic pricing plan (including target dates)		X				
Alignment across EDBs	Compare with other EDB's, form coalitions where appropriate		X				
2. Plan changes in more detail							
Access to data for analysis	Secure rights to half hour metering data from Retailers for analysis		X				
Develop detailed plans, including:	Identify issues/prepare detailed pricing reform plans			X			
- customer interactions	Establish program and focus groups (retailer + end-user)			X			
- data analysis to assess customer impacts	Narrow down preferred options and test market impacts (where applicable)			X			
- implementation and transition arrangements	Identify what will drive success			X			
Trial new pricing structures	Identify options and trial with customers			X			
- feedback loops and issues resolution	Develop processes to account for stakeholder views and review against target dates.			X			
- communication	Educate customers and retailers about change				X		
- regulatory compliance	Check plan meets regulatory expectations				X		
3. Manage roll out of new pricing options							
Develop transition strategies	Incentivise and manage take-up over time for retailers and customers					X	
Adopt risk management approach	Identify and manage risks to markets, customers, EDBs (eg political and financial risks)					X	
Review progress and make adjustments	Actively consider progress towards outcomes over time					X	
Ongoing customer interactions	Monitor customer responses and manage as required					X	
4. Regulatory Enablers							
Form of price control	Change to revenue CAP from Weighted Average Price Cap				X		
5. Implementation of new pricing options							
Trial pricing structures	New pricing structures available to customers (Optional)			1-Apr			
New pricing structures	New pricing structures for new customers and optional for existing customers				1-Apr		
New pricing for all customers	Full implementation						1-Apr

4.3. Pricing review

Top Energy’s pricing strategy has provided the framework for activity over the last year and for the changes being made this year. To assist in the delivery of the framework, Top Energy joined the ENA’s Distribution Pricing Working Group (DPWG) in 2016, to better understand and be involved in industry discussions on pricing and assist in industry alignment with the transition from a historical pricing structure.

Recent regulatory initiatives (including the Electricity Authority review of Top Energy’s pricing methodology against the pricing principles), release of LFC Guidelines and industry developments (e.g. deployment of smart meters, uptake of solar PV, electric vehicles) are other factors that are being considered in the wider pricing review.

In 2014 PwC was engaged to develop a cost of service model (COSM) and look at more efficient pricing structures. Initial analysis suggested that the pricing methodology could be improved to better reflect economic, regulatory and industry best practice. Based on this review, Top Energy is considering moving from largely consumption based pricing towards prices based on demand/capacity-utilisation with time of use consumption charges which better reflect the service we provide and cost structure (i.e. network capacity). These forms of pricing are dependent on the roll out of smart meters, with the rollout currently sitting at 50% of ICP’s. This has meant a phased approach is required.

The initial focus of the pricing review has been on modernising the pricing structure to achieve better industry alignment e.g. ENAs distribution pricing guidelines and the introduction of time of use pricing for non-residential customers. The main changes are summarised below:

- Introduction of a Residential Consumer Group with a Low User and Standard User Category Code

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- Introduction of a General Consumer Group for all other connections that are not Residential and don't fit within other Groups
- A new price structure for Unmetered based on a "per lamp" basis which will be transitioned to as data becomes available
- Increasing the proportion of fixed charges to reduce billing volatility Introduced time of use for non-residential customers using standard time periods which align with peak demand periods on our network
- Simplifying the pricing structure with improved usage of Consumer Groups, Category Codes and Register Content Codes.

In 2017/2018 the focus has been on further understanding the pricing structures available, in conjunction with the industry, and positioning Top Energy to evaluate the options against our pricing objectives in section 4.1.

In August 2017 the ENA published a paper "A Guideline Paper for Electricity Distributors on new pricing options". This paper identified and outlined five network pricing types that either on their own or in combination that could be used to meet the pricing objectives. The paper identifies that further work is required to support members as they look at implement pricing reform and two new work pricing streams have been established:

- Technical Implementation Working Group – joint working group, with Retailers, to consider the detailed issues that will affect implementation including access to data, data quality, security and privacy and systems
- Strategic Pricing Working Group – ENA working group to look at what cost effective pricing means in practice including pricing structure design, customer testing and analysis using customer half hour metering data

Top Energy will continue to be a part of the ENA Pricing Distribution Working Group and the Strategic Pricing Working Group.

To position Top Energy to evaluate the pricing options and the impact on its customers we have commenced updating our cost to serve model and engaged customers face to face through focus groups.

As outlined in section 3.2 Top Energy ran focus groups with customers in Kerikeri and Kaitaia in conjunction with the ENA. These focus groups are specifically designed to get detailed feedback from customers on pricing options outlined in the ENA Guidance paper. The pricing options considered were:

- Agreed Capacity
- Peak Demand
- Time of Use
- Fixed Price

The key customer insights on pricing options from the focus groups were:

- Communicating with customers on pricing options is likely to be challenging. To effectively communicate the pricing options analogies where required

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- Respondents preferred option was Time of Use followed by Agreed Capacity, then Fixed Price with Peak Demand last. Time of Use and Agreed Capacity were thought to be the closest at achieving balance between fairness overall and personal benefit with the minimum downsides. Key respondent thoughts are below:
 - Time of use pricing incentivises savings behaviour appropriately, was easy to understand and aligned with the general view of paying more when demand is higher. However, it was noted that large or working families would find it difficult to change behaviour
 - Agreed Capacity promoted power savings and some user control but there were a number of practical issues raised e.g. how to choose capacity, track power usage, unforeseen events
 - Fixed Price and Peak Demand were seen as inflexible and not incentivising overall power savings. Peak demand was also seen as strongly unfair due to penalising for unseen events.

The insights from our customers were broadly aligned to those from similar ENA focus groups in Christchurch and Auckland.

5. Target revenue

The first step in the pricing process is to establish the total target revenue to be recovered through prices. Distribution prices are set to generate sufficient revenue for Top Energy to recover its costs, subject to DPP allowable revenues. These costs are discussed in further detail:

Figure 4: 2018-19 Breakdown of Target Revenue

COMPONENTS OF TARGETED REVENUE			
	(1 April 2018 to 31 March 2019)	(1 April 2017 to 31 March 2018)	% change
Transpower Charges	5,339,058	5,577,786	(4.3)%
Avoided Cost of Transmission (ACOT) - DG	2,821,722	3,078,894	(8.4)%
Pass-through Costs	208,806	203,865	2.4%
Other Recoverable Costs	2,544,061	2,186,175	16.4%
Pass Through subtotal	10,913,647	11,046,720	(1.2)%
Network Operating Costs	6,188,000	5,772,000	7.2%
Non-network operating costs	9,650,000	9,316,594	3.6%
Depreciation	8,043,886	7,919,000	1.6%
Pre tax ROI charge	20,797,249	19,633,435	5.9%
Distribution subtotal	44,679,135	42,641,029	4.8%
Annual Revenue Requirement	55,592,782	53,687,749	3.5%
DPP Compliance Adjustment	(6,392,424)	(2,748,192)	132.6%
TOTAL TARGET REVENUE*	49,200,358	50,939,557	(3.4)%

The total Target Revenue has decreased by \$1.74m (3.4%) taking into consideration the posted discount that will be paid out during the year. Without the posted discount revenue would increase by 6.8% largely driven by the increase in the asset base from the last regulatory period and the corresponding increases allowed under the DPP.

5.1. Price cap regulation

Top Energy has set total target revenue for 2018-19 at \$49.2 complying with the default price path (DPP) and based on consumption and connections forecasts. The target revenue is after any posted line charge discounts that are paid to consumers through a reduction in their electricity bill. Posted discounts are forecast to be in the vicinity of \$5.2m for the year, representing 9.6% of target revenue before the discount.

Under the 2015 DPP Determination, Top Energy was allowed a price increase of 8.29% in the 2015-16 pricing year and CPI + 7% price increases in the four subsequent pricing years. This decision was based on an allowable return on investment for the 2016-2020 regulatory period of 7.19% (67th percentile vanilla Weighted Average Cost of Capital (WACC)).

In addition, Top Energy is allowed to recover pass-through and recoverable costs including transmission charges, Avoided Transmission, Avoided Distribution, rates, levies, claw-back and NPV wash-up.

5.2. Transpower charges

Top Energy passes through all transmission charges at cost in accordance with the DPP and its own pricing principles. The transmission charge is equitably distributed across all customers. Transmission charges include:

- Connection Charges – Transpower charges for use of Kaikohe GXP connection assets to which Top Energy's network connects to the national grid
- Interconnection Charges – Transpower charges for use of core grid assets based on Top Energy's share of Regional Coincident Peak Demand (RCPD) in Transpower's Upper North Island demand measurement region
- New investment charges – Transpower contractual charges for grid connection capacity and security upgrades determined by agreement between Transpower and Top Energy.

5.3. Avoided Transmission – Distributed generation

Avoided transmission and voltage support charges may be payable to embedded generators of greater than 1MW output when suitable terms have been negotiated with Top Energy. Avoided interconnection charges are paid in recognition of a generator's contribution to reducing Top Energy's share of Transpower RCPD peaks.

5.4. Avoided Distribution – Distributed generation

Avoided distribution may be payable to embedded generators of greater than 1MW output when suitable terms have been negotiated with Top Energy.

5.5. Other Pass-through costs

This includes rates and regulatory levies.

5.6. Other recoverable costs

The DPP allows Top Energy to recover an allowance for the under-recovery of allowable revenues in previous assessment periods (comprising a “Claw-back” and “NPV Wash-Up” allowance). This allowance is \$2.5m in 2018-2019.

5.7. Network costs

Network costs comprise mainly maintenance costs. These are derived from the network maintenance programme which provides consumers with acceptable levels of safety and reliability, including an allowance for repairs following faults. The amount is determined in conjunction with Top Energy’s Asset Management Plan.

5.8. Non-Network costs

These are costs incurred in managing the day to day operations of the business, including management, finance and administration costs, as well as system operations and network support.

5.9. Depreciation

Depreciation represents the return of Top Energy’s asset investment and is estimated using 2017 Regulatory Asset Base (RAB) roll-forward.

5.10. Pre-Tax WACC

A pre-tax return on investment is derived by applying a pre-tax weighed average cost (WACC) to Top Energy’s regulatory asset base (RAB). Our 2019 WACC estimate of 8.76% is based on the DPP WACC (7.19%) expressed on a pre-tax basis.

5.11. DPP compliance adjustment

This represents an adjustment to our breakdown of costs to ensure compliance with allowable revenues under the DPP. In the 2018-19 year, the adjustment is negative as Top Energy is charging below what is required to achieve the allowable return on the investment in the network. This has occurred as Top Energy’s price path is smoothed under the DPP to prevent any potential price shocks to consumers (e.g. 7% + CPI per year).

6. Consumer Groups and Pricing Options

6.1. Cost drivers

We have sought to align our consumer groups and pricing options to reflect differences in the key drivers of our costs. Approximately, 85% of our costs is associated with directly investing in, maintaining and operating the network, as well

as receiving supply from Transpower. The remaining 15% is associated with general management and administration of the business. Top Energy considers that our network cost drivers are:

- peak demand
- the length of circuit required to supply consumers
- the number of consumer connections
- dedicated asset costs.

The cost drivers that are relevant to Top Energy's current pricing methodology are peak demand, the number of connections, and dedicated asset costs, as discussed below.

Peak demand

Top Energy builds capacity in the network to meet forecast demand. As demand increases, Top Energy must consider further investments in capacity. Consumers' peak usage of existing network capacity is therefore a key driver of future costs. For instance, the network potentially faces capacity constraints in a number of growth areas (as identified in 3.1 Business considerations) and Top Energy has undertaken a large investment programme in these areas to meet forecast demand.

Circuit length

The distance between a consumer's premises and the point of supply to the network influences the length of lines and cables required to deliver electricity to consumers. Effectively, consumers that are further away from the Kaikohe GXP create relatively higher costs for Top Energy.

In our view, it is not practical, or necessarily fair, to distinguish individual consumers by circuit length. However, groups of consumers within network sub-regions can be distinguished. Recently we investigated the merits of adopting pricing sub-regions, reflecting rural and urban and Northern and Southern network supply areas, respectively. While some cost differences were evident across these regions, potentially justifying different prices, consumers have sent a clear message that rural consumers should pay no more than urban areas. For similar reasons, we have decided not to distinguish between the Southern and Northern networks.

Therefore, while circuit length is a relevant cost driver, Top Energy has decided not to reflect this in pricing other than for Industrial customers.

Consumer connections

New connections create investment and ongoing operations and maintenance costs. Top Energy's policy is for consumers to contribute towards capital costs in an upfront capital contribution. Remaining connection related costs must therefore be recovered through pricing.

Consumer specific costs

As a general principle, costs that are specific to individual consumers or groups of consumers should be directly recovered from these consumers, where practical. The provision of street-lighting and community lighting is an

example of a cost that is only caused by a specific group. Transmission and assets costs for large industrial consumers can also be identified and prices set to reflect these costs through non-standard contracts.

Pricing distinctions could also be made based on network regions (discussed above), use of the high voltage network only, and use of dedicated transformers. However, our review of pricing suggests there is little benefit for Top Energy in disaggregating prices to reflect these costs.

6.2.Consumer Groupings

Prices are disaggregated into four consumer groups, which reflect the use of assets, connection profiles, and contribution to maximum demand, consistent with key network cost drivers:

Figure 5: Consumer Groups

Consumer Group	Criteria	Rationale	Pricing and commercial terms
Larger	Large commercial and Industrial loads consuming >200,000kWh per annum, with a fuse capacity of 110kVa or greater	Pricing incentivises the efficient use of network capacity by large loads through variable charges levied on peak, shoulder and off-peak time of use periods for Large Commercial.	Standard
		Industrial loads are distinguished by much larger load size, time of use metering and Transpower and Top Energy's distribution costs can be identified for each consumer.	Non-Standard
Residential	Loads have similar capacity with a common load profile which is often controllable	Recognises the large majority of small load connections with or without access to time of use meters and providing compliance for low user regulations.	Standard
General	All connections that do not fit within other consumer groups	Same pricing options as 'standard residential' are available. In addition, pricing incentives through General Advanced variable charges levied on peak, shoulder and off-peak time of use periods. Also recognises that some connections will be without time of use meters.	Standard

Unmetered	Street and community lighting and other unmetered connections	This group recognises the unique cost and network usage profile of street and community lighting.	Standard
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6.3. Summary of pricing options

Top Energy offer the following pricing options within the above consumer groups.

Figure 6: Pricing Options

Price Code	Description and rationale	MWh	ICPs
Industrial (IND)	Fixed price recovery of costs associated with industrial loads consuming >3,000,000kWh per annum and a fuse capacity of 110kVa or greater.	56,868	3
Large Generation (LDG)	Fixed price recovery of costs associated with the connection of large scale distributed generation into the distribution network.		1
Micro Generation (DG)	Variable price recovery of costs associated with the connection of small scale distributed generation into the distribution network. Currently set at zero.	1,091	
General Advanced Metering (TOU) and (GA)	<p>Default code for all customers with an annual consumption exceeding 200,000kWh but less than 3,000,000kWh (TOU). Total charges for this plan include a fixed price for each day connected and a variable consumption price based on kWh consumption during three pricing periods, representing peak, shoulder and off-peak demand periods, as follows:</p> <p>Advanced metering is for small commercial connection with pricing beneficial for customers using between 30,000 and 200,000 kWh (GA) per annum.</p> <p>Both have pricing in the following time periods.</p> <ul style="list-style-type: none"> • Peak: 07:00-9:30 and 17:30-20:00 • Shoulder: 09:30-17:30 and 20:00-23:00 • Off-peak: 23:00-07:00 	39,693	86

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Residential Residential ICP's can have the following metering configurations: Uncontrolled, All inclusive, Day/Night and Controlled 152,493 26,578

Meter configuration	Total usage (MWh)
Uncontrolled	27,208
All Inclusive	118,706
Day	4,108
Night	1,636
Controlled	835
Total	152,493

Where:

Uncontrolled (UN24): This plan includes a fixed price for each day connected and a variable consumption price. Variable prices are set higher than other controlled codes to incentivise consumers to take up controlled or D/N prices.

All Inclusive (IN18): This plan includes a fixed price for each day connected and a variable consumption price and requires that Top Energy can control load for up to 6 hrs per day. The load offered must be at least 3 kW (e.g. a hot water cylinder). Variable prices are set higher than other controlled codes as the supply is a single meter and therefore it is not possible to determine the actual portion of controlled and uncontrolled load.

Day/Night (D16, N8): This plan includes a fixed price for each day connected and two variable consumption prices during a day (7am to 11pm) and night period (11pm-7am).

Controlled 20 (CN): Top Energy can control load for up to 4 hrs per day and the load offered must be at least 10 kW. This is available to customers in conjunction with other configurations. Prices are lower than under the UN and IN price options to encourage consumers to offer up large interruptible loads.

General General ICP's can have the following metering configurations: Uncontrolled, All inclusive, Day/Night and Controlled 67,914 5,100

Meter configuration	Total usage (MWh)
Uncontrolled	49,368
All Inclusive	4,170
Day	7,545
Night	3,266
Controlled	3,566
Total	67,914

See above for definitions.

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CAP150 (CLOSED)	<p>For customers on CT Metering, with a capacity of greater than 100 Amps per phase. Total price for this plan include a fixed price for each day connected and a variable consumption price on all loads.</p> <p>This plan was closed to new consumers from 1 April 2015 with existing consumers transitioned to other pricing options as soon as possible.</p>	7,956	76
UM	<p>Prices for streetlights (UML) are based on a price per lamp equivalent. Other connections (UMG) are supplied with continuous supply less than 500watts. Prices are wholly fixed.</p>		57
UM (CLOSED)	<p>11 different prices targeted at a range of unmetered supply configurations including:</p> <ul style="list-style-type: none"> • 9 different street and community lighting configurations • Continuous supply equipment less than 500watts (e.g. Battery Chargers, Electric Fences, Irrigation, PCM Cabinets, Phone Booths, Radio Repeaters, TV Boosters) • Intermittent supply equipment (Fire Sirens, Railway Crossing Lights, Traffic Counters). <p>Prices are wholly fixed given these connections are not metered.</p> <p>This plan is closed to new consumers from 1 April 2016 with existing consumers transitioned to other pricing options as soon as possible.</p>	1,445	202

6.4. Industrial (Non-Standard)

Industrial pricing aims to recover Top Energy's costs to service these consumers. To meet these consumers' requirements, Top Energy charge a wholly fixed annual price divided into twelve equal payments. There is no variable component. This fixed charge comprises the following individual charge items:

- Transpower Connection charges
- Transpower Interconnection Charges
- Avoided transmission charges payable to embedded generators
- Avoided distribution charges payable to embedded generators
- Top Energy connection and interconnection charges for its sub-transmission assets
- Top Energy operations and maintenance charges

The charges have been calculated consistent with network cost drivers on the basis of:

- Asset usage (e.g. no low voltage or distribution level costs are assigned to these consumers as they connect directly into the sub-transmission system)
- Coincident peak demand (i.e. to directly allocate Transpower charges)

Top Energy does not have additional obligations or responsibilities regarding interruptions to supply for non-standard connections beyond those incorporated in its standard contracts. While additional circuit redundancy and specialist equipment is provided to these consumers in some circumstances, which is sometimes beyond what is provided to many standard connections, these consumers pay for this enhanced level of security on a cost recovery basis.

Top Energy may introduce non-standard pricing for specific regional development initiatives e.g. Energy park

6.5. General Advanced Metering

Pricing comprises of a fixed and variable component. Fixed prices have been set to maintain historical linkages, reduce stranding risk associated with larger connections, as well as reflect the proportion of asset used compared to other pricing options.

Variable rates are set relatively higher during periods of peak demand and progressively lower during shoulder and off-peak demand periods. These time periods have been designed:

- To align with typical demand periods on the network
- To incentivise consumers to shift demand from peak periods to shoulder periods and from shoulder to off-peak periods
- To maintain consistency with industry standard TOU periods
- To maintain consistency with the Day/Night pricing periods.

6.6. Residential/General

This pricing is where the connection does not have access to half hour data or chooses not to select a plan that uses half hour data. This is common for residential connections. A daily fixed price is levied on these plans as follows:

- a 15 cent per day is applied to all Residential consumers who meet the criteria of being a low user (LR) to comply with the low user fixed charge regulations and the Retailer has requested the low user (LR) code
- A \$1 per day is applied to all Residential consumers who do not meet the low user criteria
- A \$1 per day is applied to all other consumers who are not Residential

A base line variable price is charged to all uncontrolled consumers (UN). Discounts to this standard price are applied to Day/Night, recognising their contribution to reducing peak demand, and Controlled plans (All Inclusive and Controlled 20), to incentivise consumers to offer up controllable load.

6.7. Unmetered

Unmetered pricing is wholly fixed. Fixed charges have historically been set with reference to historical amounts and rolled forward by inflation.

6.8. Distributed generation

Under Part 6 of the Electricity Industry Participation Code, Top Energy must price distributed generation at no more than the incremental cost of connecting this generation, taking into account any avoided costs.

Top Energy has not developed separate charges for distributed generation, other than for negotiated avoided transmission, avoided distribution and voltage support payments to large scale generators (greater than 1MW output). These generators are able to demonstrate on an annual basis that they are making a material contribution towards Top Energy avoiding additional transmission costs.

From 31 March 2019, Avoided Cost of Transmission (ACOT) payments can no longer be paid to new generation connected to Top Energy's network. This reflects recent changes to the distributed generation regulations under Part 6 of the Electricity Industry Participation Code (the Code). New distributed generation customers will have to directly approach and contract with Transpower to receive ACOT payments. Top Energy will continue to pay existing ACOT arrangements for distributed generation connected to the network on 6 December 2016 and which are on the Electricity Authority's published list of eligible Upper North Island distributed generation.

Large scale distributed generation (>1MW)

Connection charges have been set to recover the costs through a non-standard contract.

Avoided interconnection charges may be paid to generators that are connected to the Top Energy's network and which have actively contributed to reducing Top Energy's contribution to RCPD peaks, used to set Transpower's interconnection charges. Avoided transmission and voltage support charges are calculated based on the notified Transpower charges for the applicable pricing period. This requires appropriate metering facilities at each site, so that the contribution to RCPD or voltage support charge reductions can be verified.

In the event that there is more than one eligible embedded generator providing a contribution to lowering the RCPD, avoided transmission charges are calculated based upon the pro-rata value of the metered contribution from each generator at the times of the RCPD peaks.

Other distributed generation

Top Energy considers that other distributed generation customers (e.g. small scale solar PV) already receive a significant benefit through reduced distribution consumption prices, to the extent that electricity generated on site reduces the amount of electricity delivered via the network. Conversely, the cost to Top Energy of servicing these connections (i.e. an average domestic connection) is not reduced by the presence of the distributed generation, especially if the connection requires access to the network at times of peak demand. Accordingly, we believe that some connections with distributed generation are paying less than the incremental cost of providing the connection to that consumer.

While there are only a relatively small number of distributed generation connections on the network, the planned move to demand / capacity pricing and a higher proportion of fixed charges will ensure that consumers with distributed

generation pay a fair share of costs, to satisfy cost recovery and fairness considerations under Top Energy pricing objectives.

6.9. Discounts

The discount methodology will change from 1 April 2018 from discretionary to a posted discount. It is our intention to maintain the same consumption based methodology that has previously been used. Discounts calculated on this basis represent approximately \$5.2m and will be processed through the retailers to be applied to consumer invoices.

6.10. Capital contributions

A customer may be required to make an upfront contribution to the cost of extending or upgrading the network (e.g. arising from connecting to the network). This contribution pre-funds Top Energy's investment, with these costs excluded from line charges.

The value of the Capital Contribution is calculated from the total cost of extension work and reduced by the value of the Top Energy connection subsidy. The contribution represents the uneconomic cost of constructing the line but does not grant any ownership rights; Top Energy retaining ownership, and responsibility for repairs and refurbishment of the reticulated extension.

Capital Contributions may be non-refundable or refundable depending on the circumstances. Standard charges and requirements apply to typical connection configurations.

The full details of the methodology for determining capital contributions is publicly disclosed on the website www.topenergy.co.nz/network/network-disclosures/

7. Calculation of Prices

Tariffs are calculated by allocating costs to consumer groups and prices, based on assumed splits between fixed and variable tariffs. Figure 7 summarises the allocators used to allocate target revenue and the rationale for these decisions.

Figure 7: Summary of cost allocators used to set prices

Cost Category	Allocator used	Rationale
Transmission costs	<i>Interconnection charges and ACOT - DG:</i> Coincident share of RCPD (kW) for industrial consumers and Anytime Maximum Demand (AMD) for other connections	Allocation of interconnection charges aligns with Transpower's use of RCPD to apportion charges at a national level.

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	<i>Connection charges and ACOT - Transmission:</i>	Connection charges represent investment in GXP capacity. AMD broadly represents usage of this capacity.
	Share of AMD	
Network Costs	Customer group demand on the system as a percentage of ORC	Spreads maintenance cost in portion to demand, weighted by the replacement cost of assets (recognising higher maintenance is usually attributed to higher cost assets).
Non-Network Costs	Regulatory Asset Base (RAB)	Spreads costs that are relatively static with the size of a customer.
Depreciation	IND: Demand (kW) General Advanced: RAB Residential/General/UM: RAB	Allocation based on utilisation of asset utilisation, which broadly corresponds with depreciation representing use of capital.
Pre-tax ROI	RAB	Allocates return in proportion to value of assets RAB, consistent with regulatory framework.

The above allocation approach results in the following allocations of target revenue to consumer groups.

Figure 8: Cost allocation results

Consumer Group	Regulatory Asset Base 2017(\$m)	Number of ICPs	Energy Consumption Forecast 2019 (MWh)	Pass through \$000s		Distribution \$'000's				Revenue		
				Transmission, Other Pass-through and Recoverable Costs	Network Costs (Maintenance)	Non-Network Costs (Overheads)	Depreciation	Posted Discount	Pre tax WACC	Annual Revenue Requirement	DPP compliance Adjustment	Total 2019 Target Revenue
IND	6	3	56,867,804	903	145	226	188	21	466	1,949	(65)	1,884
TOU	17	59	36,555,759	1,279	451	704	587	66	1,451	4,538	(740)	3,798
LDG	2	1	-	-	51	79	66	-	170	365	(301)	64
Unmetered	1	259	1,445,050	-	19	30	25	-	64	138	381	520
Residential	140	26,578	152,493,298	5,539	3,637	5,673	4,728	4,358	7,868	31,802	(4,775)	27,028
General Commercial	72	5,203	79,007,245	3,193	1,885	2,939	2,450	773	5,561	16,800	(893)	15,906
Total	237	32,103	326,369,155	10,914	6,188	9,650	8,044	5,217	15,580	55,593	(6,392)	49,200

Appendix 5 summarises the resulting prices for 2018-2019 which are also located on the Top Energy website;

www.topenergy.co.nz/network/network-disclosures/

Appendix 1 – Certification for Year Beginning Disclosures



Certification for Year-beginning Disclosures

Pursuant to Schedule 17

Clause 2.9.1 of section 2.9

Electricity Distribution Information Disclosure Determination 2012

We, Euan Richard Krogh and Gregory Mark Steed, being directors of Top Energy Limited certify that, having made all reasonable enquiry, to the best of our knowledge –

- a) The following attached information of Top Energy Limited prepared for the purposes of clause 2.4.1 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.

E R Krogh

G M Steed

27 March 2018

Appendix 2 - Glossary

ACOT	Avoided Cost of Transmission
ACOD	Avoided Cost of Distribution
AMD	Anytime Maximum Demand, which is defined as the average of the 12 highest off-take quantities for the customer at the connection location during the Capacity Measurement Period.
Capacity Measurement Period	12-month period starting 1 September and ending 31 August inclusive, immediately prior to the commencement of the pricing year.
Consumer	A purchaser of electricity from the Retailer where the electricity is delivered via the distribution network and is interchangeable with customer.
Consumption Data	Data provided by the Retailer to the Distributor as required under the Use of System Agreement, showing details of the measured electricity consumption on the distribution network.
Code	The Electricity Industry Participation Code 2010.
Demand	The rate of expending electrical energy expressed in kilowatts (kW) or kilovolt amperes (kVA).
Distributor	Top Energy as the operator and owner of the distribution network.
Distributed Generation (DG)	Electricity generation that is connected and distributed within the distribution network, the electricity generation being such that it can be used to avoid or reduce transmission demand costs.
ENA	Electricity Networks Association
GXP	Grid Exit Point, a point of connection between Transpower's transmission system and Top Energy's distribution network.
GST	Goods and Services Tax as defined in the Goods and Services Tax Act 1985.
HV	High Voltage, voltage above 1,000 volts.
ICP	Installation Control Point. Point of Connection on the Distributor's network, which the Distributor nominates as the point at which a Retailer is deemed to supply electricity to a Consumer.
IND	Industrial Customer defined by Top Energy.
Line Prices	The prices levied by Top Energy on Consumers for the use of the Network as described in this Pricing Methodology.
Load Control Equipment	The equipment (which may include, but is not limited to, ripple receivers and relays) which is from time to time installed in a consumer's premises for the purpose of receiving load management service signals.

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LV	Low voltage. Voltage up to 1,000 volts, generally 230 or 400 volts for supply to most Consumers.
Pricing Year	12-month period from 1 April to 31 March the following year.
RPDP	Regional Peak Demand Period, relates to an Upper North Island defined by Transpower where Top Energy is located. The half hour in which any of the 100 highest regional demands occurs during the capacity measurement period for the relevant pricing year.
RCPD	Regional Coincident Peak Demand, relates to the customer's off-take at the connection location during a regional peak demand period.
Retailer	The supplier of electricity to Consumers with installations connected to the distribution network.
ToU	Time of Use Customer, who is metered according to their electricity consumption for a particular period (usually half-hourly).
Transpower	Transpower (NZ) Limited
UN	Uncontrolled

Appendix 3 – Compliance with ID determination

ID Clause	Information Disclosure requirement	Pricing Methodology Reference
2.4.1	Every EDB must publicly disclose, before the start of each disclosure year, a pricing methodology which:	This Pricing Methodology will be published on our website prior to 1 April 2018.
2.4.1(1)	Describes the methodology, in accordance with clause 2.4.3 below, used to calculate the prices payable or to be payable;	See below for document references to compliance against clause 2.4.3.
2.4.1(2)	Describes any changes in prices and target revenues;	Prices have increased for all customers by an average of 7.0% when comparing 2018 and 2019 pricing schedules. See section 2.3 Discount change from discretionary to posted. Changes in target revenues are described in Section 5.
2.4.1(3)	Explains, in accordance with clause 2.4.5 below, the approach taken with respect to pricing in non-standard contracts and distributed generation (if any);	See section 6.4 and 6.8
2.4.1(4)	Explains whether, and if so how, the EDB has sought the views of consumers, including their expectations in terms of price and quality, and reflected those views in calculating the prices payable or to be payable. If the EDB has not sought the views of consumers, the reasons for not doing so must be disclosed.	Public consultation was completed during 2017 / 2018 (see section 3.2)

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2.4.2	Any change in the pricing methodology or adoption of a different pricing methodology, must be publicly disclosed at least 20 working days before prices determined in accordance with the change or the different pricing methodology take effect.	Any changes will be disclosed on 1 March 2018.
2.4.3	Every disclosure under clause 2.4.1 above must-	
2.4.3(1)	Include sufficient information and commentary to enable interested persons to understand how prices were set for each consumer group, including the assumptions and statistics used to determine prices for each consumer group;	Top Energy considers this document provides sufficient information on how prices have been set but will continually review for improvements.
2.4.3(2)	Demonstrate the extent to which the pricing methodology is consistent with the pricing principles and explain the reasons for any inconsistency between the pricing methodology and the pricing principles;	See Appendix 4 TEL considers our pricing is broadly consistent with the pricing principles but we also discuss how potential changes to our pricing methodology will align more closely with these principles.
2.4.3(3)	State the target revenue expected to be collected for the disclosure year to which the pricing methodology applies;	See section 5.
2.4.3(4)	Where applicable, identify the key components of target revenue required to cover the costs and return on investment associated with the EDB's provision of electricity lines services. Disclosure must include the numerical value of each of the components;	See section 5.

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2.4.3(5)	State the consumer groups for whom prices have been set, and describe-	See Section 6.2.
	<ul style="list-style-type: none"> • the rationale for grouping consumers in this way; • the method and the criteria used by the EDB to allocate consumers to each of the consumer groups; 	
2.4.3(6)	If prices have changed from prices disclosed for the immediately preceding disclosure year, explain the reasons for changes, and quantify the difference in respect of each of those reasons;	See section 2.3 and Appendix 5
2.4.3(7)	Where applicable, describe the method used by the EDB to allocate the target revenue among consumer groups, including the numerical values of the target revenue allocated to each consumer group, and the rationale for allocating it in this way;	See tables in Section 7.
2.4.3(8)	State the proportion of target revenue (if applicable) that is collected through each price component as publicly disclosed under clause 2.4.18.	See tables in Section 7.
2.4.4	Every disclosure under clause 2.4.1 above must, if the EDB has a pricing strategy-	
2.4.4(1)	Explain the pricing strategy for the next 5 disclosure years (or as close to 5 years as the pricing strategy allows), including the current disclosure year for which prices are set;	Our pricing strategy is discussed in section 4.2
2.4.4(2)	Explain how and why prices for each consumer group are expected to change as a result	See section 4.2
2.4.5	Every disclosure under clause 2.4.1 above must-	

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2.4.5(1) (a), (b), (c)	Describe the approach to setting prices for non-standard contracts, including- <ul style="list-style-type: none">• the extent of non-standard contract use, including the number of ICPs represented by non-standard contracts and the value of target revenue expected to be collected from consumers subject to non-standard contracts;• how the EDB determines whether to use a non-standard contract, including any criteria used;• any specific criteria or methodology used for determining prices for consumers subject to non-standard contracts and the extent to which these criteria or that methodology is consistent with the pricing principles;	See Section 6.4 and appendix 5
2.4.5(2)	Describe the EDB's obligations and responsibilities (if any) to consumers subject to non-standard contracts in the event that the supply of electricity lines services to the consumer is interrupted. This description must explain- <ul style="list-style-type: none">• the extent of the differences in the relevant terms between standard contracts and non-standard contracts;• any implications of this approach for determining prices for consumers subject to non-standard contracts;	See Section 6.4

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2.4.5(3)	Describe the EDB's approach to developing prices for electricity distribution services provided to consumers that own distributed generation, including any payments made by the EDB to the owner of any distributed generation, and including the- <ul style="list-style-type: none">• prices; and• value, structure and rationale for any payments to the owner of the distributed generation.	See Section 6.8
2.9.1	Where an EDB is required to publicly disclose any information under clause 2.4.1, clause 2.6.1 and sub-clauses 2.6.3(4) and 2.6.5(3), the EDB must at that time publicly disclose a certificate in the form set out in Schedule 17 in respect of that information, duly signed by 2 directors of the EDB.	Completed and attached as Appendix 1

Appendix 4 – EA Pricing Principles

Pricing principles	Extent to which pricing methodology is consistent with pricing principle
<p>(a) Prices are to signal the economic costs of service provision by:</p> <p>(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</p>	<p>We interpret ‘incremental cost’ as the additional cost of connecting a consumer, comprising connection costs, network upgrades, and incremental operating costs.</p> <p>Top Energy requires a capital contribution for new connections and asset upgrades if the expected line charge revenue from the connection is less than the associated incremental capital cost (i.e. an uneconomic connection). Accordingly, distribution prices will typically be in addition to incremental capital costs.</p> <p>Remaining incremental operating costs resulting from a new connection will be recovered through distribution prices. Over the last ten years a new connection has contributed approximately \$300 per annum (real) to operating expenditure. An uncontrolled consumer (UN) would need to consume less than 1,020kWh in a year for prices to fall below this incremental cost (i.e. based on the 15 cents per day fixed charge and existing UN prices). This highlights that the application of the 15 cents per day low fixed charge creates cross-subsidisation at very low levels of consumption.</p> <p>Top Energy considers ‘stand alone cost’ means the cost for a consumer to disconnect from the distribution network and install onsite generation. Solutions do exist for small loads to disconnect from the network through installation of onsite solar generation and batteries. However, these systems are relative expensive when compared to</p>

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distribution supply. For example, a 7kW solar system, 15kW battery system with diesel generator can cost more than \$40,000 to install. We estimate this would cost \$0.70/kWh over a 15-year period and the installation is funded by a mortgage. This is significantly more expensive than the average 40c/kWh charge Top Energy's consumers pay (source: MBIE quarterly survey of electricity prices, 15 November 2017). Nevertheless, the cost of installing these systems is falling rapidly and Top Energy will continue to keep a watch on this market and respond appropriately through pricing.

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

Top Energy's primary service is to provide capacity in the distribution network. We are currently considering the adoption of demand/capacity and TOU based prices for all consumers facilitated through smart meters. This will align pricing more closely with the level of available service capacity.

Nevertheless, current pricing structures do recognise available service capacity in the network as follows:

- Consumer groups recognise different load sizes
- Many network and transmission related costs are allocated to consumer groups in proportion to demand
- Capital contributions help fund the uneconomic proportion of new investments in capacity
- Consumption based prices provide a broad incentive to reduce consumption
- Industrial sites (IND) are charged for specific asset usage and therefore the capacity these assets provide, and are apportioned transmission charges directly based on their contribution to RCPD
- TOU/Advanced Metering and Day/Night prices structures encourage consumers to shift load outside peak usage periods

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- Controlled prices encourage consumers to offer up controllable load which Top Energy can use to manage congestion during interruptions to supply, when the network maybe constrained

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

For the same reasons discussed above, Top Energy’s pricing structures signal the cost of investing in additional network capacity. Top Energy’s plans to move to demand/capacity or TOU pricing will improve these signals.

(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 suggests that consumers with a higher willingness to pay should pay relatively more than consumers with a lower willingness to pay. Top Energy considers pricing based on willingness to pay should be linked to the level of service provided. This is a common pricing practice in many competitive markets. For instance, the UN24 and CN20 pricing options give consumers a choice over whether heating loads are interrupted. Consumers that are unwilling to have supply interrupted pay relatively more than a customer that is willing to accept a slightly lower level of service. Similarly, consumers on Day/Night and TOU pricing options that do not want to shift load to off peak periods pay more for using electricity at time that suits them.

(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

Top Energy is not aware of any disconnections arising from uneconomic bypass of its network. Small scale DG (e.g. solar connections on houses) creates a risk of uneconomic bypass that is detrimental to Top Energy. However, as discussed, we consider it is currently uneconomic for a consumer to disconnect from the network in this manner.

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	<p>However, in many cases these connections demand power at peak times, however, contribute very little at non-peak times. Connections with small scale DG therefore contribute little to fixed costs of connecting them to the network. A move towards capacity/demand/TOU pricing and a higher proportion of fixed charges will address this issue. The latter has been introduced in this pricing year.</p> <p>Another potential area of uneconomic bypass is where large loads are situated close to a Transpower GXP and could bypass Top Energy's network to connect directly to the Grid. Only one large industrial load (based in Kaitaia) would be of a size sufficient to connect to Transpower's network. It would be uneconomic for this consumer to connect to the nearest GXP at Kaikohe which is 70km away.</p>
(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	Capital contributions and non-standard contracts provide a mechanism where a consumer can request assets that provide a higher level of service. The costs of specific assets are either recovered upfront through a capital contribution or within pricing. Consumers can also request alternative pricing structures under non-standard contracts to address their own risks (e.g. IND prices are wholly fixed).
(iii) where network economics warrant, and to the extent practicable, encourage investment in transmission and distribution alternatives and technology innovation	Avoided transmission, Avoided distribution and voltage support charges may be payable to embedded generators of greater than 1MW output. This may help justify investments in local generation
(d) Development of prices should be transparent, promote price stability and certainty for	The pricing strategy explained in this document provides stakeholders with an overview of Top Energy's plans for prices over the next several years. We plan to continue to consult with consumers and retailers to seek their

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stakeholders, and changes to prices should have regard to the impact to stakeholders	feedback on any changes which will be incorporated into any pricing decisions. Any changes will be transitioned over a reasonable period to avoid price shock to consumers.
(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	<p>The same price structures apply to all retailers supplying consumers on Top Energy's network. We do not consider our pricing structures provide an advantage to any individual retailer.</p> <p>The new TOU time periods from 1 April 2015 were established after considering standard practices used by other distributors to minimise transaction costs for retailers with reference to peaks on Top Energy's network. Future pricing innovation will continue to reference to standard distribution sector pricing solutions developed in conjunction with the ENA.</p> <p>Transmission and distribution charges are bundled for all consumers except large industrials.</p>

Appendix 5 - Network Line Charges 2018 – 2019

Public Notice							
<h1 style="margin: 0;">2018 / 19 Price Schedule</h1> <p style="margin: 0;">Effective from 1st April 2018. All prices exclude GST.</p>							
Consumer Group	Category Code	Price Code	Register Code	Description	Daily Fixed Charge (\$/Day)	Total (\$/kWh)	Capped Discount kWh
Residential							
Low User (LR)		No. of Users 13,465					
	LRF			LRF Daily Price	0.1500		
	LUC	UN24		LRF Uncontrolled		0.2482	0.1100
	LA	IN18		LRF All Inclusive		0.1877	0.1100
	LFC	CN20		LRF Controlled 20		0.0791	0.0000
	LD	D16		LRF Day		0.2133	0.1100
	LN	N8		LRF Night		0.0463	0.0000
	DG	92		Exported Micro generation		-	0.0000
Standard User (SR)		No. of Users 13,113					
	SRF			SRF Daily Price	1.0000		
	SUC	UN24		SRF Uncontrolled		0.2116	0.1100
	SA	IN18		SRF All Inclusive		0.1512	0.1100
	SFC	CN20		SRF Controlled 20		0.0668	0.0000
	SD	D16		SRF Day		0.1671	0.1100
	SN	N8		SRF Night		0.0400	0.0000
	DG	92		Exported Micro generation		-	0.0000
General							
General User (G)		No. of Users 5,100					
	GF			GRF Daily Price	1.0000		
	GUC	UN24		GRF Uncontrolled		0.2116	0.1100
	GA	IN18		GRF All Inclusive		0.1512	0.1100
	GFC	CN20		GRF Controlled 20		0.0668	0.0000
	GD	D16		GRF Day		0.1671	0.1100
	GN	N8		GRF Night		0.0400	0.0000
	DG	92		Exported Micro generation		-	0.0000
General Advanced User (GA)		No. of Users 27					
	GAF	TOU or SM		GF Daily price on HHR	8.9517		0.5500
	G1	PKOOD		GRF Peak		0.2102	0.0090
	G2	SPKODD		GRF Shoulder		0.1429	0.0090
	G3	DPKODD		GRF Off peak		0.0400	0.0000
	DG	92		Exported Micro generation		-	0.0000
Closed 31.3.2015 76					9.5017		0.5500
	CAP150			GCAP150		0.1389	0.0090
	FC	CN20		FC Controlled 20 (only with CAP150)		0.0774	0.0000
Larger Connections							
Large User (TOU)		\$/Day No. of Users 63					
	TOUF	TOU or SM		TOUF Daily price on HHR (a capable meter and greater than 200,000 kWh/yr)	25.7255		0.5500
	TOU1	7304		TOU Peak		0.1547	0.0090
	TOU2	7304		TOU Shoulder		0.1051	0.0090
	TOU3	3304		TOU Off peak		0.0079	0.0000
	DG	92		Exported Micro generation		-	0.0000
	LDG	7304		Exported Large generation		-	-
	IND			Industrial price is on individual based on consumption >3,000,000 kWh/yr			
	JNL	\$/Day					
	AFFCO	\$/Day					
Unmetered (UM)							
Closed 1.4.2016 for new connections		No. of users 2,996					
	UMLSH			Unmetered supply consisting of Pedestrian Crossing, Streetlights, Bollards, Unmetered Lights with 1 lamp	0.4575		
	UMLDH			Unmetered supply consisting of 1 pole with 2 lamps	0.9161		
	UMLTH			Unmetered supply consisting of 1 pole with 3 lamps	1.3724		
	UMLSHPMC			Unmetered supply consisting of 1 lamp mounted on a Top Energy Pole e.g. Pedestrian Crossing, Streetlights, Bollards	0.5644		
	UMLDHPMC			Unmetered supply consisting of 2 lamps mounted on a Top Energy Pole	1.0219		
	UMLTHPMC			Unmetered supply consisting of 3 lamps mounted on a Top Energy Pole	1.4805		
	UMDECL			Unmetered supply consisting of String lighting of Incandescent light bulbs	0.4575		
	UMGL			Unmetered supply consisting of Community Lighting, Convenience Lighting, Jetty Lights, Under Verandah Lighting	0.1533		
	UMGLPMC			Unmetered supply consisting of Community Lighting, Convenience Lighting, Jetty Lights mounted on a Top Energy pole	0.2591		
	UMCON500			Unmetered continuous supply less than 500 watts e.g. Battery Chargers, Electric Fences, Irrigation, PCM Cabinets, Phone Booths, Radio Repeaters, TV Boosters	0.4420		
	UMINT			Unmetered intermittent supply consisting of Fire Signs, Railway Crossing Lights, Traffic Counters	0.2447		
New Unmetered (UM)							
Open From 1.4.2016		No. of users 57					
	UMLF			UM streetlight (STL)	0.4575		
	UML			UM streetlight (STL)		-	
	UMGF			UM General connection (UM)	0.4575		
	UMG			UM General connection (UM)		-	
	NIL			Tsunami Warning Alarms		-	

Public Notice

2018 / 19 Price Schedule Conditions

GENERAL

A	All Prices stated are exclusive of GST.
B	The estimated number of users is at 31.3.2019 (34,811).
C	The charge comprise of a fixed network price and a variable price based on quantities distributed.
D	Each ICP is liable for 1 daily fixed network price.
E	The 15c per day fixed price provides for 21kVA maximum demand.
F	Budget pass-through prices, including transmission, comprise approximately 20% of the Delivery Price.
G	Unmetered supply tariffs are wholly fixed.
H	Industrial prices for large consumers are user specific and are wholly fixed.

PRICE CATEGORY INFORMATION

The price categories are Residential (Low User and Standard User), General, General Advanced, Larger Connections and Unmetered

1.1	A Residential connection is one for the purpose of supplying electricity to a premise that is used or intended for occupation principally as a place of residence, and excludes those premises described in Part 1b of the Electricity Industry Act 2010. The standard user price category applies to all residential connections unless the consumer has elected and is eligible for the retailers low user pricing plan.
1.2	Residential are further defined to belong to either low or standard categories. To be eligible for the low user price category the consumer must be on the retailer low user pricing plan and the premises must be a Principal place of residence. For avoidance of doubt, eligibility for the low user price category excludes holiday homes and buildings and meters that are ancillary to a users Principal place of residence.
1.3	A General User is where the connection is for the purpose of supplying electricity to a connection that does not meet the criteria of a residential user or any other price category. This includes builders temporary supplies.
1.4	New connections can have one meter per connection, unless approved by Top Energy. Prior to 1 April 2016 various configurations were available.
1.5	Any one connection can have a generation installation capable of exporting up to 10kW of electricity on to the network (or greater by approval from Top Energy Network).
1.6	A General Advanced User price category is based on usage in half hour (HHR) time periods as defined below and is available to general connections where a user has nominated a qualifying pricing plan with their retailer.

Peak	Shoulder	Off Peak
07.00 - 09.30	09.30 - 17.30	23.00 - 07.00
17.30 - 20.00	20.00 - 23.00	

A retailer price plan will qualify if the plan:

1.6.1	Has at least 2 time periods per day
1.6.2	Has at least two hours per day where the highest priced time period overlaps with Top Energy's peak time periods
1.6.3	The meter installed is capable of measuring usage per half hour (HHR)
1.6.4	General Advanced User pricing is expected to be cost effective for consumers using more than 30,000 kWh's per annum
1.6.5	Has been appropriately notified to and accepted by Top Energy; and
1.6.6	The criteria remain valid.
2.0	Larger Connections all have a fuse capacity of 110kVA or greater, are TOU metered and have a connection voltage of 400V, 11kV or 33 kV.
3.0	Streetlighting users include all metered and unmetered connections.
3.1	Unmetered Users are connections that have been approved to be unmetered and may require a nominated and approved lamp equivalency.

POSTED DISCOUNT

4.1	Discounts will only be provided to consumers that are connected on 23 October 2018 (Eligibility date) and that have used more than 1kWh during the 12 month period ending 31 August 2018.
4.2	The Price Category Code used at 31 August 2018 by an ICP will be used to determine the discount.
4.3	Variable distribution discounts will be applied to consumption up to the kWh Discount Cap, as outlined in the schedule above. Additional consumption above this cap will not receive a discount.
4.4	Discounts will be applied by your Retailer on your first bill after 1 November 2018.

EXPLANATION OF HOW EACH PRICE IS APPLIED

5.1	Fixed price is a daily price for any day the connection has a status 002 Active.
5.2	Uncontrolled and time dependent supply prices apply under normal operating circumstances for the continuously available electricity supply, i.e. anytime, peak, shoulder or off peak time periods. (See 1.5 above). IND pricing is demand based and negotiated for connections with usage over 3,000,000 kWh/annum.
5.3	A "Controlled" supply is where the distributor has the ability to periodically interrupt the supply to a particular meter at an installation. The controlled meter, or meter register, would be connected to the controlled circuit with separately wired appliances such as a hot water cylinder. Controlled pricing plans available on the Top Energy network is the Controlled (CN20): A minimum of 10 kW load, controlled up to 4 hours during any one day. The "Day Night" plan hours are: Day 7am-11pm and Night 11pm-7am. No minimum kW controllable load is required.
5.4	An "All Inclusive" (IN18) supply is a single meter register that measures both controlled and uncontrolled supply to an installation. The All Inclusive setup results in both the controlled and uncontrolled load being recorded on a single meter register, and therefore it is not possible to determine the actual portion of uncontrolled and controlled load for each connection. A minimum of 3kW controlled load is required for 6 hours during any one day.
5.5	Peak, shoulder and off peak supply prices : The price per half hour is multiplied by the volume of energy used, measured in kilowatt hours (kWh), that under normal operating circumstances is continuously available during the time periods determined by the retailers pricing plan. (See 1.6 for Top Energy price periods). This pricing option is only available if appropriate metering is installed i.e. TOU or Smart Meter.
5.6	Generation export price is a variable price multiplied by the energy exported measured in kilowatt hour (kWh), from a users connection point into the Top Energy network for delivery to other network users. The installation of micro generation requires a meter capable of recording both import and exported volume data.
5.7	Unmetered price is for both metered and unmetered, streetlights and unmetered connections with less than 500 watt load. For streetlighting the price is per lamp equivalent. The equivalent factor will depend on the number and type of lamp, pole ownership and location.
5.8	CAP150 and CAP150FC have been closed since 1 April 2015. The General Advanced (GAF) is the equivalent price, dependant on usage, that can be used by all connections that are capable of HHR (half hour usage measurement). This plan will be discontinued on 31 March 2019 and customers migrated to the appropriate Price Category.
5.9	Loss factors for the Top Energy Network are:

Distributor Code	GXP Losses factors applicable to	Registry loss category code	Loss Factor	Consumer Group / Category Code
TOPE	LV Network (Non-Technical + LV)	RLF D	1.1234	Residential / General TOU
TOPE	Site-Specific Customers	RLF I1 (INL)	1.0273	Larger (IND)
TOPE	Site-Specific Customers	RLF I2 (AFFCO)	1.0464	Larger (IND)
TOPE	Site-Specific Customers - Generators	RLF G1 (NGA)	1.0000	Larger (LDG)