

UnitedNetworks Limited

Electricity Methodology Disclosure For the year beginning 1 April 2002

pursuant to

**The Electricity (Information Disclosure) Regulations 1999
read with
Electricity (Information Disclosure) Amendment Regulations 2000**

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FORM 8: STATUTORY DECLARATION IN RESPECT OF STATEMENTS AND INFORMATION SUPPLIED TO SECRETARY

I, Daniel Wayne Warnock, of Auckland, being a Director of UnitedNetworks Limited, solemnly and sincerely declare that having made all reasonable enquiry, to the best of my knowledge, the information attached to this declaration is a true copy of information made available to the public under the Electricity (Information Disclosure) Regulations 1999, read with Electricity (Information Disclosure) Amendment Regulations 2000.

And I make this solemn declaration conscientiously believing the same to be true and by virtue of the Oaths and Declarations Act 1957.

Declared at Takapuna this 16th day of August 2002.

Solicitor

1. INTRODUCTION AND INTERPRETATION

- 1.1 This document contains certain material required to be disclosed by UnitedNetworks Limited under Regulations 23 and 24 of the Electricity (Information Disclosure) Regulations 1999, read with Electricity (Information Disclosure) Amendment Regulations 2000.
- 1.2 The information in this document was prepared by UnitedNetworks Limited after making all reasonable enquiry and to the best of its knowledge, the information complies with all relevant requirements of the Regulations.
- 1.3 The information in this document is not intended by UnitedNetworks Limited to constitute an offer of services to the public.
- 1.4 The information is available on request at:
- 44 Taharoto Rd
Takapuna
Auckland
- 1.5 In this document, words and expressions have the meaning given to them in the Regulations or the Act, unless otherwise specified.

For the purpose of this disclosure:

"*Disclosure Date*" means 31 March 2002;

"*Last financial year*" means the year ending on 31 March 2001;

"*UnitedNetworks*" means UnitedNetworks Limited;

"*Other*" means any part of UnitedNetworks Limited which is not the lines business;

"*Lines*" means the electricity lines business of UnitedNetworks;

"*Customer*" means an electricity retail company supplying End-Consumers connected to the UnitedNetworks network, or an End-Consumer directly contracted to UnitedNetworks for connection to the UnitedNetworks network;

"*End-Consumer*" means the end-user of the electricity;

"*Transmission grid*" means the network of high voltage lines owned and operated by Transpower connecting the nation's power stations to the distribution networks;

"*Bulk supply point*" means the Transpower-owned substations that are the point of connection between the Transpower network and in this case, UnitedNetworks' network. There are several in each area.

"*Assessed coincident demand*" means the calculated demand of the end consumer's or group of consumers' demand at the time of the network peak demand

"*BSPD*" means the bulk supply point maximum demand

"*Load group*" means a group of end consumers with similar consumption and demand characteristics, for whom the same rates will be applicable.

2. OVERVIEW

2.1 The line charges reflect:

The net cost to UnitedNetworks for use of the Transpower grid, point of supply assets and other transmission services for the conveyance of electricity to the particular customer, including the cost to embedded generators of avoided Transpower grid charges. With effect from 1 April 2002, losses and constraint rebates and ancillary service charges are passed directly to Customers and therefore are not incorporated in the UnitedNetworks line charges

UnitedNetworks' costs associated with the operation and maintenance of that portion of the line business used in connection with the provision of line function services including indirect costs and depreciation costs.

A rate of return on UnitedNetworks' capital employed in respect of the assets used in connection with the provision of line function services.

2.2 Financial Statements:

UnitedNetworks has prepared financial statements as required by the Electricity (Information Disclosure) Regulations 1999, read with Electricity (Information Disclosure) Amendment Regulations 2000.

2.3 Avoidable Cost Methodology:

UnitedNetworks has adopted avoidable cost methodology in allocating costs, revenues, assets and liabilities in compliance with the Electricity Information Disclosure Handbook.

2.4 Allocation of revenue and costs to load groups:

The revenues and costs are summarised in Table One at the end of this document.

2.5 Rationale for allocation of revenue and costs to load groups:

Costs were allocated in respect of each load group in accordance with the methodology provided in the Guidelines except in the following respects:

Administration (included in Indirect Costs):

The Guidelines' approach is for administration costs to be allocated on a per metered installation basis. UnitedNetworks has allocated these costs on the basis of the actual administration cost, allocated on a per end consumer and assessed coincident demand basis and averaged across the load group.

Revenue Allocation:

Revenue was allocated to each load group on the basis of the actual volume of energy used by each load group and the actual daily charges and variable charges applicable to those load groups.

Other Revenue:

Other revenue from capital payments (e.g. in respect of new lines and works) is allocated to the respective load groups.

2.6 Definition of Regional Networks:

REGION	NORTH**	EASTERN				CENTRAL
NETWORK	Waitemata	Valley	Tauranga	Rotorua	Taupo	Central*
Transpower Transmission System: Injection Points	Albany Henderson Hepburn Rd Wellsford	Hinuera Kinleith Kopu Waihou Waikino	Tauranga Mt Maunganui Te Matai	Atiamuri Ohaaki Owhata Rotorua	Wairakei	Haywards (N) Melling (N) Gracefield (N) Upper Hutt (N) Takapu Rd (N) Pauatahanui (N) Wilton (S) Central Park (S) Kaiwharawhara (S)

Explanatory Note:

*Wellington North and South Network Grid Exit Points labelled as (N) and (S) respectively.

** Also the Auckland Embedded Networks – for Points of Connection supplied from Transpower Injection Points which connect to the Vector Limited distribution system.

2.7 Definition of Time Zones:

	Tauranga	Rotorua	Taupo	Auckland Embedded Networks	Wellington
Winter	1 May-31 Aug	1 May-30 Sep	1 May-30 Sep	1 May-30 Sep	N/A
Summer	1 Sep-30 Apr	1 Oct-30 Apr	1 Oct-30 Apr	1 Oct-30 Apr	N/A
Day	7am-11pm	7am-11pm	7am-11pm	7am-11pm	7am-11pm
Night	11pm-7am	11pm-7am	11pm-7am	11pm-7am	11pm-7am

All times are New Zealand Daylight Time.

2.8 Method and rationale for allocation of End-Consumers to Load Groups:

UnitedNetworks assigns End-Consumers to Load Groups, which are based predominantly on the capacity of the Network connection. There are five categories of Load Groups, they are:

- Individually Priced End-Consumers,
- Un-metered,
- Residential and Small Commercial with capacity less than three phase sixty amps
- Capacity three phase sixty amps to 300kVA (non half-hourly metered)
- Capacity greater than 100kVA (transition differs depending on pricing network) with half-hourly meter.

Within each load group there may be more than one variable rate available for use. Depending on the end-consumer category and the capacity of the connection, the End-Consumer and retailer agree on the type of supply and metering desired (e.g. continuous, time of use, controlled). This then determines the load group charges to be applied.

Individually Priced or Asset Specific Load Group: Where UnitedNetworks provides dedicated assets to a site, charges are either asset specific based on capacity at the installation or a mixture of anytime and on peak demands and consumption.

Un-metered Load Group: Where there is no metering on the point of supply, charges have variable rates only except for Temporary Builders Supplies where a fixed daily charge applies. Rates applied are based on type of supply (streetlighting or other) load profile, ownership of fittings and for streetlighting the number of night hours as determined by multiplying the input wattage with the number of night hours from the table below. For other Un-metered connections the input wattage is assessed and a base load profile applied, multiplied by the total number of hours in the year.

	Night Hours in Pricing Network (hrs)	
	Auckland, Waitemata, Valley, Tauranga, Rotorua, Taupo	Wellington
January	298	287
February	296	286
March	360	358
April	386	389
May	428	439
June	430	442
July	438	451
August	412	417
September	365	365
October	341	339
November	298	285
December	289	275

Capacity three phase sixty amps to 300kVA (non half-hourly metered): Line charges contain a mixture of fixed daily, dedicated transformer and variable rates. The load groups are defined by a combination of region and fuse size or capacity. The charges for this group of end-consumers is based on energy usage and does not require a half-hourly meter to be installed.

Capacity greater than 100kVA (transition differs depending on pricing network) with half-hourly meter: Line charges contain a mixture of fixed daily, capacity charges, transformer charges, variable charges and demand charges. The charges for this group of end-consumers includes a demand based component and consequently a half-hourly meter needs to be installed.

Capacity Less than three phase sixty amps Load Group: Involve four mutually exclusive options within twelve Load Groups. It is not the Distributors responsibility to recommend or select an option within a Load Group. The retailer will choose the option to apply to the End-Consumer.

“Residential” means a private dwelling not used for any business activity, the load groups are then further defined by a combination of region, fuse size, capacity, kWh per annum, the fittings of the End-Consumer and the controllability of the End-Consumer.

2.9 Definition of Controlled Consumer Category Options:

Controlled Category Options for Capacity less than 3 Phase 60 Amps

End-Consumer Category Description		Details
All Inclusive		A 24-hour supply with associated appliances that can be controlled at anytime for a maximum of 5 hours in any 24 hour period.
Two Meter Option	Controlled	Supply can be controlled at anytime for a maximum of 5 hours in any 24-hour period (conditional on End-Consumer equipment: hot water cylinders, electric kilns, swimming and spa pool heater) being permanently wired to a separate controlled meter.
	Uncontrolled	A 24-hour continuous supply.
Night Supply Only		Controlled option with power between the hours of 11pm to 7am plus a minimum "boost period" of one hour generally between 1pm and 3.30pm. This rate is only available where the appliances (detailed under controlled option above) are permanently wired to a separate meter.

Controlled Category Options for Capacity 3 Phase 60 Amps and greater

End-Consumer Category Description		Details
Controlled (19 hours)		Supply can be controlled at any time for a maximum of 5 hours in any 24 hour period.
Interrupted		Can only be controlled for a maximum of 1 hour per day, after 5pm Monday to Friday between May and September.
All Inclusive		A 24-hour supply with an additional supply that can be controlled at any time for a maximum of 7 hours in any 24-hour period.
Day/Night		Day (7am -11pm) / Night (11pm - 7am) two rate tariff.
Night Supply Only		Controlled option with power between the hours of 11pm to 7am plus a minimum "boost period" of one hour generally between 1pm and 3.30pm. This rate is only available where the appliances (detailed under controlled option above) are permanently wired to a separate meter.
24 Hour Uncontrolled		24 hour supply uncontrolled
Controlled On Peak		On peak controlled
Controlled Off Peak		Off peak controlled

2.9 Definition of Load Groups:

Un-metered

Network	Load Group	Description
Waitemata	W01	Un-metered supply other than streetlighting
	W02	Un-metered streetlighting
Valley	V01	Un-metered supply other than streetlighting
	V02	Un-metered streetlighting
		Un-metered streetlighting fittings owned by UNL
Auckland	A01	Un-metered supply other than streetlighting
	A02	Un-metered streetlighting
Tauranga	T01	Un-metered supply other than streetlighting
	T02	Un-metered streetlighting
Rotorua	R01	Un-metered supply other than streetlighting
	R02	Un-metered streetlighting
Taupo	P01	Un-metered supply other than streetlighting
	P02	Un-metered streetlighting
Wellington	G01	Un-metered supply other than streetlighting
	G02	Un-metered streetlighting

Temporary Builders' Supply Charges

Network	Load Group	Description
Waitemata, Valley, Auckland, Tauranga, Rotorua, Taupo, Wellington	08W, 08V, 08A, 08T, 08R, 08P, 08G	Single Phase 60 Amp
	09W, 09V, 09A, 09T, 09R, 09P, 09G	Three Phase 60 Amp

Capacity 3 phase 60 amps to 300kVA (non half-hourly metered) and Capacity greater than 100kVA (transition differs depending on pricing network) with half-hourly meter

Waitemata Network

Load Group	Description
23W	3 phase 60A
24W	3 phase 100A
25W	3 phase 160A
26W	3 phase 200A
W28	>200A up to 299kVA
W29	300KVA
40W	Commercial greater than 200A, TOU meter
60W	Greater than 1,500 kVA individually priced

Auckland Network

Load Group	Description
20A	Commercial low voltage single phase connection
40A	Commercial 3 phase/transformer connection – zone 1
43A	Commercial high voltage supply – zone 1
41A	Commercial 3 phase/transformer connection – zone 2
44A	Commercial high voltage supply – zone 2
42A	Commercial 3 phase/transformer connection – zone 3
45A	Commercial high voltage supply – zone 3

Valley Network

Load Group	Description
23V	3 phase 60A
24V	3 phase 100A
25V	3 phase 160A
26V	3 phase 200A
V28	>200A up to 299kVA
V29	300KVA
40V	Commercial greater than 200A
60V	Greater than 1,500 kVA individually priced

Tauranga Network

Load Group	Description
T20	< 100 kVA
T22	100-199kVA
T24	200-299kVA
T26	300kVA
40T	Transformer capacity 200 kVA
41T	Transformer capacity 200 kVA unitised
42T	Transformer capacity 300 kVA
43T	Transformer capacity 300 kVA unitised
44T	Transformer capacity 500 kVA
45T	Transformer capacity 500 kVA unitised
46T	Transformer capacity 750 kVA
47T	Transformer capacity 750 kVA unitised
48T	Transformer capacity 1,000 kVA
49T	Transformer capacity 1,000 kVA unitised
60T	Individually priced End-Consumers

Rotorua Network

Load Group	Description
R20	<100kVA
R22	100-199kVA
R24	200-299kVA
R26	300kVA
40R	Transformer capacity 200 kVA
41R	Transformer capacity 200 kVA unitised
42R	Transformer capacity 300 kVA
43R	Transformer capacity 300 kVA unitised
44R	Transformer capacity 500 kVA
45R	Transformer capacity 500 kVA unitised
46R	Transformer capacity 750 kVA
47R	Transformer capacity 750 kVA unitised
48R	Transformer capacity 1,000 kVa
49R	Transformer capacity 1,000 kVA unitised
60R	Individually priced End-Consumers

Taupo Network

Load Group	Description
P20	<100 kVa
P22	100-199kVA
P24	200-299kVA
P26	300kVA
40P	Transformer capacity 200 kVA
41P	Transformer capacity 200 kVA unitised
42P	Transformer capacity 300 kVA
43P	Transformer capacity 300 kVA unitised
44P	Transformer capacity 500 kVA
45P	Transformer capacity 500 kVA unitised
46P	Transformer capacity 750 kVA
47P	Transformer capacity 750 kVA unitised
48P	Transformer capacity 1,000 kVA
49P	Transformer capacity 1,000 kVA unitised
60P	Individually priced End-Consumers

Wellington North and South Networks

Load Group	Description
Commercial Consumers	
G20	<100kVA
G22	100-199kVA
G24	200-299kVA
G26	300kVA
Large Commercial and Industrial End-Consumers	
40G	North 11kV, 400V metered shared transformer connection
41G	North 11kV, 400V metered dedicated transformer connection
42G	North 11kV, 11kV metered dedicated transformer connection
43G	North greater than 1000kVA, 400V metered
44G	North greater than 1000kVA, 11kV metered
45G	South 11kV, 400V metered shared transformer connection
46G	South 11kV, 400V metered dedicated transformer connection
47G	South 11kV, 11kV metered dedicated transformer connection
48G	South greater than 1000kVA, 400V metered
49G	South greater than 1000kVA, 11kV metered
60G	Individually priced End-Consumers

Residential and Commercial with Capacity less than 3 Phase 60 Amps

Load Group	Low Usage	Low Usage Controlled/ Uncontrolled	High Usage	High Usage Controlled/ Uncontrolled
Waitemata Residential	W11	W14	W12	W13
Waitemata Commercial	W15	W18	W16	W17
Valley Residential	V11	V14	V12	V13
Valley Commercial	V15	V18	V16	V17
Tauranga Residential	T11	T14	T12	T13
Tauranga Commercial	T15	T18	T16	T17
Rotorua Residential	R11	R14	R12	R13
Rotorua Commercial	R15	R18	R16	R17
Taupo Residential	P11	P14	P12	P13
Taupo Commercial	P15	P18	P16	P17
Wellington Residential	G11	G14	G12	G13
Wellington Commercial	G15	G18	G16	G17

2.11 Cost Recovery:

UnitedNetworks is committed to providing open access to its' distribution system. The pricing is set to reflect the usage patterns of different load groups, and ensures an equitable apportionment of its costs.

As the competitive electricity supply industry develops, UnitedNetworks' pricing will evolve accordingly. In setting and adjusting its rates, it will continue to recognise the need to be a cost-effective provider of network services.

UnitedNetworks has adopted a Cost Recovery Basis, where network costs are established and line charges set to ensure recovery of these costs.

The introduction of a low fixed charge option is an indication of the evolution to UnitedNetworks' pricing. This option is due to UnitedNetworks desire to contribute to the initiative for retailers to offer the option of a low fixed charge for End-Consumers with low usage. The low fixed charge is however counter-intuitive to the cost of supply to premises, with over 90% of costs fixed by connected capacity. It may therefore provide significant savings for owners of holiday homes, and where homes are occupied for part of the year.

3. PRICING METHODOLOGY

This section outlines the methodology for allocating the costs associated with operating and maintaining the UnitedNetworks Electricity distribution networks. The following section describes the cost drivers and the process of apportioning these costs to the End-Consumers.

3.1 Explanation of line charges

The way electricity is priced is dictated largely by the nature of the product and there are two main components to the price.

Energy component

Electricity can be generated in a variety of ways, using water, coal, gas etc. The production of electricity is contestable, and there are a number of generating companies competing in the New Zealand market. Energy retailers repackage the electricity price (which varies on a half hourly basis) and provide price stability. The cost of generating electricity is reflected in the energy price.

Network component

Power is delivered from the generators to the End-Consumers' premises in the above areas through the Transpower grid and UnitedNetworks' distribution lines. The cost of providing these lines is high, and there is little likelihood that this network would be duplicated. Hence the delivery of electricity is non-contestable.

It is also important to note that electricity, once it has been generated, cannot be stored. Therefore it is important to ensure the network is of sufficient capacity to meet the demand without incurring additional costs for excess capacity.

This document describes those charges relating to the use of the distribution and transmission lines.

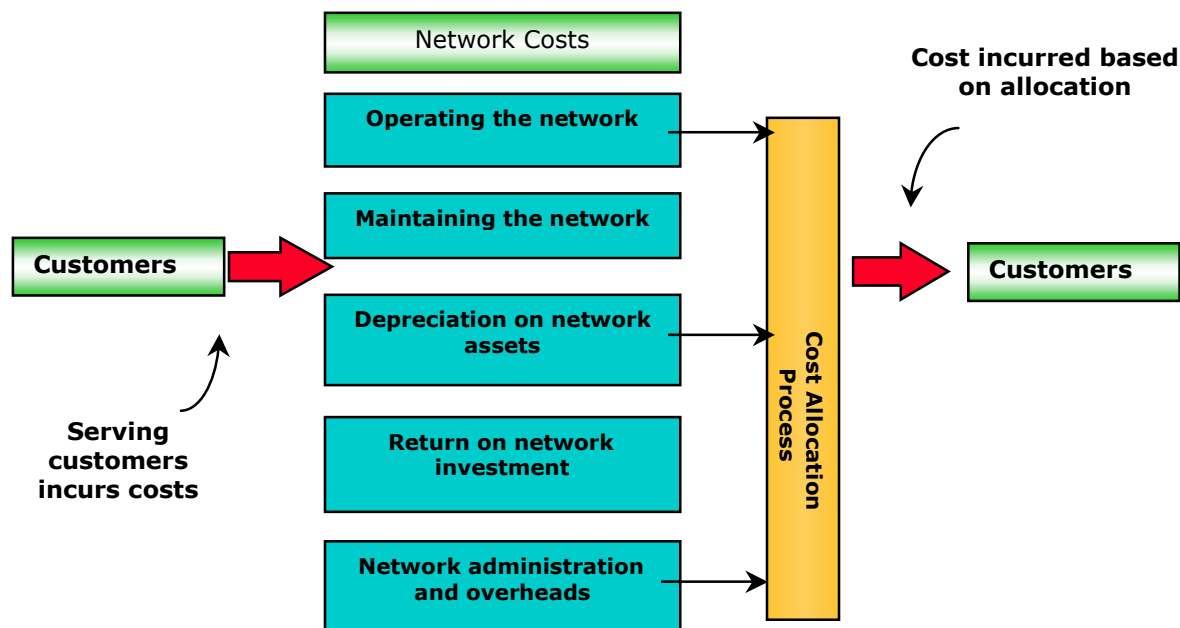
Line charges do not cover:

1. The cost of the electricity itself.
2. Specific network charges for new connections to the network, modification, relocation or removal of existing customer supply points, time of use metering where not considered part of the standard distribution network service.
3. Technical Line Losses.
4. Metering or meter reading Costs.

3.2 Pricing Policy

UnitedNetworks owns and operates the distribution assets and provides access to energy retailers for the delivery of energy to End-Consumers. UnitedNetworks must obtain sufficient revenue to ensure a safe and reliable delivery service, whilst ensuring compliance with statutory requirements, meeting our contractual obligations for connection to the Transpower grid, and ensuring an appropriate return to our shareholders.

UnitedNetworks' pricing objectives are based on a cost recovery basis, and follow the Electricity Disclosure Guidelines (1994). The objectives are summarised below;



UnitedNetworks' objectives in setting line charges are as follows:

- To meet the needs of all customers, now and in the future.
- To ensure a high level of efficiency and ensure sufficient capacity is available when needed.
- To ensure sufficient revenue for the provision of safe and reliable services.
- To apportion network operating and asset based costs fairly and, where possible, to allocate costs where they fall.
- To signal cost drivers.
- To maintain a policy of open access to all suppliers and End-Consumers of electricity.
- To take into consideration potential interfuel competition and network bypass.
- To facilitate retailers to meet the Governments objective to reduce fixed charges to low End-Consumers.

Revenue

UnitedNetworks' revenue requirements extend beyond the need to provide an adequate return to shareholders.

Large amounts of capital are necessary to maintain and develop the Network assets to meet increased demand, statutory and local authority compliance, and also to ensure a high standard of safety and reliability.

There are also compliance costs, the costs associated with our commitment to protect the environment, ensure public safety, and meet the contractual obligations for connection to the national grid.

Equity

Our line charges must be fair, with minimal cross subsidisation. Line charges are cost based and the spread of those costs across the total End-Consumer base should be consistent with the End-Consumers' contribution to costs. For example, streetlighting makes extensive use of distribution transformers and 400 volt reticulation networks, whereas a large industrial End-Consumer would not use any of these assets.

This process is difficult, since there must in the end be a balance between breaking down costs into smaller and smaller components and simplicity in pricing.

UnitedNetworks follow the Ministry of Commerce's Electricity Disclosure Guidelines (1994) which sets out a recommended methodology for definition and allocation of costs.

Efficiency

UnitedNetworks wants to promote more efficient use of the Network and believes any cost savings that can be achieved through modified behaviour should be shared.

The line charges are designed to give End-Consumers the opportunity to make more efficient use of the Network. A range of options including fixed and variable charges give End-Consumers choice and the flexibility to reduce their costs by increasing the efficient use of the network assets.

Access

UnitedNetworks has a policy of open access to all suppliers and End-Consumers wishing to convey electricity across the Network, or wishing to connect to the Network.

UnitedNetworks has defined the base service levels for network services, and has set a series of standard terms and conditions for connection to the Network. These terms protect End-Consumers from adverse effects (such as harmonics and voltage transients) which could be caused by others sharing the Network.

Network Costs

Network operating costs comprise a number of components, each of which is allocated on the End-Consumers' contributions to each component.

A large part of this cost is a fixed cost, the actual cost of providing the line assets. These assets are expensive. For example, a zone substation will generally cost well in excess of one million dollars. It is also important to note that the cost is the same, regardless of whether the asset is being used by a End-Consumer at any particular time or not. To put this another way, the cost of providing a line that is heavily loaded in a commercial area is no different to providing a similar line in a rural area where the lines are usually lightly loaded. In fact, the rural line may be more expensive to install operate and maintain, because of its distance from construction and maintenance bases.

Network Valuation and Asset Based Costs

Asset based costs are costs associated with the provision of the network. This includes the lines, substations, distribution transformers, and associated equipment.

If specific assets are added to supply individual End-Consumers, then the cost of the new network investment must be met by increased revenue from the new connection. If this cannot be recovered through existing line charges and increased volume, capital contributions will be required from End-Consumers or energy retailers.

Where shared assets are improved or upgraded, or where the costs cannot be attributed to individual End-Consumers because the investment is required for safety, statutory, or technical reasons, the costs are borne by all End-Consumers.

The shared assets are valued on the basis of a common methodology, as outlined in the Electricity Disclosures Guidelines (1994).

The method used is called the *Optimised Deprival Value*, which ensures the network value is based on the optimum design that can provide the capacity to supply the End-Consumers. The method ensures that allocated costs are based on the cost of providing the best or most efficient design for an End-Consumer category, rather than the actual configuration in place, which may theoretically be inefficient or more than is required.

The value of these assets is depreciated based on the remaining life of the existing assets. Standard lives are recommended in the Optimised Deprival Valuation Handbook (October 2000). In accordance with the ODV handbook methodology, UnitedNetworks determines its equipment lives independently, in some cases, to reflect implications of location or maintenance or other factors.

Network costs recovered through line charges include a component that reflects the value of the assets. This is the return on the investment made by the owners of UnitedNetworks.

Bulk Transmission Costs

Transpower provides the high voltage transmission lines, known as the national grid, that connects the large generating stations to the points of supply (POS), that supply UnitedNetworks' Networks.

UnitedNetworks has a connection agreement with Transpower that includes charges from Transpower based on Transpower's cost structure. The Transpower charges consist of fixed components, demand based components, and to a smaller extent energy based components. Transpower's cost drivers are similar to those of UnitedNetworks, in that they are predominantly fixed and based on provision of long life assets.

The fixed components of cost recover Transpower's costs of providing the POS (the connection charge).

The demand-based components recover the asset-based costs in the shared transmission grid, and also the operating and associated costs.

The Transpower charges are demand based on UnitedNetworks' peak demands on each POS.

Operating and Maintenance Costs

These costs are associated with provision of faults services, load control facilities which minimise investment in the transmission and distribution networks, as well as the ongoing preventative maintenance of the network.

UnitedNetworks contracts out maintenance and some inspection services, to ensure the most cost-effective process is in place.

The maintenance programme is set by our service level standards, which identify our commitment to minimise plant failures.

These costs are largely asset based.

Indirect Costs (includes Network Administration)

These costs are for the provision of support services, including billing, record management, planning, and administrative services, including contract administration, intangibles (goodwill), and the resource costs involved in managing and operating the business.

Allocation of Costs

The components of cost listed in the previous sections are allocated to individual End-Consumers, or across load groups as near as possible in accordance with the contribution these groups make to the costs.

Network Usage and the On-Peak Demand Period

The largely fixed nature of our costs means that costs tend to be independent of usage. However in providing a shared network, the cost of construction is dictated by the capacity incorporated into the design. The capacity is set by the highest expected demand contributed by all End-Consumers sharing the assets.

The network capacity, and the Transpower connection capacity, have to be designed to ensure that the network can accommodate the maximum demand imposed by all End-Consumers. This demand is called the UnitedNetworks' *peak demand*.

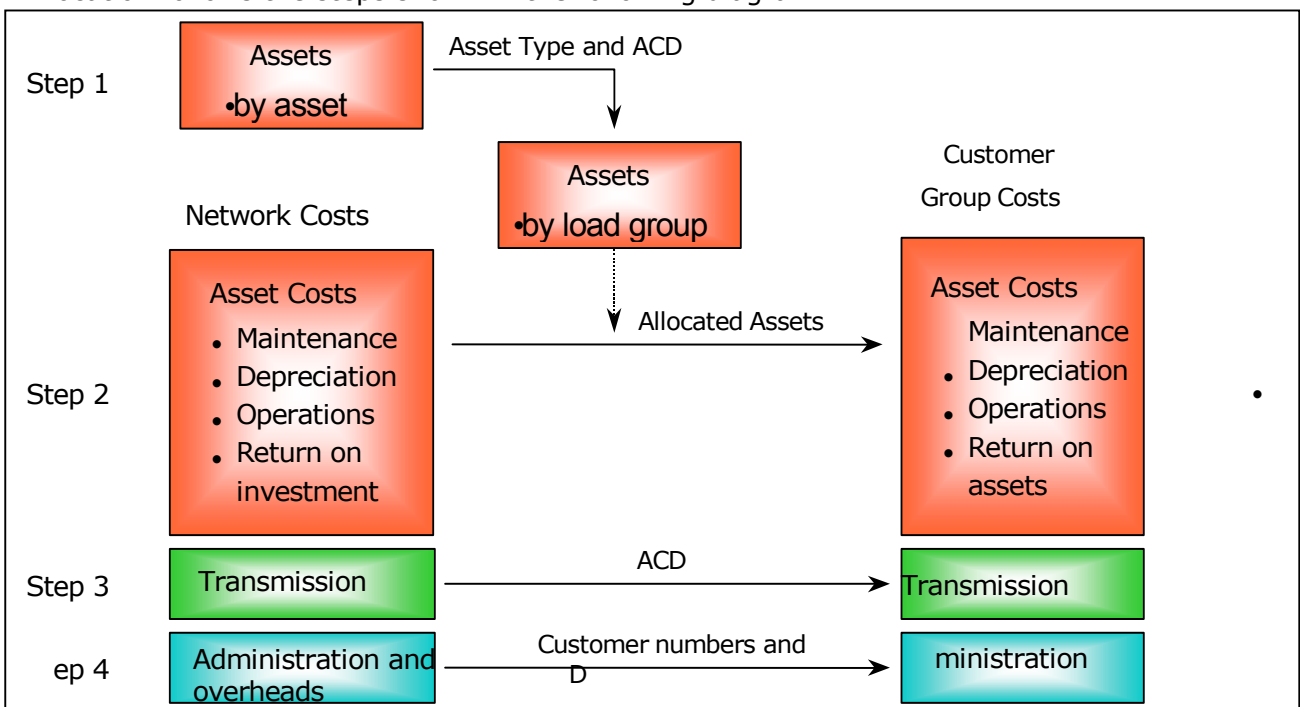
Any End-Consumers' or groups' demand which contributes to the UnitedNetworks' peak demand is called *on-peak demand*. In predominantly urban areas the on-peak demand is likely to be driven by the residential load, and occurs during winter evenings. In other regions, the on-peak demand is shaped by predominant usage patterns, such as the dairy farming load in rural areas.

The demands are measured over half hourly periods. To measure demand accurately, a meter incorporating a data logger, which records energy flow every half hour, has to be installed. Generally, only load groups 40 and 60 have half-hourly metering fitted, so that their energy use profiles - and their on-peak demand - can be accurately measured. Most End-Consumers, however, do not have such metering fitted, because of cost. The peak demand is thus assessed for load groups of similar End-Consumers. This is the *assessed coincident demand*.

UnitedNetworks' *potential peak period* (that is the time period in which UnitedNetworks' peak demand can occur) is generally defined as the period from 1700 hours to 2100 hours in the months of June to September inclusive. The potential peak period varies in some regions due to seasonal effects such as summer holiday home and spring milking loads. The assessed coincident demand is the highest demand for the load group in this period.

Method of Cost Allocation

Specific costs are allocated in accordance with the drivers associated with these costs. Allocation follows the steps shown in the following diagram.



Asset Based Costs

These are allocated in accordance with the assessed coincident demand. Dedicated assets, such as on-site transformers and switchgear, are charged separately, so that only the shared network assets are allocated to the load groups.

Transmission Costs

Transpower charges, but excluding the variable ancillary service charges, are allocated in the same way as the asset-based costs.

Transpower charges to UnitedNetworks are based on the *incremental reset option*. This incorporates a demand-based charge that is based on the average of the highest twelve Point of Supply maximum demands over the previous twelve months, calculated for each bulk supply point.

Transmission charges for load groups are calculated in a similar manner, with the charge based on the highest demand incurred by each load group, coincident with UnitedNetworks peak demand. The charge is determined through the following formula:

$$A/B \times C = D$$

where:

- A = a load group's assessed co-incident demand
- B = the total measured Point of Supply maximum demand for that pricing region.
- C = the total transmission charge for that area (Waitemata or Valley)
- D = the total transmission charge for that group.

The same formula can be used for End-Consumers on individually priced contracts but the definitions of A and B will change as follows:

- A = the End-Consumer's on-peak demand
- B = the measured Point of Supply maximum demand

This gives us the End-Consumer's on peak demand as a ratio of the UnitedNetworks system demand at the relevant bulk supply point.

The variable charge based costs are apportioned in accordance to the energy injected into the network at each point of Supply, by Customer.

Administrative Overheads

Administration costs are allocated to load groups predominantly on the basis of the number of connections within the load group. The exception is, once again, the individually priced load group, where specific account management input and contractual obligations incur additional administrative costs. Billing costs also tend to be higher for those time of use metered End-Consumers.

Derived Line Charges

The derived line charges consist of a mix of fixed and variable rates.

The variable component is charged in cents per kilowatt/hour (c/kWh). While the network costs are predominantly fixed, the cost allocation process averages the cost contribution for each load group across all connections within the load group. The impact of load factor and seasonal variations on individual connections are catered for through the application of a variable charge component. The use of load groups also provides a sorting mechanism.

The larger capacity load groups have the bulk of the charge fixed while lower capacity connections have the fixed component set at closer to 50% of the total line charge. Residential and small commercial consumers have the option of a low fixed charge where the daily charge represents 10% of the average consumer connection line cost.

Thus UnitedNetworks' prices include variable charges, so that some of the cost savings can be passed on. Any longer term savings will come to bear when UnitedNetworks costs and prices are reviewed.

UnitedNetworks requires all residential and commercial *directly connected storage based load* (such as residential water heating, spa pool heating) to be controlled by UnitedNetworks' load control plant.

UnitedNetworks controls these devices during the potential peak period, typically winter evenings. Controlling the peak demand in this way avoids the cost of providing sufficient network capacity to meet an uncontrolled peak, which would in turn result in higher network charges. Transpower costs are also reduced. These cost savings have been factored into the determination of the assessed coincident demand for load groups that include controllable load. Customers can choose to disable the load control and a premium is applicable, charged monthly.

Where a time of use (half hourly interval) metered site exhibits a poor power factor, less than 0.95, a charge for reactive power will be introduced. Such a charge requires reactive metering to be fitted at the site (This could consist of Short Term Monitoring). The reactive charge signals the cost UnitedNetworks providing extra network capacity to cater for the non-productive load flows through the network as a result of poor power factor.

Each site's load group is determined by the rating of the fuses at the point of connection to the UnitedNetworks network or for larger sites by the capacity of transformer assets installed. In some cases an End-Consumer can reduce the available capacity for a point of connection and benefit from reduced charges. To change to a lower load group, the available capacity to the site must be limited by fitting a lower rated fuse at the point of connection. Where it is not practicable to replace the fuse, a sealed MCB can be installed. UnitedNetworks reserves the right to specify the type and location of the MCB, and to inspect and seal the MCB prior to approving a change of load group for charging purposes.

Table One - Summary of UnitedNetworks ODV, Demand, Volume, Connections, Revenue and Costs allocated by customer category for Apr 2001 to Mar 2002.

	Unmetered	Domestic	Commercial	Industrial	Large Industrial	Total
No. of Customers	93,899	446,580	57,304	1,249	102	599,134
GXP Volume MWh	38,725	3,471,786	1,430,627	1,157,806	1,184,166	7,283,111
GXP CMD kW	9,673	812,831	302,877	156,859	185,331	1,467,571
ODV (\$000)	\$38,381	\$617,651	\$227,201	\$96,671	\$41,504	\$1,021,408
Revenue (\$000)						
Fixed	\$5,059	\$79,463	\$39,635	\$50,554	\$30,119	\$04,829
Variable	\$683	\$137,813	\$52,922	\$352	\$144	\$191,913
Total Revenues	\$5,741	\$217,276	\$92,557	\$50,905	\$30,263	\$396,742
Costs (\$000)						
POS (Transmission costs)	\$549	\$46,309	\$17,529	\$9,246	\$11,563	\$85,195
O & M	\$1,019	\$16,314	\$5,927	\$2,494	\$1,023	\$26,777
Dep'n	\$1,719	\$27,485	\$9,972	\$4,191	\$1,692	\$45,060
Indirect Costs	\$1,793	\$28,848	\$10,612	\$4,515	\$1,938	\$47,706
Total Operating expenditure	\$5,079	\$118,956	\$44,040	\$20,446	\$16,216	\$204,738
EBIT (\$000)	\$662	\$98,320	\$48,517	\$30,460	\$14,047	\$192,004
less Tax	-\$436	\$18,902	\$10,604	\$7,414	\$3,470	\$39,954
less Interest	\$2,137	\$34,385	\$12,648	\$5,382	\$2,311	\$56,862
Total Profit (\$000)	-\$1,039	\$45,033	\$25,264	\$17,664	\$8,266	\$95,188