DISTRIBUTED GENERATION

BASIS OF CHARGES FOR CONNECTING GENERATION FOR THE PERIOD 1/4/08 TO 31/3/09

To be read in conjunction with Application and Preferred Terms & Conditions documents

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1. Introduction

Charging for connection and operation of generation can be a complicated matter - certainly more complicated than charging for a passive load. This document firstly explains why the charges for connecting generation are more complicated and sets out the basis for the charges that we may require you to pay or rebate you for in regard to your connected generation, and secondly sets out those charges for our current pricing year.

2. Basis of charges

A distributor like us incurs two broad categories of charges when a passive electrical load is connected to our network…

- The costs associated with our network at large, such as building sufficient capacity to supply you and all our other consumers.

- Paying Transpower for the costs of their grid, such as building sufficient capacity to supply us, other lines businesses, generators and direct supply customers.

Similarly, we may incur some of these costs when generators want to inject electricity into our network. However connecting a generator to our network can also be like “negative load” – it may mean we can avoid certain categories of costs like building new capacity or paying charges to Transpower. However this would require the generation to operate continuously at its maximum rating which is very unlikely. It is more likely that your generation will operate at varying rates over time including outages for repairs or times when there is no energy to drive your generation.

This means that we may incur costs as well as being able to avoid costs. The precise amount we charge you to connect your generation to our network will depend on the precise balance of costs incurred and costs avoided which can depend on many factors including how and when your generation is operated, where it connects to our network and whether it effects the reliability of our network.

The precise nature and magnitude of these charges may influence how you operate your generation.

3. Charging components

3.1 Our distribution charges

This section sets out the costs that we would either directly incur or directly avoid as a result of connecting your generation.

Connection charge

The connection charge forms the starting point of our charges and is based on the capacity required to connect your generation to our network at large (either to draw power or to inject power into our network) and is structured as follows…

- For generation rated at less than 10kW a single monthly charge of $……..applies.
- For generation between 10kW and 100kW a fixed monthly charge of $……../kW of maximum injection capacity applies.
- For generation between 100kW and 1MW a fixed monthly charge of $……../kW of maximum injection capacity applies. This may be augmented with an additional charge if your allocated maximum injection capacity is more than …….% of the maximum demand on the line that you connect to.
- For generation greater than 1MW the connection charge will be calculated upon initial application.

If you expect to use your generation to off-set your demand from our network, be aware that if you don't run your generation, your monthly connection charge may increase significantly.

Connection assets charge

In cases where we provide the connection assets but don't require a 100% contribution from you, you will also pay a monthly fee toward the cost of connection assets (similar to hire purchase). This monthly fee will depend on a number of factors including the cost of the connection assets, the level of customer contribution you make, and the time over which the connection assets are paid off.

Location charge

Some areas of our network have surplus capacity and can easily supply new load or absorb generation, whilst other areas may not (which we refer to as constrained or congested). Using generation to offset demand in constrained areas of our network may help us to avoid the cost of building new capacity, in which case we could share that benefit with you (subject to you installing time-of-use metering so we can accurately assess your contribution). Conversely, injecting generation into an already constrained area of our network increases line losses and ultimately requires us to build new capacity.

Accordingly we have derived a locational charge per kW of injected generation for each zone substation area within our network based on the costs we would either incur or avoid. If adding generation helps us avoid costs, this charge will be a rebate (negative).

Where the energy source for your generation is flexible (and we realise that for many sources such as hydro or waste steam it won't be), we recognise that this charge may influence the precise area of our network you connect to.

Power factor

If your generators' power factor is less than 0.95 leading or lagging, we may also charge you a monthly power factor charge in $/kVAr for all the kVAr that fall outside of the 0.95 leading or lagging range.

Inability to reclose

If your generation restricts our ability to use reclosers and causes a consequent reduction in reliability to our customers, we may charge you a monthly reliability penalty based on the number of customers that are affected, the average number of interruptions per year, the average additional duration of the interruptions due to our inability to reclose, and a penalty rate of $0.11 per customer per minute per year.

Charge to recover loss of revenue

If connecting your generation to our network requires us to forego connecting a customer from whom we could derive a higher revenue, we may charge you the difference between what you pay and what that customer would pay.

Charge to compensate for sub-optimal network configuration

If connecting your generation requires us to operate our network in a sub-optimal manner (for instance, with switch configurations that lead to higher line losses) we may charge you for those costs.

3.2 Transpower's charges

Transpower charges are what we pay to connect to the national grid at Mangahao and Valley Road. Because of the precise way we are charged by Transpower, we don't have much flexibility in how we pass on these charges.

Connection charges

This is essentially a long-term fixed cost to us based on specific assets used to supply us at each grid substation. We pass this charge on to all our connected customers.

It would obviously take a long time for generation to offset the need for bigger assets, so the benefit of generation is considerably diluted. Accordingly we will only offer a rebate for generation greater than 5MW that contracts to supply electricity for at least 15 years.

Interconnection charges

This is a short-term variable charge to us based on our maximum demand from Transpower's grid substations, and is $52/kW for our current pricing year.

Transpower's recently adopted pricing methodology for both of the grid exit substation's supplying us provides very little incentive for us to reduce demand hence there are no benefits for us to pass on to generators who help us reduce our demand.

4. Charges for current pricing year

The following table sets out our charges for connecting generation for the current pricing year for each rating band of generation…

The following monthly charges will apply during the current pricing year for all conn

Charging component	Generation rating			
	Less than 10kW	Between 10kW and 100kW	Between 100kW and 1MW	Between and 5
Electra connection charge	$...../month	$...../month per kW of maximum injection capacity	$...//kW of maximum injection capacity plus additional charge if more than ....% of line max demand	Calculate
Electra monthly connection assets charge	Cost of connection assets (Expected life in months) * ((Annual ops & mtce costs)/12 + (Cost of a			
Electra location charge	Nil	Refer to table below		
Electra power factor charge	Nil	$...../kVAr for all kVAr outside of 0.95 lea		
Electra inability to reclose charge	($0.11/customer-minute/year) * (number of customers aff *(average additional minutes per event) *(number of events			
	Note that if your generation reduces the average duration of supply interruptions, th			
Electra recover lost revenue charge	Calculated as situations may arise			
Electra sub-optimal config. Charge	Calculated as situations may arise			
Transpower	Nil	Nil	Nil	Nil

connection charge				
Transpower interconnection charge	Nil			

The following table sets out the location charge for each zone substation for generation rated between 10kW and 1MW. The units are $/kW/month where the kW is your allocated maximum injection capacity.

Substation area	Charge	Rebate
Shannon		
Foxton		
Levin East		
Levin West		
Otaki		
Paraparaumu		
Paraparaumu West		
Raumati		
Waikanae		
Paekakariki		