

Record No: D2006/82419  
Container No: F2005/3687

Alan Tregilgas  
Utilities Commissioner  
Utilities Commission  
5th Floor, 38 Cavenagh Street  
Darwin NT 0800

Dear Utilities Commissioner

**Re: Distribution System Extension Policy (DSEP)**

The Corporation seeks approval from the Commission of its attached Distribution System Extension Policy (DSEP) as being:

- in accordance with both the capital contributions principles under s 86(8) of the *Electricity Reform Act* and the Capital Contributions Policy, approved by the Commission in 2004 under s 81 of the *Electricity Networks (Third Party Access) Act*; and
- appropriate for financial contributions under s 86 of the *Electricity Reform Act*.

Also note that the Corporation would like the approval of DSEP to represent approval for all financial contributions under s 86 of the *Electricity Reform Act* going forward, like the Capital Contributions Policy is for capital contributions under Chapter 8 of the *Electricity Networks (Third Party Access) Act*.

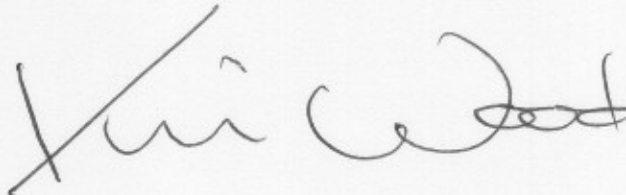
- provided returns are periodically submitted to the Commission for compliance purposes; and
- the Corporation can seek (informal and/or formal) guidance from the Commission as needed.

The Corporation notes that the Commission was unable to formally consider DSEP in 2003, as the Capital Contributions Policy had not yet been submitted to, and approved by, the Commission.

GPO Box 1921, Darwin NT 0801

Should you have any queries regarding this or any related matters please contact, Mr Darren Nelson, Manager of Economic Regulation & Services (Economics), on 8985 8444 and/or at [darren.nelson@powerwater.com.au](mailto:darren.nelson@powerwater.com.au).

Yours sincerely

A handwritten signature in black ink, appearing to read 'Kim Wood', with a long diagonal stroke at the beginning.

Kim Wood  
**Managing Director**

31 May 2006

# PowerWater

## Distribution System Extension Policy

Ref No: Network Policy NP 004 File Number: PN2003/0182  
Date of Issue: 25 May 2006 New/Updated: Revision 9

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### 2. Scope

The Distribution System Extension Policy of the Power and Water Corporation applies to extensions to and augmentation of the electricity network. It applies to non-contestable customers connected to, or intending to connect to, any electricity network owned by Power and Water.

### 3. Definitions

**Axe Handle Lot** is a lot connected to a public road by a single narrow access way.

**Basic Supply** is 10kVA single phase for residential and rural/residential customers, and 25kVA three phase for commercial / industrial customers. In a commercial / industrial subdivision, the basic supply shall be that demand used in the design of the reticulation system.

**Battle Axe Lots** are groups of at least two lots connected to public roads by narrow access ways, with the access ways located adjacent to each other.

**Capacity** means the rated demand applicable to a particular lot of land or customer, and refers to an average demand over a 15 minute period.

**Capital Contribution Policy** is a policy so named, and approved by the Utilities Commission for use in assessing capital contributions in accordance with *the Electricity Networks (Third Party Access) Act and Code*.

**Commercially Viable Customer** is a customer with an assessed consumption such that a capital contribution is either not required, or is less than the cost of the connection assets, by reason of a commercial return to Power Networks. The methodology for calculating commercial viability is summarised in the *Capital Contribution Policy* approved by the Utilities Commission from time to time.

**Contestable Customer** is a customer with an estimated consumption of electricity greater than 750 MWh/annum.

**Franchise Customer** refers to a customer with an estimated consumption of electricity less than 750 MWh/annum.

**Installation Rules**, formally known as "Contractors' Bulletins", is a publication that sets out technical details relating to the connection of supply to an installation.

**Load Limiting Circuit Breaker** is a circuit breaker, complying with Rule 1.8.3.5 of AS 3000 and Clause 5.56 of the *Installation Rules*, that is used to limit the load of an installation to an agreed capacity in accordance with this Policy.

**Low Voltage (LV)** refers to supply at a nominal voltage of 240 volts or 240/480 volts single phase or 240/415 volts two or three phase  $\pm 5\%$ . In accordance with changes to the voltage standard brought about by alignment with the international standard, Power and Water is moving towards a standard voltage of 230/460 volts single phase or 230/400 volts two or three phase.

**Overriding Statutory Charge** is an encumbrance registered on the title of land pursuant to the *Real Property Act 2000*. It disallows land to be transferred or sold whilst the charge remains. The charge is levied under the terms of the *Electricity Reform Act 2000* on a lot of land. It refers to an area that has been declared as an "Electricity Supply Distribution Extension Area" under Section 86 of the Act. An area is so declared when an electricity extension under the *Distribution System Extension Policy* results in land becoming serviced by a power line extension. *Overriding Statutory Charges* are escalated at the Darwin CPI. See also *Explanatory Notes*.

**Point of Supply** is the point where Power and Water makes supply available. For low voltage supply, this is one of the following:

- (a) A point of attachment of an overhead service on to a building or pole on which a metering panel is fitted.
- (b) A point of attachment of an overhead service on to a pole forming part of unmetered aerial consumer's mains.
- (c) A nominated point on a distribution substation located on the customer's Lot.



- (d) A point of connection of an underground service in a metering panel (otherwise known as the 'point of entry' or POE).
- (e) A point of connection of an underground service in a pillar or junction box forming part of unmetered consumer's mains, and located on the customer's Lot.
- (f) A (usually fused) point on a Power and Water pillar located on the customer's Lot.

For high voltage supply, the point of supply will be as agreed between the customer and Power and Water, and will generally be at the terminals of a high voltage metering unit located on the customer's lot.

Service refers to the low voltage overhead or underground line running from a pole or pillar owned by Power and Water, which crosses the property boundary of the lot, and runs to the *Point of Supply* located on the lot.

Service Rules and *Meter Manual*, together with the *Installation Rules*, set out many of the conditions applicable to services and metering.

Serviced means that a low voltage supply is available at some point within servicing distance of the property boundary of a lot.

Servicing Distance means:

- (a) for an overhead service, a distance, not exceeding 40 metres, that permits a service to be run without exceeding the design tension, and while maintaining the required ground clearance as defined in the *Standards Manual*. Refer also to 5.25 of the *Installation Rules*.
- (b) for an underground service in an underground area, a distance not exceeding 60 metres from the nearest pillar to the point of entry (POE).
- (c) For an underground service in an overhead area, a distance not exceeding 60 metres from the nearest pole carrying low voltage mains to the POE. Refer also to 5.26 of the *Installation Rules*.

## 4. Introduction

This document sets out the electricity *Distribution System Extension Policy* of the Power and Water Corporation.

For contestable customers, connection terms will be negotiated in response to an Access Application – see Section 5. Sections 6 to 10 cover connection terms for franchise customers.

Technical requirements relating to connection of customers' installations to the network are set out in the *Service Rules*, *Installation Rules*, and the *Meter Manual*.

In all cases, this policy relates to the most economic method of making supply available to a customer's property. Where a customer requires or chooses a method or point of supply that is more expensive than the most economical method, the customer will be required to pay any additional costs; this includes contestable customers.

Where an alternative supply arrangement is required to fulfil the reliability requirements of the Network Planning Criteria, this will be included in the design of the project, and treated as part of the extension.

## 5. Connection of Commercially Viable Customers

*Commercially Viable* customers include *Contestable Customers* and larger *Franchise Customers* where net revenue provides a significant rate of return on the connection assets.

*Contestable Customers* are those with an estimated annual consumption exceeding 750 MWh per annum.

Refer to Network Policy NP 015 for information regarding the treatment of *Contestable Customers*.

Under the Electricity Networks (Third Party Access) Act and Code, contestable customers may choose their electricity supplier. The electricity industry has been separated into three main parts – generators, the network operator, and retailers. Retailers purchase electricity from generators, pay the network operator to transport it from generator and customer, and then sells it to customers.

The power lines ("Network" or "wires") business remains a regulated monopoly. Competition is possible because all retailers and generators, Power and Water-owned and others, have access to the network on an equal cost basis.

Under this framework, a contestable customer (or a Retailer on their behalf) makes an "Access Application" to the network provider (Power and Water). The Application sets out the information needed by Power and Water to assess the application. Power and Water considers the application, and makes an offer covering the terms and conditions of the connection, including the network tariff applicable.

For most customers, choosing a retailer should be a priority. The retailer would normally carry out the negotiations with Power and Water over access terms.

Capital contributions associated with the connection of *Commercially Viable* customers are calculated in accordance with the terms of the *Capital Contributions Policy*.

## 6. Subdivisions and Amalgamations

### 6.1 Subdivisions

The developer will provide reticulation within the subdivision to Power and Water standards and bear the cost of connection to the existing electrical distribution system. Power and Water will undertake reasonable design certification and quality assurance auditing of the works at its own cost. Where excessive re-checking is required, Power and Water may require the developer to bear the cost of this.

Where a developer is required to bear the full cost of any work, the design, project management and construction is contestable. Only accredited consultants and contractors may carry out this work. Accreditation shall be in accordance with the Power and Water publication "Contractor Accreditation".

Reticulation systems shall be designed and constructed in accordance with the Power and Water publication, "Design and Construction of Network Assets". The developer will provide all reticulation intended for handover to Power and Water, including extensions into battle axe lots.

Where there are existing low voltage mains from which supply can be made available with no immediate requirement for construction, a capacity charge will apply, based on the calculated demand of the new lots.

Where additional construction is required to service new Lots, the developer will meet the full cost of this. The allocated capacity for each new lot will be the designed capacity resulting from the new work.

## **6.2 Amalgamations**

Where existing lots are amalgamated, the existing capacity of the individual Lots will be summed up. The developer will meet the full cost of providing the power supply to the new lot, with a credit applicable for the capacity already paid for.

The developer is responsible for combining the servicing arrangements into a single *Point of Supply* for the new lot.

# **7. Development of Serviced Lots**

## **7.1 Load Increases**

For load increases to an existing lot, the following applies:

- (1) a capacity charge of \$50 per kVA for increases in demand above either the *basic supply* or the maximum demand already paid for;
- (2) \$5000 for each additional substation installed specifically to provide the increase in demand;
- (3) the full cost of any high voltage line on private property; and
- (4) the demand will be limited by a circuit breaker in accordance with Installation Rule 5.56. Variable-setting circuit breakers will be sealable.

In multi-metered arrangements, the developer shall provide sufficient capacity to meet the calculated maximum demand of the whole installation. This demand will be based on consideration of the load of prospective tenants and will be limited by the use of a fixed setting circuit breaker in accordance with Installation Rule 5.56.

## **7.2 Conversion of Single Phase to Three Phase**

Where an existing single phase customer applies for three phase supply, the following capital contributions apply:

- a) Where there is existing three phase low voltage mains available at the customer's service, a capacity charge as in (1) above (increasing capacity from 10 to 25kVA) applies.
- b) Where there is no three phase supply available at the customer's service, the minimum incremental cost to make three phase supply available.

In addition, an account establishment fee may be payable to the customer's Retailer.



Refer also to Section 5.45 of the *Installation Rules*.

## 8. Extensions to Unserviced Areas

The total capital contribution for an extension is the sum of:

- a Network Extension Charge along a public road, offset by up to 50% by Overriding Statutory Charges generated by the extension;
- a Network Extension Charge for extensions on private property, and;
- a Network Connection Charge per customer

### 8.1 Extensions along Gazetted Public Roads

These are charged at the Network Extension Rates in Table 1.

Where more than one customer will benefit from an extension, the Network Extension Charge may be partially offset by Power and Water applying Overriding Statutory Charges to lots not initially taking supply. The \$2,000 OSCs generated by the extension may be subtracted from the Network Extension Charge up to a maximum of 50% of the total Network Extension Charge.

Table 1 – Network Extension Charge

Description	Single Phase	Three Phase
Network Extension Charge per km	\$15,000	\$21,000

Table 2 – Overriding Statutory Charges

Description	Overriding Statutory Charge
Power line constructed on public road at property boundary; per lot	\$2,000
Basic single phase connection charge, per connection	\$5,000

### 8.2 Extensions on Private Property

Extensions of the high voltage network onto private property are charged by Power and Water at the Network Extension Rates shown in Table 1. Alternatively, the customer may engage accredited contractors to design and construct this. Such extensions are to be designed and constructed in accordance with the publication "Design and Construction of Network Assets".

### 8.3 Connection Charge

A Network Connection Charge as per Table 3 is applicable. This provides for a basic supply of either 10kVA single phase or 25kVA three phase. A capacity charge will apply for demands in excess of the basic supply (see Section 7 above).

Extensions of the low voltage system onto private property will only be made in the case of "Battle Axe" lots; such an extension will be treated as if it was on a public road.

Table 3 – Network Connection Charge

Description	Single Phase	Three Phase
Basic connection charge/customer	\$5,000	\$8,000



#### 8.4 Conditions for Extensions on Private Property

In all cases of Power and Water-owned lines on private property, an easement is required at no cost to Power and Water, and the customer will be responsible for keeping trees clear of the line and maintaining an all-weather access track to each pole.

With single axe handle Lots, a *Point of Attachment* will be made on the first pole inside the lot.

Generally power line extensions servicing leasehold properties will be carried out in accordance with this policy, except that an *Overriding Statutory Charge* for the loan amount remains on the property until the full amount of the capital contribution is paid.

### 9. Explanatory Notes

#### 9.1 Customers with a High Maximum and/or Energy Demand

Customers with an exceptionally large load in relation to the existing distribution system may require major reinforcement of the system. In such cases Power and Water will assess and negotiate an appropriate capital contribution.

#### 9.2 Load Calculations

For the purpose of calculating maximum demands, Power and Water may accept a calculation carried out in accordance with the Wiring Rules or may determine maximum demand by assessment, or by direct measurement.

#### 9.3 Overriding Statutory Charges

*Overriding Statutory Charges (OSCs)* are fully discharged as follows:

- (i) Where high voltage, low voltage (or both) supply is available along an adjacent public road, the \$2,000 OSC is payable at the time of first property transfer, or on making application for supply.
- (ii) In the case of (i), a Connection Charge of \$5,000 (also an OSC) is payable at the time of making supply. This provides for a basic 10kVA single phase supply. The Connection Charge is not payable at the time of property transfer unless an application for supply is made at that time.
- (iii) In the case of OSCs that existed prior to 1 July 2006, the amount becomes due on first sale of the property, or when an application for supply is made.

Overriding Statutory Charges levied under this Policy are escalated at the Darwin CPI on a whole financial year basis.

See also *Definitions*.

#### 9.4 GST

Charges levied under this policy are generally exempt from GST under Division 81 of the Goods and Services Tax Act. Where a customer is required to bear the actual cost of any extension, GST is applicable, whether Power and Water carries out the work or otherwise.

## 9.5 Uneconomic Customers

The power networks business arm of Power and Water is required to operate in a commercial manner. This requires that, when considering a new investment, the project must earn sufficient additional revenue to pay for the additional costs.

The *Distribution System Extension Policy* is designed to apply to the majority of customers with typical consumption patterns and connection cost.

For projects where the additional revenue is unlikely to cover the additional operations and maintenance costs of the new assets, Power and Water will require a capital contribution sufficient to ensure that other network customers are not disadvantaged. Such contribution may be greater than the actual cost of the extension.

## 10. Payment

For commercial and industrial customers, a minimum lump sum payment of 50% must be paid prior to the work commencing. The balance shall be paid prior to final connection.

For residential and rural/residential customers, payment of a capital contribution up to \$10,000 may be made in one of the following ways:

- (a) by lump sum payment attracting a discount of 5%.
- (b) by entering an agreement to pay the full amount over a period of up to 3 years in instalments. Payments are interest free and are to be made at least monthly. For amounts up to \$7,500 a 2 year repayment period applies.

The amount in excess of \$10,000 shall be paid by lump sum.

Individual terms may be negotiated where significant works are required.

For subdivisions, contributions shall be paid in full prior to connection of the new assets to the existing system.

Account establishment and other fees may be applied by the customer's Retailer (Power and Water for franchise customers). The customer will need to submit an "Application for Supply" form before supply is connected.

For customers with a high maximum and/or energy demand, payment arrangements will form part of the overall supply negotiations.

## 11. References and Further Information

Service Rules

Installation Rules

Meter Manual

NP 001 Design and Construction of Network Assets

Contestable Customers:

Network Connection Technical Code

Access Application kit

These documents are available Power and Water's web site, or from Customer Connection Officers located at Darwin and Alice Springs as follows:

**Darwin**

PO Box 37471, Winnellie, NT, 0821  
(08) 89245700/4 Fax (08) 89245363

**Alice Springs**

PO Box 1521, Alice Springs, NT, 0871  
(08) 89517278 Fax (08) 89517253

**Power and Water web site:**

<http://www.powerwater.com.au/powerwater/html/business/business.htm>

**Further information may be obtained by contacting:**

Manager Network Engineering  
Power and Water  
PO Box 37471  
WINNELLIE NT 0821  
(08) 8924 5192 Fax (08) 89245121

Submitted by:

Chris Pemberton

Approved by:

Bertram Birk  
General Manager Power Networks  
29 May 2006



### EXAMPLES - CUSTOMERS IN SERVICED AREAS

Description	Contribution	Remarks
New residential supply - demand less than 10kVA single phase	Nil	Within 10kVA basic supply allowance
New commercial / industrial supply – demand less than 25kVA	Nil	Within 25kVA basic supply allowance
Existing residential supply – increases to 25kVA three phase	\$750	Demand 25 less 10 = 15 15 x \$50 = \$750
Existing commercial / industrial supply – increases from 40kVA to 130kVA	\$4,500	Demand 130 less 40 = 90 90 x \$50 = \$4,500
New Industrial supply - demand = 140kVA	\$5,750	Demand 140 less 25 = 115 115 x \$50 = \$5,750
Existing commercial supply – demand increases from 60kVA to 450kVA	\$24,500 plus HV cable <sup>1</sup>  NOTE: A check of commercial viability will be carried out, which may reduce this.	Demand 450 less 60 = 390 390 x \$50 = \$19,500 New substation = \$5,000 Cost of any high voltage cable
Existing supply – demand increases from 200 to 210kVA	Nil	Load increment less than 20kVA

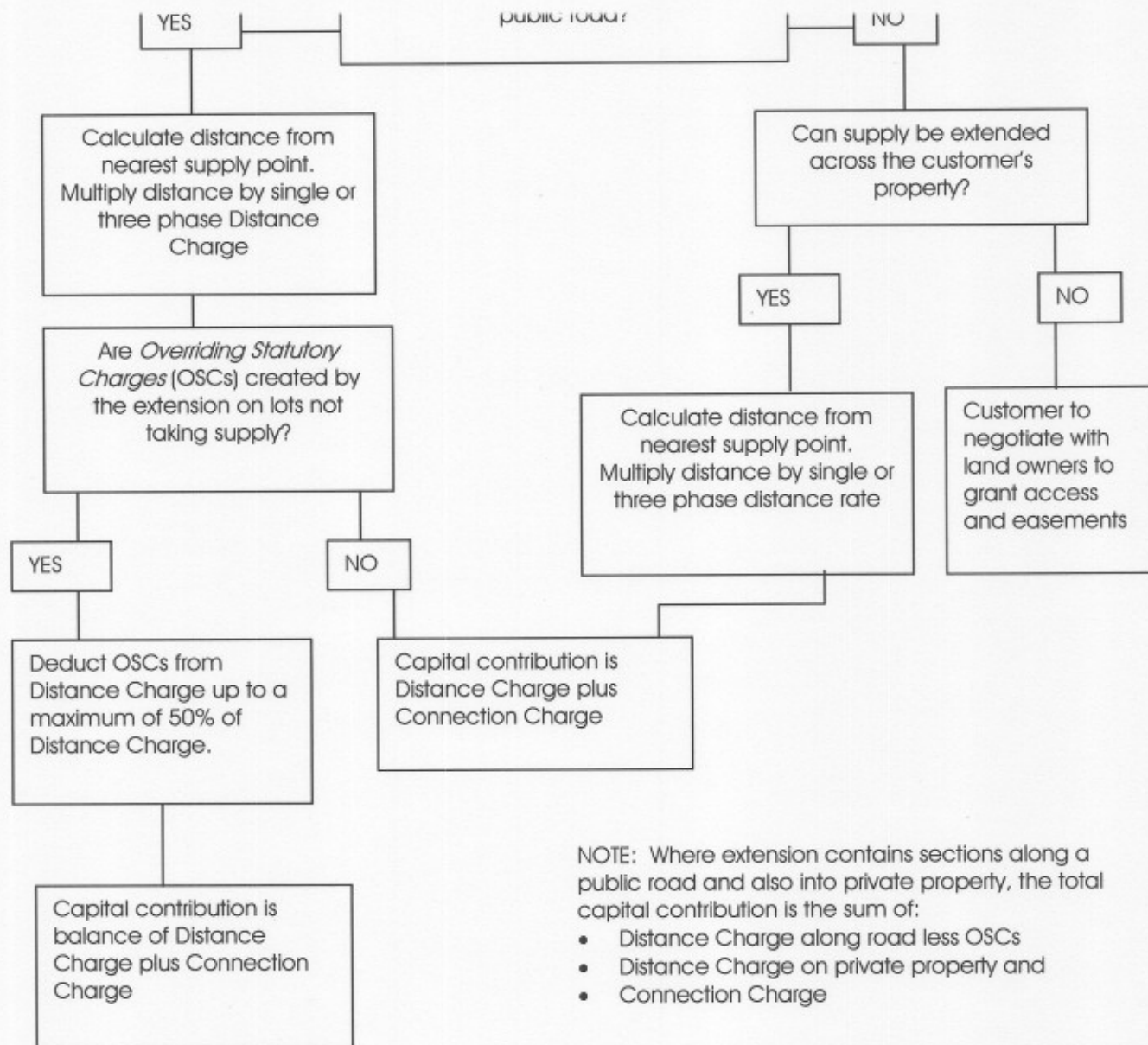
NOTE: 1. Installation of high voltage cable is contestable.

New supplies may attract an application and account establishment fee from the customer's Retailer.

### EXAMPLES - UNSERVICED AREAS

Description	Contribution	Remarks
New residential supply – 500m of line along road, second property serviced. Single phase.	0.5km x \$15k - \$2k + \$5k = \$10,500; OSC on second lot	Because second lot has OSC, customer has \$2k credit on cost of Distance Charge
New commercial / industrial supply – along road and/or extending within property.	Calculated in accordance with Capital Contribution Policy.	Extensions to commercial customers are not subsidised by DSEP.
Two residences 1km and 2km respectively inside private property – high voltage on road. Single phase. OSC	2 x \$15k + 2 x \$5k + \$2k OSC = \$42,000/2 = \$21,000 each	Extension supplies no other customers, so full cost applies.

New supplies may attract an application and account establishment fee from the customer's Retailer.



NOTE: Where extension contains sections along a public road and also into private property, the total capital contribution is the sum of:

- Distance Charge along road less OSCs
- Distance Charge on private property and
- Connection Charge

#### Commercial Customers in Unserved Areas

The above methodology is applied to residential or rural/residential zonings only. For lots zoned as commercial and/or industrial, capital contributions shall be calculated in accordance with the Capital Contributions Policy (see NP 036 Capital Contributions Policy).