



**NETWORK PRICING  
PRINCIPLES STATEMENT  
2004-05**

**ENERGEN LIMITED**

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## PREFACE

ENERGEX has updated its Network Pricing Principles Statement for 2004-05.

The basic price-setting principles remain unaltered.

There are four major changes to the document that reflect the ongoing review of the costs incurred by ENERGETEX, changes in the National Electricity Code and the requirements of the Queensland Competition Authority. These are:

1. the Standard Asset Customers (SACs) group is expanded to include customers consuming between 100 MW.h and 200 MW.h;
2. changes to the proportions of fixed, demand and energy components of the TUOS passthrough as it applies to SACs; and
3. a revised capital contribution policy has been introduced for SAC and franchise customers.

## 1. INTRODUCTION

In its *Final Determination on the Regulation of Electricity Distribution* (Final Determination), published in May 2001, the Queensland Competition Authority (QCA) required a Pricing Principles Statement (PPS) to be submitted for its assessment and approval.

ENERGEX Limited (ENERGEX) submits this document as its PPS. These principles are proposed for the development of network prices in the contestable National Electricity Market for customers connected to the distribution network. This document covers the background on the need for network prices, the network pricing objectives, a methodology overview, cost drivers, and conversion of costs into network prices. A medium term network price path strategy is also outlined in this document.

## 2. BACKGROUND

The Aggregate Annual Revenue Return (AARR) to be earned by ENERGEX as a Distribution Network Service Provider (DNSP) is determined by the QCA. This revenue is recovered through:

- the application of network prices to customers and embedded generators connected to the distribution network (sections 3-10); and
- income from the provision of distribution services (section 11).

Since the opening of the contestable electricity market in Queensland, network prices have been fixed pursuant to S301 of the Electricity Act 1994. From 19 December 2000, the QCA has assumed the role of Jurisdictional Regulator in Queensland as defined in the National Electricity Code (the Code). In fulfilling its role of Jurisdictional Regulator, the QCA has elected not to apply Part E of Chapter 6 of the Code; instead requiring the DNSPs to submit a Network Pricing Principles Statement.

This document is designed to fulfil the requirements of the QCA and to communicate the framework by which ENERGEX will be calculating network connection and access prices during the regulatory period.

## 3. NETWORK PRICING OBJECTIVES

The QCA has adopted a revenue cap regulatory regime for electricity distributors in Queensland by setting a maximum revenue cap for each of the 4 years of the regulatory period. ENERGEX's objective is to ensure that the allowable revenue is recovered from network users in a manner that is:

- economically efficient;
- simple;
- practical; and
- equitable.

In addition to these objectives, ENERGEX is guided by the principles outlined in Schedule 6.7 of Chapter 6 of the Code.

The distribution network pricing methodology is developed to achieve the following objectives consistent with the Code:

- achieving the target revenue – the network prices are structured to recover the required revenue to maintain a viable network business and to deliver efficient network connection services to network users;
- promotion of efficient use of the network – there should be appropriate signalling to network users of their impact on existing and future network capacity and costs;
- maintenance of price stability and certainty – prices should remain stable over time to permit customers to make informed investment decisions;
- maintenance of equity – network prices should be equitable for network users and should reflect the users' utilisation of the existing network and the use of specific dedicated assets;
- simplicity – network prices should be straightforward in application and readily understood by network users with the network utilisation signals interpreted appropriately; and
- free from cross subsidy – from an economic efficiency perspective, this requires that the network price for a network user, or group of users, be between the 'floor' price which is the incremental cost of supply and a 'ceiling' price represented by the stand-alone cost of supply.

#### **4. PRICING PRINCIPLES**

ENERGEX has adopted the following principles which are designed to facilitate the application of the objectives set out in the previous section.

1. Network Prices are to be consistent with the regulated revenue cap and any applicable side constraints determined by the Jurisdictional Regulator.
2. Network Prices should be based on a well-defined and clearly explained methodology.
3. Network Price development should incorporate an analysis of the cost of service provision that includes:
  - (a) definition of the classes of service provided,
  - (b) an allocation of the network costs to service classes,
  - (c) the translation of allocated costs into service prices, and
  - (d) estimates of the range of subsidy-free prices for each service class.
4. Prices are to signal the economic costs of service provision, by:
  - (a) being subsidy free (that is, between incremental costs and stand-alone costs);
  - (b) having regard to the level of available service capacity; and
  - (c) signalling the impact of additional usage on future investment costs.
5. Provided that economic costs are covered, prices should be responsive to the requirements and circumstances of users in order to:
  - (a) discourage uneconomic bypass, and
  - (b) allow for negotiation, where appropriate, to better reflect the economic value of specific services.

6. The economic signals present in the structure of TUOS charges should be preserved when allocating TUOS charges to distribution network users able to interpret those economic signals.
7. Information on allocated TUOS charges should be provided to users on request.
8. Information on customer class price levels and structures, underlying costs, price derivation methods and rationale and medium term price should be disclosed in order to allow:
  - (a) current and potential users to understand the basis for prices and to take account of prices in their consumption, investment and location decisions; and
  - (b) interested parties to better assess the range of economic opportunities for meeting user requirements, that may reduce users' costs and lead to more efficient outcomes.
9. Underlying service classifications, cost data, cost allocations and other elements that contribute to pricing decisions should be periodically reviewed and updated where relevant to reflect industry developments and changes in user requirements and preferences, methods of service provision and costs.
10. Where DNSP price strategies lead to proposed price movements or price restructuring that may be expected to impose significant adjustment costs on users, transitional price options, a phased approach or other measures should be offered to assist in the management of adjustment costs.

ENERGEX submits that the QCA should accept DNSP network prices that are consistent with these objectives and principles.

## **5. METHODOLOGY OVERVIEW**

ENERGEX has adopted a network pricing cost allocation and network price application methodology broadly consistent with Part E of Chapter 6 of the Code. The approach adopted by ENERGEX in these pricing principles is to include those parts of Part E of the Code that relate to the operational aspects of network price application and recovery.

Unlike other Jurisdictions, Queensland does not have a 'Distribution Code' which replaces the operational components of the Code and therefore to support the application and recovery of network prices, components of Part E should be retained. In implementing the QCA's requirements, ENERGEX is seeking to exclude the operation of the Code as it relates to the allocation of costs and the calculation of network prices but to include the remaining aspects of Part E. This exclusion recognises the limitations of the cost allocation and network pricing methodology included in the Code and allows for the formulation of economically efficient network prices based on broader economic principles. Part E of Chapter 6 of the Code is included as Appendix 1 to this Pricing Principles Statement.

ENERGEX has adopted Part E of Chapter 6 of the Code for connection and access services subject to:

- the exclusion from the pricing methodology of the following clauses of the Code:
  - 6.13.1 Classes of distribution service;
  - 6.13.2 Allocation of aggregate annual revenue requirements to asset categories within classes of network service;
  - 6.13.3 Method of allocation to asset categories;

- 6.13.4 Allocation of asset category costs to cost pools;
- 6.13.5 Method of allocation to cost pools;
- 6.13.6 Cost allocation to Distribution Customers and Embedded Generators;
- 6.14.1 Embedded Generator prices;
- 6.14.2 Distribution Customer price;
- 6.14.3 Prices for Network Users that are both Distribution Customers and Embedded Generators, Subclauses (b) and (c) only; and
- 6.14.4 Regulation of distribution prices;

on the basis that they are replaced by the components of this Pricing Principles Statement; and

- the exclusion from the pricing methodology of clauses:

- 6.14.5 Publication of distribution network prices;
- 6.15.2 Capital contributions, pre-payments and financial guarantees;
- 6.16.1 Billing for distribution network services;
- 6.16.2 Minimum information to be provided in distribution network service bills; and
- 6.16.4 Obligation to pay;

on the basis that they are replaced with the provisions set out in Appendix 2 of this document.

The development of network prices involves two primary processes, namely:

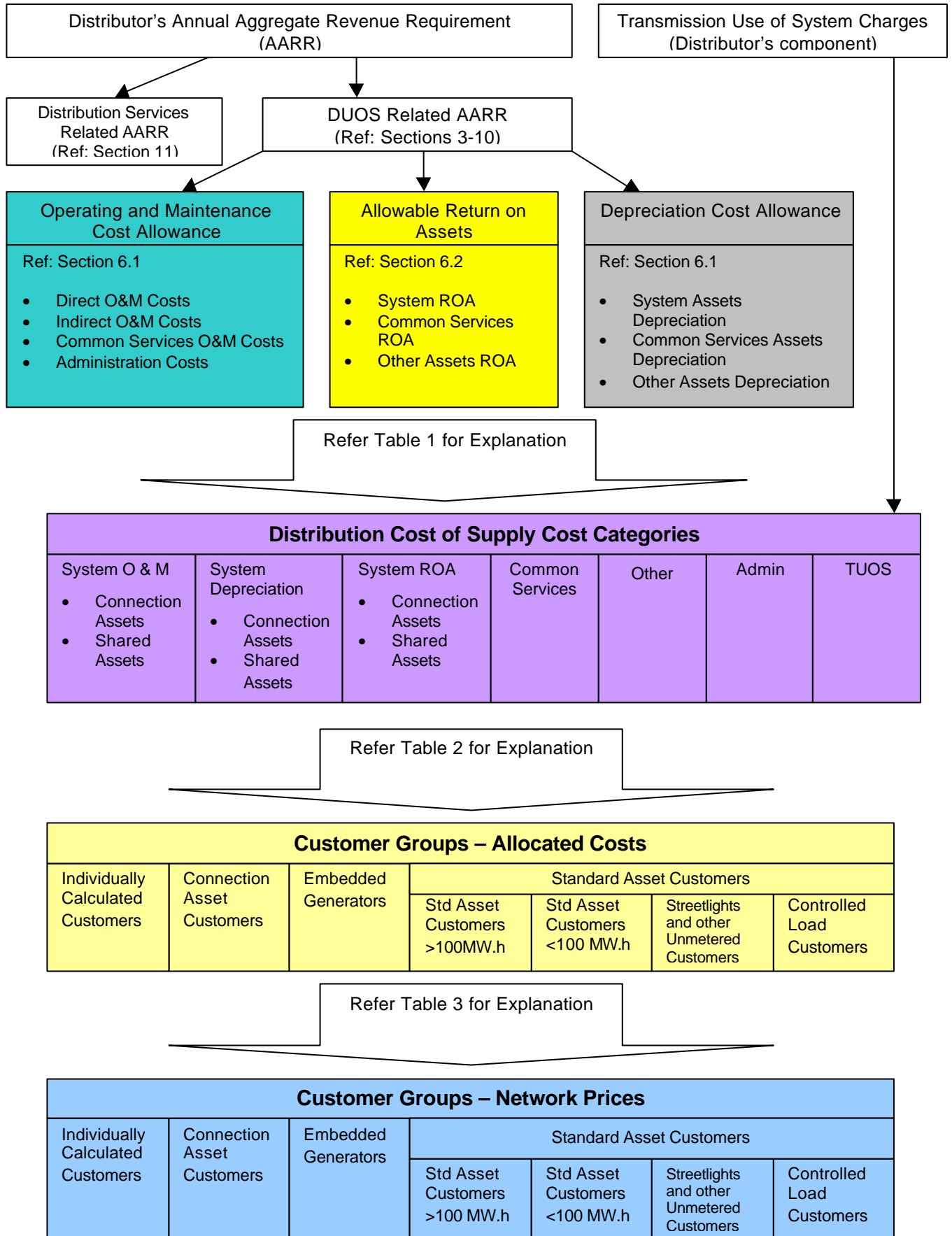
- (a) the allocation of the network costs that underlie the provision of the connection and access services to the users of those services in line with an appropriate methodology; and
- (b) the formulation of efficient network prices that recover those costs and are economically efficient.

The network prices developed under this Pricing Principles Statement are in the main cost reflective in that there is a direct relationship between the network price for the service and the costs of delivering that service (derived through a cost allocation methodology described below in Section 6).

To fulfil the other, and sometimes competing, pricing objectives (Section 3), the formulation of prices based on allocated costs must recognise wider pricing considerations. Indeed, as discussed in Section 7, a number of customer groups (with differing network prices) have been established on the basis of the economic network price efficiency.

The network price development methodology to be adopted for this regulatory period is depicted in Figure 1 below.

**Figure 1 - Network Price Development**



## 6. COST ALLOCATION PROCESS

The revenue cap as determined by the QCA is based on a building block approach which includes each of the regulated cost components, namely:

- operating and maintenance costs;
- depreciation, and
- a reasonable rate of return (WACC) on the depreciated value of the assets.

The first stage of the network price determination process is to allocate or assign the network costs to the customer groups in the most efficient and cost reflective way. That is, costs are allocated on a causal basis. This section sets out the cost allocation process utilised by ENERGEX in the determination of network prices.

### 6.1 Operating and Maintenance (O&M) Costs

The Jurisdictional Regulator has determined an overall efficient operating cost target for ENERGEX as part of the regulatory review process. To progress through the cost allocation process, this overall target is separated into a number of cost groups that are consistent in relation to drivers. These O&M cost groups are:

- (a) Direct O&M Costs – the directly attributable costs associated with the provision of network connection and distribution services.
- (b) Indirect O&M Costs – engineering and supervisory overheads associated with network management and the provision of connection and distribution services.
- (c) Common Service Costs – the directly attributable operating and maintenance cost associated with common service activities as described in the Code.
- (d) Administration Costs – those corporate overheads including CEO, IT&T, HR and Customer Services which are not directly linked to the operation and maintenance of the network, but which are associated with network service delivery.

Historical operating and maintenance costs are the basis for allocating O&M to these cost groups.

#### 6.1.1 Direct O&M Costs

The Direct O&M Costs are further segregated into voltage level cost groups based where possible on the historical direct operating and maintenance expenditure on the asset classes. Where historical data is not available, budget forecast and replacement cost of assets are used to allocate Direct O&M Costs.

The Distribution Cost of Supply (DCOS) model is used to allocate the costs associated with the operation and maintenance of the asset classes to the users of the asset class. For example, the customers taking supply at the 11kV level will be allocated a proportion of all of the upstream costs (33kV, 110kV, etc) while those taking supply at the 110kV level will be allocated their proportion of the 110kV system costs only (not downstream system costs as they do not use those parts of the system).

The voltage level direct O&M cost groups are:

- 110/132kV;
- 33kV Bus;
- 33kV Line;

- 11kV Bus;
- 11kV Line;
- low voltage;
- services (low voltage only);
- meters; and
- relays.

#### **6.1.2 Indirect O&M Costs**

The Indirect O&M Costs are allocated to the above listed voltage level cost groups in proportion to the allocated direct costs. This allocation is made on the basis that the engineering and supervisory costs are incurred proportionally to the direct O&M costs.

#### **6.1.3 Common Service Costs**

Common Service Costs are costs associated with those system assets that benefit the system as a whole and are not directly related to any single customer or group of customers. Assets included in this category are reactive plant, load control, control centres and communications.

#### **6.1.4 Administration Costs**

The Administration Costs are the summation of the non-system based costs which include corporate overheads and customer services. These costs are treated consistently as a group as it is impractical to manage a cost allocation stream for each of the specific components, for example, CEO, IT&T and HR. In addition the cost drivers for this set of costs are consistent along with the allocation methodology.

### **6.2 Return on Assets**

The Return on Assets (ROA) component of the revenue cap (representing a reasonable rate of return) can also be separated into the three cost groups as with the Depreciation allowance as follows:

- (a) System ROA – the return on those system assets employed in the provision of network connection and distribution services to customers (including any applicable tax);
- (b) Common Services ROA – the return on those system assets associated with the provision of common services; and
- (c) Other ROA – the return on non-system assets (for example, fleet, computers and buildings) and working capital, which are employed to provide regulated services to customers.

ROA costs are allocated to each cost group in proportion to the replacement cost of assets.

### **6.3 Depreciation**

The depreciation allowance can be separated into three separate cost groups on the basis of the asset type. These cost groups are:

- (a) System Assets Depreciation - the depreciation of those assets employed for the provision of network connection and distribution services to customers;

- (b) Common Services Assets Depreciation – the depreciation of those assets associated with the provision of Common Services activities; and
- (c) Other Assets Depreciation – the depreciation of the non-system assets (for example fleet, computers and buildings) which are employed to provide regulated services to customers.

Depreciation costs are allocated to each cost group in proportion to replacement cost of assets.

**6.4 DCOS Cost categories**

Table 1 below sets out the translation of these cost groups which relate to the components of the revenue cap into DCOS cost categories that are homogeneous in relation to cause and allocation approach. Table 2 in the next section sets out the allocators that are used to disperse these costs across the relevant customer groups.

**Table 1 – Cost Groups to DCOS Cost Categories**

Revenue Cap Components	Cost Groups	DCOS Cost Categories						
		System O&M	System Depreciation	System ROA	Common Services	Admin	Other	TUOS
O&M Section 6.1	O&M Direct	✓						
	O&M Indirect	✓						
	O&M Common Services				✓			
	O&M Administration					✓		
ROA Section 6.2	ROA on System Assets			✓				
	ROA on Common Services				✓			
	ROA on Other Assets						✓	
Depreciation Section 6.3	System Asset Depreciation		✓					
	Common Services Asset Depreciation				✓			
	Other Assets Depreciation						✓	
TUOS	Transmission Use of System Charges							✓

## 6.5 Allocation of DCOS Cost Categories to Customer Classes

There are four general groups of network users, to which network costs are allocated. The Standard Asset Customer group includes those customers who are not yet eligible to become contestable. These groups are:

- (a) Individually Calculated Customers (ICCs);
- (b) Connection Asset Customers (CACs);
- (c) All Standard Asset Customers (SACs); and
- (d) Embedded Generators.

The purpose of the cost allocation process is to develop a 'cost for the provision of network connection and access services' for each of these customer groups based on appropriate cost drivers and/or cost allocations.

### 6.5.1 Cost Allocators

There are a range of cost allocators that can be used in a Distribution Cost of Supply model such as that used by ENERGEX. The selection of the appropriate allocator is based on the ability of that allocator to reflect the fundamental cost driver. The range of possible allocators includes:

- (a) number of customers;
- (b) anytime energy;
- (c) period energy (time of use);
- (d) anytime demand;
- (e) period demand (time of use); and
- (f) coincident demand.

ENERGEX has adopted the following allocators in the cost allocation model:

- number of customers;
- anytime energy; and
- anytime maximum demand.

The reasoning behind the selection of these allocators is as follows:

- (a) number of customers – this allocator is appropriate for those costs that are dependent upon or driven by the number of connected customers. ENERGEX has a number of costs that are customer number-based. Indeed a significant proportion of the overhead costs of the business are driven by the number of staff and systems required to serve the customer base;
- (b) anytime energy – this has been used as an allocator for those costs that are related to the size of the customer but not specifically the demand of that customer on the network. In addition, consistent with the recovery mechanisms used in the market, those costs that cannot be directly related to a product or service are recovered in a non-distortionary basis through the use of anytime energy prices (for example, market fees, and ancillary services fees); and
- (c) anytime maximum demand (ATMD) – this method of allocation has been used for the shared system costs. The basis for this is that network development in each part of the network is driven by peak demand in that part of the network. For example, in a

domestic area the shared network capacity is based on the peak domestic demand that occurs on winter nights. By contrast in a commercial/industrial area the shared network capacity is determined by summer day peak demands. These individual demands throughout the network combine to form an overall coincident system peak demand, however this demand is more relevant to transmission network capacity than distribution. Therefore anytime demand which reflects the demands of various customer groups in different parts of the network is a reasonable driver.

Whilst the ideal cost allocation mechanism would be based on a real-time model which replicates these network location-specific demands, such an approach is not achievable at present. Anytime maximum demand provides a simple, and reasonable basis for apportioning system usage related costs given the present availability of data. It reflects the fact that demand is the primary driver of shared network costs whilst overcoming the limitations that other allocators have in recognising the variations across the network.

### 6.5.2 Implemented Cost Allocators

Table 2 below sets out the DCOS Cost Categories, the applicable class of Distribution Service (consistent with the Code), the Cost Driver and the Cost Allocation Methodology adopted in accordance with the previously established principles. Within each of the groups of network users, there are a number of Distribution Network Users, with a range of network prices. The allocation of costs within a group to the network users is on the same basis as for the general allocation of costs to the groups as described in Table 2.

**Table 2 – Allocation of Costs to User Groups**

DCOS Cost Category	Code Service Class	Cost Driver	Cost Allocation Methodology
System O&M	Exit Service, Entry Service, and Distribution Use of System Service	<ul style="list-style-type: none"> <li>• Connection Capacities</li> <li>• Demand on relevant parts of the network</li> <li>• Number of connections</li> </ul>	Costs apportioned to asset categories (asset groups at voltage level) on the basis of direct costs (O&M Direct). O&M Indirect is apportioned consistent with O&M Direct. The costs are then allocated to customer groups on the basis of the use of those assets through direct allocation for connection assets and ATMD for shared assets.
System ROA	Exit Service, Entry Service, and Distribution Use of System Service	<ul style="list-style-type: none"> <li>• Connection Capacities</li> <li>• Demand on relevant parts of the network</li> <li>• Number of connections</li> </ul>	Costs apportioned to assets (in DCOS categories) by voltage level proportional to the replacement costs. Costs are then allocated to customer groups on the basis of the use of those assets through direct allocation for connection assets and ATMD for shared assets.
System Depreciation	Exit Service, Entry Service, and Distribution Use of System Service	<ul style="list-style-type: none"> <li>• Connection Capacities</li> <li>• Demand on relevant parts of the network</li> <li>• Number of connections</li> </ul>	Costs apportioned to assets (in DCOS categories) by voltage level proportional to the replacement costs. Costs are then allocated to customer groups on the basis of the use of those assets through direct allocation for connection assets and ATMD for shared assets.

DCOS Cost Category	Code Service Class	Cost Driver	Cost Allocation Methodology
Common Services	Common Services	<ul style="list-style-type: none"> <li>System control and stability</li> <li>No unique cost driver</li> </ul>	Costs allocated to all customers on a non-distortionary basis, therefore anytime energy is used as the allocator.
Admin	Exit Service, Entry Service, and Distribution Use of System Service	<ul style="list-style-type: none"> <li>Number of customers connected</li> <li>Service requirements of customers</li> </ul>	<p>These costs are associated with the number of connected customers and their expectations/service requirements. A hybrid allocation of a percentage of costs per customer (currently 75%) and a percentage of costs on a c/kW.h (currently 25%) is adopted. These weights reflect that the number of customers is the primary driver of the Administration costs.</p> <p>Embedded generators will be allocated a fixed dollar (\$) cost depending on size and type of connection. These costs reflect the additional operational service required by Embedded generators.</p>
Other	Exit Service, Entry Service, and Distribution Use of System Service	<ul style="list-style-type: none"> <li>Number of customers connected</li> <li>Service requirements of customers</li> </ul>	<p>These costs are associated with the number of connected customers and their expectations/service requirements. A hybrid allocation of a percentage of costs per customer (currently 75%) and a percentage of costs on a c/kW.h (currently 25%) is adopted. These weights reflect that the number of customers is the primary driver of the Other costs.</p> <p>Embedded generators will be allocated a fixed dollar (\$) cost depending on size and type of connection. These costs reflect the additional operational service required by Embedded generators.</p>
Capital Contributions	Exit Service, Entry Service, and Distribution Use of System Service	<ul style="list-style-type: none"> <li>Number of customers connected</li> <li>Service requirements of customers</li> </ul>	These costs are associated with the number of connected customers and their expectations/service requirements. A hybrid allocation of a percentage of costs per SAC customer (currently 75%) and a percentage of costs on a c/kW.h (currently 25%) is adopted.
TUOS	Transmission Use of System Service	<ul style="list-style-type: none"> <li>Allocation to network users as per Code.</li> </ul>	<p>For ICCs, the TUOS is passed through in a reflective basis proportional to the Nominated Demand of the Customer and their energy consumption.</p> <p>The remaining TUOS is allocated to users on an anytime energy basis.</p>

### 6.5.3 Cost based Network Prices

Table 3 below is a diagrammatic representation of the conversion of the DCOS Cost Categories to the cost-based network price components.

**Table 3 – Conversion of DCOS Cost Categories to Prices**

DCOS Cost Category		Network Price Components		
		Fixed or Service Availability Charge	Volume Charge (c/kW.h)	Capacity / Demand Charge (\$/kW)
System O&M	Connection Assets	●		
	Shared Assets		F <sup>1</sup>	C <sup>2</sup>
System Depreciation	Connection Assets	●		
	Shared Assets		F <sup>1</sup>	C <sup>2</sup>
System ROA	Connection Assets	●		
	Shared Assets		F <sup>1</sup>	C <sup>2</sup>
Common Services			●	
Other		●	●	●
Administration		●	●	●
TUOS	ICC	●	●	●
	CAC	●	●	●
	SAC > 100 MW.h	●	●	●
	SAC < 100 MW.h	●	●	
	Streetlight and other Unmetered	●	●	
	Controlled Load	●	●	

<sup>1</sup> Volume Charge applies to Franchise Customers only.

<sup>2</sup> Capacity/Demand Charge applies to Contestable Customers only.

Network prices developed using this process are categorised as cost-based. By definition these cost-based prices are economically efficient in that they lie between the boundaries established by the stand-alone (ceiling) and incremental (floor) costs.

As a result of the cost allocation methodology described in this document, if there is some network capacity available then the incremental costs associated with a new network user will be the costs of connection and the costs of maintaining that new network user. As described in Table 3, the fixed or standing charge includes these costs, making it the floor price. Any use of energy from the network will incur additional charges taking the charge paid by any customer above the incremental cost of supply (the economic cost floor).

In the case of smaller network users connected at the distribution level (generally 11kV and below), the allocated cost of supply will be well below stand-alone costs of supply. The stand-alone costs for a small user would include costs associated with dedicated upstream infrastructure. These costs are shared between many users in the case of the fully allocated

model hence the allocated cost model should always lie below the stand-alone cost.

For larger network users connected at the sub-transmission level (33kV and above), the allocated cost model includes a site-specific component of supply network costs. Individually Calculated Customer cost-based prices are determined by mapping the actual supply network and allocating the relevant proportion of costs to the customers on the basis of their use of that network. Therefore as there is an allocation of costs, and/or the full network costs are allocated in the case of a single-user asset, the ICC network prices must be equal to or less than the stand-alone cost of supply (economic cost ceiling). The cost-based prices for Connection Asset Customers take into account the specific connection costs as well as an allocation of the upstream shared network costs. Consistent with the distribution level network users, this allocation of upstream shared network costs will result in individual network prices being less than a stand-alone ceiling cost for the CAC group.

## 6.6 Development of Economically Efficient Network Prices

The second process in the development of network prices is the calculation of actual network prices taking into account the following factors:

- (a) allocated costs;
- (b) network cost drivers;
- (c) network use and utilisation signals;
- (d) economic efficiency of network prices;
- (e) income and expenditure alignment; and
- (f) network price stability.

Consistent with the Code, the network prices proposed by ENERGETX will be comprised of a number of components, each selected and structured to provide signals to customers about the efficient use of the network and the impact of future network capacity and costs.

The price structure and the proportioning of charge components have been developed to achieve the objectives listed previously. In developing the network prices, ENERGETX has sought to have the price components signal the impact that the end users will have on the network whilst managing the demand and volume variance risk, minimising boundary issues between and within customer classes and avoiding any signals that may result in perverse outcomes.

As discussed previously, the fixed or standing-charge components adopted are intended to reflect the incremental costs that arise from the connection and management of the customer. This sends a clear signal about the economic value of the dedicated connection and provides a stable price and income regardless of the usage of the network. Network usage signals are provided by other price components.

Shared network costs are recovered through capacity and maximum demand charge components. These together provide the economic signals to the customers on the use of the shared network.

A *monthly maximum demand charge* is levied on the basis that network users who place greater pressure on the system should incur higher charges. Network expansion becomes necessary where there is a likelihood of demand exceeding available capacity. While this demand fluctuates over time, the critical supply level to be provided is the aggregated network usage during peak times. Co-incident peak demand is, therefore, the driving factor behind system augmentation. In this context, network users should be charged according to

their contribution to this threshold demand level.

In a practical sense, while there are limitations associated with determining an individual network user's contribution to co-incident peak demand, the maximum demands of those network users are an appropriate proxy. Accordingly, the demand charge levied is determined by the relevant user's peak demand recorded in any half-hour period during the month.

However, one drawback of demand charges is that they fail to assign an adequate share of costs associated with system augmentations to network users who make maximum demands on the system at infrequent intervals. These customers would generally possess a low load factor.

The load factor is the ratio of average hourly consumption to peak demand, and measures the variability of a network user's consumption. A low ratio, for instance less than 0.4, suggests a variable consumption pattern while those closer to unity identify more constant energy usage. All else being equal, a network user with a low load factor would pay considerably less than a high load factor user who has an identical maximum demand.

A *capacity charge* is similar to a demand charge but more effectively takes into account the impact that these low load factor customers have on system augmentation. It sends signals to these network users that they can reduce their network charges by reducing the variability of their consumption, as this lower peak demand reduces the pressure that they place on the network.

The demand to be used for the calculation of the capacity charge is either the contracted demand, the annual maximum demand in the most recent 12-month period prior to the setting of prices or a demand agreed between ENERGEX and the network user.

*Volume charges* have been adopted to recover those costs that are allocated on a non-distortionary basis, for example administration overheads, as well as the costs that are relative to the 'size' of the Network User but not specifically their network demand, such as common service costs. Volume charges are also used to recover any residual allocated costs after the Capacity and Demand charges have been calculated. The Volume Charge applies to the energy (kW.h) metered at the network user installation.

The pass through of TUOS charges has been the subject of significant discussion in the National Electricity Market. Consistent with the intention that those end users able to respond to the TUOS signal receive the signal, ENERGEX's network price calculation process passes through TUOS as cost reflectively as possible.

Consistent with the allocation of shared network costs, these TUOS components are allocated to individual ICCs on the basis of ATMD and anytime energy and recovered in prices by means of a fixed charge, a capacity charge, a common service charge, a general charge and a volume charge reflective of the average transmission connection point charges for the ENERGEX network.

For CACs and SACs, TUOS is allocated to the group on the basis of anytime energy. For CACs, TUOS is recovered via prices by means of a fixed charge, a capacity charge and a volume charge. For SACs >100MW.h, TUOS is recovered on the basis of a demand charge and a part fixed, part volume basis. For SACs <100 MW.h, streetlight and other unmetered customers and controlled load customers, TUOS is recovered only on the basis of fixed and volume charges.

The network price components adopted by ENERGEX for each of the network user groups

are detailed in Table 4 below.

**Table 4 – Network Price Components**

Network Price Component	Description	Customer Classes to which Network Price Component is applicable						
		ICC	CAC	EG	SAC			
					>100 MW.h	<100 MW.h	S/L	Control Load
Fixed or Service Availability Charge (\$/month)	<u>DUOS</u> Reflective of the costs associated with the connection assets (entry and exit services) and Network User management services	✓	✓	✓	✓	✓	✓	✓
	<u>TUOS</u> A proportion of the allocated TUOS costs	✓	✓		✓	✓	✓	✓
*#Capacity Charge (\$/kW/mth)	<u>DUOS</u> Reflective of the network capacity required by the Network User on a long-term basis and levied on the basis of a contracted demand	✓	✓					
	<u>TUOS</u> A proportion of the allocated TUOS costs	✓	✓					
Common Service Charge (\$/month)	<u>TUOS only</u> A proportion of the allocated TUOS costs	✓						
*Monthly Maximum Demand Charge (\$/kW/mth)	<u>DUOS</u> Reflective of the costs of network availability and limitations	✓	✓		✓			
	<u>TUOS</u> A proportion of the allocated TUOS costs				✓			
Volume Charge (¢/kW.h)	<u>DUOS</u> Recovery of costs not directly allocated with network drivers, through a non-distortionary basis. The charge also includes costs that are proportional to the size of the customer, such as customer management.	✓	✓	✓	✓	✓	✓	✓
	<u>TUOS</u> A proportion of the allocated TUOS costs	✓	✓		✓	✓	✓	✓

\* The application of capacity or demand-based charges (either authorised or actual) is limited by the type of metering installed. Demand charges are not appropriate for those customers with metering equipment only capable of measuring and recording delivered energy volume.

# In general, the Capacity Charge is based on historical recorded demands. The details of the nominated demand calculation methodology are included in the relevant network price schedule.

## 6.7 Variances from Allocated Cost-based Prices

ENERGEX currently develops and applies network prices based on the distributed cost model. The contestable customer groups adopted and the network pricing methodology applied to each of those groups has precluded any possible bypass challenge on the basis that the network price is efficient and an alternative energy service can not be sourced at a lower economic value.

Consistent with Principle 5 from Section 4, ENERGEX may negotiate a price other than the price calculated using the cost allocation methodology where it can be demonstrated that the cost based network price is not efficient as an economic bypass opportunity exists or an alternative energy service could be utilised.

## 6.8 Application of Capital Contributions

The capital contributions policy of ENERGEX is currently being finalised in consultation with the QCA.

# 7. NETWORK PRICE STRUCTURE

## 7.1 Customers

To provide the appropriate economic and cost of supply signals, the network pricing regime distinguishes four groups of contestable network users and four groups of non-contestable network users (or franchise customers), namely:

### Contestable Network Users

- Individually Calculated Customers;
- Connection Asset Customers;
- Embedded Generators; and
- Standard Asset Customers (> 100 MW.h p.a. energy consumption)

### Non-contestable Network Users

- Connection Asset Customers and Standard Asset Customers (> 100 MW.h p.a. energy consumption) who are currently not in the market;
- Standard Asset Customers (< 100 MW.h p.a. energy consumption);
- Streetlight and other Unmetered Customers such as bus shelters; and
- Controlled Load Customers, principally hot water.

The purpose of the four contestable network user-groups is to provide individual or direct cost of supply signals to those users who are capable of responding to the signals in the appropriate manner. There is a trade-off between the complexity of individual price calculation and the inefficiencies created through price averaging at the distribution level. A practical limit also arises in the number of site-specific network prices that can feasibly be determined and administered.

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1 Uneconomic connections are defined as connections that would not be undertaken without some contribution by customers. Technically, an uneconomic connection is one where, in the absence of any contribution, the present value of incremental revenue is less than the present value of incremental costs.

The distributed cost methodology as set out in Figure 1 represents a reasonable balance between the competing objectives. Prices calculated on the basis of this methodology will lie between the 'floor' price, which is the incremental cost of supply, and a 'ceiling' price represented by the stand-alone cost of supply. ENERGEX will demonstrate examples of these in the annual network price submission (as set out in Section 7).

The network pricing structure adopted by ENERGEX is described below in Sections 7.1.1 and 7.1.2.

### 7.1.1 Site-Specific Prices

A site-specific price will apply to customers in the following circumstances:

- Individually Calculated Customer (ICC) network prices will apply for all customers with energy consumption greater than 40 GW.h/year, or where a customer's circumstances in a pricing zone mean that the average shared network charge becomes meaningless or distorted. ICC prices are based on actual TUOS charges for the relevant transmission connection point, plus charges associated with the actual shared distribution network utilised for the electricity supply plus connection charges based on actual connection assets utilised. This provides the greatest cost reflectivity for these customers and is feasible since the number of such customers is relatively small. It is also justified by virtue of the shared distribution network assets being designated specifically to meet the requirements of these customers.

ICC prices for customers with energy consumption lower than 40 GW.h per annum could occur where:

- a customer has a dedicated supply system which is quite different and separate from the remainder of the supply network;
  - there are only two or three customers in a supply system making average prices inappropriate; or
  - inequitable treatment of otherwise comparable customers arising from the 40 GW.h cut-off. Selection of these customers will be at the sole discretion of the DNSP.
- Connection Asset Customers (CAC) network prices will apply to non-ICCs with energy consumption greater than 4 GW.h per year. These charges are based on average shared network charges plus site-specific connection charges based on the actual connection assets utilised, plus average TUOS charges. This provides a significant degree of cost reflectivity for this group of customers while recognising the practical difficulties of calculating individual shared network charges for each customer.

CAC prices for customers with energy consumption lower than 4 GW.h per annum could occur where:

- a customer has a dedicated supply system which is quite different and separate from the remainder of the supply network; or
  - inequitable treatment of otherwise comparable customers arises from the 4 GW.h cut-off. Selection of these customers will be at the sole discretion of the DNSP.
- Embedded Generator (EG) network prices for connection and access services will be developed on a similar basis as CACs. This is due to the nature of connections which are typically non-standard and may require additional embedded generator protection system upgrades. If the EG's installation is a net importer of energy and uses the ENERGEX network to meet its needs when the generator is not running, the appropriate

customer network prices will apply. The EGs will receive only a single charge for the connection assets regardless of whether they are importing or exporting.

### **7.1.2 Standard Prices**

Standard network prices will apply to all remaining contestable network users. SAC network prices are based on the averages of both the shared network charges and connection charges for the customer group plus average TUOS charges. SAC network prices for the relevant customer groups are published prior to each successive tranche of contestability.

## **7.2 Non-contestable (Franchise) Customers**

Non-contestable customers are generally those customers not yet eligible to enter the contestable market. However, the arrangements in Queensland are such that those customers who are eligible to become contestable but have not elected to do so are also able to access franchise tariffs. This group of customers receives a 'bundled' retail tariff that includes network and retail components. Franchise tariffs are fixed in accordance with the *Electricity Act 1994*.

Network charges for these customers play no price signalling role due to the charges for these customers being bundled.

ENERGEX shall recover the network charge revenue from the Host Retailer for customers on franchise tariffs on the basis of:

- the component of allocated costs associated with non-contestable customers in the CAC group, plus average TUOS charges;
- the component of allocated costs associated with non-contestable customers in the SAC >100 MW.h group plus average TUOS charges; and
- allocated costs for SAC <100 MW.h, streetlights and other unmetered, and controlled load customer groups plus average TUOS charges for the unallocated portion of the TUOS charges.

Network prices for non-contestable customers will be calculated by ENERGEX and submitted to the QCA annually for approval.

When non-contestable customers become contestable, they will move from a franchise tariff to published network prices.

## **8. ANNUAL APPROVAL PROCESS**

ENERGEX will submit annually to the QCA a schedule of proposed network prices that are to apply in the following financial year. ENERGEX will demonstrate that the proposed prices comply with the methodology in the Pricing Principles Statement. This process has applied since the 2001/2002 network pricing period.

The dates for the annual approval process are as follows:

- 31 March      ENERGEX submits to QCA the proposed price schedule for the coming financial year;
- 25 May        Approval from QCA if satisfied that the proposed prices comply with the Pricing Principles Statement; and

- 31 May      ENERGETX publishes price schedule for the coming financial year.

In its annual network prices submission, ENERGETX will provide:

- data and information on how the proposed prices are calculated (including examples);
- a reconciliation of revenue from each customer group with the AARR;
- the proposed schedule of network prices, including terms and conditions, to be published;
- demonstration that the network prices lie between the economic boundaries of floor and ceiling prices; and
- a demonstration that the proposed prices are within the side constraints.

## 9. MEDIUM TERM PRICE PATH

This Network Pricing Principles Statement includes the following medium term network pricing matters which will be considered by ENERGETX in the development of network prices in the regulatory period (from 2001/2002 to 2004/2005) and are subject to the approval of the QCA.

- **Price paths for ICCs and CACs**

Initially, the target network prices for ICCs and CACs have been determined on an allocated cost basis. However, previous side constraints have limited price movements and the network prices for some ICCs and CACs are below the allocated cost. It is intended that the network prices for these customers will be revised and annual adjustments made to align them to the target price levels.

- **Network Price Structure**

In addition to the alignment of prices to cost, the network price structure may be reviewed to promote a more efficient use of network and to send the appropriate demand signals. This review may include:

- re-balancing the proportion of charges between demand and volume (energy) components;
- re-balancing the proportion of charges within the demand component (Authorised Demand versus Actual Demand);
- the introduction of Time of Use signals; or
- the introduction of KVA charges.

- **Standard Prices for small SACs**

When the standard prices were developed in 1999/2000, customers were given the option of selecting either a demand network charge or a volume only network charge. The volume-only network charge was a transitional arrangement designed to facilitate the entry of customers who had no demand history under the franchise regime into the market.

The volume network charges for the SACs were due to be phased out on 1 July 2001. However, for equity reasons, the small volume network charge is retained but only for application to those customers whose annual energy consumption has fallen below the current contestability threshold level since entering the market. This provision is considered necessary as the current Electricity Regulation does not allow these

customers to revert to the franchise tariff and removal of the volume-only network charge will unfairly penalise them.

ENERGEX will retain the option of a volume-only network charge for contestable customers.

- **TUOS Prices for CACs and SACs >200MW.h**

In 2002-03, the method by which Powerlink levied its TUOS charges changed considerably so that a higher proportion of their charges were fixed in nature. ENERGEX subsequently reviewed its pricing structure for CACs and contestable SACs to more appropriately reflect the new balance of fixed and variable charges applied by Powerlink.

After considering the impact of the TUOS passthrough used in 2003-04, further review of Powerlink's charges and discussion with the QCA, ENERGEX's proposal for TUOS passthrough in 2004-05 has been updated. As a consequence:

- the proportions of fixed charges for SACs >200MW .h, have been decreased;
- the proportion of volume charges for SACs > 200MW.h has been increased; and
- the proportion of demand charges for SACs > 200MW.h has been increased.

The changes will be phased in to minimise customer impacts.

The proportions of fixed, demand and volume charges for CACs has remained unchanged.

- **Standard price for small-scale Embedded Generators**

Embedded generators are relatively new entrants in the national electricity market. As the market matures and more EGs are connected to the network, a standard network price structure for small-scale generators may be introduced. Any network price structure developed for EGs will be consistent with the approach taken within the broader National Electricity Market environment.

- **Short Term Connection Arrangements**

The network price structure from 2001/02 is based on network users entering long-term connection contracts which are consistent with the life of the assets utilised. However it is recognised by the DNSPs and the QCA that some network users may seek to enter short-term connection arrangements based on the economic life of the facility. Under such circumstances it would be reasonable for the DNSPs to have the flexibility to offer the network user options regarding the contract term, network charges and prudential coverage. For circumstances where a short-term connection arrangement is adopted, the DNSP may determine network prices on the basis of appropriate accelerated recovery of the costs of the assets employed in providing the connection and access service.

- **Multiple Connections to a Single Facility**

To improve the consistency of network price application across the national electricity market, ENERGEX proposed to review the current site-specific network pricing arrangements in relation to multiple network connections. It is intended that a network price will apply to each connection with the network and that those customers with multiple network connections will pay multiple network prices. This approach is entirely consistent with the NEMMCO issued NMI Procedure. Prior to the implementation of this

change, ENERGEX will conduct consultation sessions with the interested parties and provide adequate notice to the market of the proposal.

## **10. EMBEDDED GENERATOR AVOIDED TUOS**

Clause 5.5(h) of the National Electricity Code requires the Distribution Network Service Providers to calculate 'avoided Customer TUOS usage charges'.

Clause 5.5(i) requires the DNSP to calculate the amount to be passed through to an Embedded Generator by:

- (1) determining the Customer TUOS usage charges that would have been payable by the Distribution Network Service Provider for the relevant financial year if the Embedded Generator had not injected any energy at its connection point during that financial year; and
- (2) determining the amount by which the charges calculated in paragraph (1) exceed the Customer TUOS usage charges actually payable by the Distribution Network Service Provider, which amount will be the relevant amount for the purposes of clause 5.5(h).

Clause 5.5 of the Code is included in Appendix 3 of this Pricing Principles Statement.

### **10.1 Calculation of Avoided TUOS**

ENERGEX proposes to use the following methodology to comply with the Code for Embedded Generators who have sought access to ENERGEX's distribution network under Clause 5.5 and who have a generator Connection & Access Agreement with ENERGEX:

- (a) determine the amount of energy sent out by the Embedded Generator in the relevant billing period (kW.h);
- (b) convert this to an equivalent amount of energy at the Transmission Network Connection Point (TNCP) by adjusting the sent out energy by the Distribution Loss Factor (DLF) of the Embedded Generator referred to the TNCP;
- (c) add the generation output to the TNCP actual metered data for the period;
- (d) recalculate the TUOS as if the generator was not connected;
- (e) subtract the actual TUOS payment from the amount calculated in (d); and
- (f) credit the value from (e) to the Embedded Generator account.

Avoided TUOS payments to Embedded Generators following the end of the relevant financial year, shall be made as a lump sum cheque payment.

### **10.2 Cost Associated with the Payment of Avoided TUOS**

Costs relating to payments to Embedded Generators for Avoided Customer TUOS Usage Charges are not part of ENERGEX's AARR. To fund these payments, they need to be considered when reviewing the annual TUOS payments and recoveries. In other words, the transmission costs (which must be collected from customers) need to be considered as the sum of TUOS payable to the Transmission Network Service Provider and 'Avoided TUOS' payable to Embedded Generators.

An estimate of Avoided TUOS Payments for the ensuing financial year can be determined each year when Powerlink's TUOS prices are known. The estimate will be calculated from the forecast Embedded Generator output and Powerlink TUOS prices for the connection point to which the Embedded Generator is connected. This estimate can then be factored

into TUOS recovery amounts input into the DCOS model to determine appropriate TUOS charges to apply for that financial year.

#### **11. ADDITIONAL DISTRIBUTION SERVICES**

For 2004-05, income from the following distribution services will be incorporated within the overall AARR:

- recoverable works not subject to legislative provisions – carried out by ENERGEN at the request of customers and would not otherwise have been required for the efficient management of the network. An example is where a customer requests that a pole be moved;
- subdivision services – associated with the installation and construction of network services in a subdivision, such as design of the actual network to be installed; and
- temporary builders' services – services which relate to the temporary connection of building sites to the distribution network until such time as the construction of this facility is complete or until that structure is equipped with its own permanent supply.

The prices that ENERGEN may charge for these services is based on the cost of service provision plus a 5% margin, as approved by the QCA.

## APPENDIX 1 – NEC EXTRACT OF PART E, CHAPTER 6

### Part E - Distribution Network Pricing

This part of the *Code* is subject to the review to be undertaken by *NECA* required by clause 6.1.6 of the *Code* and is to apply only for so long as the *ACCC* has not approved such modifications, as may be recommended by *NECA* under clause 6.1.6(g) of the *Code*.

This part of the *Code* applies to the pricing of *prescribed distribution services* for *distribution networks*.

#### 6.11 Introduction

- (a) Prices for *prescribed distribution services* are based on the averaging of *distribution service* costs.
- (b) Prices for *Distribution Customers* may vary depending on the location, *voltage* level and *load* characteristics of individual *Distribution Customers*.
- (c) *Distribution service* pricing does not permit the concept of point-to-point wheeling arrangements.
- (d) *Distribution service* pricing must be applied to *distribution systems*.
- (e) The *Jurisdictional Regulator* may, in consultation with *Code Participants*, develop alternative pricing methodologies to the approach set out in Part E. Any new pricing methodology so developed must conform to any jurisdictional rules, principles, or guidelines for the regulation of *distribution* pricing formulated under clause 6.10.1(f).

#### 6.12 Step 1 - Determination of Aggregate Annual Revenue Requirement

To enable regulation of *distribution service* pricing under this Part E, each *Distribution Network Service Provider* must seek from the relevant *Jurisdictional Regulator* a determination of the *Distribution Network Service Provider's aggregate annual revenue requirement* in accordance with Part D.

#### 6.13 Step 2 - Allocation of Distribution Costs

The components of the *aggregate annual revenue requirement*, are to be allocated first amongst different assets within classes of *distribution service*, and then to different *cost pools* in accordance with clause 6.14.

##### 6.13.1 **Classes of distribution service**

- (a) Classes of *distribution service* may include:
  - (1) *entry service* which includes the asset-related costs and services provided to serve an *Embedded Generator* or group of *Embedded Generators* at a

single *network coupling point* from that *network coupling point* to their *connection point*;

- (2) *exit service* which includes the asset-related costs and services provided to serve a *Distribution Customer* or group of *Distribution Customers* at a single *network coupling point* from that *network coupling point* to their *connection point*;
  - (3) *distribution use of system service* which includes the *distribution network* shared by *Embedded Generators* and *Distribution Customers*, but excluding *entry service*, *exit service* and *common service*;
  - (4) *common service* which includes the asset-related costs and services that ensure the integrity of the *distribution network* and benefit all *Distribution Customers* and cannot be allocated on the basis of *voltage* levels or location; and
  - (5) *firm access service* being the risk premium associated with the guarantee of *generator access* to *Generators* and other *Market Participants* who elect to enter into *generator access* contracts under clause 5.5.
- (b) *Distribution Network Service Providers* must classify each element and cost of their *distribution service*, including payments made to other *Network Service Providers*, into one of the classes of *distribution services* listed in 6.13.1.
- (c) The sum of the *aggregate annual revenue requirement* for each class of *distribution service* must equal the *Distribution Network Service Provider's* *aggregate annual revenue requirement*.

### **6.13.2 Allocation of aggregate annual revenue requirements to asset categories within classes of network service**

- (a) The assets required by the *Distribution Network Service Provider* to deliver each class of *distribution service* except *common service* and *generator access service* may be split into asset categories for the purpose of allocating the *aggregate annual revenue requirement* prior to setting prices.
- (b) The asset categories referred to in clause 6.13.2(a) must be defined by the *Distribution Network Service Provider* and agreed with the *Jurisdictional Regulator* and may include:
  - (1) *use of system voltage* levels; and
  - (2) *connection asset voltage* levels.
- (c) The *Distribution Network Service Provider* may elect to use locational prices and if used, the *Distribution Network Service Provider* must obtain the approval of the *Jurisdictional Regulator* and specify the locations and *voltage* levels for which these locational prices are to apply.

- (d) (d) The *Distribution Network Service Provider* may elect to divide its *network* into geographical areas for one or more *voltage* levels which will represent different zones for pricing purposes and if this occurs, the *Distribution Network Service Provider* must obtain the approval of the *Jurisdictional Regulator* of the geographic boundaries incorporated in the *pricing zones* and of the *voltage* levels of *distribution service* incorporated within these *pricing zones*.

### 6.13.3 Method of allocation to asset categories

- (a) The *aggregate annual revenue requirement* for an asset category in relation to each class of *distribution service* is to be calculated by the *Distribution Network Service Provider* by allocating the *aggregate annual revenue requirement* for that class of *distribution service* to the asset categories using an allocation basis agreed with the *Jurisdictional Regulator*.
- (b) The method by which the *aggregate annual revenue requirement* is allocated under clause 6.13.3(a) may include:
- (1) for asset-related costs including return on assets and current cost depreciation charges, the basis may be the replacement cost of the relevant asset categories determined in accordance with any rules specified by the *Jurisdictional Regulator* including rules for treating asset category replacement costs which were provided as partially or fully contributed;
  - (2) chart of accounts information for operating and maintenance costs; or
  - (3) for the *transmission or distribution service* costs paid to other *Network Service Providers*, on such basis as may be agreed with the *Jurisdictional Regulator*.
- (c) Payments to and from *Embedded Generators* are to be determined up to an amount of the long run marginal cost of *augmenting* the *distribution network*, including any other *networks* necessary to cater for additional *generation* at the *network coupling point*, calculated on a case by case basis in accordance with schedule 6.3.
- (d) Any payments made under clause 6.13.3(c):
- (1) to *Embedded Generators* must be added to: and
  - (2) from *Embedded Generators* must be deducted from,
- the *aggregate annual revenue requirement* for the relevant asset category consistent with the calculation used to determine that payment.

### 6.13.4 Allocation of asset category costs to cost pools

- (a) Each *Distribution Network Service Provider* must establish *cost pools* to which *aggregate annual revenue requirements* for all asset categories referred to in

clause 6.13.2 must be allocated according to the use of the assets by groups of *Network Users* having similar *load* characteristics and *voltage* levels.

- (b) Prices for the same *voltage* level and/or *load class* may differ between *pricing zones*.
- (c) *Cost pools* may include *load classes* within each *voltage* level which have similar *load* and/or *metering* characteristics as defined by each *Distribution Network Service Provider*.
- (d) Additional *cost pools* may be included by the *Distribution Network Service Provider* as required by the use of locational and zonal pricing and for any other relevant purpose.
- (e) *Distribution service* prices are to be derived from the costs allocated to each *cost pool*.

#### **6.13.5 Method of allocation to cost pools**

- (a) The method of allocating the *aggregate annual revenue requirement* for the asset categories to *cost pools* must be agreed with the *Jurisdictional Regulator*.
- (b) Methods of allocation referred to in clause 6.13.5(a) may include one or more of the following measures:
  - (1) anytime demand;
  - (2) period demand (such as peak shoulder and off-peak)
  - (3) coincident demand;
  - (4) period *energy* (such as peak, shoulder and off-peak);
  - (5) anytime *energy*; and
  - (6) *load cycle* basis (method of intercepts).

#### **6.13.6 Cost allocation to Distribution Customers and Embedded Generators**

*Distribution service* costs must be allocated to *Embedded Generators* and *Distribution Customers* as follows:

- (a) The *cost pools* for *entry services* are all to be allocated to *Embedded Generators* at the *network coupling point*.
- (b) The *cost pools* for *exit services* are all to be allocated to *Distribution Customers* at the *network coupling point*.
- (c) In respect of the *cost pools* for *distribution use of system services* (as defined in clause 6.13.1(a)(3):

- (1) the portion of the *distribution use of system* costs allocated to *Embedded Generators* must not exceed the long run marginal cost of *augmenting* the *distribution network* and any other *networks* necessary to cater for additional *generation* at the *network coupling point*, calculated on a case by case basis in accordance with schedule 6.3; and
- (2) the portion of the *distribution use of system* costs allocated to *Distribution Customers* must be done on a cost reflective or other basis agreed with the *Jurisdictional Regulator*.
- (d) The *cost pools* for *common services* must be allocated to *Distribution Customers* on a cost reflective or other basis agreed with the *Jurisdictional Regulator*.
- (e) Where *entry services* are shared by *Embedded Generators* and *exit services* are shared by *Distribution Customers*, the allocated cost must be shared between the *Network Users* either:
  - (1) as agreed with the *Network Users*; or
  - (2) on a cost reflective or other basis agreed with the *Jurisdictional Regulator*; or
  - (3) on the basis of the *maximum demand* of individual *Network Users* at a *network coupling point*, measured in respect of the 10 hours for which the *Network User* has used the *network* most intensively during the preceding year.

#### **6.13.7 Treatment of network service costs paid to other Network Service Providers**

- (a) A *Distribution Network Service Provider* must pay *transmission service* costs to a *Transmission Network Service Provider* in respect of the *Distribution Network Service Provider's* use of a *transmission network* at each *connection point* on the *transmission network*.
- (b) The *transmission service* costs referred to in clause 6.13.7(a) must be allocated to asset categories using an appropriate allocation method agreed with the *Jurisdictional Regulator*.
- (c) Where a *Distribution Network Service Provider* uses other *distribution networks*, *distribution service* costs must be paid by that *Distribution Network Service Provider* to the owner of those other *distribution networks* for the use of those other *distribution networks* at each *network coupling point*.
- (d) The *distribution service* costs referred to in clause 6.13.7(c) must be allocated to asset categories using an appropriate allocation method agreed with the *Jurisdictional Regulator*.

## 6.14 Step 3 - Usage Based Prices for Distribution Network Service

The outcome of the cost allocation process specified in clause 6.13 is a number of *cost pools* containing allocated annual costs referable to categories which may include one or more of the following classes depending on the type of *Embedded Generator* or *Distribution Customer* receiving *distribution service* at each *connection point*. Typical *cost pools* include:

- (a) *Embedded Generator entry costs*;
- (b) *Distribution Customer exit costs*;
- (c) *Embedded Generator distribution use of system costs*;
- (d) *Distribution Customer distribution use of system costs*; and
- (e) *Distribution Customer common service costs*.

These classes of cost may be converted into prices in accordance with clauses 6.14.1 to 6.14.3.

### 6.14.1 Embedded Generator prices

- (a) The *Embedded Generator* price for *prescribed distribution services* may incorporate *entry costs*.
- (b) The price payable by an *Embedded Generator* for *entry services* is a fixed annual amount equal to the *entry services cost* allocated to each *Embedded Generator* under clause 6.13.6(a) unless the price for those *entry services* has been agreed in a current *connection agreement* with the *Embedded Generator*.
- (c) The price payable by an *Embedded Generator* for *distribution use of system services* will be determined in accordance with the access arrangements for *Generators* in clause 5.5 and the parties may seek recourse to the *Jurisdictional Regulator* in the event of a dispute.
- (d) There may be other prices applicable to *distribution services* for *Embedded Generators*, including local *connection* requirements and any risk premium associated with the provision of firm access between the *Embedded Generator* and the *Distribution Network Service Provider* and such prices must be agreed between the *Embedded Generator* and the relevant *Distribution Network Service Provider*.
- (e) There may be situations where the *Distribution Network Service Provider* is prepared to pay for equivalent *network service* by *Embedded Generators*. These arrangements are set out in clause 6.10.5(d)(7)(iii) and prices for such equivalent *network services* are to be agreed between the relevant *Distribution Network Service Provider* and *Jurisdictional Regulator*.

### 6.14.2 Distribution Customer price

- (a) The price payable by a *Distribution Customer* for *prescribed distribution service* may incorporate *exit costs*, *Distribution Customer distribution use of system costs* and *common service costs*.
- (b) The price payable by *Distribution Customers* is to be determined as an amount consistent with the following (subject to any relevant *price cap* level):
  - (1) a fixed amount equal to the *exit cost* specified in clause 6.13.6(b); plus
  - (2) a variable amount so that costs for *distribution use of system* allocated to *Distribution Customers* under clause 6.13.6(c) are fully recovered; plus
  - (3) a variable amount so that costs for *common service* allocated under clause 6.13.6(d) are fully recovered.
- (c) The *Distribution Customer* price structure is to be determined by the *Distribution Network Service Provider*.
- (d) The prices determined under this sub-clause may comprise one or more elements related to:
  - (1) demand based charges (\$ per maximum kW per period or \$ per maximum kVA per period, which may include a time of use component);
  - (2) *energy* based charges (? per kW.h or ? per kVAh which may include a time of use component); and
  - (3) *Distribution Customer* charges (\$ per *Distribution Customer* per period).
- (e) Where quantities are used in determining charges, these quantities can be minimum quantities specified in the prices, actual quantities used by the *Distribution Customer* and quantities agreed by the *Distribution Customer* and *Distribution Network Service Provider*. The pricing outcome will be subject to regulation as outlined in clause 6.14.4.
- (f) Where the price payable for *exit services* has been agreed between a *Distribution Customer* and the relevant *Distribution Network Service Provider* in a current *connection agreement*, the price payable by that *Distribution Customer* determined under clause 6.14.2(b) must not include any amount attributable to *exit costs*.

### 6.14.3 Prices for Network Users that are both Distribution Customers and Embedded Generators

- (a) *Network Users* may have *connection points* that combine *Embedded Generators* and *Distribution Customers*. Depending on the relative status of the relevant *generation* and the *load*, the *connection point* could represent a net *Distribution Customer* or a net *Embedded Generator*. Where the net loading position at a

*customer connection point* fluctuates between *net import* and *net export* during a *billing period* the following conditions are to apply:

- (1) periods of *net import* of energy will be subject to *embedded generator* pricing arrangements; and
  - (2) *net export* of energy will be subject to *distribution network service* pricing arrangements.
- (b) For *Distribution Customers* where there is no export of *generation* into the *distribution network*, prices are to be applied and payable by the *Network Users* as determined under clause 6.14.2. These arrangements may also apply for the provision of *reserve* or duplicate *supply* associated with *distribution services* requested by the *Distribution Customer* to cover *outage* of embedded generation
- (c) For *Embedded Generators* where there is not consumption of electricity from the *distribution network* by the *Distribution Customer*, prices are to be applied as determined under clause 6.14.2 provided that the *Network User* must not be charged twice for the use of the same assets. These arrangements may also apply for the provision of *reserve* or duplicate *supply* associated with *distribution services* requested by the *Distribution Customer* to cover *outage* of embedded generation

#### **6.14.4 Regulation of distribution prices**

- (a) The *Jurisdictional Regulator* may place limits on the annual variation in published *distribution service* prices. Any such limits must be specified by the *Jurisdictional Regulator* at the commencement of the *regulatory control period* and are to apply for the duration of the *regulatory control period*.
- (b) Pricing outcomes for *Distribution Customers* under clause 6.14.4 must not be inconsistent with any applicable jurisdictional requirements and any applicable *price cap* level.

#### **6.14.5 Publication of distribution network prices**

- (a) *Distribution Network Service Providers* in conjunction with the *Jurisdictional Regulator* must publish by 31 May each year:
- (1) a schedule of prices for all classes of *distribution services* at each *voltage* level, *load class* and *pricing zone* where the schedule prices are to be the maximum price charged; and
  - (2) a statement providing details of principles and methods for determining *connection charges*,

to apply to *Distribution Customers* and *Embedded Generators* in the following year, commencing 1 July.

- (b) Price variations other than on an annual basis can only be made with the approval of the *Jurisdictional Regulator* who will also determine the amount of notice which should be given before implementation of the new price.

#### **6.14.6 Agreement as to distribution prices**

- (a) Subject to clause 6.14.6(b) and (c), the prices determined in accordance with clauses 6.14.1 to 6.14.3, or the prices determined by the application of a *price cap* are the maximum prices which a *Network Service Provider* is entitled to charge for providing the relevant *prescribed distribution services* to the standards described in schedule 5.1 notwithstanding any agreement with another person to the contrary.
- (b) A *Network Service Provider* may, but is not required to, agree with another *Code Participant* to charge that *Code Participant* lower prices than those described in clause 6.14.6(a) and, if the relevant parties have so agreed, the prices payable by that other *Code Participant* for the provision of the relevant *prescribed distribution services* are those so agreed rather than those described in clause 6.14.6(a).
- (c) If a *Network Service Provider* agrees to provide another *Code Participant* with *prescribed distribution services* to higher standards than those described in schedule 5.1, then the prices payable by the *Code Participant* are to be those agreed between the *Network Service Provider* and the relevant *Code Participant*.

### **6.15 Distribution Network Service Provider Prudential Requirements**

This clause sets out the arrangements by which *Distribution Network Service Providers* may minimise financial risks associated with investment in *network* assets, and to achieve cost-reflective payment options in conjunction with the use of average *distribution* prices. The clause also prevents *Distribution Network Service Providers* from receiving income twice for the same assets through prudential requirements and *distribution service* prices.

#### **6.15.1 Prudential requirements for distribution network service**

- (a) A *Distribution Network Service Provider* may require an *Embedded Generator* or *Distribution Customer* that requires a new *connection* or a modification in service for an existing *connection* to establish *prudential requirements* for *connection service* and *distribution use of system* service.
- (b) *Prudential requirements* for *connection service* and *distribution network use of system* service are a matter for negotiation between the *Distribution Network Service Provider* and the *Embedded Generator* or *Distribution Customer* and the provisions agreed must be set out in the *connection agreement* between the *Distribution Network Service Provider* and the *Embedded Generator* or *Distribution Customer*.
- (c) The *connection agreement* may include one or more of the following provisions:

- (1) the conditions under which and the time frame within which other *Network Users* who use that part of the *distribution network* contribute to refunding all or part of the payments;
  - (2) the conditions under which financial arrangements may be terminated; and
  - (3) the conditions applying in the event of default by the *Distribution Customer* or *Embedded Generator*.
- (d) *Prudential requirements* may incorporate, but are not limited to one or more of the following arrangements:
- (1) financial capital contributions;
  - (2) non-cash asset contributions;
  - (3) *distribution service* charge prepayments;
  - (4) guaranteed minimum *distribution service* charges for an agreed period;
  - (5) guaranteed minimum *distribution service* quantities for an agreed period; and
  - (6) provision of financial guarantees for *distribution service* charges.

### 6.15.2 Capital contributions, pre-payments and financial guarantees

The principles to be applied to capital contributions, pre-payments and financial guarantees are:

- (a) the *Distribution Network Service Provider* is not entitled to receive any asset related cost component of *annual revenue requirement* for assets provided by *Network Users*;
- (b) the *Distribution Network Service Provider* may receive a capital contribution, pre-payment and/or financial guarantee up to the future *annual revenue requirement* for any new assets installed as part of a new *connection* or modification to an existing *connection*, including any *augmentation* to the *distribution network*;
- (c) where assets have been the subject of a contribution or prepayment, the *Distribution Network Service Provider* must amend the *aggregate annual revenue requirement*; and
- (d) the asset categories referred to in clause 6.13.3 must not incorporate the asset related cost components of the *annual revenue requirement* for any asset category covered by clause 6.15.2 and the *Network Users* who use any such asset together as a group are to pay less for the ongoing use of that asset category than they otherwise would have paid.

### 6.15.3 Treatment of past pre-payments and capital contributions

- (a) Payments made by *Customers* and *Embedded Generators* for *distribution service* prior to the introduction of the *Code* must be made in accordance with any existing contractual arrangements with *Distribution Network Service Providers*.
- (b) Where specific contractual arrangements are not in place, past *distribution service* pre-payments or capital contributions may be incorporated in the capital structure of the *Distribution Network Service Provider's* business.
- (c) The *Jurisdictional Regulator* may intervene in and resolve any dispute under this clause 6.15.3 which cannot be resolved between the relevant *Customers*, *Embedded Generators* and the *Distribution Network Service Provider*.

## 6.16 Billing and Settlements Process

This clause describes the manner in which *Distribution Customers* and *Embedded Generators* are billed by *Distribution Network Service Providers* for *distribution service* and how payments for *distribution service* are settled.

### 6.16.1 Billing for distribution network services

- (a) The *Distribution Network Service Provider* must bill *Network Users* for *distribution service* as follows:
  - (1) *Embedded Generators*:
    - (i) by applying the *entry price* as a fixed annual charge to each applicable *Embedded Generator*; and
    - (ii) by applying the *Generator distribution use of system price* to the applicable *Embedded Generator's* nominated capacity.
  - (2) *Distribution Customers*:

The charges to *Distribution Customers* are to be determined according to use of the *distribution network* as determined by a *meter* or by agreement between the *Distribution Customer* and the *Distribution Network Service Provider* by applying one or more of the following measures:

- (i) demand-based prices to the *Distribution Customer's metered* or agreed half-hourly demand;
- (ii) *energy-based prices* to the *Distribution Customer's metered* or agreed *energy*;
- (iii) the *Distribution Customer* charge determined under clause 6.16 as a fixed periodic charge to each *Distribution Customer*; and
- (iv) a fixed periodic charge, a prepayment or other charge determined by agreement with the *Distribution Customer*.

- (b) Subject to clause 6.16.1(c), where a *Distribution Customer* (other than a *Market Customer*) incurs *distribution network* charges, the *Distribution Network Service Provider* must bill the *Market Customer* from whom the *Distribution Customer* purchases electricity directly or indirectly for such *distribution services* in accordance with clause 6.16.1(a)(2).
- (c) If a *Customer* and the *Market Customer* from whom it purchases electricity agree, the *Distribution Network Service Provider* may bill the *Customer* directly for *distribution services* used by that *Customer* in accordance with clause 6.16.1(a)(2).
- (d) *Distribution Network Service Providers* must:
- (1) calculate *transmission service* charges and *distribution service* charges for all *connection points* in their *distribution network*; and
  - (2) pay to *Transmission Network Service Providers* the *transmission service* charges incurred in respect of use of a *transmission network* at each *connection point* on the relevant *transmission network*.
- (e) Charges for *distribution service* based on *metered* kW, kW.h, kVA or kVAh for:
- (1) *Embedded Generators* that are *Market Generators*;
  - (2) *Market Customers*; and
  - (3) *Second-Tier Customers*,
- must be calculated by the *Distribution Network Service Provider* from the *metering data* managed by NEMMCO.
- (f) Charges for *distribution services* based on *metered* kW, kW.h, kVA or kVAh for:
- (1) *Embedded Generators* that are not *Market Generators*;
  - (2) *Non-registered Customers*; and
  - (3) *franchise customers*,
- must be calculated by the *Distribution Network Service Provider* using data that is consistent with the *metering data* used by the relevant *Local Retailer* in determining *energy settlements*.
- (g) For *Non-registered customers* and *franchise customers*, the *Distribution Network Service Provider* may bill the relevant *Local Retailer* for *distribution services* used by *Non-registered customers* and *franchise customers*.
- (h) Where the billing for a *Distribution Customer* for a particular *financial year* is based on quantities which are undefined until after the commencement of the *financial year*, charges are to be estimated from the previous year's billing quantities with a reconciliation to be made when the actual billing quantities are known.

- (i) Where the previous year's billing quantities are unavailable or no longer suitable, nominated quantities may be used as agreed between the parties.

### **6.16.2 Minimum information to be provided in distribution network service bills**

The minimum information to be provided directly to a *Code Participant* for a *distribution network coupling point* is:

- (a) the *distribution network coupling point* identifier;
- (b) the dates on which the *billing period* starts and ends;
- (c) the identifier of the *distribution service* price from which the *coupling point* charges are calculated; and
- (d) measured quantities, billed quantities, prices and amounts charged for each component of the *Distribution Customer's* total *distribution service* account.

### **6.16.3 Settlement between distribution network service providers**

The billing and *settlement* process specified in this clause 6.16 must be applied to all *Distribution Customers* including other *Distribution Network Service Providers*.

### **6.16.4 Obligation to pay**

A *Network User* must pay *distribution service* charges properly charged to it and billed in accordance with clause 6.16 by the due date specified in the bill.

## **6.17 Distribution Network Service Pricing Records**

Each *Distribution Network Service Provider* must maintain appropriate *distribution service* pricing records that satisfy any requirements of the *Jurisdictional Regulator*.

## **6.18 Data Required for Distribution Network Service Pricing**

### **6.18.1 Forecast use of networks by Distribution Customers and Embedded Generators**

The information required by *Distribution Network Service Providers* is to be provided by *Code Participants* as part of the *connection* and access requirements set out in Chapter 5 of the *Code*.

### **6.18.2 Confidentiality of distribution network pricing information**

All information used by *Distribution Network Service Providers* for the purposes of *distribution service* pricing is *confidential information* and must be treated in accordance with clause 8.6.

## APPENDIX 2 – VARIATION TO NEC PART E, CHAPTER 6

### 6.14.5 Publication of distribution network prices

The Code requires that DNSP's publish network prices for all classes of distribution service at each voltage level. As network prices for ICCs and CACs are individually determined and are considered commercially sensitive information, these prices will be forwarded directly to the customer and their Retailer Of Choice and will not be placed in the public domain. Network prices for SACs are included in a Price Schedule and will be published.

The principles to be applied by Distribution Network Service Providers in relation to the publication of distribution network prices are:

- (a) Distribution Network Service Providers in conjunction with the Jurisdictional Regulator must publish by 31 May each year:
  - (1) a schedule of network prices including terms and conditions for contestable standard asset customers (SAC) and the shared network (averaged) component of network prices for CACs where the schedule prices are to be the maximum price charged; and
  - (2) a statement providing details of principles and methods for determining connection charges (this Pricing principles Statement),to apply to Distribution Customers and Embedded Generators in the following year, commencing 1 July.
- (b) Network prices for ICCs and CACs will not be published but will be supplied directly to the customer and their Retailer Of Choice.
- (c) The calculation of network prices for the franchise customers will be based on a methodology to be submitted by the Distribution Network Service Provider and approved by the Jurisdictional Regulator on an annual basis.
- (d) Price variations other than on an annual basis will be calculated by the Distribution Network Service Provider in accordance with the methodology approved by the Jurisdictional Regulator and implemented at the appropriate time.

### 6.15.2 Capital Contribution Pre-Payments and Financial Guarantees

The Code requires that network businesses do not impose capital related charges for assets contributed by customers. One of the difficulties in this requirement is that contributions often relate to many different assets and even part of some assets. It is very difficult for network businesses to separately identify and account for all contributed assets, particularly when revaluation of assets is required on a periodic basis.

The principles to be applied by DNSPs to the treatment of capital contributions shall recognise that:

- network users should not be charged for assets to which they have contributed;
- DNSP's have a practical difficulty in separately identifying and managing on an on-going basis those assets, or parts of assets, have been contributed to by individual network users; and
- DNSP's asset base is revalued as a whole at periodic intervals.

Therefore, to meet the intent of the *Code*, and to ensure an economic, practical and equitable approach, the following process shall be adopted:

- (a) The QCA shall approve the level of capital contributions when determining the DNPS's Revenue Cap for connection and access services.
- (b) The capital contribution initial estimation deduction is a once-off reduction in revenue that equates to the net present value of all future network charges for contributed assets. (In this way the assets can be included in the asset base for calculation of ROA and depreciation whilst still recognising the contributions made in accordance with the *Code*).
- (c) Capital contributions made after the commencement of the Code in Queensland (18 January 1998) by
  - I. ICCs, or
  - II. CACs for connection assets only

for which site specific network charges would apply will be eligible for recognition of that capital contribution upon the customer becoming contestable. The period of recognition shall not exceed the life of the assets towards which the contribution was made.

- (d) Capital contributions made by Standard Asset Customers are pre-payments of revenue shortfall and therefore will not be specifically recognised as the customer has paid such capital contribution to access a published network price schedule

#### **6.16.1 Billing for distribution network services**

- (a) The Distribution Network Service Provider must bill for connection and access services based on the approved network charges.
- (b) Subject to Clause 6.16.1(c), the Distribution Network Service Provider must bill the Market Customer from whom the Distribution Customer purchases electricity directly or indirectly for such connection and access services in accordance with clause 6.16.1(a)
- (c) If a Customer and the Market Customer from whom it purchases electricity agree, the Distribution Network Service Provider may bill the Customer directly for connection and access used by that Customer in accordance with clause 6.16.1(a)

- (d) Distribution Network Service Providers must:
  - (1) Calculate transmission service charges and connection and access charges for all connection points in their distribution network; and
  - (2) Pay to Transmission Network Service Providers the transmission service charges incurred in respect of use of a transmission network at each connection point on the relevant transmission network.
- (e) Charges for connection and access services based on metered or agreed or nominated or Authorised kW, kW.h, kVA or kVAh for all contestable customers and embedded generators must be calculated by the Distribution Network Service Provider from the data managed by an approved Metering Data Agent.
- (f) Charges for connection and access services based on metered kW, kW.h, kVA or kVAh for non-contestable (or franchise) customers will be calculated by the Distribution Network Service Provider using data that is consistent with the metering data used by the relevant Local Retailer in determining energy settlements. The calculation of the franchise customers will be based on a methodology to be submitted by the Distribution Network Service Provider and approved by the Jurisdictional Regulator on an annual basis.

#### **6.16.2 Minimum information to be provided in network service bills for contestable network users.**

The minimum information to be provided directly to a Code Participant is:

- (a) the National Metering Identifier (NMI);
- (b) the dates on which the billing period starts and ends;
- (c) the measured quantities, billed quantities, prices and amounts charged for each component of the Distribution Customer's.

#### **6.16.4 Obligation to pay**

A Market Customer, Customer, or Embedded Generator must pay distribution service charges properly charged to it and billed in accordance with clause 6.16 by the due date specified in the bill.

## APPENDIX 3 – NEC EXTRACT OF CLAUSE 5.5

### 5.5 Access Arrangements for Generators

- (a) The *Network Service Provider* referred to under this clause 5.5 is the *Network Service Provider* required under this *Code* to process a connection enquiry or to submit an offer to *connect* for the provision of *network service* to the *Generator's* *generating unit* or group of *generating units*.
- (b) If requested by a *Generator*, whether as part of a *connection* enquiry, *application to connect* or the subsequent negotiation of a *connection agreement*, the *Network Service Provider* must negotiate in good faith with the *Generator* to reach agreement in respect of the *generator access* arrangements sought by the *Generator*.
- (c) As a basis for negotiations under clause 5.5(b):
  - (1) the *Generator* must provide to the *Network Service Provider* such information as is reasonably requested relating to the expected operation of its *generating units*; and
  - (2) the *Network Service Provider* must provide to the *Generator* such information as is reasonably requested to allow the *Generator* to fully assess the commercial significance of the access arrangements sought by the *Generator* and offered by the *Network Service Provider*.
- (d) A *Generator* may seek *generator access* arrangements at any level of *power transfer capability* between zero and the *maximum power input* of the *Generator's* *generating units* or group of *generating units*.
- (e) The *Network Service Provider* shall use reasonable endeavours to provide the *generator access* arrangements being sought by the *Generator* subject to those arrangements being consistent with *good electricity industry practice* considering:
  - (1) the *connection assets* to be provided by the *Network Service Provider* or otherwise at the *connection point*; and
  - (2) the potential *augmentations* or *extensions* required to be undertaken on all affected *transmission networks* or *distribution networks* to provide that level of *power transfer capability* over the period of the *connection agreement* taking into account the amount of *power transfer capability* provided to other *Code Participants* under *generator access* or *market network service provider access* arrangements in respect of all affected *transmission networks* and *distribution networks*.
- (f) The *Network Service Provider* and the *Generator* shall negotiate in good faith to reach agreement as appropriate on the:

- (1) *connection service* charge to be paid by the *Generator* in relation to *connection assets* to be provided by the *Network Service Provider*;
  - (2) *use of system services* charge to be paid by the *Generator* in relation to any *augmentations* or *extensions* required to be undertaken in respect of all affected *transmission networks* and *distribution networks* (“*negotiated use of system charges*”);
  - (3) [Deleted]
  - (4) amount to be paid by the *Generator* to the *Network Service Provider* in relation to the costs reasonably incurred by the *Network Service Provider* in providing *generator access*;
  - (5) compensation to be provided by the *Network Service Provider* to the *Generator* in the event that the *generating units* or group of *generating units* of the *Generator* are *constrained off* or *constrained on* during a *trading interval*; and
  - (6) compensation to be provided by the *Generator* to the *Network Service Provider* in the event that *dispatch* of the *Generator’s generating units* or group of *generating units* causes another *Generator’s generating units* or group of *generating units* to be *constrained off* or *constrained on* during a *trading interval*.
- (g) The maximum charge that can be applied by the *Network Service Provider* in respect of *negotiated use of system charges* for the *transmission network* and/or *distribution network* shall be determined in accordance with schedule 6.3.
- (h) A *Distribution Network Service Provider* must pass through to an *Embedded Generator* the amount calculated in accordance with clause 5.5(i) for *Customer TUOS usage charges* that would have been payable by the *Distribution Network Service Provider* to a *Transmission Network Service Provider* had the *Embedded Generator* not been *connected* to its *distribution network* (“*avoided Customer TUOS usage charges*”).
- (i) To calculate the amount to be passed through to an *Embedded Generator* in accordance with clause 5.5(h), a *Distribution Network Service Provider* must if *Customer TUOS usage prices* were in force at the *relevant transmission connection point* in the relevant *financial year*:
- (1) determine the *Customer TUOS usage charges* that would have been payable by the *Distribution Network Service Provider* for the relevant *financial year* if the *Embedded Generator* had not injected any energy at its *connection point* during that *financial year*; and
  - (2) determine the amount by which the charges calculated in paragraph (1) exceed the *Customer TUOS usage charges* actually payable by the *Distribution Network Service Provider*, which amount will be the relevant amount for the purposes of clause 5.5(h).

Where *Customer TUOS usage prices* were not in force at the relevant *transmission connection point* throughout the relevant *financial year*, the *Distribution Network Service Provider* must apply an equivalent procedure to that described above in relation to that component of its *transmission use of system service* charges which is deemed by the relevant *Transmission Network Service Provider* to represent the marginal cost of *transmission*, less an allowance for locational signals present in the *spot market* to determine the amount for the purposes of clause 5.5(h).

- (j) Any payments to *Generators* and *Embedded Generators* under clauses 5.5(f)(3) and 5.5(h) are to be included as part of the *aggregate annual revenue requirements* of the relevant *Transmission Network Service Provider* or *Distribution Network Service Provider* and are to be recovered in the same manner as payments to *Embedded Generators* under clause 6.13.3(d) (except that, where the *Generator* is connected to a *transmission network*, all references in clause 6.13.3(d) and schedule 6.3 to "*distribution*" are to be read as references to "*transmission*").