CHAPTER 6

6. Economic Regulation of Distribution Services

Part A - Introduction to Chapter 6

6.1 Introduction and application

6.1.1 Summary of key principles and core objectives of distribution network pricing

(a) Without limiting the application of any other provision of the *Rules*, this rule 6.1 summarises the key principles and core objectives which are intended to apply to the *distribution* pricing arrangements in Parts B and C.

(b) The key principles underlying the *distribution* pricing arrangements in Parts B and C are intended to:

(1) promote competition in the provision of *distribution services* wherever practicable;

(2) facilitate a commercial environment which is transparent and stable, and which does not discriminate between users of *distribution services*; and

(3) regulate the non competitive market for *distribution services* in a way which seeks the same outcomes as those achieved in competitive markets.

(c) The core objectives intended to be achieved by the application of the *distribution* pricing arrangements in Parts B and C are:

(1) efficiency in the use, operation, and maintenance of, and investment in, *distribution systems*, and in the location of generation and demand;

(2) upstream and downstream competition;

(3) price stability; and

(4) equity.

6.1.2 Purpose

(a) The regulatory principles for *distribution service* pricing are set out in Part B.

(b) The principles on which prices for *distribution services* are to be determined are set out in Part C.

6.1.3 Distribution network pricing implementation

In addition to the method of pricing *distribution services*, Part C also covers the following related matters:

(a) prudential requirements for receipt of *distribution services*, which are set out in rule 6.7;

(b) billing and settlements procedures associated with *distribution services*, which are set out in rule 6.8;

(c) the collection of data which is necessary for the determination of *distribution service* prices, which is dealt with in rule 6.2.

6.1.4 Application of Chapter 6 to Market Network Services

(a) Parts B and C do not govern the principles or rules for the calculation of prices a *Market Network Service Provider* may charge for its services.

(b) Parts B and C do not govern the principles or rules for the calculation of prices for *distribution network services* provided by a *Distribution Network Service Provider* to:

(1) a *Market Network Service Provider*; or

(2) another *Network Service Provider* for electricity delivered to a *Market Network Service Provider* through the network of the other *Network Service Provider* (except for any such electricity which is ultimately consumed within the other *Network Service Provider's network*).

(c) Charges for the *distribution network services* referred to paragraph (b) are governed by the applicable provisions of rule 5.5 and clause 6.6.7 only.

Part B - Regulation of Network Pricing for Distribution Systems

6.2 General Regulation of Distribution Network Pricing

6.2.1 Jurisdictional regulatory arrangements

(a) The arrangements specified in Part D:

(1) set out the objectives and principles which must be applied by the *Jurisdictional Regulators* in the economic regulation of *distribution service* pricing;

(2) provide for the formulation of national guidelines by which the objectives and principles referred to in clause 6.2.1(a)(1) may be applied; and

(3) recognise the ongoing role of *distribution service* pricing regimes which may exist in a *participating jurisdiction* to which it may be inappropriate to apply national guidelines for *distribution service* pricing.

(b) Subject to any provision relating to cross-border *networks* in Chapter 9, each *participating jurisdiction* must appoint a *Jurisdictional Regulator* to be responsible within its jurisdiction for the regulation of *distribution service* pricing.

(c) With the consent of each *participating jurisdiction*, the *Jurisdictional Regulators* may together formulate and agree national guidelines to apply to national *distribution service* pricing.

(d) The intention of this Part D is that, where appropriate, national guidelines for *distribution service* pricing are to be formulated:

(1) in accordance with clause 6.2.1(e) and the objectives and principles applicable to *distribution service* pricing set out in clauses 6.2.2 and 6.2.3; and

(2) to apply to those aspects of *distribution service* which are common to all *participating jurisdictions*.

(e) Any national guidelines for *distribution service* pricing formulated under clause 6.2.1(c) must be applicable only to matters which:

(1) are not regulated by the regime for *distribution service* pricing existing within any *participating jurisdiction*; or

(2) although regulated in whole or in part by the regime for *distribution service* pricing existing within a *participating jurisdiction*, may appropriately be regulated in accordance with national guidelines, in which case any *participating jurisdiction* whose regime for *distribution service* pricing already includes regulation of matters to which the proposed national guidelines are to apply may agree to change its regime to the extent of the duplication,

and otherwise, guidelines for *distribution service* pricing applicable within a *participating jurisdiction* are to be formulated and applied by the relevant *Jurisdictional Regulator* in accordance with clause 6.2.1(f).

(f) Subject to any provision relating to cross-border *networks* in Chapter 9, each *Jurisdictional Regulator* may formulate guidelines and rules to apply to *distribution service* pricing within the relevant *participating jurisdiction* and any guidelines so formulated must:

(1) not be inconsistent with the objectives and principles for *distribution service* pricing set out in clauses 6.2.2 and 6.2.3;

(2) not be inconsistent with any national guidelines for *distribution service* pricing formulated by the *Jurisdictional Regulators* under clause 6.2.1(c); and

(3) not purport to regulate matters to which any national guidelines formulated by the *Jurisdictional Regulators* under clause 6.2.1(c) apply.

(g) **[Deleted]**

(h) The arrangements outlined in Parts D and E of this Chapter must be applied by the *Jurisdictional Regulator* in the relevant *participating jurisdiction* subject to:

(1) the objectives and principles for regulation of *distribution service* pricing detailed in clauses 6.2.2 and 6.2.3;

(2) any national guidelines for regulation of *distribution service* pricing detailed in clauses 6.2.2 and 6.2.3; and

(3) any jurisdictional rules, principles or guidelines for the regulation of *distribution service* pricing formulated for the jurisdiction under clause 6.2.1(f).

6.2.2 Objectives of the distribution service pricing regulatory regime to be administered by the Jurisdictional Regulators

The *distribution service* pricing regulatory regime to be administered under Part D of this Chapter must seek to achieve the following outcomes:

(a) an efficient and cost-effective regulatory environment;

(b) an incentive-based regulatory regime which:

(1) provides an equitable allocation between *Distribution Network Users* and *Distribution Network Service Providers* of efficiency gains reasonably expected by the *Jurisdictional Regulators* to be achievable by the *Distribution Network Service Providers*;

(2) provides for, on a prospective basis, a sustainable commercial revenue stream which includes a fair and reasonable rate of return to *Distribution Network Service Providers* on efficient investment, given efficient operating and maintenance practices of the *Distribution Network Service Providers*;

(3) ensures consistency in the regulation of:

(i) *connection* to *distribution networks*; and

(ii) *distribution service* pricing; and

(4) provides for the recovery by *Distribution Network Service Providers* of *Customer TUOS usage charges* from those *Distribution Customers* that have a *metering installation* capable of capturing relevant *transmission system* and *distribution system* usage data, in a way that preserves the location and time signals of the *Customer TUOS usage prices*;

(c) prevention of monopoly rent extraction by *Distribution Network Service Providers*;

(d) an environment which fosters an efficient level of investment within the *distribution* sector, and upstream and downstream of the *distribution* sector;

(e) an environment which fosters efficient operating and maintenance practices within the *distribution* sector;

(f) an environment which fosters efficient use of existing infrastructure;

(g) reasonable recognition of pre-existing policies of governments regarding *distribution* asset values, revenue paths and prices;

(h) promotion of competition in upstream and downstream markets and promotion of competition in the provision of *distribution services* where economically feasible;

(i) reasonable regulatory accountability through transparency and public disclosure of regulatory processes and the basis of regulatory decisions;

(j) reasonable certainty and consistency over time of the outcomes of regulatory processes, recognising the adaptive capacities of *Registered Participants* in the provision and use of *distribution system* assets; and

(k) reasonable and well defined regulatory discretion which permits an acceptable balancing of the interests of *Distribution Network Service Providers* and *Distribution Network Users* and the public interest.

6.2.3 Principles for regulation of distribution service pricing

The regime under which the revenues of *Distribution Network Service Providers* are to be regulated must be administered by each *Jurisdictional Regulator* in accordance with the following principles:

(a) Concerns over monopoly pricing in respect of *distribution services* will, wherever economically efficient and practicable, be addressed through the introduction of competition in the provision of *distribution services*.

(b) Where pro-competitive and structural reforms alone are not a practicable or adequate means of addressing the problems of monopoly pricing in respect of *distribution services* or protecting the interests of *Distribution Network Users,* the form of economic regulation to be applied is described in clause 6.2.5.

(c) The form of economic regulation applied by the *Jurisdictional Regulator* must not be changed during a *regulatory control period*.

(d) Subject to clause 6.2.3(c), if the *Jurisdictional Regulator* proposes to amend the form of economic regulation specified in clause 6.2.5 applied to a *Distribution Network Service Provider,* the *Jurisdictional Regulator* must:

(1) give two years prior notice to the *Distribution Network Service Provider* of the new economic regulation arrangements to apply from the commencement of the next *regulatory control period*; and

(2) publish a description of the process and timetable for amending the form of economic regulation at a time which provides all affected parties with adequate notice to prepare for, participate in, and respond to that process, prior to the commencement of the *regulatory control period* to which that form of economic regulation is to apply.

(e) The regulatory regime to be administered by the *Jurisdictional Regulator* must be consistent with the objectives outlined in clause 6.2.2 and must also have regard to the need to:

(1) provide *Distribution Network Service Providers* with incentives and reasonable opportunities to increase efficiency;

(2) create an environment in which *generation*, energy storage, demand side options and *network augmentation* options are given due and reasonable consideration;

(3) take account of and be consistent with the allocation of risk between *Distribution Network Service Providers* and *Distribution Network Users*;

(4) take account of and be consistent with any obligations of *Registered Participants* in relation to *distribution networks* under Chapter 5;

(5) provide a fair and reasonable risk-adjusted cash flow rate of return to *Distribution Network Service Providers* on efficient investment given

efficient operating and maintenance practices on the part of the *Distribution Network Service Providers* where:

(i) assets created at any time under a *take or pay contract* are valued in a manner consistent with the provisions of that contract;

(ii) subject to clause 6.2.3(e)(5)(i), assets (also known as "sunk assets") in existence and generally in service on 1 July 1999 are valued at the value determined by the *Jurisdictional Regulator* or consistent with the regulatory asset base established in the *participating jurisdiction*;

(iii) subject to clause 6.2.3(e)(5)(i), the valuation of assets brought into service after 1 July 1999 ("new assets"), any subsequent revaluation of any new assets and any subsequent revaluation of assets existing and generally in service on 1 July 1999 is to be undertaken on a basis to be determined by the *Jurisdictional Regulator* and in determining the basis of asset valuation to be used, the *Jurisdictional Regulator* must have regard to:

(A) the principle that *deprival value* should be the preferred approach to valuing *network* assets;

(B) **[Deleted]**

(C) such other matters reasonably required to ensure consistency with the objectives specified in clause 6.2.2; and

(iv) benchmark returns established by the *Jurisdictional Regulator* are consistent with the method of valuation of new assets and revaluation, if any, of existing assets and consistent with the achievement of a commercial economic return on efficient investment; and

(6) provide reasonable certainty and consistency over time of the outcomes of regulatory processes having regard for:

(i) the need to balance the interests of *Distribution Network Users* and *Distribution Network Service Providers*;

(ii) the capital intensive nature of the *distribution* sector, the relatively long lives of *distribution* assets, and the variable and frequent *augmentation* of *distribution networks*;

(iii) the need to minimise the economic cost of regulatory actions and uncertainty; and

(iv) relevant previous regulatory decisions made by authorised persons including:

(A) the initial revenue setting and asset valuation decisions made by a government at a time at which that government was a *Distribution Network Service Providers* in the

context of industry reform pursuant to the Competition Principles Agreement;

(B) decisions made by *Jurisdictional Regulators* and any regulatory intentions previously expressed; and

(C) decisions made by ministers under jurisdictional legislation.

6.2.4 Economic regulation of distribution services

(a) The *Jurisdictional Regulator* is responsible for determining which, if any, *distribution services* provided by a *Distribution Network Service Provider* in the relevant *participating jurisdiction* should be deemed to be *prescribed distribution services* and accordingly subject to economic regulation in accordance with clause 6.2.5. In making this determination the *Jurisdictional Regulator* must have regard to:

(1) the principles for regulation of *distribution service* pricing described in clause 6.2.3;

(2) the extent of effective competition in the provision of that *distribution service*;

(3) whether sufficient competition exists to warrant the application of a regulatory approach which is more "light handed" than the approach described in clause 6.2.5;

(4) the effectiveness of the form of economic regulation specified under clause 6.2.5 in achieving the efficiency objectives included in clause 6.2.2; and

(5) the form, if any, of that regulation.

(b) *Distribution services* which are not *prescribed distribution services* are deemed to be *excluded distribution services* and, without limiting the discretion of the *Jurisdictional Regulator* under clause 6.2.4(a), *excluded distribution services* are those to which it is appropriate to apply a regulatory approach which is more "light-handed" than the approach described in clause 6.2.5 (and so the costs of and revenue for such services are excluded from the *revenue cap* or *price cap* which applies to *prescribed distribution services*). The *Jurisdictional Regulator* must determine the form of regulation which is to be applied to *excluded distribution services*.

6.2.5 Form and mechanism of economic regulation

In respect of *distribution services* subject to economic regulation pursuant to clause 6.2.4(a):

(a) Economic regulation must be of the prospective CPI minus X form, or some incentive-based variant of the CPI minus X form, and may take into account the performance of the relevant *Distribution Network Service Provider* under any *prescribed distribution service* standards imposed by the *Rules* or

by any regulatory regime administered by the *Jurisdictional Regulator*, provided it is consistent with the objectives and principles outlined in clauses 6.2.2 and 6.2.3.

(b) The *Jurisdictional Regulator* must specify the form of economic regulation to be applied to the *Distribution Network Service Provider* to be in the form of:

(1) a *revenue cap*;

(2) a weighted average *price cap*; or

(3) a combination of the above.

(c) The *Jurisdictional Regulator* must apply the form of economic regulation specified in clauses 6.2.5(a) and (b) to each *Distribution Network Service Provider* for the *regulatory control period*, which must be a period of not less than 3 years.

(d) In setting a separate *regulatory cap* to be applied to each *Distribution Network Service Provider* in accordance with clause 6.2.5(b), the *Jurisdictional Regulator* must take into account each *Distribution Network Service Provider's* revenue requirements during the *regulatory control period*, having regard for:

(1) the demand growth which the *Distribution Network Service Provider* is expected to service using any appropriate measure including but not limited to:

(i) energy consumption by categorisation of *Distribution Customers* or other relevant groups of persons who consume energy;

(ii) demand by categorisation of *Distribution Customers* or other relevant groups of persons who consume energy;

(iii) numbers of *Distribution Customers* by categorisation of *Distribution Customer* or other relevant groups of persons who consume energy; and

(iv) length of the *distribution network*;

(2) any service standards applicable to the *Distribution Network Service Provider* under the *Rules*, and any other standards imposed on the *Distribution Network Service Provider* by any regulatory regime administered by the *Jurisdictional Regulator* or by agreement between the *Distribution Network Service Provider* and the relevant *Distribution Network Users*;

(3) price stability;

(4) the *Jurisdictional Regulator's* reasonable judgment of the potential for efficiency gains to be realised by the *Distribution Network Service Provider* in expected operating, maintenance and capital costs, taking

into account the expected demand growth and service standards referred to in clauses 6.2.5(d)(1) and (2);

(5) the *Distribution Network Service Provider's weighted average cost of capital* applicable to the relevant *distribution service*, having regard to the risk adjusted cash flow rate of return required by investors in commercial enterprises facing similar business risks to those faced by the *Distribution Network Service Provider* in the provision of that *distribution service*;

(6) the provision of a fair and reasonable risk-adjusted cash flow rate of return on efficient investment including sunk assets subject to the provisions of clause 6.2.3(e)(5);

(7) the right of the *Distribution Network Service Provider* to recover reasonable costs arising from but not limited to:

(i) any State, Territory and Commonwealth taxes (or State or Territory equivalent of Commonwealth taxes) which it has paid in connection with the provision of *distribution services*;

(ii) charges paid to *Transmission Network Service Providers* and other *Distribution Network Service Providers* arising from the provision of *distribution services*;

(iii) payments made to *Embedded Generators* for demand side management programs and local energy storage *facilities* as a result of the application of clause 5.6.2 where the *Jurisdictional Regulator* determines that this is appropriate;

(8) any correction factors arising from the previous *regulatory control period*;

(9) any reduction or increase in energy losses in the *distribution network*;

(10) the on-going commercial viability of the *distribution* industry; and

(11) any other relevant financial indicators.

(e) Notwithstanding clause 6.2.5(c), the *Jurisdictional Regulator* may revoke a *regulatory cap* determination during a *regulatory control period* only where it appears to the *Jurisdictional Regulator* that:

(1) the *regulatory cap* was set on the basis of false or materially misleading information provided to the *Jurisdictional Regulator*; or

(2) there was a material error in the setting of the *regulatory cap* and the prior written consent of parties affected by any proposed subsequent re-opening of the *regulatory cap* has been obtained by the *Jurisdictional Regulator*.

(f) If the *Jurisdictional Regulator* revokes a *regulatory cap* determination under clause 6.2.5(e), then the *Jurisdictional Regulator* may make a new *regulatory cap* determination in substitution for the revoked determination

to apply for the remainder of the *regulatory control period* for which the revoked *regulatory cap* determination was to apply.

(g) Prior to the end of a *regulatory control period*, the *Jurisdictional Regulator* must publish a description of the process and timetable for re-setting the level of *regulatory cap* to apply in the next *regulatory control period* and must provide to all affected parties adequate notice to allow them to prepare for, participate in, and respond to that process.

6.2.6 Monitoring of Distribution Network Service Provider performance and compliance with regulatory determinations

(a) A *Distribution Network Service Provider* must use reasonable endeavours to ensure that it complies with any *regulatory cap* in respect of *distribution services* in any year.

(b) A *Distribution Network Service Provider* must submit certified annual financial statements to the relevant *Jurisdictional Regulator* (in a form and by a date to be determined by the *Jurisdictional Regulator*) which provide a true and fair statement of the financial and operating performance of the *Distribution Network Service Provider* in a reporting period.

(c) The certified annual financial statements submitted by the *Distribution Network Service Provider* to the *Jurisdictional Regulator* may be used by the *Jurisdictional Regulator* to:

(1) monitor the compliance of the *Distribution Network Service Provider* with the applicable *regulatory caps*;

(2) assess the allocation of costs between services which are subject to regulation under the *regulatory caps* and services or activities which are not subject to regulation under the *regulatory caps*, and identify any cross-subsidy between these different types of services or activities; and

(3) collate data regarding the financial, economic and operational performance of the *Distribution Network Service Provider* to be used as input to the *Jurisdiction Regulator's* decision-making regarding the setting of *regulatory caps* or other regulatory controls to apply in future *regulatory control periods.*

(d) In addition to the certified financial statements referred to in clause 6.2.6(b), the *Jurisdictional Regulator* may require a *Distribution Network Service Provider* to provide any other information the *Jurisdictional Regulator* reasonably requires to perform its regulatory functions in a manner and by a date it considers to be consistent with the requirements of clauses 6.2.2, 6.2.3, 6.2.4 and 6.2.5.

(e) The *Jurisdictional Regulator* may request or undertake verification and/or independent audit of any information sought by it, or provided to it, under this clause 6.2.6.

(f) Information provided to the *Jurisdictional Regulator* by a *Distribution Network Service Provider* pursuant to this clause 6.2.6 must be treated as confidential by the *Jurisdictional Regulator* and must not be disclosed to any other party without the prior written consent of the *Distribution Network Service Provider* which provided the information unless the procedures set out in clauses 6.2.7(c)-(e) have been followed.

6.2.7 Information disclosure by the Jurisdictional Regulator

(a) In making a *regulatory cap* determination or any other decision under this clause 6.2, the relevant *Jurisdictional Regulator* must publish full and reasonable details of the basis and rationale of the decision including but not limited to the following:

(1) reasonable details of qualitative and quantitative methodologies applied including any calculations and formulae; and

(2) full reasons for all material judgments and qualitative decisions made and options considered and all discretions exercised which have a material bearing on the outcome of the *Jurisdictional Regulator's* overall decision.

(b) Notwithstanding clause 6.2.7(a), the *Jurisdictional Regulator* must also disclose relevant information to the relevant *Distribution Network Service Provider*, but only on request by the *Distribution Network Service Provider*, such information to include, but is not limited to, the following:

(1) the values adopted by the *Jurisdictional Regulator* for each of the input variables in any calculations and formulae, including a full description of the rationale for adoption of those values; and

(2) reasonable details of other assumptions made by the *Jurisdictional Regulator* in the conduct of all material qualitative and quantitative analyses undertaken in relation to the setting of a *regulatory cap* or any related matter.

(c) Each *Jurisdictional Regulator* in discharging its functions under the *Rules* may publicly release information or the contents of documents provided to it by a *Distribution Network Service Provider* for the purposes of performing its functions under the *Rules* in circumstances where the *Distribution Network Service Provider* has declined to give written consent to its release in accordance with clause 6.2.6(f) if the *Jurisdictional Regulator*:

(1) is of the opinion that:

(A) the disclosure of the information or the contents of the documents would not cause detriment to the *Distribution Network Service Provider* who supplied it; or

(B) although the disclosure of the information or the contents of the documents would cause detriment to the *Distribution Network Service Provider* who supplied it, the public benefit in disclosing it outweighs that detriment; and

(2) is of the opinion, in relation to any other person who has provided the *Distribution Network Service Provider* with information or documents that form part of the information or documents provided by the *Distribution Network Service Provider* to the *Jurisdictional Regulator*, that:

(A) the disclosure of the information or contents of the documents would not cause detriment to that person; or

(B) although the disclosure of the information or contents of the documents would cause detriment to that person, the public benefit in disclosing it outweighs the detriment,

and the procedures set out in clauses 6.2.7(d)-(e) have been followed.

(d) The *Jurisdictional Regulator* must not publicly release any information or the contents of any documents under clause 6.2.7(c) until the expiration of 28 days from the date of receipt of a written notice sent by the *Jurisdictional Regulator* to:

(1) the *Distribution Network Service Provider* who supplied the information or documents; or

(2) any person whom the *Jurisdictional Regulator* is aware supplied the *Distribution Network Service Provider* with information or documents that form part of the information or documents provided to the *Jurisdictional Regulator* by the *Distribution Network Service Provider*,

as the case may be, of the *Jurisdictional Regulator*'s intention to disclose.

(e) The notice referred to in clause 6.2.7(d) must:

(1) state that the *Jurisdictional Regulator* wishes to disclose the information or contents of the documents, specifying the nature of the intended disclosure and setting out detailed reasons why the *Jurisdictional Regulator* wishes to make the disclosure;

(2) state that the *Jurisdictional Regulator* is of the opinion required by clause 6.2.7(c) and setting out detailed reasons why it is of that opinion; and

(3) identify the legislation (if any) governing the review of decisions by the *Jurisdictional Regulator* to release information in the relevant *participating jurisdiction*.

(f) Where as a result of a review, under the legislation (if any) referred to in clause 6.2.7(e)(3), of its decision to publicly release information or documents a *Jurisdictional Regulator* is not allowed to disclose particular information or documents provided to it for the purpose of performing its functions under the *Rules*, the *Jurisdictional Regulator* may nonetheless use the information or document for the purposes of performing its functions under the *Rules.*

(g) Nothing in clauses 6.2.7(d) and (e) is intended to affect a *Registered Participant's* rights to seek a review under general principles of administrative law of the *Jurisdictional Regulator's* decision to publicly release any information or the contents of any documents under clause 6.2.7(c).

Part C – Distribution Network Pricing

This part of the *Rules* applies to the pricing of *prescribed distribution services* for *distribution networks*, and must be interpreted in accordance with the pricing principles set out in clause 6.1.1 and schedule 6.4.

6.3 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 *Registered 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 6.2.1(f).

6.4 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.

6.5 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 6.6.

6.5.1 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 *Generators connected* to a *transmission network* where benefits of *new distribution network investment* have been allocated to that *Generator* in accordance with schedule 6.5 and *Distribution Customers*, but excluding *entry service, exit service* and *common service*; and

(4) *common service* which includes the asset-related costs and services that ensure the integrity of the *distribution system* and benefit all *Distribution Customers* and cannot reasonably be allocated on the basis of *voltage* levels or location.

(b) *Distribution Network Service Providers* must classify each element and cost of their *distribution services*, including payments made to other *Network Service Providers*, into one of the classes of *distribution services* listed in clause 6.5.1(a).

(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*.

6.5.2 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* 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 6.5.2(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) 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* to the geographic boundaries incorporated in the *pricing zones* and of the *voltage* levels of *distribution service* incorporated within these *pricing zones*.

6.5.3 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 6.5.3(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 6.2.

(d) Any payments made under clause 6.5.3(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.

6.5.4 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 6.5.2 must be allocated according to the use of the assets by groups of *Distribution Network Users* having similar *load*

characteristics and *voltage* levels, other than in relation to *cost pools* for services provided by *new distribution network investment* assets, for which *cost pools* the *aggregate annual revenue requirements* must be allocated in a manner that is consistent with schedule 6.5.

(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*.

6.5.5 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 6.5.5(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).

6.5.6 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* must all be allocated to *Embedded Generators* at the *network coupling point*.

(b) The *cost pools* for *exit services* must all 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 6.5.1(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 6.2; 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* (other than *Market Network Service Providers* as they are not required to pay for *common services*) 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 *Distribution Network Users* either:

(1) as agreed with the *Distribution 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 *Distribution Network Users* at a *network coupling point*, measured in respect of the 10 hours for which the *Distribution Network User* has used the *network* most intensively during the preceding year.

(f) The *cost pools* for services provided by *new large distribution network assets* and *new small distribution network assets* must be allocated to *Embedded Generators* and *Generators connected* to a *transmission network*, where benefits of *new distribution network investment* have been allocated to that *Generator* in accordance with schedule 6.5, and *Distribution Customers*, in a manner which is consistent with schedule 6.5.

6.5.7 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 6.5.7(a) must be allocated to asset categories using an appropriate allocation method agreed with the *Jurisdictional Regulator* and consistent with the objective of the *distribution service* pricing regulatory regime set out in clause 6.2.2(b)(4).

(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 6.5.7(c) must be allocated to asset categories using an appropriate allocation method agreed with the *Jurisdictional Regulator*.

6.6 Step 3 - Usage Based Prices for Distribution Network Service

The outcome of the cost allocation process specified in clause 6.5 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;

(e) *Distribution Customer common service* costs;

(f) *new large distribution network asset* costs; and

(g) *new small distribution network asset* costs.

These classes of cost may be converted into prices in accordance with clauses 6.6.1 to 6.6.3.

6.6.1 Embedded Generator prices

(a) The *Embedded Generator* charge for *prescribed distribution services* may incorporate *entry costs.*

(b) The charge payable by an *Embedded Generator* for *entry services* is a fixed annual amount equal to the *entry cost* allocated to each *Embedded Generator* under clause 6.5.6(a) unless the charge for those *entry services* has been agreed in a current *connection agreement* with the *Embedded Generator*.

(c) The charge payable by an *Embedded Generator* for *negotiated use of system services* must be determined in accordance with rule 5.5(f)(3) and the parties may seek recourse to the *Jurisdictional Regulator* in the event of a dispute.

(d) There may be other charges applicable to *distribution services* for *Embedded Generators*, including local *connection* requirements and any risk premium associated with the provision of *generator access* between the *Embedded Generator* and the *Distribution Network Service Provider* and

such charges must be agreed between the *Embedded Generator* and the relevant *Distribution Network Service Provider*. Any revenue received from charges for *generator access* does not form part of the relevant *Distribution Network Service Provider's aggregate annual revenue requirement*.

(e) There may be situations where the *Distribution Network Service Provider* is prepared to pay for equivalent *distribution services* by *Embedded Generators.* These arrangements are set out in clause 6.2.5(d)(7)(iii) and payments for such equivalent *distribution services* are to be agreed between the relevant *Distribution Network Service Provider* and *Jurisdictional Regulator.*

(f) Where an *Embedded Generator* benefits from *new large distribution network assets* or *new small distribution network assets* as determined in accordance with clause 5.6.2, the charge payable by the *Embedded Generator* for the services provided by those new assets will be as determined in accordance with schedule 6.5.

6.6.2 Distribution Customer price

(a) The charges payable by a *Distribution Customer* for *prescribed distribution services* may incorporate *exit costs, distribution use of system* costs and *common service* costs.

(b) The charge 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* allocated in accordance with clause 6.5.6(b); plus

(2) a variable amount so that costs for *distribution use of system* allocated to *Distribution Customers* under clause 6.5.6(c) are fully recovered; plus

(3) a variable amount so that costs for *common service* allocated to *Distribution Customers* under clause 6.5.6(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 prices* (eg. $ per maximum kW per period or $ per maximum kVA per period, which may include a time of use component);

(2) *energy based prices* (eg. ¢ per kWh or ¢ per kVAh which may include a time of use component); and

(3) *Distribution Customer* charges (eg. $ per *Distribution Customer* per period).

(e) Where quantities are used in determining charges, these quantities may be minimum quantities specified in the prices, actual quantities used by the *Distribution Customer* or quantities agreed by the *Distribution Customer* and *Distribution Network Service Provider.* The pricing outcome will be subject to regulation as outlined in clause 6.6.4.

(f) Where the charge payable for *exit services* has been agreed between a *Distribution Customer* and the relevant *Distribution Network Service Provider* in a current *connection agreement,* the charge payable by that *Distribution Customer* determined under clause 6.6.2(b) must not include any amount attributable to *exit costs.*

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

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

(1) periods of net export of *energy* will be subject to *Embedded Generator* pricing arrangements; and

(2) periods of net import of *energy* will be subject to *Distribution Customer* pricing arrangements.

(b) For *Distribution Customers* where there is no export of *generation* into the *distribution network*, prices are to be applied and payable as determined under clause 6.6.2.

(c) For *Embedded Generators* where there is no consumption of electricity from the *distribution network* by a *Distribution Customer*, prices are to be applied and payable as determined under clause 6.6.1 provided that the *Embedded Generator* must not be charged twice for the use of the same assets.

6.6.4 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 6.6.4 must not be inconsistent with any applicable jurisdictional requirements and any applicable *price cap* level.

6.6.5 Publication of distribution network prices

(a) Each *Distribution Network Service Provider* 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;

(2) a statement providing details of principles and methods for determining *connection* charges; and

(3) the service standards to which it will adhere for the services to which those *distribution service* prices relate, which service standards must include, and not be inconsistent with, any service standards imposed on the *Distribution Network Service Provider* by any regulatory regime administered by the *Jurisdictional Regulator*,

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.

6.6.6 Agreement as to distribution prices

(a) Subject to clause 6.6.6(b) and (c), the prices determined in accordance with clauses 6.6.1 to 6.6.3, or the prices determined by the application of a *price cap*, are the maximum prices which a *Distribution Network Service Provider* is entitled to charge for providing the relevant *prescribed distribution services* to:

(1) the standards described in schedule 5.1; and

(2) the standards published in accordance with clause 6.6.5(a)(3),

notwithstanding any agreement with another person to the contrary.

(b) A *Distribution Network Service Provider* may, but is not required to, agree with a *Distribution Network User* to charge that *Distribution Network User* lower prices than those described in clause 6.6.6(a) and, if the relevant parties have so agreed, the prices payable by that *Distribution Network User* for the provision of the relevant *prescribed distribution services* are those so agreed rather than those described in clause 6.6.6(a).

(c) If a *Distribution Network Service Provider* agrees to provide a *Distribution Network User* with *prescribed distribution services* to higher or lower standards than those described in schedule 5.1 or the standards published in accordance with clause 6.6.5(a)(3), then the prices payable by the *Distribution Network User* as a result of the difference between the level prescribed by schedule 5.1 or the standards published in accordance with clause 6.6.5(a)(3) and the agreed higher or lower standard are to be those

agreed between the *Distribution Network Service Provider* and the relevant *Distribution Network User* in accordance with clause 6.6.7, provided that the reductions in prices payable by the *Distribution Network User* for the provision of *prescribed distribution services* to a lower standard are limited to the amount of the *Distribution Network Service Provider's* avoided costs (if any) as a result of the provision of services to that lower standard.

6.6.7 Pricing of negotiable services

(a) Each *Distribution Network Service Provider* (other than a *Market Network Service Provider*) must establish a framework in accordance with the requirements of clause 6.6.7(b) (the "*negotiating framework*") setting out the minimum requirements to be followed during negotiations with *Distribution Network Users* for *negotiable services*.

(b) For the purposes of clause 6.6.7(a), the *negotiating framework* must specify:

(1) a requirement for the *Distribution Network Service Provider* and the *Distribution Network User* to negotiate in good faith for the provision of *negotiable services*;

(2) notwithstanding clause 6.10.2, a requirement for the *Distribution Network Service Provider* to provide all such commercial information as the *Distribution Network User* may reasonably require to enable the *Distribution Network User* to engage in effective negotiation with the *Distribution Network Service Provider* for the provision of *negotiable services*, including the cost information described in clause 6.6.7(b)(3);

(3) a requirement for the *Distribution Network Service Provider* to:

(i) identify, and inform the *Distribution Network User* of, the reasonable costs and/or the increase or decrease in costs (as appropriate), of providing those *negotiable services*; and

(ii) demonstrate to the *Distribution Network User* that its charges for providing those *negotiable services* reflect those costs and/or the cost increment or decrement (as appropriate);

(4) a requirement for the *Distribution Network User* to provide all such commercial information as the *Distribution Network Service Provider* may reasonably require to enable the *Distribution Network Service Provider* to engage in effective negotiation with the *Distribution Network User* for the provision of *negotiable services*;

(5) a reasonable period of time for commencing, progressing and finalising negotiations with the *Distribution Network User* for the provision of *negotiable services*, and a requirement that each party to the negotiation must use its reasonable endeavours to adhere to those time periods during the negotiation;

(6) a process for dispute resolution which provides for all disputes arising out of or concerning negotiations for *negotiable services* to be dealt

with in accordance with clause 8.2 or, where the *Distribution Network User* is not a *Registered Participant*, in accordance with a specified alternative dispute resolution process;

(7) a requirement to publish the outcome of the negotiation to provide *negotiable services*; and

(8) the arrangements for payment by the *Distribution Network User* of the *Distribution Network Service Provider's* reasonable direct expenses incurred in processing the application to provide the *negotiable services*; and

(9) a requirement that the *Distribution Network Service Provider* determine the potential impact on other *Distribution Network Users* of the negotiated provision of a *prescribed distribution service* to a higher or lower standard than any standard:

(i) described in schedule 5.1; or

(ii) published by the *Distribution Network Service Provider* in accordance with clause 6.6.5(a)(3),

and a requirement that the *Distribution Network Service Provider* must notify and consult with any affected *Distribution Network Users* and ensure that the provision of these *negotiable services* does not result in non-compliance with any service standards or other obligations in relation to other *Distribution Network Users* under the *Rules.*

(c) Each *Distribution Network Service Provider* must:

(1) have its *negotiating framework* developed in accordance with clause 6.6.7(b) approved by the *Jurisdictional Regulator*; and

(2) comply with the requirements of the *negotiating framework* in accordance with its terms and subject to any amendments or conditions imposed by the *Jurisdictional Regulator*.

(d) For the avoidance of doubt, commercial information which is required to be provided to a *Distribution Network User* in accordance with clause 6.6.7(b)(2):

(1) does not include confidential information provided to the *Distribution Network Service Provider* by another person; and

(2) may be provided subject to a condition that the *Distribution Network User* must not provide any part of that commercial information to any other person without the consent of the *Distribution Network Service Provider* which provided the information to the *Distribution Network User*.

(e) For the avoidance of doubt, commercial information which is required to be provided to a *Distribution Network Service Provider* in accordance with clause 6.6.7(b)(4):

(1) does not include confidential information provided to the *Distribution Network User* by another person; and

(2) may be provided subject to a condition that the *Distribution Network Service Provider* must not provide any part of that commercial information to any other person without the consent of the *Distribution Network User* which provided the information to the *Distribution Network Service Provider*.

6.7 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 provides for the adoption of 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.

6.7.1 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/or *distribution use of system service*.

(b) Prudential requirements for *connection service* and/or *distribution use of system service* are a matter for negotiation between the *Distribution Network Service Provider* and the *Embedded Generator* or *Distribution Customer* and the terms 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 *Distribution 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) The 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.

6.7.2 Capital contributions, prepayments and financial guarantees

In relation to capital contributions, prepayments and financial guarantees:

(a) the *Distribution Network Service Provider* is not entitled to receive any asset related cost component of the *aggregate annual revenue requirement* for assets provided by *Distribution Network Users*;

(b) the *Distribution Network Service Provider* may receive a capital contribution, prepayment and/or financial guarantee up to the future *aggregate 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 6.5.3 must not incorporate the asset related cost components of the *aggregate annual revenue requirement* for any asset category covered by clause 6.7.2 and the *Distribution 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.

6.7.3 Treatment of past prepayments and capital contributions

(a) Payments made by *Distribution Customers* and *Embedded Generators* for *distribution service* prior to 13 December 1998 must be made in accordance with any contractual arrangements with the relevant *Distribution Network Service Providers* applicable at that time.

(b) Where contractual arrangements referred to in clause 6.7.3(a) are not in place, past *distribution service* prepayments 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 6.7.3 which cannot be resolved between the relevant *Distribution Network Service Provider* and *Distribution Customer* or *Embedded Generator*.

6.8 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.

6.8.1 Billing for distribution services

(a) A *Distribution Network Service Provider* must bill *Distribution Network Users* for *distribution service* as follows:

(1) *Embedded Generators*:

(i) by applying the *entry charge* as a fixed annual charge to each *Embedded Generator*; and

(ii) by applying the *Generator distribution use of system* price to the *Embedded Generator's* nominated capacity.

(2) *Distribution Customers*:

The charges to *Distribution Customers* must be determined according to use of the *distribution network* as determined in accordance with a *metrology procedure* or, in the absence of a *metrology procedure* allowing such a determination to be made, 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 this clause 6.8 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 6.8.1(c), where a *Distribution Customer* (other than a *Market Customer*) incurs *distribution service* 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 6.8.1(a)(2).

(c) If a *Distribution Customer* and the *Market Customer* from whom it purchases electricity agree, the *Distribution Network Service Provider* may bill the *Distribution Customer* directly for *distribution services* used by that *Distribution Customer* in accordance with clause 6.8.1(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 services* based on *metered* kW, kWh, 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:

(1) *settlements ready data* obtained from *NEMMCO's metering database,* for those *Embedded Generators, Market Customers* and *Second-Tier Customers* with *connection points* that have a type 1, 2, 3 or 4 *metering installation*; and

(2) *energy data*, in accordance with a *metrology procedure* that allows the *Distribution Network Service Provider* to use *energy data* for this purpose, or otherwise *settlements ready data* obtained from *NEMMCO's metering database*, for those *Embedded Generators*, *Market Customers* and *Second-Tier Customers* with *connection points* that have a type 5, 6 or 7 *metering installation*.

(f) Charges for *distribution services* based on *metered* kW, kWh, 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) 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 must 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.

6.8.2 Minimum information to be provided in distribution network service bills

The following is the minimum information that must be provided with a bill for a *network coupling point* issued by a *Distribution Network Service Provider* directly to a *Registered Participant*:

(a) the *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 *network coupling point* charges are calculated; and

(d) measured quantities, billed quantities, prices and amounts charged for each component of the total *distribution service* account.

6.8.3 Settlement between Distribution Network Service Providers

The billing and *settlement* process specified in this clause 6.8 must be applied to all *Distribution Customers* including other *Distribution Network Service Providers*.

6.8.4 Obligation to pay

A *Distribution Network User* must pay *distribution service* charges properly charged to it and billed in accordance with this clause 6.8 by the due date specified in the bill.

6.9 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*.

6.10 Data Required for Distribution Network Service Pricing

6.10.1 Forecast use of networks by Distribution Customers and Embedded Generators

Any information required by *Distribution Network Service Providers* must be provided by *Registered Participants* as part of the *connection* and access requirements set out in Chapter 5.

6.10.2 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.

Part D – Unbundling TUOS and DUOS charges

6.11 *Separate disclosure of transmission and distribution charges*

(a) A *Distribution Customer*:

(1) with a *load* of greater than 10MW or 40GWh per annum; or

(2) which has *metering* equipment which is capable of capturing relevant *transmission* and *distribution system* usage data,

may request a *Distribution Network Service Provider* to whose *network* the *Distribution Customer* is *connected* (a "TUOS/DUOS disclosure request") to provide the *Distribution Customer* with a statement identifying the separate components of the *transmission use of system* and *distribution use of system* charges which the *Distribution Customer* has been charged for electricity supplied to its *connection points* (a "TUOS/DUOS disclosure statement").

(b) Within 10 *business days* of receipt of any *TUOS/DUOS disclosure request*, a *Distribution Network Service Provider* must notify the relevant *Distribution Customer* of the estimated charge, including details of how the charge is calculated, for providing the *TUOS/DUOS disclosure statement*, which charge must be no greater than the reasonable variable costs directly incurred by the *Distribution Network Service Provider* in preparing the statement for the particular *Distribution Customer*.

(c) If the relevant *Distribution Customer* advises the *Distribution Network Service Provider* within 30 days of receipt of the notice referred to in clause 6.11(b) that it still requires the requested *TUOS/DUOS disclosure statement*, the relevant *Distribution Network Service Provider* must prepare the statement and provide it to the *Distribution Customer* within 30 days of being so advised. The *TUOS/DUOS disclosure statement* must include detailed information on the methodology used to determine the *distribution use of system* charges and the allocation of the *transmission use of system* charges which the *Distribution Customer* has been charged for electricity *supplied* to its *connection point*, which information must be sufficient to allow the *Distribution Customer* to assess the impact on their *network* charges of a change in their *network* use.

(d) The *TUOS/DUOS disclosure statement* must also separately identify the *Customer TUOS usage charge*, *Customer TUOS general charge* and *common service charge* components of the *transmission use of system* charges which the *Distribution Customer* has been charged for electricity *supplied* to its *connection point*, where a *Distribution Customer* that makes a *TUOS/DUOS disclosure request* in accordance with clause 6.11(a) requests this information.

(e) Where a *Distribution Customer* requests the inclusion in the *TUOS/DUOS disclosure statement* of the information referred to in clause 6.11(d), the *Distribution Network Service Provider* must separately identify that

component of the charge notified under clause 6.11(c) that relates to the provision of this additional information.

(f) Each *Distribution Network Service Provider* must publish information annually disclosing the *transmission use of system* and *distribution use of system* charges for each of the classes of *Distribution Customers* identified for this purpose by the *Distribution Network Service Provider*, or as required by the *Jurisdictional Regulator*.

Part E – Ring Fencing Arrangements for Distribution Network Service Providers

6.12 Distribution Ring-Fencing Guidelines

6.12.1 Compliance with Distribution Ring-Fencing Guidelines

All *Distribution Network Service Providers*, including providers who are *Market Network Service Providers*, must comply with the *Distribution Ring-Fencing Guidelines* prepared in accordance with clause 6.12.2 as from the time that any *jurisdictional derogation* from this rule 6.12 ceases to apply in respect of the *participating jurisdiction* in which the *Distribution Network Service Provider* is located.

6.12.2 Development of Distribution Ring-Fencing Guidelines

(a) *Distribution Ring-Fencing Guidelines* must be developed by each *Jurisdictional Regulator* in consultation with the *AER* and each other *Jurisdictional Regulator* for the accounting and functional separation of the provision of *prescribed distribution services* by *Distribution Network Service Providers* located in that *Jurisdictional Regulator's participating jurisdiction* from the provision of other services by such *Distribution Network Service Providers* (the "*Distribution Ring-Fencing Guidelines*").

(b) The *Distribution Ring-Fencing Guidelines* may include, but are not limited to:

(1) provisions defining the need for and extent of:

(i) legal separation of the entity through which a *Distribution Network Service Provider* provides *distribution network services* from any other entity through which it conducts business;

(ii) the establishment and maintenance of consolidated and separate accounts for *prescribed distribution services* and other services provided by the *Distribution Network Service Provider*;

(iii) allocation of costs between *prescribed distribution services* and other services provided by the *Distribution Network Service Provider*;

(iv) limitations on the flow of information between the *Distribution Network Service Provider* and any other person; and

(v) limitations on the flow of information where there is the potential for a competitive disadvantage between those parts of the *Distribution Network Service Provider's* business which provide *prescribed distribution services* and parts of the *Distribution Network Service Provider's* business which provide any other services; and

(2) provisions allowing the *AER* or the *Jurisdictional Regulator* to add to or to waive a *Distribution Network Service Provider's* obligations under the *Distribution Ring-Fencing Guidelines*.

(c) In developing the *Distribution Ring-Fencing Guidelines* each *Jurisdictional Regulator* must consider, without limitation, the following matters:

(1) the need, so far as practicable, for consistency in the *Distribution Ring-Fencing Guidelines* between each *participating jurisdiction*;

(2) the need, so far as practicable, for consistency with Federal and State regulation in each *participating jurisdiction* of ring-fencing requirements of other utility businesses;

(3) the need, so far as practicable, for consistency between the *Transmission* and *Distribution Ring-Fencing Guidelines*; and

(4) the need, so far as practicable, for the *Distribution Ring-Fencing Guidelines* in each *participating jurisdiction* to be consistent with the arrangements for the *retailer of last resort* in that jurisdiction.

(d) In developing the *Distribution Ring-Fencing Guidelines*, each *Jurisdictional Regulator* must consult with *participating jurisdictions*, *Registered Participants*, *NEMMCO* and other *interested parties*, and such consultation must be at least as extensive as the consultation prescribed by the *Rules consultation procedures*.

Schedule 6.1 - Estimating Weighted Average Cost of Capital

1. Basis for Estimating the Weighted Average Cost of Capital of a Distribution Network Service Provider

In 1990, the Commonwealth Treasury published a paper entitled "Financial Monitoring of Government Business Enterprises: An Economic Framework (Treasury Economic Paper Number 14)". This paper addressed the issue of setting target economic rates of return and concluded that:

> "Investments by Governments in business enterprises are not the same as social expenditures funded from the budget (requiring higher levels of taxation to pay for that), with no prospect of future payback. The business enterprises produce and sell goods and services which could alternatively be produced and sold by the private sector. Attempts to expand Government business enterprises through the use of target rates of return lower than the opportunity cost of capital in the private sector would result in a misallocation of resources between the public and private sectors.
>
> Improved resource allocation is more likely to be achieved by having Government business enterprises operate under financial conditions parallelling as closely as possible those in the private sector, rather than by giving public enterprises an investment break. Setting target rates of return for Government business enterprises on the basis of the marginal rate of return of private sector investments of similar risk is a central part of this even-handed treatment.
>
> Basing target rates of return for public enterprises on the return from alternative private sector investments should result in sound investment and operational decisions at the Government enterprise level and balanced investment between the public and private sectors."

In January 1995 the National Steering Committee on Performance Monitoring of Government Business Enterprises circulated a draft paper entitled "An Economic Framework for Assessing the Financial Performance of Government Trading Enterprises". The National Steering Committee's draft paper extended the work completed in 1990 by the Commonwealth Treasury, and addressed, among other things, the issue of estimating the cost of capital of government business enterprises.

The following schedule outlines an approach to estimating the cost of capital of a government-owned *Distribution Network Service Provider* in the National Electricity Market. The approach outlined herein is consistent with that outlined in the draft paper produced in January 1995 by the National Steering Committee on Performance Monitoring of Government Business Enterprises. The approach outlined is also consistent with clause 3(1) of the Competition Principles Agreement executed by the Commonwealth, State and Territory Governments on 11 April 1995, which states:

"The objective of competitive neutrality policy is the elimination of resource allocation distortions arising out of the public ownership of entities engaged in significant business activities: Government businesses should not enjoy any net competitive advantage simply as a result of their public sector ownership."

2. Outline of Method for Estimating a Network Service Provider's Weighted Average Cost of Capital

2.1 Definition of Weighted Average Cost of Capital

The *weighted average cost of capital* is a "forward looking" weighted average cost of debt and equity for a commercial business entity. Accordingly, the *Network Service Provider's weighted average cost of capital* will represent the shadow price or social opportunity cost of capital as measured by the rate of return required by investors in a privately-owned company with a risk profile similar to that of the *distribution network* company.

The terms "required economic rate of return", "target rate of return" and "cost of capital" are synonymous and are used interchangeably throughout this schedule.

2.2 Cost of Equity

There is a variety of methods which can be applied to estimate the cost of equity capital of a business enterprise. The Capital Asset Pricing Model (CAPM) remains the most widely accepted tool applied in practice to estimate the cost of equity.

The CAPM is a model based on the proposition that the required rate of return on equity is equal to the risk-free rate of return plus a risk premium.

The theory underlying the CAPM is rigorous. However, in applying the CAPM, there should be a recognition of the limitations of the model. The limitations of CAPM, as with any model, relate mainly to the measurement and estimation of relevant input variables. Consequently, the CAPM should be regarded as providing an indication of the cost of equity, rather than a firm and precise measurement.

2.3 Cost of Debt

The cost of debt is estimated with reference to current prices in domestic and overseas corporate debt markets. Given the long lives of *network* assets, the cost of debt should reflect the cost of a long-dated debt portfolio.

3. Estimation of the Cost of Equity

The *Network Service Provider's* required rate of return on equity is estimated using the Capital Asset Pricing Model (CAPM):

$R_e = R_f + \beta (R_m - R_f)$

where R_e = required rate of return on equity, after company tax

R_f = risk - free rate

$(R_m - R_f)$ = the risk premium above the risk-free rate required for a market-weighted (ie diversified) portfolio of securities

β = a measure of the asset's riskiness relative to the market

The approach to estimating values for each of the inputs to the CAPM is outlined in detail below.

3.1 Risk-free Rate

The risk free rate is normally taken to be the yield to maturity on long term (10 year) Commonwealth bonds, with the equity market risk premium (see section 3.2 below) also measured historically from such a benchmark.

3.2 Equity Market Risk Premium

The equity market risk premium (MRP) can be observed by considering the historical data of yield gaps between returns on equity, R_m and returns on risk-free debt, R_f, namely:

$MRP = R_m - R_f$

3.3 Beta

Beta is a measure of the extent to which the return on a given equity investment moves with the return on the equity market.

Beta factor measurements for all listed Australian companies are publicly available. Where beta data is not available (because the *Network Service Provider* is not a listed company), it is necessary to estimate a beta factor. This can be done by observing the beta factors of listed companies (in Australia and overseas) which have business risk profiles and capital structures similar to those of Australian *Network Service Providers*.

3.4 Capital Structure and Market Risk Premium

The risk premium sought by equity investors will be a function of:

- the underlying market risk (volatility) of the pre-financing cash flows of the investment, and
- the level of financial risk, which is in turn dependent on the capital structure of the entity.

Published data on share market betas and related market risk premia relate to equity returns, and therefore reflect the market risk and the financial risk faced by investors.

To ensure validity of the CAPM calculations, it is necessary to apply assumptions of capital structure and market risk premia which are consistent with one another. In addition, where beta and other data relating to listed companies are being used to impute a cost of equity for a government business enterprise, the capital structures of the GBE and the private sector surrogate(s) should be reasonably comparable. This ensures that the beta imputed for the GBE correctly reflects the financial and market risk of the GBE.

4. Determination of the Cost of Debt

4.1 The Question of the Government Guarantee on Borrowings

The National Steering Committee on Performance Monitoring of GBE's recommends that where the GBE has access to Government-guaranteed borrowings, the guarantor should charge the GBE a fee for provision of the Government guarantee. The guarantee fee would generally be the difference between the cost of Government debt and the cost of debt which would be faced by the enterprise if it was privately owned.

Application of the fee in this manner would increase the GBE's cost of debt to levels which reflect its full opportunity cost. This approach is consistent with the principles outlined in section 1 of this schedule and with clause 3(4)(b)(ii) of the Competition Principles Agreement which states:

"The Parties will impose on the Government business enterprise debt guarantee fees directed towards offsetting the competitive advantages provided by government guarantees".

4.2 Estimating the Cost of Debt

Typically, a *Network Service Provider* will have a portfolio of debt consisting of lines of debt with different maturities, durations and yields. Given the long life of *network* assets this debt portfolio would typically be long-dated. A weighted average cost of debt should be estimated, taking into account the maturity and duration characteristics of the portfolio and the associated current market yields. Market yields applicable to the debt should reflect fully the *Network Service Provider's* credit risk.

5. Determination of the Weighted Average Cost of Capital

5.1 The Relationship Between Capital Structure and Weighted Average Cost of Capital

The National Steering Committee on Performance Monitoring of GBE's draft paper entitled "An Economic Framework for Assessing the Financial Performance of Government Trading Enterprises" states:

> "Gearing should not affect a government trading enterprise's target rate of return, which implies that shareholder value will also be insensitive to varying levels of debt. For practical ranges of capital structure (say less than 80% debt), the required rate of return on total assets for a government trading enterprise should not be affected by changing debt to equity ratios".

As noted in section 3.4, where beta and other data relating to listed companies are being used to impute a cost of equity for a government business enterprise, the capital structures of the GBE and the private sector surrogate(s) should be reasonably comparable. This ensures that the beta imputed for the GBE correctly reflects the financial and market risk of the GBE.

5.2 Taxation and the Impacts of Dividend Imputation

Clause 3(4)(b)(i) of the Competition Principles Agreement states:

> "The Parties will impose on the Government business enterprise full Commonwealth, State and Territory taxes or tax equivalent systems".

Weighted average cost of capital can be defined and expressed in pre-company tax terms or after company tax terms. Both definitions of *weighted average cost of capital* will yield exactly the same results, provided that:

- the definition of cash flows (ie costs and revenue requirements) is consistent with the definition of *weighted average cost of capital* applied; and
- the tax rate used to "gross-up" after tax required return to pre-tax required return is the effective tax rate[1] paid by the company.

Under an imputation tax system, a proportion of the tax paid at the company level is, in effect, personal tax withheld at the company level. Australia has a full imputation tax system, however the proportion of company tax paid which can be claimed as a tax credit against personal tax varies, depending on:

[1] Effective tax rate = Actual tax paid ÷ (revenue - Operating expenses - net interest paid - Depreciation)

- the marginal tax rate of the recipient of the franked dividend; and
- whether the recipient is an Australian tax-payer.

The value of franking credits, will impact on:

- the value of an investment as perceived by various investors; and
- the *weighted average cost of capital* of a tax-paying corporate entity.

In October 1993, researchers at the Melbourne University Graduate School of Management completed initial empirical research into the value of franking credits in Australia. The results of this research indicate that franking credits are, on average, valued by equity investors at approximately 50 cents in the dollar.

As the ultimate owners of government business enterprises, tax-payers would value their equity (and post corporate tax cash flows) on exactly the same basis as they would value an investment in any other corporate tax-paying entity. On this basis, it would be reasonable to assume the average franking credit value (of 50%) in the calculation of the *Network Service Provider's* pre-tax *weighted average cost of capital*.

5.3 Calculation of the Weighted Average Cost of Capital Under an Imputation tax

The formula for calculating pre-tax *weighted average cost of capital* ("WACC") is:

$$WACC = \frac{R_e}{1 - T(1 - \gamma)} * \frac{S}{V} + R_d * \frac{D}{V}$$

where:

R_e = required rate of return on equity, after company tax

R_d = pre-tax weighted average cost of debt

T = effective corporate tax rate

γ = value of franking credits or imputation factor

S = market value of equity

D = market value of debt

V = market value of debt plus equity

5.4 Example Calculation of Pre-tax Weighted Average Cost of Capital

The calculations below are provided for illustrative purposes only, and the input assumptions have no status or purpose other than facilitating a demonstration of the approved method for estimating *weighted average cost of capital*.

Key assumptions:

Effective tax rate	33%
Imputation factor	0.5
Consumer Price Index	3.3%
Equity (geared) β	0.4
Risk free rate	8.2% nominal
Implied real risk free rate	4.75% real

Equity market risk premium	6.6%
Cost of debt margin over risk free rate	1.25%
Weighted average cost of debt	9.45% nominal

Capital structure:

Debt:	55%
Equity:	45%

Cost of equity:

R_e $R_f + \beta (R_m ! R_f)$

$8.2 + (0.4 \times 6.6)$

10.8% nominal after tax

Before tax *weighted average cost of capital*:

$$WACC = \frac{R_e}{1 - T(1 - y)} \times \frac{S}{V} + R_d \times \frac{D}{V}$$

$$= \frac{10.8\%}{(1 - 0.33(1 - 0.5)} \times \frac{45}{100} + 9.45\% \times \frac{55}{100}$$

= 11.0% nominal before tax

Assumed inflation = 3.3%, so 11.0% nominal before tax = 7.5% real before tax

Schedule 6.2 - Maximum Negotiated Use of System Service Price

This schedule 6.2 describes the method by which *Distribution Network Service Providers* are to determine the maximum prices to be paid by *Generators* or *Market Network Service Providers connected* to a *distribution network* for *use of system* where they have negotiated to pay *negotiated use of system charges* under rule 5.5(f)(3). This method calculates the maximum prices which a *Distribution Network Service Provider* can charge a *Generator* to provide a nominated capacity at the *Generator's connection point* at a standard of service comparable with that offered to *Distribution Customers*.

This schedule does not apply to the calculation of any *distribution network user access* charge which a person has agreed to pay the *Distribution Network Service Provider* to guarantee a level and standard of service of *power transfer capability* under rule 5.5(f)(4). Any such charges or compensation are costs or revenue which fall outside the relevant *revenue cap* or *price cap*.

The schedule also does not apply to the prices to be paid for *connection* charges which are otherwise payable under rule 5.5(f)(1).

1. Long Run Marginal Cost

The *negotiated use of system service* price for use of the *distribution network* is to be based on the long run marginal cost of *distribution network augmentation* required to provide *distribution service* for new *Generators* at a *connection point* in a *distribution network*.

The Long Run Marginal Cost, expressed in $ per kW is defined as:

Net present value of cost of new network investments ($) ÷ Net present value of new *generation* capacity (kW)

The *negotiated use of system service* price expressed in $ per kW per year is determined by expressing the long run marginal cost as an annual charge using a discount rate over a 30 year period equal to the *Distribution Network Service Provider's weighted average cost of capital*, determined in accordance with schedule 6.1.

2. New Generation Capacity

New *generation* capacity is assumed to be *connected* at each *connection point* where a *negotiated use of system service* price is required.

For *distribution networks* the new *generation* capacity is the capacity of *generation* actually installed or to be installed at the *connection point*.

3. Cost of New Network Investment

The cost of new network investment is the estimated cost of new investments in the *distribution network* assuming:

(i) *network* development, *loads* and *generation* correspond to the current system plus committed development only;

(ii) new *generation* capacity as defined in section 2 above, is *connected* at the *connection point* being examined, and at no other *connection point*;

(iii) *network loads* in the same *region* as the new *generation* capacity are to be scaled up in proportion to the increase resulting from the new *generation* capacity;

(iv) *network* capacity is to be provided to allow all committed *loads* to be supplied with any one circuit or *transformer* out of service and with any credible combination of *generation dispatch*.

4. Negotiated Use of System Service Price relative to the Reference Node

For *distribution networks,* the *negotiated use of system service* price is further determined in accordance with item 5.5 of schedule 6.3.

Schedule 6.3 - Categories of Distribution System Cost

This schedule 6.3 describes how the *distribution system* costs may be formed from the *aggregate annual revenue requirement* of a *Distribution Network Service Provider* which is determined in accordance with Part B of Chapter 6. It describes the asset categories which may be used, and defines the manner in which the assets may be categorised. It also indicates how total costs could be allocated between *excluded distribution service* categories and the *prescribed distribution service* categories of *connection*, *distribution use of system* and *common service*.

The *aggregate annual revenue requirement* of a *Distribution Network Service Provider* can be separated into four components:

- costs which relate to the provision of assets to provide service to the overall *distribution system* and any non asset related costs which may not be appropriate to allocate to individual parts of the *distribution system* (called *common service*);

- the cost of providing assets which are fully dedicated to the *supply* of a single customer or group of customers *connected* at a single point within the *distribution network* (called *connection assets*);
- the cost of assets which are shared to a greater or lesser extent by all users across the *distribution system* and can be identified as related to a specific part of the *distribution system* (*distribution use of system* assets); and
- the cost of that proportion of assets which relate to the provision of services to *Embedded Generators* by *new distribution network investment* assets allocated to *Embedded Generators* as a result of the application of clause 5.6.2 (called *new distribution network investment* assets).

The *aggregate annual revenue requirement* of the *Distribution Network Service Provider* must exclude costs which relate to the provision of *excluded distribution services* and unrelated business activities including but not limited to costs in respect of *energy* trading and *generation*. It may be that some *connection assets* have been determined as providing *excluded distribution services* for a single customer or group of customers *connected* at a single point within the *distribution network.*

Overhead type costs such as motor vehicles, construction equipment, computers, office equipment, software, operations and management of the business general overheads and other expenses that cannot be identified against *common service*, *connection service* or *distribution use of system service* must be allocated in a fair and reasonable way across all of these services.

1. Common Service Costs

The *common service* cost category includes all the *distribution service* costs which cannot be allocated to users on a locational basis, ie they cover those costs which provide equivalent benefits to all users within the *distribution system* without any differentiation of their location. These costs are usually applied to users on a *postage stamp basis*.

There are two types of costs to be included in the *common service* category:

(i) the cost of *network* assets which provide a *common service*; and

(ii) the cost to the *Distribution Network Service Provider* of providing non asset related services to users.

1.1 Distribution Network Assets Which Provide Common Service

Common service is provided by *distribution network* assets that can include, but are not limited to, the following:

- *power system* communications networks;
- *control systems*;
- control centres;
- dynamic reactive control *plant*;
- static *reactive plant*;
- spare *plant* and equipment including that installed at *substations*;
- fixed assets such as buildings and land that are not associated with *substation* or line easements, eg head office buildings, land for future *substations* etc.; and
- *load* control signalling equipment in *substations* and on customer premises.

1.2 Non Asset Related Common Service Costs

The non asset related *common service* costs can include, but are not limited to, the following:

- *distribution network* switching and operations;
- *distribution network* planning and development.

Again, with these expenses only the *Distribution Network Service Provider's* share of each category should be included into the total *common service cost pool*.

The remaining *distribution network* assets are divided into three categories: *connection assets*, *distribution use of system* assets and *new distribution network investment* assets.

2. Connection Assets

The *connection asset* costs are recovered from the *Distribution Customers* who benefit from them and require no complex analysis to determine the sharing.

Connection assets are those assets (including individual assets within a *substation*) which provide supply to only those *Distribution Customers connected* at the *connection point*. This simple definition avoids the difficulties of assets changing from *connection assets* to becoming part of the *distribution network*.

Consequently *connection assets* would typically include the following:

- service lines plus *meters* for domestic customers;
- service lines, *meters*, dedicated *distribution transformers* and associated switchgear for medium size commercial and industrial *Distribution Customers*;
- *high voltage* lines and *plant* for major commercial and industrial *Distribution Customers*.

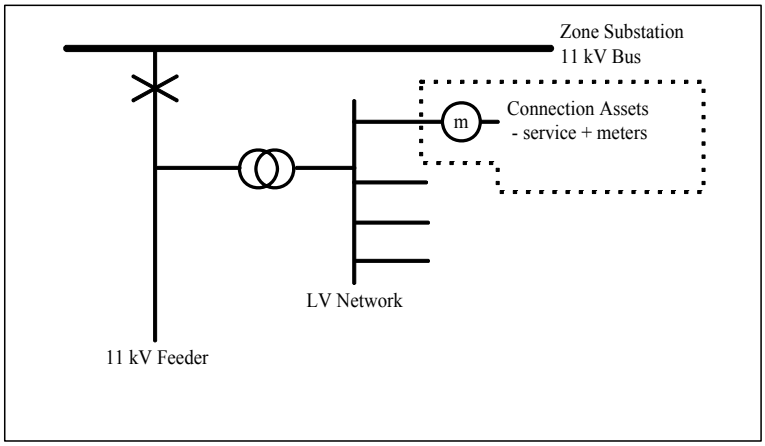
The asset related costs of *connection assets* that:

- have been provided by a *Distribution Customer*;
- have been funded by capital contributions from a *Distribution Customer*; or
- provide customer connection through *excluded distribution service,*

may be excluded from the *aggregate annual revenue requirement* of the *Distribution Network Service Provider* by the *Jurisdictional Regulator.*

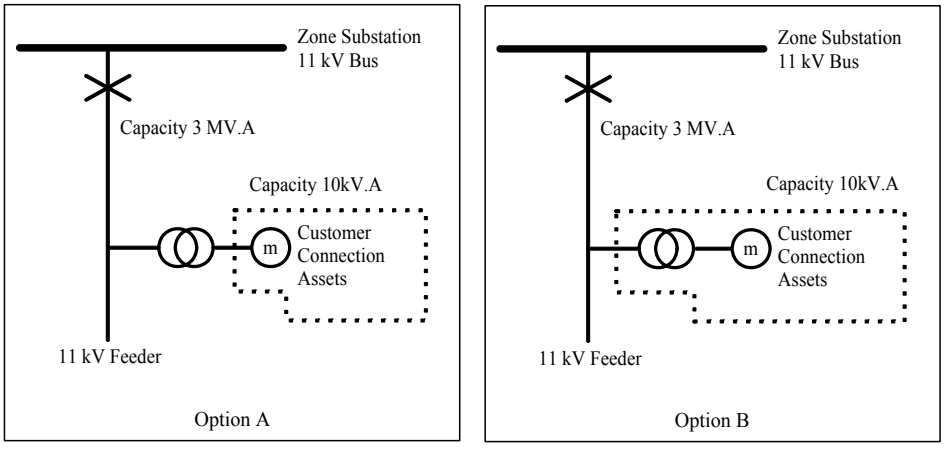
The examples below highlight some of the issues associated with *connection assets* and recommended approaches in each case. The philosophy adopted is to assign as *connection assets* those assets that can be reasonably considered as being fully dedicated to the use of the relevant *Distribution Customer*.

Example 1 - Domestic Customer in Suburban Area



In this case there is virtually no choice, that is, the *connection assets* are the LV service lines plus *meters*, and all upstream *network* (LV mains, *distribution transformers* etc.). The *network coupling point* (boundary of *connection service* and *distribution service*) is the junction of the service mains and the LV mains. The *connection point* is the asset boundary between the service main and the customer's electrical installation.

Example 2 - Domestic Customer in Rural Area (5kV.A) / Single Customer on a spur, dedicated *distribution transformer*

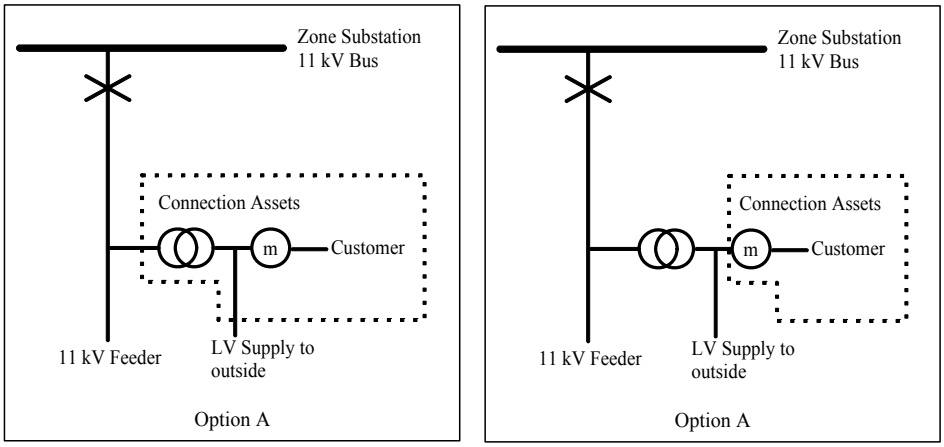


The 11 kV spur line has a large capacity compared to the expected *Distribution Customer maximum demand*. The *connection* charges associated with this asset would be abnormally high for a *Distribution Customer* of this size if this and the *distribution transformer* were included as *connection assets*.

Another important consideration is that any capital contribution policy is not necessarily related to a *connection asset* policy. That is, capital contributions may be sought from the *Distribution Customer* for installation of parts of the *distribution system*. In this case, a contribution may be sought for part or all of the cost of the 11

kV spur line plus the *distribution transformer*. This does not mean that these assets need be considered as *connection assets*. Option A is often utilised as it places the *connection asset* charges for this *Distribution Customer* on an equal basis with all other domestic *Distribution Customers.* Inequities in the cost of *supply* are managed by seeking capital contributions as required.

Example 3 - New Commercial/Industrial Customer 250kV.A *maximum demand* / 300kV.A *transformer*, LV feed to outside area for backup

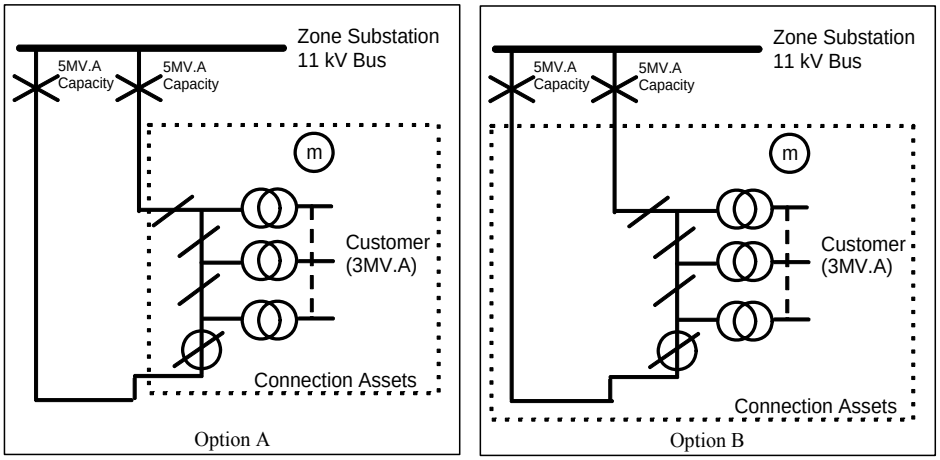


In this case a *transformer* is installed for virtually dedicated use of the commercial and industrial *Distribution Customer*. In option A, the *transformer* (and associated protection), the service and the *metering* are considered as the *connection asset*. The alternative option B has the *connection assets* as only the LV service plus the *metering*, due to the shared use of the *distribution transformer*. In this case an important issue arises as to the extent of shared usage. In this case the outside LV *supply* is for backup only and the commercial and industrial *Distribution Customer* has a demand of above 80% of *transformer* capacity.

Option A is often used since the asset is essentially dedicated to the use of the *Distribution Customer* and the backup provided by the LV interconnection works is to the mutual benefit of the *Distribution Customer* and/or the general LV network. If the LV supply fed other *Distribution Customers* on the *distribution network*, then option B may be used since the *transformer* is a genuine shared asset.

Under option A, the *network coupling point* is the tee point where the 11 kV spur joins the *distribution network*. The *connection point* is past the LV *metering point*, on the asset boundary.

Example 4 - C & I Customer, 3 MV.A maximum demand, requires 100% backup capability on the 11 kV feeder plus three 1500 kV.A *transformers* for added security

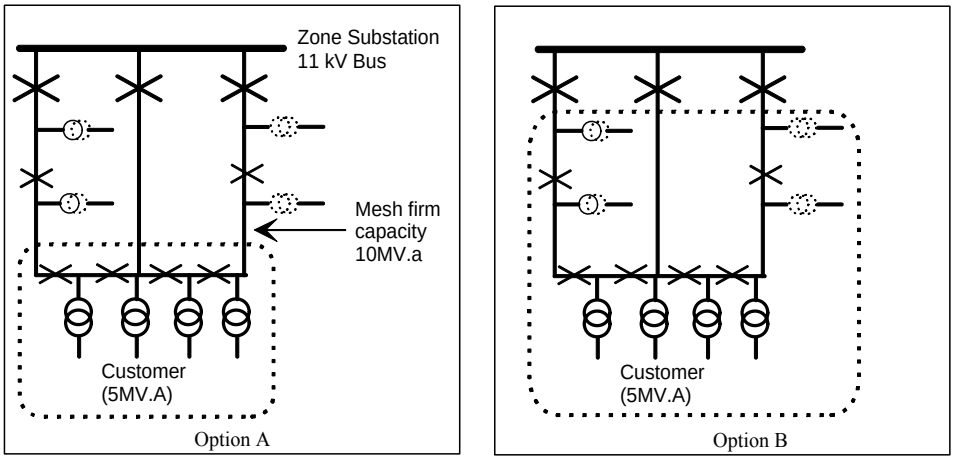


In this example, option A reflects the shallow policy with *transformers* and associated switchgear as *connection assets* and option B reflects the requirement of the *Distribution Customer* to have 100% feeder backup capability. Selecting option B may result in the feeder asset being poorly utilised which is not appropriate. If a deep *connection asset* policy was chosen, then several *Distribution Customers* in the feeder ring could share the total *connection assets*. This may work but would be difficult to administer when demands changed or when *Distribution Customers* were added to or subtracted from the ring.

Option A is simpler and addresses the issue of the *Distribution Customer* requiring three 1500 kV.A *transformers*. These *connection assets* can be provided on an agreed basis between the *Distribution Network Service Provider* and the *Distribution Customer* and provided the *Distribution Customer* pays an agreed return on those assets there is no problem. The *Distribution Customer* is paying the full cost for the improved security of *supply* from the extra *transformer*. The issue of backup feeder capacity for the *Distribution Customer* could be resolved by a capital contribution made by the *Distribution Customer* to the *Distribution Network Service Provider* for retaining spare capacity in the second feeder and/or constructing it initially.

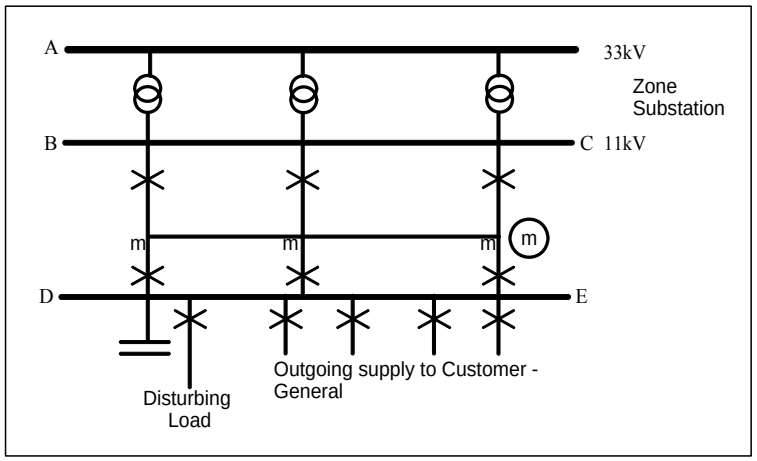
Under option A, the *network coupling point* is the *high voltage* switchgear. The *connection point* is past the LV *metering point*, on the asset boundary.

Example 5 - CBD Customer, 5MV.A



This is very similar to example 4 in that option A is the shallow policy including only local *Distribution Customer* equipment and option B includes the total mesh. Again option A is favoured to avoid the complication associated with determining charging proportions for option B, particularly with *Distribution Customers* being added or subtracted. The *Distribution Network Service Provider* may choose to retain ownership of the circuit breakers to ensure operational integrity of the mesh but the whole *substation* could still be classified as a *connection asset*.

Example 6 - Major Industrial Customer, 10+ MV.A



In this case part of the *Distribution Customer load* is supplied from bus C at the zone *substation* and the remainder (a disturbing *load*) is supplied from a dedicated 33/11 kV *transformer* to reduce the impact of the disturbing *load*. Other *Distribution Customers* share the use of bus C with the *Distribution Customer*. Several options exist for treatment of this situation as follows:

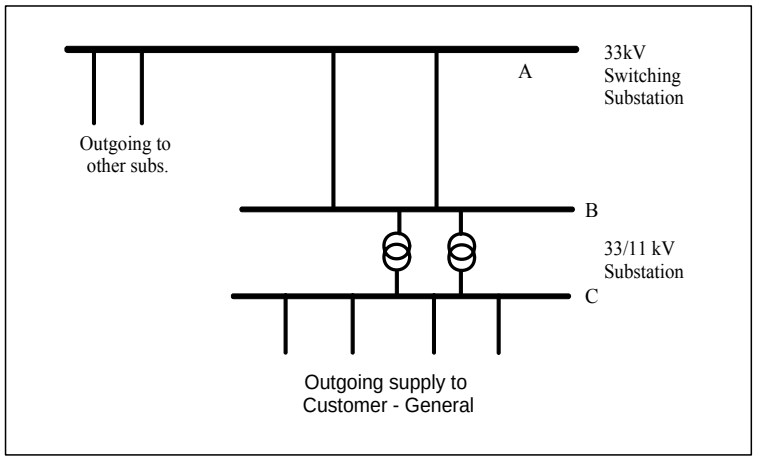
(1) Treat the *Distribution Customer* as having a *network coupling point* at 11 kV at busses B and C. The 11 kV feeders from B to D and C to E are treated as *connection assets* and the *Distribution Customer* is charged for the *distribution service* (upstream shared *network*) at an 11 kV rate. The *connection point* is the asset boundary at busses D and E.

(2) Treat the *load* supplied from bus D and the *load* supplied from bus E as separate situations. That is, for the *load* on bus D the *connection assets* could be treated as all *plant* between A and D with A as the *network coupling point*. This part of the *load* would be given a *distribution service* price at a 33 kV rate. The *load* supplied from E could be treated as per option 1 with a *network coupling point* at C, *connection assets* between C and E and an 11 kV *distribution service* rate.

(3) The final option would be to adopt a shallow *connection asset* approach with the *network coupling points* at busses D and E. The *distribution service* prices could then be based on a standard 11 kV rate or if zonal pricing was adopted, a separate *pricing zone* could be adopted for the *supply* to bus D. The separate *pricing zone* could be used to reflect differences in cost of *supply* to the bus D *load*. This zonal pricing approach may be appropriate if for example several large disturbing *loads* collected at bus D.

Another point of note in this example is the treatment of the *shunt capacitor* at bus D. The poor *power factor load* at D necessitates the use of the *capacitor bank* to minimise losses and investment in *plant* between A and D. The capacitor should be treated as a *connection asset* in this case since it is required specifically for one *Distribution Customer* as opposed to most *substation* capacitors which are for general *network reactive power* requirements and are treated as *common service* assets.

Example 7 - Major Industrial Customer, 20+ MV.A



In this case the 33 kV feeders from A to B and the 33/11 kV *substation* are fully utilised by the *Distribution Customer load*. The choices for location of the *network coupling point* are A, B and C. A is favoured in this case since the feeders and *substation* are fully utilised and dedicated for the use of the *Distribution Customer*. If either the feeders or the 33/11 kV *substation* could be shared in future then this would be a strong argument for shifting the *network coupling point* closer to the *Distribution Customer*. In this case with the *network coupling point* at A the *Distribution Customer* would receive a *distribution service* at the 33 kV rate.

3. Distribution Use of System Service (other than new distribution network investment allocated to Embedded Generators)

The remaining *distribution network* assets are included as *distribution use of system* assets, other than that proportion of *new distribution network investment* assets from which *Embedded Generators* are determined to benefit in accordance with clause 5.6.2 (in respect of which *Embedded Generators* pay charges determined in accordance with schedule 6.5). This category includes all elements of the *distribution network* which provides *use of system* service and forms the majority of the costs. The *distribution use of system* assets would typically include:

(i) *distribution lines* including all poles and associated hardware;

(ii) terminating switchgear (circuit breakers and isolators) including associated protection and controls;

(iii) *transformers* between *distribution voltage* levels;

(iv) switchgear for the above *transformers*;

(v) underground cable systems including conduits and trenching.

The costs associated with *distribution use of system* assets are to be allocated on a usage basis and pricing structures include *voltage* levels, *Distribution Customer* classes and zones as required.

4. Distribution Network (new distribution network investment allocated to Embedded Generators)

These assets are that proportion of *new distribution network investment* assets in respect of which *Embedded Generators* are determined to benefit in accordance with clause 5.6.2. The allocation of costs for this proportion of *new distribution network investment* assets is determined in accordance with schedule 6.5.

5. Other considerations

5.1 Reactive Plant

Reactive plant is provided for *distribution system* reasons and is to be treated as a *distribution network* asset.

Reactive plant installed at the *distribution voltage* level of *distribution substations* should be charged for as *distribution network* assets through application of a *common service* price unless it is clearly evident that such *plant* has been provided to meet the local reactive requirements of one or more *Distribution Customers connected* at that *substation* in which case it may be charged as a *connection asset*.

5.2 Substation Establishment and Buildings

The majority of *substation* establishment costs are included in the asset valuation for major *plant* items. For example the cost of a circuit breaker includes associated *busbars* and isolators, secondary *plant* including *remote control* and *secondary equipment*, civil works, design installation and commissioning and project administration.

5.3 Meters

Metering installations for *Distribution Customers* will be treated as *connection assets* in accordance with the provisions outlined in Chapter 7.

5.4 Land

Land at *substations* which supply specific *Distribution Customers* or *connect Embedded Generators* will be treated as part of the *connection assets*. This will be site-specific; that is, the specific value of the land at each *substation* will be included with the value of the *substation* for charging purposes.

5.5 Embedded Generation

Embedded Generators can in some circumstances provide significant benefits in certain parts of a *distribution network*. An example will highlight some of the issues.

A remote *load centre* is currently supplied from two existing 33 kV feeders. The *maximum demand* of the *load* is 20 MW and it is increasing steadily. Within 5 years a third 33 kV circuit will be required as will *substation* reinforcement works in later years. Through normal supply side planning this would require a $5M capital injection in 2005 and a further $5M in 2010. The options to be considered in this case include:

- *supply* side reinforcement;
- a demand side management project incorporating both curtailable and *interruptible loads*;
- an *embedded generating unit*.

In this case the injection of local *generation* at the *load centre* would provide substantial loss reduction, long deferrals of the capital program and possible *reliability* improvements. An injection of 10 MW reliable *generation* would be appropriate initially. The key considerations from a *distribution network* pricing perspective are as follows:

- **Reliability** - for the *generation* to be an acceptable option the *reliability* of the *embedded generating unit* would need to be assured. This could be achieved through suitable contract arrangements, a joint venture between the *Distribution Network Service Provider* and the *Embedded Generator* or combination of the *generation* with some existing *load* so that the *load* could be interrupted if the *generation* failed. The *generation* is most critical during *network* contingencies and *reliability* considerations should include recognition of the *embedded generating unit* configuration (e.g. multiple sets) and possible common failure modes.
- **Network prices** – *network* prices would be broken into the three components as shown below.
  - (1) *Common service* charges would generally be nil as under the *Rules* all *common service* costs are allocated to *Distribution Customers*.
  - (2) *Connection service* charges would be determined based on the specific *connection asset* requirements.

(3) *Distribution use of system* charges are negotiable between the *Distribution Network Service Provider* and the *Embedded Generator*. The charges (or payment) need to reflect the benefit available to the *Distribution Network Service Provider* from the *embedded generating unit*. This will depend on:

(i) the sizing of the *generation* relative to the capacity and capability of the local *network* to which the *embedded generating unit* is being *connected*;

(ii) the reliability of the *generation* and hence the ability to defer *augmentation* works while providing an overall acceptable level of *reliability;*

(iii) the degree to which any benefits to the *distribution network* which might accrue from the *generation* are shared between the *Distribution Network Service Provider*, the *Embedded Generator* and other *Distribution Network Users.*

In this case, if the *generation* was very *reliable* and the capital program was deferred by several years then a payment to the *Embedded Generator* for some of the deferral value could result. The long run marginal cost (benefit) of the shared *distribution network* reinforcement represents the upper limit of payment to the *Embedded Generator*.

As a general principle, commercial arrangements should be made with *Embedded Generators* and this may include a competitive tendering process to ensure equal opportunity for other *Embedded Generators*. For example, a statement of opportunity for the area concerned could be issued with an invitation to bid for *generation* capacity in the area. This would facilitate free market forces providing the optimum outcome for the *distribution network* business and existing *Distribution Customers*.

6. Excluded Distribution Services

Services and activities that the *Jurisdictional Regulator* may define as *excluded distribution services* may include, but are not limited to, the following:

(a) the transportation of electricity not consumed in the *Distribution Network Service Provider's* system (i.e. on behalf of another *Distribution Network Service Provider*);

(b) new *connection* and augmentation of existing *connection* to the *distribution network*;

(c) services (including metering, electric lines or electrical *plant*) for the specific benefit of any *Distribution Network User* requested by that *Distribution Network User* and not made available by the *Distribution Network Service Provider* as a normal part of *prescribed distribution service* to all customers. These services can include:

(1) charges for moving mains, services or *meters* forming part of the *distribution network* to accommodate extension, redesign or redevelopment of any premises;

(2) the provision of electric *plant* (i.e. mobile generators) for the specific purpose of enabling the provision of top-up or standby supplies of electricity; and

(3) the provision of prepayment *meters* to customers, but only to the extent that the charge for the provision of those *meters* exceeds the charge for the provision of standard *meters* for such customers;

(d) the relocation of electric lines and *plant* and the carrying out of associated works pursuant to any statutory obligations imposed on the *Distribution Network Service Provider*;

(e) charges for temporary supplies;

(f) capital contributions or other forms of prudential requirements for new works and augmentations;

(g) charges for reserve and duplicate *supply*;

(h) charges for supplies with higher quality and reliability standards than required by general practice;

(i) charges for *connection points* requiring more than the least overall cost, technically acceptable assets;

(j) charges for *distribution services* and system augmentation required to receive *energy* from an *Embedded Generator*;

(k) charges for *generator access* for *Embedded Generators* under rule 5.5;

(l) charges for non-compliance with a *connection agreement*, including but not limited to *reactive power*, *power factor*, harmonics, *voltage* dips and test supply requirements;

(m) charges for multiple *connection points* to a single property not recovered through *prescribed distribution service* prices;

(n) charges for public lighting;

(o) charges for provision of *metering* to a standard in excess of that required for the billing of *prescribed distribution services*;

(p) charges for provision of *TUOS/DUOS disclosure statements* to *Distribution Customers* under rule 6.11.

Schedule 6.4 - Principles for Network Pricing

1. Cost reflective pricing

Distribution network prices should in principle be cost reflective. This is to facilitate the competitive *market*, by providing equitable access to the *distribution network* and ensuring that appropriate investment in the *distribution network* takes place in the longer term.

It is intended that all *Distribution Network Users* should be charged on a consistent basis, in accordance with their use of *distribution network* assets and taking into account the impact of *distribution network constraints*.

2. Non-discriminatory pricing of distribution network services

Distribution network pricing should provide non discriminatory access to the *distribution network*. This implies a common approach for all *Market Participants*, no matter where they are located or whether they participate or not in competitive *market* trading. Actual prices at different locations will differ because of the *distribution network* configuration and patterns of use. In this way, prices will equitably recover the costs of the *distribution network*.

Distribution network pricing should be based on the location in the *distribution network* and the assets employed in providing *distribution services*. The price for each *Market Participant* should be influenced by the location in the *distribution network* and the assets employed in providing *distribution services.*

3. Compatibility with market trading arrangements

The *distribution network* pricing proposals should be compatible with the electricity *market* design proposals to encourage and facilitate the development of these arrangements.

The pricing approach proposed should be independent of any contract arrangements that *Market Participants* may enter into for *energy* trading. In return for the payment of a *connection* and *use of system* fee to the local *Distribution Network Service Provider*, the *Market Participant* is entitled to enter into *energy* trading arrangements with any other *Market Participant*.

4. Distribution network prices for economically efficient investment

Distribution network prices should provide signals to optimise the cost of *distribution network* development in order to minimise the cost of development and operation of the *market*.

It should be recognised that the above objectives of non-discriminatory pricing (leading to the equitable recovery of existing costs) and economically efficient pricing for new investment in the *distribution network* are to some extent incompatible. The challenge is to devise a method of *distribution network* pricing which meets both.

5. Network interconnectors managed to reduce the barriers to a national market

[Deleted]

6. Published and transparent prices

Prices for *distribution services* should be transparent and published in order to provide pricing signals to *Market Participants*. This is consistent with the principle adopted by COAG.

Schedule 6.5 – Charges to Generators for New Distribution Network Investment

1. Charges to Generators for New Distribution Network Investment

Notwithstanding any other provisions of the *Rules*, charges to *Generators* for *new distribution network investment* will not apply until any changes to the *Rules* which provide for such charges are made.

2. Determination of relative benefits for new distribution network investment

Until the commencement of operation of any changes to the *Rules* referred to in paragraph 1 above, in relation to *new distribution network investment* proposed as part of the *network* planning process under clause 5.6.2, the percentage share of benefits resulting from the establishment and use of the *new distribution network investment* is deemed to be zero for *Generators* and 100% for *Distribution Customers connected* to the *distribution network*. All the *Distribution Network Service Provider's* capital costs of establishing and operating a *new large distribution network asset* or a *new small distribution network asset* must be allocated to *Distribution Customers* for the purposes of paragraph 3 of this schedule 6.5.

3. Recovery of costs for new distribution network investment

Where a *Jurisdictional Regulator* has, as part of its economic regulation of a *Distribution Network Service Provider* under clause 6.2.5, allocated an amount to be recovered by the *Distribution Network Service Provider* for *new distribution network investment*, the *Distribution Network Service Provider* must recover that entire amount from *Distribution Customers* by charging the amount allocated to *Distribution Customers* through *distribution use of system* charges.