



Final

**Electricity transmission network service
providers**

Pricing methodology guidelines

October 2007

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Glossary

Shortened forms

<i>AARR</i>	Aggregate Annual Revenue Requirement
<i>AER</i>	Australian Energy Regulator
<i>ASRR</i>	Annual Service Revenue Requirement
<i>CRNP</i>	cost reflective network pricing
<i>TNSP</i>	transmission network service provider
<i>TUOS</i>	transmission use of system

Terms

The AER has adopted the following definitions for the purposes of the *guidelines* only:

Appointing provider has the meaning ascribed to it in clause 6A.29.1(a) of the *National Electricity Rules*.

Contract agreed maximum demand means the agreed maximum demand negotiated between a *TNSP* and a *transmission customer*.

Current metered energy offtake means metered *energy* measured at a *connection point* in the current *billing period*.

Current metered maximum demand offtake means metered maximum demand measured at a *connection point* in the current *billing period*.

Directly attributable in relation to *transmission* assets refers to assets that are used or required to provide the relevant pricing *category of prescribed transmission service*.

Guidelines means the *pricing methodology guidelines*.

Historical metered energy offtake means metered *energy* measured at a *connection point* in the corresponding *billing period* two years earlier.

Historical metered maximum demand offtake means metered maximum demand measured at a *connection point* in the corresponding *billing period* two years earlier.

National Electricity Rules means the rules as defined in the *National Electricity Law*.

1. Nature and Authority

1.1 Introduction

These *guidelines* specify or clarify a number of aspects in relation to the preparation of a *Transmission Network Service Provider's (TNSP)* proposed *pricing methodology* to be submitted to the *Australian Energy Regulator (AER)*.

1.2 Authority

Clause 6A.25.1(a) of the *National Electricity Rules* requires the *AER* to develop, in accordance with the *transmission consultation procedures, guidelines* relating to the preparation of a proposed *pricing methodology* by a *TNSP*.

1.3 Role of these guidelines

These *guidelines* specify or clarify:

- (a) the information that is to accompany a proposed *pricing methodology*;
- (b) permitted pricing structures for the recovery of the locational component of providing *prescribed TUOS services*;
- (c) permitted postage stamp pricing structures for *prescribed common transmission services* and the recovery of the adjusted non-locational component of providing *prescribed TUOS services*;
- (d) the types of *transmission system* assets that are *directly attributable* to each *category of prescribed transmission services*; and
- (e) those parts of a proposed *pricing methodology*, or the information accompanying it that will not be publicly disclosed without the consent of the *TNSP*.

1.4 Relationship between these guidelines and the National Electricity Rules

- (a) Each *TNSP* must develop a proposed *pricing methodology* for submission to the *AER* in accordance with the requirements of these *guidelines* and the *National Electricity Rules*.
- (b) The *pricing methodology* approved by the *AER* must be used by the relevant *TNSP*, in conjunction with the *National Electricity Rules*, for the purpose of determining *transmission* prices in each *regulatory year* of a *regulatory control period*.
- (c) Clause 6A.17.1 of the *National Electricity Rules* provides for information to be provided by the *TNSP* to the *AER* which the *AER* may use to monitor,

report on and enforce compliance with a *transmission determination*, including a *TNSP's pricing methodology*. A failure by a *TNSP* to comply with its *pricing methodology* may constitute a breach of clause 6A.24.1(d) of the *National Electricity Rules*.

1.5 Confidentiality

The *AER's* obligations regarding confidentiality and the disclosure of information provided to it by a *TNSP* are governed by the *Trade Practices Act 1974*, the *National Electricity Law* and the *National Electricity Rules*.

1.6 Definitions and interpretation

- (a) In these *guidelines* the words and phrases presented in italics have the meaning given to them in:
 - (1) the glossary; or
 - (2) if not defined in the glossary, the *National Electricity Rules*.
- (b) Explanations in these *guidelines* about why certain information is required are provided for guidance only.

1.7 Processes for revision

The *AER* may amend or replace the *guidelines* from time to time in accordance with clause 6A.25.1(b)(2) of the *National Electricity Rules*.

1.8 Version history and effective date

A version number and an effective date of issue will identify every version of these *guidelines*.

2. Pricing methodology guidelines

2.1 Information requirements

A *TNSP*'s proposed *pricing methodology* must contain the following information:

- (a) Whether the *TNSP* is the sole provider of *prescribed transmission services* within its *region* or whether there are multiple *TNSPs* providing *prescribed transmission services*.
- (b) If there are multiple *TNSPs* providing *prescribed transmission services* within its *region* the *TNSP* should detail whether it:
 - (1) has been appointed as the *Co-ordinating Network Service Provider* for a *region* under clause 6A.29.1(a) of the *National Electricity Rules* and is therefore responsible for the allocation of the *AARR* within the *region*; or
 - (2) is an *appointing provider* for the purposes of clause 6A.29.1(a) of the *National Electricity Rules* and if so, it should nominate the *Co-ordinating Network Service Provider* and identify the parts of its proposed *pricing methodology* which will be dealt with by the *Co-ordinating Network Service Provider*.
- (c) Details of how the *AARR* has been derived including an explanation of how the operating and maintenance costs subtracted from the *maximum allowed revenue* in accordance with clause 6A.22.1 of the *National Electricity Rules* have been determined and how they will be recovered via *transmission prices*.
- (d) Details of how the *AARR* will be allocated to derive the *ASRR* for each *category of prescribed transmission service*, including:
 - (1) how the *attributable cost shares* for each *category of prescribed transmission service* will be calculated in accordance with clause 6A.22.3 of the *National Electricity Rules* including:
 - A. an explanation of how the costs referred to in clause 6A.22.3(a) of the *National Electricity Rules* will be calculated; and
 - B. hypothetical worked examples for each *category of prescribed transmission service*;
 - (2) how the priority ordering approach outlined in clause 6A.23.2(d) of the *National Electricity Rules* will be applied, including a hypothetical worked example; and
 - (3) how asset costs which may be attributable to both *prescribed entry services* and *prescribed exit services* will be allocated.
- (e) Details of how the *ASRR* for each *category of prescribed transmission service* will be allocated to each *transmission connection point*, including:

- (1) how the *attributable connection point cost share* for both *prescribed entry services* and *prescribed exit services* will be calculated in accordance with clause 6A.22.4 of the *National Electricity Rules*, including:
 - A. an explanation of how the costs referred to in clause 6A.22.4(a) of the *National Electricity Rules* will be calculated;
 - B. hypothetical worked examples; and
 - C. how asset costs allocated to *prescribed entry services* and *prescribed exit services* at a *connection point*, which may be attributable to multiple *transmission network users*, will be allocated;
 - (2) how the locational and pre-adjusted non-locational shares of *prescribed TUOS services* will be allocated in accordance with 6A.23.3(d) of the *National Electricity Rules*;
 - (3) how the locational and adjusted non-locational components of *prescribed TUOS services* will be determined and allocated to *connection points* in accordance with clause 6A.23.3(c) of the *National Electricity Rules*.
- (f) In relation to price structures:
- (1) confirm that separate prices will be developed for each *category of prescribed transmission service*;
 - (2) confirm that the prices for *prescribed entry services* and *prescribed exit services* will be a fixed annual amount, and describe how these amounts will be calculated;
 - (3) outline how the pricing structure for the recovery of the locational component of *prescribed TUOS services* complies with these *guidelines* and clauses 6A.23.4(e)-(i) of the *National Electricity Rules* including outlining:
 - A. the time period for the allocation of *generation to load* as prescribed in clause S6A.3.2(3) of the *National Electricity Rules*;
 - B. how prices will be structured to comply with the *National Electricity Rules* and these *guidelines*; and
 - C. the process for deriving the locational charge for each *billing period* and details of any adjustment mechanism applied to a measure of forecast demand once actual demand is known;
 - (4) outline how the postage stamp pricing structure for the recovery of the adjusted non locational component of *prescribed TUOS services* complies with these *guidelines* and clause 6A.23.4(j) of the *National Electricity Rules*; and

- (5) outline how the postage stamp pricing structure for the recovery of *prescribed common transmission services* complies with these *guidelines* and clause 6A.23.4(d) of the *National Electricity Rules*.
- (g) Details of how the *TNSP* intends to set the *prescribed TUOS service* locational price at new *connection points* or at *connection points* where the load has changed significantly after *prescribed TUOS service* locational prices have been determined and published by the *TNSP*.
- (h) If a *TNSP* expects to calculate a postage stamped charge in accordance with either section 2.3(c)(4)(C) or 2.3(d)(3)(C) of these *guidelines*, it must explain the likely circumstances surrounding the use of *current energy offtake* or *current maximum demand offtake* in its proposed *pricing methodology*.
- (i) A statement of how the *pricing methodology* gives effect to and is consistent with, the *pricing principles for prescribed transmission services* including an explanation of how any alternative pricing structure which the *TNSP* wishes to apply meets the requirements of clause 6A.23.4(a)-(j) of the *National Electricity Rules*.
- (j) Details of any proposed transitional arrangements the *TNSP* considers necessary as a result of the implementation of its *pricing methodology*.
- (k) Information relating to any prudent discounts for *prescribed transmission services* previously submitted to the *AER* or expected to be submitted to the *AER* within the next *regulatory control period* and how those discounts are proposed to be recovered from *Transmission Network Users* in accordance with rule 6A.26 of the *National Electricity Rules*.
- (l) Details of billing arrangements with *Transmission Network Users* and transfers between *TNSPs* conducted in accordance with rule 6A.27 of the *National Electricity Rules*.
- (m) Details of the nature of *prudential requirements* as outlined in rule 6A.28 of the *National Electricity Rules* and how any capital contributions will be taken into account in determining a *Transmission Network Users'* prices for *prescribed transmission services*.
- (n) If a *TNSP* has, in accordance with section 2.5 of these *guidelines*, provided the *AER* with a confidential version of its proposed *pricing methodology*, the non confidential version of the proposed *pricing methodology* must outline the area or areas where the *TNSP* is making a claim for confidentiality and why.
- (o) Details of any derogation in accordance with chapter 9 of the *National Electricity Rules*.
- (p) Details of any transitional arrangements which apply in accordance with chapter 11 of the *National Electricity Rules*.
- (q) The period over which the proposed *pricing methodology* will apply.

- (r) A description of any differences between the *pricing methodology* applied during the current *regulatory control period* and that proposed for the next *regulatory control period*.
- (s) Details of how the *TNSP* intends to monitor, and develop records of its compliance with its approved *pricing methodology*, the *pricing principles for prescribed transmission services* and more broadly part J of the *National Electricity Rules*.

2.2 Permitted (locational) pricing structures

- (a) Prices for the recovery of the locational component of *prescribed TUOS services* must be based on demand at times of greatest utilisation of the *transmission network* and for which network investment is most likely to be contemplated in accordance with clause 6A.23.4(e) of the *National Electricity Rules*.
- (b) The *CRNP* methodology and modified *CRNP* methodology outlined in S6A.3 of the *National Electricity Rules* provides guidance on the process for cost allocation for the locational component of *prescribed TUOS services* and results in a lump sum dollar amount to be recovered at each *transmission connection point*.
- (c) The following measures of demand may be applied to the lump sum dollar amount referred to in section 2.2(b) of these *guidelines* to derive the locational price at each *transmission connection point*:
 - (1) The current *contract agreed maximum demand* (prevailing at the time *transmission* prices are published) as negotiated in a *transmission customer's* connection agreement or the *transmission customer's* maximum demand in the previous 12 months if the *transmission customer* has exceeded its current *contract agreed maximum demand*, expressed as \$/MW/day; or
 - (2) The average of the *transmission customer's* half-hourly maximum demand recorded at a *connection point* on the 10 weekdays when system demand was highest between the hours of 11:00 and 19:00 in the local time zone during the previous 12 months, expressed as \$/MW/day.
- (d) A *TNSP* (or *Co-ordinating Network Service Provider*) may propose alternative pricing structures for the recovery of the locational component of *prescribed TUOS services* which it considers give effect to, and are consistent with the *pricing principles for prescribed transmission services* in the *National Electricity Rules*.
- (e) If a *TNSP* (or *Co-ordinating Network Service Provider*) proposes an alternative pricing structure for the recovery of the locational component of *prescribed TUOS services* it must clearly demonstrate to the *AER* that the alternative pricing structure:

- (1) gives effect to, and is consistent with the *pricing principles for prescribed transmission services* in the *National Electricity Rules*;
 - (2) improves on the permitted pricing structures outlined in section 2.2(c) of these *guidelines*; and
 - (3) contributes to the NEM objective.
- (f) If historical data is unavailable for a *connection point* for use in either the allocation of costs to a *connection point* using the *CRNP* or modified *CRNP* methodology outlined in S6A.3 or the calculation of locational prices outlined in section 2.2(c) of these *guidelines*, an estimate of demand must be used instead.
- (g) The *contract agreed maximum demand* must only be used for the calculation of the locational component of *prescribed TUOS services* pricing structure if the *transmission customer's* connection agreement or other enforceable instrument governing the terms of connection of the *transmission customer*:
- (1) nominates a fixed maximum demand for the *connection point*; and
 - (2) specifies penalties for exceeding the *contract agreed maximum demand*.
- (h) The locational TUOS price calculated in accordance with these *guidelines* must be applied to a measure of actual, forecast or contract demand to derive the locational charge.

2.3 Permitted (postage stamp) pricing structures

- (a) Prices for *prescribed common transmission services* and the recovery of the adjusted non-locational component of *prescribed TUOS services* are to be set on a *postage stamp basis* in accordance with clause 6A.23.4(d) and clause 6A.23.4(j) of the *National Electricity Rules* respectively.
- (b) Permissible postage stamp pricing structures for either the non-locational component of *prescribed TUOS services* or *prescribed common transmission services* must be based on any one of the following:
- (1) either *contract agreed maximum demand* or *historical energy*;
 - (2) *maximum demand*; or
 - (3) an alternative pricing structure proposed by the TNSP.
- (c) If a postage stamped structure is based on either *contract agreed maximum demand* or *historical energy* it must be calculated as follows:
- (1) Each *financial year* a *TNSP* (or *Co-ordinating Network Service Provider*) must determine the following two prices:

- A. an *energy based price* that is a price per unit of historical metered energy or current metered energy at a *connection point*; and
 - B. a *contract agreed maximum demand price* that is a price per unit of *contract agreed maximum demand* at a *connection point*.
- (2) Either the *energy based price* or the *contract agreed maximum demand price* applies at a *connection point* except for those *connection points* where a *transmission customer* has negotiated reduced charges for *prescribed common transmission services* or the adjusted non-locational component of *prescribed TUOS services* in accordance with clause 6A.26.1 of the *National Electricity Rules*.
- (3) The *energy based price* and the *contract agreed maximum demand price* referred to in section 2.3(c)(1) of these *guidelines* must be determined so that:
- A. a *transmission customer* with a load factor in relation to its *connection point* equal to the median load factor for *connection points* with *transmission customers* connected to the *transmission network* in the *region* or *regions* is indifferent between the use of the *energy based price* and the *contract agreed maximum demand price*; and
 - B. the total amount to be recovered by *prescribed common transmission services* or the adjusted non-locational component of *prescribed TUOS services* does not exceed the ASRR for each *category of prescribed transmission service*.
- (4) The charge for either the *prescribed common transmission service* or the adjusted non locational component of *prescribed TUOS services* using the *energy based price* for a *billing period* in a *financial year* for each *connection point* must be calculated by:
- A. multiplying the *energy based price* by the metered energy offtake at that *connection point* in the corresponding *billing period* two years earlier (i.e. *historical metered energy offtake*); or
 - B. multiplying the *energy based price* by the metered energy offtake at that *connection point* in the same *billing period* (*current metered energy offtake*) if the *historical metered energy offtake* is not available; or
 - C. multiplying the *energy based price* by the *current metered energy offtake* if the *historical metered energy offtake* is significantly different to the *current metered energy offtake*.
- (5) The charge calculated for *prescribed common transmission services* or the adjusted non-locational component of *prescribed TUOS services* using the *contract agreed maximum demand price* for a *billing period* in a *financial year* for each *connection point* must be calculated by

multiplying the *contract agreed maximum demand* price by the maximum demand for the *connection point* in that *financial year* and then dividing this amount by the number of *billing periods* in the *financial year*.

- (6) The *energy based price* or the *contract agreed maximum demand* price that applies for *prescribed common transmission services* or the adjusted non-locational component of *prescribed TUOS services* must be the one which results in the lower estimated charge for that *prescribed transmission service*.
 - (7) A *contract agreed maximum demand* price must only be used for the calculation of the *prescribed common transmission services* charge or the adjusted non-locational component of *prescribed TUOS services* charge if the *transmission customer's* connection agreement or other enforceable instrument governing the terms of connection of the *transmission customer*:
 - A. nominates a *contract agreed maximum demand* for the *connection point*; and
 - B. specifies penalties for exceeding the *contract agreed maximum demand*.
- (d) If a postage stamped pricing structure is based on *maximum demand* it must be calculated as follows:
- (1) Each *financial year* a *TNSP* (or *Co-ordinating Network Service Provider*) must determine the *maximum demand* based price that is a price per unit of historical metered *maximum demand* or actual metered *maximum demand* measured at a *connection point*;
 - (2) The *maximum demand* based price applies at a *connection point* except for those *connection points* where a *transmission customer* has negotiated reduced charges for *prescribed common transmission services* or the adjusted non-locational component of *prescribed TUOS services* in accordance with clause 6A.26.1 of the *National Electricity Rules*.
 - (3) The charge for either the *prescribed common transmission services* or the adjusted non-locational component of *prescribed TUOS services* using the *maximum demand* based price for a *billing period* in a *financial year* for each *connection point* must be calculated by:
 - A. multiplying the *maximum demand* based price by the *maximum demand* at that *connection point* in the corresponding *billing period* two years earlier (i.e. *historical metered maximum demand* *offtake*); or
 - B. multiplying the *maximum demand* based price by the maximum demand at that *connection point* in the same *billing period* (*current*

metered maximum demand offtake) if the *historical maximum demand offtake* is not available;

- C. multiplying the *maximum demand* based price by the *current metered maximum demand offtake* if the *historical metered maximum demand offtake* is significantly different to the *current metered maximum demand offtake*.
- (e) A *TNSP* (or *Co-ordinating Network Service Provider*) may propose alternative postage stamp pricing structures which it considers give effect to, and are consistent with the *pricing principles for prescribed transmission services* in the *National Electricity Rules*, in which case it must clearly demonstrate to the *AER* that the alternative pricing structure is least distortionary to *transmission network users' behaviour* and:
- (1) gives effect to, and is consistent with the *pricing principles for prescribed transmission services* in the *National Electricity Rules*;
 - (2) improves on the permitted pricing structures outlined in section 2.2(c) and (d) of these *guidelines*; and
 - (3) contributes to the NEM objective.

2.4 Attribution of transmission system assets to categories of prescribed transmission services

- (a) The following sections outline the types of *transmission system* assets that are *directly attributable* to each *category of prescribed transmission service*.
- (1) The types of *transmission system* assets that are *directly attributable* to *prescribed entry services* are limited to:
 - A. *substation* buildings, *substation* land and associated infrastructure (such as fences, earthing equipment etc);
 - B. switchgear and *plant* associated with *generators' generating systems* connection and *generator transformers*;
 - C. secondary systems associated with primary systems providing *prescribed entry services*;
 - D. *transmission* lines owned by *TNSPs* connecting *generators' generating systems* to the *TNSP's transmission network*; and
 - E. *meters* associated with *prescribed entry services* and owned by the *TNSP*.
 - (2) The types of *transmission system* assets that are *directly attributable* to *prescribed exit services* are limited to:

- A. *substation* buildings, *substation* land and associated infrastructure (such as fences, earthing equipment etc);
 - B. switchgear used to supply the sub-*transmission voltage* and associated switchgear at both the *transmission* and sub-*transmission voltage* level;
 - C. transformers which supply the sub-*transmission voltage* level and associated switchgear at both the *transmission* and sub-*transmission voltage* level;
 - D. secondary systems associated with primary systems providing *prescribed exit services*;
 - E. *meters* associated with *prescribed exit services* and owned by the TNSP; and
 - F. *reactive plant* installed for *power factor* correction which provides benefit to *transmission customers* connected at the *connection point*.
- (3) The types of *transmission system* assets that are *directly attributable* to *prescribed TUOS services* are limited to:
- A. *substation* buildings, *substation* land and associated infrastructure (such as fences, earthing equipment etc);
 - B. *transmission* lines and associated easements;
 - C. switchgear on *transmission* lines and auto-transformers which are part of the *transmission network* and are switched at the *substation* including associated bus work and control and protection schemes;
 - D. auto-transformers which transform *voltage* between *transmission* levels;
 - E. static and dynamic *reactive plant* and associated switchgear and transformation regardless of the *voltage* level; and
 - F. all system controls required for monitoring and control of the integrated *transmission system* including remote monitoring and associated communications, *load shedding* and special control schemes and *voltage* regulating *plant* required for operation of the integrated *transmission system*.
- (4) The types of *transmission system* assets that are *directly attributable* to *prescribed common transmission services* are limited to:
- A. *substation* buildings, *substation* land and associated infrastructure (such as fences, earthing equipment etc);
 - B. *power system* communications networks;

- C. *control systems*;
 - D. network switching centres (excluding generation and system control functions);
 - E. static and dynamic reactive control *plant* and associated switchgear;
 - F. spare *plant* and equipment including that installed at *substations*;
 - G. fixed assets such as buildings and land that are not associated with *substation* or line easements, (head office buildings, land for future *substations* etc.); and
 - H. motor vehicles and construction equipment.
- (b) In its proposed *pricing methodology*, a *TNSP* may include additional types of *transmission system* assets that it considers are *directly attributable* to one or more *category of prescribed transmission service*.
- (c) A *TNSP* must justify the inclusion of any additional types of *transmission system* assets referred to in section 2.4(b) of these *guidelines* and the *AER* will consider each when assessing the *TNSP's* proposed *pricing methodology*.

2.5 Disclosure of information

- (a) A *TNSP* should develop its proposed *pricing methodology* so that it can be publicly released by the *AER*.
- (b) If a *TNSP* identifies information which it considers to be confidential or commercially sensitive and it considers that providing that information to the *AER* is necessary in order to demonstrate that its proposed *pricing methodology* complies with the *National Electricity Rules*, it should include that information in a confidential version of its proposed *pricing methodology* and provide it to the *AER*.
- (c) The *AER* will not publicly disclose a confidential version of a proposed *pricing methodology*.
- (d) The *AER* considers that confidential or commercially sensitive information is likely to include details of, or information that could readily be used to infer an individual *transmission customer's* price or charge, premises, negotiated discounts, *prudential requirements* or other commercial arrangements relating to its electricity supply.
- (e) If a *TNSP* considers that other information should not be made publicly available, it must justify its claim for confidentiality to the *AER*.
- (f) If the *AER* disagrees with a *TNSP's* claim that information provided to it is of a confidential or commercially sensitive nature, the *AER* will:

- (1) notify the *TNSP* of its view, and
 - (2) allow the *TNSP* to withdraw the information or rescind its claim for confidentiality.
- (g) If information is withdrawn under 2.5(f) of these *guidelines* the AER will:
- (1) not take the information into consideration when assessing the *TNSP*'s proposed *pricing methodology*, and
 - (2) not publicly disclose that information.