TRANSEND

# APPENDIX 12

## Revised proposed pricing methodology, January 2009

TRANSEND

# Revised Proposed Pricing Methodology

**FINAL**

**UNCONTROLLED WHEN PRINTED**

**CONTACT**

*This document is the responsibility of the Customer and Asset Management Group, Transend Networks Pty Ltd, ABN 57 082 586 892.*

*Please contact Transend's Manager Connections with any queries or suggestions.*

**REVIEW DATE**

*This document is due for review not later than December 2012*

**RESPONSIBILITIES**

**Implementation**

*All Transend staff*

**Audit**

*Periodic audits to establish conformance with this document will be conducted by Transend's Connections Department.*

**Compliance**

*All Transend staff*

**Document Management**

*Pricing Officer*

**MINIMUM REQUIREMENTS**

*The requirements set out in Transend's documents are minimum requirements that must be complied with by Transend staff and contractors, including designers and other consultants. The user is expected to implement any practices which may not be stated but which can reasonably be regarded as good practices relevant to the objective of this document without non-compliance with the specific requirement of this document. Transend expects the users to improve upon these minimum requirements where possible and to integrate these improvements into their procedures and quality assurance plans.*

# CONTENTS

## LIST OF TABLES



## LIST OF FIGURES

# 1 GENERAL

## 1.1 PURPOSE

Clause 6A.10.1(a) of the National Electricity Rules (the *Rules*) requires a *Transmission Network Service Provider* (*TNSP*) to submit a proposed *pricing methodology* when it submits its *Revenue Proposal* to the *AER*. The proposed *pricing methodology* relates to the *prescribed transmission services* that are provided by the *TNSP* and outlines how the *TNSP* will determine prices for *prescribed transmission services*.

The *Rules* also require that the proposed *pricing methodology* must:

- give effect to and be consistent with the *Pricing Principles for Prescribed Transmission Services* set out in clause 6A.23 of the *Rules*; and
- comply with the requirements of, and contain or be accompanied by such information as is required by, the *pricing methodology guidelines* made for that purpose under clause 6A.25 of the *Rules*.

On 30 May 2008, *Transend* submitted its *Revenue Proposal*, proposed *negotiating framework* and proposed *pricing methodology* to the *AER*. On 27 November 2008 the *AER* released its *Draft Decision – Transend transmission determination 2009–10 to 2013–14*, in which it included an explanation why it had decided not to approve *Transend's* proposed *pricing methodology*[1].

Clause 6A.12.3(a) of the *Rules* permits a *TNSP* to submit a revised proposed *pricing methodology* when it submits its revised *Revenue Proposal* to the *AER*. The revised proposed *pricing methodology* may only make the revisions to the proposed *pricing methodology* required so as to incorporate the substance of any changes required by, or to address matters raised in, the draft decision.

This revised proposed *pricing methodology* (henceforth called "*Pricing Methodology*" throughout this document) is a fulfilment of *Transend's* obligation under the *Rules* to prepare a *pricing methodology* for *prescribed transmission services*.

## 1.2 SCOPE

This *Pricing Methodology* applies to the determination of prices for *prescribed transmission services* by *Transend* in Tasmania during the *regulatory control period* from 1 July 2009 to 30 June 2014.

## 1.3 OBJECTIVES

This *Pricing Methodology* outlines how *Transend* will determine prices for *prescribed transmission services*. It also:

- gives effect to and is consistent with the *Pricing Principles for Prescribed Transmission Services* set out in clause 6A.23 of the *Rules*; and
- complies with the requirements of, and contains such information as is required by, the *pricing methodology guidelines* made for that purpose under clause 6A.25 of the *Rules* and published by the *AER*.

[1] The *AER*'s reasons for not approving the proposed pricing methodology are outlined in section 12.6 and Appendix K of the draft decision.

## 1.4 DEFINITIONS

In this framework the words in italics have the meaning given to them in:

(1) this definitions section; or

(2) if not defined in this definitions section, the *Rules*.

### 1.4.1 Definition of a pricing methodology

Clause 6A.24.1(b) of the *Rules* states that a *pricing methodology* is a methodology, formula, process or approach that, when applied by a *TNSP*:

(1) allocates the *aggregate annual revenue requirement* for *prescribed transmission services* provided by that *TNSP* to:

  (i) the *categories of prescribed transmission services* for that *TNSP*; and

  (ii) *transmission network connection points* of *Transmission Network Users*; and

(2) determines the structure of the prices that a *TNSP* may charge for each of the *categories of prescribed transmission services* for that *TNSP*.

### 1.4.2 Definition of a prescribed transmission service

As noted in section 1.3 above, this *Pricing Methodology* relates to *prescribed transmission services* only. The *Rules* defines *prescribed transmission services* to be any of the following services:

(a) a *shared transmission service* that:

  (i) does not exceed such *network* performance requirements (whether as to quality or quantity) as that *shared transmission service* is required to meet under any *jurisdictional electricity legislation*;

  (ii) except to the extent that the *network* performance requirements which that *shared transmission service* is required to meet are prescribed under any *jurisdictional electricity legislation*, does not exceed such *network* performance requirements (whether as to quality or quantity) as are set out in Schedule 5.1a or 5.1 of the *Rules*; or

  (iii) is an *above-standard system shared transmission service*;

(b) services that are required to be provided by a *Transmission Network Service Provider* under the *Rules*, or in accordance with *jurisdictional electricity legislation,* to the extent such services relate to the provision of the services referred to in paragraph (a), including such of those services as are:

  (i) required by *NEMMCO* to be provided under the *Rules*; and

  (ii) necessary to ensure the integrity of a *transmission network*, including through the maintenance of *power system security* and assisting in the planning of the *power system*; or

(c) *connection services* that are provided by a *Transmission Network Service Provider* to another *Network Service Provider* to *connect* their *networks* where neither of the *Network Service Providers* is a *Market Network Service Provider*;

but does not include a *negotiated transmission service* or a *market network service*.

### 1.4.3 Other definitions

- *billing demand* is the greater of a *Transmission Customer's* 30 minute *maximum demand* and that customer's 30 minute maximum *apparent power* (in MVA) multiplied by their minimum *Rules* -required *power factor*.
- *contract agreed maximum demand*[2] means the agreed *maximum demand* negotiated between a *TNSP* and a *Transmission Customer*.
- *Transend* means Transend Networks Pty Ltd (ABN 57 082 586 892).

## 1.5 REFERENCES

This *Pricing Methodology* should be read in conjunction with the following documents:

- Chapters 6A, 10 and 11 of the *Rules*;
- *AER's Pricing Methodology Guidelines*, October 2007; and
- *Transend's* Cost Allocation Methodology.

# 2 TRANSEND'S TRANSMISSION PRICING POLICY

In December 1999, the Tasmanian Electricity Regulator issued a determination in relation to electricity pricing policies. As part of that determination, *Transend* was required to develop a transmission pricing policy through a consultative process with (Tasmanian Electricity) Code Participants and interested parties. In November 2000 *Transend's* original Transmission Pricing Policy was published, describing how transmission prices were determined and applied in Tasmania from that date. It was based on pricing principles set out in the Tasmanian Electricity Code – as it existed then – and the State Regulator's Pricing Determination of December 1999.

The Transmission Pricing Policy has been updated regularly, including when *Transend* became subject to the (then) National Electricity Code. Even though there was no formal requirement for *Transend* to prepare such a document *Transend* continued to publish the Transmission Pricing Policy to assist customers and other interested parties. As noted in the latest version of the Transmission Pricing Policy:

"[T]he objective of this policy is to provide existing and potential *Transmission Network Users*, as well as other interested parties, with an understanding of how Transend applies the *Rules* to set prices for non-contestable *revenue-capped transmission services* to enable *Transend's revenue cap* to be recovered."[3,4]

The information required to be included in a *pricing methodology* includes all the information contained in, and in fact expands upon, *Transend's* Transmission Pricing Policy. Therefore, *Transend* will discontinue publication of the Transmission Pricing Policy from 1 July 2009.

[2] As defined in *AER*, *Final Decision, Electricity transmission network service providers, Pricing methodology guidelines,* 29 October 2007, p.iv.

[3] At that time, non-contestable *transmission services* under Chapter 6 of the *Rules* referred to all *transmission services* that were provided under a *TNSP's revenue cap*.

[4] Transend, Transmission Pricing Policy, version 3.0, October 2005, available online at http://www.transend.com.au/portals/0/publications/TPP3.pdf.

# 3 PRICING METHODOLOGY GUIDELINES

As noted in section 1.1, the *Rules* require that a *TNSP's pricing methodology* must comply with the requirements of, and contain or be accompanied by such information as is required by, the *pricing methodology guidelines* made for that purpose under clause 6A.25 of the *Rules*. On 29 October 2007, the *AER* published the first version of its *Pricing Methodology Guidelines*. The role of the guidelines is to:

"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*."[5]

# 4 INTRODUCTION

## 4.1 BACKGROUND

*Transend* is a licensed *transmission network service provider* (*TNSP*) and owns and operates the electricity transmission system in Tasmania. The company owns 3,650 circuit kilometres of transmission lines, 47 substations and nine switching stations, with a control centre located in Hobart.

*Transend* is registered with *NEMMCO* as a participant in Australia's *National Electricity Market* (*NEM*). The *NEM* operates on an *interconnected power system* that extends from Queensland to South Australia. The *interconnected* system was extended in 2006 when the Tasmanian *power system* was physically connected to the *NEM* via Basslink.

## 4.2 PRESCRIBED TRANSMISSION SERVICE PROVIDERS

Transend is the sole provider of *prescribed transmission services* in Tasmania. As such, there are no *appointing providers* or any need to appoint a *Co-ordinating Network Service Provider*.

## 4.3 DEROGATIONS

*Transend* does not have any *derogations* under Chapter 9 of the *Rules* that are relevant to this *Pricing Methodology*.

## 4.4 TRANSITIONAL ARRANGEMENTS

In accordance with the transitional arrangements for existing *prescribed transmission services* outlined in clause 11.6.11 of the *Rules*, *Transend* has grandfathered *connection services* where permissible under clause 11.6.11 of the *Rules*.

[5] AER, *Final Decision, Electricity transmission network service providers, Pricing methodology guidelines,* 29 October 2007, p.1

## 4.5 PERIOD COVERED BY PRICING METHODOLOGY

This *Pricing Methodology* is to apply for the *regulatory control period* commencing on 1 July 2009 and ending on 30 June 2014.

## 4.6 DIFFERENCES BETWEEN PRICING METHODOLOGIES

As this is the first *pricing methodology* required to be prepared and submitted by *Transend* there is no existing *pricing methodology* to compare it against.

### 4.6.1 Differences between pricing methodology and pricing policy

There are a number of differences between this *Pricing Methodology* and *Transend's* Transmission Pricing Policy. The catalyst for the differences between the two documents is the changes to Chapter 6A of the *Rules*. A key difference between the two documents is that the *Pricing Methodology* contains considerably more detailed information than the pricing policy. This is due to the detailed requirements for a *pricing methodology* listed in the *Rules* and the *Pricing Methodology Guidelines*. For example, the *Rules* require considerable detail about informational requirements and pricing issues, as well as requiring *TNSPs* to include worked examples to demonstrate the practical application of the *pricing methodology*. The pricing policy, on the other hand, is less detailed as there were no prescribed or statutory obligations.

In developing this *Pricing Methodology*, *Transend's* philosophy has been to retain its previous pricing practices where permitted to do so the *Rules*, as existing *Transmission Network Users* are familiar with these practices. Transend has departed from these pricing practices only where it was required to do so under the *Rules* and/or the *Pricing Methodology Guidelines*.

Other differences between this *Pricing Methodology* and *Transend's* Transmission Pricing Policy are outlined below.

### 4.6.2 Allocation of AARR

The *aggregate annual revenue requirement* (*AARR*) for *prescribed transmission services* is allocated to the four *categories of prescribed transmission services* on the basis of optimised replacement cost (ORC) of assets in each category, rather than on the basis of the depreciated optimised replacement cost (DORC)[6].

The impact of this change is that a larger share of the *AARR* will be allocated to those *categories of prescribed transmission services* with relatively older assets. Correspondingly, a smaller share of the *AARR* will be allocated to those categories with relatively younger assets.

### 4.6.3 Priority ordering

Costs that could be allocated to more than one *category of prescribed transmission service* are allocated according to the priority ordering process described in clause 6A.23.2(d) of the *Rules*. The majority of these costs are *substation* establishment costs which, as required under the old Chapter 6, were allocated to *connection* costs at each *substation* where *connection services* where provided[7].

The impact of this change will be a re-allocation of the substation establishment costs (and other shared costs) between *categories of prescribed transmission service*. A significantly larger share of the costs will be allocated to *prescribed TUOS services*, and significantly smaller shares will be allocated to prescribed entry services and

[6] See sections 7.2 and 7.4 of this document.

[7] See section 7.3 and Appendix 2 of this document.

prescribed exit services. For the first time, a small share of the costs will be allocated to prescribed common transmission services but is not anticipated that this will be significant.

### 4.6.4 Calculation of locational prices and charges

The price for the locational component of *prescribed TUOS services* will be determined using a different measure of *demand* to that used under *Transend's* Pricing Policy to determine the equivalent of locational prices (currently the average of the monthly *maximum demands* from the most recent complete *financial year* is used to determine the price). The *Pricing Methodology Guidelines* specify the measures of *demand* permitted to be used to calculate locational prices from the lump sums output from the *CRNP* (or modified *CRNP*) process. *Transend* will use *contract agreed maximum demand* to determine the locational prices[8].

A customer's *contract agreed maximum demand* is larger than their average *maximum demand*, which means that the locational prices will be smaller than they would otherwise have been. The impact of this change is detailed in the following example. A *Transmission Network User* with large seasonal changes in demand will have a significant difference between *contract agreed maximum demand* and average *maximum demand*, leading to a large reduction in locational price. On the other hand, *Transmission Network Users* with relatively constant *demand* levels are likely to have a small difference between *contract agreed maximum demand* and average *maximum demand*, leading to a small reduction in locational price.

A different measure of *demand* will also be used to calculate the charge for the locational component of the *prescribed TUOS services.* Transend will multiply the relevant locational price by a customer's *contract agreed maximum demand* to determine the charge for the locational component of the *prescribed TUOS services.*

As the same measure of demand is being used to convert the lump sum output from the *CRNP* (or modified *CRNP*) process into a locational price and to convert that price into a charge, it is expected the locational charge (on an annual basis) will equal the initial lump sum figure, notwithstanding changes to a customer's *contract agreed maximum demand* or application of the 2 per cent rule[9].

### 4.6.5 Expression of locational prices

The *Pricing Methodology Guidelines* requires the price for the locational component of *prescribed TUOS services* to be expressed as a daily rather than a monthly price. As a result, the locational prices will appear to have fallen by about 97 per cent[10].

### 4.6.6 Changes to 2 per cent rule

Annual movements in locational prices were previously limited to be no more than 2 percentage points different to the average (weighted) price for the region. The *Rules* now permit annual changes in locational prices of more than 2 percentage points if certain criteria are met, including the *AER* approving the change[11].

### 4.6.7 Determining non-locational and common service charges

For those customers facing *energy based prices* for the non-locational component of *prescribed TUOS services* and for *prescribed common transmission services*, TNSPs

[8] See section 9.4.1 of this document.

[9] The 2 per cent rule is detailed further in section 9.4.2 of this document.

[10] See section 9.4.3 of this document.

[11] See section 9.4.2 of this document.

are permitted to use current energy to determine the charges provided that the historical *energy* levels differ significantly from current energy levels. Previously, these charges could only be calculated using current energy if historic *energy* was not available or, if it was available, the *AER* had approved the use of current *energy*.

The change to the *Rules* will not affect the manner in which *Transend* calculates these charges but *Transend* will not be required to seek the *AER's* approval to use current *energy* where historic *energy* exists. It should also be noted that the *Rules* provide no direction as to what the threshold is for the difference between historic and current *energy* levels to be considered 'significantly different'.

### 4.6.8 Treatment of radial lines connecting both generator and load

*Transend* had previously identified a category of radial transmission line that connected *generators* but also provided additional *transmission services*. There are three radial *transmission lines* that are used primarily to connect *generators* to the *transmission network* but may also be required to supply load. Under *Transend's* Pricing Policy the costs of these assets were allocated to the shared *network*.

Chapter 6A of the *Rules* classifies these assets as *connection assets* and specifies the costs of these assets will be recovered from prescribed *connection services* rather than *prescribed TUOS services*.

## 4.7 Publication of Pricing Methodology

Once it has been approved by the *AER*, *Transend* will *publish* a copy of its current *pricing methodology* on its website (www.transend.com.au).

## 4.8 Publication of Transmission Prices

For the purposes of determining the *distribution service* prices as outlined in clause 6A.24.2(b) in Part J of Chapter 6A of the *Rules, Transend* will *publish* the prices for each of the *categories of prescribed transmission services* to apply for the following *financial year*, by 15 May each year on its website (www.transend.com.au).

## 4.9 Compliance with Pricing Methodology

Prior to the prices for *prescribed transmission services* being *published* for a *financial year*, *Transend* will engage independent auditors to review the prices to determine whether they have been prepared in accordance with this *Pricing Methodology*.

To enable independent auditors (or the *AER,* if it so chooses) to undertake such a review and to be able to determine clearly whether or not the provisions of this *Pricing Methodology* have been followed, *Transend* will ensure that appropriate records relating to the price setting process are retained and made available to the auditors (or the *AER* if so requested).

The independent auditors will prepare an Audit Report that will address the extent to which the prices calculated for the forthcoming *financial year* are in accordance with this *Pricing Methodology*. As this Audit Report has been prepared by the auditor for *Transend*, it cannot be provided to third parties, even though they will face the calculated prices. However, following completion of the Audit Report, the auditor will provide a copy of the Audit Report to Transend's customers and the *AER* once these parties have signed a release letter, to be provided by the auditor to each customer (and the *AER*).

# 5 OVERVIEW

As the *AER* noted in its Final Decision on the *pricing methodology guidelines*[12]:

> *"Revenue cap regulation allows a TNSP to earn up to a maximum allowed revenue (MAR) within a regulatory year. The MAR is used to derive the aggregate annual revenue requirement (AARR) which is recovered from transmission network users by charging for prescribed transmission services. The charges levied by a TNSP are based on transmission service prices derived for each category of prescribed transmission service."*

This *Pricing Methodology* outlines how *Transend* will apply the *Rules* to calculate these *transmission services* prices. In summary, prices are determined by:

(1) calculating the *AARR Transend* is permitted to recover for a *financial year*;

(2) apportioning the *AARR* to each *category of prescribed transmission service* to determine the *ASRR*;

(3) allocating the *ASRR* to individual *connection points*; and

(4) calculating prices for each *category of prescribed transmission service*.

Appendix 1 contains a flowchart of an overview of this process.

The rest of this *Pricing Methodology* describes in detail the process for calculating prices for *prescribed transmission services*.

# 6 CALCULATION OF THE AARR

The *maximum allowed revenue* (*MAR*) for a *TNSP* for a *regulatory year* of a *regulatory control period* is the amount calculated as such in accordance with clause 6A.3 of the *Rules*.

Clause 6A.22.1 of the *Rules* notes that for the purpose of pricing of *prescribed transmission services*, the *aggregate annual revenue requirement* (*AARR*) for *prescribed transmission services* provided by a *TNSP*, is the *MAR* referred to in clause 6A.3.1 adjusted:

(1) in accordance with clause 6A.3.2 of the *Rules*; and

(2) by subtracting the operating and maintenance costs expected to be incurred in the provision of *prescribed common transmission services*.

These operating and maintenance costs expected to be incurred in the provision of *prescribed common transmission services* will be sourced from budget estimates for the relevant *regulatory year* and will include:

- *transmission network* switching costs;
- administration and management of the business;
- *transmission network* planning and development; and
- general overheads.

[12] AER, *Final Decision, Electricity transmission network service providers, Pricing methodology guidelines,* 29 October 2007, p.3.

# 7 ALLOCATING THE AARR TO CATEGORIES OF SERVICE

## 7.1 CATEGORIES OF SERVICE

*Transend* is permitted to recover its *AARR* from connected parties for the provision of *prescribed transmission services*. There are four *prescribed transmission services*:

- *prescribed entry services* which are *entry services* that are *prescribed transmission services* by virtue of the operation of clause 11.6.11 of the *Rules*;
- *prescribed exit services* which are *exit services* that are *prescribed transmission services* by virtue of the operation of clause 11.6.11 of the *Rules* and all *exit services* provided to *Distribution Network Service Providers (DNSP)*;
- *prescribed common transmission services* which provide equivalent benefits to all *Transmission Customers* who have a *connection point* with *Transend's transmission network* without any differentiation based on their location within the *transmission system*; and
- *prescribed transmission use of system (TUOS) services* which are *prescribed transmission services* that:
  - ❖ provide different benefits to *Transmission Customers* who have a *connection point* with the relevant *transmission network* depending on their location within the *transmission system*; and
  - ❖ are not *prescribed common transmission services*, *prescribed entry services* or *prescribed exit services*.

## 7.2 ATTRIBUTABLE COST SHARE

The *attributable cost share* is defined in clause 6A.22.3 of the *Rules* and is used to calculate the *ASRR* (see section 7.4 below). Clause 6A.22.3 states that:

(a) For a *Transmission Network Service Provider* for a *category of prescribed transmission services*, the *attributable cost share* for that provider for that category of services must, subject to any adjustment required under the principles in clause 6A.23.2, substantially reflect the ratio of:

  (i) the costs of the *transmission system* assets directly attributable to the provision of that *category of prescribed transmission services*; to

  (ii) the total costs of all the *Transmission Network Service Provider's transmission system* assets directly attributable to the provision of *prescribed transmission services*.

(b) The costs of the *transmission system* assets referred to in paragraph (a) refers to optimised replacement cost or to an accepted equivalent to optimised replacement cost that is referable to values contained in the accounts of the *Transmission Network Service Provider*.

From this definition it is clear that:

- the *attributable cost share* is a ratio; that is, it lies between 0 and 1;
- there is an *attributable cost share* for each *category of prescribed transmission service*; and
- the sum of the *attributable cost shares* for all four *categories of prescribed transmission service* will be equal to 1.

While paragraph (a) of clause 6A.22.3 implies that *attributable cost shares* could be determined in a manner different to that outlined in the clause, they must "substantially

reflect the ratios" that would be calculated in the prescribed manner. Given that ratios must be calculated according to the manner prescribed in clause 6A.22.3 in order to verify that the *attributable cost shares* used do, in fact, "substantially reflect the ratios", *Transend* calculates the *attributable cost shares* in accordance with clause 6A.22.3(a).

Similarly, paragraph (b) of clause 6A.22.3 permits a *TNSP* to use the optimised replacement cost (ORC) of assets or "an accepted equivalent to optimised replacement cost" when determining the *attributable cost shares*. In accordance with clause 6A.22.3(b), *Transend* uses the ORC from its statutory financial accounts to determine the *attributable cost shares*.

### 7.2.1 Worked example

Assume that the total optimised replacement cost of the *transmission system* asset providing *prescribed transmission services* is $1,000 million, comprising:

- $100 million providing *prescribed entry services*;
- $200 million providing *prescribed exit services*;
- $300 million providing *prescribed common transmission services;* and
- $400 million providing *prescribed TUOS services*.

| Category of service | Cost of assets (ORC, $m) | Attributable cost share |
|---|---|---|
| Prescribed entry services | 100.0 | 0.10 |
| Prescribe exit services | 200.0 | 0.20 |
| Prescribed common transmission services | 300.0 | 0.30 |
| Prescribed TUOS services | 400.0 | 0.40 |
| **Total prescribed transmission services** | **1,000.0** | **1.00** |

**Table 1 – Worked example: attributable cost shares**

Following clause 6A.22.3 of the *Rules*, the *attributable cost share* for *prescribed entry services* is calculated as ($100 million / $1,000 million) or 0.10. The *attributable cost shares* for the other *categories of prescribed transmission services* are outlined in Table 1. It should be noted that the sum of the *attributable cost shares* for all *categories of prescribed transmission services* is 1.00.

## 7.3 Cost Allocation

From section 7.2 above, it is clear that the correct allocation of costs is a critical step in the calculation of *attributable cost shares*. The first step in the cost allocation process is to identify all *Transend's transmission system* assets directly attributable[13] to the provision of *prescribed transmission services*. The next step is to allocate these assets to each *category of prescribed transmission services*. Section 2.4 of the *Pricing Methodology Guidelines* informs this allocation process by outlining the types of *transmission system* assets that are directly attributable to each *category of prescribed transmission service*[14].

[13] The term 'directly attributable' appears in the *Rules* but is not defined in the *Rules*. However, the AER states that "directly attributable in relation to *transmission* assets refers to asset that are used or required to provide the relevant pricing *category of prescribed transmission service*". AER, *Final Decision, Electricity transmission network service providers, Pricing methodology guidelines,* 29 October 2007, p.iv

[14] ibid, p.10.

As required by clause 6A.22.3 of the *Rules*, if an asset is not directly attributable to a single *category of prescribed transmission service*, then the priority ordering process outlined in clause 6A.23.2(d) of the *Rules* is applied. Appendix 2 contains a detailed explanation of how *Transend* will apply the priority ordering process.

As noted in section 7.2 above, *Transend* will use the optimised replacement cost of its assets sourced from its statutory financial accounts.

Once assets have been allocated to a single *category of prescribed transmission service* (either directly or under the priority ordering process), the total value of assets for each category is determined by summing the total value of all assets within that category. As demonstrated in section 7.2.1 above, the *attributable cost share* for each *category of prescribed transmission service* is the value of assets for that category divided by the sum of the value of assets for all categories.

### 7.3.1 Allocation of assets providing shared prescribed connection services

Clause 6A.23.2(d)(3) of the *Rules* requires the costs of any *transmission system* asset not attributed to *prescribed TUOS services* or *prescribed common transmission services* under the priority ordering process to be attributed to *prescribed entry services* and *prescribed exit services*. However, no guidance is provided as to how the costs should be attributed if the assets provide *prescribed connection services* to more than one *Transmission Network User*.

In the first instance, any such assets will be attributed to *prescribed entry service* and *prescribed exit service* based on a negotiated agreement between the parties involved.

In the absence of any such agreement, any such assets will be attributed on the basis of *contract agreed maximum demand* (or recent annual *maximum demand* if *contract agreed maximum demand* is not available) and the installed *generator* capacity of each *Transmission Network User*.

## 7.4 CALCULATION OF ANNUAL SERVICE REVENUE REQUIREMENT

Clause 6A.22.2 defines the *annual service revenue requirement (ASRR)* for a *TNSP* as "the portion of the *AARR* for *prescribed transmission services* provided by a *Transmission Network Service Provider* that is allocated to each *category of prescribed transmission services* for that provider and that is calculated by multiplying the *AARR* by the *attributable cost share* for that category of services in accordance with the principles in clause 6A.23.2".

The *ASRR* for each *category of prescribed transmission service* is equal to the *attributable cost share* for that category multiplied by the *AARR*. While the *attributable cost shares* are ratios (between 0 and 1), the *ASRRs* are dollar values between 0 and the total value of the *AARR*.

### 7.4.1 Worked example

Following on from the worked example in section 7.2.1, further assume that the *MAR* is $120 million and that the operating and maintenance costs expected to be incurred in the provision of *prescribed common transmission services* is $20 million. Therefore, the *AARR* will be ($120 million – $20 million) or $100 million.

The *ASRR* for each *category of prescribed transmission service* is the product of the relevant *attributable cost share* and the *AARR*. For example, the *ASRR* for *prescribed entry services* is calculated as (0.10 * $100 million) or $10 million. The *ASRRs* for the other *categories of prescribed transmission services* are outlined in Table 2. It should be noted that the sum of the *ASRRs* for all *categories of prescribed transmission services* is equal to the *AARR*.

| Category of service | Attributable cost share | ASRR ($m) |
|---|---|---|
| Prescribed entry services | 0.10 | 10.0 |
| Prescribe exit services | 0.20 | 20.0 |
| Prescribed common transmission services | 0.30 | 30.0 |
| Prescribed TUOS services | 0.40 | 40.0 |
| **Total prescribed transmission services** | **1.00** | **100.0** |

**Table 2 – Worked example: ASRRs**

# 8 ALLOCATING THE ASRR TO CONNECTION POINTS

The next step in the pricing process is to allocate the *ASRR* for *prescribed entry services*, *prescribed exit services* and the locational component of *prescribed TUOS services* to individual *connection points*. The remaining *ASRR* (being for *prescribed common transmission services* and the adjusted non-locational component for *prescribed TUOS services*) are not allocated during this step but directly through the pricing step (see section 9 below).

## 8.1 ATTRIBUTABLE CONNECTION POINT COST SHARE

The *attributable connection point cost share* is defined in clause 6A.22.4 of the *Rules* and is used to allocate the *ASRR* for *prescribed entry services* and *prescribed exit services* to *connection points*. Clause 6A.22.4 states that:

(a) For a *Transmission Network Service Provider* for *prescribed entry services* and *prescribed exit services*, the *attributable connection point cost share* for that provider for each of those categories of services must substantially reflect the ratio of:

  (i) the costs of the *transmission system* assets directly attributable to the provision of *prescribed entry services* or *prescribed exit services*, respectively, at a *transmission network connection point*; to

  (ii) the total costs of all the *Transmission Network Service Provider's transmission system* assets directly attributable to the provision of *prescribed entry services* or *prescribed exit services*, respectively.

(b) The costs of the *transmission system* assets referred to in paragraph (a) refers to optimised replacement cost or to an accepted equivalent to optimised replacement cost that is referable to values contained in the accounts of the *Transmission Network Service Provider*.

The *attributable connection point cost share* is analogous to the *attributable cost share* but applies to individual *connection points* rather than a *category of prescribed transmission service*. Therefore, *Transend* calculates the *attributable connection point costs shares* in a comparable manner to the calculation of the *attributable cost shares*.

To determine the *attributable connection point cost share* the allocation process is to a lower level – assets are allocated to individual *connection points* rather than *categories of prescribed transmission service*.

## 8.2 PRESCRIBED ENTRY SERVICES

The *ASRR* for *prescribed entry services* is allocated to individual *connection points* using the *attributable connection point cost share* for *prescribed entry services*.

From section 8.1 it is clear that, with respect to *prescribed entry services*:

- the *attributable connection point cost share* is a ratio; that is, it lies between 0 and 1;
- there is an *attributable connection point cost share* for each *connection point*; and
- the sum of the *attributable connection point cost shares* for all *connection points* will be equal to 1.

The *ASRR* allocated to each *connection point* is equal to the *attributable connection point cost share* for that *connection point* multiplied by the *ASRR*. While the *attributable connection point cost shares* are ratios (between 0 and 1), the *ASRRs* for each *connection point* are dollar values between 0 and the total value of the *ASRR*.

### 8.2.1 Worked example

Following on from the worked example in section 7.4.1, further assume that there are three *connection points* through which *prescribed entry services* are being provided and that the cost of the assets providing these *prescribed entry services* is:

- $50 million at *connection point* A;
- $30 million at *connection point* B; and
- $20 million at *connection point* C.

The *attributable connection point cost share* for *prescribed entry services* at connection point A is calculated as ($50 million / $100 million) or 0.50. The *attributable connection point cost shares* for *prescribed entry services* at the other *connection points* are outlined in Table 3. The sum of the *attributable connection point cost shares* for *prescribed entry services* for all *connection points* is 1.00.

| Connection Point | Cost of assets (ORC, $m) | Attributable cost share | ASRR ($m) |
|---|---|---|---|
| Connection point A | 50.0 | 0.50 | 5.00 |
| Connection point B | 30.0 | 0.30 | 3.00 |
| Connection point C | 20.0 | 0.20 | 2.00 |
| **Total prescribed entry services** | **100.0** | **1.00** | **10.0** |

**Table 3 – Worked example: allocating ASRR for prescribed entry services to connection points**

The *ASRR* for *prescribed entry services* for each *connection point* is the product of the relevant *attributable connection point cost share* and the *ASRR* for *prescribed entry services*. For example, the *ASRR* for *prescribed entry services* for connection point A is calculated as (0.50 * $10 million) or $5 million. The *ASRR* for *prescribed entry services* for the other *connection points* are outlined in Table 3. It should be noted that the sum of the *ASRR* for *prescribed entry services* for all *connection points* is equal to the *ASRR* for *prescribed entry services*.

## 8.3 PRESCRIBED EXIT SERVICES

The process to allocate the *ASRR* for *prescribed exit services* to *connection points* is the same as that for *prescribed entry services* outlined above in section 8.2.

Section 7.3.1 outlines the process that is followed if an asset provides prescribed *connection services* to more than one connected party.

### 8.3.1 Worked example

Following on from the worked example in section 7.4.1, further assume that there are five *connection points* through which *prescribed exit services* are being provided and that the cost of the assets providing these *prescribed exit services* is:

- $72 million at *connection point* D;
- $50 million at *connection point* E;
- $35 million at *connection point* F;
- $25 million at *connection point* G; and
- $18 million at *connection point* H.

The *attributable connection point cost share* for *prescribed exit services* at connection point D is ($72 million / $200 million) or 0.360. The *attributable connection point cost shares* for *prescribed exit services* at the other *connection points* are outlined in Table 4. The sum of the *attributable connection point cost shares* for *prescribed exit services* for all *connection points* is 1.00.

| Connection Point | Cost of assets (ORC, $m) | Attributable cost share | ASRR ($m) |
|---|---|---|---|
| Connection point D | 72.0 | 0.360 | 7.20 |
| Connection point E | 50.0 | 0.250 | 5.00 |
| Connection point F | 35.0 | 0.175 | 3.50 |
| Connection point G | 25.0 | 0.125 | 2.50 |
| Connection point H | 18.0 | 0.090 | 1.80 |
| **Total prescribed exit services** | **200.0** | **1.000** | **20.00** |

**Table 4 – Worked example: allocating ASRR for prescribed exit services to connection points**

The *ASRR* for *prescribed exit services* for each *connection point* is the product of the relevant *attributable connection point cost share* and the *ASRR* for *prescribed exit services*. For example, the *ASRR* for *prescribed exit services* for connection point D is calculated as (0.360 * $20 million) or $7.2 million. The *ASRR* for *prescribed exit services* for the other *connection points* are outlined in Table 4. It should be noted that the sum of the *ASRR* for *prescribed exit services* for all *connection points* is equal to the *ASRR* for *prescribed exit services*.

## 8.4 PRESCRIBED TUOS SERVICES

Clause 6A.23.3(c) requires the *ASRR* for *prescribed TUOS* services to be recovered from a locational component and an adjusted non-locational component. As noted above, the adjusted non-locational component is not allocated during this step but directly through the pricing step (see section 9.5 below). However, adjustments required to be made to this non-locational component are derived from this step, so it is relevant to include discussion of its derivation at this stage.

### 8.4.1 Locational component of prescribed TUOS services

The first step to allocate the locational component of the *prescribed TUOS services* to *connection points* is to determine how much of the *ASRR* is to be allocated initially to each component. Clause 6A.23.3(d) requires that 50 per cent of the *ASRR* for *prescribed TUOS services* is to be allocated initially to each of the locational and

non-locational components, unless different allocation shares can be justified. *Transend* will use the prescribed 50 per cent shares, in line with Transend's previous practices[15].

The locational component is allocated to connection points by the modified *cost reflective network pricing*[16] (*CRNP*) methodology using the TPRICE software currently used by all *TNSPs*. *Transend* has previously employed the modified *CRNP* because of the highly radialised nature of the *transmission system* in Tasmania and will continue to apply the modified *CRNP*.

The modification of the standard *CRNP* process employed by *Transend* is to discount the charges to be recovered from radial *transmission lines* by the utilisation of those lines. For example, if the *CRNP* methodology suggests that *Transend* should recover $1 million from a particular radial line that has a utilisation factor of 60 per cent, then only $0.6 million is recovered from *connection points* relating to this line through the locational component of the *prescribed TUOS services ASRR*. The modification applies to radial lines only and is not applied to those assets that are part of the meshed *transmission network*.

The reason for applying this modification is that it means that existing customers are not penalised for the low utilisation of such assets and it provides potential customers with a financial incentive to locate where the utilisation rate is low, thereby enhancing overall utilisation of the *transmission system* and potentially deferring augmentation.

Consistent with section 2.2(b) of the *Pricing Methodology Guidelines*, the output of the TPRICE software is a "lump sum dollar amount to be recovered at each *transmission connection point*"[17]. Using the modified *CRNP* will mean that the aggregate value of these lump sum dollar amounts is less than the 50 per cent allocation of the *ASRR* for *prescribed TUOS services* that was to be allocated through locational component. Any part of the *ASRR* for the locational component that is not allocated due to application of the modified *CRNP* is added to the non-locational component. In the example above, $0.4 million would not be allocated to *connection points* by virtue of the modified *CRNP*, so this amount is added to (and recovered via) the non-locational component.

A set of load and generation data is required to allocate the locational component to *connection points* using the TPRICE software. *Transend* uses the 30 minute data for each *connection point* for the most recently completed *financial year*. For example, load and generation data from 2007-08 would be used when determining prices for 2009-10 as this would be the most recently completed *financial year* when the prices are being determined in early 2009. This would involve 35 136 pieces of data for each *connection point*, comprising 17 568 observations each for *active power* and *reactive power* (one observation for each 30 minute period during the financial year).

Basslink is the only *interconnector* between Tasmania and the rest of the *NEM*. As Basslink is a *market network service provider* (*MNSP*), there is no requirement for *Transend* to make allowance for the estimated *inter-regional settlements residue auction amounts* as outlined in clause 6A.23.3(c)(1) of the *Rules*.

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[15] As noted in clause 6A.23.3(d), these 50 per cent shares are allocated to the locational and non-locational components prior to subsequent adjustments allowed by the Rules (see later in this section). Therefore, the actual share of the *ASRR* for *prescribed TUOS services* that is recovered from the locational component will be different to the 50 per cent share initially allocated to this component.

[16] The *CRNP* and modified *CRNP* processes are outlined in Schedule 6A.3 of the *Rules*.

[17] AER, *Final Decision, Electricity transmission network service providers, Pricing methodology guidelines,* 29 October 2007, p.6.

### 8.4.2 Network support costs

Clause 5.6.2(m) of the *Rules* permits *TNSPs* to implement a *generation* option as an alternative to *network augmentation*. In situations where this network support option is pursued, the *TNSP* must make a *network support payment* to the *generator*. Clause 6A.7.2 of the *Rules* describes how a *TNSP* can recover an *AER*-approved *network support payment* in respect of a *network support event* from *Transmission Network Users* by way of a *network support pass through amount*.

As the *network support payment* is made in lieu of *network augmentation*, an estimate of this payment is converted to an equivalent asset replacement cost and added to the cost of the *prescribed TUOS service* assets being supported. This conversion is performed using the same rate of return that is used to determine the locational component of the *prescribed TUOS service* prices using the TPRICE software.

# 9 CALCULATION OF TRANSMISSION SERVICE PRICES

Clause 6A.23.4(b) of the Rules requires that:

(b) Separate prices are to be developed for each *category of prescribed transmission services*, being:

(i) *prescribed entry services*;

(ii) *prescribed exit services*;

(iii) *prescribed common transmission services*;

(iv) *prescribed TUOS services* – locational component; and

(v) *prescribed TUOS services* – the adjusted non-locational component.

## 9.1 PRESCRIBED ENTRY SERVICE PRICES

Clause 6A.23.4(c) requires prices for *prescribed entry services* and *prescribed exit services* to be a fixed annual amount. With respect to the price for *prescribed entry services*, the process to determine the *ASRR* for *prescribed entry services* for each individual *connection point* was determined in the previous step (see section 8.2). This amount will be recovered by a fixed dollar amount per month.

### 9.1.1 Worked example

In the example in section 8.2.1, the *ASRR* for *prescribed entry services* to be recovered from *connection point* B was determined to be $3 million. Therefore, the price for *prescribed entry services* for *connection point* B will be ($3 million / 12 months) or $250,000 per month.

## 9.2 PRESCRIBED EXIT SERVICE PRICES

An identical process to that described in section 9.1 above will be followed to determine the price for *prescribed exit services* for individual *connection points*.

### 9.2.1 Worked example

In the example in section 8.3.1, the *ASRR* for *prescribed exit services* to be recovered from *connection point* D was determined to be $7.2 million. Therefore, the price for *prescribed exit services* for *connection point* D will be ($7.2 million / 12 months) or $600,000 per month.

## 9.3 PRESCRIBED COMMON TRANSMISSION SERVICES PRICES

As described in section 6 above, the *AARR* is determined by subtracting from the *MAR* "the operating and maintenance costs expected to be incurred in the provision of *prescribed common transmission services*"[18]. However, clause 6A.23.3(f) of the Rules requires that "the *ASRR* for *prescribed common transmission services* and the operating and maintenance costs incurred in the provision of those services, are to be recovered through prices charged to *Transmission Customer* and *Network Service Provider transmission network connection points* set in accordance with clause 6A.23.4". Therefore, the dollar amount used to determine the prices for *prescribed common transmission services* is more than just the *ASRR* for *prescribed common transmission services* as it also includes the operating and maintenance costs expected to be incurred in the provision of *prescribed common transmission services*.

Clause 6A.23.4(d) of the *Rules* requires "prices for *prescribed common transmission services* must be on a *postage-stamp basis*". Section 2.3 of the *Pricing Methodology Guidelines* details how such prices must be determined.

Section 2.3(b) of the *Pricing Methodology Guidelines* permits three possible *postage stamp pricing* structures. *Transend* has elected to use the first pricing structure (either *contract agreed maximum demand* or historical *energy*) as this is consistent with previous pricing structures, and *Transmission Network Users* will be familiar with it.

The process to determine prices for *prescribed common transmission services* under this pricing structure satisfies the requirements of section 2.3(c) of the *Pricing Methodology Guidelines* as set out below.

(1) Each *financial year Transend* must determine the following two prices:

  (i) an *energy based price* that is a price per unit of historical metered *energy* or current metered *energy* at a *connection point*; and

  (ii) 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* in accordance with clause 6A.26.1 of the *Rules*[19].

(3) The *energy based price* and the *contract agreed maximum demand* price referred to in section (1) above must be determined so that:

  (i) 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 *Transend's transmission network* is indifferent between the use of the *energy based price* and the *contract agreed maximum demand* price; and

  (ii) the total amount to be recovered by *prescribed common transmission services* does not exceed the relevant *ASRR*[20].

[18] See clause 6A.22.1 of the *Rules.*

[19] At this stage there are no negotiated reduced charges for *prescribed common transmission services* in accordance with clause 6A.26.1 of the *Rules*.

[20] All references to the *ASRR* for *prescribed common transmission services* in this section includes the operating and maintenance costs expected to be incurred in the provision of those services.

(4) The charge for the *prescribed common transmission service* using the *energy based price* for a *billing period* in a *financial year* for each *connection point* must be calculated by:

(i) multiplying the *energy based price* by the *metered energy offtake* at that *connection point* in the corresponding *billing period* two years earlier (that is, *historical metered energy offtake*); or

(ii) 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

(iii) 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* 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 if the *Transmission Customer's* connection agreement or other enforceable instrument governing the terms of connection of the *Transmission Customer*:

(i) nominates a *contract agreed maximum demand* for the *connection point*; and

(ii) specifies penalties for exceeding the *contract agreed maximum demand*.

### 9.3.1 Changes to contract agreed maximum demand

On the basis that customers' *contract agreed maximum demands* are used to determine prices and to calculate charges, any changes to a customer's *contract agreed maximum demand* will have repercussions on the recovery of the *AARR*. Further, a core tenet of pricing for *prescribed transmission services* is that a customer's current behaviour should only affect their locational charge, with all other charges effectively being fixed (or sunk costs). Therefore it is clear that customers should not be able to change their *contract agreed maximum demand* simply for the sake of reducing their charges.

If customers were permitted to reduce their *contract agreed maximum demand* during a financial year, it would provide an incentive for customers with seasonal demands to alter their *contract agreed maximum demand* to match their demand. This would introduce an unnecessary element of complexity into the pricing calculations, as well as customer and asset management.

While the implications for pricing would be addressed through the existing under and over-recovery process, it would not overcome the principle outlined above that a customer's current behaviour should only affect their locational charge.

There would also be a further complication for sites providing connection services to more than one customer. In such situations, the cost of assets providing services to more than one customer are (typically) allocated according to the ratio of each customer's *contract agreed maximum demand.* In the situation where one customer reduces their *contract agreed maximum demand,* the other customer(s) at that site would face increased connection charges.

Providing customers with the ability to amend their *contract agreed maximum demand* during a financial year would also mean connection agreements would need to be re-negotiated (both when the demand reduces and then when it rises again). This would also require appropriate system studies to be undertaken to ensure that the increased demand could be met. *Transend* considers that such changes would create unnecessary administrative burden for minimal benefit.

*Transend* proposes that a customer's connection agreement will specify the process required to adjust its *contract agreed maximum demand.* However, any requests to reduce a customer's *contract agreed maximum demand* will not see any reduction during the prevailing *financial year* in any charges calculated using *contract agreed maximum demand*. However, any increases in *contract agreed maximum demand* will be applied immediately to the calculation of relevant charges.

While this apparent asymmetry may seem inequitable from the perspective of an individual *Transmission Network User*, it is equitable considering all *Transmission Network Users* in aggregate, and it is necessary to ensure that customers are not unduly affected by increased charges as a result of other customers trying to minimise their charges.

## 9.4 PRESCRIBED TUOS SERVICES – LOCATIONAL COMPONENT PRICES

As noted in section 8.4.1 above, section 2.2(b) of the *Pricing Methodology Guidelines* "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*"[21]. These lump sum dollar amounts are converted into prices by dividing by a relevant demand figure.

### 9.4.1 Measure of demand used to determine price

Section 2.2(c) of the *Pricing Methodology Guidelines* outlines two permitted measures of demand that may be used to convert the lump sum amounts into prices, while section 2.2(d) states that other measures of demand may be used provided they meet the criteria listed in section 2.2(e).

*Transend's* previous measure of demand (the average monthly *maximum demand* from the most recently completed *financial year*) is not one of the two measures listed in section 2.2(c), so it is necessary to select a new measure of *demand* – one of these two nominated measures. However, the choice of which of these measures to use cannot be done in isolation but must be considered with the manner in which the price will be converted into a charge.

Each billing period the *prescribed TUOS services* locational component price will be multiplied by a measure of demand to derive a *prescribed TUOS services* locational component charge. Consistency between the measure of demand used to determine the price and the measure of demand used to determine the charge will ensure the aggregate amount recovered for the *financial year* approximates the lump sum dollar

[21] AER, *Final Decision, Electricity transmission network service providers, Pricing methodology guidelines,* 29 October 2007, p.6

amount of the *ASRR* for that connection point, thereby minimising under-or over-recovery of the *ASRR*.

While the demand measure outlined in section 2.2(c)(2) of the *Pricing Methodology Guidelines* has greater intuitive appeal as it provides an appropriate pricing signal to customers[22], this measure is likely to lead to the *ASRR* being under-recovered if a prevailing measure of demand is used to calculate the charge. This is because the measure of demand used to determine the price ("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") would be higher (and in some cases significantly higher – particularly for *DNSPs*) than the average measure of demand used to calculate the charge (*billing demand* in the *billing period*).

On the other hand, the *contract agreed maximum demand* fails to provide customers with pricing signals, even though it would minimise under- or over-recoveries of the *ASRR*[23].

Further, section 2.2(c) of the *Pricing Methodology Guidelines* requires that prices for the locational component must be expressed as $/MW/day. Therefore, the lump sum dollar amount for each *connection point* output from the TPRICE software must be divided by both the relevant measure of *demand* and by 365[24] to yield an initial locational price for each *connection point*. As outlined in section 9.4.2 below, customers may not face this initial price as a further adjustment may be required.

After consideration Transend has determined that its preferred approach is to:

(1) Use prevailing *contract agreed maximum demand* as the measure of demand to convert the lump sum amounts into prices.

(2) Apply the 2 per cent rule outlined in section 9.4.2 below to determine the final *prescribed TUOS services* locational component price for each *connection point*.

During each *billing period*, locational charges will be determined by multiplying the locational price applicable to each *connection point* by the relevant *contract agreed maximum demand*.

### 9.4.2 The 2 per cent rule

Clause 6A.23.4(f) of the *Rules* states that unless otherwise permitted "prices for recovering the locational component of the *ASRR* for the provision of *prescribed TUOS services* must not change by more than 2 per cent per annum compared with the load weighted average price for this component for the relevant region"[25]. Therefore, the annual percentage change in the prices initially determined for each *connection point* must be calculated and compared with the average price change for the locational component from the previous year.

The locational component price at each *connection point* will be amended, where necessary, to ensure that the absolute difference between the annual percentage change

[22] If a customer's *maximum demand* in the *billing period* is used to calculate the charge then the customer's behaviour (demand) will clearly affect their charge.

[23] Under- or over-recoveries of the *ASRR* would only occur if a customer changes its *contract agreed maximum demand*, a customer is disconnected or a new customer is connected.

[24] In cases of a leap year, the divisor would be 366 rather than 365.

[25] Clause 6A.23.4(g) of the Rules allows for the annual change in price for a *connection point* to exceed the average price change by more 2 percentage points provided that three criteria are met, including that the *AER's* approval is obtained.

in the locational component price at an individual *connection point* and the annual average percentage change for all *connection points* is no greater than 2 percentage points.

Where the annual percentage change for the price at a given *connection point* is within 2 percentage points of the average annual price change, there will be no adjustment to the locational component price for that *connection point*.

Where the annual percentage change for the price at a given *connection point* is more than 2 percentage points above the average annual price change, the locational component price for that *connection point* will be reduced until the annual percentage change is 2 percentage points above the average annual price change. This reduction in price will mean that the lump sum dollar amount identified by the TPRICE software cannot be recovered from this *connection point*. As noted in section 9.5 below, this deficit will be added to the non-locational component to ensure that the *ASRR* for *prescribed TUOS services* is fully recovered.

Where the annual percentage change for the price at a given *connection point* is more than 2 percentage points below the average annual price change, the locational component price for that *connection point* will be increased until the annual percentage change is 2 percentage points below the average annual price change. This increase in price will mean that more than the lump sum dollar amount identified by the TPRICE software will be recovered from this *connection point*. As noted in section 9.5 below, this surplus amount will be deducted to the non-locational component to ensure that the *ASRR* for *prescribed TUOS services* is fully recovered.

### 9.4.3 Transitional arrangements

As noted in section 9.4.1 above, the manner in which prices for the locational component of *prescribed TUOS services* is markedly different to that used to determine the usage prices under the old Chapter 6 of the *Rules*. This means that the usage prices from 2008-09 – the final year of usage prices – cannot be used when applying the 2 per cent rule for 2009-10 – the first year of locational prices. This is demonstrated clearly by the fact that the usage prices were calculated on a $/MW/month basis whereas the locational prices are calculated on a $/MW/day basis – the usage prices will be about 30 times that of the locational prices, even if nothing else had changed.

Therefore, to ensure that a suitable base price is used when applying the 2 per cent rule in 2009-10, the usage prices for 2008-09 will be re-calculated on a comparable basis to the locational prices but will be used solely as a base for applying the 2 per cent rule.

### 9.4.4 Worked example

The locational component price in year 1 for *connection points* X, Y and Z are all $100/MW/day and the initial prices for year 2 are calculated to be $105, $111 and $114, while the weighted average price for year 2 is $110 (based on equal *contract agreed maximum demands* at each *connection point*). Therefore, the annual average price change is 10% while the annual price change for the *connection points* are 5%, 11% and 14%. However, the 2 per cent rule means these price changes must be constrained to between 8% and 12% (that is, within 2 percentage points of the average annual price change of 10%).

In the case of *connection point* X, the price must be adjusted up to $108, which means that more will be recovered from this *connection point* than indicated by the TPRICE software. This additional amount will be deducted from the non-locational component.

In the case of *connection point* Y, no adjustment is required to the price so it remains at $111, which means that the amount recovered from this *connection point* is that indicated by the TPRICE software.

In the case of *connection point* Z, the price must be adjusted down to $112, which means that less will be recovered from this *connection point* than indicated by the TPRICE software. This additional amount will be added to the non-locational component.

### 9.5 PRESCRIBED TUOS SERVICES – ADJUSTED NON-LOCATIONAL COMPONENT PRICES

Clause 6A.23.3(c)(2) of the *Rules* outlines how the 50 per cent share of the *ASRR* for *prescribed TUOS service* that was initially allocated to be recovered by the non-locational prices (the pre-adjusted non-locational component – see section 8.4.1) is adjusted to yield the adjusted non-locational component. These adjustments are:

- by subtracting or adding any *settlements residue* due to *intra-regional loss factors* which is expected to be distributed or recovered (as the case may be) to or from the *TNSP* in accordance with clause 3.6.5(a) of the *Rules*[26];
- for any *over-recovery amount* or *under-recovery amount* that has not previously been recovered;
- for any amount arising as a result of the application of *the modified CRNP methodology* rather than the *CRNP methodology* (see section 8.4.1);
- for any amount arising as a result of the application of *Rules* clause 6A.23.4(h) and (i); that is, application of the 2 per cent rule (see section 9.4.2); and
- for any amount arising as a result of the application of prudent discounts in clause 6A.26.1(d)-(g) of the *Rules* (see section 11).

Once the adjusted non-locational component has been determined, it is to be recovered in accordance with clause 6A.23.4(j) of the *Rules*; that is, on a *postage-stamp* basis. The methodology used to determine prices for the non-locational component is identical to that outlined in section 9.3 used to determine prices for *prescribed common transmission services*.

As the two postage-stamp prices are determined on the same basis, an individual customer will face either *energy based prices* for both charges or the *contract agreed maximum demand* prices for both charges. A customer cannot face an *energy based price* for one charge and the *contract agreed maximum demand* price for the other.

## 10 EXCESS ACTIVE DEMAND CHARGE

As noted in section 9.3, a *contract agreed maximum demand* price can only be applied for the *postage-stamped* prices if the *Transmission Customer's* connection agreement or other enforceable instrument governing the terms of connection of the *Transmission Customer*:

- nominates a *contract agreed maximum demand* for the *connection point*; and
- specifies penalties for exceeding the *contract agreed maximum demand*.

If in any month the 30 minute *billing demand* at a connection point exceeds the *contract agreed maximum demand* for that *connection point* without the prior approval of *Transend*, then the *Transmission Customer* will be liable to pay an excess active demand charge.

[26] As noted previously, *Transend* does not receive any settlements residue auction proceeds as the *interconnection* between Tasmania and the rest of the *NEM* is a *MNSP*. However, *Transend* does receive payments from *NEMMCO* in relation to *settlements* residue amounts that arise due to Tasmania's *intra-regional loss factors*.

As outlined in section 9.4, the *prescribed TUOS services* locational component charge is calculated using *contract agreed maximum demand* (rather than *billing demand*). The excess active demand charge will be set at three times the *prescribed TUOS services* locational component price for the relevant *connection point* multiplied by the amount by which the *billing demand* exceeds the *contract agreed maximum demand.* The excess active demand charge maintains the same financial disincentive for customers to exceed *contract agreed maximum demand* as the *prescribed TUOS services* locational charge will be lower than the old *TUOS* usage charge. To demonstrate this, the *TUOS* usage charge and excess active demand charges can be determined using the same data in the example in section 10.1.

For the avoidance of doubt, it should be noted that the excess active demand charge is levied in addition to the *prescribed TUOS services* locational component charge. Monies recovered through the excess active demand charge is treated as revenue from *prescribed transmission services* and therefore included in *Transend's* maximum allowed revenue.

### 10.1 WORKED EXAMPLE

Assume that the *contract agreed maximum demand* for a *connection point* is 100 MW and the *prescribed TUOS services* locational component price for the *connection point* is $40/MW/day. If the *billing demand* for that *connection point* for a *billing period* (comprising 30 days) is 105 MW, then an excess active demand charge would be levied. The amount of the excess active demand would be $18,000 – calculated as (3 * 5 MW * $40/MW/day * 30 days) – while the *prescribed TUOS services* locational component charge for this *connection point* for this *billing period* would be $120,000 – calculated as (100 MW * $40/MW/day * 30 days).

Under *Transend's* old pricing policy, the equivalent *TUOS* usage price would be about $1,200/MW/month ($40/MW/day * 30 days ). The *TUOS* usage charge would be $126,000 – calculated as (105 MW * $1,200/MW/month), while the excess active demand charge would be $12,000 – calculated as (2 * 5 MW * $1,200/MW/month). The sum of these two charges is $138,000. Therefore, the same charge results under both old and new methodologies.

## 11 PRUDENT DISCOUNTS

Currently none of *Transend's* customers are in receipt of prudent discounts. In the event that a customer does seek a prudent discount in the future, *Transend* will follow the requirements outlined in clause 6A.26 of the *Rules* to ensure that the correct process for determining and applying prudent discounts is followed and, where *Transend* proposes to recover more than 70 per cent of the amount of the discount from other customers, approval of the *AER* is sought.

With respect of the impact of prudent discount on *prescribed transmission service* prices, *Transend* will adjust, in accordance with clause 6A.26.1(d)-(g) of the *Rules*, the non-locational component of the *ASRR* for *prescribed TUOS services* for the amount of any anticipated under-recovery arising from prudent discounts applied. As noted above, this anticipated under-recovery will only exceed 70 per cent of the value of the prudent discounts where *Transend* has obtained the approval of the *AER*.

## 12 BILLING ARRANGEMENTS

Clause 6A.27 of the *Rules* describes the manner in which *Transmission Network Users* are billed for *prescribed transmission services* and how payments for those services are made. *Transend's* billing arrangements for *prescribed transmission services* are outlined below and are consistent with clause 6A.27.

Clauses 6A.27.4 and 6A.27.5 are not relevant to *Transend* at this point in time as it is the sole provider of *prescribed transmission services* in Tasmania (as noted in section 4.2), so *Transend* currently has no payments or transfers with other *TNSPs*.

## 12.1 Billing for Prescribed Transmission Services

Charges for *prescribed transmission service* payable by *Transmission Network Users* will be calculated for each *connection point* in accordance with the *published transmission service* prices. *Transend* will issue a bill to each *Transmission Network Users* for *prescribed transmission services*.

Where the billing for a particular *financial year* is based on quantities which are undefined until after the commencement of the *financial year*, charges will be estimated from the previous year's billing quantities with a reconciliation to be made when the actual billing quantities are known and, where the previous year's billing quantities are unavailable or no longer suitable, nominated quantities may be used as agreed between the parties.

Charges for *prescribed transmission services* which are determined from *metering data*[27] will be based on kW or kWh obtained from the *metering data* managed by *NEMMCO*.

## 12.2 Information to be Provided in Network Service Bills

At a minimum, the following information will be provided with a bill for a *connection point* issued by *Transend* directly to a *Transmission Network User*:

- the *connection point* identifier;
- the dates on which the *billing period* starts and ends;
- the identifier of the published *transmission service* price from which the *connection point* charges are calculated;
- measured quantities, billed quantities, agreed quantities, prices and amounts charged for each component of the total *transmission service* account.

In addition, a bill for a *connection point* issued by *Transend* directly to a *Transmission Network User* will separately identify, for the total amount levied in relation to *prescribed TUOS services* in the *billing period* for that *connection point* each of the following components:

- charges for the locational and the adjusted non-locational component of *prescribed TUOS services*; and
- charges for *prescribed common transmission services*.

## 12.3 Obligation to Pay Charges for Prescribed Transmission Services

*Transend* notes that the *Rules* oblige a *Transmission Network User* to pay charges for *prescribed transmission services* properly charged to it and billed in accordance with this *Pricing Methodology* by the date specified in the bill.

The remedies available to *Transend* in the event that a *Transmission Network User* fails to pay charges for *prescribed transmission services* properly charged to it and billed in

[27] Generally this will be charges for the *prescribed TUOS service* non-locational component and the *prescribed common transmission services* where a *transmission customer* faces *energy based prices*, and also excess active demand charges.

accordance with this *Pricing Methodology* by the date specified in the bill are outlined in the relevant connection agreement.

# 13 PRUDENTIAL REQUIREMENTS

Clause 6A.28 of the *Rules* recognises *Transend's* right to minimise financial risks associated with investment in *transmission network* assets. *Transend's prudential requirements* for *prescribed transmission services* are outlined below and are consistent with clause 6A.28.

## 13.1 PRUDENTIAL REQUIREMENTS FOR PRESCRIBED TRANSMISSION SERVICES

*Transend* may require a *Transmission Network User* to establish *prudential requirements* for either or both *connection services* and *transmission use of system services*. These prudential requirements may take the form of, but need not be limited to, capital contributions, pre-payments or financial guarantees.

## 13.2 CAPITAL CONTRIBUTION OR PREPAYMENT FOR A SPECIFIC ASSET

Where *Transend* is required to construct specific assets to provide *connection services* or *transmission use of system services* to a *Transmission Network User*, *Transend* may require that user to make a capital contribution or prepayment for all or part of the cost of the new assets installed. Any contribution made will be taken into account in the determination of *transmission service* prices applicable to that user.

## 13.3 TREATMENT OF PAST CAPITAL CONTRIBUTIONS

The treatment of capital contributions for *connection services* and/or *transmission use of system services* made by a *Transmission Network User* prior to 13 December 1998 must be in accordance with the relevant contractual arrangements with *Transend* applicable at that time.

Where contractual arrangements are not in place, the treatment of past capital contributions for *connection services* and/or *transmission use of system services* must be negotiated by *Transend* and the *Transmission Network User* and, if a dispute arises and cannot be resolved, the matter must be referred to the *AER*.

## 13.4 SUBSEQUENT BENEFICIARY OF PAST CAPITAL CONTRIBUTIONS

Where an asset, fully or partly funded through capital contributions, that was previously dedicated to a *Transmission Network User* subsequently becomes shared, the new user(s) shall be charged an amount in recognition of this capital contribution and *Transend* shall refund this same amount to the original user who made the initial capital contribution.

# APPENDIX 1 – OVERVIEW OF PRICING PROCESS

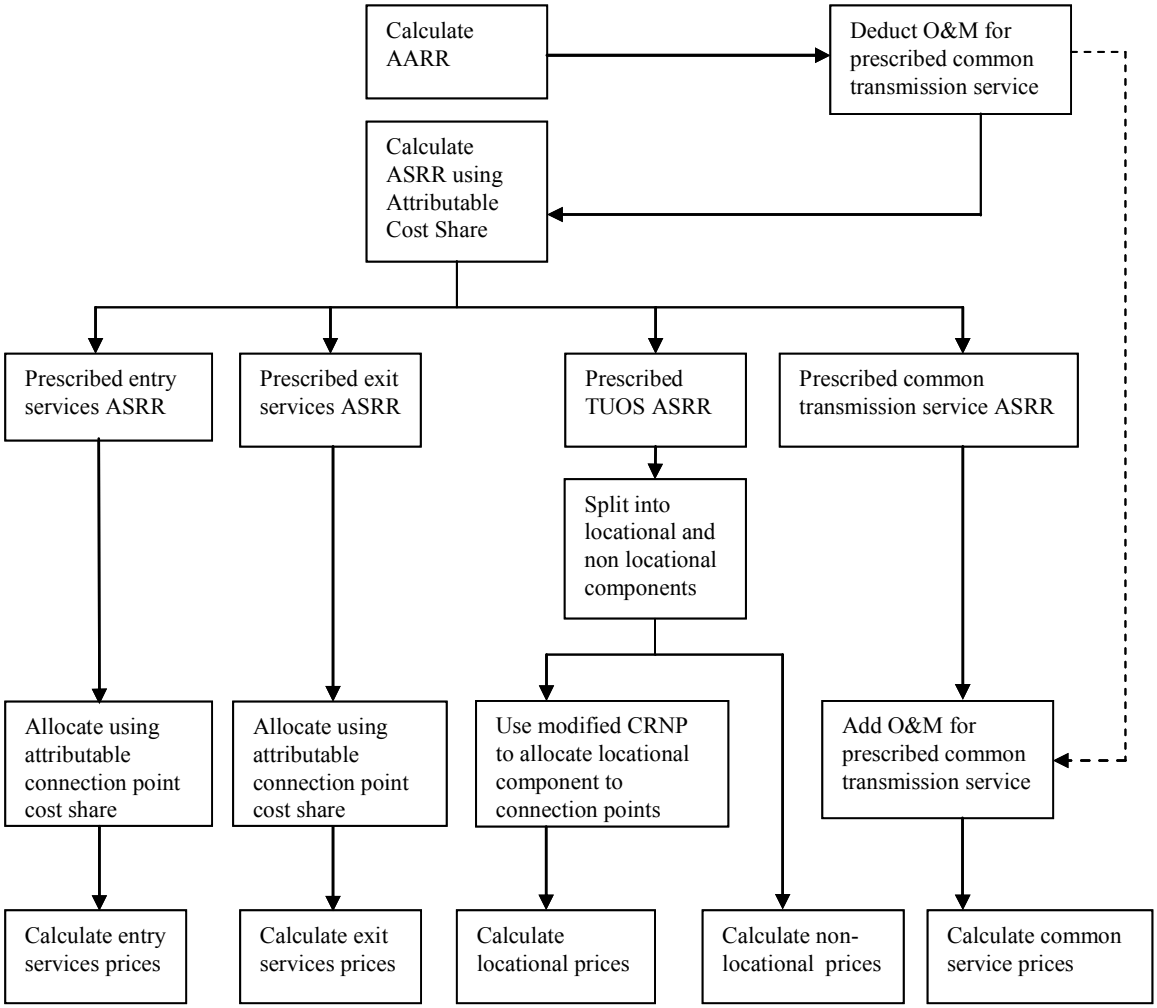



**Figure 1 – Overview of Pricing Process**

# APPENDIX 2 – APPLICATION OF PRIORITY ORDERING PROCESS

## RULES REQUIREMENT

Clause 6A.23.2(d) of the *Rules* states that:

Where, as a result of the application of the *attributable cost share*, a portion of the *AARR* would be attributable to more than one category of *prescribed transmission services*, that *attributable cost share* is to be adjusted and applied such that any costs of a *transmission system* asset that would otherwise be attributed to the provision of more than one category of *prescribed transmission services*, is allocated as follows:

(1) to the provision of *prescribed TUOS services*, but only to the extent of the *stand-alone amount* for that *category of prescribed transmission services*;

(2) if any portion of the costs of a *transmission system* asset is not allocated to *prescribed TUOS services*, under subparagraph (1), that portion is to be allocated to *prescribed common transmission services*, but only to the extent of the *stand-alone amount* for that *category of prescribed transmission services*;

(3) if any portion of the costs of a *transmission system* asset is not attributed to *prescribed transmission services* under subparagraphs (1) and (2), that portion is to be attributed to *prescribed entry services* and *prescribed exit services*.

The term "*stand-alone amount*" is defined in the *Rules* as:

> *For a category of prescribed transmission services, the costs of a transmission system asset that would have been incurred had that transmission system asset been developed, exclusively to provide that category of prescribed transmission services.*

## AEMC RULE DETERMINATION

In its rule determination the AEMC provided the following guidance on the application of the priority ordering approach for the allocation of costs which can be attributed to more than one *category of prescribed transmission service*:

> *The Commission has maintained a priority ordering approach for the allocation of expenses or costs which can be attributed to more than one type of service. The cascading principle adopted by the Commission is based on the premise that users are seen to be the 'cause' of transmission investment. Therefore, costs should be first allocated to prescribed transmission use of system services on a standalone basis and then to prescribed common services. Where a service/cost cannot justifiably be attributed to TUoS or common services it should be allocated to entry and exit services.*[28]

In developing this *Pricing Methodology Transend* has had regard for the following example that the *AEMC* presented in the rule determination[29]:

> *Consider a substation costing $30 million that was developed:*
>
> - *partly in order to provide Prescribed Transmission Use of System Services;*

[28] AEMC 2006, *National Electricity Amendment (Pricing of Prescribed Transmission Services) Rule 2006 No. 22*, Rule Determination, 21 December 2006, Sydney, p.5.

[29] AEMC 2006, *National Electricity Amendment (Pricing of Prescribed Transmission Services) Rule 2006 No. 22*, Rule Determination, 21 December 2006, Sydney, pp.37-38.

- *partly in order to provide Common Transmission Services; and*
- *partly in order to provide Prescribed Exit Services.*

*Then assume that had the substation been developed solely to provide Prescribed TUoS Services, it could have been much smaller and would have cost only $10 million. Had the substation been developed solely in order to provide Common Services, it would have cost $5 million. Finally, had the substation been developed solely in order to provide Prescribed Exit Services, it would have cost $20 million.*

*The application of the principle would then lead to the $30 million cost of the substation being attributed to Prescribed Transmission Service categories as follows:*

- *$10m to the Prescribed TUoS ASRR;*
- *$5m to the Prescribed Common Services ASRR; and*
- *the remaining $15 million to the Prescribed Exit Service ASRR.*

## OBJECTIVE AND GENERAL APPROACH

*Transend's* allocation methodology for the priority ordering process relies on the premise that *substation* infrastructure and establishment costs are proportionate to the number of *high voltage* circuit breakers in the *substation*. *Transend* believes that the use of *high voltage* circuit breakers as an allocating mechanism is appropriate as the breakers:

1. are easily identifiable and attributable;
2. are practical and straightforward for the *AER* or other parties to review; and
3. provide the basis for a predictable and repeatable process.

Further, *Transend* believes the circuit breaker methodology is consistent with the (simple and easily replicated) "desktop-style" study that the *AEMC* anticipated that *TNSPs* would undertake[30].

Based on this assumption, the appropriate allocator for *substation* infrastructure and establishment costs for a stand-alone arrangement is the ratio of the number of *high voltage* circuit breakers in the stand-alone arrangement to the number of *high voltage* circuit breakers in the whole *substation*.

[30] In its draft determination of the pricing *Rule*, the *AEMC* stated that "The Commission's intent is that TNSPs would undertake an internal desktop style study of their assets and make an informed but approximate judgment as to the relevant standalone costs of providing different services rather than engage in a prolonged and detailed DORC-style consultant-led audit and evaluation of their assets". AEMC 2006, *Draft National Electricity Amendment (Pricing of Prescribed Transmission Services) Rule 2006*, Draft Determination, 19 October 2006, Sydney, p.47.

## PROPOSED METHODOLOGY

As illustrated by the diagrams below, a "branch" is a collection of assets (for example, *transmission lines*, circuit breakers, capacitors, buses and *transformers*) that provide a *transmission service*.

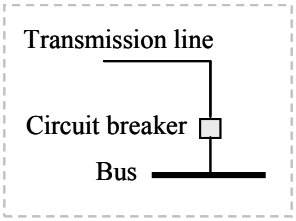



**Figure 2 – Branch with Transmission Line, Bus and Circuit Breaker**

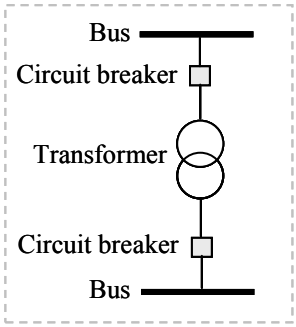



**Figure 3 – Branch with Transformer, Circuit Breaker and two Busses**

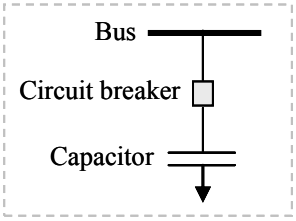



**Figure 4 – Branch with Capacitor, Circuit Breaker and Bus**

### Step 1: Branch Identification

Identify the branches – being the *transmission lines*, *transformers*, major reactive devices and exits/entries in the *substation* which provide *prescribed TUOS services*, *prescribed common transmission services* and *prescribed entry services* or *prescribed exit services* – in the *substation*.

### Step 2: Allocation of Circuit Breakers to Branches

For each *high voltage* circuit breaker in the *substation,* identify the branches directly connected to it. Any circuit breaker that does not directly connect to a branch is excluded from allocation and all costs associated with it are added to the *substation* infrastructure and establishment cost.

Count the total number of circuit breakers directly connected to branches.

As a general rule, branches connecting *Distribution Network Service Providers* (*DNSPs*) are classified as *prescribed exit services* while branches connecting *generators* are classified as *prescribed entry service*. Assets providing *negotiated services* are not part of the regulatory asset base and fall outside the priority ordering process detailed in clause 6A.23.2(d) of the *Rules*.

### Step 3: Determination of Stand alone Arrangements

#### *Step 3.1: Stand-alone Arrangements for Prescribed TUOS Services*

With reference to the number of *transmission lines* providing *prescribed TUOS services*, determine the number of circuit breakers required to provide *TUOS services* of an equivalent standard on a stand-alone basis. *Transend* understands the stand-alone configuration should be the simplest *substation* configuration (in the absence of development) had the *substation* been developed to provide only *prescribed TUOS services*. This may be done by way of a look up of typical stand-alone configurations.

#### *Step 3.2: Stand-alone Arrangements for Prescribed Common Transmission Services*

With reference to the number of *transmission lines* providing *prescribed TUOS services* and devices providing *prescribed common transmission services,* determine the number of circuit breakers required to provide *prescribed common transmission services* of an equivalent standard on a stand-alone basis[31]. *Transend* understands the stand-alone configuration to be the simplest *substation* configuration (in the absence of development) had the *substation* been developed to provide only *prescribed common transmission services*. This may be done by way of a look up of typical stand-alone configurations.

### Step 4: Allocation of Substation Infrastructure and Establishment Costs

#### *Step 4.1. Allocation to Prescribed TUOS Services*

Allocate a portion of the *substation* infrastructure and establishment costs to *prescribed TUOS services* according to the ratio of the *high voltage* circuit breakers identified in step 3.1 to the total number of *high voltage* circuit breakers connected to branches in the *substation* identified in step 2.

#### *Step 4.2 Calculate the Unallocated Substation Infrastructure Costs after TUOS Allocation*

Calculate the unallocated *substation* infrastructure cost by subtracting the amount calculated in step 4.1 from the total *substation* infrastructure amount. If the unallocated *substation* infrastructure cost is zero (that is, the *prescribed TUOS services* component of the *substation* infrastructure costs equals the total *substation* infrastructure amount), then no *substation* infrastructure costs would be allocated to *prescribed common transmission services*, *prescribed entry services* or *prescribed exit services*.

#### *Step 4.3 Allocation to Prescribed Common Transmission Services*

Allocate a portion of the *substation* infrastructure and establishment costs to *prescribed common transmission services* based on to the ratio of the *high voltage* circuit breakers providing *prescribed common transmission services* identified in step 3.2 to the total number of *high voltage* circuit breakers connected to branches in the *substation*. If the *common service* portion of substation infrastructure is greater than the unallocated costs calculated in step 4.2, then only the unallocated portion is attributed to *prescribed common transmission service*. In this instance, no *substation* infrastructure costs would be allocated to *prescribed entry services* or *prescribed exit services*.

[31] The number of *transmission lines* providing *prescribed TUOS services* is included in determining the number of circuit breakers required to provide *prescribed common transmission services* on a stand-alone basis because the *common services* are provided to the entire *transmission network*, so they cannot be considered in isolation but must be connected to the *transmission network* through the *prescribed TUOS services*.

### *Step 4.4 Calculate the Unallocated Substation Infrastructure Costs after Common Service Allocation*

Re-calculate the unallocated *substation* infrastructure cost by subtracting the amount calculated in step 4.3 from the amount calculated in step 4.2. If the unallocated *substation* infrastructure cost is zero (that is, the *prescribed TUOS services* and *prescribed common transmission services* components of the *substation* infrastructure costs equals the total *substation* infrastructure amount), then no *substation* infrastructure costs would be allocated to *prescribed entry services* or *prescribed exit services*.

### *Step 4.5 Allocation of Prescribed Entry and Exit Service*

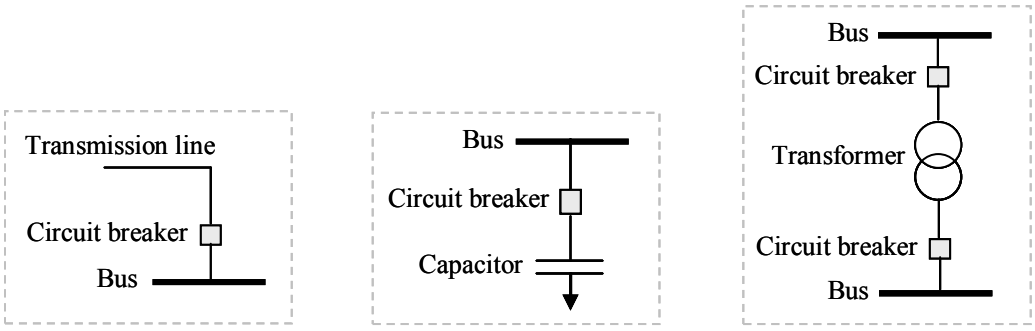
Allocate the remaining *substation* infrastructure and establishment costs (calculated in step 4.4) to each branch providing *prescribed entry services* or *prescribed exit services*. This allocation will be based on the ratio of the *high voltage* circuit breakers providing the *prescribed entry services* or *prescribed exit services* to the total number of *high voltage* circuit breakers, or in accordance with *Transend's* cost allocation methodology as appropriate[32].

### Notes on Process

The following points should be noted:

- costs are only allocated in step 4 until fully allocated;
- consistent with clause 6A.23(d)(3) of the *Rules*, it is possible that no costs will be attributed to entry and exit services;
- new and existing *negotiated service* assets are excluded from the analysis as any incremental establishment costs associated with such assets are taken to be included in the *negotiated services* charges on a causation basis; and
- the assessment of stand-alone arrangements only needs to be conducted once per *substation* except where changes to the configuration of the *substation* occur.

### Key to Diagrams




[32] The allocation between (or within) *prescribed entry services* or *prescribed exit services* is not included in the priority ordering process as it was not considered in clause 6A.23.3(d)(3) of the *Rules*.

## EXAMPLES OF APPLICATION OF PRIORITY ORDERING PROCESS

### Example A

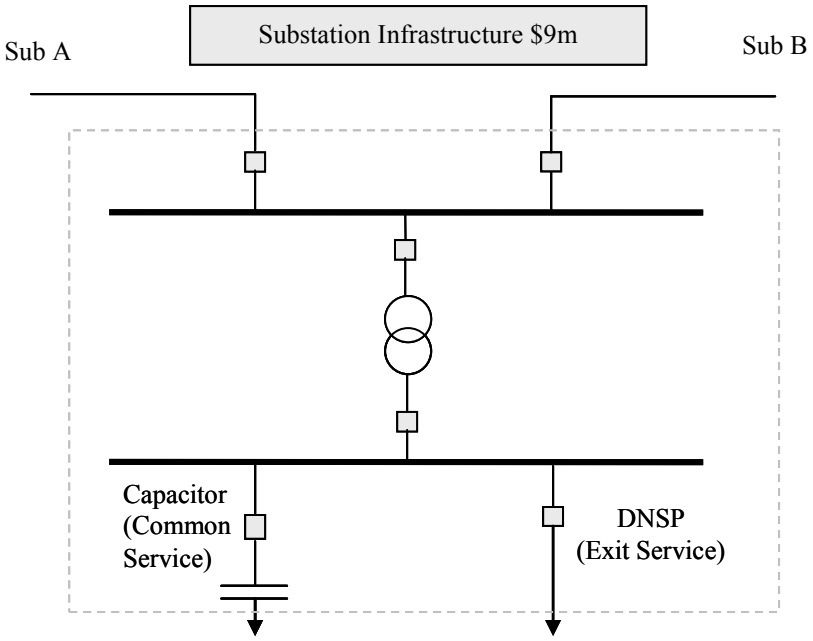



**Figure 5 – Substation Configuration: example A**

Step 1: The branches are *transmission lines* to Sub A and Sub B, a *prescribed exit service* to a *DNSP*, a *transformer* and a capacitor[33].

Step 2: The total number of circuit breakers directly connected to branches is 6.

Step 3.1: The stand-alone arrangement for the provision of *prescribed TUOS services* to an equivalent standard is shown below and consists of 2 circuit breakers.


**Figure 6 – Stand-alone Prescribed TUOS Services: example A**

[33] These examples do not include reference to any *prescribed entry services* for two reasons (i) for the sake of simplicity and (ii) because the impact of a *prescribed entry service* is the same as for a *prescribed exit service*. Therefore, references in the examples to *prescribed exit service* are interchangeable with references to *prescribed entry services*. This interchangeability between *prescribed entry services* and *prescribed exit service* for the purpose of cost allocation under priority ordering is the reason that the table in each example includes reference to "Costs to entry and exit" even though the relevant example may only include *prescribed exit services.*

Furthermore, in a situation where there is more than one *prescribed entry services* and/or *prescribed exit service*, as shown in Example D for example, the allocation of costs between the *prescribed entry services* and/or *prescribed exit service* is described in section 7.3.1.

Step 3.2: The stand-alone arrangement for the provision of *prescribed common transmission services* to an equivalent standard is shown below and consists of 3 circuit breakers.

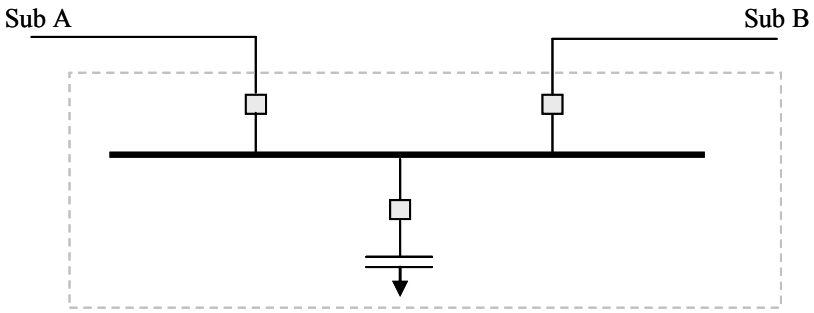



**Figure 7 – Stand-alone Prescribed Common Transmission Services: example A**

Step 4: Assume the total infrastructure cost that can be allocated to more than one *category of prescribed transmission service* is $9 million.

Step 4.1: Costs are allocated to *prescribed TUOS services* in the ratio of the number of circuit breakers in the stand-alone arrangement to the total number of circuit breakers. Therefore, the infrastructure cost allocated to *TUOS* = (2/6) x $9m = $3m

Step 4.2: Unallocated = $9m - $3m = $6m

Step 4.3: Costs are allocated to *prescribed common transmission service* in the ratio of the number of circuit breakers in the stand-alone arrangement to the total number of circuit breakers. Therefore, the infrastructure cost allocated to *common service* = (3/6) x $9m = $4.5m

Step 4.4: Unallocated = $6m - $4.5m = $1.5m

Step 4.5: The remaining (unallocated) infrastructure cost are allocated to *prescribed entry services* and *prescribed exit services*. Therefore, the infrastructure cost allocated to *exit services* = $1.5m

| | | **Allocated** | **Yet to be allocated** |
|---|---|---|---|
| Substation infrastructure costs | | | 9,000,000 |
| Total breakers | 6 | | |
| TUOS stand-alone breakers | 2 | | |
| Costs to TUOS | 0.333 | 3,000,000 | 6,000,000 |
| Common service stand-alone breakers | 3 | | |
| Costs to common service | 0.500 | 4,500,000 | 1,500,000 |
| Costs to entry and exit | | 1,500,000 | 0 |
| **TOTAL** | | **9,000,000** | **0** |

**Table 5 – Priority ordering allocation: example A**

**Example B**

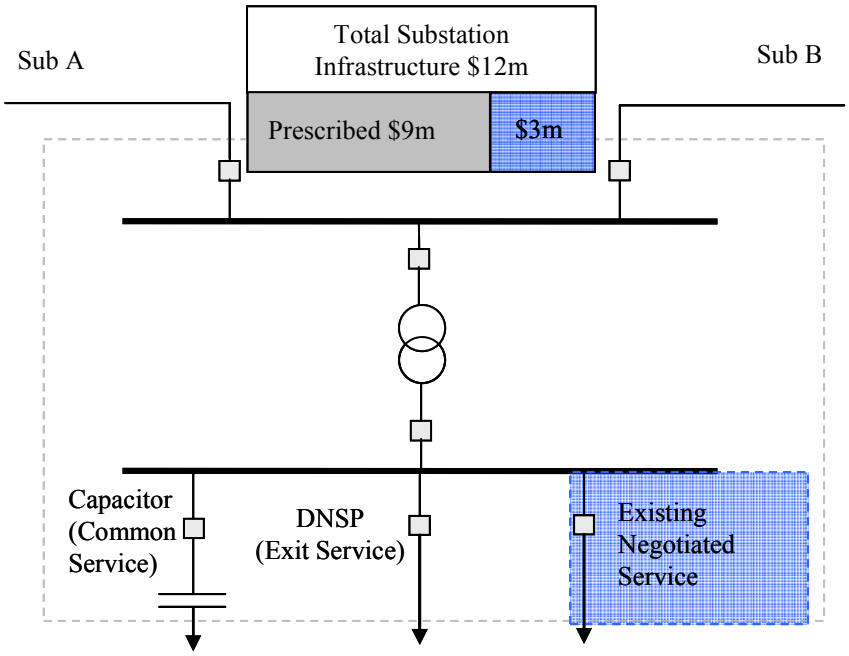



**Figure 8 – Substation Configuration: example B**

Step 1: The branches are *transmission lines* to Sub A and Sub B, a *prescribed exit service* to a *DNSP*, a *transformer*, a capacitor and an existing *negotiated service*.

Step 2: The total number of circuit breakers directly connected to branches is 6 (none of the costs for *prescribed transmission services* are allocated to the *negotiated service*).

Step 3.1: The stand-alone arrangement for the provision of *prescribed TUOS services* to an equivalent standard is shown below and consists of 2 circuit breakers.


**Figure 9 – Stand-alone Prescribed TUOS Services: example B**

Step 3.2: The stand-alone arrangement for the provision of *prescribed common transmission services* to an equivalent standard is shown below and consists of 3 circuit breakers.

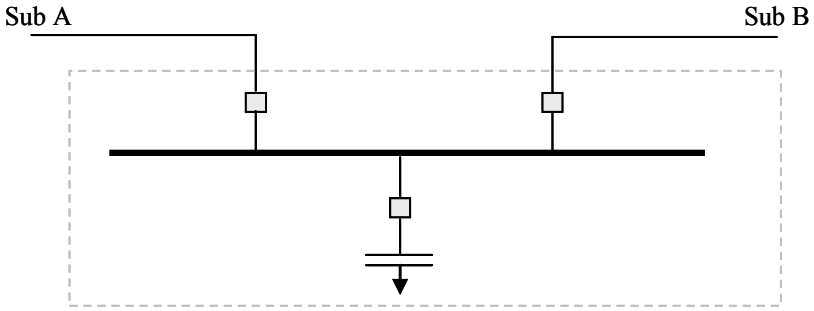



**Figure 10 – Stand-alone Prescribed Common Transmission Services: example B**

Step 4: Assume the total infrastructure cost is $12m; $3m of which is for the existing negotiated service, which does not form part of the regulatory asset base and is not governed by clause 6A.23.2(d) of the *Rules*. Therefore, the total infrastructure cost that can be allocated to more than one *category of prescribed transmission service* is $9 million.

Step 4.1: Costs are allocated to *prescribed TUOS services* in the ratio of the number of circuit breakers in the stand-alone arrangement to the total number of circuit breakers. Therefore, the infrastructure cost allocated to *TUOS* = (2/6) x $9m = $3m

Step 4.2: Unallocated = $9m - $3m = $6m

Step 4.3: Costs are allocated to *prescribed common transmission service* in the ratio of the number of circuit breakers in the stand-alone arrangement to the total number of circuit breakers. Therefore, the infrastructure cost allocated to *common service* = (3/6) x $9m = $4.5m

Step 4.4: Unallocated = $6m - $4.5m = $1.5m

Step 4.5: The remaining (unallocated) infrastructure cost are allocated to *prescribed entry services* and *prescribed exit services*. Therefore, the infrastructure cost allocated to *exit services* = $1.5m

| | | **Allocated** | **Yet to be allocated** |
|---|---|---|---|
| Substation infrastructure costs | | | 9,000,000 |
| Total breakers | 6 | | |
| TUOS stand-alone breakers | 2 | | |
| Costs to TUOS | 0.333 | 3,000,000 | 6,000,000 |
| Common service stand-alone breakers | 3 | | |
| Costs to common service | 0.500 | 4,500,000 | 1,500,000 |
| Costs to entry and exit | | 1,500,000 | 0 |
| **TOTAL** | | **9,000,000** | **0** |

**Table 6 – Priority ordering allocation: example B**

**Example C**

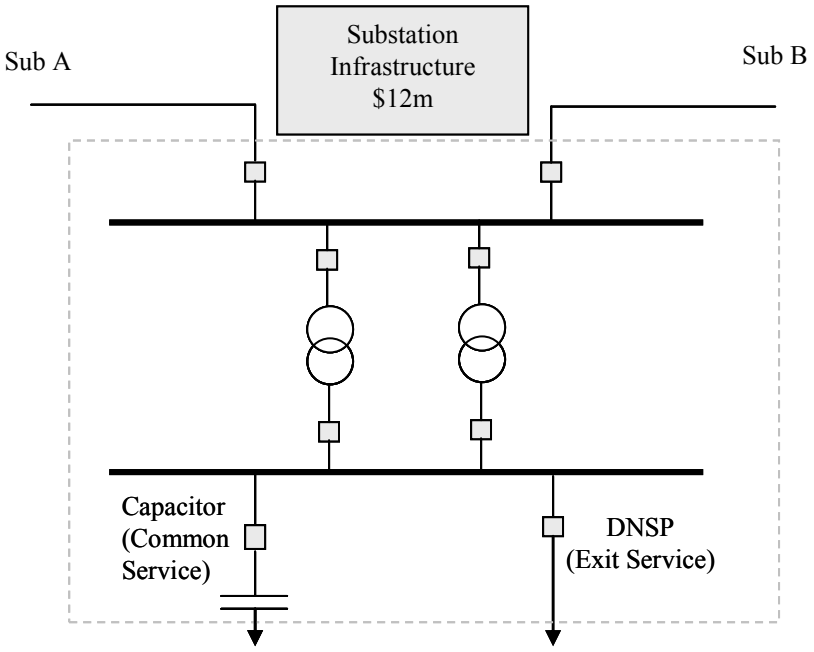



**Figure 11 – Substation Configuration: example C**

Step 1: The branches are *transmission lines* to Sub A and Sub B, a *prescribed exit service* to a *DNSP*, two *transformers* and a capacitor.

Step 2: The total number of circuit breakers directly connected to branches is 8.

Step 3.1: The stand-alone arrangement for the provision of *prescribed TUOS services* to an equivalent standard is shown below and consists of 2 circuit breakers.


**Figure 12 – Stand-alone Prescribed TUOS Services: example C**

Step 3.2: The stand-alone arrangement for the provision of *prescribed common transmission services* to an equivalent standard is shown below and consists of 3 circuit breakers.

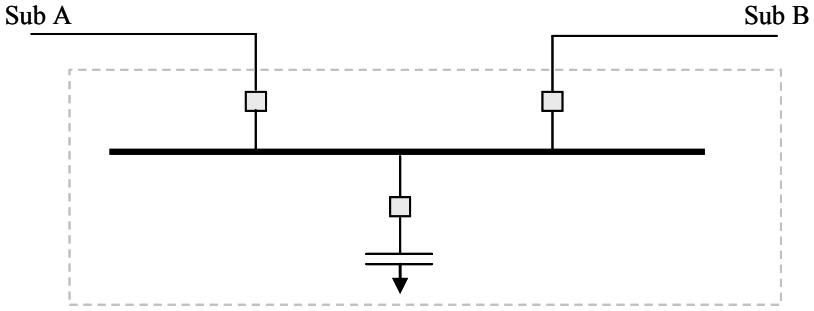



**Figure 13 – Stand-alone Prescribed Common Transmission Services: example C**

Step 4: Assume the total infrastructure cost that can be allocated to more than one *category of prescribed transmission service* is $12 million.

Step 4.1: Costs are allocated to *prescribed TUOS services* in the ratio of the number of circuit breakers in the stand-alone arrangement to the total number of circuit breakers. Therefore, the infrastructure cost allocated to *TUOS* = (2/8) x $12m = $3m

Step 4.2: Unallocated = $12m - $3m = $9m

Step 4.3: Costs are allocated to *prescribed common transmission service* in the ratio of the number of circuit breakers in the stand-alone arrangement to the total number of circuit breakers. Therefore, the infrastructure cost allocated to *common service* = (3/8) x $12m = $4.5m

Step 4.4: Unallocated = $9m - $4.5m = $4.5m

Step 4.5: The remaining (unallocated) infrastructure cost are allocated to *prescribed entry services* and *prescribed exit services*. Therefore, the infrastructure cost allocated to *exit services* = $4.5m

| | | **Allocated** | **Yet to be allocated** |
|---|---|---|---|
| Substation infrastructure costs | | | 12,000,000 |
| Total breakers | 8 | | |
| TUOS stand-alone breakers | 2 | | |
| Costs to TUOS | 0.250 | 3,000,000 | 9,000,000 |
| Common service stand-alone breakers | 3 | | |
| Costs to common service | 0.375 | 4,500,000 | 4,500,000 |
| Costs to entry and exit | | 4,500,000 | 0 |
| **TOTAL** | | **12,000,000** | **0** |

**Table 7 – Priority ordering allocation: example C**

**Example D**

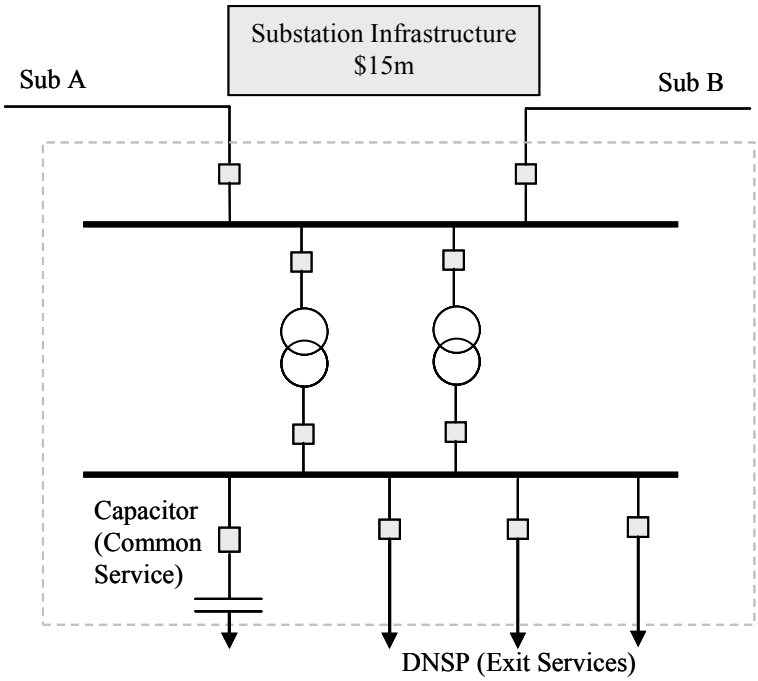



**Figure 14 – Substation Configuration: example D**

Step 1: The branches are *transmission lines* to Sub A and Sub B, *prescribed exit services* to *DNSP(s)*, two *transformers* and a capacitor.

Step 2: The total number of circuit breakers directly connected to branches is 10.

Step 3.1: The stand-alone arrangement for the provision of *prescribed TUOS services* to an equivalent standard is shown below and consists of 2 circuit breakers.

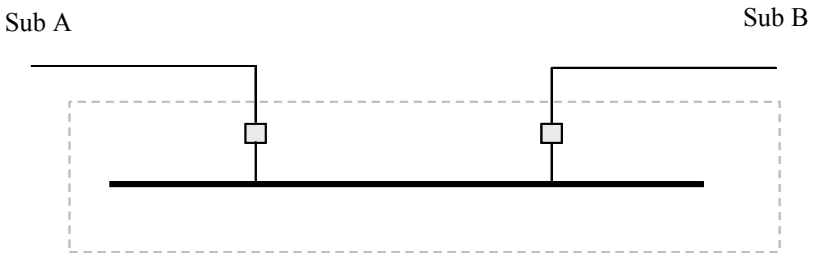



**Figure 15 – Stand-alone Prescribed TUOS Services: example D**

Step 3.2: The stand-alone arrangement for the provision of *prescribed common transmission services* to an equivalent standard is shown below and consists of 3 circuit breakers.

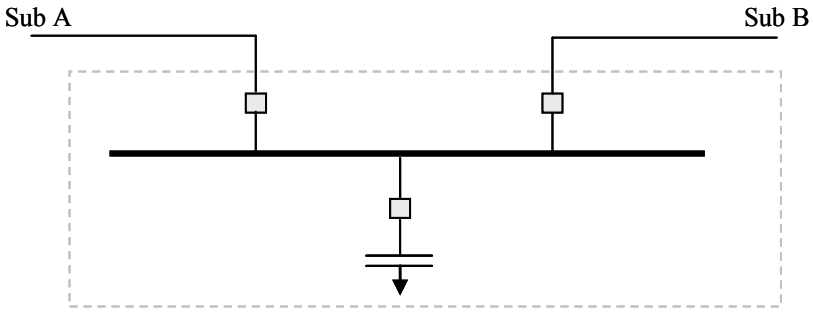



**Figure 16 – Stand-alone Prescribed Common Transmission Services: example D**

Step 4: Assume the total infrastructure cost that can be allocated to more than one *category of prescribed transmission service* is $15 million.

Step 4.1: Costs are allocated to *prescribed TUOS services* in the ratio of the number of circuit breakers in the stand-alone arrangement to the total number of circuit breakers. Therefore, the infrastructure cost allocated to *TUOS* = (2/10) x $15m = $3m

Step 4.2: Unallocated = $15m - $3m = $12m

Step 4.3: Costs are allocated to *prescribed common transmission service* in the ratio of the number of circuit breakers in the stand-alone arrangement to the total number of circuit breakers. Therefore, the infrastructure cost allocated to *common service* = (3/10) x $15m = $4.5m

Step 4.4: Unallocated = $12m - $4.5m = $7.5m

Step 4.5: The remaining (unallocated) infrastructure cost are allocated to *prescribed entry services* and *prescribed exit services*. Therefore, the infrastructure cost allocated to *exit services* = $7.5m

| | | **Allocated** | **Yet to be allocated** |
|---|---|---|---|
| Substation infrastructure costs | | | 15,000,000 |
| Total breakers | 10 | | |
| TUOS stand-alone breakers | 2 | | |
| Costs to TUOS | 0.200 | 3,000,000 | 12,000,000 |
| Common service stand-alone breakers | 3 | | |
| Costs to common service | 0.300 | 4,500,000 | 7,500,000 |
| Costs to entry and exit | | 7,500,000 | 0 |
| **TOTAL** | | **15,000,000** | **0** |

**Table 8 – Priority ordering allocation: example D**

# APPENDIX 3 – LIST OF PRICING POINTS

In its *Draft Decision – Transend transmission determination 2009–10 to 2013–14*, the *AER* requested that *Transend* specify the points in the *transmission network* where costs will be allocated and prices determined in Transend's *Pricing Methodology* as the *AER* considers that it would be beneficial. Table 9 below contains a listing of these points.

| **Point in network – load** | **Point in network – load** | **Point in network – generation** |
|---|---|---|
| Arthurs Lake | Newton | Bastyan |
| Avoca | North Hobart | Bell Bay |
| Boyer | Norwood | Butlers Gorge |
| Bridgewater | Palmerston | Catagunya |
| Burnie | Port Latta | Cethana |
| Chapel St | Que | Cluny |
| Comalco | Queenstown | Devils Gate |
| Creek Rd | Railton | Fisher |
| Derby | Risdon | Gordon |
| Derwent Bridge | Rokeby | John Butters |
| Devonport | Rosebery | Lake Echo |
| Electrona | Savage River | Lemonthyme |
| Emu Bay | Scottsdale | Liapootah |
| George Town | Smithton | Mackintosh |
| Hadspen | Sorell | Meadowbank |
| Hampshire | St Marys | Paloona |
| Huon River | Starwood | Poatina |
| Kermandie | Temco | Reece |
| Kingston | Trevallyn | Repulse |
| Knights Rd | Triabunna | Tarraleah |
| Lindisfarne | Tungatinah | Trevallyn |
| Meadowbank | Ulverstone | Tribute |
| Mowbray | Waddamana | Tungatinah |
| New Norfolk | Wesley Vale | Wayatinah |
| | | Wilmot |

**Table 9 – Points in the transmission network where costs will be allocated and prices determined**