Proposed TPM – marked-up with comments, 28 July 2021

Commented [A1]: We have proposed some very minor amendments in tracked changes, primarily to correct typographical errors/grammar etc. However, as with the other comments, these are also for Transpower's consideration.

Schedule 12.4 cl 12.84
Transmission Pricing Methodology

Part A Preliminary

Introduction

1 Purpose

The **transmission pricing methodology** is used to recover the cost of **transmission services** provided by **Transpower**, other than **transmission services** provided under **investment contracts**, but not more than **recoverable revenue** for each **pricing year**. This **transmission pricing methodology** allocates that cost to **customers** through **transmission charges**.

2 Overview of Transmission Charges

The **transmission charges** are—

(a) **connection charges**, which recover part of **recoverable revenue** by reference to the cost of **connection investments**. Part C specifies how **connection charges** are calculated; and

(b) **benefit-based charges**, which recover part of **recoverable revenue** by reference to the **covered cost** of **benefit-based investments**. Part D specifies how **benefit-based charges** are calculated; and

(c) **cap recovery charges**, which are a redistribution of **transmission charges** that would otherwise be payable by **capped customers** who are receiving **cap reductions**; and

(d) **prudent discount recovery charges**, which are a redistribution of **transmission charges** that would otherwise be payable by **prudent discount recipients**; and

(e) **residual charges**, which recover the remainder of **recoverable revenue**. Part E specifies how **residual charges** are calculated.

Interpretation

3 General Definitions

In this **transmission pricing methodology**, unless the context otherwise requires—

2020 guidelines means the guidelines the **Authority** published under paragraph 12.83(b) of this Code on 10 June 2020

AC assets means **grid assets** other than **HVDC assets**

AC switch means a switch that is an **AC asset**

adjustment event means a **connection charge adjustment event**, **benefit-based charge adjustment event** or **residual charge adjustment event**

allocation data means any data, including **metering information**, about a **customer's supply**, **demand**, **injection**, **offtake** or **gross energy** that affects the **customer's** allocation of **transmission charges**

allowance means, for a cost or charge over a period, the building block in forecast MAR under the **Transpower IPP** over the period for the cost or charge

alternative project means—

(a) for an **inefficient bypass prudent discount**, an investment by the **customer** in a **transmission alternative** that, if implemented, would bypass existing **grid assets**; or

(b) for a **stand-alone cost prudent discount**, an investment in the **grid** or a **transmission alternative** by an efficient **transmission services** provider that, if implemented, would provide **transmission services** in substitution for all of the

transmission services the **customer** currently receives from **interconnection assets**

alternative project costs has the meaning in clause 115

ancillary service BBI means a **post-2019 BBI** that is expected to have a material impact on prices or quantities in the **wholesale market** for a **specified ancillary service** relative to the **post-2019 BBI's counterfactual**. An **ancillary service BBI** may also be a **market BBI** or **reliability BBI**, but cannot be a **resiliency BBI**

ancillary service regional customer group means a **regional customer group** defined in subclause 51(3)

ancillary service regional NPB means **regional NPB** arising from changes in prices or quantities in the **wholesale market** for a **specified ancillary service**. **Ancillary service regional NPB** may be calculated for **ancillary service BBIs**

annual benefit-based charge has the meaning in subclause 36(2)

annual cap recovery charge has the meaning in subclause 110(1)

annual charges means the following **transmission charges** for a **customer** and **pricing year**~~—:~~

(a) **annual connection charges**:
(b) **annual benefit-based charges**:
(c) **annual cap recovery charge**:
(d) **annual prudent discount recovery charge**:
(e) **annual residual charge**

annual connection charge has the meaning in subclause 26(2) or 26(3)

annual prudent discount recovery charge has the meaning in subclause 135(4)

annual residual charge has the meaning in subclause 65(2)

anytime maximum demand (connection) or **AMDC** means, for a **customer**, **connection location** and **pricing year**, the average of the 12 highest **offtake** quantities for the **customer** at the **connection location** during **CMP A** for the **pricing year**, multiplied by 2 to convert to average **demand**

anytime maximum demand (residual) or **AMDR** means the amount calculated under clause 66 for a **load customer** and **pricing year**

anytime maximum injection (connection) or **AMIC** means, for a **customer, connection location** and **pricing year**, the average of the 12 highest **injection** quantities for the **customer** at the **connection location** during **CMP A** for the **pricing year**, multiplied by 2 to convert to average **supply**

Appendix A BBI means the following **interconnection investments** (initial allocations for which are set out in Appendix A)~~ specified in Appendix A, being —~~

Bunnythorpe Haywards	the **interconnection investment** approved by the **Commission** on 9 May 2014 as the Bunnythorpe-Haywards A and B Lines Conductor Replacement Project, including all subsequent amendments to that approved project
HVDC	all **interconnection investments** in the **HVDC link commissioned** on or before 23 July 2019

Commented [A2]: We have proposed this amendment, since Appendix A does not specify/describe these investments, but rather sets out the allocations for them.

Commented [A3]: To clarify the meaning of "amendment" we suggest changing this expression throughout this defintion to "all subsequent amendments to that approved project approved by the Commission under the Transpower Capex IM". This will make clear that the TPM is referring to the amendments going through the approval process rather than anything else which might be contained in the Capex IM.

LSI Reliability	the **interconnection investment** approved by the Electricity Commission on 9 August 2010 as the Lower South Island Reliability Transmission Investment, including all subsequent amendments to that approved project
LSI Renewables	the **interconnection investment** approved by the Electricity Commission on 6 September 2010 as the Lower South Island Renewables Investment, including all subsequent amendments to that approved project, but excluding the **post-2019 CUWLP investment**
NIGU	the **interconnection investment** approved by the Electricity Commission on 5 July 2007 as the North Island Grid Upgrade, including all subsequent amendments to that approved project
UNIDRS	the **interconnection investment** approved by the Electricity Commission on 5 July 2010 as the Upper North Island Dynamic Reactive Support Investment, including all subsequent amendments to that approved project.
Wairakei Ring	the **interconnection investment** approved by the Electricity Commission on 20 February 2009 as the Wairakei Ring Investment, including all subsequent amendments to that approved project
~~UNIDRS~~	~~the **interconnection investment** approved by the Electricity Commission on 5 July 2010 as the Upper North Island Dynamic Reactive Support Investment, including all subsequent amendments to that approved project.~~

Commented [A4]: Reordered to be alphabetical.

application means an application to **Transpower** under this **transmission pricing methodology**, including an application for a **prudent discount** or **reassignment**

application fee means a fee for a type of **application published** by **Transpower**

application requirements means, for an **application**, the content requirements for the **application published** by **Transpower**

assumptions book means a document **published** by **Transpower** containing assumptions and detailed methodologies that **Transpower**—

(a) intends to apply for allocating and adjusting **benefit-based charges**; and

(b) does not expect to vary between **BBIs** except according to the method (**standard method**, **simple method** or Appendix A) used to calculate their **BBI customer allocations**

avoided transmission charges means—

(a) for an **inefficient bypass prudent discount**, the **transmission charges** the relevant **customer** would avoid paying if the relevant **alternative project** were implemented~~,~~—

  (i) assessed relative to the **transmission charges** the **customer** would pay if the **alternative project** were not implemented; and

  (ii) assuming none of the **alternative project costs** for the **alternative project** would be recovered through **transmission charges**; and

(b) for a **stand-alone cost prudent discount**, the relevant **customer's benefit-based charges** for all **BBIs** of which the **customer** is a **beneficiary**

BBI customer allocation means a **customer's** allocation of the **benefit-based charge** for a **BBI**—

(a) specified in **Appendix A** and as adjusted under clauses 78, 80 to 87 and 89, if the **BBI** is an **Appendix A BBI**; or

(b) calculated under subclause 43(1), if the **BBI** is a **post-2019 BBI**

BBI prudent discount recovery charge means a charge calculated under subclause 135(1) for a **prudent discount**, **customer** and **pricing year**

BBI reassignment factor has the meaning in subclause 101(4)

beneficiary means, for a **BBI**, a **customer** who has a positive **BBI customer allocation** for the **BBI**

benefit factor has the meaning in clause 4

benefit-based charge means a charge described in subclause 2(b) and calculated under clause 36 for a **BBI**, **beneficiary** and **pricing year**

benefit-based charge adjustment event has the meaning in subclause 78(1)

benefit-based investment or **BBI** means**—**

(a) an **Appendix A BBI**; or

(b) a **post-2019 BBI**

benefitting customer means, for an **application** for an **inefficient bypass prudent discount**, any **customer** named in the **application** whose **transmission charges** would be reduced if the **alternative project** for the **application** were implemented

cap condition means the condition specified in subclause 108(2)

cap recovery charge means a charge described in subclause 2(c) and calculated under clause 110 for a **customer** and **pricing year**

cap recovery-relevant charges means, for a **customer** and **pricing year**, the **customer's**—

(a) **annual benefit-based charges** for the **Appendix A BBIs** and **pricing year**; and

(b) **annual residual charge** for the **pricing year**

cap reduction means the total reduction in a **capped customer's transmission charges** for a **pricing year** under subclause 108(1)

capacity means the rated capacity of an asset to (as the case may be)—

(a) consume or generate **electricity**; or

(b) take **electricity** from or inject **electricity** into a **network**; or

(c) transmit or **distribute electricity**,

in each case measured in units appropriate for the context

capacity measurement period or **CMP** means a period over which a calculation under this **transmission pricing methodology** is made, being either:

CMP A for **pricing year** n, **capacity year** n-2. **CMP A** is relevant to calculating **connection charges**

CMP B for a **BBI**, the period ending on the last **trading period** of the most recent complete **capacity year** before the **final investment decision date** for the **BBI** (**capacity year** n) and starting on the first **trading period** of **capacity year** n-4. **CMP B** is relevant to calculating **benefit-based charges** for **BBIs** under a **standard method**

CMP C for the first **simple method period**, the period ending on the last **trading period** of the second most recent complete **capacity year** before the start of the **first pricing year** (**capacity year** n) and starting on the first **trading period** of **capacity year** n-4

for a subsequent **simple method period**, the period ending on the last **trading period** of the most recent complete **capacity year** before the first **pricing year** of the **simple method period** (**capacity year** n) and starting on the first **trading period** of **capacity year** n-4

CMP C is relevant to calculating **benefit-based charges** for **BBIs** under the **simple method**

CMP D the period from the first **trading period** of **financial year** 2014 to the last **trading period** of **financial year** 2017. **CMP D** is relevant to calculating **benefit factors** and **residual charges**

CMP E for **pricing year** n, the period from the first **trading period** of **financial year** n-8 to the last **trading period** of **financial year** n-5. **CMP E** is relevant to calculating **residual charges**

CMP F for a **SSCGU**, the period ending on the last **trading period** of the most recent complete **capacity year** before the **SSCGU** occurred (**capacity year** n) and starting on the first **trading period** of **capacity year** n-4. **CMP F** is relevant to adjusting **benefit based charges** for **high-value BBIs**

CMP G the period from the first **trading period** of **pricing year** 2015 to the last **trading period** of **pricing year** 2019. **CMP G** is relevant to calculating **difference caps**

capacity year means a period of 12 months starting on 1 September and ending on 31 August. **Capacity year** n means the **capacity year** starting in year n

capital charge means **Transpower's** return on its investment in a **grid asset**

capped charges means, for a **capped customer** and **pricing year**, the **capped customer's**:
(a) **annual benefit-based charges** for the **Appendix A BBIs** and **pricing year**; and
(b) **annual residual charge** for the **pricing year**; and
(c) **cap recovery charge** for the **pricing year**

capped customer means—
(a) for the **first pricing year**, a **customer**, other than a **generator**, who was a **customer** during **pricing year** 2019 and at least 2 **pricing years** preceding **pricing year** 2019; and
(b) for each subsequent **pricing year**, any such **customer** who had a **cap reduction** for the previous **pricing year**

Commented [A5]: Please consider if this language inadvertently excludes some load customers. There would seem to be a risk that this language would prevent any customer who could qualify as a generator (which requires only that they own generating units connected to a network) being ineligible for the cap, even if they were primarily a load customer. It is not clear that calculating charges separately for offtake and injection would assist since the customer would still qualify as a generator regardless.

closing RAB value has the meaning in the **Transpower IMs**

coincident peak offtake has the meaning in subclause 63(8)

Commission means the Commerce Commission established by section 8 of the Commerce Act 1986

commissioned has the meaning in clause 6

commissioning date means the date a **grid asset**, **connection investment**, or **interconnection investment** (including a **BBI**) is **commissioned**

compliance investment means an investment by **Transpower** in a **grid asset** or **transmission alternative** to ensure the **grid asset** or **transmission alternative** is maintained, and can be operated, in accordance with **good electricity industry practice**. A **compliance investment** may also be an **enhancement investment**, **refurbishment investment** or **replacement investment**

connection asset has the meaning in subclause 23(1), and includes "deep" **connection assets** as described in paragraph 24(5)(b)

connection charge means a charge described in subclause 2(a) and calculated under clause 26 for a **customer** and **pricing year** and—

(a) a **connection asset** and **connection location**; or

(b) a **connection transmission investment**

connection charge adjustment event has the meaning in clause 73

connection customer allocation means a **customer's** allocation of the **connection charge** for a **connection asset** and **connection location** calculated under clause 33

connection investment means a **grid investment** or group of related **grid investments** exclusively in, or in relation to, 1 or more **connection assets**

connection link has the meaning in paragraph 22(1)(e)

connection node has the meaning in paragraph 22(1)(d)

connection region means a region determined by **Transpower** under subclause 60(4)

connection transmission alternative means a **transmission alternative** to the extent it is an alternative to an investment in a **connection asset**, as determined by **Transpower**

consuming plant means equipment that consumes **electricity**, regardless of size, including electrical appliances as defined in the Electricity Act 1992

continuing BBI has the meaning in subclause 81(5) or 82(5)

contributing customer means, for a **funded asset**—

(a) a **customer** who funded, or is funding, all or part of the capital cost of the **funded asset** under an **investment contract**; or

(b) a **customer** who funded, or is funding, all or part of the capital cost of the **funded asset** through **connection charges**

counterfactual means, for a **BBI**, the expected future **grid** state assuming the **BBI** is not **commissioned**

covered cost means the amount of **recoverable revenue** allocated to a **BBI** for a **pricing year** calculated under subclause 40(1)

CPI means the consumers price index (all groups) published by Stats NZ

customer means a **designated transmission customer**

demand adjustment factor means a factor by which **individual NPB** under the **simple method** for **offtake customers** is scaled relative to **individual NPB** under the **simple method** for **injection customers**, having an initial value of 1 and as may be adjusted under subclause 62(3)

depreciation means depreciation of a **grid asset** calculated in accordance with the **Transpower IMs**

Commented [A6]: Please consider if there are any other instances where the TPM should refer to compliance investments.

We note for completeness that compliance investment is only used once outside of the definitions section, in respect of the counterfactual which must be used. We think that this is likely okay since such investments will presumably also likely be enhancement, refurbishment or replacement investments, but wanted to double check that this category of investments does not need to be addressed elsewhere. The other option would be to define enhancement investments to include compliance investments.

de-rate means, for an asset or **plant**, to alter the asset or **plant** physically so that the asset's or **plant's capacity** is permanently reduced

difference cap has the meaning in clause 109(1)

discounted BBI means—
(a) for an **inefficient bypass prudent discount**, a **BBI** that would be bypassed by the relevant **alternative project**; or
(b) for a **stand-alone cost prudent discount**, a **BBI** of which the **prudent discount recipient** is a **beneficiary**

economic life means, for a **grid asset**, the **grid asset's** physical asset life as defined in the **Transpower IMs**

EDB ID determination means the *Electricity Distribution Information Disclosure Determination 2012* [2012] NZCC 22

EDB IMs means the *Electricity Distribution Services Input Methodologies Determination 2012* [2012] NZCC 26

efficient stand-alone investment has the meaning in clause 132

eligible BBI means a **BBI**, including a **BBI** that is currently **reassigned** or was previously **reassigned**, for which both of the following conditions are satisfied (as applicable):
(a) the total **closing RAB value** of all **grid assets** comprised in the **BBI** for the most recent complete **financial year**, adjusted by the **reassignment factor** for any current **reassignment** the **BBI** is subject to, is at least the **reassignment threshold**; and~~:~~
(b) if the **BBI** is a **post-2019 BBI**, either—
  (i) at least 10 years have passed since the **BBI's commissioning date**; or
  (ii) since the **post-2019 BBI's commissioning date**—
    (A) a **customer** permanently disconnected from the **grid** at a **connection location** at which the **customer** was a **beneficiary** of the **post-2019 BBI** when it disconnected; and
    (B) that disconnection (without regard to subsequent events) caused the **BBI's BBI reassignment factor** to be less than 0.8; or
  (iii) since the **post-2019 BBI's commissioning date**—
    (A) a **customer** who is a **beneficiary** of the **post-2019 BBI** permanently disconnected **plant** from the **grid**; and
    (B) that disconnection (without regard to subsequent events) caused the **BBI's BBI reassignment factor** to be less than 0.8

Commented [A7]: We think this drafting may need to be amended to make clear that it is a one-off event (the disconnection of one party) that causes the 0.2 drop. We suggest replace "(without regard to subsequent events)" with "not taking into account other events" and replace "be less than 0.8" with "decrease by 0.2". It should be clear that this isolated event by itself has the effect "decrease by 0.2" rather than being the last event in a train.

eligible person means, for an **application** for r**eassignment** or a proposal to reverse a **reassignment**—
(a) a **beneficiary** of the **BBI** to which the **application** or proposal relates; or
(b) a person who owns **embedded plant** that is connected to the **local network** or **grid**-connected **plant** of a **beneficiary** of the **BBI**

embedded means, for **plant**, that the **plant** is—
(a) connected to a **local network** or to **grid**-connected **plant**; and
(b) not connected to the **grid**

embedded electricity means the **electricity** referred to in the definitions of **supplied load customer** and **supplying load customer**

enhancement investment means an investment by **Transpower** in an existing **grid asset** or **transmission alternative** that is not a **refurbishment investment** or **replacement investment**. An **enhancement investment** may also be a **compliance investment**

event pricing year means the **pricing year** during which an **adjustment event** occurs

exempt pricing year means, for an **adjustment event** and **customer**—
(a) the **event pricing year**; and
(b) the **pricing year** after the **event pricing year** if the **adjustment event** occurred more recently than one month before the deadline for **Transpower** notifying the **customer** of its **transmission charges** for the **pricing year** under the relevant **transmission agreement**

factual means, for a **BBI**, the expected future **grid** state assuming the **BBI** is **fully commissioned**

final investment decision date means, for a **BBI**, the date **Transpower** makes its final decision to proceed with its investment in the **BBI**

financial year means a period of 12 months starting on 1 July and ending on 30 June. **Financial year** n means the **financial year** starting in year n

first pricing year means the first **pricing year** to which this **transmission pricing methodology** applies

forecast loading period has the meaning in subclause 101(1)

forecast peak loading has the meaning in subclause 101(2)

full commissioning date means the date a **BBI** is **fully commissioned**

Commented [A8]: Query whether this definition is needed, since it is only used once (in the definition of standard method calculation period).

fully commissioned has the meaning in clause 6

funded asset means a **connection asset**—
(a) **commissioned** after the start of the **first pricing year**; and
(b) all or part of the capital cost of which was funded, or is being funded, by a **customer** under an **investment contract**

GAAP means generally accepted accounting practice in New Zealand

GEIP (standing for good electricity industry practice) means, for an **alternative project**, the exercise of that degree of skill, diligence, prudence, foresight and economic management that would reasonably be expected from a skilled and experienced asset owner engaged in the management of the **alternative project**, under conditions comparable to those applicable to the **alternative project**, consistent with applicable law, safety and environmental protection

Commented [A9]: We query why this requires a different definition from GEIP in the Code when we assume a similar standard should apply for alternative projects as for other transmission contexts.

grid assets has the meaning in subclause 19(1)

grid investment means an investment by **Transpower** in the **grid** or a **transmission alternative**

gross energy has the meaning in subclause 5(3)

GXP tie means a situation in which a **connected asset owner's assets** are simultaneously connected to the **grid** at more than 1 **point of connection**

high-value means, for a **BBI**, that the depreciated value of the **BBI** at the relevant time is more than the base capex threshold as defined in the **Transpower Capex IM**

high-voltage grid means the part of the **grid** with a nominal voltage of 220 kV or more

HILP event means a low probability event or group of events that, if it or they occurred, would have a high impact on **unserved energy**, as determined by **Transpower**

host customer means, for **embedded plant**, the **customer** who owns the **local network** or **grid**-connected **plant** the **embedded plant** is connected to

HVDC asset means a **grid asset** that is part of the **HVDC link**

HVDC opex means—
(a) **availability costs** allocated to the **HVDC owner**; and
(b) insurance premiums for the **HVDC link**

ID WACC means, for **Transpower** or a **distributor**, the pre-tax weighted average cost of capital determined by the **Commission** under the **Transpower IMs** or **EDB IMs** for the purposes of **Transpower's** or the **distributor's** information disclosure regulation under Part 4 of the Commerce Act 1986

independent expert means an independent person who is a recognised technical expert in the matter that has been referred to him or her. In appointing an **independent expert**, the party referring the matter to the **independent expert** must nominate 3 persons and the other party may agree that any 1 of them be appointed. Failing agreement between the parties, the **independent expert** will be appointed by the **Authority**

independent verification means, for an **application**, a written report on the accuracy and sufficiency of the information and analysis contained in the **application** prepared by 1 or more persons who are—
(a) recognised technical experts on the subject matter of the **application**; and
(b) approved by **Transpower**

individual NPB means **NPB** for a **customer** calculated under clause 48 or 55 or subclause 59(1)

inefficient bypass prudent discount means a discount of a **customer's transmission charges** provided under this **transmission pricing methodology** for the purpose in clause 124

injection means the net quantity of **electricity** flow into the **grid** at a **connection location** from a **customer's assets** during a **trading period**

injection connection asset means a **connection asset** for a **point of injection**

injection customer means, for a **connection location** and **trading period**, a **customer** who owns or controls **assets**—
(a) connected at the **connection location**; and
(b) from which **electricity** flowed into the **grid** during the **trading period**

interconnection asset has the meaning in subclause 23(2)

interconnection investment means a **grid investment** or group of related **grid investments** exclusively in, or in relation to, 1 or more **interconnection assets**

interconnection link has the meaning in paragraph 22(1)(f)

interconnection node has the meaning in paragraph 22(1)(a)

interconnection transmission alternative means a **transmission alternative** to the extent it is not a **connection transmission alternative**

intervening BBI means a **post-2019 BBI commissioned** before the start of the **first pricing year**

intra-regional allocator has the meaning in subclause 63(1) or 63(2) for the relevant **regional customer group**

investment contract means—
(a) a contract entered into at any time between **Transpower** and another person (who may or may not be a **customer**) under which—

Commented [A10]: Please consider whether this defined term should be labelled slightly differently, to resolve any possible confusion over the definition of the same term in the Code.

Commented [A11]: This defined term is not used.

Commented [A12]: Should this also refer to 63(3) and (4)?

Commented [A13]: Please consider whether this defined term should be labelled slightly differently, to resolve any possible confusion over the definition of the same term in the Code.

(i) **Transpower** agrees to provide any new, **upgraded** or modified **grid assets**; or
(ii) the other person agrees to make a contribution to the capital, maintenance, operating or other cost of a **grid asset**,

including—

(iii) a **new investment agreement contract**; and
(iv) a contract to move or remove **grid assets**; or

(b) an agreement deemed to be an **investment contract** under paragraph 28(5)(b)

investment contract asset means a **grid asset** provided under an **investment contract**

investment grid means a simplified model of the **grid** for a **market BBI's factual** or **counterfactual** that models—

(a) all existing **branches** and **market nodes**, as those **branches** and **market nodes** may be added to or removed in the **market BBI's factual** or **counterfactual** (as the case may be); and
(b) the **constraints** of the **HVDC link**, as those **constraints** would be in the **market BBI's factual** or **counterfactual** (as the case may be); and
(c) the **market BBI's modelled constraints**, as those **constraints** would be in the **market BBI's factual** or **counterfactual** (as the case may be)

investment reassignment factor has the meaning in subclause 101(3)

investment region means a **modelled region** under the **simple method** where a **BBI** or part of a **BBI** is located

investment test means the investment test applied to a **tested investment** under the **Transpower Capex IM**

land and buildings has the meaning in subclause 19(3)

large means, subject to clause 9—

(a) for **plant**, that the **plant**—
  (i) is connected to the **grid**; or
  (ii) has **capacity** of at least 10 **MW**; and
(b) for an **upgrade** of **plant**, that the **plant's capacity** has increased by at least 10 **MW** compared to the **plant's capacity** before the **upgrade**; and
(c) for a **de-rating** of **plant**, that the **plant's capacity** has reduced by at least 10 **MW** compared to the **plant's capacity** before the **de-rating**

link has the meaning in subclause 21(3)

load customer means a **customer** who, at a **connection location** during a **trading period**, is or was (as the context requires) 1 or more of the following:

(a) an **offtake customer**:
(b) a **supplied load customer**:
(c) a **supplying load customer**

loop has the meaning in paragraph 22(1)(b)

low-value means, for a **BBI**, that the depreciated value of the **BBI** at the relevant time is not more than the base capex threshold as defined in the **Transpower Capex IM**

low-voltage grid means the part of the **grid** with a nominal voltage of less than 220 kV

market BBI means a **post-2019 BBI** that is expected to have a material impact on prices or quantities in the **wholesale market** for **electricity** relative to the **post-2019 BBI's counterfactual**. A **market BBI** may also be an **ancillary service BBI** or a **reliability BBI**, but cannot be a **resiliency BBI**

market node means a **GXP** or **GIP**

market regional NPB means **regional NPB** arising from changes in prices or quantities in the **wholesale market** for **electricity**. **Market regional NPB** is calculated for **market BBIs**

market scenario means, for a **BBI**, a future state for factors that influence **NPB** for the **BBI**

material damage means destruction of, or substantial damage to, a **BBI**, as determined by **Transpower**

maximum gross demand has the meaning in subclause 5(4)

maximum revenue means, for a **pricing year**, the maximum revenue **Transpower** is permitted to recover for the **pricing year**, as determined by the **Commission** under Part 4 of the Commerce Act 1986. At the date of this **transmission pricing methodology**, this is the most recently updated forecast SMAR for the **pricing year** under the **Transpower IPP**

MCP opex means operating costs of the type described in clause 3.1.3(1)(d) of the **Transpower IMs**, being operating costs relating to major capex projects

mixed connection asset means a **connection asset** that, as well as connecting a **customer**, is used for **grid** operation generally

modelled constraint means, for a **market BBI**—

(a) a **constraint** affecting a new **grid asset** comprised in the **market BBI**; or
(b) a **constraint** that would be alleviated materially if the **market BBI** were **fully commissioned**, as determined by **Transpower**

modelled region—

(a) for a **BBI** under the **price-quantity method**, has the meaning in subclause 50A(2), 50B(2), 51(3), 52(4) or 53(3) depending on the type of **regional NPB** being calculated; and
(b) for a **BBI** under the **resiliency method**, has the meaning in clause 56; and
(c) for a **BBI** under the **simple method**, has the meaning in subclause 60(1)

monthly benefit-based charge has the meaning in subclause 36(3)

monthly cap recovery charge has the meaning in subclause 110(2)

monthly charges means the following **transmission charges** for a **customer** and **pricing year**:

(a) **monthly connection charges**:
(b) **monthly benefit-based charges**:
(c) **monthly cap recovery charge**:
(d) **monthly prudent discount recovery charge**:
(e) **monthly residual charge**

monthly connection charge has the meaning in subclause 26(4)

monthly prudent discount recovery charge has the meaning in subclause 135(5)

monthly residual charge has the meaning in subclause 65(3)

net private benefit or **NPB** (which may be negative, zero or positive)**—**

(a) means, for a **regional customer group** or **customer**, the sum of the quantified benefits (positive values) and disbenefits (negative values) the **regional customer group** or **customer** is expected to receive from the relevant **BBI**; and
(b) for a **host customer**, includes the sum of the quantified benefits (positive values) and disbenefits (negative values) the owners of **embedded plant** connected to the **host customer's local network** or **grid**-connected **plant** are expected to receive from the relevant **BBI**

node has the meaning in subclause 21(1)

nominated peak kVar means, for a **connected asset owner**, **zone** and **pricing year**, the quantity $\sum_j Q_{xjz}$ in subclause 8.67(2) of this Code calculated using the **connected asset owner's** nomination for the **zone** applying from the most recent 1 March before the start of the **pricing year**

non-contributing customer means, for a **funded asset**, a **customer** who~~:~~
(a) is connected by the **funded asset** at a **connection location**; and
(b) was not a **contributing customer** for the **funded asset** before connecting to it

non-grid network means a system of **lines**, substations and other **works**, used primarily for the conveyance of **electricity**, that is not part of the **grid** or connected to the **grid**

offtake means the net quantity of **electricity** flow out of the **grid** at a **connection location** into **customer assets** during a **trading period**

offtake customer means, for a **connection location** and **trading period**, a **customer** who owns or controls **assets**—
(a) connected at the **connection location**; and
(b) into which **electricity** flowed from the **grid** during the **trading period**

opening RAB value has the meaning in the **Transpower IMs**

optimised replacement cost means, for any **grid asset** or group of **grid assets**, the optimised replacement cost of the **grid asset** or group of **grid assets** as at 1 July 2006, as determined by **Transpower**

other regional NPB means **regional NPB** that is not **market regional NPB**, **ancillary service regional NPB** or **reliability regional NPB**. **Other regional NPB** may be calculated for **market BBIs**, **ancillary service BBIs** or **reliability BBIs**

outage scenario means, for a **reliability BBI**, an **outage** or other event or group of events affecting access to **transmission services** in respect of which the **reliability BBI** is expected to have a material impact on **unserved energy**

peak BBI means ~~A~~ a**post-2019 BBI** for which the investment need is primarily attributable to meeting peak **demand**

peak offtake period has the meaning in paragraph 63(8)(b)

peak offtake trading period has the meaning in paragraph 63(8)(a)

plant means **consuming plant** or **generating plant**

point of injection means a **connection location** at which there is 1 or more **injection customers**

post-2019 BBI means an **interconnection investment commissioned** after 23 July 2019, including the **post-2019 CUWLP investment**. To avoid doubt—
(a) a **grid investment** that is, or is comprised in, an **Appendix A BBI** is not a **post-2019 BBI**; and
(b) an **interconnection investment** carried out or approved as a single project may comprise more than 1 **post-2019 BBI**

post-2019 CUWLP investment means the **interconnection investment** comprising the following **grid investments** approved by the Electricity Commission on 6 September 2010 as part of the Lower South Island Renewables Investment:
(a) thermal upgrade of the circuits between Cromwell and Twizel:
(b) re-conductoring of the circuits between Roxburgh and Livingstone

Commented [A14]: Please consider whether this defined term should be labelled slightly differently, to resolve any possible confusion over the definition of the same term in the Code.

Commented [A15]: Please consider whether this defined term should be labelled slightly differently, to resolve any possible confusion over the definition of the same term in the Code.

PQ WACC means, for **Transpower** or a price-quality regulated **distributor**, the vanilla or pre-tax (as the context requires) weighted average cost of capital determined by the **Commission** under the **Transpower IMs** or **EDB IMs** for the purposes of **Transpower's** or the **distributor's** price-quality regulation under Part 4 of the Commerce Act 1986

pre-existing customer means a **customer** who has been a member of a **regional customer group** for (as the case may be)—

(a) at least 2 full **pricing years** during **CMP B** for the relevant **BBI**; or

(b) at least 2 full **financial years** during **CMP C** for the relevant **simple method period**

pre-existing load customer means a **load customer** who was a **customer** for the whole of **CMP D**

previous transmission pricing methodology means, as applicable, the transmission pricing methodology comprised in this Code when it came into force, as subsequently amended up to the date this **transmission pricing methodology** came into force

price-quantity method means the method for calculating **NPB** for a **post-2019 BBI** specified in clauses 44 to 53

pricing year has the meaning given to that term in the **Transpower IMs**. At the date of this **transmission pricing methodology**, a **pricing year** is a period of 12 months starting on 1 April and ending on 31 March. **Pricing year** n means the **pricing year** starting in year n

prior contributing customer means, for a **funded asset** and in respect of a **non-contributing customer** for the **funded asset**, a **contributing customer** who was connected to the **funded asset** before the **non-contributing customer** became connected to the **funded asset**

prudent discount means an **inefficient bypass prudent discount** or **stand-alone cost prudent discount**

prudent discount calculation period means, for a **prudent discount**, the period—

(a) starting at the start of the **prudent discount's start pricing year**, or estimated **start pricing year** assuming the **prudent discount** is approved; and

(b) ending—

(i) for an **inefficient bypass prudent discount**, at the end of the remaining **economic life** of the **grid assets** the relevant **alternative project** would bypass, up to a maximum of 15 years after the start of the **prudent discount calculation period**; or

(ii) for a **stand-alone cost prudent discount**, 15 years after the start of the **prudent discount calculation period**

prudent discount confirmation date means, for a **prudent discount** decision, the date the following conditions are satisfied:

(a) either—

(i) the relevant **customer** has confirmed to **Transpower** in writing that it does not intend to refer any aspect of **Transpower's** decision to an **independent expert**; or

(ii) the **customer** did not refer any aspect of **Transpower's** decision to an **independent expert** before time to do so expired under subclause 118(3); or

(iii) an **independent expert** has made final binding decisions on all aspects of **Transpower's** decision referred to the **independent expert**; or~~:~~

(b) for an approved **prudent discount**, **Transpower** and the **customer** have entered into a **prudent discount** agreement for the **prudent discount**

prudent discount discount rate means—

(a) subject to paragraph 125(c), for an **inefficient bypass prudent discount**—

(i) if the applicant **customer** is a **distributor**, the **distributor's ID WACC** at the time of the **application** for the **prudent discount**; or

(ii) if the applicant **customer** is not a **distributor** but is subject to another regulated pre-tax weighted average cost of capital, that pre-tax weighted average cost of capital; or

(iii) otherwise, a pre-tax weighted average cost of capital for the applicant **customer** determined by **Transpower** by applying the methodology for estimating **ID WACC** for **distributors** in the **EDB IMs**; or

(b) for a **stand-alone cost prudent discount**, **Transpower's ID WACC** at the time of the **application** for the **prudent discount**

prudent discount practice manual means a document **published** by **Transpower** containing assumptions and detailed methodologies that **Transpower**—

(a) intends to apply for assessing **applications** for **prudent discounts**; and

(b) does not expect to vary between **prudent discount applications** except according to whether the **application** is for an **inefficient bypass prudent discount** or **stand-alone cost prudent discount**

prudent discount recipient means a **customer** receiving a **prudent discount**

prudent discount recovery charge means a charge described in subclause 2(d), being a **BBI prudent discount recovery charge** or **residual prudent discount recovery charge**

reassignment means a reassignment of all or part of the **covered cost** of a **BBI** to **residual revenue**, and **reassigned** has a corresponding meaning

reassignment amount has the meaning in clause 96

reassignment confirmation date means, for a **reassignment** decision, the date 1 of the following conditions is satisfied:

(a) the relevant **eligible person** has confirmed to **Transpower** in writing that it does not intend to refer any aspect of **Transpower's** decision to an **independent expert**:

(b) the **eligible person** did not refer any aspect of **Transpower's** decision to an **independent expert** before time to do so expired under subclause 103(3) or paragraph 106(2)(c):

(c) an **independent expert** has made final binding decisions on all aspects of **Transpower's** decision referred to the **independent expert**

reassignment factor guidance means, for a type of **grid investment** in, or in relation to, **interconnection assets**, information about the relationship between the **grid investment's forecast peak loading** and its **investment reassignment factor**, which may include 1 or more methods of calculating the **investment reassignment factor** as a function of **forecast peak loading**

reassignment practice manual means a document **published** by **Transpower** containing assumptions and detailed methodologies that **Transpower**—

(a) intends to apply for assessing **applications** for **reassignment**; and

(b) does not expect to vary between **reassignment applications**

reassignment threshold has the meaning in subclause 97(2)

recent customer means a **customer** who has been a member of a **regional customer group** for (as the case may be)—

(a) less than 2 full **pricing years** during **CMP B** for the relevant **BBI**; or

(b) less than 2 full **financial years** during **CMP C** for the relevant **simple method period**

Commented [A16]: Could this term be relabelled, to avoid repeating the word discount?

Commented [A17]: This definition seems unnecessary given this term is used once (in sub-clause 101(5)) and this information could be set out in that clause.

recent load customer means a **load customer** who is a **customer** at the start of the **first pricing year** but was not a **customer** for the whole of **CMP D**

recoverable revenue means, for a **pricing year**—
(a) **maximum revenue** for the **pricing year**; less
(b) any part of **maximum revenue** for the **pricing year Transpower** is able or required to recover other than through **transmission charges**, including by way of annuities paid by **prudent discount recipients**

reduction event means, for a **pre-existing customer**, a reduction in the **pre-existing customer's** expected **maximum gross demand** compared to the **pre-existing customer's AMDR** baseline calculated under clause 67(1)—
(a) of at least 10 **MW**; and
(b) due to an event or circumstance that occurred after the start of **CMP D** and before the start of the **first pricing year**; and
(c) due to an event or circumstance beyond the **pre-existing customer's** reasonable control, not being—
  (i) a change in the basis for calculating future transmission charges; or
  (ii) a change in the market for the **pre-existing customer's** products or services; or
  (iii) any of the events specified in paragraph (d) of the definition of **force majeure event** in clause 1.1(1) of this Code; or
  (iv) an event that could have been prevented by the **customer** by the exercise of a reasonable standard of care; and
(d) that is sustained

refurbishment investment means a **grid investment** that—
(a) is asset refurbishment as defined in the **Transpower Capex IM**; or
(b) would be asset refurbishment as defined in the **Transpower Capex IM** if an investment in a **transmission alternative** were an investment in the **grid**.
A **refurbishment investment** may also be a **compliance investment**

regional customer group means a **regional demand group** or **regional supply group**

regional demand group—
(a) for a **BBI** under the **price-quantity method**, has the meaning in subclause 50A(2), 50B(2), 51(3), 52(4) or 53(3) depending on the type of **regional NPB** being calculated; and
(b) for a **BBI** under the **resiliency method**, has the meaning in clause 56; and
(c) for a **BBI** under the **simple method**, has the meaning in clause 61

regional NPB means **NPB** for a **regional customer group** calculated in accordance with, or assumed under, a **standard method** or **simple method**

regional supply group—
(d) for a **BBI** under the **price-quantity method**, has the meaning in subclause 50A(2), 50B(2), 51(3), 52(4) or 53(3) depending on the type of **regional NPB** being calculated; and
(e) for a **BBI** under the **simple method**, has the meaning in clause 61

regulatory asset base or **RAB** means **Transpower's** record of **commissioned grid assets** and their values used to calculate **maximum revenue** under the **Transpower IMs**

regulatory control period or **RCP** means a regulatory period as defined in the **Transpower IPP**

related entity of a person means another person that controls, is controlled by, or is under common control with the first person, including a person that—

Commented [A18]: See refer-back letter.

Commented [A19]: See refer-back letter.

(a) is a related company of the first person as defined in section 2(3) of the Companies Act 1993; or
(b) would be a related company of the first person under that section if both the first person and the other person were companies registered under that Act

reliability BBI means a **post-2019 BBI** that is expected to reduce materially **unserved energy** relative to the **post-2019 BBI's counterfactual** if there is an **outage** or other event or group of events affecting access to **transmission services**. A **reliability BBI** may also be a **market BBI** or **ancillary service BBI**, but cannot be a **resiliency BBI**

reliability regional NPB means **regional NPB** arising from changes in **unserved energy**. **Reliability regional NPB** is calculated for **reliability BBIs**

replacement cost means, for a **grid asset** and subject to subclause 35(5), the cost of replacing the **grid asset**, either separately or as part of a group of **grid assets**, with a modern equivalent **grid asset** with the same service potential

replacement cost adjustment factor means, for a **grid asset** or group of **grid assets**, the **optimised replacement cost** for the **grid asset** or group of **grid assets** divided by the cost, as at (or about) 1 July 2006, of replacing the **grid asset** or group of **grid assets** with the then modern equivalent **grid asset** with the same service potential, as determined by **Transpower**

replacement investment means a **grid investment** that—
(a) is asset replacement as defined in the **Transpower Capex IM**; or
(b) would be asset replacement as defined in the **Transpower Capex IM** if an investment in a **transmission alternative** were an investment in the **grid**.
A **replacement investment** may also be a **compliance investment**

residual charge means a charge described in subclause 2(e) and calculated under clause 65 for a **load customer** and **pricing year**

residual charge adjustment event has the meaning in subclause 90(1)

residual charge adjustment factor or **RCAF** means the factor calculated under clause 68 for a **load customer** and **pricing year**

residual prudent discount recovery charge means a charge calculated under subclause 135(2), for a **prudent discount**, **customer** and **pricing year**

residual revenue means, for a **pricing year**, **recoverable revenue** for the **pricing year** less **connection charges** and **benefit-based charges** for the **pricing year**. The minimum value of **residual revenue** for a **pricing year** is 0

Commented [A20]: Please consider whether this definition is correct. There are of course other charges not mentioned here, eg, cap recovery charges and the prudent discount recovery charges. Are you comfortable that the residual revenue definition adequately accounts for all the other charges?

resiliency BBI means a **post-2019 BBI** for which the investment need is primarily attributable to mitigating a risk of cascade failure or a **HILP event**. A **resiliency BBI** cannot also be a **market BBI**, **ancillary service BBI** or **reliability BBI**

resiliency method means the method for calculating **NPB** for a **resiliency BBI** specified in clauses 54 to 56

reverse flow means **electricity** exiting the **grid** at a **GXP** and entering the **grid** at another **GXP** as a result of a **GXP tie**

scenario means a **market scenario** or **outage scenario**

Schedule 1 allocations means, for an **Appendix A BBI**, the allocations for the **Appendix A BBI** specified in Schedule 1 of the **2020 guidelines**

Schedule 1 beneficiary means, for an **Appendix A BBI**, a person specified in Schedule 1 of the **2020 guidelines** who has a positive **Schedule 1 allocation** for the **Appendix A BBI**

simple method means the method for calculating **NPB** for a **low-value post-2019 BBI** specified in clauses 57 to 62

simple method contribution has the meaning in clause 62(6)

simple method factor has the meaning in subclause 59(2)

simple method period has the meaning in clause 58

small regional loop has the meaning in paragraph 22(1)(c)

specified ancillary service means **instantaneous reserve**, **frequency keeping** or **voltage support**

stand-alone cost prudent discount means a discount of a **customer's transmission charges** provided under this **transmission pricing methodology** for the purpose in clause 130

standard method means the **price-quantity method** or **resiliency method**

standard method calculation period means, for a **BBI**, the period—

(a) starting on the **BBI's** expected **commissioning date**; and

(b) ending on the earlier of—

(i) 20 years after the **BBI's** expected **full commissioning date**; and

(ii) the end of the useful life of the **BBI**, as determined by **Transpower**

Commented [A21]: Please consider if it is correct to refer to the commissioning date here but the full commissioning date in (b)?

standard method discount rate means, for a **BBI**—

(a) if the **BBI** is a **tested investment**, the pre-tax, real discount rate used when the **BBI** was assessed under the **investment test**, excluding discount rates used only for sensitivity analysis; or

(b) otherwise—

(i) the applicable rate in the **assumptions book**; or

(ii) if there is no applicable rate in the **assumptions book**, the rate in clause D6(3)(a) of the **Transpower Capex IM**

start pricing year means—

(a) for a **BBI**, the first **pricing year** that starts at least 6 months (or such shorter period as **Transpower** may determine is practicable) after the **BBI's commissioning date** (which, for an **Appendix A BBI**, is the **first pricing year**); or

(b) for a **SSCGU**, the first **pricing year** that starts at least 6 months (or such shorter period as **Transpower** may determine is practicable) after the date of the **SSCGU**; or

(c) for a **reassignment**, the first **pricing year** that starts at least 6 months (or such shorter period as **Transpower** may determine is practicable) after the **reassignment confirmation date**; or

(d) for an **inefficient bypass prudent discount**, the first **pricing year** that starts—

(i) at least 6 months (or such shorter period as **Transpower** may determine is practicable) after the **prudent discount confirmation date**; and

(ii) on or after a date determined by **Transpower** based on the time that would be required for the **customer** to implement the relevant **alternative project**; or

(e) for a **stand-alone cost prudent discount**, the first **pricing year** that starts at least 6 months (or such shorter period as **Transpower** may determine is practicable) after the **prudent discount confirmation date**

station means a substation or switching station

substantial sustained increase means, for **large plant**, an increase in the **large plant's** expected annual **electricity** consumption or generation (as the case may be)—

(a) of at least 25% since the last time the relevant **customer's BBI customer allocations** for 1 or more **BBIs** were calculated, as assessed under subclause 78(4); and
(b) that is not attributable to a **large upgrade** of the **large plant**; and
(c) that is sustained

substantial sustained change in grid use or **SSCGU** means an event or series of directly related events that result in a change in expected total annual **injection** or **offtake**—
(a) of at least 5% of average total annual **injection** or **offtake** (as the case may be) over **CMP F**; and
(b) that is sustained

Commented [A22]: We note that the guidelines provide for an SSCGU to have occurred only where, in Transpower's reasonable opinion, the changes have not been adequately accounted for by the other adjustment provisions (cl 41(a)). This requirement does not seem to have explicitly been included in the proposed TPM. Is Transpower comfortable that this has been addressed in the proposed TPM drafting?

supplied load customer means, for a **connection location** and **trading period**, a **connected asset owner** who owns or controls a **local network** or **consuming plant**—
(a) connected to the **grid** at the **connection location**; and
(b) into which **electricity** flowed directly from **generating plant** during the **trading period**

supplying load customer means, for a **connection location** and **trading period**, a **generator** who owns or controls **generating plant**—
(a) connected to the **grid** at the **connection location**; and
(b) from which **electricity** flowed directly to **consuming plant** or a **non-grid network** during the **trading period**

system limit means a level of **demand** at which the power system would not remain in a **satisfactory state** during and following an **outage scenario**, potentially requiring involuntary post-contingency **demand** reduction

system limit model means a simplified model of the **grid** that—
(a) models a **reliability BBI's factual**, **counterfactual**, **system limits** and **market scenarios**; and
(b) applies the **reliability BBI's outage scenarios** to the **factual**, **counterfactual**, **system limits** and **market scenarios** to model the change in **unserved energy** between the **reliability BBI's factual** and **counterfactual**

TA opex means operating costs of the type described in clause 3.1.3(1)(c) of the **Transpower IMs**, being operating costs for **transmission alternatives**

tested investment means a **connection investment** or **interconnection investment** that —
(a) has been individually approved by the **Commission** as a major capex project or listed project under the **Transpower Capex IM**; or
(b) is a base capex project to which **Transpower** was required to apply a cost-benefit analysis under the **Transpower Capex IM**

total gross energy has the meaning in subclause 5(5)

transmission charges means the charges specified in clause 2

transmission services means the following services provided by a **grid owner**:
(a) electricity lines services, as defined in section 54C of the Commerce Act 1986, but excluding **system operator** services:
(b) the provision of **transmission alternatives**

Transpower Capex IM means the *Transpower Capital Expenditure Input Methodology Determination 2012* [2012] NZCC 2

Transpower IMs means the *Transpower Input Methodologies Determination 2010* [2012] NZCC 17

Transpower IPP means the *Transpower Individual Price-Quality Path Determination* [2019] NZCC 19

Transpower operations facility means a facility that is used by **Transpower** only to operate the **grid** and is not a **station**

upgrade means, for an asset or **plant**, to alter the asset or **plant** physically so that the asset's or **plant's capacity** is permanently increased

unserved energy (measured in kWh or **MWh**) means an amount by which demand for **electricity** exceeds supply of **electricity** at 1 or more **GXPs**

value of commissioned asset has the meaning in the **Transpower IMs**

value of lost load or **VOLL** means, for a **reliability BBI**—

(a) if the **reliability BBI** is a **tested investment**, the value of **unserved energy** used when the **reliability BBI** was assessed under the **investment test**, excluding values of **unserved energy** used only for sensitivity analysis; or

(b) otherwise—

(i) the applicable value of **unserved energy** in the **assumptions book**; or

(ii) if there is no applicable value of **unserved energy** in the **assumptions book**, the value of **unserved energy** referred to in subclause 4(1) of Schedule 12.2 of this Code

wholesale market model means a simplified model of prices and quantities in the **wholesale market** for **electricity** (and only in that **wholesale market**) that, subject to subclause 50(4)—

(a) models a **market BBI's factual**, **counterfactual** and **market scenarios**; and

(b) assumes suppliers offer prices based on their marginal variable costs of supply; and

(c) assumes perfectly inelastic demand up to 1 or more estimated costs of self-supply that are the same for all demand types; and

(d) applies least-cost dispatch to the **market BBI's factual**, **counterfactual** and **market scenarios**, under the assumptions in paragraphs (b) and (c), to model the change in prices and quantities in the **wholesale market** for **electricity** between the **market BBI's factual** and **counterfactual**.

4 Benefit Factor

A **customer's benefit factor** for an **Appendix A BBI** (BF) is calculated as follows:

$$BF = \frac{CA}{E}$$

where

CA is the **customer's BBI customer allocation** for the **Appendix A BBI** (which may be 0)

E is—

(a) if the **customer** is a **Schedule 1 beneficiary**, the **customer's** average annual **offtake** or **injection** over **CMP D**, being the period the **Authority** used to calculate the **Schedule 1 allocations**; or

(b) otherwise, **Transpower's** estimate of the **customer's** annual **offtake** or **injection** when the **customer's assets** are fully operational, which must be the same as the value of variable E in paragraph 80(6)(a) if that paragraph was applied to the **customer** when the **customer** first connected to the **grid**,

subject, in each case, to any adjustments to those values under clauses 82 to 87 since they were first calculated or estimated.

5 Load Customers, Gross Energy and Maximum Gross Demand

(1) The different types of **load customer** are shown in figures 1, 2 and 3. In figures 1, 2 and 3, "LN" means **local network**, "CP" means **consuming plant**, "GP" means **generating plant**, "NGN" means **non-grid network** and "POC" means **point of connection** to the **grid**:

(a) In figure 1, a **customer** owning or controlling LN, CP or GP is an **offtake customer** to the extent of the **offtake**:

(b) In figure 2, a **customer** owning or controlling LN or CP is a **supplied load customer** to the extent of the **embedded electricity**. The **embedded electricity** is referred to as the **supplied load customer's embedded electricity** "at" the POC and relevant **connection location**:

(c) In figure 3, a **customer** owning or controlling GP is a **supplying load customer** to the extent of the **embedded electricity**. The **embedded electricity** is referred to as the **supplying load customer's embedded electricity** "at" the POC and relevant **connection location**.

Commented [A23]: Please consider whether the following scenario is captured (if feasible): Injection by a distributed generator passes through the load customer to the grid. In this scenario, would the load customer be considered a load customer to the extent of that distributed generation?

Figure 1

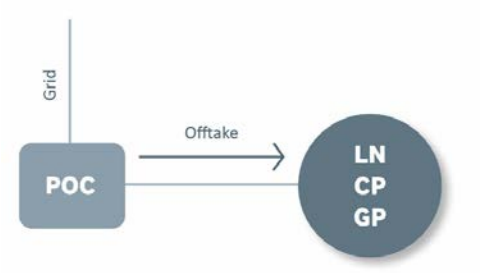


Figure 2

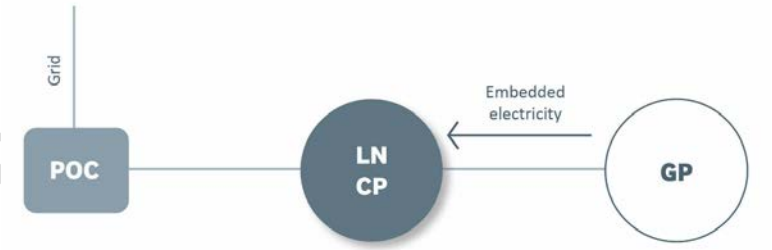
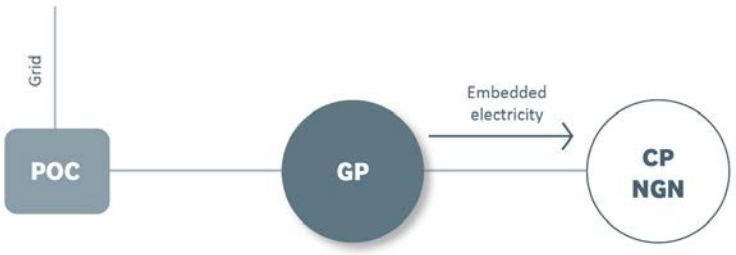


Figure 3



(2) If a configuration of **consuming plant** and **generating plant** connected to the **grid** is such that the **customer** may be treated as either a **supplied load customer** or **supplying load customer**, the **customer's** status as a **supplied load customer** or **supplying load customer** must be determined by **Transpower**.

(3) **Gross energy** (measured in kWh or **MWh**) means, for a **load customer**, **connection location** and **trading period—**

(a) the **load customer's offtake** at the **connection location** during the **trading period**; plus

(b) the **load customer's embedded electricity** at the **connection location** during the **trading period**.

(4) **Maximum gross demand** (measured in kW or **MW**) means, for a **load customer**, **connection location** and period, the **load customer's** maximum per-**trading period gross energy** at the **connection location** during the period multiplied by 2.

(5) **Total gross energy** (measured in kWh or **MWh**) for a **load customer** and period (TGE) is calculated as follows:

$$TGE = \sum_{l} \sum_{t} GE_{tl}$$

where GE_{tl} is the **load customer's gross energy** for **trading period** t at **connection location** l during the period.

6 Commissioning

(1) A **grid asset** is **commissioned** when it is first commissioned as defined in the **Transpower IMs**.

(2) A **connection investment** or **interconnection investment** (including a **BBI**) is **commissioned** when the first **grid asset** or **transmission alternative** comprised in it is **commissioned** or started (as the case may be).

(3) A **connection investment** or **interconnection investment** (including a **BBI**) is **fully commissioned** when all **grid assets** and **transmission alternatives** comprised in it are **commissioned** or started (as the case may be).

(4) Ssubject to subclauses (1) to (3), the time a **grid asset**, **connection investment** or **interconnection investment** (including a **BBI**) is **commissioned** or **fully commissioned** is determined by **Transpower**.

7 Connection and Disconnection

In this **transmission pricing methodology**, unless the context otherwise requires—

(a) an asset becomes connected to a **network** at a **point of connection** at the time the **point of connection** is **commissioned**; and

(b) an asset becomes disconnected from a **network** at a **point of connection** at the time the **point of connection** is **decommissioned**; and

(c) subject to paragraphs (a) and (b), the time an asset becomes connected to or disconnected from a **network** or **plant** is determined by **Transpower**; and

(d) **plant** is **grid**-connected only if it is directly connected to the **grid**; and

(e) **embedded plant** is connected to a **local network** or **grid**-connected **plant** if the **embedded plant** is—

(i) directly connected to the **local network** or **grid**-connected **plant**; or

(ii) indirectly connected to the **local network** or **grid**-connected **plant** through other **plant** or a **non-grid network**.

8 Sustained Change

Where **Transpower** is required under this **transmission pricing methodology** to assess whether a change will be~~is~~ sustained, the change must only be treated as one that will be sustained if **Transpower** reasonably expects the change to persist for at least 5 years after the relevant **transmission charges** inputs to their calculation are adjusted in response to the change.

9 Large Plant

Where **Transpower** is required under this **transmission pricing methodology** to assess whether **plant**, or an **upgrade** or **de-rating** of **plant**, is **large**, **Transpower** may make that assessment by combining 2 or more units of **plant** that are—

(a) of the same type (**consuming plant** or **generating plant**); and

(b) owned by the same person or **related parties**,

if **Transpower** considers it is fair and reasonable in all the circumstances to do so.

10 Interpretation

In this **transmission pricing methodology**, unless the context otherwise requires—

(a) all defined terms are shown in bold text; and

(b) a term in bold text not defined in this **transmission pricing methodology** has the meaning given to it in Part 1 of this Code; and

(c) any other grammatical form of a defined term has a corresponding meaning; and

(d) if there is any inconsistency between the text description of a calculation for which there is formula and the formula, the formula takes precedence; and

(e) if there is any inconsistency between an illustrative figure, table or associated commentary and the provisions of this **transmission pricing methodology** being illustrated by the figure, table or associated commentary, the provisions being illustrated take precedence; and

(f) a reference—

(i) to the singular includes the plural and vice versa; and

(ii) to a person includes an individual, company, other body corporate, association, partnership, firm, joint venture, trust or Crown entity; and

(iii) to a clause, subclause, paragraph, subparagraph or Part is to a clause, subclause, paragraph, subparagraph or Part of this **transmission pricing methodology**; and

(iv) to any legislation, including this Code, the **Transpower IPP**, the **Transpower IMs** and the **Transpower Capex IM**, includes that legislation as amended or replaced from time to time; and

(g) the word "including" is to be read as "including, but not limited to", and the word "includes" is to be read as "includes, without limitation"; and

(h) a reference to a preceding **financial year** is a reference to the first complete **financial year** that precedes the start of the **pricing year** in respect of which the relevant calculation is undertaken; and

(i) a reference to a **customer's offtake**, **embedded electricity** or **injection** at a **connection location** is a reference to the **customer's offtake**, **embedded electricity** or **injection** at all **points of connection** to the **grid** at the **connection location** where the **customer offtakes electricity**, has **embedded electricity** or **injects electricity** (as the case may be); and

(j) a reference to a **load customer's** (including an **offtake customer's**) or **injection customer's connection location**:

(i) is a reference to all **points of connection** to the **grid** at the **connection location** where the **load customer offtakes electricity** or has **embedded electricity** or where the **injection customer injects electricity** (as the case may be); and

(ii) does not include any **connection location** where the **load customer** does not **offtake electricity** or have **embedded electricity** or where the **injection customer** does not **inject electricity** (as the case may be).

Calculation of Transmission Charges

11 Transmission Charges Calculated Separately

A **customer** may be both a **load customer** (including an **offtake customer**) and an **injection customer** during the same **trading period**, including at the same **connection location** and **point of connection** to the **grid**. In this case, the **customer's transmission charges** are calculated separately for the **customer** as a **load customer** and an **injection customer**, except as otherwise stated in this **transmission pricing methodology**.

12 Calculations and Estimations

(1) Except as otherwise stated in this **transmission pricing methodology**—

(a) any calculation (including of **transmission charges**) or estimation under this **transmission pricing methodology** is carried out by **Transpower**; and

(b) any input to a calculation or estimation under this **transmission pricing methodology** is determined by **Transpower**; and

(c) to the extent a calculation or estimation under this **transmission pricing methodology** requires modelling, **Transpower** may use the modelling tools it uses in its business from time to time.

(2) If this **transmission pricing methodology** specifies a source for an input to a calculation or estimation under this **transmission pricing methodology** but the source is not available or the input is not included in or provided by the source, the input is to be determined by **Transpower**.

(3) **Transpower** must calculate or estimate all values under this **transmission pricing methodology**—

(a) that are **connection customer allocations**, **BBI customer allocations** or other **transmission charge** allocators intended to sum to 1 or 100%, to at least 4 decimal places (if expressed as a decimal) or 2 decimal places (if expressed as a percentage), and **Transpower** is not obliged to calculate or estimate the values any more precisely than that; and

(b) that are in units of dollars, to 2 decimal places; and

(c) that are **supply** or **demand**, in whole kW; and

(d) that are **electricity**, in whole kWh.

(4) If—
(a) the **connection customer allocations** for a **connection asset**; or
(b) the **BBI customer allocations** for a **BBI**; or
(c) any other **transmission charge** allocators that are intended to sum to 1 or 100%,
do not sum to 1 or 100% due to rounding, **Transpower** must adjust all of the relevant **transmission charge** allocators on a pro rata basis to achieve a sum of 1 or 100%.

13 Determinations

(1) Matters under this **transmission pricing methodology** determined by **Transpower** are determined in **Transpower's** sole discretion while acting—
(a) reasonably; and
(b) subject to subclause (2), in accordance with **GAAP**; and
(c) subject to subclause (3), with reference to—
(i) information made available to **Transpower** by or on behalf of **participants** and other persons with an interest in the determination; and
(ii) **Transpower's** and (where published) other persons' financial and regulatory records, registers and disclosures, including the **RAB**; and
(iii) other information relevant to the determination **Transpower** is reasonably able to obtain.

(2) If there is any inconsistency between the requirements of **GAAP** and the requirements of this **transmission pricing methodology**, this **transmission pricing methodology** takes precedence.

(3) **Transpower** is not required to give equal weight to the information referred to in paragraph (1)(c).

14 Reverse Flow

(1) This clause 14 applies if all of the following conditions are satisfied:
(a) a **customer** has an agreement with the **system operator** under clause 6 of Technical Code A of Schedule 8.3:
(b) the **customer** has notified **Transpower** in writing that there is **reverse flow** at a **connection location** as a result of a **GXP tie** authorised under the agreement referred to in paragraph (a):
(c) the **customer** notified **Transpower** under paragraph (b) within 20 **business days** of the **reverse flow** starting:
(d) **Transpower** is reasonably satisfied there is **reverse flow** at the **connection location** as a result of a **GXP tie** authorised under the agreement referred to in paragraph (a).

(2) **Transpower** must, despite anything else in this **transmission pricing methodology**—
(a) adjust the **customer's allocation data** for the **connection location** to mitigate or eliminate the impact of the **reverse flow**, as determined by **Transpower**; and
(b) use the adjusted **allocation data** to calculate future **transmission charges**.

(3) **Transpower** must **publish** the details of any adjustment it makes under subclause (2) within 20 **business days** of making the adjustment.

15 Exceptional Operating Circumstances

(1) If **Transpower** determines—

(a) a **Transpower** requirement (as a **grid owner**) or a planned or unplanned **outage** has caused exceptional operating circumstances in the power system; and
(b) those circumstances have resulted in a **customer's allocation data** not reflecting normal operating circumstances in the power system (a distortion),

Transpower may, despite anything else in this **transmission pricing methodology**—
(c) adjust the **allocation data** to mitigate or eliminate the distortion, as determined by **Transpower**; and
(d) use the adjusted **metering information** to calculate future **transmission charges**.

(2) **Transpower** must **publish** the details of any adjustment it makes under subclause (1) within 20 **business days** of making the adjustment.

General

16 Applications, Application Fees and Application Requirements

(1) **Transpower—**
(a) is not obliged to start assessing an **application**; and
(b) may suspend its assessment of, or reject, an **application**,
if—
(c) the **application fee** for the **application** has not been paid; or
(d) the **application** does not comply with the relevant **application requirements**; or
(e) the applicant otherwise does not comply, or has not complied, with this **transmission pricing methodology** in relation to the **application**.

(2) Subject to subclause (1), **Transpower** must—
(a) prioritise assessment of **applications** in the order they are received by **Transpower**; and
(b) complete its assessment of an **application** within a reasonable time of receiving it, having regard to the complexity of the **application** and the quality of the information provided by the applicant in support of it.

(3) **Application fees** must be reasonable having regard to **Transpower's** expected costs of assessing **applications** of the relevant type, and may be—
(a) fixed or based on actual costs; and
(b) capped or uncapped; and
(c) up-front or staged; and
(d) refundable or non-refundable.

(4) **Application requirements** must be reasonable having regard to the matters relevant to **Transpower's** assessment of **applications** of the relevant type.

17 Consultation on Transmission Charges

(1) **Transpower** must consult on the following matters with at least the following **customers** before the relevant **transmission charges** or adjustments to them are finalised:

subject matter	minimum group to be consulted
Proposed **annual connection charges**	**Customers** who will pay the **connection charges**
Proposed material adjustment to **connection charges** during a **pricing year**	**Customers** who will pay the adjusted **connection charges**
Expected total **covered cost** for a **post-2019 BBI** expected to be **high-value** when **fully commissioned**	Public consultation
Proposed material adjustment to the expected total **covered cost** of a **post-2019 BBI** expected to be **high-value** immediately before or after the adjustment	Public consultation
Proposed starting **BBI customer allocations** for a **post-2019 BBI** expected to be **high-value** when **fully commissioned**	Public consultation
Proposed adjustment to the **BBI customer allocations** for a **post-2019 BBI** due to a **SSCGU**	Public consultation
Other proposed material adjustment to the **BBI customer allocations** for a **post-2019 BBI** expected to be **high-value** immediately before the adjustment	**Customers** who are or will be **beneficiaries** of the **post-2019 BBI**
Proposed allocation of **residual charges** for a **pricing year**	All **load customers**
Proposed material adjustment to the allocation of **residual charges** during a **pricing year**	All **load customers**

(2) **Transpower** must consult publicly on the proposed **modelled regions** and **regional NPBs** under the **simple method**, and proposed **simple method factors** and **demand adjustment factor**, for—

(a) the first **simple method period**, before the start of the **first pricing year**; and

(b) each subsequent **simple method period**, before the start of the **simple method period,**

provided that **Transpower** is not required to consult on the **demand adjustment factor** for the first **simple method period** (which is 1).

(3) Consultation under subclause (1) may occur as part of **Transpower** or **Commission** consultation required under the **Transpower Capex IM**, other parts of this Code, or **transmission agreements**, either before or after the start of the **first pricing year**.

(4) Consultation—

(a) under subclause (1) on the proposed starting **BBI customer allocations** for a **high-value post-2019 BBI** or a proposed material adjustment to the **BBI customer allocations** for a **high-value post-2019 BBI**; and

(b) under subclause (2),

must include consultation on any material departures from the assumptions and methodologies in the **assumptions book** and the reasons for those departures.

18 Information about Transmission Charges

As part of **Transpower's** obligations under a **transmission agreement** to notify the relevant **customer** of **annual charges**, **monthly charges** and changes to them, **Transpower** must provide the **customer** with reasonable information that is sufficient for the **customer** to understand the basis on which the **customer's annual charges** and **monthly charges** have been calculated. For a **load customer**, this information must include, for the relevant **pricing year**—

(a) the amount of otherwise unallocated operating costs included in **residual revenue**; and

(b) **reassignment amounts** included in **residual revenue**.

Part B Grid Asset Classification

19 Grid Assets and Land and Buildings

(1) **Grid assets** are **assets** and other works (including land, easements, leases and other interests in land, buildings, containment facilities and other structures) that—

(a) comprise or support the **grid**; and

(b) are—

(i) owned by or leased to **Transpower**, provided that if the **assets** or other works are leased by **Transpower** to another person then the **assets** or other works will only be **grid assets** if **Transpower** has expressly agreed in writing with that person that the **assets** or other works are to be treated as **grid assets** for the purposes of this **transmission pricing methodology**; or

(ii) owned by another person and not leased to **Transpower**, but only if **Transpower** has expressly agreed in writing with that person that the **assets** or other works are to be treated as **grid assets** for the purposes of this **transmission pricing methodology**.

(2) For the purposes of subclause (1)(b)(ii), **Transpower's** provision of, or agreement to provide, **grid assets** that facilitate the connection of other **assets** to the **grid** does not constitute **Transpower's** agreement to treat the other **assets** as **grid assets** for the purposes of this **transmission pricing methodology**.

(3) **Land and buildings** are **grid assets** that are land, easements, leases or other interests in land, buildings, oil containment facilities, or other structures that are not comprised in the **grid**.

(4) **Land and buildings** that support a part of the **grid** are referred to as being "part of" that part of the **grid**, together with the **grid assets** that comprise that part of the **grid**.

20 Partial Funding of Grid Assets

Subject to other legal requirements and **GAAP**, a **grid asset** the capital cost of which is partially funded under an **investment contract**—

(a) may be represented in **Transpower's** financial and regulatory records, registers and disclosures, including the **RAB**, as multiple **grid assets**; and

(b) those **grid assets** may be treated as separate **grid assets** for the purposes of calculating **transmission charges**,

as necessary or convenient to ensure **Transpower** does not under-recover the total cost of the **grid asset** through this **transmission pricing methodology** and the **investment contract**. To avoid doubt, **Transpower** must not use its discretion under this clause to over-recover the total cost of a **grid asset**.

21 Nodes and Links

(1) A **node** is any of the following:

(a) a **connection location**:

(b) a **station** that is not a **connection location**:

(c) a location in the **grid** where a circuit diverges or terminates (such as a "tee" point, or a deviation of a circuit within a **line** to connect to a **station** where the **line** does not terminate).

(2) For the purposes of subclause (1)(c)—

(a) a circuit does not "diverge" at a location merely because it changes direction at the location, or transitions from overhead to underground or vice versa at the location; and

(b) adjacent towers, poles or other structures at which a circuit diverges may be treated as a single location.

(3) Subject to subclause (8), a **link** is either a single circuit or multiple parallel circuits (of the same voltage) that are **grid assets** and connect 2 **nodes** (and includes any **grid assets**, such as circuit breakers, that are required to connect the **link** at either **node**).

(4) To avoid doubt—

(a) a **Transpower operations facility** is not a **node**; and

(b) a circuit or multiple parallel circuits that are **grid assets** and connect—

(i) a **node**; and

(ii) a **Transpower operations facility** that is not connected to any other **node**,

is not a **link**.

(5) Figures 4 and 5 illustrate how **nodes** and **links** are identified under subclauses (1) to (4):

(a) Figure 4 shows a physical **grid** configuration. CL1, CL2 and CL3 are **connection locations**. TOF is a **Transpower operations facility**. T1, T2, T3 and T4 are towers. The lines are circuits between the **connection locations** or **Transpower operations facility** and the towers. All of the circuits are **grid assets** except the circuit between CL2 and CL3:

(b) Figure 5 shows the same **grid** configuration as figure 4 but in the form of **nodes** and **links**. **Nodes** N2, N4 and N5 correspond to **connection locations** CL1, CL2 and CL3 respectively. **Node** N1 corresponds to the divergence at tower T1. **Node** N3 corresponds to the divergence at towers T2 and T3, which are adjacent and treated as a single location. There is no **node** corresponding to tower T4 because the change of direction of the circuits at T4 is insufficient to constitute a divergence. There is no **node** corresponding to **Transpower operations facility** TOF because a **Transpower operations facility** is not a **node**. There is no **link** between N4 and N5 because the circuit between CL2 and CL3 is not a **grid asset**. There is no **link** between T3 and TOF because TOF is not a **node**.

Figure 4

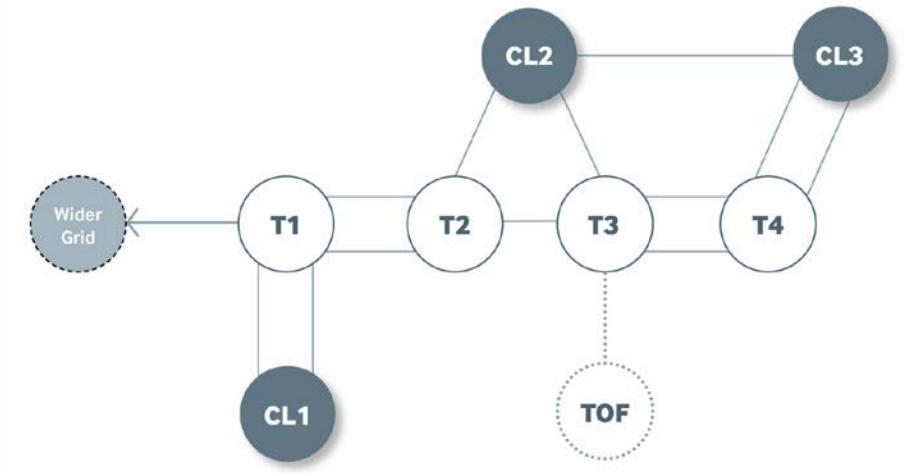
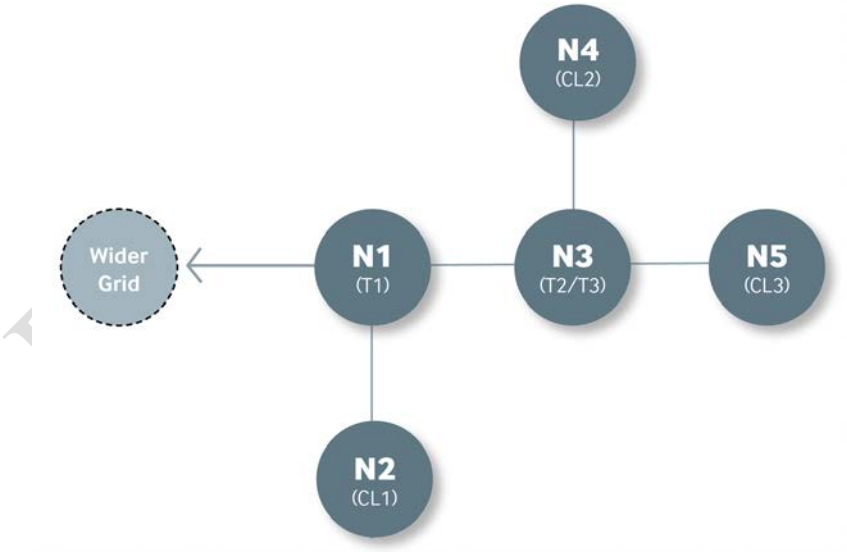


Figure 5



(6) Subclauses (1) to (3) must be applied to identify **nodes** and **links** contemporaneously and not prospectively or retrospectively. If a **grid asset** is expected to change from being a **node** or **link** to not being a **node** or **link**, or vice versa, once a future event occurs (such as the

commissioning or **decommissioning** of it or another **asset**), that does not affect the **node** or **link** status of the **grid asset** before the event occurs.

(7) Subject to subclause (8), if a **grid asset** was a **node** or **link** before this **transmission pricing methodology** came into effect or before an event occurred, that does not prevent the **grid asset** ceasing to be a **node** or **link** when this **transmission pricing methodology** came into effect or when the event occurred, or vice versa.

(8) A circuit or circuits that are not **grid assets** but, immediately before this **transmission pricing methodology** came into effect, comprised a "link" under the **previous transmission pricing methodology**—

(a) will be treated as a **link** despite not being comprised of **grid assets**; but

(b) will cease to be a **link** if the circuit or circuits otherwise cease to meet the requirements for comprising a **link** under this **transmission pricing methodology**.

Commented [A24]: Should these words be deleted?

22 Connection and Interconnection Nodes and Links

(1) **Nodes** and **links** are identified as **connection nodes** or **connection links** or **interconnection nodes** or **interconnection links** according to the following rules:

(a) an **interconnection node** is any **node** connected to 2 or more **nodes** in a **loop**, other than a **small regional loop**:

(b) a **loop** is a continuous path of **nodes** and **links** with the same start and end **node**:

(c) a **small regional loop** is a **loop** between any group of **nodes** (excluding the **nodes** at the Benmore and Haywards substations) with only a single **link** from the **loop** to a **node** outside the **loop** that—

(i) is part of another **loop**; or

(ii) ultimately links to another **loop**, either directly or indirectly through other **nodes**:

(d) a **connection node** is any **node** that is not an **interconnection node**, including all **nodes** in a **small regional loop**:

(e) a **connection link** is a **link** with a **connection node** at 1 or both of its ends:

(f) an **interconnection link** is a **link** that connects 2 **interconnection nodes**.

(2) Figures 6, 7 and 8 illustrate how **small regional loops**, **interconnection nodes** and **links**, and **connection nodes** and **links** are identified under subclause (1):

(a) In figures 6 and 7, **nodes** N2, N3 and N4 comprise a **small regional loop** because in each case there is only 1 **link** (from N4) to another **loop**. In figure 6, the **link** from N4 to the other **loop** is direct because **interconnection node** N6 is part of the other **loop**. In figure 7, the **link** from N4 to the other **loop** is indirect through **connection node** N5. In figures 6 and 7, N2, N3 and N4 are **connection nodes** and the **links** between and to them are **connection links**. In figure 7, the **link** from N5 to N6 is also a **connection link**:

(b) In figure 8, **nodes** N2, N3 and N4 do not comprise a **small regional loop** because there is more than 1 **link** (from N3 and N4) to another **loop**. Even if the **link** from N4 to N6 did not exist, N2, N3 and N4 would still not comprise a **small regional loop** because there are 2 **links** to another **loop** from N3. In figure 8, N2, N3 and N4 are **interconnection nodes** and (apart from the **link** from **connection node** N1 to N2, which is a **connection link**) the **links** between and to them are **interconnection links**.

Figure 6

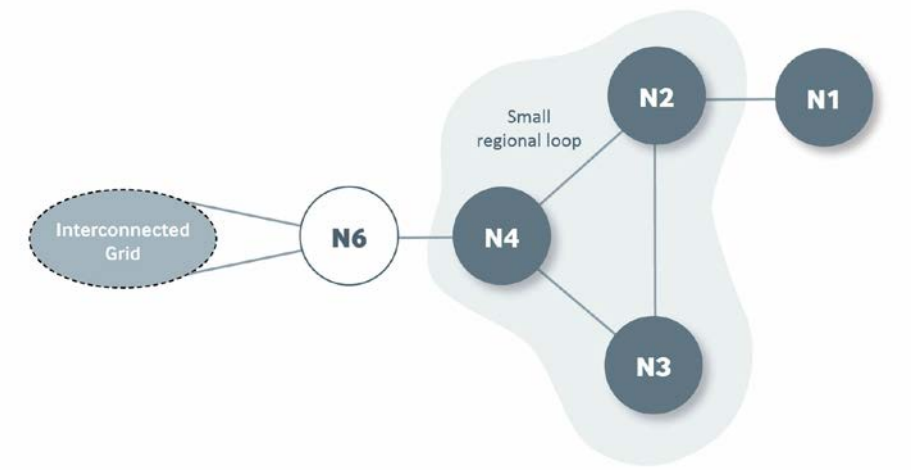


Figure 7

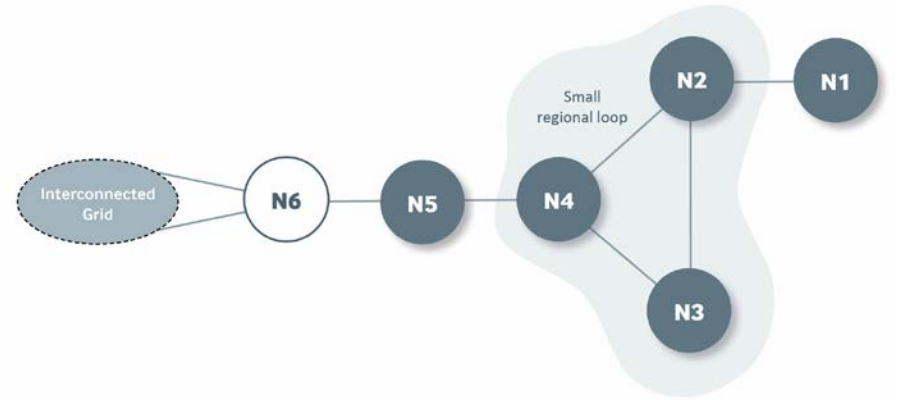
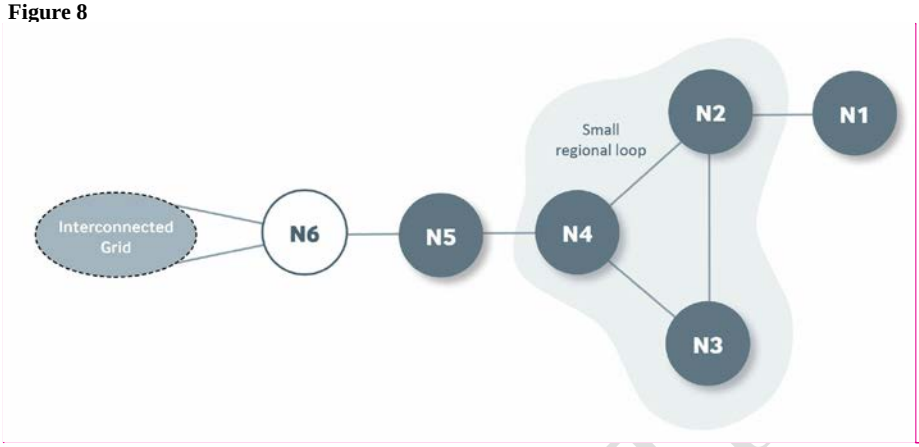


Figure 8



Commented [A25]: This diagram appears not to be as described in paragraph (b) above and is just a copy of figure 7.

(3) Subject to subclause (4), subclause (1) must be applied to classify **nodes** and **links** contemporaneously and not prospectively or retrospectively. If a **node** or **link** is expected to change from a **connection node** or **link** to an **interconnection node** or **link**, or vice versa, once a future event occurs (such as the **commissioning** or **decommissioning** of it or another **asset**), that does not affect the classification of the **node** or **link** before the event occurs.

(4) If a group of **nodes** or **links** that are to be provided as part of the same project are **commissioned** in a staged manner, the **connection** or **interconnection** status of each **node** and **link** in the group must be determined prospectively based on all **nodes** and **links** in the group being **commissioned**. However—

(a) if all the **nodes** and **links** have not been **commissioned** by the start of the **pricing year** that is at least 9 months after the first **node** or **link** is **commissioned**—

(i) subclause (3) will apply from the start of that **pricing year** and not this subclause (4) (so that the **nodes** and **links** will be classified contemporaneously from the start of that **pricing year**); and

(ii) once all the **nodes** and **links** are **commissioned**, subclause (3) will apply from the start of the first **pricing year** that starts after the last **node** or **link** is **commissioned** (so that the **nodes** and **links** will be classified contemporaneously from the start of that **pricing year**); and

(b) this subclause (4) must not be applied to classify an **interconnection node** or **interconnection link** as a **connection node** or **connection link**.

(5) If a **node** or **link** was classified as a **connection node** or **link** before this **transmission pricing methodology** came into effect or before an event occurred, that does not prevent the **node** or **link** being re-classified as an **interconnection node** or **link** when this **transmission pricing methodology** came into effect or when the event occurred, or vice versa.

23 Connection and Interconnection Assets

(1) A **connection asset** is any of the following that is not an **HVDC asset**:

(a) a **grid asset** at a **connection node**, other than voltage support equipment that is not an **investment contract asset**:

(b) at an **interconnection node** that is a **connection location**—

(i) any **grid asset** that is used to connect a **customer's assets** to the **grid**. This may include:

(A) a supply transformer, feeder bay, or supply transformer high voltage or low voltage breaker:

(B) a low voltage breaker, low voltage bus section breaker, voltage transformer, revenue meter, or other equipment that is on the same bus as a feeder; and

(ii) a proportion of the **land and buildings** at the **connection location** (LB_{conn}) calculated as follows:

$$LB_{conn} = \frac{RC_{conn\ total}}{RC_{total}}$$

where

$RC_{conn\ total}$	is the total **replacement cost** of all **grid assets** described in subparagraph (i) at the **connection location** at the end of the preceding **financial year**
RC_{total}	is the total **replacement cost** of all **grid assets** (excluding **land and buildings**) at the **connection location** at the end of the preceding **financial year**:

(c) a **grid asset** that is part of a **connection link**. If a **line** is included in a **connection link** and 1 or more other **links**, the part of the **line** ascribed to the **connection link** must be determined according to the length of the **line** included in the **connection link** relative to the total length of the **line**.

(2) An **interconnection asset** is any **grid asset** that is not a **connection asset**, and includes any **HVDC asset**.

24 Associating Connection Assets with Connection Locations and Customers

(1) A **connection asset** that—

(a) is at a **connection location**; or

(b) if the **connection location** is a **connection node**, connects the **connection location** (directly or indirectly) to an **interconnection node**,

is referred to as a **connection asset** "for" the **connection location**, "that connects" (or other grammatical form of that phrase) the **customers** at the **connection location** and that those **customers** are "connected to" (or other grammatical form of that phrase).

(2) A **customer** who owns **assets** connected at a **connection location** is referred to as a **customer** "at" the **connection location**.

(3) Subject to subclause (4), a **connection asset** for a **connection location** is referred to as "shared" between the **customers** at the **connection location**.

(4) A **connection asset** at a **connection location** that connects a specific **customer** only is not shared with any other **customer**.

(5) Figure 9 is the **node** and **link** configuration in figure 6 and illustrates how **connection assets** are associated with **connection locations** and **customers** under subclauses (1) to (3):

(a) N1, N3, N4 and N6 are **connection locations** at which **customers** A, B, C, D and E are connected. The smaller circles within N1, N3, N4 and N6 are **connection assets** at those **connection locations** that connect the specific **customers** shown only:

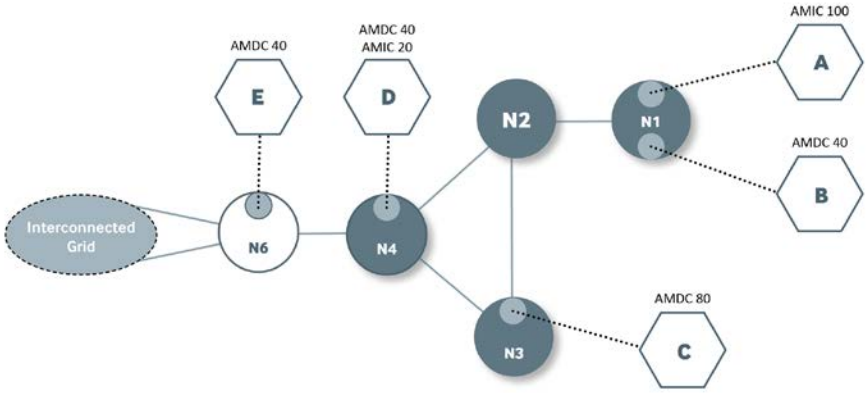
(b) The following table shows which **connection assets** are "for" the **connection locations** at N1, N3, N4 and N6. The **links** with an asterisk are "deep" **connection assets** for the relevant **connection location** because they are not located at, and do not directly connect to, the **connection location**:

connection assets	N1	N3	N4	N6
at **connection location**	Y	Y	Y	Y
in **link** N1-N2	Y	N	N	N
in **link** N2-N3	Y*	Y	N	N
in **link** N3-N4	Y*	Y	N	N
in **link** N2-N4	Y*	Y*	N	N
in **link** N4-N6	Y*	Y*	Y	N

(c) The following table shows how the **connection assets** at and between N1, N2, N3, N4 and N6 are "shared" between **customers** A, B, C, D and E:

connection assets	sharing
at N1	shared between A and B, apart from A- or B-specific **connection assets**
at N2	shared between A, B and C
at N3	shared between A, B and C, apart from C-specific **connection assets**
at N4	shared between A, B, C and D, apart from D-specific **connection assets**
at N6	shared between A, B, C, D and E, apart from E-specific **connection assets**
in **link** N1-N2	shared between A and B
in **link** N2-N3	shared between A, B and C
in **link** N3-N4	shared between A, B and C
in **link** N2-N4	shared between A, B and C
in **link** N4-N6	shared between A, B, C and D

Figure 9



25 Discretion to Classify and Reclassify as Connection

(1) Despite anything else in this **transmission pricing methodology**, **Transpower** may classify or (subject to subclause (2)) reclassify any **grid asset** that would otherwise be an **interconnection asset** as a **connection asset** if—

(a) the **grid asset** directly or indirectly connects 1 or more **customers** to the rest of the interconnected **grid**; and

(b) the **grid asset** does not provide material **transmission services** to any other **customers**; and

(c) **Transpower** considers it is fair and reasonable in all the circumstances to classify or reclassify the **interconnection asset** as a **connection asset**.

(2) **Transpower** must not reclassify a **grid asset** as a **connection asset** under subclause (1) retrospectively.

Commented [A26]: At (2) we think that you mean that charges that have been incurred already don't get reallocated, but charges that are incurred after the reclassification will be affected? Can you please clarify.

Part C Connection Charges

26 Calculation of Connection Charges

(1) Only **customers** connected to **connection assets** pay **connection charges**.

(2) A **customer's annual connection charge** for a **connection asset**, **connection location** and **pricing year** (CC) is calculated as follows:

$$CC = \big((A + FA + M + O + IOH) \times CA\big) - RBT$$

where

A is the asset component for the **connection asset** and **pricing year** calculated under clause 27

FA is the **customer's funded asset** component for the **connection asset** and **pricing year** calculated under clause 28

M is the maintenance component for the **connection asset** and **pricing year** calculated under clause 30

O is the operating component for the **connection asset** and **pricing year** calculated under clause 31

IOH is the injection overhead component for the **customer** for the **connection asset**, **connection location** and **pricing year** calculated under clause 32

CA is the **customer's connection customer allocation** for the **connection asset**, **connection location** and **pricing year**

RBT is the **customer's funded asset** rebate for the **connection asset**, **connection location** and **pricing year** calculated under clause 29.

(3) A **customer's annual connection charge** for a **connection location** and **pricing year** (ACC) is calculated as follows:

$$ACC = \sum_{a} CC_a$$

where CC_a is the **customer's annual connection charge** for **connection asset** a for the **connection location** and **pricing year**.

(4) A **customer's annual connection charge** for a **connection transmission alternative** and **pricing year** (TACC) is calculated as follows:

$$TACC = TAC \times \frac{\sum_l ACC_l}{\sum_l ACC_{l\ total}}$$

where

TAC is the **TA opex** for the **connection transmission alternative** and preceding **financial year**

ACC_l is the **customer's annual connection charge** for **connection location** l and the previous **pricing year**, where **connection location** l is a **connection location** that would be connected by a **connection asset** for which the **connection transmission alternative** is an alternative

$ACC_{l\ total}$ is the total of all **customers' annual connection charges** for **connection location** l and the previous **pricing year**.

(5) A **customer's monthly connection charge** for a **pricing year** (MCC) is calculated—

(a) for a **connection location**, as follows:

$$MCC = \frac{ACC}{12}$$

where ACC is the **customer's annual connection charge** for the **connection location** and **pricing year**; and

(b) for a **connection transmission alternative**, as follows:

$$MCC = \frac{TACC}{12}$$

where TACC is the **customer's annual connection charge** for the **connection transmission alternative** and **pricing year**.

(6) **Connection charges** are calculated for each **pricing year** before the start of the **pricing year**.

(7) A **connection charge** may be adjusted, including during a **pricing year**, under clauses 73 to 77 if there is a **connection charge adjustment event**.

27 Asset Component

(1) The asset component of the **connection charge** for a **connection asset** and **pricing year** (A) allocates a portion of the capital cost of all **connection assets** to the **connection asset**, and is calculated as follows:

$$A = (ARR \times RC) + (DARR \times RC')$$

where

ARR is the **connection asset** return rate for the **pricing year** calculated under subclause (3)

RC is—

(a) if the **connection asset** is an **investment contract asset**, 0; or

(b) otherwise, subject to subclause (2), the **replacement cost** of the **connection asset** at the end of the preceding **financial year**

DARR is the discounted **connection asset** return rate for the **connection asset** and **pricing year** calculated under subclause (4)

RC′ is the replacement cost of the **connection asset** at the end of the preceding **financial year** (even if **connection asset** a is an **investment contract asset**) subject to any reduction made under subclause (2) for the **pricing year**.

(2) **Transpower** may reduce the value of RC in subclause (1) if the **connection asset**—

(a) was **commissioned** after the start of the **first pricing year**; and

(b) has **capacity** in addition to the **capacity** likely to be required during the relevant **pricing year** by the **customers** that the **connection asset** connects.

The size of the reduction in the value of RC must be determined by **Transpower**—

(c) having regard to the **capacity** in the **connection asset** the **customers** have agreed to fund under **investment contracts**; and

(d) ~~be~~ proportionately to the amount of additional **capacity** referred to in paragraph (b).

(3) The **connection asset** return rate for a **pricing year** (ARR) is calculated as follows:

$$ARR = \frac{(r \times V_{total}) + D_{total}}{RC_{total}}$$

where

r is **Transpower's PQ WACC** (pre-tax) for the **pricing year**

V_{total} is the total **closing RAB value** of all **connection assets** for the preceding **financial year**

D_{total} is total **depreciation** of all **connection assets** other than **investment contract assets** during the preceding **financial year**

RC_{total} is the total **replacement cost** of all **connection assets** other than **investment contract assets** at the end of the preceding **financial year**.

(4) The discounted **connection asset** return rate for a **connection asset** and **pricing year** (DARR) is calculated as follows:

$$DARR = \frac{ARR \times R_{total}}{RC'_{total}}$$

where

ARR is the **connection asset** return rate for the **pricing year** calculated under subclause (3)

R_{total} is the total of all reductions made under subclause (2) for the **connection asset** and **pricing year**

RC'_{total} is the total **replacement cost** of all **connection assets** at the end of the preceding **financial year** (including **connection assets** that are **investment contract assets**) less any reductions made under subclause (2) for the **pricing year**.

28 Funded Asset Component

(1) The **funded asset** component of the **connection charge** ensures that **non-contributing customers** pay part of the capital cost of **funded assets** through their **connection charges**.

(2) A **customer's funded asset** component for a **connection asset** is 0 unless—
- (a) the **connection asset** is a **funded asset**; and
- (b) the **customer** is, but for the **funded asset** component, a **non-contributing customer** for the **funded asset**.

(3) Subject to subclauses (4) and (5), a **non-contributing customer's funded asset** component for a **funded asset** and **pricing year** (FA) is calculated as follows:

$$FA = TF \times \frac{EL_{remain}}{EL_{total}} \times \frac{1}{10}$$

where

TF is the total amount paid, or expected to be paid, towards the capital cost of the **funded asset** under all **investment contracts**

EL_{remain} is the remaining **economic life** of the **funded asset** at the end of the **pricing year** during which the **non-contributing customer** connected to the **funded asset**

EL_{total} is the total **economic life** of the **funded asset**, including any part of it that has elapsed.

(4) The **non-contributing customer's funded asset** component for the **funded asset** applies for 10 consecutive **pricing years** only, starting with the **pricing year** after the **pricing year** during which the **non-contributing customer** connected to the **funded asset**.

(5) If the **non-contributing customer** agrees with 1 or more **prior contributing customers** to contribute towards the capital cost of a **funded asset**—
- (a) subclause (3) applies to the **funded asset** subject to that agreement; and
- (b) the agreement is deemed to be an **investment contract** for the **funded asset** (even if **Transpower** is not a party to it).

29 Funded Asset Rebate

(1) A **non-contributing customer's funded asset** component for a **funded asset** and **pricing year** is rebated to each **prior contributing customer** for the **funded asset** in respect of the **non-contributing customer**.

(2) A **customer's funded asset** rebate for a **connection asset** and **pricing year** is 0 unless—
- (a) the **connection asset** is a **funded asset**; and
- (b) a **non-contributing customer** pays a **funded asset** component for the **funded asset** and **pricing year**; and
- (c) the **customer** is a **prior contributing customer** for the **funded asset** in respect of the **non-contributing customer**.

(3) Subject to subclause (4), **prior contributing customer** c's **funded asset** rebate of **non-contributing customer** i's **funded asset** component for a **connection location** and **pricing year** (RBT_c) is calculated as follows:

$$RBT_c = FA_i \times CA_i \times \frac{AMDIC_c}{AMDIC_{total} - AMDIC_i}$$

where

FA_i is **non-contributing customer** i's **funded asset** component for the **funded asset** and **pricing year**

CA_i is **non-contributing customer** i's **connection customer allocation** for the **funded asset**, **connection location** and **pricing year**

$AMDIC_c$ is **prior contributing customer** c's **AMDC** or **AMIC** (as the case may be) for the **connection location** and **pricing year**

$AMDIC_{total}$ is the total of all **customers'** (including **prior contributing customer** c's and **non-contributing customer** i's) **AMDC** or **AMIC** (as the case may be) for the **connection location** and **pricing year**

$AMDIC_i$ is **non-contributing customer** i's **AMDC** or **AMIC** (as the case may be) for the **connection location** and **pricing year**.

(4) Subclause (3) applies subject to any agreement of the type referred to in subclause 28(5).

30 Maintenance Component

(1) The maintenance component of the **connection charge** for a **connection asset** and **pricing year** (M) allocates to the **connection asset** a portion of **Transpower's** total maintenance costs for all **connection assets**, and is calculated as follows:

$$M = MC \times (1 - ICR_{maint})$$

where

MC is the maintenance cost component for the **connection asset** and **pricing year** calculated under subclause (2)

ICR_{maint} is the percentage of the maintenance cost for the **connection asset** and **pricing year** expected to be recovered by **Transpower** under **investment contracts**, expressed as a decimal and no more than 1.

(2) The maintenance cost component for the **connection asset** and **pricing year** (MC) is—
(a) if the **connection asset** is located at a **station**, the **station** maintenance cost component for the **pricing year** calculated under subclause (3); or
(b) if the **connection asset** is a **line**, the **line** maintenance cost component for the **pricing year** calculated under subclause (5).

(3) The **station** maintenance cost component for the **connection asset** and **pricing year** ($MC_{station}$) is calculated as follows:

$$MC_{station} = MRR_{station} \times RC$$

where

$MRR_{station}$	is the **station** maintenance recovery rate for the **pricing year** calculated under subclause (4)
RC	is the **replacement cost** of the **connection asset** at the end of the preceding **financial year**.

(4) The **station** maintenance recovery rate for a **pricing year** ($MRR_{station}$) is calculated as follows:

$$MRR_{station} = \frac{AMC_{station\ total}}{RC_{station\ total}}$$

where

$AMC_{station\ total}$	is the average over the preceding 4 **financial years** of **Transpower's** maintenance costs for all **connection assets** located at **stations**
$RC_{station\ total}$	is the total **replacement cost** of all **connection assets** located at **stations** at the end of the preceding **financial year**.

(5) The **line** maintenance cost component is calculated using a **line** maintenance recovery rate that depends on the **line** type. The different **line** types (all AC) used are—

(a) 220kV or higher voltage tower **lines**; and
(b) other tower **lines**; and
(c) pole **lines**; and
(d) underground cable **lines**.

(6) The **line** maintenance cost component for the **connection asset** and **pricing year** (MC_{line}) is calculated as follows:

$$MC_{line} = MRR_{line\ t} \times L$$

where

$MRR_{line\ t}$	is the **line** maintenance recovery rate for the **connection asset's line** type t and the **pricing year** calculated under subclause (7)
L	is the **line** length (in km) of the **connection asset** at the end of the preceding **financial year**.

(7) Subject to subclause (8), the **line** maintenance recovery rate for **lines** of type t and a **pricing year** ($MRR_{line\ t}$) is calculated as follows:

$$MRR_{line\ t} = \frac{AMC_{line\ t\ total}}{L_{t\ total}}$$

where

$AMC_{line\ t\ total}$	is the average over the preceding 4 **financial years** of **Transpower's** maintenance costs for all **connection assets** that are **lines** of type t

$L_{t\ total}$ is the total **line** length (in km) of all **connection assets** that are **lines** of type t at the end of the preceding **financial year**.

(8) **Transpower** may estimate the **line** maintenance recovery rate for underground cable **lines** if **Transpower** determines it has insufficient data to carry out the calculation in subclause (7) for underground cable **lines**.

31 Operating Component

(1) The operating component of the **connection charge** for a **connection asset** and **pricing year** (O) allocates to the **connection asset** a portion of **Transpower's** total operating costs for all **AC assets**, and is calculated as follows:

$$O = OC \times \left(1 - ICR_{op}\right)$$

where

OC is the operating cost component for the **connection asset** and **pricing year** calculated under subclause (2)

ICR_{op} is the percentage of the operating cost for the **connection asset** and **pricing year** expected to be recovered by **Transpower** under **investment contracts**, expressed as a decimal and no more than 1.

(2) The operating cost component for the **connection asset** and **pricing year** (OC) is calculated as follows:

$$OC = ORR \times \left(S - (0.1 \times S_{cust})\right)$$

where

ORR is the operating recovery rate for the **pricing year** calculated under subclause (3)

S is the number of switches that are part of the **connection asset** at the end of the preceding **financial year**

S_{cust} is the number of switches that are part of the **connection asset** and operated by a **customer** at the end of the preceding **financial year**.

(3) The operating recovery rate for the **pricing year** (ORR) is calculated as follows:

$$ORR = \frac{OC_{switch\ total}}{\left(S_{total} - (0.1 \times S_{cust\ total})\right)}$$

where

$OC_{switch\ total}$ is **Transpower's** total operating costs for all **AC switches** over the preceding **financial year**

S_{total} is the total number of **AC switches** at the end of the preceding **financial year**

$S_{cust\ total}$ is the total number of **AC switches** that are operated by a **customer** at the end of the preceding **financial year**.

32 Injection Overhead Component

Commented [A27]: See refer-back letter.

(1) The injection overhead component of the **connection charge** recognises that **injection customers** are not allocated any overhead costs for **grid assets** not comprised in **BBIs** through **residual charges**.

(2) The injection overhead component of the **connection charge** for a **customer**, **connection asset**, **connection location** and **pricing year** (OH)—

(a) is 0 if the **customer** is not an **injection customer** at the **connection location**; or

(b) otherwise allocates to the **connection asset** a portion of **Transpower's** total overhead costs for **grid assets**, and is calculated as follows:

$$IOH = IOR \times RC$$

where

IOR is the injection overhead rate for the **pricing year** calculated under subclause (3)

RC is the **replacement cost** of the **connection asset** at the end of the preceding **financial year**.

(3) The injection overhead rate for a **pricing year** (IOR) is calculated as follows:

$$IOR = \frac{IO_{total}}{\sum_a \sum_j \left(RC_a \times CA_{aj}\right)}$$

where

IO_{total} is the injection overhead total for the **pricing year** calculated under subclause (4)

RC_a is the **replacement cost** of **injection connection asset** a at the end of the preceding **financial year**

CA_{aj} is **customer** j's **connection customer allocation** for **injection connection asset** a at the end of the preceding **financial year**.

(4) The injection overhead total for a **pricing year** (IO_{total}) is calculated as follows:

$$IO_{total} = OH \times \frac{M_{inj\ total}}{M_{total}}$$

where

OH is the deemed overhead cost component of **maximum revenue** for the **pricing year** calculated under subclause (5)

$M_{inj\ total}$ is **Transpower's** total maintenance cost for **injection connection assets** during the preceding **financial year**

M_{total} is **Transpower's** total maintenance cost for **grid assets** during the preceding **financial year**.

(5) The deemed overhead cost component of **maximum revenue** for a **pricing year** (OH) is calculated as follows:

$$OH = OC_{total} + PC + RC - OC_{maint} - OC_{switch}$$

where

OC_{total} is the **allowance** for operating costs, as defined in the **Transpower IMs**, for the **pricing year**

PC is the **allowance** for pass-through costs, as defined in the **Transpower IMs**, for the **pricing year**

RC is the **allowance** for recoverable costs, as defined in the **Transpower IMs**, for the **pricing year**

OC_{maint} is the part of OC_{total} that relates to **grid** maintenance

OC_{switch} is $OC_{switch\ total}$ in subclause 31(3) for the **pricing year**.

Commented [A28]: Why not use the same terminology as in the previous clause and copy across the same definition?

33 Connection Customer Allocations

(1) Subject to subclause (5) and clause 34, a **customer's connection customer allocation** for a **connection asset**, **connection location** and **pricing year** (CA_1) is calculated as follows if the **connection asset** is—

(a) for 1 **connection location** only; and

(b) not a **mixed connection asset**:

$$CA_1 = \frac{AMDIC}{AMDIC_{total}}$$

where

AMDIC is the **customer's AMDC** or **AMIC** (as the case may be) at the **connection location** for the **pricing year**

$AMDIC_{total}$ is the total of all **customers' AMDCs** and **AMICs** at the **connection location** for the **pricing year**.

(2) Subject to subclause (5) and clause 34, a **customer's connection customer allocation** for a **connection asset**, **connection location** and **pricing year** (CA_{2+}) is calculated as follows if the **connection asset** is—

(a) for 2 or more **connection locations**, being the set of **connection locations** L; and

(b) not a **mixed connection asset**:

$$CA_{2+} = \frac{AMDIC}{AMDIC_{L\ total}}$$

where

AMDIC is the **customer's AMDC** or **AMIC** (as the case may be) at the **connection location** for the **pricing year**

$AMDIC_{L\ total}$ is the total of all **customers' AMDCs** and **AMICs** at all **connection locations** in the set of **connection locations** L for the **pricing year**.

(3) Subject to subclauses (4) and (5) and clause 34, a **customer's connection customer allocation** for a **connection asset**, **connection location** and **pricing year** (CA_{mixed}) is calculated as follows if the **connection asset** is a **mixed connection asset**:

$$CA_{mixed} = \frac{AMDIC}{C}$$

where

AMDIC is the **customer's AMDC** or **AMIC** (as the case may be) at the **connection location** for the **pricing year**

C is the **capacity** of the **connection asset** at the end of **CMP A** for the **pricing year**.

(4) If the sum of all **customers' connection customer allocations** for a **mixed connection asset** and **pricing year** is greater than 1, **Transpower** must scale down all of the **connection customer allocations** on a pro rata basis so that they sum to 1.

(5) If a **connection asset** is—

(a) an **investment contract asset** provided under an **investment contract** with a **customer**; and

(b) for more than 1 **connection location**, or for 1 **connection location** at which there is more than 1 **customer**,

then the calculation of the **connection customer allocations** for the **connection asset** for the **connection locations** is subject to any provisions in the **investment contract** that alter the **customer's connection customer allocation** for the **connection asset** for the **connection locations**.

(6) The following table shows the **connection customer allocations** for the **connection assets** that are part of the **connection links** in figure 9 (based on the **AMDC** and **AMIC** quantities shown in figure 9):

link	connection location	customer	connection customer allocation
N1-N2	N1	A	$\frac{100}{140} = 0.7143$
		B	$\frac{40}{140} = 0.2857$
N2-N3 N3-N4 N2-N4	N1	A	$\frac{100}{220} = 0.4545$
		B	$\frac{40}{220} = 0.1818$
	N3	C	$\frac{80}{220} = 0.3636$
N4-N6	N1	A	$\frac{100}{280} = 0.3571$
		B	$\frac{40}{280} = 0.1429$
	N3	C	$\frac{80}{280} = 0.2857$
	N4	D (offtake)	$\frac{40}{280} = 0.1429$
		D (injection)	$\frac{20}{280} = 0.0714$

34 De-rating

(1) This clause 34 applies if both of the following conditions are satisfied:

(a) a **customer** (the notifying **customer**) has notified **Transpower** in writing that the notifying **customer's assets** at a **connection location** have been **de-rated**:

(b) **Transpower** is reasonably satisfied the notifying **customer's assets** at the **connection location** have been **de-rated**.

(2) A relevant **pricing year** is—

Commented [A29]: Should this say "In this clause 34"?

(a) the first **pricing year** that starts at least 6 months (or such shorter period as **Transpower** may determine is practicable) after the date the conditions in subclause (1) are first satisfied; and

(b) a subsequent **pricing year** if the date the conditions in subclause (1) are first satisfied is within **CMP A** for the **pricing year**.

(3) **Transpower** must, for each relevant **pricing year**, calculate **connection charges** for the **connection location** by—

(a) estimating the notifying **customer's** future **AMDC** and **AMIC** for the **connection location** taking into account—

(i) the new **capacity** of the connecting **customer's assets**; and

(ii) any available historical information about the notifying **customer's offtake** and **injection** at the **connection location**; and

(b) capping the notifying **customer's AMDC** and **AMIC** for the **connection location** and relevant **pricing year** at the notifying **customer's** estimated future **AMDC** and **AMIC** for the **connection location**.

35 Replacement Costs

(1) **Transpower** must review, including update as appropriate, the **replacement costs** it uses to calculate **connection charges** at intervals of no more than 5 years from the start of the **first pricing year**.

(2) **Transpower's** first review of **replacement costs** under subclause (1) may occur before the start of the **first pricing year**.

(3) Subject to subclause (4), **Transpower** must consult with all **customers** who pay **connection charges** on any update to **replacement costs** under subclause (1) before updating the **replacement costs**.

(4) **Transpower** is not required to consult on an update to **replacement costs** under subclause (1) if **Transpower** determines—

(a) the update is technical and non-controversial; or

(b) there is widespread support for the update among **customers**; or

(c) there has been adequate prior consultation on the update so that all relevant views of **customers** have been considered.

(5) Before **Transpower's** first review of **replacement costs** under subclause (1) is completed, the **replacement cost** of a **connection asset commissioned** before 1 July 2006 is calculated by multiplying the **connection asset's** unadjusted **replacement cost** by the **replacement cost adjustment factor**.

(6) If **Transpower** does not have a **replacement cost** for a **connection asset**, **Transpower** must use the **replacement cost** available to **Transpower** for the closest equivalent of the **connection asset**, as determined by **Transpower**, for the purposes of calculating **connection charges** for the **connection asset**.

Part D Benefit-based Charges

General

36 Calculation of Benefit-based Charges

(1) Subject to subclauses 81(7) and 82(7) and clause 86, only **beneficiaries** pay **benefit-based charges**, and only for the **BBIs** of which they are **beneficiaries** ~~of~~.

(2) A **beneficiary's annual benefit-based charge** for a **BBI** and **pricing year** (BBC) is calculated as follows:

$$BBC = CC \times CA$$

where

CC is the **BBI's covered cost** for the **pricing year**

CA is the **beneficiary's BBI customer allocation** for the **BBI**.

(3) A **beneficiary's monthly benefit-based charge** for a **BBI** and **pricing year** (MBBC) is calculated as follows:

$$MBBC = \frac{BBC}{12}$$

where BBC is the **beneficiary's annual benefit-based charge** for the **BBI** and **pricing year**.

(4) **Benefit-based charges** are calculated for each **pricing year** before the start of the **pricing year**.

(5) A **benefit-based charge** may be—

(a) adjusted, including during a **pricing year**, under clauses 78 to 89 if there is a **benefit-based charge adjustment event**; and

(b) adjusted under clause 95 if the relevant **BBI** is subject to **reassignment**.

37 Start of Benefit-based Charges

(1) Subject to subclause (2), **Transpower** must start the **benefit-based charges** for a **BBI** from the **BBI's start pricing year**.

(2) **Transpower** may delay the start of the **benefit-based charges** for a **low-value post-2019 BBI** under the **simple method** until the **pricing year** that starts at least 6 months (or such shorter period as **Transpower** may determine is practicable) after **Transpower's** financial and regulatory records and registers contain all the locational information **Transpower** reasonably requires to calculate the **benefit-based charges** for the **BBI**.

Commented [A30]: We have included comments on the drafting on BBC Allocation in this document for Transpower's consideration. However, there may be further comments, as the Authority's substantive consideration of refer-back of BBC Allocation has been deferred.

38 Capital Expenditure on Existing BBIs

(1) Subject to subclause (4), **Transpower** must treat a **refurbishment investment** or **replacement investment** in respect of an existing **post-2019 BBI** as—

(a) part of the existing **post-2019 BBI**, in which case the **refurbishment investment** or **replacement investment** will increase the **covered cost** of the **post-2019 BBI** but will not change its **BBI customer allocations**; or

(b) a separate **post-2019 BBI**; or

(c) part of an existing **post-2019 BBI** referred to in paragraph (b)-, in which case the **refurbishment investment** or **replacement investment** will increase the **covered cost** of the **post-2019 BBI** but will not change its **BBI customer allocations**.

(2) Subject to subclause (4), **Transpower** must treat a **refurbishment investment** or **replacement investment** in respect of an **Appendix A BBI** as—

(a) a separate **post-2019 BBI**; or

(b) part of an existing **post-2019 BBI** referred to in paragraph (a)-, in which case the **refurbishment investment** or **replacement investment** will increase the **covered cost** of the **post-2019 BBI** but will not change its **BBI customer allocations**.

(3) **Transpower** must treat an **enhancement investment** in respect of an existing **BBI** as a separate **post-2019 BBI**.

(4) **Transpower** must not treat a **refurbishment investment** or **replacement investment** as part of an existing **post-2019 BBI** under subclause (1) or (2) if **Transpower** determines the **refurbishment investment** or **replacement investment** is likely to have—

(a) different **beneficiaries** than the existing **post-2019 BBI**; or

(b) a materially different distribution of **NPB** than the existing **post-2019 BBI**.

39 Assumptions Book

(1) **Transpower** must **publish**, and may from time to time **publish** updates to, an **assumptions book**.

(2) The **assumptions book** must not contain any assumptions or methodologies that are inconsistent with this Code.

(3) Subject to subclause (4), **Transpower** must consult with all **customers** on the **assumptions book** or any update to it before **publishing** the **assumptions book** or update.

(4) **Transpower** is not required to consult on an update to the **assumptions book** if **Transpower** determines—

(a) the update is technical and non-controversial; or

(b) there is widespread support for the update among **customers**; or

(c) there has been adequate prior consultation on the update so that all relevant views of **customers** have been considered.

(5) Except as otherwise stated in this **transmission pricing methodology**, the **assumptions book** is not binding on **Transpower** or any **independent expert**.

(6) **Transpower** must review the content of the **assumptions book** and consider whether any of the content is appropriate for incorporation in this **transmission pricing methodology** by way of a review under clause 12.85 of this Code at intervals of no more than 7 years from the start of the **first pricing year**.

(7) The **assumptions book** may be part of the same document in which the **reassignment practice manual** or **prudent discount practice manual** is contained.

Covered Cost

40 Covered Cost

(1) A **BBI's covered cost** for a **pricing year** (CC) is calculated as follows:

$$CC = \sum_{a} (D_a + C_a + T_a) + AO$$

where

D_a is, subject to subclause (6), **depreciation** of **grid asset** a for the preceding **financial year**, where **grid asset** a is a~~n~~ **grid asset** comprised in the **BBI**, excluding accelerated **depreciation**

C_a is the **capital charge** for **grid asset** a and the preceding **financial year** calculated under subclause (2)

T_a is the sum of—

(a) **Transpower's** depreciation tax loss (positive value) or gain (negative value) for **grid asset** a and the preceding **financial year** calculated under subclause (3); and

(b) income tax on the **capital charge** for **grid asset** a and the preceding **financial year** calculated under subclause (5)

AO is the attributed opex component for the **BBI** and **pricing year** calculated under subclause 41(1).

(2) The **capital charge** for a **grid asset** and **financial year** (C) is calculated—

(a) if the **grid asset** had an **opening RAB value** for the **financial year**, as follows:

$$C = r \times V$$

where

r is **Transpower's PQ WACC** (vanilla) at the start of the **financial year**

V is the **opening RAB value** for the **grid asset** and **financial year**; or

(b) if the **grid asset** did not have an **opening RAB value** for the **financial year**, as follows:

$$C = V \times \frac{r \times (12.5 - m)}{12}$$

where

V is—

(a) if the **grid asset's commissioning date** was before the start of the **financial year**, the **grid asset's value of commissioned asset** less

notional **depreciation** of the **grid asset** for previous **financial years** calculated under paragraph (6)(d); or

(b) if the **grid asset's commissioning date** was during the **financial year**, the **grid asset's value of commissioned asset**

r is **Transpower's PQ WACC** (vanilla) at the start of the **financial year**

m is—

(a) if the **grid asset's commissioning date** was before the start of the **financial year**, 0.5; or

(b) if the **grid asset's commissioning date** was during the **financial year**, the month of the **financial year** during which the **grid asset** was **commissioned** (for example, m = 3 for September).

(3) **Transpower's** depreciation tax loss or gain for a **grid asset** and **financial year** (T_{dep}) is calculated as follows:

$$T_{dep} = \frac{r \times (AD - TD - I)}{1 - r}$$

where

r is the corporate tax rate, as defined in the **Transpower IMs**, at the start of the **financial year**;

AD is, subject to subclause (6), **depreciation** of the **grid asset** during the **financial year**

TD is, subject to subclause (6), tax depreciation of the **grid asset** during the **financial year**

I is notional interest for the **grid asset** and **financial year** calculated under subclause (4).

(4) Notional interest for a **grid asset** and **financial year** (I) is calculated as follows:

$$I = V \times L \times CD$$

where

V is the **opening RAB value** for the **grid asset** and **financial year**

L is leverage, as defined in the **Transpower IMs**, at the start of the **financial year**

CD is the estimated cost of debt used under the **Transpower IMs** to calculate **Transpower's PQ WACC** (vanilla) applicable at the start of the **financial year**.

(5) Income tax on the **capital charge** for a **grid asset** and **financial year** (T_{inc}) is calculated as follows:

$$T_{inc} = \frac{r \times C}{1 - r}$$

where

r is the corporate tax rate, as defined in the **Transpower IMs**, at the start of the **financial year**;

C is the **capital charge** for the **grid asset** and **financial year** calculated under subclause (2).

(6) If a **grid asset** comprised in a **BBI** that is expected to be **high-value** when **fully commissioned**—

(a) was **commissioned** before or during a **pricing year's** preceding **financial year**; and

(b) has no value in the **RAB** for the preceding **financial year**,

Transpower must—

(c) determine an interim asset type for the **grid asset** for **depreciation** and tax depreciation purposes; and

(d) use the **grid asset's value of commissioned asset** and determined asset type to calculate notional **depreciation** and notional tax depreciation for the **grid asset** and preceding **financial year**; and

(e) use the notional **depreciation** and tax depreciation as the values for the variables D_a, AD and TD, as appropriate, in subclauses (1), (3) and 41(1) for the **grid asset** and **pricing year**; and

(f) make such adjustments to **depreciation** and depreciation tax loss or gain for the **BBI** and subsequent **financial years** as are necessary to ensure—

(i) there is no over-recovery of **depreciation** for the **grid asset**; and

(ii) there is no over or under-recovery of depreciation tax loss or gain.

41 Attributed Opex Component

(1) The attributed opex component for a **BBI** and **pricing year** (AO) is calculated as follows:

$$AO = \sum_{a} (D_a \times AOR) + HVDC + TA + MCP$$

where

D_a is, subject to subclause 40(6), **depreciation** of **grid asset** a for the preceding **financial year**, where **grid asset** a is a **grid asset** comprised in the **BBI**, excluding accelerated **depreciation**

AOR is the attributed opex ratio for the **pricing year** calculated under subclause (3)

HVDC is—

(a) if the **BBI** comprises 1 or more **grid investments** in the **HVDC link**, an allocation of **HVDC opex** for the preceding **financial year** as determined by **Transpower** subject to subclause (2); or

(b) otherwise, 0

TA is—

(a) if the **BBI** comprises 1 or more **grid investments** in **interconnection transmission alternatives**, **TA opex** for the **interconnection transmission alternatives** and preceding **financial year**; or

(b) otherwise, 0

MCP is **MCP opex** for the **BBI** and preceding **financial year**.

(2) **HVDC opex** for a **financial year** must be fully allocated to 1 or more **BBIs** that comprise a **grid investment** in the **HVDC link**, unless there are no such **BBIs**.

(3) The attributed opex ratio for a **pricing year** during an **RCP** (AOR) is calculated as follows:

$$AOR = \frac{OC + PC + RC - HVDC - TA - MCP - FD}{D}$$

where

OC is the **allowance** for operating costs, as defined in the **Transpower IMs**, for the **RCP**

PC is the **allowance** for pass-through costs, as defined in the **Transpower IMs**, for the **RCP**

RC is the **allowance** for recoverable costs, as defined in the **Transpower IMs**, for the **RCP**

HVDC is forecast **HVDC opex** for the **RCP**

TA is the **allowance** for **TA opex** for the **RCP**, to the extent any part of it is included in any of the above **allowances**

MCP is the **allowance** for **MCP opex** for the **RCP**, to the extent any part of it is included in any of the above **allowances**

FD is an amount of operating costs attributable to **Transpower** assets that are fully depreciated at the start of the **RCP**, as determined by **Transpower**

D is the **allowance** for **depreciation** for the **RCP**.

(4) The value of AOR in subclause (3) is—
(a) calculated for the whole of the **RCP**; and
(b) only re-calculated if any of the relevant **allowances** are reset by the **Commission** during the **RCP**.

BBI Customer Allocations

42 BBI Customer Allocations for Appendix A BBIs

(1) Subject to subclause (3), for each **Appendix A BBI**—
(a) the starting **beneficiaries** are the persons specified in Appendix A with a positive **BBI customer allocation** for the **Appendix A BBI**; and
(b) the starting **BBI customer allocations** are as specified in Appendix A.

(2) To avoid doubt, for each **Appendix A BBI**—
(a) the starting **beneficiaries** are based on the **Schedule 1 beneficiaries** of the **Appendix A BBI**; and
(b) the starting **BBI customer allocations** are based on the **Schedule 1 allocations** for the **Appendix A BBI**,

in each case adjusted as **Transpower** determines necessary to account for changes to **customers** before and after the **Authority** published the **2020 guidelines**.

(3) **Transpower** must adjust the starting **beneficiaries** and starting **BBI customer allocations** for the **Appendix A BBIs** under clauses 80 to 87 if there is a relevant **benefit-based charge adjustment event** before the **first pricing year**.

43 BBI Customer Allocations for Post-2019 BBIs

(1) A **customer's BBI customer allocation** for a **post-2019 BBI** (CA) is calculated as follows:

$$CA = \frac{NPB}{NPB_{total}}$$

where

NPB is the **customer's individual NPB** for the **post-2019 BBI**

NPB_{total} is the total of all **customer~~'~~s' individual NPBs** for the **post-2019 BBI**.

(2) A **customer's individual NPB** for a **post-2019 BBI** is calculated under a **standard method** or **simple method** as follows:

type	sub-type	method
post-2019 BBI expected to be **high-value** when **fully commissioned**	**resiliency BBI**	**resiliency method**
	otherwise	**price-quantity method**
post-2019 BBI expected to be **low-value** when **fully commissioned**		**simple method**

(3) If a **post-2019 BBI** is a **tested investment**, the assumptions and other inputs (including the **factual**, **counterfactual**, **modelled constraints** and **scenarios**) **Transpower** uses in applying a **standard method** to the **post-2019 BBI** must be as consistent as reasonably practicable with the assumptions and other inputs used in applying the **investment test** to the **post-2019 BBI**, except—

(a) as otherwise stated in this **transmission pricing methodology**; or

(b) to the extent **Transpower** determines such alignment would not produce **BBI customer allocations** that are broadly proportionate to **NPB** from the **post-2019 BBI**.

Standard Method: Price-quantity Method

44 Overview of Price-quantity Method

(1) Clauses 44 to 53 apply—

(a) to the **price-quantity method** only; and

(b) only to those **post-2019 BBIs** to which **Transpower** applies the **price-quantity method** in accordance with subclause 43(2).

(2) Under the **price-quantity method**—

(a) **regional NPB** is calculated for a **regional customer group** as any of the following:
  (i) **market regional NPB** under clauses 50 to 50B:
  (ii) **ancillary service regional NPB** under clause 51:
  (iii) **reliability regional NPB** under clause 52:
  (iv) **other regional NPB** under clause 53; and

(b) **Transpower**—
  (i) must calculate **market regional NPB** for a **market BBI**; and
  (ii) may calculate **ancillary service regional NPB** for an **ancillary service BBI**; and
  (iii) must calculate **reliability regional NPB** for a **reliability BBI**; and
  (iv) subject to subclause 53(2), may calculate **other regional NPB** for a **market BBI**, **ancillary service BBI** or **reliability BBI**; and

(c) **individual NPB** is calculated for each **customer** in a **regional customer group** with positive **regional NPB**.

45 Factual and Counterfactual

(1) **Transpower** must determine a **BBI's factual** and **counterfactual**.

(2) **Transpower** must apply the following principles to determine the **BBI's counterfactual** unless **Transpower** determines applying these principles does not produce a reasonably likely future **grid** state:
(a) if a **grid investment** comprised in the **BBI** is an **enhancement investment**, the **counterfactual** must include the **grid investment** not being made:
(b) if a **grid investment** comprised in the **BBI** is a **replacement investment** or **compliance investment**, the **counterfactual** must include the immediate **decommissioning** of the relevant **grid asset** or **transmission alternative** without replacement:
(c) if a **grid investment** comprised in the **BBI** is a **refurbishment investment**, the **counterfactual** must include leaving the relevant **grid asset** or **transmission alternative** in operation without refurbishment until it reaches replacement state and then immediately **decommissioning** it without replacement.

46 Scenarios

(1) **Transpower** must determine a **BBI's scenarios**. The **BBI's market scenarios** must include variations in load growth, generation expansion and hydrology.

Commented [A31]: Please consider whether this list should also separately refer to consideration of customer exit.

(2) **Transpower** must apply the same **scenarios** in a **BBI's factual** and **counterfactual**, unless the **BBI** is a **market BBI** that is expected to influence materially **generating plant** investment decisions, in which case **Transpower** may apply different generation development **market scenarios** in the **BBI's factual** and **counterfactual**.

(3) If a **market scenario** for a **BBI** includes a **customer** ceasing to be a **customer**, the **market scenario** must not be applied in the **BBI's factual or counterfactual** in respect of the **customer**. To avoid doubt, this means the present value of **regional NPB** for a **regional customer group** for the **BBI** of which the **customer** is a member may be different for the **customer** than for all other **customers** who are members of the **regional customer group**.

47 Offtake and Injection at Same Connection Location

Despite clauses 48, 50, 50A, 50B and 63, in calculating—
(a) **market regional NPB** for a **regional customer group**; or
(b) a **customer's** share of **market regional NPB** for a **regional customer group**,

Transpower may set off market benefit and disbenefit arising in respect of a **customer** with **offtake** and **injection** at the same **connection location**.

48 Individual NPB

A **customer's individual NPB** for a **BBI** (NPB) is calculated as follows:

$$NPB = \sum_{g} \left(PVRNPB_g \times \frac{IRA_g}{IRA_{g\ total}} \right)$$

where

$PVRNPB_g$ is the present value of **regional NPB** for **regional customer group** g calculated under clause 49, where **regional customer group** g is a **regional customer group** for the **BBI**—
(a) that has a positive present value of **regional NPB**; and
(b) of which the **customer** is a member

IRA_g is the value of the **customer's intra-regional allocator** for **regional customer group** g

$IRA_{g\ total}$ is the total of the values of all **customers' intra-regional allocators** for **regional customer group** g.

49 Present Value of Regional NPB

(1) Subject to subclause (2), the present value of a **regional customer group's regional NPB** (PVRNPB) is calculated as follows:

$$PVRNPB = \sum_{n} \frac{RNPB_n}{(1+r)^n}$$

where

$RNPB_n$ is the **regional customer group's market regional NPB**, **ancillary service regional NPB**, **reliability regional NPB** or **other regional NPB** (as the case may be) for year n of the **BBI's standard method calculation period**

r is the **BBI's standard method discount rate**.

(2) As an alternative to the calculation under subclause (1), **Transpower** may calculate a **regional customer group's market regional NPB**, **ancillary service regional NPB**, **reliability regional NPB** or **other regional NPB** (as the case may be) for each year of the **BBI's standard method calculation period** on a present value basis, provided the method of calculating present value is consistent with the method in subclause (1).

Commented [A32]: We are unclear as to exactly what this clause is doing.

50 Modelling for Market Regional NPB

(1) This clause 50 applies to modelling for calculating **market regional NPB** for a **market BBI**.

(2) **Transpower** must determine the **market BBI's investment grids**.

(3) **Transpower** must use a **wholesale market model** to model the prices, quantities and changes in prices and quantities in the **wholesale market** for **electricity** between the **market**

BBI's factual and **counterfactual** under its **market scenarios** and based on its **investment grids**. The modelling must cover each year of the **market BBI's standard method calculation period**.

(4) The illustrative **wholesale market models** in figures 10 and 11 show alternative modelled prices, quantities and changes in prices and quantities for a notional **market BBI**, **modelled region**, **market scenario** and year of the **market BBI's standard method calculation period** (without the application of subclause (5)). The effect of the **market BBI** is modelled as a change in the supply curve from S (**counterfactual**) to S′ (**factual**). P_{max} is the estimated cost of self-supply for the relevant **regional demand group**:

Figure 10

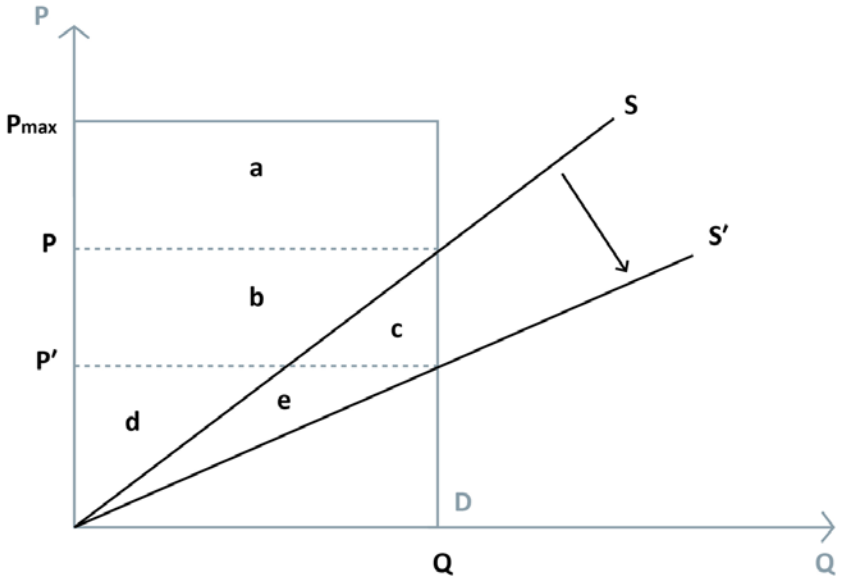
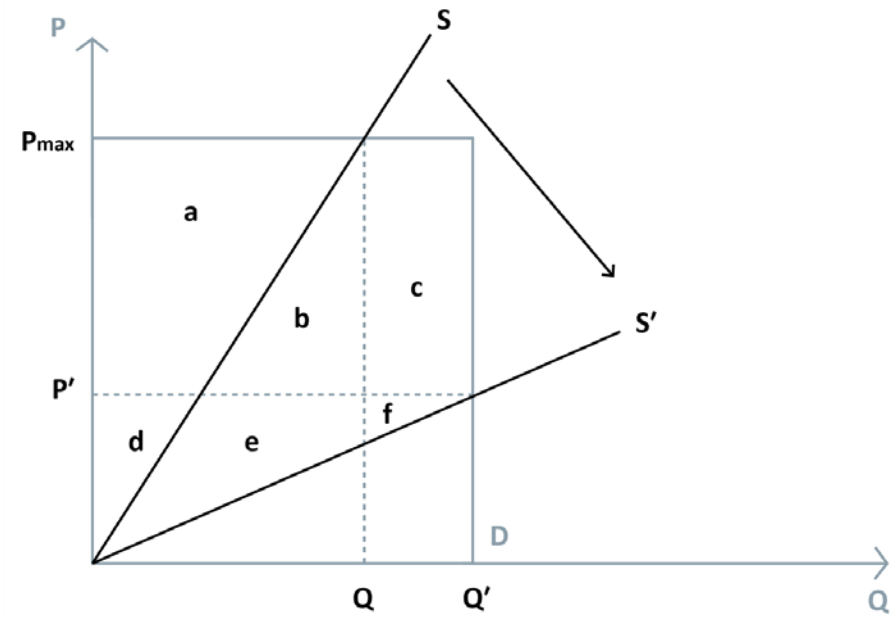


Figure 11



(5) **Transpower** may adjust prices in the modelling under this clause 50 if, and to the extent, **Transpower** determines it is appropriate to do so to moderate the sensitivity of modelled prices and changes in prices to modelling assumptions and other inputs, with the objective of ensuring the **BBI customer allocations** for the **market BBI** are broadly proportionate to **NPB** from the **market BBI**.

50A Calculation of Market Regional NPB

(1) This clause 50A applies to calculating **market regional NPB** for a **market BBI** in circumstances where **Transpower** determines calculating **market regional NPB** for the **market BBI** under this clause 50A will produce **BBI customer allocations** for the relevant **market BBI** that are broadly proportionate to **NPB** from the **market BBI**.

(2) **Transpower** must determine the **market BBI's modelled regions** and **regional customer groups** based on the outcomes of the modelling under clause 50. The **modelled regions** and **regional customer groups** are as follows:

type of **regional customer group**	**modelled region**	**regional customer group**
regional demand group	a region defined by a set of **GXPs** at which modelled price changes arising from the **market BBI** are in the same direction	existing **offtake customers** in the **modelled region**, subject to subclause (3)
regional supply group	a region defined by a set of **GIPs** at which modelled price changes arising from the **market BBI** are in the same direction	existing **injection customers** in the **modelled region**, subject to subclause (3)

(3) There may be more than 1 **regional demand group** or **regional supply group** for the same **modelled region**, each comprising different **offtake customers** or **injection customers** (as the case may be), if **Transpower** determines it is necessary to have more than 1 **regional demand group** or **regional supply group** for the **modelled region** to produce **BBI customer allocations** for the **market BBI** that are broadly proportionate to **NPB** from the **market BBI,** having regard to the attributes of the **offtake customers** or **injection customers** (as the case may be).

(4) For each **regional customer group**, **market scenario** and year of the **market BBI's standard method calculation period**, the expected market benefit (positive value) or disbenefit (negative value) is calculated—

(a) based on the modelling under clause 50; and

(b) for the periods during which the **market BBI** is modelled to provide its primary market benefits, as determined by **Transpower**,

as follows:

(c) for a **regional demand group**, quantities in the **counterfactual** are positive if prices decrease in the **factual** and negative if prices increase in the **factual**:

(d) for a **regional supply group**, quantities in the **counterfactual** are positive if prices increase in the **factual** and negative if prices decrease in the **factual**:

(e) for a **regional demand group** or **regional supply group**, the positive or negative quantities under paragraph (c) or (d) (as appropriate) are summed with the changes in quantities between the **factual** and **counterfactual**, an increase being positive and a decrease being negative.

(5) In the illustrative **wholesale market model** in figure 11—

(ad) the expected market benefit for the **regional demand group** is +Q + (Q′ - Q); and

(be) the expected market benefit or disbenefit for the **regional supply group** is –Q + (Q′ - Q).

(6) A **regional customer group's market regional NPB** for a year of the **market BBI's standard method calculation period** (MRNPB) is calculated as follows:

$$MRNPB = \frac{1}{\sum_s W_s} \sum_s (EMBD_s \times W_s)$$

where

S is the number of **market scenarios** for the **market BBI**, each being **market scenario** s

$EMBD_s$ is the expected market benefit (positive value) or disbenefit (negative value) for the **regional customer group** and year for **market scenario** s

W_s is a weighting for **market scenario** s determined by **Transpower**.

(7) To avoid doubt, subject to clause 47, expected market benefits and disbenefits are not summed between different **regional customer groups**.

(8) If necessary for calculating the **BBI customer allocations** for the **market BBI**, **Transpower** must determine the dollar value of each **regional customer group's market regional NPB** for each year of the **market BBI's standard method calculation period**, taking into account total positive **market regional NPB** for the **market BBI** calculated under clause 50B.

50B Alternative Calculation of Market Regional NPB

(1) This clause 50B applies to calculating **market regional NPB** for a **market BBI** in circumstances where **Transpower** determines calculating **market regional NPB** for the **market BBI** under clause 50A will not produce **BBI customer allocations** for the relevant **market BBI** that are broadly proportionate to **NPB** from the **market BBI**.

(2) **Transpower** must determine the **market BBI's modelled regions** and **regional customer groups** based on the outcomes of the modelling under clause 50. The **modelled regions** and **regional customer groups** are as follows:

type of **regional customer group**	**modelled region**	**regional customer group**
regional demand group	a region defined by a set of **GXPs** at which the modelled price changes arising from the **market BBI** are in the same direction and of a similar magnitude	existing **offtake customers** in the **modelled region**, subject to subclause (3)
regional supply group	a region defined by a set of **GIPs** at which the modelled price changes arising from the **market BBI** are in the same direction and of a similar magnitude	existing **injection customers** in the **modelled region**, subject to subclause (3)

(3) There may be more than 1 **regional demand group** or **regional supply group** for the same **modelled region**, each comprising different **offtake customers** or **injection customers** (as the case may be), if **Transpower** determines it is necessary to have more than 1 **regional demand group** or **regional supply group** for the **modelled region** to produce **BBI customer allocations** for the **market BBI** that are broadly proportionate to **NPB** from the

market BBI, having regard to the attributes of the **offtake customers** or **injection customers** (as the case may be).

(4) For a **regional demand group**, **market scenario** and year of the **market BBI's standard method calculation period**, the expected market benefit or disbenefit is equal to—

(a) the modelled change in consumer benefit for the **regional demand group** in the **wholesale market** for **electricity** (a positive change being a market benefit and a negative change being a market disbenefit); plus

(b) unless **Transpower** has adjusted modelled price outcomes under subclause 50(5), the modelled change in **loss and constraint excess** received by **customers** in the **regional demand group** as a result of the change in consumer benefit (a positive change being a market benefit and a negative change being a market disbenefit).

Commented [A33]: We consider that the current drafting may be insufficiently clear as to what is to happen or else liable to create confusion. In particular, the reference to Transpower adjusting modelled prices under sub-clause 50(5) potentially risks suggesting that those adjustments have not already been accounted for in "the modelled change in consumer benefit" referenced in sub-clause 50B(4)(a) and that they are in some way specific to the calculation of LCE, rather than applying more generally. Could Transpower please consider clarifying this provision.

(5) For a **regional supply group**, **market scenario** and year of the **market BBI's standard method calculation period**, the expected market benefit or disbenefit arising is equal to—

(a) the modelled change in producer benefit for the **regional supply group** in the **wholesale market** for **electricity** (a positive change being a market benefit and a negative change being a market disbenefit); plus

(b) unless **Transpower** has adjusted modelled price outcomes under subclause 50(5), the modelled change in **loss and constraint excess** received by **customers** in the **regional supply group** as a result of the change in producer benefit (a positive change being a market benefit and a negative change being a market disbenefit).

(6) In the illustrative **wholesale market model** in figure 10—

(a) the expected market benefit or disbenefit for the **regional demand group** is equal to the modelled change in consumer benefit, being:

factual	**counterfactual**	change in consumer benefit
a + b + c	a	b + c

(b) the expected market benefit or disbenefit for the **regional supply group** is equal to the modelled change in producer benefit, being:

factual	**counterfactual**	change in producer benefit
d + e	b + d	e - b

(7) In the illustrative **wholesale market model** in figure 11—

(a) the expected market benefit or disbenefit for the **regional demand group** is equal to the modelled change in consumer benefit, being:

factual	**counterfactual**	change in consumer benefit
a + b + c	0	a + b + c

(b) the expected market benefit or disbenefit for the **regional supply group** is equal to the modelled change in producer benefit, being:

factual	**counterfactual**	change in producer benefit
d + e + f	a + d	e + f - a

(8) A **regional customer group's market regional NPB** for a year of the **market BBI's standard method calculation period** (MRNPB) is calculated as follows:

$$MRNPB = \frac{1}{\sum_s W_s} \sum_s (EMBD_s \times W_s)$$

where

S is the number of **market scenarios** for the **market BBI**, each being **market scenario** s

$EMBD_s$ is the expected market benefit (positive value) or disbenefit (negative value) for the **regional customer group** and year for **market scenario** s

W_s is a weighting for **market scenario** s determined by **Transpower**.

(9) To avoid doubt, subject to clause 47, expected market benefits and disbenefits are not summed between different **regional customer groups**.

51 Ancillary Service Regional NPB

(1) This clause 51 applies to calculating **ancillary service regional NPB** for an **ancillary service BBI**.

Commented [A34]: If the intention is for calculating ancillary service regional NPB to be optional, as suggested by cl 44(2)(b), it might be preferable for this clause to note that it applies where Transpower determines to calculate that NPB (to avoid any confusion, given the following sub-clause is framed as a requirement).

(2) **Transpower** must model changes in prices and quantities in the **wholesale market** for the relevant **specified ancillary service** between the **ancillary service BBI's factual** and **counterfactual** under its **market scenarios**. The modelling must cover each year of the **ancillary service BBI's standard method calculation period**.

(3) The **ancillary service BBI's modelled regions** and **regional customer groups** are as follows:

specified ancillary service	type of **regional customer group**	modelled region	regional customer group
instantaneous reserve (by **island**)	**regional demand group**	none	none
	regional supply group	**island**	existing **grid**-connected **generators** in **modelled region**
frequency keeping	**regional demand group**	New Zealand	existing **direct consumers** in **modelled region**
	regional supply group	none	none
voltage support (by **zone**)	**regional supply group**	none	none
	regional demand group	**zone**	existing **connected asset owners** in **modelled region**

(4) For a **regional customer group**, **market scenario** and year of the **ancillary service BBI's standard method calculation period**, the expected market benefit or disbenefit is equal to the modelled change in the **allocable cost** of the **specified ancillary service** (a negative change being a market benefit and a positive change being a market disbenefit).

(5) A **regional customer group's ancillary service regional NPB** for a year of the **ancillary service BBI's standard method calculation period** (ASRNPB) is calculated as follows:

$$ASRNPB = \frac{1}{\sum_s W_s} \sum_s (EMBD_s \times W_s)$$

where

S is the number of **market scenarios** for the **ancillary service BBI**, each being **market scenario** s

$EMBD_s$ is the expected market benefit (positive value) or disbenefit (negative value) for the **regional customer group** and year for **market scenario** s

W_s is a weighting for **market scenario** s determined by **Transpower**.

(6) To avoid doubt, subject to clause 47, expected market benefits and disbenefits are not summed between different **regional customer groups**.

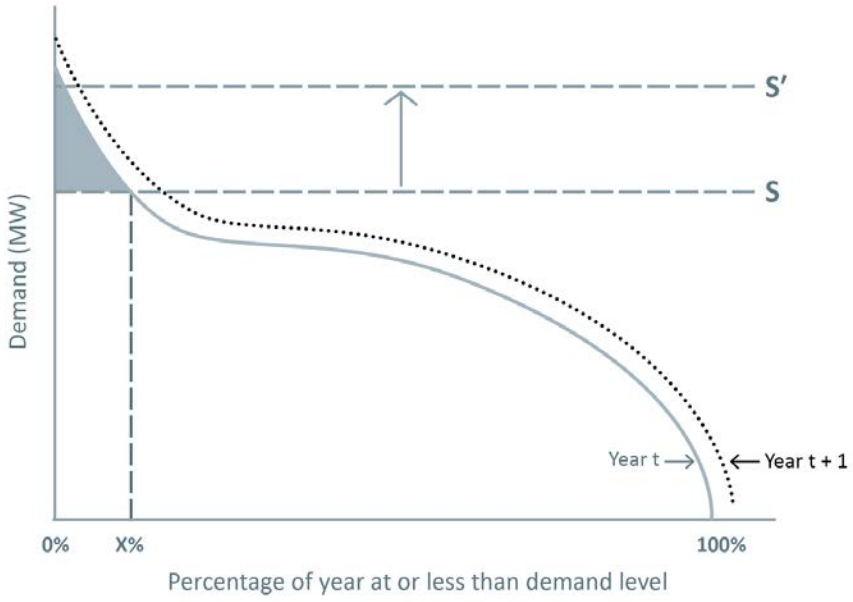
52 Reliability Regional NPB

(1) This clause 52 applies to calculating **reliability regional NPB** for a **reliability BBI**.

(2) **Transpower** must use a **system limit model** to model changes in **unserved energy** between the **reliability BBI's factual** and **counterfactual** under its **outage scenarios**. The modelling must cover each year of the **reliability BBI's standard method calculation period**.

(3) The illustrative **system limit model** in figure 12 shows the modelled change in **unserved energy** for a notional **reliability BBI**, **modelled region**, **outage scenario**, **market scenario** and year of the **reliability BBI's standard method calculation period**. The effect of the **reliability BBI** is modelled as a change in the **system limit** from S (**counterfactual**) to S′ (**factual**).

Figure 12



(4) **Transpower** must determine the **reliability BBI's modelled regions** and **regional customer groups** based on the outcomes of the modelling under subclause (2). The **modelled regions** and **regional customer groups** are as follows:

type of **regional customer group**	**modelled region**	**regional customer group**
regional demand group	a region defined by a set of **GXPs** at which the modelled changes in **unserved energy** arising from the **reliability BBI** are in the same direction and of a similar magnitude	existing **offtake customers** in the **modelled region**
regional supply group	a region defined by a set of **GIPs** at which the modelled changes in **unserved energy** arising from the **reliability BBI** are in the same direction and of a similar magnitude	existing **injection customers** in the **modelled region**

(5) For each **regional customer group**, **market scenario** and year of the **market BBI's standard method calculation period**, the expected reliability benefit or disbenefit (ERBD) is calculated as follows:

$$ERBD = -\sum_{z}(\Delta EUE_z \times VL)$$

where

ΔEUE the modelled change in **unserved energy** for the **regional customer group** and **outage scenario** z, where **outage scenario** z is an **outage scenario** for the relevant **reliability BBI** (a negative change being a reliability benefit and a positive change being a reliability disbenefit)

VL is—

(a) if the **regional customer group** is a **regional demand group**, the **reliability BBI's VOLL**; or

(b) if the **regional customer group** is a **regional supply group**, a value of lost generation determined by **Transpower**.

(6) A **regional customer group's reliability regional NPB** for a year of the **reliability BBI's standard method calculation period** (RRNPB) is calculated as follows:

$$RRNPB = \frac{1}{\sum_s W_s}\sum_{s}(ERBD_s \times W_s)$$

where

S is the number of **market scenarios** for the **reliability BBI**, each being **market scenario** s

$ERBD_s$ is the expected reliability benefit (positive value) or disbenefit (negative value) for the **regional customer group** and year for **market scenario** s

W_s is a weighting for **market scenario** s determined by **Transpower**.

(7) To avoid doubt—

(a) expected reliability benefits and disbenefits are not summed between different **regional customer groups**; and

(b) all **regional demand groups**, and all members of a **regional demand group**, are assumed to have the same value of **unserved energy**, being the **reliability BBI's VOLL**; and

(c) all **regional supply groups**, and all members of a **regional supply group**, are assumed to have the same value of lost generation, being the value of lost generation determined by **Transpower** under subclause (5).

53 Other Regional NPB

(1) This clause 53 applies to calculating or estimating **other regional NPB** for a **market BBI**, **ancillary service BBI** or **reliability BBI**.

(2) **Transpower** must only calculate or estimate **other regional NPB** for a **BBI** if all of the following criteria are satisfied:

(a) **Transpower** reasonably expects positive **other regional NPB** for the **BBI** to be received—

(i) directly by 1 or more existing **customers**, whether in their capacities as **customers** or otherwise; or

(ii) by the majority of the owners of **embedded plant** connected to a **host customer's local network** or **grid**-connected **plant**, whether in their capacities as owners of the **embedded plant** or otherwise:

(b) **Transpower** determines the **other regional NPB** will be a material part of total positive **regional NPB** for the **BBI**:

(c) **Transpower** determines the dollar value of the **other regional NPB** can be calculated or estimated to a reasonable level of certainty without **Transpower** incurring disproportionate cost.

(3) The **BBI's modelled regions** and **regional customer groups** are as follows:

type of **regional customer group**	**modelled region**	**regional customer group**
regional demand group	a region in which **other regional NPB** is expected to arise from the **BBI**	existing **offtake customers** in the **modelled region** expected to receive the **other regional NPB**
regional supply group		existing **injection customers** in the **modelled region** expected to receive the **other regional NPB**

(4) To avoid doubt, the **BBI customer allocations** for a **BBI** are not adjusted merely because **other regional NPB** for the **BBI** arises or is discovered after the starting **BBI customer allocations** for the **BBI** have been calculated.

Standard Method: Resiliency Method

54 Overview of Resiliency Method

(1) Clauses 54 to 56 apply—

(a) to the **resiliency method** only; and

(b) only to those **post-2019 BBIs** to which **Transpower** applies the **resiliency method** in accordance with subclause 43(2).

(2) Under the **resiliency method**—

(a) there is 1 **modelled region** and 1 **regional customer group**; and

(b) **regional NPB** for the **regional customer group** is assumed to be positive and is not calculated; and

(c) **individual NPB** is calculated for each **customer** in the **regional customer group**.

55 Individual NPB

Customer c's **individual NPB** for the **resiliency BBI** (NPB_c) is equal to the value of **customer** c's **intra-regional allocator** for the **regional customer group**.

56 Modelled Region and Regional Customer Groups

A **resiliency BBI's modelled region** and **regional customer groups** are as follows:

type of **regional customer group**	**modelled region**	**regional customer group**
regional demand group	the **island** in which the risk of cascade failure is mitigated	existing **offtake customers** in the **modelled region**
	a region in which the risk of the **HILP event** is mitigated	
regional supply group	none	none

Simple Method

57 Overview of Simple Method

(1) Clauses 57 to 62 apply—

(a) to the **simple method** only; and

(b) only to those **low-value post-2019 BBIs** to which **Transpower** applies the **simple method** in accordance with subclause 43(2).

(2) Under the **simple method**—

(a) **regional NPB** is calculated for a **regional customer group** in respect of an **investment region** based on the extent to which the **regional customer group** is deemed to contribute to total **offtake** and **injection** in, or **electricity** flow to or from, the **investment region**, either as—

(i) a **regional customer group** in the **investment region**; or

(ii) a **regional demand group** in another **modelled region** that imports **electricity** from the **investment region** directly or indirectly; or

(iii) a **regional supply group** in another **modelled region** that exports **electricity** to the **investment region** directly or indirectly; and

(b) **individual NPB** is calculated for each **customer** in a **regional customer group** with positive **regional NPB** in respect of the **investment region**.

(3) To avoid doubt, a **BBI** may have more than one **investment region** depending on where the **grid investments** comprised in the **BBI** are located.

58 Simple Method Periods

(1) Subject to subclause (2), the **simple method periods** are—

(a) the period starting on 24 July 2019 and ending at the end of the fourth **pricing year** after the **first pricing year**; and

(b) each period of 5 **pricing years** immediately following the end of the previous **simple method period**.

(2) **Transpower** may start a new **simple method period** to coincide with the start of an **RCP**.

59 Individual NPB

(1) A **customer's individual NPB** for a **BBI** in an **investment region** (NPB) is calculated as follows:

$$NPB = \sum_{g} \left(RNPB_g \times SMF_g \right)$$

where

$RNPB_g$ is **regional NPB** for **regional customer group** g, where **regional customer group** g is a **regional customer group** for the **BBI**—

(a) that has positive **regional NPB** in respect of the **investment region**; and

(b) of which the **customer** is a member

SMF_g is the **customer's simple method factor** for **regional customer group** g.

(2) A **customer's simple method factor** for a **simple method period** and **regional customer group** of which the **customer** is a member (SMF) is calculated as follows:

$$SMF = \frac{IRA}{IRA_{total}}$$

where

IRA is the value of the **customer's intra-regional allocator** for the **simple method period** and **regional customer group**

IRA_{total} is the total of the values of all **customer's' intra-regional allocators** for the **simple method period** and **regional customer group**.

(3) **Transpower** must—

(a) **publish** in the **assumptions book** the **simple method factors** for the first **simple method period** before the start of the **first pricing year**, which, subject to subclause (4), will apply to **BBIs commissioned** during the first **simple method period**; and

(b) **publish** in the **assumptions book** the **simple method factors** for each subsequent **simple method period** before the start of the subsequent **simple method period**, which, subject to subclause (4), will apply to **BBIs commissioned** during the subsequent **simple method period**.

(4) If a **benefit-based charge adjustment event** in any of paragraphs 78(1)(b) to 78(1)(k) occurs, **Transpower** must—

(a) calculate or re-calculate~~,~~ (as the case may be) all **customers' simple method factors** for the current **simple method period** under subclause (2) using estimated values for the **customers' intra-regional allocators** to the extent necessary; and

(b) **publish** in the **assumptions book** the new **simple method factors**, which, subject to this subclause (4), will apply to **BBIs commissioned** during the **simple method period** after the new **simple method factors** are **published**.

60 Modelled Regions

(1) The **modelled regions** are the **connection regions** and **HVDC link**.

(2) **Transpower** must—

(a) **publish** in the **assumptions book** the initial **modelled regions** before the start of the **first pricing year**; and

(b) **publish** in the **assumptions book** the **modelled regions** for each subsequent **simple method period** before the start of the subsequent **simple method period**.

(3) **Transpower** must review, including update as appropriate, the **modelled regions** (other than the **HVDC link**) for each **simple method period** before the start of the **simple method period**.

(4) **Transpower** must determine the **connection regions** for a **simple method period** by—

(a) determining **high-voltage grid connection regions** on either side of the **HVDC link**; and

(b) isolating prevailing directional **electricity** flows on **interconnection branches** in the **high-voltage grid** (excluding the **HVDC link**) over **CMP C** for the simple method period and determining **high-voltage grid connection regions** on either side of the **interconnection branches** on which those **electricity** flows occur; and

(c) determining a **low-voltage grid connection region** on the **low-voltage grid** side of each **interconnection transformer branch** containing an **interconnecting transformer** connecting the **low-voltage grid** to a **high-voltage grid connection region**; and

(d) if a **low-voltage grid connection region** is connected to more than 1 **high-voltage grid connection region**, determining separate **low-voltage grid connection regions** on either side of the minimum transfer **interconnection branch** within the **low-voltage grid connection region**, so that each of the separate **low-voltage grid connection regions** is connected to only 1 **high-voltage grid connection region**; and

(e) for a **low-voltage connection region** connected to 1 **high-voltage connection region**, determining separate **low voltage grid connection regions** on either side of the minimum transfer **interconnection branch** within the **low-voltage grid connection region** if **electricity** flow on that **branch** is low relative to total **electricity** flows between **interconnecting transformers** in the **low-voltage grid connection region**; and

(f) incorporating—

(i) the **branches** referred to in paragraph (b) in the **connection region** that receives the prevailing **electricity** flows on those **branches**; and

(ii) the **branches** referred to in paragraph (c), including the **interconnecting transformers**, in the relevant **low-voltage grid connection region**; and
(iii) the **branches** referred to in paragraphs (d) and (e) in both relevant **low-voltage connection regions** in half parts.

(5) **Transpower**—
(a) is not required to (but may) assess **electricity** flows over the entire **high-voltage grid** under paragraph (4)(b); and
(b) may amalgamate geographically adjacent **connection regions** for a **simple method period** if—
(i) the **connection regions** have the same voltage; and
(ii) 1 or more of the **connection regions** contains significantly fewer **market nodes** than the average number of **market nodes** contained in all **connection regions**.

61 Regional Customer Groups
The **regional customer groups** are as follows:

type of **regional customer group**	**modelled region**	**regional customer group**
regional demand group	a **connection region**	**offtake customers** in the **modelled region**
regional supply group		**injection customers** in the **modelled region**

62 Regional NPB
(1) **Transpower** must—
(a) **publish** in the **assumptions book** the **regional NPB** for each **regional customer group** in respect of each **investment region** for the first **simple method period** before the start of the **first pricing year**, which will apply to **BBIs commissioned** during the first **simple method period**; and
(b) **publish** in the **assumptions book** the **regional NPB** for each **regional customer group** in respect of each **investment region** for a subsequent **simple method period** before the start of the subsequent **simple method**, which will apply to **BBIs commissioned** during the subsequent **simple method period**.

(2) **Regional NPB** for a **regional customer group** in respect of an **investment region** for a **simple method period** (RNPB) is calculated as follows:

$$RNPB = \frac{1}{\sum_t W_t} \sum_t (SMC_t \times W_t) \times DAF$$

where

T is the number of **trading periods** for which SMC_t is calculated, which must be all **trading periods** during **CMP C** for the **simple method period** for which **Transpower** determines it has access to reliable values for the variables in subclause (6)

SMC_t is the **regional customer group's simple method contribution** in respect of the **investment region** for **trading period** t, where **trading period** t is a **trading period** during **CMP C** for the **simple method period**

W_t is a weighting for **trading period** t determined by **Transpower**

DAF is—

(a) if the **regional customer group** is a **regional demand group**, the **demand adjustment factor** for the **simple method period**; or

(b) if the **regional customer group** is a **regional supply group**, 1.

(3) **Transpower** must review, including update as appropriate, the **demand adjustment factor** for each **simple method period** after the first **simple method period**—

(a) taking into account the overall **BBI customer allocations** between **offtake customers** and **injection customers** across at least 10 **BBIs** under the **standard methods**; and

(b) with the objective of producing **BBI customer allocations** that are broadly proportionate to **NPB** from **BBIs commissioned** during the **simple method period**.

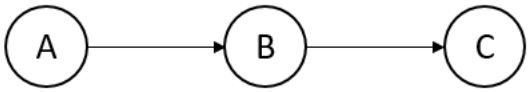
Transpower must publish the **demand adjustment factor** in the **assumptions book** before the start of the **simple method period**.

(4) Figure 13 illustrates how, given the generalised **electricity** flow state depicted (**connection region** A to B to C)—

(a) the **beneficiaries** of a **BBI** in one of the **connection regions** (being the **investment region**) are identified; and

(b) a **regional customer group's simple method contribution** in respect of the **investment region** is calculated for a **trading period** during which, on average, the **electricity** flow state prevailed.~~:~~

Figure 13



		connection region A	**connection region** B	**connection region** C
simple method contribution	**regional supply group** A	$\frac{G_a}{(G_a + L_a + F_{a\_b})}$	$\frac{F_{a\_b}}{(G_b + L_b + F_{a\_b} + F_{b\_c})}$	$\frac{F_{b\_c}}{(G_c + L_c + F_{b\_c})}\left(\frac{F_{a\_b}}{G_b + F_{a\_b}}\right)$
	regional supply group B	0	$\frac{G_b}{(G_b + L_b + F_{a\_b} + F_{b\_c})}$	$\frac{F_{b\_c}}{(G_c + L_c + F_{b\_c})}\left(\frac{G_b}{G_b + F_{a\_b}}\right)$
	regional supply group C	0	0	$\frac{G_c}{(G_c + L_c + F_{b\_c})}$
	regional demand group A	$\frac{L_a}{(G_a + L_a + F_{a\_b})}$	0	0
	regional demand group B	$\frac{F_{a\_b}}{(G_a + L_a + F_{a\_b})}\left(\frac{L_b}{L_b + F_{b\_c}}\right)$	$\frac{L_b}{(G_b + L_b + F_{a\_b} + F_{b\_c})}$	0
	regional demand group C	$\frac{F_{a\_b}}{(G_a + L_a + F_{a\_b})}\left(\frac{F_{b\_c}}{L_b + F_{b\_c}}\right)$	$\frac{F_{b\_c}}{(G_b + L_b + F_{a\_b} + F_{b\_c})}$	$\frac{L_c}{(G_c + L_c + F_{b\_c})}$

(5) In figure 13—

(a) the **beneficiaries** of a **BBI** in **connection region** A (being the **investment region**) are deemed to be—

(i) the **customers** in the **regional demand group** and **regional supply group** in **connection region** A; and

(ii) the **customers** in the **regional demand groups** in **connection regions** B and C, which import **electricity** from the **investment region** directly or indirectly; and

(b) the **beneficiaries** of a **BBI** in **connection region** B (being the **investment region**) are deemed to be—

(i) the **customers** in the **regional demand group** and **regional supply group** in **connection region** B; and

(ii) the **customers** in the **regional supply group** in **connection region** A, which exports **electricity** to the **investment region** directly; and

(iii) the **customers** in the **regional demand group** in **connection region** C, which imports **electricity** from the **investment region** directly; and

(c) the **beneficiaries** of a **BBI** in **connection region** C (being the **investment region**) are deemed to be—

(i) the **customers** in the **regional demand group** and **regional supply group** in **connection region** C; and

(ii) the **customers** in the **regional supply groups** in **connection regions** A and B, which export **electricity** to the **investment region** directly or indirectly.

(6) In figure 13, a **regional customer group's simple method contribution** in respect of the **investment region** (being either **connection region** A, B or C) for a **trading period** is calculated in accordance with the relevant formula in figure 13, where:

G_x is total **injection** in **connection region** x during the **trading period**

L_x is total **offtake** in **connection region** x during the **trading period**

F_{x_y} is **electricity** flow from **connection region** x to **connection region** y during the **trading period**.

Intra-regional Allocators

63 Intra-regional Allocators

(1) Subject to subclause (2), the **intra-regional allocator** for a **regional customer group** under the **price-quantity method** is as follows:

type of **BBI**	type of **regional customer group**	**intra-regional allocator**
peak BBI	**regional supply group**	mean historical annual **injection**
	regional demand group	mean historical **coincident peak offtake**
non-**peak BBI**	**regional supply group**	mean historical annual **injection**
	regional demand group	mean historical annual **offtake**

(2) The **intra-regional allocator** for an **ancillary service regional customer group** under the **price-quantity method** is as follows:

specified ancillary service	type of **ancillary service regional customer group**	**intra-regional allocator**
instantaneous reserve	**regional supply group**	mean historical annual **injection**
frequency keeping	**regional demand group**	mean historical annual **offtake**
voltage support	**regional demand group**	mean peak kVar

(3) The **intra-regional allocator** for the **regional customer group** under the **resiliency method** is mean historical annual **offtake**.

(4) The **intra-regional allocator** for a **regional customer group** under the **simple method** is as follows:

type of **regional customer group**	**intra-regional allocator**
regional supply group	mean historical annual **injection**
regional demand group	mean historical annual **offtake**

(5) If a **regional customer group** for a **BBI** under a **standard method** has a mean historical annual **offtake intra-regional allocator**, the value of a **pre-existing customer's intra-regional allocator** for the **regional customer group**, where the **pre-existing customer** is a member of the **regional customer group**, (IRA) is calculated as follows:

$$IRA = \frac{1}{N}\sum_{n} TO_n$$

where

N is the number of **capacity years** (including part **capacity years** expressed as a decimal) during **CMP B** for the relevant **BBI** in respect of which the **pre-existing customer** was a member of the **regional customer group**

TO_n is the **pre-existing customer's** total **offtake** at all **GXPs** in the **regional customer group's modelled region** during **capacity year** n of **CMP B** for the **BBI**.

(6) If a **regional customer group** for a **BBI** under a **standard method** has a mean historical annual **injection intra-regional allocator**, the value of a **pre-existing customer's intra-regional allocator** for the **regional customer group**, where the **pre-existing customer** is a member of the **regional customer group**, (IRA) is calculated as follows:

$$IRA = \frac{1}{N}\sum_{n} TI_n$$

where

N is the number of **capacity years** (including part **capacity years** expressed as a decimal) during **CMP B** for the relevant **BBI** in respect of which the **pre-existing customer** was a member of the **regional customer group**

TI_n is the **pre-existing customer's** total **injection** at all **GIPs** in the **regional customer group's modelled region** during **capacity year** n of **CMP B** for the **BBI**.

(7) If a **regional customer group** for a **BBI** under a **standard method** has a mean historical **coincident peak offtake intra-regional allocator**, the value of a **pre-existing customer's**

intra-regional allocator for the **regional customer group**, where the **pre-existing customer** is a member of the **regional customer group**, (IRA) is calculated as follows:

$$IRA = \frac{1}{N}\sum_{n} CPO_n$$

where

N is the number of **capacity years** (rounded up to the nearest whole **capacity year**) during **CMP B** for the relevant **BBI** in respect of which the **pre-existing customer** was a member of the **regional customer group**

CPO_n is the **pre-existing customer's coincident peak offtake** for the **regional customer group** and **capacity year** n of **CMP B** for the **BBI**.

(8) A **pre-existing customer's coincident peak offtake** for a **regional customer group** and **capacity year** is the **pre-existing customer's** total **offtake** at all **GXPs** in the **regional customer group's modelled region** during the **peak offtake trading period**, where:

(a) the **peak offtake trading period** is the **trading period** in the **peak offtake period** during which total **offtake** (across all **offtake customers**) at those **GXPs** was at its highest; and

(b) the **peak offtake period** is the part of the **capacity year** for which the **pre-existing customer** was a member of the **regional customer group** (which may be the whole **capacity year**).

(9) If a **regional customer group** for a **BBI** under a **standard method** has a mean peak kVar **intra-regional allocator**, the value of a **pre-existing customer's intra-regional allocator** for the **regional customer group**, where the **pre-existing customer** is a member of the **regional customer group**, (IRA) is calculated as follows:

$$IRA = \frac{1}{N}\sum_{n} NPK_n$$

where

N is the number of **capacity years** (rounded up to the nearest whole **capacity year**) during **CMP B** for the relevant **BBI** in respect of which the **pre-existing customer** was a member of the **regional customer group**

NPK_n is the **pre-existing customer's nominated peak kVar** for the **regional customer group's modelled region** and **capacity year** n of **CMP B** for the **BBI**.

(10) If a **regional customer group** for a **BBI** under the **simple method** has a mean historical annual **offtake intra-regional allocator**, the value of a **pre-existing customer's intra-regional allocator** for the **regional customer group**, where the **pre-existing customer** is a member of the **regional customer group**, (IRA) is calculated as follows:

$$IRA = \frac{1}{N}\sum_{n} TO_n$$

where

N is the number of **capacity years** (including part **capacity years** expressed as a decimal) during **CMP C** for the relevant **simple method period** in respect of which the **pre-existing customer** was a member of the **regional customer group**

TO_n is the **pre-existing customer's** total **offtake** at all **GXPs** in the **regional customer group's modelled region** during **capacity year** n of **CMP C** for the **simple method period**.

(11) If a **regional customer group** for a **BBI** under the **simple method** has a mean historical annual **injection intra-regional allocator**, the value of a **pre-existing customer's intra-regional allocator** for the **regional customer group**, where the **pre-existing customer** is a member of the **regional customer group**, (IRA) is calculated as follows:

$$IRA = \frac{1}{N}\sum_{n} TI_n$$

where

N is the number of **capacity years** (including part **capacity years** expressed as a decimal) during **CMP C** for the relevant **simple method period** in respect of which the **pre-existing customer** was a member of the **regional customer group**.

TI_n is the **pre-existing customer's** total **injection** at all **GIPs** in the **regional customer group's modelled region** during **capacity year** n of **CMP C** for the **simple method period**.

64 Recent Customers

The value of a **recent customer's intra-regional allocator** for a **regional customer group** is estimated under paragraph 80(3)(a) as if the **recent customer** were a new **customer** joining the **regional customer group,** but also taking into account any available historical information about the **recent customer's** mean historical annual **injection**, mean historical annual **offtake** or mean historical **coincident peak offtake** (as the case may be).

Part E Residual Charges

65 Calculation of Residual Charges

(1) Only **load customers** pay **residual charges**.

(2) A **load customer's annual residual charge** for a **pricing year** (ARC) is calculated as follows:

$$ARC = AMDR \times RCR$$

where

AMDR is the **load customer's AMDR** for the **pricing year**

RCR is the **residual charge** rate for the **pricing year** calculated under clause 71.

(3) A **load customer's monthly residual charge** for a **pricing year** (MRC) is calculated as follows:

$$MRC = \frac{ARC}{12}$$

where ARC is the **load customer's annual residual charge** for the **pricing year**.

(4) **Residual charges** are calculated for each **pricing year** before the start of the **pricing year**.

(5) A **residual charge** may be re-calculated, including during a **pricing year**, under clauses 90 to 94 if there is a **residual charge adjustment event**.

66 Anytime Maximum Demand (Residual)

A **load customer's AMDR** for a **pricing year** (AMDR) is calculated as follows:

$$AMDR = AMDR_{baseline} \times RCAF$$

where

$AMDR_{baseline}$ is the **load customer's AMDR** baseline calculated or estimated under clause 67

RCAF is the **load customer's RCAF** for the **pricing year**.

67 Anytime Maximum Demand (Residual) Baseline

(1) Subject to subclause 69(1), a **pre-existing load customer's AMDR** baseline ($AMDR_{baseline}$) is calculated as follows:

$$AMDR_{baseline} = \frac{1}{4} \sum_{n=2014}^{2017} \sum_{l} MGD_{ln}$$

where MGD_{ln} is the **pre-existing load customer's maximum gross demand** for **connection location** l and **financial year** n.

(2) A **recent load customer's AMDR** baseline—

(a) is estimated by **Transpower** under paragraph 91(2)(a) as if the **recent load customer** were a new **load customer**, but also taking into account any available historical information about the **recent load customer's maximum gross demand**; and

(b) may be re-estimated by **Transpower** under clause 70.

68 Residual Charge Adjustment Factor

(1) A **load customer's RCAF** for **pricing year** n ($RCAF_n$) is—

(a) 1 if:

(i) **pricing year** n is **pricing year** 2022 or earlier; or

(ii) the **load customer** became a **load customer** after the start of **financial year** n-8; or

(b) otherwise, calculated as follows:

$$RCAF_n = \frac{LATGE_n}{ATGE_{baseline}}$$

where

$LATGE_n$ is the **load customer's** lagged average **total gross energy** for **pricing year** n calculated under subclause (2)

$ATGE_{baseline}$ is the **load customer's** average **total gross energy** baseline calculated under subclause (3) or (4)

(2) A **load customer's** lagged average **total gross energy** for **pricing year** n ($LATGE_n$) is calculated as follows:

$$LATGE_n = \frac{1}{4}\sum_{m=n-8}^{n-5} TGE_m$$

where TGE_m is the **load customer's total gross energy** for **financial year** m.

(3) Subject to subclause 69(2), a **pre-existing load customer's** average **total gross energy** baseline ($ATGE_{baseline}$) is calculated as follows:

$$ATGE_{baseline} = \frac{1}{4}\sum_{n=2014}^{2017} TGE_n$$

where TGE_n is the **pre-existing load customer's total gross energy** for **financial year** n.

(4) A **recent load customer's** or new **load customer's** average **total gross energy** baseline is equal to the **load customer's** lagged average **total gross energy** for the first **pricing year** the **load customer's RCAF** is calculated under paragraph (1)(b). To avoid doubt, this means the **load customer's RCAF** for that **pricing year** will be 1.

69 Reduction Events

(1) **Transpower** may reduce a **pre-existing load customer's AMDR** baseline by an amount determined by **Transpower**—

(a) if a **reduction event** for the **pre-existing load customer** has occurred; and

(b) to the extent the impact of the **reduction event** is not fully captured in the calculation of the **pre-existing load customer's AMDR** baseline under subclause 67(1).

(2) If **Transpower** reduces a **pre-existing load customer's AMDR** baseline under subclause (1), **Transpower** must also reduce the **pre-existing load customer's** average **total gross energy** baseline to the extent necessary to be consistent with the reduction in the **pre-existing customer's AMDR** baseline, as determined by **Transpower**.

70 Re-estimating AMDR Baseline for Recent and New Load Customers

(1) **Transpower** may re-estimate a **recent load customer's** or new **load customer's AMDR** baseline when historical information about the **load customer's maximum gross demand** and **total gross energy** for at least 4 complete **financial years** is available, but—

(a) may only do so once; and

(b) may only do so before the first **pricing year** the **load customer's RCAF** is calculated under paragraph 68(1)(b).

(2) To avoid doubt, the purpose of a re-estimation under subclause (1) is to correct any material under- or over-estimation in **Transpower's** initial estimation of a **recent load customer's** or new **load customer's AMDR** baseline.

71 Residual Charge Rate

The **residual charge** rate for a **pricing year** (RCR) is calculated as follows:

$$RCR = \frac{RR}{AMDR_{total}}$$

where

RR is **residual revenue** for the **pricing year**

$AMDR_{total}$ is the total of all **customers' AMDR** for the **pricing year**.

Part F Adjustments

General

72 Adjustment Events

(1) An **adjustment event** is deemed to have occurred on the date **Transpower** has actual knowledge, and is reasonably satisfied, that the **adjustment event** has occurred, regardless of when the **adjustment event** actually occurred.

(2) Except as otherwise stated in this **transmission pricing methodology**, if an **adjustment event** occurs, **Transpower** must adjust relevant **transmission charges** from the date of the **adjustment event**, if necessary on a pro rata basis for the **event pricing year** depending on when the **adjustment event** occurred during the **event pricing year**.

(3) If **adjustment events** affecting the same **transmission charge** occur simultaneously, **Transpower** must determine an order in which the **adjustment events** will be deemed to have occurred for the purpose of adjusting the **transmission charge**.

Connection Charges

73 Connection Charge Adjustment Events

(1) The following events are **connection charge adjustment events**:

- (a) a **customer** (the connecting **customer**) connects at a **connection location** at which the **customer** is not already connected:
- (b) a **customer** (the disconnecting **customer**) disconnects from a **connection location**:
- (c) a **customer** (the vendor) sells or otherwise transfers part of its business that constitutes it as a **customer** at a **connection location** to another party (the purchaser):
- (d) **Transpower** decides to voluntarily under-recover the **connection charges** for a **connection asset**, **connection location** or **connection transmission alternative**.

(2) **Transpower** must not voluntarily under-recover the **connection charge** for a **connection asset** or **connection location** if the effect of doing so would be to increase **residual revenue** for any **pricing year**.

Commented [A35]: Should this also refer to a connection transmission alternative?

74 Connection Charge Adjustment Event: Connecting Customer

(1) This clause 74 applies in the case of the **connection charge adjustment event** in paragraph 73(1)(a).

(2) A relevant **pricing year** is the **event pricing year** and the **pricing year** after the **event pricing year**.

(3) **Transpower** must, for each relevant **pricing year**—

- (a) determine whether the connecting **customer** will be treated as an **offtake customer** or **injection customer** at the **connection location**; and
- (b) estimate the connecting **customer's AMDC** or **AMIC** (as applicable depending on **Transpower's** determination under paragraph (a)) for the **connection location** taking into account—
  - (i) the type and **capacity** of the connecting **customer's assets**; and
  - (ii) **AMDC** or **AMIC** (as the case may be) for any other **customers** with **assets** of the same or a similar type as the new **customer's assets** connected at the **connection location**; and

(c) calculate or re-calculate (as the case may be) all **customers' connection customer allocations** for the **connection location** to account for the connecting **customer's AMDC** or **AMIC** estimated under paragraph (b); and

(d) calculate or re-calculate (as the case may be) all **customers' connection charges** for the **connection location** based on the **customers' connection customer allocations** calculated under paragraph (c); and

(e) calculate or re-calculate (as the case may be) all **customers'** (including the connecting **customer's**) **connection charges** for any relevant **connection transmission alternative**—

(i) to account for the connecting **customer's annual connection charge** for the **connection location** calculated under paragraph (d); and

(ii) assuming that **annual connection charge** applied for the previous **pricing year**.

Commented [A36]: We were not clear on what this clause is attempting to do.

(4) **Transpower** must start the connecting **customer's monthly connection charges** calculated under paragraph (3)(d) or (3)(e) as soon as reasonably practicable. The connecting **customer's monthly connection charges** may include an adjustment as necessary to ensure the connecting **customer** pays its full **connection charges** for the **connection location** or **connection transmission alternative** from the date the connecting **customer** connected at the **connection location**.

(5) **Transpower** is not required to (but may) start any other **customer's monthly connection charges** calculated under paragraph (3)(d) or (3)(e) during, or from the start of, an **exempt pricing year** for the **customer**. However, any over-recovery of **annual connection charges** for the **connection location** or **connection transmission alternative** and **exempt pricing year** resulting from the start of the connecting **customer's monthly connection charges** for the **connection location** or **connection transmission alternative** must be rebated, as appropriate, to the other **customers** by way of an adjustment to their **transmission charges**—

(a) if reasonably practicable, at the end of the **exempt pricing year**; or

(b) otherwise, as soon as reasonably practicable during the next **pricing year**.

75 Connection Charge Adjustment Event: Disconnecting Customer

(1) This clause 75 applies in the case of the **connection charge adjustment event** in paragraph 73(1)(b).

(2) **Transpower**—

(a) must make the disconnecting **customer's connection customer allocations** (and the inputs to their calculation) and **connection charges** for the **connection location** and any relevant **connection transmission alternative** 0; and

(b) must not increase—

(i) any other **customer's connection charges** for the **connection location** or **connection transmission alternative** and **event pricing year**; or

(ii) any other **transmission charges** for the **event pricing year**,

as a consequence of the application of paragraph (a).

76 Connection Charge Adjustment Event: Partial Sale of Business

(1) This clause 76 applies in the case of the **connection charge adjustment event** in paragraph 73(1)(c).

(2) A relevant **pricing year** is the **event pricing year** and the **pricing year** after the **event pricing year**.

(3) **Transpower** must, for each relevant **pricing year**—

(a) determine an apportionment between the vendor and purchaser of the vendor's **connection customer allocations** (and the inputs to their calculation) for the **connection location** taking into account the size and nature of the transferred business; and

(b) calculate or re-calculate (as the case may be) the vendor's and purchaser's **connection charges** for the **connection location** based on the apportionment of the vendor's **connection customer allocations** under paragraph (a); and

(c) calculate or re-calculate (as the case may be) the vendor's and purchaser's **connection charges** for any relevant **connection transmission alternative**—

(i) to account for the vendor's and purchaser's **annual connection charges** for the **connection location** calculated under paragraph (b); and

(ii) assuming those **annual connection charges** applied for the previous **pricing year**.

(4) **Transpower** must start the purchaser's **monthly connection charges** calculated under paragraph (3)(b) or (3)(c) as soon as reasonably practicable. The purchaser's **monthly connection charges** may include an adjustment as necessary to ensure the purchaser pays its full **connection charges** for the **connection location** or **connection transmission alternative** from the date of the transfer.

(5) **Transpower** is not required to (but may) start the vendor's **monthly connection charges** calculated under paragraph (3)(b) or (3)(c) during, or from the start of, an **exempt pricing year** for the vendor. However, any over-recovery of **annual connection charges** for the **connection location** or **connection transmission alternative** and **exempt pricing year** resulting from the start of the purchaser's **monthly connection charges** for the **connection location** or **connection transmission alternative** must be rebated to the vendor by way of an adjustment to its **transmission charges**—

(a) if reasonably practicable, at the end of the **exempt pricing year**; or

(b) otherwise, as soon as reasonably practicable during the next **pricing year**.

77 Connection Charge Adjustment Event: Voluntary Under-recovery

(1) This clause 77 applies in the case of the **connection charge adjustment event** in paragraph 73(1)(d).

(2) A relevant **pricing year** is a **pricing year** for which **Transpower** decided to voluntarily under-recover the **connection charges** for the **connection asset**, **connection location** or **connection transmission alternative**.

(3) **Transpower** must, for each relevant **pricing year**, calculate or re-calculate (as the case may be) all **customers' connection charges** for the **connection asset**, **connection location** or **connection transmission alternative** to account for the amount of the voluntary under-recovery of the **connection charges**.

(4) If **Transpower** decides to voluntarily under-recover the **connection charges** for the **connection asset**, **connection location** or **connection transmission alternative** and a relevant **pricing year** during, or within 1 month of the start of, the relevant **pricing year**, **Transpower** is not required to (but may) start **customers' monthly connection charges** calculated under subclause (3) during, or from the start of, the relevant **pricing year**. However, any over-recovery of **annual connection charges** for the **connection asset**, **connection location** or **connection transmission alternative** and relevant **pricing year** (accounting for the voluntary under-recovery) must be rebated, as appropriate, to the **customers** by way of an adjustment to their **transmission charges**—

(a) if reasonably practicable, at the end of the relevant **pricing year**; or
(b) otherwise, as soon as reasonably practicable during the next **pricing year**.

Benefit-based Charges

78 Benefit-based Charge Adjustment Events

(1) The following events are **benefit-based charge adjustment events**:
(a) a **BBI** suffers **material damage**:
(b) a new **customer** connects to the **grid**:
(c) a **customer** (the exiting **customer**) ceases to be a **customer**:
(d) an existing **customer** (the connecting or disconnecting **customer**) connects **plant** to, or disconnects **plant** from, the **grid**:
(e) **large embedded plant** is connected to, or **large embedded plant** is disconnected from, a **host customer's** (the connecting or disconnecting **customer's**) **local network** or **grid**-connected **plant**:
(f) there is a **substantial sustained increase** by a **customer's** (the increasing **customer's**) existing **grid**-connected **plant**:
(g) there is a **substantial sustained increase** by existing **large embedded plant** connected to a **host customer's** (the increasing **customer's**) **local network** or **grid**-connected **plant**:
(h) a transformer at a **GXP** for a **distributor's** (the upgrading **distributor's**) **local network** is **upgraded**:
(i) a **distributor** (the connecting **distributor**) connects its **local network** at a **GXP** (new **GXP**) to which the connecting **distributor** was not connected immediately before connecting its **local network** at the new **GXP**:
(j) the **point of connection** for existing **large plant** changes:
(k) a **customer** (the vendor) sells or otherwise transfers part of its business that constitutes it as a **beneficiary** of a **BBI** to another party (the purchaser):
(l) **Transpower** decides to voluntarily under-recover a **BBI's covered cost**:
(m) there is a **SSCGU**.

(2) **Transpower** must not voluntarily under-recover a **BBI's covered cost** if the effect of doing so would be to increase **residual revenue** for any **pricing year**.

(3) For the purposes of paragraphs (1)(d) and (1)(e)—
(a) a **large upgrade** of existing **plant** is treated as the connection of **large plant** equivalent in size to the **upgrade**; and
(b) a **large de-rating** of existing **plant** is treated as the disconnection of **large plant** equivalent in size to the **de-rating**; and
(c) a series of incremental **upgrades** or **de-ratings** of existing **plant** is treated as a **large upgrade** or **large de-rating** (as the case may be) if the incremental **upgrades** or **de-ratings** would constitute a **large upgrade** or **large de-rating** if undertaken at the same time.

(4) For the purposes of paragraphs (1)(f) and (1)(g), whether the increase in **electricity** consumed or generated by the **large plant** is a **substantial sustained increase** in respect of a **BBI** must be assessed against the average annual **electricity** consumption or generation by the **large plant** explicitly or implicitly included in the current value of the increasing **customer's intra-regional allocator** for its **regional customer group** and the **BBI**.

(5) To avoid doubt, the **benefit-based charge adjustment events** in paragraphs (1)(a) and (1)(l) do not result in any change to the relevant **BBI's BBI customer allocations**.

Commented [A37]: Should this clause clarify that it is referring to large plant?

Commented [A38]: As noted in respect of the previous draft, the operation of sub-clause 79(4) could effectively change allocations. So this clause appears inconsistent. Please consider. The same issue arises in respect of the definition of BBI customer allocation.

(6) The **benefit-based charge adjustment event** in paragraph (1)(j) is treated as the **benefit-based charge adjustment events** in 1 or both of paragraphs (1)(d) and (1)(e) (depending on the previous and new **point of connection**) occurring in respect of the same **large plant**, provided that clause 82 will not apply except as specified in clause 86.

(7) Any of the **benefit-based charge adjustment events** in paragraphs (1)(b) to (1)(j) may also be a **SSCGU**, in which case both clause 89 and clause 80, 81, 82, 83, 84, 85 or 86 (as applicable depending on the **benefit-based charge adjustment event**) will apply. However, clause 80, 81, 82, 83, 84, 85 or 86 will only apply to a relevant **BBI** described in paragraph 89(2)(a) in respect of **pricing years** before the **SSCGU's start pricing year**.

79 Benefit-based Charge Adjustment Event: Material Damage

Commented [A39]: See refer-back letter.

(1) This clause 79 applies in the case of the **benefit-based charge adjustment event** in paragraph 78(1)(a).

(2) A relevant **pricing year** is the **event pricing year** and the **pricing year** after the **event pricing year**.

(3) Subject to subclause (4), **Transpower** must, for each relevant **pricing year**—
- (a) reduce the **BBI's covered cost** by an amount determined by **Transpower** to reflect the reduction of the **BBI's** value attributable to the **material damage**, to the extent this reduction is not already reflected in the relevant **RAB** values or **values of commissioned asset** used to calculate the **BBI's covered cost** for the relevant **pricing year**; and
- (b) calculate or re-calculate (as the case may be) all **beneficiaries' benefit-based charges** for the **BBI** based on the reduction of the **BBI's covered cost** under paragraph (a).

(4) If a **beneficiary** (the causing **beneficiary**) caused, or contributed to the cause of, the **material damage**, subclause (3) does not apply to the causing **beneficiary's benefit-based charge** for the **BBI**.

(5) **Transpower** is not required to (but may) start a **beneficiary's monthly benefit-based charge** calculated under paragraph (3)(b) during, or from the start of, an **exempt pricing year** for the **beneficiary**. However, any over-recovery of the **BBI's covered cost** for the **exempt pricing year** (accounting for the **material damage**) must be rebated, as appropriate, to the **beneficiaries** (other than any causing **beneficiary**) by way of an adjustment to their **transmission charges**—
- (a) if reasonably practicable, at the end of the **exempt pricing year**; or
- (b) otherwise, as soon as reasonably practicable during the next **pricing year**.

(6) **Transpower** must not increase any **transmission charges** for the **event pricing year** as a consequence of the application of subclause (3).

80 Benefit-based Charge Adjustment Event: New Customer

(1) This clause 80 applies in the case of the **benefit-based charge adjustment event** in paragraph 78(1)(b).

(2) The new **customer**—
- (a) is a **beneficiary** of each **post-2019 BBI** (a relevant **post-2019 BBI**) that has positive **regional NPB** for a **regional customer group** of which the new **customer** is expected to be a member (a relevant **regional customer group** for the relevant **post-2019 BBI**); and

(b) may be a **beneficiary** of 1 or more of the **Appendix A BBIs**.

(3) **Transpower** must, for each relevant **post-2019 BBI**—

(a) estimate the value of the new **customer's intra-regional allocator** for each relevant **regional customer group** assuming full operation of the new **customer's assets** and taking into account—

(i) the type and **capacity** of the new **customer's assets**; and

(ii) the values of the **intra-regional allocators** for any other **beneficiaries** of the relevant **post-2019 BBI** with **assets** of the same or a similar type as the new **customer's assets**; and

(b) calculate the new **customer's individual NPB** for the relevant **post-2019 BBI**—

(i) under clause 48 or 55 or ~~subclause~~ 59 (as applicable depending on the method used to calculate **beneficiaries' BBI customer allocations** for the relevant **post-2019 BBI**), applying subclause (4) if necessary; and

(ii) based on the value of the new **customer's intra-regional allocator** for each relevant **regional customer group** estimated under paragraph (a), but excluding the value of the new **customer's intra-regional allocator** from the denominator of the formula in ~~sub~~clause 48 or subclause 59(2) (as applicable); and

(c) calculate the new **customer's BBI customer allocation** for the relevant **post-2019 BBI** based on the new **customer's individual NPB** for the relevant **post-2019 BBI** calculated under ~~subclause~~ paragraph (b), but excluding the value of the new **customer's individual NPB** from the denominator of the formula in subclause 43(1); and

(d) scale down all **beneficiaries'** (including the new **customer's**) **BBI customer allocations** for the relevant **post-2019 BBI** by a factor (F) calculated as follows:

$$F = \frac{1}{1 + CA}$$

where CA is the new **customer's BBI customer allocation** for the relevant **post-2019 BBI** calculated under paragraph (c);

(e) add the new **customer's individual NPB** calculated under paragraph (b) in respect of a **regional customer group** to the **regional customer group's regional NPB**, unless the relevant **post-2019 BBI** is a **resiliency BBI** (for which **regional NPB** is not calculated); and

(f) calculate or re-calculate (as the case may be) all **beneficiaries' benefit-based charges** for the relevant **post-2019 BBI** based on the **beneficiaries' BBI customer allocations** calculated under paragraph (d).

(4) If the new **customer** is in a **modelled region** for which there is no **regional customer group** of which the new **customer** would be a member, **Transpower** may—

(a) create a new **regional customer group** for the new **customer** to be the first member of; and

(b) determine the **regional NPB** for that **regional customer group**, unless the relevant **post-2019 BBI** is a **resiliency BBI** (for which **regional NPB** is not calculated).

(5) The following tables illustrate the application of subclause (3) to a new **customer** (**customer** E) entering **regional customer group** Y for a **post-2019 BBI**:

Before

Regional customer group	Beneficiary	Regional NPB	Intra-regional allocator	Individual NPB	BBI customer allocation
X	A	60	1	20	18.18%
	B		2	40	36.36%
Y	C	50	3	30	27.27%
	D		2	20	18.18%

Transition (paragraphs (3)(a) to (3)(c))

Regional customer group	Beneficiary	Regional NPB	Intra-regional allocator	Individual NPB	BBI customer allocation
X	A	60	1	20	18.18%
	B		2	40	36.36%
Y	C	50	3	30	27.27%
	D		2	20	18.18%
	E		1 (estimated)	1/5 × 50 = 10	10/110 = 9.09%

After (paragraphs (3)(d) and (3)(e))

Regional customer group	Beneficiary	Regional NPB	Intra-regional allocator	Individual NPB	BBI customer allocation (scaled by 1/1.0909)
X	A	60	1	20	16.67%
	B		2	40	33.33%
Y	C	50 + 10 = 60	3	30	25.00%
	D		2	20	16.67%
	E		1 (estimated)	10	8.33%

(6) **Transpower** must, for each **Appendix A BBI**—

(a) calculate the new **customer's BBI customer allocation** for the **Appendix A BBI** (CA) as follows:

$$CA = E \times \frac{1}{J} \sum_{J} BF_j$$

where

E is **Transpower's** estimate of the new **customer's** average annual **offtake** or **injection** at the new **customer's connection location** when the new **customer's assets** are fully operational

J is the number of incumbent **customers** of the same type as the new **customer** (**generator** or **connected asset owner**)—

(a) at the new **customer's connection location**; or

(b) if there are no such incumbent **customers** at the new **customer's connection location**, at the **connection location** electrically closest to the new **customer's connection location** at which there is 1 or more such incumbent **customers**, as determined by **Transpower**,

each such incumbent **customer** being **customer** j

BF_j is **customer** j's **benefit factor** for the **Appendix A BBI**; and

(b) scale down all **beneficiaries'** (including the new **customer's**) **BBI customer allocations** for the **Appendix A BBI** by a factor (F) calculated as follows:

$$F = \frac{1}{1 + CA}$$

where CA is the new **customer's BBI customer allocation** for the **Appendix A BBI** calculated under paragraph (a); and

(c) calculate or re-calculate (as the case may be) all **beneficiaries' benefit-based charges** for the **Appendix A BBI** based on the **beneficiaries' BBI customer allocations** calculated under paragraph (b).

(7) The following tables illustrate the application of subclause (6) to a new **customer** (**customer** E) for an **Appendix A BBI**, where the incumbent **beneficiaries** are all starting **beneficiaries** and the **benefit factors** for **beneficiaries** B and C are used in the calculation in subclause (6)(a):

Before

beneficiary	**benefit factor**	annual **offtake/injection**	**BBI customer allocation**
A	0.1818	100	18.18%
B	0.1818	200	36.36%
C	0.0909	300	27.27%
D	0.0455	400	18.18%

Transition (paragraph (6)(a))

beneficiary	**benefit factor**	annual **offtake/injection**	**BBI customer allocation**
A	0.1818	100	18.18%
B	0.1818	200	36.36%
C	0.0909	300	27.27%
D	0.0455	400	18.18%
E	(0.1818 + 0.0909)/2 = 0.1364	250 (estimated)	0.1364 × 250 = 34.10%

After (paragraph (6)(b))

beneficiary	**benefit factor**	annual **offtake/injection**	**BBI customer allocation** (scaled by 1/1.341)
A	0.1818	100	13.56%
B	0.1818	200	27.11%
C	0.0909	300	20.34%
D	0.0455	400	13.56%
E	0.1364	250 (estimated)	25.43%

(8) **Transpower** must start the new **customer's monthly benefit-based charges** calculated under paragraph (3)(f) or (6)(c) as soon as reasonably practicable. The new **customer's monthly benefit-based charges** may include an adjustment as necessary to ensure the new **customer** pays its full **benefit-based charge** for each **BBI** from the date the new **customer** connected to the **grid**.

(9) **Transpower** is not required to (but may) start any other **beneficiary's monthly benefit-based charges** calculated under paragraph (3)(f) or (6)(c) during, or from the start of, an **exempt pricing year** for the **beneficiary**. However, any over-recovery of the **benefit-based charge** for a **BBI** and **exempt pricing year** resulting from the start of the new **customer's monthly benefit-based charge** for the **BBI** must be rebated, as appropriate, to the other **beneficiaries** by way of an adjustment to their **transmission charges**—

(a) if reasonably practicable, at the end of the **exempt pricing year**; or

(b) otherwise, as soon as reasonably practicable during the next **pricing year**.

81 Benefit-based Charge Adjustment Event: Exiting Customer

(1) This clause 81 applies in the case of the **benefit-based charge adjustment event** in paragraph 78(1)(c).

(2) The exiting **customer** ceases to be a **beneficiary** of each **BBI** (a relevant **BBI**) of which the exiting **customer** was a **beneficiary** immediately before ceasing to be a **customer**.

(3) Subject to subclause (7), **Transpower**—

(a) must, for each relevant **BBI**—

(i) make the exiting **customer's BBI customer allocation** and **benefit-based charge** for the relevant **BBI** 0; and

(ii) scale up all remaining **beneficiaries' BBI customer allocations** for the relevant **BBI** by a factor (F) calculated as follows:

$$F = \frac{1}{1 - CA}$$

where CA is the exiting **customer's BBI customer allocation** for the relevant **BBI** immediately before it was set to 0 under subparagraph (i); and

(iii) if the relevant **BBI** is a **post-2019 BBI**, subtract the exiting **customer's individual NPB** for the relevant **BBI** in respect of each **regional customer group** from the **regional customer group's regional NPB**; and

(iv) re-calculate all remaining **beneficiaries' benefit-based charges** for the relevant **BBI** based on the remaining **beneficiaries' BBI customer allocations** calculated under subparagraph (ii).

(b) must not increase—

(i) the remaining **beneficiaries' benefit-based charges** for the relevant **BBI** and **event pricing year**; or

(ii) any other **transmission charges** for the **event pricing year**,

as a consequence of the application of subparagraph (a)(i).

(4) The following tables illustrate the application of subclause (3) to a **customer** (**customer** D) exiting **regional customer group** Y for a **post-2019 BBI**:

Before

Regional customer group	Beneficiary	Regional NPB	Intra-regional allocator	Individual NPB	BBI customer allocation
X	A	60	1	20	16.67%
	B		2	40	33.33%
Y	C	60	3	30	25.00%
	D		2	20	16.67%
	E		1	10	8.33%

Transition (subparagraphs and (3)(a)(i) and (3)(a)(ii))

Regional customer group	Beneficiary	Regional NPB	Intra-regional allocator	Individual NPB	BBI customer allocation (scaled by 1/0.8333)
X	A	60	1	20	20.00%
	B		2	40	40.00%
Y	C	60	3	30	30.00%
	D		2	20	0%
	E		1	10	10.00%

After (subparagraph (3)(a)(iii))

Regional customer group	Beneficiary	Regional NPB	Intra-regional allocator	Individual NPB	BBI customer allocation
X	A	60	1	20	20.00%
	B		2	40	40.00%
Y	C	60 – 20 = 40	3	30	30.00%
	E		1	10	10.00%

(5) In subclauses (6) and (7), a **continuing BBI** is a **BBI**—

(a) of which the exiting **customer** was a **beneficiary** immediately before ceasing to be a **customer**; and

(b) **commissioned** more recently than 10 years before the date the exiting **customer** ceased to be a **customer**.

(6) Subclause (7) applies to a **continuing BBI** until the start of the first **pricing year** that starts at least 10 years after the **continuing BBI's commissioning date**.

(7) If a **related entity** of the exiting **customer** is a **customer** after the exiting **customer** ceases to be a **customer**—

(a) subparagraphs (3)(a)(ii) to (3)(a)(iv) do not apply; and

(b) the exiting **customer's benefit-based charge** for the **continuing BBI** must be attributed (by way of increase) to the **related entity** in its capacity as a **customer**. If there is more than 1 **related entity**, this subclause applies to a **related entity** determined by **Transpower**; and

(c) **Transpower** must start the **related entity's monthly benefit-based charges** attributed under paragraph (b) as soon as reasonably practicable. The **related entity's monthly benefit-based charges** may include an adjustment as necessary to ensure the **related entity** pays its full attributed **benefit-based charge** for the **continuing BBI** from the date the exiting **customer** ceased to be a **customer**.

82 Benefit-based Charge Adjustment Event: Large Plant Connected or Disconnected

(1) Subject to subclause 78(6), this clause 82 applies in the case of the **benefit-based charge adjustment event** in paragraph 78(1)(d) or 78(1)(e).

(2) Subject to paragraph (4)(a), **Transpower** must, for a connecting **customer**—

(a) comply with clause 80 as if the **large plant** had been connected to the **grid** by a separate new **customer** (the notional new **customer**) at—

(i) if the **large plant** is connected to the **grid**, the **connection location** where the **large plant** is connected; or

(ii) if the **large plant** is connected to the connecting **customer's local network**, the **connection location** electrically closest to the **large plant's** electrically closest **point of connection** to the **local network**, as determined by **Transpower**; or

(iii) if the **large plant** is connected to the connecting **customer's grid**-connected **plant**, the **connection location** where the **grid**-connected **plant** is connected; and

(b) attribute (by way of increase) the notional new **customer's BBI customer allocation** (and the inputs to its calculation) and **benefit-based charge** for each relevant **post-2019 BBI** and **Appendix A BBI** to the connecting **customer**.

(3) Subject to paragraph (4)(b) and subclause (7), **Transpower** must, for a disconnecting **customer**—

(a) comply with clause 81 (without regard to subclauses 81(5) to 81(7)) as if the **large plant** had been disconnected from the **grid** by a separate exiting **customer** (the notional exiting **customer**) at—

(i) if the **large plant** was connected to the **grid**, the **connection location** where the **large plant** was connected; or

(ii) if the **large plant** was connected to the disconnecting **customer's local network**, the **connection location** electrically closest to the **large plant's** electrically closest **point of connection** to the **local network** before the **large plant** was disconnected, as determined by **Transpower**; or

(iii) if the **large plant** was connected to the disconnecting **customer's grid**-connected **plant**, the **connection location** where the **grid**-connected **plant** is connected; and

(b) attribute (by way of reduction) the notional exiting **customer's BBI customer allocation** (and the inputs to its calculation) and **benefit-based charge** for each relevant **BBI** and **Appendix A BBI** to the disconnecting **customer,** provided that the minimum value of the disconnecting **customer's BBI customer allocation** (and the inputs to its calculation) and **benefit-based charge** for each relevant **BBI** and **Appendix A BBI** is 0.

(4) **Transpower** must—

(a) if paragraph 80(3)(e) applies, add the notional new **customer's individual NPB** in respect of each **regional customer group** to the **regional NPB** of the connecting **customer's regional customer group** for the relevant **connection location**; and

(b) if subparagraph 81(3)(a)(iii) applies, subtract the notional new **customer's individual NPB** in respect of each **regional customer group** from the **regional NPB** of the disconnecting **customer's regional customer group** for the relevant **connection location**, provided that the minimum value of the **regional NPB** is 0.

(5) In subclauses (6) and (7), a **continuing BBI** is a **BBI**—

(a) of which the notional exiting **customer** was a **beneficiary** immediately before the disconnection of the **large plant**; and

(b) **commissioned** more recently than 10 years before the date the **large plant** was disconnected.

(6) Subclause (7) applies to a **continuing BBI** until the start of the first **pricing year** that starts at least 10 years after the **continuing BBI's commissioning date**.

(7) If the **large plant** owner or a **related entity** of the **large plant** owner (relevant person) is a **customer** after the disconnection of the **large plant**—

(a) subparagraphs 81(3)(a)(ii) to 81(3)(a)(iv) do not apply; and

(b) the notional exiting **customer's benefit-based charge** for the **continuing BBI** must be attributed (by way of increase) to the relevant person in its capacity as a **customer**. If there is more than 1 relevant person, this subclause applies to—

(i) the **large plant** owner; or

(ii) if the **large plant** owner is not a **customer** after the disconnection of the **large plant**, a **related entity** determined by **Transpower**; and

(c) **Transpower** must start the relevant person's **monthly benefit-based charges** attributed under paragraph (b) as soon as reasonably practicable. The relevant person's **monthly benefit-based charges** may include an adjustment as necessary to ensure the relevant person pays its full attributed **benefit-based charge** for the **continuing BBI** from the date the **large plant** was disconnected.

83 Benefit-based Charge Adjustment Event: Substantial Sustained Increase

(1) This clause 83 applies in the case of the **benefit-based charge adjustment event** in paragraph 78(1)(f) or 78(1)(g).

(2) Subject to subclause (3), **Transpower** must—

(a) comply with clause 80 as if the **substantial sustained increase** were attributable to **plant** connected to the **grid** by a separate new **customer** (the notional new **customer**) at—

(i) if the **substantial sustained increase** is in **electricity** consumed or generated by **grid**-connected **plant**, the **connection location** where the **grid**-connected **plant** is connected; or

(ii) if the **substantial sustained increase** is in **electricity** consumed or generated by **large embedded plant** connected to the increasing **customer's local network**, the **connection location** electrically closest to the **large embedded plant's** electrically closest **point of connection** to the **local network**, as determined by **Transpower**; or

(iii) if the **substantial sustained increase** is in **electricity** consumed or generated by **large embedded plant** connected to the increasing

customer's grid-connected **plant**, the **connection location** where the **grid**-connected **plant** is connected; and

(b) attribute the notional new **customer's BBI customer allocation** (and the inputs to its calculation) and **benefit-based charge** for each relevant **post-2019 BBI** and **Appendix A BBI** to the increasing **customer**.

(3) If paragraph 80(3)(e) applies, **Transpower** must add the notional new **customer's individual NPB** in respect of each **regional customer group** to the **regional NPB** of the increasing **customer's regional customer group** for the relevant **connection location**.

84 Benefit-based Charge Adjustment Event: Distributor Transformer Upgrade

(1) This clause 84 applies in the case of the **benefit-based charge adjustment event** in paragraph 78(1)(h).

(2) **Transpower** must—

(a) comply with clause 80 as if a transformer equivalent in size to the **upgrade** had been connected at the **GXP** by a separate new **distributor** (the notional new **distributor**); and

(b) attribute the notional new **distributor's BBI customer allocation** (and the inputs to its calculation) and **benefit-based charge** for each relevant **post-2019 BBI** and **Appendix A BBI** to the upgrading **distributor**.

85 Benefit-based Charge Adjustment Event: Distributor Connection at GXP

(1) This clause 85 applies in the case of the **benefit-based charge adjustment event** in paragraph 78(1)(i).

(2) Subject to subclause (3), **Transpower** must—

(a) comply with clause 80 as if a **local network** had been connected at the new **GXP** by a separate new **distributor** (the notional new **distributor**), provided that the estimate of the notional new **distributor's intra-regional allocators** must take into account any expected reduction in the connecting **distributor's offtake** at other **GXPs** in the same **modelled region** as the new **GXP** as a result of the connection of the connecting **customer's local network** at the new **GXP**; and

(b) attribute the notional new **distributor's BBI customer allocation** (and the inputs to its calculation) and **benefit-based charge** for each relevant **post-2019 BBI** and **Appendix A BBI** to the connecting **distributor**.

(3) Subclause (2) does not apply in respect of a **BBI** if—

(a) **Transpower** does not reasonably consider the connection of the connecting **customer's local network** at the new **GXP** to be associated with a sustained increase in the connecting **distributor's** expected total **offtake** at all **GXPs** in the same **modelled region** for the **BBI** as the new **GXP** (including the new **GXP**); or

(b) any sustained increase referred to in paragraph (a) is explicitly or implicitly included in the current value of the connecting **distributor's intra-regional allocator** for its **regional demand group** for the **modelled region** and **BBI**.

86 Benefit-based Charge Adjustment Event: Changed Point of Connection

(1) This clause 86 applies in the case of the **benefit-based charge adjustment event** in paragraph 78(1)(j).

(2) **Transpower** must—

(a) apply subclauses 82(2) and 82(3) to calculate the notional new **customer's** and notional exiting **customer's BBI customer allocations**; and

(b) identify the **BBIs** of which both the notional new **customer** and notional exiting **customer** are **beneficiaries** (the relevant **BBIs**).

(3) If the notional new **customer's BBI customer allocation** for a relevant **BBI** is equal to or more than the notional exiting **customer's BBI customer allocation** for the relevant **BBI**, **Transpower** must—
(a) apply paragraph 82(2)(b) for the connecting c**ustomer** and relevant **BBI**; and
(b) apply paragraph 82(3)(b) for the disconnecting **customer** and relevant **BBI** (without regard to subclause 82(6)).

(4) If the notional exiting **customer's BBI customer allocation** for a relevant **BBI** is more than the notional new **customer's BBI customer allocation** for the relevant **BBI**, **Transpower** must—
(a) apply paragraph 82(2)(b) for the connecting **customer** and relevant **BBI** ~~but~~ by attributing to the connecting **customer** the notional exiting **customer's BBI customer allocation** (and the inputs to its calculation) and **benefit-based charge** for the relevant **BBI** instead of the notional new **customer's**; and
(b) apply paragraph 82(3)(b) for the disconnecting **customer** and relevant **BBI** (without regard to subclause 82(6)).

87 Benefit-based Charge Adjustment Event: Partial Sale of Business

(1) This clause 87 applies in the case of the **benefit-based charge adjustment event** in paragraph 78(1)(k).

(2) **Transpower** must—
(a) determine an apportionment between the vendor and purchaser of the vendor's **BBI customer allocation** (and the inputs to its calculation) for the **BBI** taking into account the size and nature of the transferred business; and
(b) calculate or re-calculate (as the case may be) the vendor's and purchaser's **benefit-based charges** for the **BBI** based on the apportionment of the vendor's **BBI customer allocation** under paragraph (a).

(3) **Transpower** must start the purchaser's **monthly benefit-based charge** calculated under paragraph (2)(b) as soon as reasonably practicable. The purchaser's **monthly benefit-based charge** may include an adjustment as necessary to ensure the purchaser pays its full **benefit-based charge** for the **BBI** from the date of the transfer.

(4) **Transpower** is not required to (but may) start the vendor's **monthly benefit-based charge** calculated under paragraph (2)(b) during, or from the start of, an **exempt pricing year** for the vendor. However, any over-recovery of the **annual benefit-based charge** for the **BBI** and **exempt pricing year** resulting from the start of the purchaser's **monthly benefit-based charge** for the **BBI** must be rebated to the vendor by way of an adjustment to its **transmission charges**—
(a) if reasonably practicable, at the end of the **exempt pricing year**; or
(b) otherwise, as soon as reasonably practicable during the next **pricing year**.

88 Benefit-based Charge Adjustment Event: Voluntary Under-recovery

(1) This clause 88 applies in the case of the **benefit-based charge adjustment event** in paragraph 78(1)(l).

(2) A relevant **pricing year** is a **pricing year** for which **Transpower** decided to voluntarily under-recover the **BBI's covered cost**.

(3) **Transpower** must, for each relevant **pricing year**, calculate or re-calculate (as the case may be) all **beneficiaries' benefit-based charges** for the **BBI** to account for the amount of the voluntary under-recovery of the **BBI's covered cost**.

(4) If **Transpower** decides to voluntarily under-recover the **BBI's covered cost** for a relevant **pricing year** during, or within 1 month of the start of, the relevant **pricing year**, **Transpower** is not required to (but may) start **beneficiaries' monthly benefit-based charges** calculated under subclause (3) during, or from the start of, the relevant **pricing year**. However, any over-recovery of the **BBI's covered cost** for the relevant **pricing year** (accounting for the voluntary under-recovery) must be rebated, as appropriate, to the **beneficiaries** by way of an adjustment to their **transmission charges**—
- (a) if reasonably practicable, at the end of the relevant **pricing year**; or
- (b) otherwise, as soon as reasonably practicable during the next **pricing year**.

89 Benefit-based Charge Adjustment Event: SSCGU

(1) This clause 89 applies in the case of the **benefit-based charge adjustment event** in paragraph 78(1)(m).

(2) **Transpower** must—
- (a) determine which **post-2019 BBIs**, if any, satisfy all of the following conditions (the relevant **BBIs**):
  - (i) the **post-2019 BBI** is expected to be **high-value** at the start of the **SSCGU's start pricing year**:
  - (ii) the distribution of **regional NPB** for the **post-2019 BBI** is likely to have changed materially as a result of the **SSCGU**, compared to the distribution of **regional NPB** for the **post-2019 BBI** immediately before the **SSCGU**:
  - (iii) the **SSCGU** was not a **market scenario** used to calculate the existing **BBI customer allocations** for the **post-2019 BBI**; and
- (b) for each relevant **BBI**, re-calculate **beneficiaries' BBI customer allocations** as if the relevant **BBI** were a new **high-value post-2019 BBI** for which—
  - (i) the **standard method calculation period** starts on the date of the **SSCGU**; and
  - (ii) the **final investment decision date** is the date of the **SSCGU**.

(3) In carrying out the re-calculation under paragraph (2)(b), **Transpower** may use—
- (a) a different **standard method** than was used to calculate the existing **BBI customer allocations** for the relevant **BBI**; or
- (b) different **factual**, **counterfactual**, **investment grids**, **system limits**, **scenarios**, **modelled regions** and **regional customer groups** than were used to calculate the existing **BBI customer allocations** for the relevant **BBI**.

(4) From the **SSCGU's start pricing year**, **Transpower** must calculate **beneficiaries' benefit-based charges** for each relevant **BBI** based on the **beneficiaries' BBI customer allocations** for the relevant **BBI** re-calculated under paragraph (2)(b).

Residual Charges

90 Residual Charge Adjustment Events

(1) The following events are **residual charge adjustment events**:
- (a) a new **customer** (the new **load customer**) connects to the **grid**:
- (b) a **customer** (the exiting **load customer**) ceases to be a **customer**:

(c) a **customer** (the vendor) sells or otherwise transfers part of its business that constitutes it as a **load customer** to another party (the purchaser):
(d) **Transpower** decides to voluntarily under-recover **residual revenue**.

(2) **Transpower** must not voluntarily under-recover **residual revenue** for a **pricing year** if the effect of doing so would be to increase **residual revenue** for any other **pricing year**.

91 Residual Charge Adjustment Event: New Load Customer

(1) This clause 91 applies in the case of the **residual charge adjustment event** in subclause 90(1)(a).

(2) **Transpower** must—
(a) estimate the new **load customer's AMDR** baseline assuming full operation of the new **load customer's assets** from the start of **CMP D** and taking into account—
(i) the type and **capacity** of the new **load customer's assets**; and
(ii) the **AMDR** baselines for any other **load customers** with **assets** of the same or a similar type as the new **load customer's assets**; and
(b) calculate or re-calculate (as the case may be) all **load customers' residual charges** to account for the new **load customer's AMDR** (but not any change in **residual revenue** that may have occurred during the **event pricing year**).

(3) **Transpower** must start the new **load customer's monthly residual charge** calculated under paragraph (2)(b) as soon as reasonably practicable. The new **load customer's monthly residual charge** may include an adjustment as necessary to ensure the new **load customer** pays its full **residual charge** from the date the new **load customer** connected to the **grid**.

(4) **Transpower** is not required to (but may) start any other **load customer's monthly residual charge** calculated under paragraph (2)(b) during, or from the start of, an **exempt pricing year** for the **load customer**. However, any over-recovery of **residual revenue** for the **exempt pricing year** resulting from the start of the new **load customer's monthly residual charge** must be rebated, as appropriate, to the other **load customers** by way of an adjustment to their **transmission charges**—
(a) if reasonably practicable, at the end of the **exempt pricing year**; or
(b) otherwise, as soon as reasonably practicable during the next **pricing year**.

(5) To avoid doubt, **Transpower** may re-estimate the new **load customer's AMDR** baseline under clause 70.

92 Residual Charge Adjustment Event: Exiting Load Customer

(1) This clause 92 applies in the case of the **residual charge adjustment event** in paragraph 90(1)(b).

(2) **Transpower—**
(a) must make the exiting **load customer's AMDR** and **residual charge** 0; and
(b) must not increase—
(i) any other **load customer's residual charge** for the **event pricing year**; or
(ii) any other **transmission charges** for the **event pricing year**,
as a consequence of the application of paragraph (a).

93 Residual Charge Adjustment Event: Partial Sale of Business

(1) This clause 93 applies in the case of the **residual charge adjustment event** in paragraph 90(1)(c).

(2) **Transpower** must—

(a) determine an apportionment between the vendor and purchaser of the vendor's **AMDR** (and the inputs to its calculation) taking into account the size and nature of the transferred business; and

(b) calculate or re-calculate (as the case may be) the vendor's and purchaser's **residual charges** based on the apportionment of the vendor's **AMDR** under paragraph (a) (but not any change in **residual revenue** that may have occurred during the **event pricing year**).

(3) **Transpower** must start the purchaser's **monthly residual charge** calculated under paragraph (2)(b) as soon as reasonably practicable. The purchaser's **monthly residual charge** may include an adjustment as necessary to ensure the purchaser pays its full **residual charge** from the date of the transfer.

(4) **Transpower** is not required to (but may) start the vendor's **monthly residual charge** calculated under paragraph (2)(b) during, or from the start of, an **exempt pricing year** for the vendor. However, any over-recovery of **residual revenue** for the **exempt pricing year** resulting from the start of the purchaser's **monthly residual charge** must be rebated to the vendor by way of an adjustment to its **transmission charges**—

(a) if reasonably practicable, at the end of the **exempt pricing year**; or

(b) otherwise, as soon as reasonably practicable during the next **pricing year**.

94 Residual Charge Adjustment Event: Voluntary Under-recovery

(1) This clause 94 applies in the case of the **residual charge adjustment event** in paragraph 90(1)(d).

(2) A relevant **pricing year** is a **pricing year** for which **Transpower** decided to voluntarily under-recover **residual revenue**.

(3) **Transpower** must, for each relevant **pricing year**, calculate or re-calculate (as the case may be) all **load customers' residual charges** for the discounted **pricing year** to account for the amount of the voluntary under-recovery of **residual revenue**.

(4) If **Transpower** decides to voluntarily under-recover **residual revenue** for a relevant **pricing year** during, or within 1 month of the start of, the relevant **pricing year**, **Transpower** is not required to (but may) start **load customers' monthly residual charges** calculated under subclause (3) during, or from the start of, the relevant **pricing year**. However, any over-recovery of **residual revenue** for the relevant **pricing year** (accounting for the voluntary under-recovery) must be rebated, as appropriate, to **load customers** by way of an adjustment to their **transmission charges**—

(a) if reasonably practicable, at the end of the relevant **pricing year**; or

(b) otherwise, as soon as reasonably practicable during the next **pricing year**.

Part G Reassignment

95 Effect of Reassignment

If an **eligible BBI** is **reassigned**, **Transpower** must, from the **reassignment's start pricing year**—

(a) reduce the **eligible BBI's covered cost** by the **eligible BBI's reassignment amount**; and

(b) calculate **beneficiaries' benefit-based charges** for the **eligible BBI** based on the reduction of the **eligible BBI's covered cost** under paragraph (a).

96 Reassignment Amount

The **reassignment amount** for a **reassigned eligible BBI** (RA) is calculated as follows:

$$RA = CC \times (1 - RF)$$

where

CC is the **eligible BBI's covered cost**

RF is the **eligible BBI's reassignment factor**.

97 Eligibility for Reassignment

(1) Before or as soon as reasonably practicable after the start of a **pricing year**, **Transpower** must **publish**—

(a) a list of **BBIs** that satisfy paragraph (a) of the definition of **eligible BBI** in clause 3 as at the start of the **pricing year**; and

(b) identify which of the listed **BBIs** are **post-2019 BBIs** that satisfy subparagraph (b)(i) of the definition of **eligible BBI** in clause 3 as at the start of the **pricing year**.

(2) The **reassignment threshold** is—

(a) $5m for the **first pricing year**; and

(b) for each **pricing year** after the **first pricing year**, calculated as follows:

$$RT = \$5m \times \frac{CPI}{CPI_{base}}$$

where

RT is the **reassignment threshold** for the **pricing year**

CPI is the average of the quarterly **CPIs** for the preceding **financial year**

CPI_{base} is the average of the quarterly **CPIs** for the most recent complete **financial year** before the start of the **first pricing year**.

(3) If there is a base adjustment to **CPI**, the calculation in paragraph (2)(b) is to include an equivalency adjustment to eliminate the impact of the base adjustment.

98 Reassignment Application

(1) If an **eligible person** wishes for a **BBI** to be **reassigned**, the **eligible person** must submit to **Transpower** a written **application** for **reassignment** that meets the requirements of subclause (2).

(2) An **application** for **reassignment** must—
- (a) contain all of the information described in the relevant **application requirements**; and
- (b) contain reasonable evidence that the conditions for **reassignment** are met; and
- (c) be accompanied by an **independent verification** of the **application**.

(3) The **eligible person** must provide **Transpower** with any additional information **Transpower** determines is necessary to enable it to assess the **application**.

99 Application Screening and Publication

(1) **Transpower** must reject an **application** for **reassignment** without assessing the **application** further if—
- (a) the applicant is not an **eligible person**; or
- (b) the **BBI** to which the **application** relates is not an **eligible BBI** when **Transpower** receives the **application**.

(2) **Transpower** may reject an **eligible person's application** for **reassignment** without assessing the **application** further—
- (a) under subclause 16(1); or
- (b) if an **eligible person** has previously applied for **reassignment** on substantially the same basis as the new **application** and **Transpower**—
  - (i) rejected the previous **application**; and
  - (ii) determines there has not been a change in circumstances since its decision on the previous **application** that materially increases the likelihood of the new **application** being approved.

(3) **Transpower** is not required to consult on any decision to reject an **application** under subclause (1), (2) or 16(1).

(4) Unless **Transpower** rejects an **application** under subclause (1), (2) or 16(1), and subject to clause 105, **Transpower** must **publish** the **application** and any information the **eligible person** provides to **Transpower** under subclause 98(3).

100 Assessment

(1) In assessing an **eligible person's application** for **reassignment**, **Transpower** is not obliged to use the information the **eligible person** provided in or in support of the **application**.

(2) **Transpower** must approve the **application** if—
- (a) **Transpower** determines that the **eligible BBI** to which the **application** relates has a **BBI reassignment factor** of less than 0.8; and
- (b) the circumstances causing the **BBI reassignment factor** to be less than 0.8 are sustained.

(3) Otherwise, **Transpower** must reject the **application**.

101 Forecast Peak Loading and Reassignment Factors

(1) The **forecast loading period** for an **eligible BBI** the subject of a **reassignment** application is the period starting on the date **Transpower** receives the application and ending on the later of—
- (a) 10 years after the date **Transpower** receives the application; and
- (b) if the **eligible BBI** is a **post-2019 BBI** to which subparagraph (b)(i) of the definition of **eligible BBI** in clause 3 does not apply, 20 years after the **eligible BBI's commissioning date**.

(2) **Forecast peak loading** for a **grid investment** comprised in the **eligible BBI** is the expected future peak electrical loading of the **grid investment** over the **eligible BBI's forecast loading period**, as determined by **Transpower**.

(3) The **investment reassignment factor** for a **grid investment** comprised in the **eligible BBI** is the proportion of the **grid investment's** total **replacement cost Transpower** determines it would incur to replace the **grid investment** with a **grid investment**—

(a) of the same type; and

(b) with a service potential sufficient to meet the **forecast peak loading** and reasonable **grid** contingencies, but no more.

(4) The **BBI reassignment factor** for the **eligible BBI** (BRF) is calculated as follows:

$$BRF = \frac{1}{CC_{total}} \sum_{i} (CC_i \times IRF_i)$$

where

CC_{total} is the **eligible BBI's covered cost** for the **pricing year** during which the application for **reassignment** was received

CC_i is the part of the **eligible BBI's covered cost** for the **pricing year** during which the application for **reassignment** was received attributable to **grid investment** i, where **grid investment** i is a **grid investment** comprised in the **eligible BBI**

IRF_i is **grid investment** i's **investment reassignment factor**.

(5) **Transpower** may **publish reassignment factor guidance** in the **reassignment practice manual**.

102 Consultation on Draft Decision

(1) Subject to subclause 99(3), **Transpower** must consult with all **customers** on its draft decision to approve or reject an **eligible person's application** for **reassignment**.

(2) Subject to clause 105, **Transpower's** consultation under subclause (1) must include the information specified in paragraphs 104(a), 104(b) and 104(c) for the draft decision.

103 Decision and Independent Review

(1) If **Transpower** approves an **eligible person's application** for **reassignment**, **Transpower** may approve a different **BBI reassignment factor** than sought in the **application**.

(2) **Transpower** must notify the **eligible person** whether **Transpower** approves or rejects the **application**. **Transpower's** notice must include the information specified in paragraphs 104(a), 104(b) and 104(c).

(3) The **eligible person** may, within 60 days of **Transpower** notifying the **eligible person** of **Transpower's** decision on the **application**, refer any aspect of **Transpower's** decision to an **independent expert** for review.

(4) The **independent expert's** decision will be binding on **Transpower** and the **eligible person**, and will have effect as if **Transpower** had made the decision itself, except that the **eligible person** may not refer the decision to an **independent expert** again.

(5) The costs of the **independent expert** must be met by the **eligible person** unless the **independent expert** decides an aspect of **Transpower's** decision under review was unreasonable, in which case **Transpower** may be required to meet all or some of the costs of the **independent expert**, as determined by the **independent expert**.

104 Decision to be Published

Subject to clause 105, as soon as reasonably practicable after the **reassignment confirmation date**, **Transpower** must **publish**—

(a) its decision to approve or reject the **eligible person's application** for **reassignment**; and

(b) if **Transpower** approves the **application**, the **eligible BBI** and its **BBI reassignment factor**; and

(c) **Transpower's** analysis supporting its decision, including any material departures from the assumptions and methodologies in the **reassignment practice manual** and the reason for those departures; and

(d) any report prepared by an **independent expert** relating to the **reassignment**.

105 Commercially Sensitive Information

(1) Subject to subclause (2), **Transpower** is not obliged to **publish** or otherwise disclose any information under subclause 99(4) or 102(2) or clause 104 if—

(a) the **eligible person** identifies the information as commercially sensitive; and

(b) **Transpower** determines the disclosure of the information would be likely to commercially disadvantage the **eligible person** or any other person, in a material manner.

(2) **Transpower** must always **publish** under subclause 102(2) and clause 104 at least—

(a) its draft decision or decision (as the case may be) to approve or reject the **eligible person's application** for **reassignment**; and

(b) if the **application** is approved, the **eligible BBI** and its **BBI reassignment factor**.

106 Reversal

(1) **Transpower** must fully or partially reverse a **reassignment** if—

(a) **Transpower** determines that the **forecast peak loading** of 1 or more of the **grid investments** comprised in the relevant **BBI** have increased such that the **BBI's BBI reassignment factor** has increased; and

(b) the circumstances causing the **BBI reassignment factor** to have increased are sustained; and

(c) at the time of the reversal, the total **closing RAB value** of all **grid assets** comprised in the **BBI** for the most recent complete **financial year** is at least the **reassignment threshold**.

(2) If **Transpower** proposes to fully or partially reverse the **reassignment**—

(a) clause 102 applies as if that clause applied to **Transpower's** draft decision to reverse the **reassignment**;

(b) **Transpower** must **publish** its decision on the reversal, including—

(i) the **BBI's** new **BBI adjustment factor**; and

(ii) **Transpower's** analysis supporting its decision, including any material departures from the assumptions and methodologies in the **reassignment practice manual** and the reason for those departures; and

(c) an **eligible person** for the **BBI** may, within 60 days of **Transpower** publishing its decision on the reversal, refer any aspect of **Transpower's** decision to an **independent expert** for review, in which cases subclauses 103(4) and 103(5) will apply; and

(d) clauses 104 and 105 apply as if those clauses applied to Transpower's decision on the reversal and the **eligible person** referred to in paragraph 105(1)(a) were any **eligible person** who referred **Transpower's** decision to an **independent expert** under paragraph (c).

(3) If **Transpower** determines that the **BBI's BBI reassignment factor** is 0.8 or more, **Transpower** must fully reverse the **reassignment**.

(4) To avoid doubt, all references to the **BBI's BBI reassignment factor** in this clause 106 refer to the **BBI reassignment factor** calculated by reference to the **replacement costs** of the **grid investments** comprised in the **BBI** without any adjustment for their **investment reassignment factors** for the current **reassignment** of the **BBI**.

(5) A full or partial reversal of **reassignment** will have effect from the first **pricing year** that starts at least 6 months (or such shorter period as **Transpower** may determine is practicable) after the **reassignment confirmation date**.

107 Reassignment Practice Manual

(1) **Transpower** may from time to time **publish**, and **publish** updates to, a **reassignment practice manual**.

(2) The **reassignment practice manual** must not contain any assumptions or methodologies that are inconsistent with this Code.

(3) Subject to subclause (4), **Transpower** must consult with all **customers** on the **reassignment practice manual** or any update to it before **publishing** the **reassignment practice manual** or update.

(4) **Transpower** is not required to consult on an update to the **reassignment practice manual** if **Transpower** determines—

(a) the update is technical and non-controversial; or

(b) there is widespread support for the update among **customers**; or

(c) there has been adequate prior consultation on the update so that all relevant views of **customers** have been considered.

(5) The **reassignment practice manual** is not binding on **Transpower** or any **independent expert**.

(6) **Transpower** must review the content of the **reassignment practice manual** and consider whether any of the content is appropriate for incorporation in this **transmission pricing methodology** by way of a review under clause 12.85 of this Code at intervals of no more than 7 years from the start of the **first pricing year**.

(7) The **reassignment practice manual** may be part of the same document in which the **assumptions book** or **prudent discount practice manual** is contained.

Part H Transitional Price Cap

108 Cap and Cap Condition

(1) Despite anything else in this **transmission pricing methodology**, a **capped customer's transmission charges** for each **pricing year** preceding **pricing year** 2038 are reduced by the minimum amount necessary (if any) to ensure the **cap condition** is satisfied for the **capped customer** and **pricing year**.

(2) The **cap condition** for a **pricing year** is:

$$CC - IC_{19} - HVDC_{19} \leq DC$$

where

CC is a **capped customer's capped charges** for the **pricing year**

IC_{19} is the **capped customer's** annual interconnection charge for **pricing year** 2019 under the **previous transmission pricing methodology**

$HVDC_{19}$ is the **capped customer's** annual HVDC charge for **pricing year** 2019 under the **previous transmission pricing methodology**

DC is the **capped customer's difference cap** for the **pricing year**.

(3) A **capped customer's capped charges** include the **capped customer's cap recovery charge**. It is therefore possible the **cap condition** will not be satisfied for the **capped customer** when a **cap recovery charge** is allocated to the **capped customer**. Accordingly, for each **pricing year**, subclause (1) is applied iteratively until the **cap condition** does not result in a reduction in any **capped customer's capped charges** for the **pricing year**. The **cap recovery charge** component of **capped charges** is 0 for the first iteration.

(4) The **cap condition** applies at the start of a **pricing year** only. The **cap condition** is not applied again, and **difference caps** and **cap recovery charges** are not re-calculated, if there is an adjustment to **transmission charges** during the **pricing year**.

(5) The **cap condition** is applied, and the **difference cap** is calculated, subject to any applicable prudent discount agreement entered into under this **transmission pricing methodology** or the **previous transmission pricing methodology**, provided the prudent discount agreement applies or applied at the relevant time.

(6) Despite anything else in this clause 108, the **cap condition** must not result in **Transpower** recovering less than **recoverable revenue** for a **pricing year**. If **Transpower** determines it is necessary to do so, **Transpower** may reduce all **capped customers' cap reductions** for a **pricing year** on a pro rata basis to ensure **Transpower** recovers **recoverable revenue** for the **pricing year** (but not more than **recoverable revenue** for the **pricing year**).

109 Difference Cap

(1) A **capped customer's difference cap** for **pricing year** n (DC_n) is calculated as follows:

$$DC_n = NEB_{19} \times (0.035 + (0.02 \times N) + \Delta CPI_n + \Delta TGE_n)$$

where

NEB_{19} is the **capped customer's** notional **electricity** bill for **pricing year** 2019 calculated under subclause (2)

N is—
(a) if the **capped customer** is a **distributor**, 0; or
(b) if the **capped customer** is a **direct consumer**, the greater of 0 and n-2024

ΔCPI_n is the proportionate change in **CPI** for **pricing year** n calculated under subclause (3)

ΔTGE_n is the proportionate increase (if any) in the **capped customer's total gross energy** for **pricing year** n calculated under subclause (5).

(2) A **capped customer's** notional **electricity** bill for **pricing year** 2019 (NEB_{19}) is calculated as follows:

$$NEB_{19} = LC_{19} + (P_{19} \times TGE_{19})$$

where

LC_{19} is—
(a) if the **capped customer** is a **distributor**, the **capped customer's** "total line charge revenue" for **pricing year** 2019, as disclosed in the **capped customer's** Report on Billed Quantities and Line Charge Revenues (Schedule 8) under the **EDB ID determination** for its disclosure year ended 31 March 2020; or
(b) if the **capped customer** is a **direct consumer**, the **capped customer's** total annual transmission charges for **pricing year** 2019 under the **previous transmission pricing methodology**

P_{19} is the volume weighted average of **final prices** at the **capped customer's connection locations** during **CMP G**, using **gross energy** per **trading period** for weighting

TGE_{19} is the **capped customer's total gross energy** for **pricing year** 2019, being—
(a) if the **capped customer** is a **distributor**, the **capped customer's** "electricity entering system for supply to consumers' connection points" for **pricing year** 2019, as disclosed in the **capped customer's** Report on Network Demand (Schedule 9e) under the **EDB ID determination** for its disclosure year ended 31 March 2020; or
(b) if the **capped customer** is a **direct consumer**, as determined by **Transpower**.

(3) Subject to subclause (4), the proportionate change in **CPI** for **pricing year** n (ΔCPI_n) is calculated as follows:

$$\Delta CPI_n = \frac{CPI_{n-2}}{CPI_{19}} - 1$$

where

CPI is the average of the quarterly **CPIs** for **pricing year** n-2

CPI_{19} is 1041.75, being the average of the quarterly **CPIs** for **pricing year** 2019.

(4) If there is a base adjustment to **CPI**, the calculation in subclause (3) is to include an equivalency adjustment to eliminate the impact of the base adjustment.

(5) The proportionate increase (if any) in a **capped customer's total gross energy** for **pricing year** n (ΔTGE_n) is calculated as follows:

$$\Delta TGE_n = \frac{TGE_{n-2}}{TGE_{19}} - 1$$

where

TGE_n is the **capped customer's total gross energy** for **pricing year** n-2, being—

(a) if the **capped customer** is a **distributor**, the **capped customer's** "electricity entering system for supply to consumers' connection points" for **pricing year** n-2, as disclosed in the **capped customer's** Report on Network Demand (Schedule 9e) under the **EDB ID determination** for its disclosure year ended 31 March of year n-1; or

(b) if the **capped customer** is a **direct consumer**, as determined by **Transpower**.

TGE_{19} is as defined in subclause (2) for the **capped customer**.

110 Cap Recovery Charge

(1) A **customer's annual cap recovery charge** for a **pricing year** (ACRC) is calculated as follows:

$$ACRC = CR_{total} \times \frac{CRRC}{CRRC_{total}}$$

where

CR_{total} is the total of all **customer's cap reductions** for the **pricing year**

CRRC is the **customer's cap recovery-relevant charges** for the **pricing year**

$CRRC_{total}$ is the total of all **customer~~'~~s' cap recovery-relevant charges** for the **pricing year**.

(2) A **customer's monthly cap recovery charge** for a **pricing year** (MCRC) is calculated as follows:

$$MCRC = \frac{ACRC}{12}$$

where ACRC is the **customer's annual cap recovery charge** for the **pricing year**.

Part I Prudent Discount Policy

General

111 Effect of Prudent Discount Agreements

(1) Despite anything else in this **transmission pricing methodology**, a **prudent discount recipient's transmission charges** are subject to its **prudent discount** agreement.

(2) Except as otherwise stated in this **transmission pricing methodology**, allocations of **transmission charges** (other than **prudent discount recovery charges**) and adjustments to those allocations are calculated without regard to the impact of any **prudent discount** agreement on the effective allocations of **transmission charges**.

112 Prudent Discount Applications

(1) If a **customer** wishes to receive a **prudent discount**, the **customer** must submit to **Transpower** a written **application** for the **prudent discount** that meets the requirements of subclause (2).

(2) The **application** must—

(a) contain all of the information described in the relevant **application requirements**; and

(b) contain reasonable evidence that the conditions for obtaining the **prudent discount** are met; and

(c) include at least the level of detail a prudent board of directors of a company would reasonably expect when assessing an investment proposal for the **alternative project** proposed in the **application**; and

(d) be accompanied by an **independent verification** of the **application**.

(3) The **customer** must provide **Transpower** with any additional information **Transpower** determines is necessary to enable it to assess the **application**.

113 Application Screening and Publication

(1) **Transpower** must reject an **application** for a **prudent discount** without assessing the **application** further if the applicant is not a **customer**.

(2) **Transpower** may reject a **customer's application** for a **prudent discount** without assessing the **application** further—

(a) under subclause 16(1); or

(b) if a **customer** has previously applied for a **prudent discount** on substantially the same basis as the new **application** and **Transpower**—

(i) rejected the previous **application**; and

(ii) determines there has not been a change in circumstances since its decision on the previous **application** that materially increases the likelihood of the new **application** being approved.

(3) **Transpower** is not required to consult on any decision to reject an **application** under subclause (1), (2) or 16(1).

(4) Unless **Transpower** rejects an **application** under subclause (1), (2) or 16(1), and subject to clause 122, **Transpower** must **publish** the **application** and any information the **customer** provides to **Transpower** under subclause 112(3).

114 Assessment

(1) In assessing a **customer's application** for a **prudent discount**, **Transpower** is not obliged to use the information the **customer** provided in or in support of the **application**, but must not assess an **alternative project** that is not the **alternative project** proposed in the **application**.

(2) In assessing whether the **alternative project** would provide the same or a substantially similar level of service to the **customer** as the **transmission services** it currently receives, **Transpower** must consider—

(a) access to **electricity**; and
(b) quality of supplied **electricity**; and
(c) reliability and security of supply of **electricity**; and
(d) any other measure of quality for **transmission services Transpower** determines is relevant.

115 Calculation of Alternative Project Costs

(1) The **alternative project costs** for an **alternative project** are the capital, operating, maintenance and overhead costs of the **alternative project**, as would be incurred by:

(a) the **customer**, in the case of an **inefficient bypass prudent discount**; or
(b) an efficient **transmission services** provider, in the case of a **stand-alone cost prudent discount**.

(2) For the purposes of calculating the **alternative project costs**, the value of any increase or decrease in **electrical** losses that would result from the **alternative project** must be included as an operating cost of the **alternative project** (with a decrease being treated as a negative cost).

(3) The **alternative project costs** must be calculated accounting for the impact of the relevant capital, operating, maintenance and overhead costs on the **customer's** or efficient **transmission services** provider's tax liability.

116 Assessment of Commercial Viability

(1) The **alternative project** proposed in a **customer's application** for a **prudent discount** is only commercially viable if it is reasonably likely that:

$$\frac{PVATC - PVAPC}{PVAPC} > 0.1$$

where

PVAPC is the present value of the **alternative project costs** for the **alternative project** calculated under subclause (2)

PVATC is the present value of the **customer's avoided transmission charges** calculated under subclause (2).

(2) In carrying out the present value calculations under subclause (1), **Transpower** must use the formula:

$$PV = \sum_{n} \frac{A_n}{(1+r)^n}$$

where

PV is the present value being calculated

A_n are the **alternative project costs** or **avoided transmission charges** (as the case may be) for year n of the relevant **prudent discount calculation period**

r is the relevant **prudent discount discount rate**.

117 Consultation on Draft Decision

(1) Subject to subclause 113(3), **Transpower** must consult with all **customers** on its draft decision to approve or reject a **customer's application** for a **prudent discount**.

(2) Subject to clause 122, **Transpower's** consultation under subclause (1) must include—
- (a) the information specified in paragraphs 121(a) and 121(c) and subparagraph 121(b)(i) for the draft decision; and
- (b) if **Transpower** proposes to approve the **application**, the terms of the proposed **prudent discount** agreement specified in subparagraphs 122(2)(b)(ii), 122(2)(b)(iii) and 122(2)(b)(iv).

118 Decision and Independent Review

(1) If **Transpower** approves a **customer's application** for a **prudent discount**, **Transpower** may—
- (a) approve different terms of the **prudent discount** than sought in the **application**, including a different amount of the **prudent discount**; and
- (b) approve the **application** subject to reasonable conditions.

(2) **Transpower** must notify the **customer** whether **Transpower** approves or rejects the **application**. **Transpower's** notice must include—
- (a) the information specified in paragraphs 121(a) and 121(c) and subparagraph 121(b)(i); and
- (b) if **Transpower** approves the **application**, the terms of the proposed **prudent discount** agreement specified in subparagraphs 122(2)(b)(ii), 122(2)(b)(iii) and 122(2)(b)(iv).

(3) The **customer** may, within 60 days of **Transpower** notifying the **customer** of **Transpower's** decision on the **application**, refer any aspect of **Transpower's** decision to an **independent expert** for review.

(4) The **independent expert's** decision will be binding on **Transpower** and the **customer**, and will have effect as if **Transpower** had made the decision itself, except that the **customer** may not refer the decision to an **independent expert** again.

(5) The costs of the **independent expert** must be met by the **customer** unless the **independent expert** decides an aspect of **Transpower's** decision under review was unreasonable, in which case **Transpower** may be required to meet all or some of the costs of the **independent expert**, as determined by the **independent expert**.

119 Prudent Discount Agreement

(1) If **Transpower** approves a **customer's application** for a **prudent discount**, **Transpower** must promptly offer a **prudent discount** agreement to the **customer**.

(2) A **prudent discount** agreement must provide for—

(a) the **customer** to pay **Transpower** an annuity, calculated under clause 120, in monthly instalments; and
(b) **Transpower** to calculate the **customer's transmission charges** in accordance with clause 129 or 134, as applicable; and
(c) **Transpower** to have the right to terminate the **prudent discount** agreement immediately if any of the conditions of **Transpower's** approval is not, or ceases to be, satisfied; and
(d) if the **prudent discount** agreement is for a **stand-alone cost prudent discount**, the **customer** to have the right to terminate the **prudent discount** agreement at the start of a **pricing year** by notifying **Transpower** at least 6 months before the start of the **pricing year**.

(3) The term of the **prudent discount** agreement must be the same as the relevant **prudent discount calculation period**, subject to earlier termination in accordance with the terms of the **prudent discount** agreement. To avoid doubt the term of the **prudent discount** agreement must start on the **prudent discount's start pricing year**.

120 Calculation of Annuity

The annuity under a **prudent discount** agreement (AN) is levelised and calculated as follows:

$$AN = \frac{APC}{\sum_{n=1}^{N} \frac{1}{(1+r)^n}}$$

where

N is the number of years in the relevant **prudent discount calculation period**, with each such year being year n

APC is the present value of the **alternative project costs** for the relevant **alternative project** calculated under subclause 116(2)

r is the relevant **prudent discount discount rate**.

121 Decision to be Published

Subject to clause 122, as soon as reasonably practicable after the **prudent discount confirmation date**, **Transpower** must **publish**—
(a) its decision to approve or reject the **customer's application** for the **prudent discount**; and
(b) if **Transpower** approves the **application**—
  (i) any conditions of its approval; and
  (ii) a copy of the relevant **prudent discount** agreement; and
(c) its analysis supporting its decision, including any material departures from the assumptions and methodologies in the **prudent discount practice manual** and the reason for those departures; and
(d) any report prepared by an **independent expert** relating to the **prudent discount**.

122 Commercially Sensitive Information

(1) Subject to subclause (2), **Transpower** is not obliged to **publish** any information under subclause 113(4) or 117(2) or clause 121 if—
(a) the **customer** identifies the information as commercially sensitive; and

(b) **Transpower** determines the disclosure of the information would be likely to commercially disadvantage the **customer** or any other person, in a material manner.

(2) **Transpower** must always **publish** under subclause 117(2) and clause 121 at least—
(a) its draft decision or decision (as the case may be) to approve or reject the **customer's application** for the **prudent discount**; and
(b) if **Transpower** approves the application—
(i) details of the **alternative project** and **alternative project costs**; and
(ii) the annuity under the **prudent discount** agreement and details of how it was calculated; and
(iii) details of how the **prudent discount recipient's transmission charges** will be calculated under the **prudent discount** agreement; and
(iv) the term of the **prudent discount** agreement.

123 Prudent Discount Practice Manual

(1) **Transpower** may from time to time **publish**, and **publish** updates to, a **prudent discount practice manual**.

(2) The **prudent discount practice manual** must not contain any assumptions or methodologies that are inconsistent with this Code.

(3) Subject to subclause (4), **Transpower** must consult with all **customers** on the **prudent discount practice manual** or any update to it before **publishing** the **prudent discount practice manual** or update.

(4) **Transpower** is not required to consult on an update to the **prudent discount practice manual** if **Transpower** determines—
(a) the update is technical and non-controversial; or
(b) there is widespread support for the update among **customers**; or
(c) there has been adequate prior consultation on the update so that all relevant views of **customers** have been considered.

(5) The **prudent discount practice manual** is not binding on **Transpower** or any **independent expert**.

(6) **Transpower** must review the content of the **prudent discount practice manual** and consider whether any of the content is appropriate for incorporation in this **transmission pricing methodology** by way of a review under clause 12.85 of this Code at intervals of no more than 7 years from the start of the **first pricing year**.

(7) The **prudent discount practice manual** may be part of the same document in which the **assumptions book** or **reassignment practice manual** is contained.

Inefficient Bypass Prudent Discount

124 Purpose of Inefficient Bypass Prudent Discount

The purpose of an **inefficient bypass prudent discount** is to help ensure this **transmission pricing methodology** does not provide incentives for a **customer** to invest in an **alternative project** that would allow a **customer** to reduce its own **transmission charges**, by bypassing existing **grid assets**, while increasing total economic costs.

125 Multiple Benefitting Customers

If there is more than 1 **benefitting customer** for an **application** for an **inefficient bypass prudent discount**—

(a) all references to the applicant **customer** or **prudent discount recipient** in clauses 111 to 129 and 135 are deemed to include every **benefitting customer**; and

(b) without limiting paragraph (a)—

(i) the commercial viability test in clause 116 must be applied using the total **avoided transmission charges** of all **benefitting customers**; and

(ii) the inefficiency test in subclause 127(2) must be applied using **Transpower's** costs of providing **transmission services** to all **benefitting customers**; and

(c) the highest **prudent discount discount rate** across the **benefitting customers** applies to the **application**.

126 Assessment of Equivalence, Feasibility and Commercial Viability

Transpower must assess whether the **alternative project** for an **inefficient bypass prudent discount**—

(a) would provide the **customer** with the same or a substantially similar level of service as the **transmission services** provided by the **grid assets** the **alternative project** would bypass; and

(b) is technically feasible using present day technology and construction methods, including that it is feasible for the **customer** to obtain the necessary resource consents and property rights for the **alternative project**; and

(c) is operationally feasible, including that the **alternative project** is compliant with applicable **asset owner performance obligations**, **technical codes** and any other requirements in Part 8 of this Code; and

(d) is otherwise consistent with **GEIP**; and

(e) is commercially viable under subclause 116(1).

127 Assessment whether the Alternative Project is Inefficient

(1) If **Transpower** determines the **alternative project** for an **inefficient bypass prudent discount** satisfies all of the criteria in clause 126, **Transpower** must assess whether the **alternative project** is inefficient under subclause (2).

(2) The **alternative project** is only inefficient if it is reasonably likely that—

$$PVAPC > \left(PVTC_{no\ ap} - PVTC_{ap}\right)$$

where

PVAPC is the present value of the capital, operating, maintenance and overhead costs of the **alternative project**, including, but not limited to, the **alternative project costs**

$PVTC_{no\ ap}$ is the present value of **Transpower's** capital, operating, maintenance and overhead costs of providing **transmission services** to the **customer** at the required service levels, including the cost of future **grid investments**, without the **alternative project** calculated under subclause (3)

$PVTC_{ap}$ is the present value of **Transpower's** capital, operating, maintenance and overhead costs of providing **transmission services** to the **customer** at the required service levels, including the cost of future **grid investments**, with the **alternative project** calculated under subclause (3).

(3) In carrying out the present value calculations under subclause (2), **Transpower** must use the formula:

$$PV = \sum_{n} \frac{C_n}{(1+r)^n}$$

where

PV is the present value being calculated

C_n is the relevant costs for year n of the relevant **prudent discount calculation period**

r is the relevant **prudent discount discount rate**.

128 Approval or Rejection of Inefficient Bypass Prudent Discount Application

(1) **Transpower** must approve a **customer's application** for an **inefficient bypass prudent discount** if **Transpower** determines—

(a) the **alternative project** for the **application** satisfies all of the criteria in clause 126; and

(b) the **alternative project** is inefficient under subclause 127(2).

(2) Otherwise, **Transpower** must reject the **application**.

129 Impact on Transmission Charges

A **prudent discount** agreement for an **inefficient bypass prudent discount** must provide for **Transpower** to calculate the **prudent discount recipient's transmission charges** during the term of the **prudent discount** agreement as if the relevant **alternative project** had been implemented, assuming none of its **alternative project costs** would be recovered through **transmission charges**.

Stand-alone Cost Prudent Discount

130 Purpose of Stand-alone Cost Prudent Discount

The purpose of a **stand-alone cost prudent discount** is to help ensure this **transmission pricing methodology** does not result in a **customer** paying **transmission charges** that exceed the efficient stand-alone cost of the **transmission services** the **customer** receives from **interconnection assets**.

131 Assessment of Equivalence, Feasibility and Commercial Viability

(1) **Transpower** must assess whether the **alternative project** for a **stand-alone cost prudent discount**—

(a) is an **efficient stand-alone investment** that would provide the **customer** with the same or a substantially similar level of service as the **transmission services** the **customer** currently receives; and

(b) subject to subclause (2), is technically feasible using present day technology and construction methods; and

(c) is operationally feasible, including that the **alternative project** is compliant with applicable **asset owner performance obligations**, **technical codes** and any other requirements in Part 8 of this Code; and

(d) is otherwise consistent with **GEIP**; and

(e) is commercially viable under clause 116.

(2) The **alternative project** is technically feasible even if it is not feasible to obtain any or all of the necessary resource consents and property rights for the **alternative project**, provided the **alternative project** is technically feasible in all other respects. In calculating the **alternative project costs**, **Transpower** must use estimates of the likely cost of obtaining any resource consents and property rights that are not feasible to obtain based on the cost of obtaining broadly equivalent resource consents and property rights for feasible activities in feasible locations.

132 Assessment of Efficient Stand-alone Investment

(1) An **efficient stand-alone investment** is an investment in the **grid** or a **transmission alternative** an efficient **transmission services** provider would make to supply **transmission services** solely to the **customer** who has applied for a **stand-alone cost prudent discount**, assessed by—

(a) using the existing **grid** and the **customer's** existing **points of connection** to the **grid** as a starting point; and

(b) holding **connection assets** constant; and

(c) applying optimisation tests to **interconnection assets** to identify, in the single-**customer** hypothetical, stranded **interconnection assets**, excess **capacity** in **interconnection assets** and other **interconnection asset** over-engineering.

(2) An **efficient stand-alone investment** does not need to be in the same location or follow the same route as the existing **grid**.

133 Approval or Rejection of Stand-alone Cost Prudent Discount Application

(1) **Transpower** must approve a **customer's application** for a **stand-alone cost prudent discount** if **Transpower** determines the **alternative project** for the **application** satisfies all of the criteria in subclause 131(1).

(2) Otherwise, **Transpower** must reject the **application**.

134 Impact on Transmission Charges

A **prudent discount** agreement for a **stand-alone cost prudent discount** must provide for the **prudent discount recipient's benefit-based charges** to be 0 during the term of the **prudent discount** agreement.

Commented [A40]: See refer-back letter.

Prudent Discount Recovery

135 Prudent Discount Recovery Charges

(1) Subject to subclause (3), **customer** c's **BBI prudent discount recovery charge** for **discounted BBI** b and a **pricing year** ($BPDS_{cb}$), where **customer** c is a **beneficiary** of **discounted BBI** b and not the **prudent discount recipient**, is calculated as follows:

$$BPDS_{cb} = (PD - A) \times \frac{BBC_{recipient\ b}}{\sum_k BBC_{recipient\ k} + RC_{recipient}} \times \frac{BBC_{cb}}{\sum_j BBC_{jb}}$$

where

PD is the amount of the relevant **prudent discount** for the **pricing year**

A is the annuity payable by the **prudent discount recipient** for the **prudent discount** and **pricing year**

$BBC_{recipient\ b}$ is the **prudent discount recipient's benefit-based charge** for **discounted BBI** b and the **pricing year** without the **prudent discount**

$BBC_{recipient\ k}$ is the **prudent discount recipient's benefit-based charge** for **discounted BBI** k for the **pricing year** without the **prudent discount**, where **discounted BBI** k is a **discounted BBI** for the **prudent discount** (including **discounted BBI** b)

$RC_{recipient}$ is—

(a) if the **prudent discount** includes any discount to the **prudent discount recipient's residual charge** or **connection charges**, the **prudent discount recipient's residual charge** for the **pricing year** without the **prudent discount**; or

(b) otherwise, 0

BBC_{cb} is **customer** c's **benefit-based charge** for **discounted BBI** b and the **pricing year**

BBC_{jb} is **customer** j's **benefit-based charge** for **discounted BBI** b and the **pricing year**, where **customer** j is a **beneficiary** of **discounted BBI** b and not the **prudent discount recipient** (including **customer** c).

(2) Subject to subclause (3), **customer** c's **residual prudent discount recovery charge** for a **prudent discount** and **pricing year** ($RPDS_c$), where **customer** c is a **load customer** and not the **prudent discount recipient**, is calculated as follows:

$$RPDS_c = (PD - A - BPDS) \times \frac{RC_c}{\sum_j RC_j}$$

where

PD is the amount of the **prudent discount** for the **pricing year**

A is the annuity payable by the **prudent discount recipient** for the **prudent discount** and **pricing year**

BPDS is the total amount of the **prudent discount** to be recovered through **BBI prudent discount recovery charges** for the **pricing year**

RC_c is **customer** c's **residual charge** for the **pricing year**

RC_j is **customer** j's **residual charge** for the **pricing year**, where **customer** j is not the **prudent discount recipient** (including **customer** c).

(3) The minimum value of a **BBI prudent discount recovery charge** or **residual prudent discount recovery charge** is 0.

(4) A **customer's annual prudent discount recovery charge** for a **pricing year** (APDRC) is the sum of the **customer's BBI prudent discount recovery charges** and **residual prudent discount recovery charges** for the **pricing year**.

(5) A **customer's monthly prudent discount recovery charge** for a **pricing year** (MPDRC) is calculated as follows:

$$MPDRC = \frac{APDRC}{12}$$

where APDRC is the **customer's annual prudent discount recovery charge** for the **pricing year**.

(6) **Prudent discount recovery charges** are calculated at the start of a **pricing year** only. **Prudent discount recovery charges** are not re-calculated if there is an adjustment to **transmission charges** during the **pricing year**.

Appendix A – Appendix A BBIs and Starting BBI Customer Allocations

Customer	Bunnythorpe Haywards	HVDC	LSI Reliability	LSI Renewables	NIGU	Wairakei Ring	UNIDRS
Alpine Energy Ltd	3.07%	0.85%	1.50%	2.99%	0.30%	0.24%	0.30%
Aurora Energy Ltd	5.64%	1.57%	0.90%	4.49%	0.30%	0.27%	0.30%
Beach Energy Resources NZ (Holdings) Ltd	0.03%	0.07%	0.10%	0.08%	0.03%	0.04%	0.03%
Buller Electricity Ltd	0.26%	0.08%	0.08%	0.19%	0.01%	0.01%	0.01%
Centralines Ltd	0.07%	0.21%	0.24%	0.17%	0.05%	0.01%	0.05%
Contact Energy Ltd	2.08%	12.56%	24.07%	0.09%	5.90%	21.39%	5.90%
Counties Power Ltd	0.31%	1.06%	1.08%	0.85%	2.60%	1.42%	2.60%
Daiken Southland Ltd	0.27%	0.09%	1.39%	0.28%	0.02%	0.02%	0.02%
EA Networks	1.68%	0.51%	0.76%	1.71%	0.26%	0.15%	0.26%
Eastland Network Ltd	0.17%	0.35%	0.57%	0.41%	0.05%	0.00%	0.05%
Electra Ltd	2.71%	0.79%	0.95%	0.67%	0.34%	0.15%	0.34%
Genesis Energy Ltd	1.20%	3.23%	0.00%	0.03%	3.63%	7.69%	3.63%
GTL Energy New Zealand Ltd	0.00%	0.00%	0.01%	0.00%	0.00%	0.00%	0.00%
Horizon Energy Distribution Ltd	0.23%	0.24%	0.37%	0.43%	0.04%	0.00%	0.04%

Customer	Bunnythorpe Haywards	HVDC	LSI Reliability	LSI Renewables	NIGU	Wairakei Ring	UNIDRS
KiwiRail Holdings Ltd	0.03%	0.07%	0.11%	0.08%	0.20%	0.12%	0.20%
Mainpower New Zealand Ltd	3.17%	0.88%	1.28%	2.95%	0.24%	0.20%	0.24%
Marlborough Lines Ltd	2.01%	0.45%	0.87%	1.88%	0.15%	0.13%	0.15%
MEL (Te Apiti) Ltd	0.11%	0.01%	0.00%	0.00%	0.09%	0.00%	0.09%
MEL (West Wind) Ltd	0.00%	0.08%	0.00%	0.00%	0.20%	0.00%	0.20%
Mercury NZ Ltd	0.69%	0.06%	0.08%	0.07%	6.76%	10.73%	6.76%
Mercury SPV Ltd	0.45%	0.01%	0.00%	0.00%	0.28%	0.00%	0.28%
Meridian Energy Ltd	0.12%	33.65%	1.10%	0.05%	7.01%	0.00%	7.01%
Methanex New Zealand Ltd	0.03%	0.06%	0.09%	0.07%	0.03%	0.04%	0.03%
Nelson Electricity Ltd	0.28%	0.06%	0.12%	0.23%	0.02%	0.02%	0.02%
Network Tasman Ltd	3.02%	0.71%	1.34%	2.57%	0.20%	0.17%	0.20%
Network Waitaki Ltd	1.12%	0.36%	0.52%	2.17%	0.13%	0.08%	0.13%
New Zealand Steel Ltd	0.30%	0.50%	0.96%	0.85%	2.45%	1.34%	2.45%
Nga Awa Purua Joint Venture	0.00%	0.00%	0.00%	0.00%	0.97%	8.06%	0.97%

Customer	Bunnythorpe Haywards	HVDC	LSI Reliability	LSI Renewables	NIGU	Wairakei Ring	UNIDRS
Ngatamariki Geothermal Ltd	0.01%	0.00%	0.00%	0.00%	0.58%	4.89%	0.58%
Norske Skog Tasman Ltd	0.00%	0.00%	0.00%	0.00%	0.18%	2.48%	0.18%
Northpower Ltd	0.66%	1.13%	2.17%	1.79%	5.94%	2.92%	5.94%
Nova Energy Ltd	0.04%	0.00%	0.00%	0.00%	0.03%	0.00%	0.03%
NZ Aluminium Smelters Ltd	21.77%	7.26%	2.13%	23.65%	1.59%	1.62%	1.59%
OMV New Zealand Production Ltd	0.34%	0.01%	0.00%	0.00%	0.21%	0.00%	0.21%
Orion New Zealand Ltd	18.00%	4.89%	7.19%	14.73%	1.14%	1.00%	1.14%
Pan Pac Forest Product Ltd	0.34%	0.47%	0.77%	0.69%	0.10%	0.00%	0.10%
Powerco Ltd	3.97%	6.26%	8.59%	6.71%	1.90%	3.61%	1.90%
Powernet Ltd	5.31%	1.38%	10.58%	6.34%	0.38%	0.35%	0.38%
Scanpower Ltd	0.04%	0.15%	0.17%	0.12%	0.03%	0.03%	0.03%
Southdown Cogeneration Ltd	0.00%	0.00%	0.00%	0.00%	0.01%	0.00%	0.01%
Southern Generation GP Ltd	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Southpark Utilities Ltd	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

Customer	Bunnythorpe Haywards	HVDC	LSI Reliability	LSI Renewables	NIGU	Wairakei Ring	UNIDRS
Tararua Wind Power	0.26%	0.01%	0.00%	0.00%	0.16%	0.00%	0.16%
The Lines Company Ltd	0.16%	0.36%	0.47%	0.37%	0.18%	0.49%	0.18%
Todd Generation Taranaki Ltd	0.49%	0.18%	0.00%	0.03%	0.52%	0.00%	0.52%
Top Energy Ltd	0.00%	0.24%	0.00%	0.00%	1.08%	0.52%	1.08%
Trustpower Ltd	0.09%	0.66%	0.02%	0.17%	0.16%	1.15%	0.16%
Unison Networks Ltd	0.63%	1.34%	2.20%	1.60%	0.16%	0.00%	0.16%
Vector Ltd	5.44%	10.77%	19.03%	14.41%	50.86%	24.57%	50.86%
Waipa Networks Ltd	0.25%	0.59%	0.81%	0.64%	0.33%	1.02%	0.33%
Waverley Wind Farm	0.27%	0.01%	0.00%	0.00%	0.17%	0.00%	0.17%
WEL Networks Ltd	0.51%	1.13%	1.82%	1.41%	1.12%	2.38%	1.12%
Wellington Electricity Lines Ltd	11.69%	4.24%	4.92%	3.22%	0.82%	0.66%	0.82%
Westpower Ltd	0.39%	0.09%	0.18%	0.45%	0.04%	0.03%	0.04%
Whareroa Cogeneration Ltd	0.10%	0.03%	0.00%	0.00%	0.02%	0.00%	0.02%
Winstone Pulp International	0.16%	0.29%	0.43%	0.36%	0.07%	0.00%	0.07%