Part 1
Preliminary provisions

~~**annual consumption list** means the list **published** by the **market administrator** in accordance with clause 13.188~~

~~**back-up metering information** means **half-hour metering information** from any alternative **metering installation** that measures the same flow of **electricity** at the relevant **grid exit points** and **grid injection points** as would have been given under clause 13.166(1)(b)~~

~~**bound**, in relation to a **transmission security constraint**, means that the flow of **electricity** through 1 or more transmission **lines** or transformers is equal to or greater than the **transmission security constraint** applied to those transmission **lines** or transformers, and **bind** has a corresponding meaning~~

~~**check metering information** means **half-hour metering information** from a **meter**, located at the **grid exit point** or **grid injection point** that gives equivalent information, but not necessarily of the same accuracy, as the relevant **grid exit point** or **grid injection point** **meter**~~

~~**constraint price**, in relation to a transmission security constraint, means the amount in dollars and cents per **MW** per hour by which the objective function described in clause 8 of schedule 13.3 is increased by relaxing the transmission security constraint by a very small amount~~

dispatch means the process of—
(a)   pre-dispatch scheduling, to match expected **supply** with expected **demand**, and to allocate **ancillary service offers** and transmission **offers** to match expected **grid** conditions; and
(b)   rescheduling to meet forecast **demand**; and
(c)   issuing instructions <u>and notifications</u> based on the **dispatch schedule** and the real-time conditions to manage resources to meet the actual **demand**,—
    and **dispatching** has a corresponding meaning

<u>**dispatch marginal location factor** means the factor that is determined by dividing the **dispatch price** at any **grid exit point** or **grid injection point** by the **dispatch price** at the relevant **reference point**</u>

<u>**dispatch notification** means a notification to a **dispatch notification purchaser** made by the **system operator** under clause 13.72(1)(b)</u>

<u>**dispatch notification purchaser** means a **dispatchable load purchaser** that has specified under clause 1(ba) of Schedule 13.8 that it intends to operate a **dispatch-capable load station** as a **dispatch notification purchaser**</u>

dispatch price means a price in dollars and cents for each **grid injection point**, each **grid exit point**, and each **reference point**, as specified in the **dispatch schedule**

dispatch reserve price means a price in dollars and cents for **fast instantaneous** and **sustained instantaneous reserve** for each **island**, as specified in the **dispatch schedule**

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equivalent day means the day of a previous week corresponding to the day for which an **initial estimate** or **final estimate** is required to be made. However, if the day is a **national holiday**, the **equivalent day** will be deemed to be the previous Sunday. If the day for which an **initial estimate** is required to be made is a **business day**, but the corresponding day of the previous week is a **national holiday**, the **equivalent day** is deemed to be the next earlier corresponding day that is not a **national holiday**

error claimant means a person who—
(a) considers that prices contain a **pricing error**; and
(b) claims, in accordance with subpart 4 of Part 13, that a **pricing error** has occurred

final estimate means the mean of the metering data for each of the previous 4 **equivalent days** for the relevant **trading period** weighted in accordance with the quantity of **electricity** sold in the relevant **trading period** on the **equivalent days** in the relevant **island** as determined in accordance with the following formula:

$$\frac{Eday_4 + Eday_3 + Eday_2 + Eday_1}{4} \times \left\{ \frac{(IslandLoad_0)}{\dfrac{IslandLoad_4 + IslandLoad_3 + IslandLoad_2 + IslandLoad_1}{4}} \right\}$$

where

$Eday_1$ is the quantity of **electricity** measured at the relevant **metering installation** in kWh for the **trading period** of the **equivalent day** 1 week before the **trading day** for which the estimate is required

$Eday_2$ is the quantity of **electricity** measured at the relevant **metering installation** in kWh for the **trading period** of the **equivalent day** 2 weeks before the **trading day** for which the estimate is required

$Eday_3$ is the quantity of **electricity** measured at the relevant **metering installation** in kWh for the **trading period** of the **equivalent day** 3 weeks before the **trading day** for which the estimate is required

$Eday_4$ is the quantity of **electricity** measured at the relevant **metering installation** in kWh for the **trading period** of the **equivalent day** 4 weeks before the **trading day** for which the estimate is required

$Island\ Load_0$ means the quantity of **electricity**, measured in kWh, for the relevant **trading period** (as measured before the commencement of the calculation of this estimate) supplied in the **island** in which the relevant **metering installation** is located, less any measurement taken at any **metering installation** for which an estimate is being obtained for the same **trading period** and **island**

$Island\ Load_1$ means the quantity of **electricity**, measured in kWh, for the **trading period** of the **equivalent day** 1 week before the **trading day** for which the estimate is required (as measured before the commencement of the calculation of this estimate) supplied in the **island** in which the relevant **metering installation** is located, less any measurement taken at any **metering installation** for which an estimate is being obtained for the same **trading period** and **island**

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Island Load$_2$ ~~means the quantity of~~ **electricity**~~, measured in kWh, for the~~ **trading period** ~~of the~~ **equivalent day** ~~2 weeks before the~~ **trading day** ~~for which the estimate is required (as measured before the commencement of the calculation of this estimate) supplied in the~~ **island** ~~in which the relevant~~ **metering installation** ~~is located, less any measurement taken at any~~ **metering installation** ~~for which an estimate is being obtained for the same~~ **trading period** ~~and~~ **island**

Island Load$_3$ ~~means the quantity of~~ **electricity**~~, measured in kWh, for the~~ **trading period** ~~of the~~ **equivalent day** ~~3 weeks before the~~ **trading day** ~~for which the estimate is required (as measured before the commencement of the calculation of this estimate) supplied in the~~ **island** ~~in which the relevant~~ **metering installation** ~~is located, less any measurement taken at any~~ **metering installation** ~~for which an estimate is being obtained for the same~~ **trading period** ~~and~~ **island**

Island Load$_4$ ~~means the quantity of~~ **electricity**~~, measured in kWh, for the~~ **trading period** ~~of the~~ **equivalent day** ~~4 weeks before the~~ **trading day** ~~for which the estimate is required (as measured before the commencement of the calculation of this estimate) supplied in the~~ **island** ~~in which the relevant~~ **metering installation** ~~is located, less any measurement taken at any~~ **metering installation** ~~for which an estimate is being obtained for the same~~ **trading period** ~~and~~ **island**

final price means an **interim price** that becomes a **final price** ~~in dollars and cents for each~~ **grid injection point**~~,~~ ~~each~~ **grid exit point** ~~and each~~ **reference point** ~~determined~~ in accordance with ~~the methodology specified by~~ clause 13.182A or 13.182B ~~13.135~~

final reserve price means an **interim reserve price** that becomes a **final reserve price** ~~the price calculated in dollars and cents for~~ **fast instantaneous reserve** ~~and~~ **sustained instantaneous reserve** ~~determined in each~~ **island** in accordance with ~~the methodology specified by~~ clause 13.182A or 13.182B ~~13.135~~

gate closure period, in relation to a **trading period** for which a **generator** or **ancillary service agent** has submitted an **offer** or **reserve offer**, or for which a **dispatchable load purchaser** has submitted a **nominated dispatch bid**, means—

(a)   the **trading period** to which the **offer** or **reserve offer** relates, and the **trading period** immediately preceding th~~e~~at **trading period** ~~to which the~~ **offer** ~~or~~ **reserve offer** ~~relates,~~ for—
  (i)   an **embedded generator**:
  (ii)   an **intermittent generator**:
  (iii)   an **ancillary service agent** that is also an **embedded generator**; and

(b)   the **trading period** to which the **offer, reserve offer**, or **nominated dispatch bid** relates, and the 2 **trading periods** immediately preceding th~~e~~at **trading period** ~~to which the~~ **offer, reserve offer** ~~or~~ **nominated dispatch bid** ~~relates,~~ for—
  (i)   any other **generator**:
  (ii)   any other **ancillary service agent**:
  (iii)   a **dispatchable load purchaser**

~~**half-hour metering information**~~—
~~(a)   means information describing the quantity of~~ **electricity** ~~conveyed in each~~ **trading period** ~~that is—~~
  ~~(i)   recorded directly by a~~ **metering installation**~~; or~~

      (ii) ~~calculated or estimated using information recorded directly by a~~ **~~metering~~** **~~installation~~**~~; and~~

(b) ~~in respect of a~~ **~~generator~~** ~~that is selling~~ **~~electricity~~** ~~to the~~ **~~clearing manager~~** ~~and other persons at the same~~ **~~grid injection point~~** ~~in the same~~ **~~trading period~~**~~, includes the file recording the quantity of~~ **~~electricity~~** ~~sold to the~~ **~~clearing manager~~** ~~during each such~~ **~~trading period~~** ~~constructed in accordance with~~ **~~dispatch instructions~~** ~~issued by the~~ **~~system operator~~** ~~under this Code.~~

~~high spring washer price relaxation factor~~ ~~means, in relation to a~~ **~~high spring washer price situation~~** ~~in a~~ **~~trading period~~**~~, 1~~**~~MW~~**

~~high spring washer price situation~~ ~~means a situation in a~~ **~~trading period~~** ~~in which —~~
~~(a) 1 or more~~ **~~transmission security constraints~~** ~~bind; and~~
~~(b) the~~ **~~software~~** ~~used by the~~ **~~pricing manager~~** ~~to calculate provisional prices, interim prices, and final prices (or used by the~~ **~~system operator~~** ~~to determine, under clause 13.134(4), whether a~~ **~~high spring washer price situation~~** ~~still exists) calculates a price for electricity at any~~ **~~grid injection point~~** ~~or~~ **~~grid exit point~~**~~, excluding~~ **~~grid injection points~~** ~~and~~ **~~grid exit points~~** ~~that are disconnected, that is equal to or greater than the product of the~~ **~~high spring washer price trigger ratio~~** ~~and the highest unconstrained cleared offer price in that~~ **~~trading period~~**

~~high spring washer price situation methodology~~ ~~means the methodology described in clauses 13.134(2) and 13.134(4)~~

~~high spring washer price trigger ratio~~ ~~means the ratio in clause 13.133~~

~~historical annual consumption~~ ~~means the annual consumption of a~~ **~~grid exit point~~** ~~or~~ **~~grid injection point~~** ~~for the 12-month period ended 3 months preceding publication of the~~ **~~annual consumption list~~**

~~infeasibility situation~~ ~~means a situation where the~~ **~~software~~** ~~used to determine~~ **~~final prices~~** ~~and~~ **~~final reserve prices~~** ~~calculates a model variable with a value (either positive or negative) as set out in the list given to the~~ **~~pricing manager~~** ~~under Schedule 13.2~~

~~initial estimate~~ ~~means an estimate of~~ **~~metering information~~** ~~to be made by giving the~~ **~~metering information~~** ~~of all~~ **~~participants~~** ~~of the~~ **~~equivalent day~~** ~~of the previous week~~

~~input information~~ ~~means information given to the~~ **~~pricing manager~~** ~~in accordance with clause 13.141~~

interim price means a price in dollars and cents for each **grid injection point** and each **grid exit point**, determined in accordance with the methodology specified in clause <u>13.134A, and includes a revised **interim price published** by the **clearing manager** under clause 13.177(b)</u>~~13.135~~

interim reserve price means a price in dollars and cents for **fast ~~instantaenous~~<u>instantaneous</u> reserve** and **sustained instantaneous reserve**, determined in each **island** in accordance with <u>the</u> methodology specified in clause <u>13.134A, and includes a revised **interim reserve price published** by the **clearing manager** under clause 13.177(b)</u>~~13.135~~

~~island GWAP~~ ~~means the generation weighted average price for an~~ **~~island~~** ~~for a~~ **~~trading period~~** ~~calculated in accordance with clause 1(2) of Schedule 13.3A~~

~~**island scarcity pricing situation** means a situation determined to be an island scarcity pricing situation by the **pricing manager** under clause 13.135A(3)~~

~~**island shortage situation** means a situation specified in a notice to be an **island**-wide shortage by the **system operator** under clause 5(1A) of **Technical Code** B of Schedule 8.3~~

~~**loss adjusted demand** means the total demand determined by taking all actual demand **half-hour metering information** given to the **pricing manager** under clause 13.138 and multiplying the total by 1.05~~

~~**metering situation** means a situation in which—~~
~~(a) the **metering information** to be given is incomplete or incorrect or is and remains an **initial estimate** for—~~
~~(i) a **grid exit point** or **grid injection point** specified on the **annual consumption list** as having **historical annual consumption** greater than 500 GWh; or~~
~~(ii) any 2 or more **grid exit points** or **grid injection points** specified on the **annual consumption list** as having **historical annual consumption** greater than 300 GWh; or~~
~~(iii) any 10 or more **grid exit points** or **grid injection points**; or~~
~~(iv) an **intermittent generating station** with a **point of connection** to the **grid**; or~~
~~(v) a **type B industrial co-generating station** with a **point of connection** to the **grid**; or~~
~~(b) the **metering information** for a **dispatch-capable load station** given for a **trading period** is incomplete or incorrect or is and remains an **initial estimate** for a **grid exit point** at which a **nominated dispatch bid** has been submitted for the **trading period**~~

~~**national GWAP** means the generation weighted average price for both **islands** for a **trading period** calculated in accordance with clause 2(2) of Schedule 13.3A~~

~~**national scarcity pricing situation** means a situation determined to be a national scarcity pricing situation by the **pricing manager** under clause 13.135A(4)~~

~~**national shortage situation** means concurrent **island shortage situations** in the North Island and the South Island~~

~~**net grid exit point** means any **grid exit point** or **grid injection point** that is not a **net grid injection point**~~

~~**net grid injection point** means a **grid exit point** or **grid injection point** for which the most recent information provided by the **grid owner** under clauses 13.141(1)(b) and 13.166 is less than or equal to 0~~

~~**offer stack** means the stack generated from ranking in price order, from lowest to highest, all **offers** to sell **electricity** as given to the **pricing manager** under clause 13.141(1)(c)~~

pricing error means an <u>error in an</u> **interim price** or **interim reserve price** ~~is incorrect or is likely to be incorrect,~~ as a<u>the</u> result of—
(a) an incorrect input being used in calculating the **interim price** or **interim reserve price**; or
(b) the ~~**pricing**~~ <u>**clearing**</u> **manager** having followed an incorrect process in calculating that **interim price** or **interim reserve price**, in contravention of this Code

pricing manager ~~means the **market operation service provider** who is for the time being appointed as pricing manager under this Code~~

provisional marginal location factor ~~means the factor that is determined by dividing the **provisional price** at a **grid exit point** or **grid injection point** by the **provisional price** at the relevant **reference point**~~

provisional price ~~means a price in dollars and cents that has been **published** based on data relating to a **provisional price situation**. When a **provisional price** is **published**, the **provisional price** applies to all **trading periods** on the relevant **trading day**~~

provisional price situation ~~means a **metering situation**, or a **SCADA situation**, or an **infeasibility situation**, or a **high spring washer price situation**~~

provisional reserve price ~~means a price calculated in dollars and cents that has been **published** based on data relating to a **provisional price situation**~~

real time price ~~means a price for **electricity** at a **grid exit point** or a **grid injection point**, and the price for **instantaneous reserve** in dollars and cents for the **real time pricing period** determined in accordance with clause 13.88~~

real time pricing period ~~means a period of 5 minutes starting on the hour or any multiple of 5 minutes past the hour on any **trading day**~~

relevant registration factor ~~means the mean difference over time between **metering installation** readings and **check metering information** readings at the relevant **grid exit point**~~

SCADA situation ~~means a situation where the **input information** to be given under clause 13.141(1)(a) is incorrect or incomplete, except when a reasonable estimate has been made by the **grid owner** under clause 13.141(1)(a)(ii)~~

scarcity pricing situation ~~means an **island scarcity pricing situation** or a **national scarcity pricing situation**~~

shortage situation ~~means an **island shortage situation** or a **national shortage situation**~~

sub-block dispatch groups means that grouping of **generating stations** or **generating units** within a **block dispatch group** into subgroups to take account of any **block security constraints** notified by the **system operator** in accordance with clauses 13.61(1) and 13.73~~(1)~~(j)

transmission security constraint ~~means a flow limit covered by clause 15(d)(i) or (iii) of Schedule 13.3, including any adjustments that have been made in accordance with clause 13(2)(d) and (f) of Schedule 13.3, but excluding a flow limit set in relation to the **HVDC link**~~

unconstrained cleared offer price ~~means the highest amount in dollars and cents per **MWh** specified for a **grid injection point** or a **grid exit point** in an **offer** that is —~~
~~(a)~~ ~~provided to the **pricing manager** in accordance with clause 13.63; and~~
~~(b)~~ ~~less than or equal to the price for **electricity** at that **grid injection point** or **grid exit point** calculated by the **software** used by the **pricing manager** to calculate **provisional prices** and **final prices**~~

unsupplied demand situation means a situation in which—
(a)   there is **demand** at a **GXP**—
    (i)   in a **price-responsive schedule**, for which price and quantity values have been assigned by the **system operator** under clause 13.58AA(1)(a); or
    (ii)   in a **non-response schedule**, for which price and quantity values have been assigned by the **system operator** under clause 13.58AA(1)(b); or
    (ii)   in a **dispatch schedule**, for which price and quantity values have been assigned by the **system operator** under clause 13.69AA; and
(b)   the **system operator** expects that the relevant **demand** will be unable to be supplied by **offers** in the relevant **price-responsive schedule**, **non-response schedule**, or **dispatch schedule**

wholesale market means—
(a)   the spot market for **electricity**, including the processes for setting—
    (i)   ~~**real time prices**~~:
    (ii)   **forecast prices** and **forecast reserve prices**:
    (iii)   ~~**provisional prices** and **provisional reserve prices**~~:
    (iv)   **interim prices** and **interim reserve prices**:
    (v)   **final prices** and **final reserve prices**:
    (vi)   **dispatch prices** and **dispatch reserve prices**:
(b)   markets for **ancillary services**:
(c)   the hedge market for **electricity**, including the market for **FTRs**.

Part 3
Market operation service providers

3.1 Appointment of market operation service providers
(1) The **Authority** must appoint a person or persons to perform each of the following **market operation service provider** roles:
   (a) the **registry manager**:
   (b) a **reconciliation manager**:
   (c) ~~a **pricing manager**:~~
   (d) a **clearing manager**:
   (e) a **market administrator**:
   (f) any other role identified in regulations as a **market operation service provider** role.
(2) The **Authority** may appoint a person or persons to perform the **market operation service provider** role of wholesale information trading system provider.
(3) The **system operator** is also a **market operation service provider**, but clauses 3.3, 3.10 and 3.15 do not apply to the **system operator**.
(4) The **Authority** may also appoint a person or persons to act as an industry service provider in providing any service under this Code.

Part 8
Common quality

…

8.68 Clearing manager to determine amounts owing

(1) The **clearing manager** must determine the amount owing to the **system operator** by each **grid owner**, **purchaser**, **generator** and **connected asset owner** for **ancillary services** under clauses 8.55 to 8.67. On behalf of the **system operator**, the **clearing manager** must collect those amounts, and any amounts advised by the **system operator** as owing to it under clauses 8.6 and 8.31(1)(a), by including the relevant amounts in the amounts advised by the **clearing manager** as owing under Part 14.

(2) To enable the **clearing manager** to determine those amounts, the **system operator** must provide to the **clearing manager** the total **allocable cost** for each **ancillary service** and any additional information required to carry out the calculations under clauses 8.55 to 8.67 that is not otherwise provided by the **reconciliation manager** ~~or the **pricing manager**~~ under Part 13.

(3) The **clearing manager** must determine the amount owing by each **connected asset owner**, other than a **generator** that is directly **connected** to the **grid**, for **extended reserve** in accordance with clause 8.67A.

(4) The **clearing manager** must determine the amount owing to each **extended reserve provider** for the provision of **extended reserve** in accordance with—
    (a) the **extended reserve schedule**; and
    (b) any relevant notice received from the **system operator** under clause 8.54Q(2).

(5) The **clearing manager** must collect the amounts determined under subclause (3) and pay the amounts determined under subclause (4) by including the relevant amounts in the invoices issued by the **clearing manager** under Part 14.

(6) All amounts owing under this clause are subject to the priority order of payments set out in clause 14.56.

8.69 Clearing manager to determine wash up amounts payable and receivable

(1) The **clearing manager** must determine the following amounts owing as a result of **washups** under subpart 6 of Part 14:
    (a) the amount owing to the **system operator** by each **grid owner**, **purchaser**, **generator** and **connected asset owner** for **ancillary services** under clauses 8.55 to 8.67:
    (b) the amount owing to each **grid owner**, **purchaser**, **generator** and **connected asset owner** by the **system operator** for **ancillary services** under clauses 8.55 to 8.67:
    (c) the amount owing by each **distributor** for **extended reserve** under clause 8.67A:
    (d) the amount owing to each **extended reserve provider** for **extended reserve** under clause 8.68.

(2) On behalf of the **system operator** the **clearing manager** must collect or pay the amounts owing for **ancillary services**, and any amounts advised by the **system operator** as payable to it under clauses 8.6 and 8.31(1)(a) by including the relevant amounts advised by the **clearing manager** as owing under Part 14.

(3) To enable the **clearing manager** to determine the amounts payable for **ancillary services**, the **system operator** must provide to the **clearing manager** the **allocable cost** for each **ancillary service** and any additional information required to carry out the

recalculations under clauses 8.55 to 8.67 that is not otherwise provided by the **reconciliation manager** ~~or the **pricing manager**~~ under Part 13.

(4)   All amounts owing under this clause are subject to the priority order of payments set out in clause 14.56.

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Schedule 8.3
Technical codes

Technical Code B – Emergencies

…

5   Formal notices and responses

(1)   The **system operator** must issue a notice either orally or in writing to relevant **participants** whenever, or as soon as practicable after, any of the following events has occurred:

    (a)   the ability of the **system operator** to plan to comply, and to comply, with the **principal performance obligations** is at risk or is compromised (as set out in the **policy statement**):

    (b)   public safety is at risk:

    (c)   there is a risk of significant damage to **assets**:

    (d)   independent action has been taken in accordance with this **technical code** to restore the **system operator's principal performance obligations**.~~.~~:

    (e)   <u>an **unsupplied demand situation**.</u>

(1A) ~~The **system operator** must issue a notice in writing to all **participants** whenever, or as soon as practicable after, an **island** wide instruction to disconnect **demand** has been issued, amended, or revoked under clause 6.~~

(1B) ~~For the purposes of subclause (1A), an **island** wide instruction is when the electrical or geographical region affected by a notice is all of an **island**.~~

(1C) ~~The **system operator** must provide any notice issued under subclause (1A) to the **pricing manager** by 0730 hours on the following **trading day**.~~

(2)   The **system operator** must ensure that a **formal notice** issued in accordance with subclause (1) ~~or subclause (1A)~~ includes the following:

    (a)   the electrical or geographical region affected by the notice:

    (b)   the potential consequences of the situation:

    (c)   the responses requested of **participants**:

    (d)   the start time and end time of the situation to which the notice applies.

(3)   The **system operator** must record the issue of a **formal notice**, and each **participant** must record receipt of a **formal notice**.

(4)   If the **system operator** issues a request in accordance with this **technical code** to a **participant**, the **participant** must use reasonable endeavours to respond to the request.

6   Actions to be taken by the system operator in a grid emergency

(1)   If <u>an **unsupplied demand situation**, or</u> insufficient generation and **frequency keeping** gives rise to a **grid emergency**, the **system operator** may, having regard to the priority below, if practicable, and regardless of whether a **formal notice** has been issued, do 1 or more of the following:

    (a)   request that a **generator** varies its **offer** and **dispatch** the **generator** in accordance with that **offer**, to ensure there is sufficient generation and **frequency keeping**:

    (b)   request that a **purchaser** or a **connected asset owner** reduce **demand**:

    (c)   require a **grid owner** to reconfigure the **grid:**

(d)   require the disconnection of **demand** in accordance with clause 7A:

(e)   take any other reasonable action to alleviate the **grid emergency**.

(2)   If insufficient transmission capacity gives rise to a **grid emergency**, the **system operator** may, having regard to the priority below, if practicable, and regardless of whether a **formal notice** has been issued, do 1 or more of the following:

    (a)   request that a **generator** varies its **offer** and **dispatch** the **generator** in accordance with that **offer**, to ensure that the available transmission capacity within the **grid** is sufficient to transmit the remaining level of **demand**:

    (b)   request that an **asset owner** restores its **assets** that are not in service:

    (c)   request that a **purchaser** or **connected asset owner** reduces its **demand**:

    (d)   require the disconnection of **demand** in accordance with clause 7A:

    (e)   take any other reasonable action to alleviate the **grid emergency**.

(3)   If frequency is outside the **normal band** and all available **injection** has been **dispatched**, the **system operator** may require the disconnection of **demand** in accordance with clause 7A in appropriate block sizes until frequency is restored to the **normal band**.

(4)   If any **grid** voltage reaches the minimum voltage limit set out in the table contained in clause 8.22(1), and is sustained at or below that limit, the **system operator** may require the disconnection of **demand** in accordance with clause 7A in appropriate block sizes until the voltage is restored to above the minimum voltage limit.

(5)   The **system operator** may, if an unexpected event occurs giving rise to a **grid emergency**, take any reasonable action to alleviate the **grid emergency**.

Part 9
Security of supply

…

Subpart 2—Outages in shortage of supply situation

9.14 Supply shortage declaration
(1)   The **system operator** may, after consultation with the **Authority**, make a **supply shortage declaration**.
(2)   The **system operator** may make a **supply shortage declaration** only if there is a shortage of **electricity** supply or transmission capacity such that the **system operator** considers—
  (a)   that the normal operation of the spot market for **electricity** is, or will soon be, unlikely to facilitate the adjustment of supply and demand necessary to ensure that supply matches demand; and
  (b)   that, if planned outages are not implemented, unplanned outages are likely.
(2A) For the purposes of subclause (2), the spot market for **electricity** includes the processes for setting—
  (a)   ~~**real time prices**~~:
  (b)   **forecast prices** and **forecast reserve prices**:
  (c)   ~~**provisional prices** and **provisional reserve prices**~~:
  (d)   **interim prices** and **interim reserve prices**:
  (e)   **final prices** and **final reserve prices**:
  (f)   **dispatch prices** and **dispatch reserve prices**.
(3)   A declaration applies to—
  (a)   all of New Zealand; or
  (b)   the regions specified in the declaration.
(4)   In making a declaration under subclause (1), the **system operator** must have regard to the **system operator rolling outage plan**.
(5)   The **system operator** must **publish** the declaration as soon as practicable after it is made.

Part 13
Trading arrangements

13.1 Contents of this Part

This Part provides for processes by which—

(a)   **purchasers** and **generators** submit and revise **bids** and **offers** for **electricity**, **grid owners** submit and revise information, **ancillary service agents** submit and revise **reserve offers**, the **system operator** forecasts **demand** at **conforming GXPs**, and the **system operator** collects information to enable schedules to be prepared; and

(b)   the **system operator** prepares and **publishes** information from the **price-responsive schedules**, **non-response schedules**, and dispatch schedules, ~~and real time price~~ schedules, and formulates and issues **dispatch instructions**; and

(c)   the **clearing manager** holds must-run dispatch **auctions**; and

(d)   the ~~pricing~~ clearing **manager** ~~collects data and~~ produces ~~provisional prices~~, **interim prices** ~~and final prices~~; and

(daa)   **pricing errors** are claimed, investigated, and resolved; and

(dab)   **interim prices** become **final prices**; and

(da)   the **Authority** determines whether each **GXP** is either a **conforming GXP** or a **non-conforming GXP**; and

(db)   the **clearing manager** calculates **constrained off amounts** and **constrained on amounts**; and

(e)   **generators** may apply to the **Authority** to have 1 or more **generating units** approved as—

    (i)   a **type A industrial co-generating station**; or

    (ii)   a **type B industrial co-generating station**; and

(f)   information about **risk management contracts** is disclosed; and

(fa)   **disclosing participants** prepare and submit **spot price risk disclosure statements**; and

(g)   the **FTR manager** prepares and **publishes** the **FTR allocation plan**, creates and allocates **FTRs**, and operates the **FTR register**; and

(h)   the **clearing manager** collects and allocates **FTR auction** revenue; and

(i)   information about **FTRs** is provided; and

(j)   a device or a group of devices may be approved to be a **dispatch-capable load station**; and

(k)   **purchasers** are approved as **dispatch notification purchasers**.

…

Subpart 1—Bids and offers

13.4 Contents of this subpart

This subpart provides for processes to facilitate **trading** by which—

(a)   **bids** and **offers** for **electricity** are submitted and revised by **generators** and **purchasers**; and

(b)   information from the **grid owners** is submitted and revised; and

(c)   **reserve offers** are submitted and revised by **ancillary service agents**; and

(d)   the **system operator** collects the information referred to in this subpart; and

(e)   information about **bids** and **offers** is to be made available.

13.5 Bids and offers must be lawful

A **purchaser**, **generator** or **ancillary service agent** must not make or maintain a **bid**, **offer** or **reserve offer** if the **purchaser** or **generator** or **ancillary service agent** knows or ought reasonably to know that acting in accordance with the **bid**, **offer** or **reserve offer** would contravene any law.

13.5A Conduct in relation to generators' offers and ancillary service agents' reserve offers

(1)   Each **generator** and **ancillary service agent** must ensure that its conduct in relation to **offers** and **reserve offers** is consistent with a high standard of trading conduct.

(2)   Subclause (1) applies when—

(a)   a **generator** submits or revises an **offer**; or

(b)   an **ancillary service agent** submits or revises a **reserve offer**.

13.5B Safe harbours for clause 13.5A

(1)   A **generator** complies with clause 13.5A if—

(a)   the **generator** makes **offers** in respect of all of its generating capacity that is able to operate in a **trading period**; and

(b)   when the **generator** decides to submit or revise an **offer**, it does so as soon as it can; and

(c)   in the case of a **generator** that is **pivotal**,—

(i)   prices and quantities in the **generator's offers** do not result in a material increase in the **final price** at which **electricity** is supplied in a **trading period** at any **node** at which the **generator** is **pivotal**, compared with the **final price** at the **node** in an immediately preceding **trading period** or other comparable trading period in which the **generator** is not **pivotal** at that **node**; or

(ii)   the **generator's offers** are generally consistent with **offers** it has made when it has not been **pivotal**; or

(iii)   the **generator** does not benefit financially from an increase in the **final price** at which **electricity** is supplied in a **trading period** at a **node** at which the **generator** is **pivotal**.

(2)   A **generator** does not breach clause 13.5A only because the **generator** does not comply with subclause (1).

(3)   An **ancillary service agent** complies with clause 13.5A if—

(a)   the **ancillary service agent** makes **reserve offers** in respect of all of its capacity to provide **instantaneous reserve** that is able to operate in a **trading period**; and

(b)   when the **ancillary service agent** decides to submit or revise a **reserve offer**, it does so as soon as it can; and

(c)   in the case of an **ancillary service agent** that is **pivotal**,—

(i)   prices and quantities in the **ancillary service agent's reserve offers** do not result in a material increase in the **final reserve price** in a **trading period** in an **island** in which the **ancillary service agent** is **pivotal**, compared with

the **final reserve price** in the **island** in an immediately preceding **trading period** or other comparable **trading period** in which the **ancillary service agent** is not **pivotal**; or

(ii)   the **ancillary service agent's reserve offers** are generally consistent with **reserve offers** it has made when it has not been **pivotal**; or

(iii)   the **ancillary service agent** does not benefit financially from an increase in the **final reserve price** in a **trading period** in an **island** in which the **ancillary service agent** is **pivotal**.

(4)   An **ancillary service agent** does not breach clause 13.5A only because the **ancillary service agent** does not comply with subclause (3).

Bids and offer preparation

…

13.7 Purchaser to submit bids for dispatch-capable load station

(1)   This clause applies to each **dispatchable load purchaser**.

(2)   Unless the **dispatchable load purchaser** relies on clause 13.8A, the **dispatchable load purchaser** must submit to the **system operator** for each of its **dispatch-capable load stations** for each **trading period** in the **schedule period—**

    (a)   a **nominated non-dispatch bid**; or

    (b)   a **nominated dispatch bid**.

(3)   A **nominated bid** submitted under subclause (2) must represent a reasonable estimate of the total quantity of **electricity** the **dispatchable load purchaser** will purchase—

    (a)   for the **dispatch-capable load station**; and

    (b)   for the **trading period**; and

    (c)   at the prices specified in the **nominated bid**.

13.7AA Purchaser to submit bids for non-dispatch-capable load

(1)   This clause applies to each **purchaser** that—

    (a)   purchases **non-dispatch-capable load**; and

    (b)   in relation to a **nominated bid**, does not rely on clause 13.8A.

(2)   The **purchaser**—

    (a)   must, if it purchases **non-dispatch-capable load** at a **non-conforming GXP**, submit to the **system operator** for each **trading period** in the **schedule period** a **nominated non-dispatch bid** that represents a reasonable estimate of the total **non-dispatch-capable load** that the **purchaser** will purchase—

        (i)   at the **GXP**; and

        (ii)   for the **trading period**; and

        (iii)   at the prices specified in the **nominated non-dispatch bid**; and

    (b)   may, if it purchases **non-dispatch-capable load** at a **conforming GXP**, submit to the **system operator** for a **trading period** a **difference bid** that represents a reasonable estimate of an increase or decrease in the **purchaser's** usual **non-dispatch-capable load** purchased—

        (i)   at the **GXP**; and

        (ii)   for the **trading period**; and

        (iii)   at the prices specified in the **difference bid**.

13.7AB Timeframe for submitting bids to system operator

(1)   Each **purchaser** that submits a **nominated bid** to the **system operator** must submit the **nominated bid** at least 71 **trading periods** before the beginning of the **trading period** to which the **nominated bid** applies.

(2)   Each **purchaser** that submits a **difference bid** to the **system operator** must submit the **difference bid** at least 4 **trading periods** before the beginning of the **trading period** to which the **difference bid** applies.

13.7AC Submitting bid for first time

(1)   Despite anything in this Code, a **purchaser** must give at least 5 **business days**' notice in writing to the **system operator** and the **clearing manager** before the **purchaser** submits a **bid** for the first time.

(2)   **System operator** may request from a **purchaser** information—
        (a)   about the **purchaser**; and
        (b)   that the **system operator** requires for the purposes of scheduling and **dispatch** in accordance with this Code.

(3)   A **purchaser** must comply with a request made under subclause (2).

13.7AD Submitting bid for last time

        Despite anything in this Code, if a **purchaser** intends to permanently cease to submit **bids** to the **system operator**, the **purchaser** must give at least 5 **business days'** notice in writing to the **system operator**, ~~the **pricing manager**,~~ and the **clearing manager**.

…

13.13 Information to be contained in bids

(1)   A **purchaser** must ensure that each of its **nominated bids**—
        (a)   contains all information required by Form 4 in Schedule 13.1; and
        (aa)   if it is a **nominated bid** for a **dispatch-capable load station**, specifies whether it is—
                (i)   a **nominated dispatch bid**; or
                (ii)   a **nominated non-dispatch bid**.
        (b)   *[Revoked]*
        (c)   ~~if it is a **nominated dispatch bid**, specifies a price for each band that is one of the following:~~
                (i)   ~~$15,000/**MWh** or less; or~~
                (ii)   ~~if the **Authority** has **published** a price for the purposes of this paragraph, the **published** price; or~~
                (iii)   ~~if the **Authority** has not **published** a price for the purposes of this paragraph, $600,000/**MWh**.~~
(1A)   ~~The **Authority** may **publish** a price for the purposes of subclause (1)(c) if,—~~
        (a)   ~~the **system operator** has given to the **Authority** an updated list of values of model parameters in accordance with clause 13.189(2)(a), and the **Authority** has considered any advice it has received from the **system operator** under clause 13.189(2)(b) and (2A); or~~
        (b)   ~~the **Authority** considers that it is necessary to **publish** a new price.~~

(2)   A **purchaser** must ensure that each of its **difference bids** contains all information required by Form 4A in Schedule 13.1.

…

13.17 Offers may be revised

(1)   Subject to subclauses (2) to (4), a **generator** may revise an **offer** at any time before the end ~~beginning~~ of the **trading period** to which the **offer** relates by submitting a new **offer** to the **system operator**.

(2)   A **generator** must not revise any of its **offer** prices during a **gate closure period**.

(3)   A **generator** must not revise the **MW** specified in any price band in an **offer** during a **gate closure period**, unless clause 13.18(1), 13.18(1A), 13.18A, or 13.19 applies.

(4)   A **generator** must not revise any of the following **offer** parameters during a **gate closure period**, unless clause 13.19 applies:

(a)   ramp rates:

(b)   maximum output (including overload).

…

13.19A Bids may be revised

(1)   Each **purchaser** may, at any time before the end ~~beginning~~ of a **trading period** in respect of which a **bid** is made,—

(a)   revise any of its **bid** prices or the **MW** specified in any price band in a **bid** for any **trading period** by submitting a new **bid** to the **system operator**; or

(aa)   revise a **nominated bid**—

(i)   from being a **nominated dispatch bid** to being a **nominated non-dispatch bid**; or

(ii)   from being a **nominated non-dispatch bid** to being a **nominated dispatch bid**.

(1A)   Despite subclause (1), a **dispatchable load purchaser** must not do any of the following during a **gate closure period**:

(a)   revise the price of a **nominated dispatch bid**:

(b)   revise the **MW** specified in any price band in a **nominated dispatch bid**, unless subclause (1B) or clause 13.19B applies.

(1B)   A **dispatchable load purchaser** may revise the **MW** specified in any price band in a **nominated dispatch bid** during a **gate closure period** if—

(a)   the revision is necessary due to a **bona fide physical reason**; or

(b)   the **system operator** issues a **formal notice** under clause 5 of **Technical Code** B of Schedule 8.3; or

(c)   a **bona fide physical reason** that made a revision necessary under paragraph (a) ceases to exist sooner than was expected at the time it arose; and—

(i)   the 1st **trading period** after the original **bona fide physical reason** ceases to exist is within 24 hours after the circumstances that constituted the original **bona fide physical reason** arose; and

(ii)   the total change in **MW** specified in the **nominated dispatch bid** that is revised as a result of the **bona fide physical reason** ceasing to exist is the same or less than the total change in **MW** specified in the **nominated**

> dispatch bid that was made as a result of the original **bona fide physical reason**.

(2) [*Revoked*]

(3) [*Revoked*]

(3A) If a **purchaser** revises a **nominated bid** for a **dispatch-capable load station** in the **trading period** that is immediately before the **trading period** to which the **nominated bid** applies, the revised **nominated bid** is a **nominated non-dispatch bid**.

(3B) Despite subclause (1), a **dispatchable load purchaser** must not, during the 2 **trading periods** immediately preceding the **trading period** to which a **nominated non-dispatch bid** relates, revise the **nominated non-dispatch bid** to being a **nominated dispatch bid**.

(4) [*Revoked*]

(5) [*Revoked*]

(6) If the **system operator** declares a **grid emergency**, a **dispatchable load purchaser** must comply with clause 13.99A.

13.19B Bids must be revised

(1) Before the <u>end</u> ~~beginning~~ of the **trading period** to which a **nominated bid** relates, the **purchaser** that submitted the **nominated bid** must immediately submit a revised **nominated bid** in respect of **MW** to the **system operator** if the **purchaser** expects, or ought reasonably to expect, that the **MW** it is likely to purchase at the prices indicated in the **nominated bid** will,—

  (a) if the **nominated bid** is a **nominated non-dispatch bid**, differ from the **MW** specified in the **nominated bid** by more than the lesser of—
    (i) 20 **MW**; and
    (ii) 20% of the **nominated bid MW**; or

  (b) if the **nominated bid** is a **nominated dispatch bid**, differ from the **MW** specified in the **nominated bid** by more than the lesser of—
    (i) 10 **MW**; and
    (ii) 10% of the **nominated bid MW**.

(2) Despite subclause (1), a **purchaser** is not required to submit a revised **nominated bid** in respect of **MW**, if the expected change in **MW** is less than 5 **MW**.

13.20 System operator notified of revised nominated bids or offers in certain circumstances

(1) This clause applies to each **purchaser** or **generator** that submits a revised **nominated bid** or **offer** ~~during~~ <u>in</u> the <u>period commencing</u> 15 minutes <u>before</u> ~~immediately preceding~~ the **trading period** to which the revised **nominated bid** or **offer** relates <u>and ending at the end of the relevant</u> **trading period**.

(2) A **purchaser** or **generator** that submits a revised **nominated bid** or **offer** in the time frame described in subclause (1) must immediately notify the **system operator** of the revision by telephone or electronic means (if the **system operator** and the **purchaser** or **generator** have agreed the electronic means before the **purchaser** or **generator** notifies the **system operator** of the revision or cancellation).

(3) Subclause (2) does not apply to an **intermittent generator** submitting a revised **offer** under clause 13.18A.

13.21 Authority notified of revised nominated dispatch bid or offer during gate closure period

(1)   A **dispatchable load purchaser** or **generator** that submits a revised **nominated dispatch bid** or a revised **offer** to the **system operator** during a **gate closure period** must report each revision to the **Authority** in writing together with an explanation of the reasons for the revision.

(1A) The **dispatchable load purchaser** or **generator** must report the revision to the **Authority** no later than 1700 hours on the 1st **business day** following the **trading day** on which the revision was made.

(1B) Subclauses (1) and (1A) do not apply to an **intermittent generator** submitting a revised **offer** under clause 13.18A.

(2)   [*Revoked*]

13.22 Transmission of information through information system

(1)   All information required to be submitted by a **purchaser** or **generator** under clauses 13.6 to 13.27 must be transmitted to the **system operator** through the electronic facility contained in the **information system**.

(2)   The **system operator** must immediately confirm receipt of any information received by it from a **purchaser** or **generator** through the electronic facility contained in the **information system**. Each confirmation must contain a copy of the information received by the **system operator** together with the time of receipt.

(3)   If a **purchaser** or **generator** has not received the confirmation within 10 minutes after that information has been sent, the **purchaser** or **generator** must telephone the **system operator** to check whether the information has been received. If it has not, the **purchaser** or **generator** must resend the information. The process set out in this clause must then be repeated until the **system operator** has confirmed receipt of the information from the **purchaser** or **generator**.

13.23 Backup procedures if information system is unavailable

(1)   If the **information system** is unavailable to receive **bids** or **offers** or to confirm the receipt of **bids** or **offers**, each **purchaser** and **generator** or the **system operator**, as the case may be, must follow the backup procedures specified by the **market administrator**.

(2)   The backup procedures referred to in subclause (1) must be specified by the **market administrator** following consultation with each **purchaser**, **generator** and the **system operator**. The **market administrator** must ensure that there is always a backup procedure notified to each **purchaser**, **generator** and the **system operator**.

…

13.34 Changes may be made <u>later than</u> ~~within~~ 1 hour before trading period

(1)   A **grid owner** may update the information submitted under clause 13.33 ~~later than~~ <u>during the period commencing</u> 1 hour before the relevant **trading period** <u>and ending at the end of the relevant</u> **trading period** only if—

    (a)   a **bona fide physical reason** necessitates the change; or

    (b)   the **system operator** issues a **formal notice**; or

(c)   an unforeseeable change occurs in the availability of a **grid owner's assets**, which were the subject of a planned or unplanned outage notified by the **grid owner** to the **system operator**.

(2)   If a **grid owner** has sent revised information to the **system operator** under subclause (1) later than 15 minutes before the relevant **trading period**, the **grid owner** must also immediately notify the **system operator** of the revised information by telephone or by such other mechanism as may be agreed from time to time in writing between **grid owners** and the **system operator**.

(3)   [*Revoked*]

(4)   [*Revoked*]

…

13.46 Reserve offers may be revised

(1)   Subject to subclauses (1A) and (1B), an **ancillary service agent** may revise a **reserve offer** at any time before the end ~~beginning~~ of the **trading period** in respect of which the **reserve offer** is made by submitting a new **reserve offer** to the **system operator**.

(1A)   An **ancillary service agent** must not revise its **reserve offer** prices during a **gate closure period**.

(1B)   An **ancillary service agent** must not revise the **MW** specified in any price band in a **reserve offer** during a **gate closure period** unless subclause (3) or clause 13.47 applies.

(2)   An **ancillary service agent** that revises a **reserve offer** for an **embedded generating station** must use reasonable endeavours to submit the **reserve offer** at least 1 hour before the beginning of the **trading period** in respect of which the **reserve offer** is made.

(3)   Before the end ~~beginning~~ of the **trading period** to which the **reserve offer** applies, and despite clauses 13.97 to 13.101, an **ancillary service agent** must immediately submit a revised **reserve offer** in respect of **MW** offered to the **system operator** if—

(a)   the **MW** specified in any price band in the **reserve offer** no longer represents a reasonable estimate of the **instantaneous reserve** available from the **ancillary service agent** at the **grid injection point**, **grid exit point** or **interruptible load group GXP**; or

(b)   the relevant **MW** specified in the **non-response schedule** most recently **published** by the **system operator** is not likely to be achieved by the **ancillary service agent** at the relevant **grid injection point**, **grid exit point** or **interruptible load group GXP**.

(4)   [*Revoked*]

…

13.48 System operator notified of revised reserve offers in certain circumstances

(1)   This clause applies to each **ancillary service agent** that submits a revised **reserve offer** ~~during the~~ in the period beginning 15 minutes before ~~immediately preceding~~ the **trading period** to which the revised **reserve offer** relates and ending at the end of the relevant **trading period**.

(2)   The **ancillary service agent** must immediately advise the **system operator** of the revision by telephone or electronic means (if the **system operator** and the **ancillary**

service agent have agreed the electronic means before the **ancillary service agent** notifies the **system operator** of the revision.

…

<div align="center">

Subpart 2—Scheduling and dispatch

</div>

13.56 Contents of this subpart
This subpart specifies—
(a) the **system operator's dispatch objective**; and
(b) the process for preparing a **price-responsive schedule** and **non-response schedule**, including the contents of and inputs for those schedules; and
(c) the process by which the **system operator** prepares a **dispatch schedule**; and
(d) the process by which the **system operator** prepares and issues **dispatch instructions**; and
(e) the requirement for **generators**, **ancillary service agents**, and **dispatched purchasers** to comply with **dispatch instructions**; and
(f) the process for preparation and **publication** by the **system operator** of the schedule of **real time prices**; and
(g) the implications of a **grid emergency** for **bids**, **offers** and **reserve offers**; and
(h) the **system operator's** reporting obligations; and
(i) the requirement for the **system operator** to **publish** scheduling information.

…

13.58AA System operator to assign price and quantity values
(1) In preparing each **price-responsive schedule** and each **non-response schedule**, the **system operator** must assign the price and quantity values set out in subclause (2) to the following **demand**:
(a) in relation to a **price-responsive schedule**, forecast **demand** at a **conforming GXP** that is not the subject of a **bid**:
(b) in relation to a **non-response schedule**,—
(i) forecast **demand** at a **conforming GXP** that is not the subject of a **nominated bid**; and
(ii) **demand** at a **GXP** that is the subject of a **nominated non-dispatch bid**.
(2) The price and quantity values are as follows:
(a) $10,000 per **MWh** for the first 5% of the relevant **demand**:
(b) $15,000 per **MWh** for the next 15% of the relevant **demand**:
(c) $20,000 per **MWh** for the remaining 80% of the relevant **demand**.

13.58A Inputs for price-responsive schedule and non-response schedule
(1) The **system operator** must prepare a **price-responsive schedule** using the following inputs:
(a) **offers** and **reserve offers**; and
(b) **nominated bids**; and
(c) the forecast prepared by the **system operator** under clause 13.7A(1); and
(d) **difference bids**; and

(e)   information provided to the **system operator** by a **grid owner** under clauses 13.29 to 13.34 about—
    (i)   the AC transmission system configuration, capacity, and **losses**; and
    (ii)   the capability of the **HVDC link** including its **configuration**, capacity, **losses**, the direction of any transfer limit, and any minimum or maximum transfer limits; and
    (iii)   transformer configuration, capacity, and **losses**; and

(f)   the adjustments specified in subclause (2)(e), subject to any exceptions specified in the **policy statement**; and

(g)   information about **voltage support** from contracts held by the **system operator** under the **procurement plan**; and

(h)   information from **ancillary service agents** about **instantaneous reserves** procured under the **procurement plan**; and

(i)   any price and quantity values assigned by the **system operator** under clause 13.58AA(1)(a).

(2)   The **system operator** must prepare a **non-response schedule** using the following inputs:

(a)   **offers**, **nominated dispatch bids**, and **reserve offers**; and

(b)   **nominated non-dispatch bid** quantities; and

(c)   the forecast prepared by the **system operator** under clause 13.7A(1); and

(d)   information provided to the **system operator** by a **grid owner** under clauses 13.29 to 13.34 referring to—
    (i)   the AC transmission system configuration, capacity, and **losses**; and
    (ii)   the capability of the **HVDC link** including its **configuration**, capacity, **losses**, the direction of any transfer limit, and any minimum or maximum transfer limits; and
    (iii)   transformer configuration, capacity, and **losses**; and

(e)   adjustments made by the **system operator** under clause 13(1) of Schedule 13.3, in order to meet the **dispatch objective**; and

(f)   information about **voltage support** from contracts held by the **system operator** under the **procurement plan**; and

(g)   information from **ancillary service agents** about **instantaneous reserves** procured under the **procurement plan**; and

(h)   any price and quantity values assigned by the **system operator** under clause 13.58AA(1)(b).

13.59 Contents of each price-responsive schedule and non-response schedule
For each **trading period** in the **schedule length period**,—

(a)   each **price-responsive schedule** and each **non-response schedule** prepared by the **system operator** must specify—
    (i)   the expected average level of **electricity** output for each **generating plant** or **generating unit**; and
    (ii)   the expected average level of **instantaneous reserve** for each **generating plant** or **generating unit**; and

(iii)   the expected average level of **interruptible load** for each **ancillary service agent** for each **grid exit point** or **interruptible load group grid exit point**; and

(iv)   the indicative **frequency keeping units** for each **island**; and

(v)   the expected average level of **demand** at each **grid exit point**; and

(vi)   **forecast prices**; and

(vii)   **forecast reserve prices**; and

(viii)   **forecast marginal location factors** for each **grid injection point** and each **grid exit point**; and

(ix)   the expected largest single reserve risk for each **island**; and

(x)   the expected level of **fast instantaneous reserve** and **sustained instantaneous reserve** required in each **island**; and

(xi)   a stack of **reserve offers** for each **island** (ranking in price order from lowest to highest), and for each **island** separate stacks must be provided for **fast instantaneous reserve** and **sustained instantaneous reserve**; and

(xii)   a stack of all **reserve offers** for each **island** (ranking in price order from lowest to highest) adjusted for the expected level of energy output for each **generating plant** or **generating unit**, and for each **island** separate stacks must be provided for **fast instantaneous reserve** and **sustained instantaneous reserve**; and

(xiii)   the expected **HVDC component flows**; and

(xiv)   the expected **HVDC risk offsets**; and

(xv)   the **expected near-constraint arc flows**; and

(xvi)   the **expected near-group-constraint arc flows**; and

(xvii)   the **group constraint formulas** relating to the **expected near-group-constraint arc flows**; and

(xviii)   the expected deficit quantities for energy, **fast instantaneous reserve**, and **sustained instantaneous reserve** (if any); and

(xix)   whether the **HVDC link** is out of service; and

(xx)   the quantity of **demand** for which price and quantity values have been assigned by the **system operator** under clause 13.58AA(1)(a) (in relation to a **price-responsive schedule**) or clause 13.58AA(1)(b) (in relation to a **non-response schedule**); and

(b)   each **price-responsive schedule** prepared by the **system operator** must specify the ~~expected~~ quantities for each **bid** that are forecast to be supplied; and

(c)   each **non-response schedule** prepared by the **system operator** must specify the expected—

(i)   **non-dispatch-capable load** at each **conforming GXP**; and

(ii)   **demand** for each **nominated bid**.

…

13.62 Frequency of price-responsive schedules and non-response schedules

(1)   The **system operator** must use reasonable endeavours to commence preparing a **price-responsive schedule** and a **non-response schedule**—

(a)   once in every 4th **trading period** throughout the **trading day**, for a period covering—

(i)   the **trading period** in which the **system operator** commences preparing the relevant schedule; and

(ii)   the following 71 **trading periods**; and

(b)   once in each **trading period** for a period covering—

      (i)   the **trading period** in which the **system operator** commences preparing the relevant schedule; and

      (ii)   the following 7 **trading periods**.

(2)   The **system operator** must use reasonable endeavours to ensure that—

(a)   each time it prepares a **price-responsive schedule**, it prepares a **non-response schedule** at the same time; and

(b)   each time it prepares a **non-response schedule**, it prepares a **price-responsive schedule** at the same time.

(3)   The **system operator** must complete a schedule—

(a)   if it commenced preparing the schedule under subclause (1)(a), by the end of the **trading period** after the **trading period** in which the **system operator** commenced preparing the schedule; and

(b)   if it commenced preparing the schedule under subclause (1)(b), by the end of the **trading period** in which the **system operator** commenced preparing the schedule.

13.63 Trading period information to be given to ~~pricing manager and~~ clearing manager

The **system operator** must, by 0730 hours of each **trading day**, send to the ~~pricing manager and~~ **clearing manager** the final information provided to the **system operator** under subpart 1 in relation to each **trading period** of the previous **trading day**.

…

13.67 Transmission of information through information system

(1)   All information to be made available by the **system operator** to the **clearing manager** ~~or the pricing manager~~ under clauses 13.58 to 13.66 must be transmitted through the electronic facility contained in the **information system**.

(2)   If the **information system** is unavailable to send information under clauses 13.58 to 13.66 the **system operator** must follow the backup procedures specified by the **market administrator**.

(3)   The backup procedures referred to in subclause (2) must be specified by the **market administrator** following consultation with the **system operator** <u>and</u>~~,~~ the **clearing manager**~~, and the pricing manager~~. The **market administrator** must ensure that there is always a backup procedure notified to the **system operator** <u>and</u>~~,~~ the **clearing manager**~~, and the pricing manager~~.

…

<u>13.69AA System operator to assign price and quantity values</u>

<u>In preparing each **dispatch schedule**, the **system operator** must assign the price and quantity values set out in clause 13.58AA(2) to forecast **demand** at a **GXP** that is not the subject of a **nominated dispatch bid**.</u>

13.69A System operator to prepare dispatch schedule

~~The **system operator** must prepare a **dispatch schedule** in accordance with the methodology set out in Schedule 13.3.~~

(1) Before each **trading period**, or as soon as practicable after the start of a **trading period**, the **system operator** must prepare a **dispatch schedule** for the **trading period**—

(a) using the information described in clause 13.69B; and

(b) in accordance with the methodology set out in Schedule 13.3.

(2) The **system operator** must prepare a new **dispatch schedule** for a **trading period** as frequently as the **system operator** considers is necessary during a **trading period** to meet the **dispatch objective**.

13.69B Inputs for dispatch schedule

(1) The **system operator** must use the following inputs to prepare a **dispatch schedule**:

(a) **offers** and **reserve offers**, excluding the following:

(i) **offers** submitted by an **intermittent generator** under clause 13.6:

(ii) revised **offers** submitted by an **intermittent generator** under clause 13.18A:

(iii) **offers** submitted by a **type B co-generator** under clause 13.6:

(iv) revised **offers** submitted by a **type B co-generator** under clause 13.17; and

(b) the quantities and prices specified in **nominated bids** (clauses 13.7 and 13.7AA) and the quantities and prices specified in revised **nominated bids** (clauses 13.19A and 13.19AA):

(c) any price and quantity values assigned by the **system operator** under clause 13.69AA:

(d) the expected profile of demand until the next **dispatch schedule** is produced by the **system operator**:

(e) any additional information regarding the future output of an **intermittent generator**, submitted by an **intermittent generator** in agreement with the **system operator** for the period until the next **dispatch schedule** is produced:

(f) the current output levels of each **generator** or, if no such data is available, a reasonable estimate of the current output levels of each **generator**:

(g) information from the **grid owner** (clauses 13.29 to 13.34) and revised information from the **grid owner** (clause 13.33) about—

(i) the AC transmission system configuration, capacity and losses; and

(ii) the capability of the **HVDC link** including its **configuration**, capacity, **losses**, the direction of any transfer limit, and any minimum or maximum transfer limits; and

(iii) transformer configuration, capacity and losses:

(h) information about **voltage support**:

(i) the price order in the current **dispatch schedule**:

(j) in relation to **intermittent generators**, any ramp rates agreed between the **intermittent generator** and the **system operator**.

(2) The **system operator** must incorporate, in each schedule prepared, any adjustments to the inputs described in subclause (1) that may be required to meet the **dispatch objective**.

13.69D Contents of each dispatch schedule

Each **dispatch schedule** prepared by the **system operator** must specify, for each **trading period** in the **schedule length period**,—

(a)   the expected level of **electricity** output for each **generating plant** or **generating unit**; and

(b)   the expected level of **instantaneous reserve** for each **generating plant** or **generating unit**; and

(c)   the expected level of **interruptible load** for each **ancillary service agent** for each **grid exit point** or **interruptible load group grid exit point**; and

(d)   the expected level of **demand** at each **grid exit point**; and

(e)   **dispatch prices**; and

(f)   **dispatch reserve prices**; and

(g)   **dispatch marginal location factors** for each **grid injection point** and each **grid exit point**; and

(h)   the expected largest single reserve risk for each **island**; and

(i)   the expected level of **fast instantaneous reserve** and **sustained instantaneous reserve** required in each **island**; and

(j)   separate stacks of **fast instantaneous reserve offers** for each **island** and **sustained instantaneous reserve offers** for each **island** (ranking in price order from lowest to highest); and

(k)   separate stacks of **fast instantaneous reserve offers** for each **island** and **sustained instantaneous reserve offers** for each **island** (ranking in price order from lowest to highest) adjusted for the expected level of energy output for each **generating plant** or **generating unit**; and

(l)   the expected **HVDC component flows**; and

(m)   the expected **HVDC risk offsets**; and

(n)   the **expected near-constraint arc flows**; and

(o)   the **expected near-group-constraint arc flows**; and

(p)   the **group constraint formulas** relating to the **expected near-group-constraint arc flows**; and

(q)   the expected deficit quantities for energy, **fast instantaneous reserve**, and **sustained instantaneous reserve** (if any); and

(r)   whether the **HVDC link** is out of service; and

(s)   the quantities for each **bid** that are forecast to be supplied; and

(t)   the expected **non-dispatch-capable load** at each **conforming GXP**.

13.70 System operator may depart from dispatch schedule

The **system operator** may exercise discretion in departing from the **dispatch schedule** only if it is necessary to meet—

(a)   the **dispatch objective**; or

(b)   the requirements of clause 8.5 in relation to restoration of the power system.

13.71 System operator to use certain things

(1)   In determining **dispatch instructions** when implementing a **dispatch schedule** under clause 13.72(1)(a), the **system operator** must use—

(a)   the price order in the current **dispatch schedule**; and

(b)   any revised **offer** from a **generator** notified in accordance with clause 13.19 (except for revised **offers** submitted by an **intermittent generator** under clause 13.19(1)(a)(iii)); and

(c)   any ramp rates of **generators**. For **intermittent generators**, the ramp rates are those agreed between the **intermittent generator** and the **system operator**; and

(d)   any revised **nominated bid** quantities from a **purchaser** notified in accordance with clause 13.19A; and

(e)   any additional information regarding the future output of an **intermittent generator** submitted by an **intermittent generator** in agreement with the **system operator**; and

(f)   the actual profile of **demand** during the previous **trading period**; and

(g)   the expected profile of **demand** within the current **trading period** and the subsequent **trading periods**; and

(h)   the current output levels of each **generator**; and

(i)   any revised **reserve offer** from an **ancillary service agent** notified in accordance with clause 13.48; and

(j)   any revised information received from a **grid owner** under clause 13.34(1); and

(k)   the order in which reserves may be called as specified by the **system operator** from time to time.

(2)   In determining **dispatch instructions** under clause 13.72(1)(b), the **system operator** must use revised **nominated dispatch bids** submitted under clause 13.19A.

13.72 System operator to issue dispatch instructions and dispatch notifications

(1)   The **system operator** must implement each **dispatch schedule**, and any departure from a **dispatch schedule** under clause 13.70 by—

(a)   a **dispatch schedule**, and any departure from the **dispatch schedule** under clause 13.70, by issuing **dispatch instructions** to,—

(i)   **generators**; and

(ii)   **ancillary service agents**; and

(iii)   **dispatchable load purchasers** (other than **dispatch notification purchasers**) that have submitted **nominated dispatch bids**; and

(ab)   issuing **dispatch notifications** to **dispatch notification purchasers**.

(b)   a **non-response schedule** by issuing **dispatch instructions** to **dispatchable load purchasers** that have submitted **nominated dispatch bids**.

(2)   The **system operator** must issue each **dispatch instruction** and each **dispatch notification** in a reasonable and timely manner to enable the **participant** to which the **dispatch instruction** or **dispatch notification** is issued to comply with the **dispatch instruction** or **dispatch notification**.

(3)   Despite subclause (1), the **system operator** is not required to issue a **dispatch instruction** to a **participant** if—(a) the **dispatch instruction** is—

(a)i)   to provide a quantity of **active power** under clause 13.73(1)(a); or

(b)ii)   to provide a quantity of **instantaneous reserve** under clause 13.73(1)(b).; and

(4)   Despite subclause (1), the **system operator** is not required to issue a **dispatch instruction** or **dispatch notification** to a **participant** if (b)   the **dispatch instruction** or **dispatch notification** would differ from the most recent **dispatch instruction** or **dispatch notification** issued to the **participant** by 1 **MW** or less.

13.73 Content of dispatch instructions ~~to generators, ancillary service agents, and~~
~~dispatchable load purchasers~~

~~(1)~~ The **system operator** must ensure that each **dispatch instruction** it issues under clause
13.72(1)(a) instructs the **generator**, ~~or~~ **ancillary service agent**, or <u>**dispatchable load**</u>
<u>**purchaser**</u> to carry out 1 of the following in relation to a **generating plant**, a
generating unit, a **block dispatch group**, a **station dispatch group**, a **frequency**
keeping unit, <u>a **dispatch-capable load station**</u>, or **interruptible load**:

   (a)   provide a quantity of **active power**:
   (b)   provide a quantity of **instantaneous reserve**:
   (c)   provide a quantity and quality of reserve power or alternative to regulate
         frequency continuously:
   (d)   provide a quantity of **reactive power**:
   (e)   adjust transformer tap positions to maintain voltage levels:
   (f)   provide a level of voltage:
   (g)   **synchronise** or **de-synchronise generating plant** within the current **trading**
         period or the next **trading period** either directly or in accordance with any
         process that may be agreed with the **generator**:
   (h)   switch on or switch off schemes for over frequency tripping where such capability
         exists in **generating plant** that a **generator** has offered to provide to the **system**
         operator:
   (i)   manage the **generating plant** within a **block dispatch group** or **station dispatch**
         group so as to ensure the largest single reserve risk within that **block dispatch**
         group or **station dispatch group** does not exceed the relevant maximum reserve
         risk notified by the **system operator** for the North Island or the South Island for
         each **trading period**:
   (j)   manage the total aggregate generation for each **sub-block dispatch group** or **sub-**
         station dispatch group for that **generator** so as not to exceed the total sum of the
         dispatched quantities for each **generating plant** or **generating unit** comprising
         that **sub-block dispatch group** or **sub-station dispatch group** for the duration of
         the notice received under clauses 13.60, 13.61, or 13.64 to 13.66:
   (k)   manage the total aggregate generation for each **block dispatch group** or **station**
         dispatch group for that **generator** so as to meet the total sum of the **dispatched**
         quantities for each **generating station** or **generating unit** comprising that **block**
         dispatch group or **station dispatch group**<u>:</u>
   (l)   <u>use a specified quantity of **electricity**.</u>

~~(2)   The **system operator** must ensure that each **dispatch instruction** issued under clause~~
~~13.72(1)(b) instructs the **dispatchable load purchaser** to use a specified quantity of~~
~~electricity in relation to a **dispatch-capable load station**.~~

13.74 Content of dispatch instructions to reserve, interruptible load, and frequency
keeping suppliers *[Revoked]*

13.75 Form of dispatch instruction
(1)   When issuing a **dispatch instruction** under clause 13.72(1)(a), the **system operator**
      must specify—
   (a)   the **generating plant**, **generating unit**, **block dispatch group**, **station dispatch**
         group, **interruptible load**, <u>**dispatch-capable load station**,</u> or **frequency**
         keeping units to which the **dispatch instruction** applies; and
   (b)   the desired outcome of the **dispatch instruction**; and

(c)   if the start time for the **dispatch instruction** differs from the issue time, the start time within the current **trading period** or the next **trading period**; and

(d)   if specific ramp rates are concerned, a specific target time to reach the desired outcome; and

(e)   the time at which the **dispatch instruction** was issued; and

(f)   any **block security constraint** that occurs within a **block dispatch group** and how the **block security constraint** divides the **generating stations** or **generating units** of a **block dispatch group** into **sub-block dispatch groups** as part of such a **dispatch instruction**; and

(g)   any **station security constraint** that occurs within a **station dispatch group** and how the **station security constraint** divides the **generating stations** or **generating units** of a **station dispatch group** into **sub-station dispatch groups**; and

(h)   if it is a **dispatch instruction** specified in clause 13.73~~(1)~~(i), the maximum reserve risk for the relevant **island**; and~~.~~

~~(2)~~ (i)   ~~W~~when issuing a **dispatch instruction** to a **dispatchable load purchaser**, ~~under clause 13.72(1)(b), the~~ **system operator** ~~must specify~~

~~(a)~~ (i)   the **dispatch-capable load station** to which the **dispatch instruction** applies; and

~~(b)~~ (ii)   the **trading period** for which the **dispatch instruction** is issued; and

~~(c)~~ (iii)   the desired outcome of the **dispatch instruction**.

13.76 Dispatch instructions _and dispatch notifications_ to be logged

~~(1)~~ ~~The~~ **system operator** ~~must issue~~ **dispatch instructions** ~~using the electronic facilities specified in the~~ **information system** ~~to —~~

    ~~(a)~~ ~~each~~ **generator**~~; and~~

    ~~(b)~~ ~~each~~ **dispatchable load purchaser** ~~that has submitted a~~ **nominated dispatch bid**~~.~~

(1)   Subject to subclause (2), the **system operator** must use the electronic facilities specified in the **information system** to issue **dispatch instructions** and **dispatch notifications**.

(2)   The **system operator** must use either voice communication or electronic communication (if such facility exists) to issue **dispatch instructions** to each **ancillary service agent**.

(3)   The **system operator** must log and record each **dispatch instruction** and **dispatch notification**.

(4)   Each **generator** and each **ancillary service agent** must log each **dispatch instruction** received from the **system operator**.

(5)   The **system operator** must provide a copy of each **dispatch instruction** and each **dispatch notification**—

    (a)   to the **clearing manager**, by 1600 hours on the 7th **business day** of the **billing period** after the **billing period** in which the **system operator** issues and logs the **dispatch instruction** or **dispatch notification**; and

    (b)   to the **Authority**, by 1600 hours on the first **business day** after the day on which the **system operator** issues and logs the **dispatch instruction** or **dispatch notification**.

~~(6)~~ ~~For the purpose of subclause (5), if the~~ **system operator** ~~has issued more than 1~~ **dispatch instruction** ~~for a~~ **dispatch-capable load station** ~~for the same~~ **trading period**~~,~~ ~~the~~ **system operator** ~~must provide a copy of the latest~~ **dispatch instruction.**

…

13.79 Acknowledgement of dispatch instructions

If the **system operator** has issued a **dispatch instruction** to a **generator** or an **ancillary service agent**, that person must acknowledge to the **system operator** receipt of that **dispatch instruction** within 4 minutes of receiving that **dispatch instruction**, and must use its reasonable endeavours to acknowledge to the **system operator** receipt of the **dispatch instruction** within 3 minutes of receiving the **dispatch instruction**.

13.80 Dispatch instructions provided to grid owner

(1) If the **system operator** has issued a **dispatch instruction** to an **embedded generator** to generate from a **generating plant** required by the **system operator** to be scheduled, the **system operator** must inform the **grid owner** that is **connected** to the **local network** in which the **embedded generator** is located of the quantity of **active power** that was the subject of such **dispatch instruction** and the **trading periods** for which the **dispatch instruction** was issued.

(2) The **system operator** must provide the information to the relevant **grid owner** by 0400 hours on the day after the **dispatch instruction** was issued.

13.81 Backup procedures if communication not possible

(1) The **system operator** must follow the back-up procedures specified by it from time to time if—
   (a) none of the mechanisms described in clause 13.76 are available to issue **dispatch instructions** or **dispatch notifications** under clause 13.72(1)(a); or
   (b) the **system operator** does not receive an acknowledgement from a **generator** or **ancillary service agent** of receipt of a **dispatch instruction** within 10 minutes after issuing the **dispatch instruction**.

(2) If the **system operator** is not able to send, using the electronic facilities specified under clause 13.76(1), a **dispatch instruction** or **dispatch notification** to a **dispatchable load purchaser** that has submitted a **nominated dispatch bid**, the **dispatchable load purchaser** must follow the backup procedures specified by the **system operator**.

13.82 Dispatch instructions to be complied with

(1) This clause applies to—
   (a) a **generator**; and
   (b) an **ancillary service agent**; and
   (c) a **dispatched purchaser**.

(2) Each **participant** to which this clause applies must comply with a **dispatch instruction** properly issued by the **system operator** under clause 13.72 unless,—
   (a) in the **participant's** reasonable opinion,—
      (i) personnel or plant safety is at risk; or
      (ii) following the **dispatch instruction** will contravene a law; or
   (b) the **generating plant** or **dispatch-capable load station** is already responding to an automated signal to activate—
      (i) **capacity reserve**; or
      (ii) **instantaneous reserve**; or

(iii) **automatic under-frequency load shedding**; or

(iv) **over frequency reserve**; or

(c) the **participant** is a **generator** or **ancillary service agent** acting in accordance with clause 13.86; or

(d) the **participant** is an **intermittent generator** that has complied with clause 13.17 and clause 13.18A, and the **system operator** has not advised that there is—

(i) a **grid emergency**; or

(ii) a system **constraint** that directly affects the **intermittent generator**; or

(e) the **participant**—

(i) is a **generator**; and

(ii) deviates from a **dispatch instruction** for **active power** to comply with clause 8.17; or

(f) the **participant**—

(i) is a **dispatched purchaser**; and

(ii) deviates from the **dispatch instruction**—

(A) to comply with a request issued by the **system operator** under clause 5(4) of **Technical Code** B of Schedule 8.3; or

(B) to comply with clause 8.18; or

(g) the **participant**—

(i) is a **dispatched purchaser**; and

(ii) cannot comply with the **dispatch instruction** because of a disconnection of **demand** under clause 7A of **Technical Code** B of Schedule 8.3; or

(ga) the **participant**—

(i) is a **dispatched purchaser**; and

(ii) the **dispatch instruction** is issued for a **trading period** for which the latest **nominated bid** for the relevant **dispatch-capable load station** is a **nominated non-dispatch bid**; or

(h) the **participant**—

(i) is a **generator** or an **ancillary service agent**; and

(ii) deviates from a **dispatch instruction** to comply with clause 9 of **Technical Code** B of Schedule 8.3; or

(i) the **participant**—

(i) is a **generator** or an **ancillary service agent**; and

(ii) is acting in accordance with a commissioning or test plan that—

(A) is required under clause 2(6) of **Technical Code** A of Schedule 8.3; and

(B) expressly allows the **generator** or **ancillary service agent** to depart from the **dispatch instruction** for the purpose of the commissioning or test plan; and

(iii) has no reasonable means of complying with the **dispatch instruction** while acting in accordance with the commissioning or test plan; or

(j) the **participant** is a **type B co-generator** and the **system operator** has not advised that there is—

(i) a **grid emergency**; or

(ii) a system **constraint** that directly affects the **type B co-generator**.

(3) A **participant** to which the exception in subclause (2)(a) applies must immediately advise the **system operator** of the circumstance in which the exception arises.

(4) If a **dispatched purchaser** is issued with more than 1 **dispatch instruction** for the same **dispatch-capable load station** for the same **trading period**, the **dispatched purchaser** must comply with the latest **dispatch instruction**.

(5)   To avoid doubt, a **dispatch instruction** listed in clause 13.73~~(1)~~(b) to 13.73~~(1)~~(f) or 13.73~~(1)~~(h) is properly issued only if—

    (a)   the **generator** or **ancillary service agent** to which the **dispatch instruction** is given has an enforceable contract with the **system operator** for the provision of services relating to the **dispatch instruction**; or

    (b)   the **dispatch instruction** is consistent with an enforceable contract between the **system operator** and the **generator** or **ancillary service agent** for the provision of services relating to the **dispatch instruction**; or

    (c)   the **dispatch instruction** is given for the purposes of clause 8.5 or 13.70; or

    (d)   the **dispatch instruction** is consistent with—

        (i)   the **asset owner performance obligations** under clauses 8.22 to 8.24; or

        (ii)   the **technical codes** concerning voltage; or

        (iii)   a **dispensation**.

(6)   A **dispatched purchaser** issued with a **dispatch instruction** for a **dispatch-capable load station** must not make changes to its other load at the same **GXP** with the intention of offsetting the **dispatch instruction** for the **dispatch-capable load station**.

13.82A Compliance with dispatch notifications

(1)   A **dispatch notification purchaser** is not required to comply with a **dispatch notification** issued by the **system operator** under clause 13.72.

(2)   However, the **system operator** may, in considering whether to suspend or revoke a **dispatch notification purchaser's** approval under clause 10 of Schedule 13.8, take into account the extent to which a **dispatch notification purchaser** complies with **dispatch notifications**.

13.83 Generators to make staff or facilities available to meet dispatch instructions

(1)   Each **generator** must ensure, with respect to each of its **generating plants** that is the subject of an **offer**, that appropriate personnel or facilities are available to receive and comply with any **dispatch instruction** given by the **system operator** to the **generator**.

(2)   Nothing in this clause limits the ability of a **generator** to have a control centre that operates 1 or more items of **generating plant** by remote control.

13.83A Dispatchable load purchasers to make staff or facilities available to meet dispatch instructions and dispatch notifications

(1)   Each **dispatchable load purchaser** that has submitted a **nominated dispatch** ~~bid~~**bid** must ensure that appropriate personnel or facilities are available to receive and comply with each **dispatch instruction** or **dispatch notification** issued to the **dispatchable load purchaser**.

(2)   Nothing in this clause limits the ability of a **dispatchable load purchaser** to have a control centre that operates 1 or more **dispatch-capable load stations** by remote control.

…

13.87A Approval process for dispatch notification purchasers

(1)   A **purchaser** may apply to become a **dispatch notification purchaser** by applying to the **system operator** for approval of the relevant device or group of devices as a **dispatch-capable load station** under Schedule 13.8.

(2)   If the **system operator** receives an application under subclause (1), the **system operator** must consider the application in accordance with Schedule 13.8.

(3)   If the **system operator** approves a **purchaser's** application to become a **dispatch notification purchaser**,—

(a)   the purchaser is a **dispatch notification purchaser** in relation to the **dispatch-capable load station** to which the application relates; and

(b)   the approval is valid until the date on which the approval is revoked under clause 10 of Schedule 13.8; but

(b)   the **purchaser** in respect of which approval is granted is not a **dispatch notification purchaser** while approval for the **relevant dispatch-capable load station** is suspended under clause 10 of Schedule 13.8.

13.87B Content of dispatch notifications

The **system operator** must ensure that each **dispatch notification** it issues under clause 13.72(1)(b) instructs the **dispatch notification purchaser** to use a specified quantity of **electricity** at a **non-dispatch-capable load station**.

13.87C Form of dispatch notification

When issuing a **dispatch notification** under clause 13.72(1)(b), the **system operator** must specify—

(a)   the **dispatch-capable load station** to which the **dispatch notification** applies; and

(b)   the desired outcome of the **dispatch notification**; and

(c)   if the start time for the **dispatch notification** differs from the issue time, the start time of the **dispatch notification**; and

(d)   the time at which the **dispatch notification** was issued.

Real time prices

13.88 Preparation of schedule of real time prices

(1)   The purpose of this clause is to require the **system operator** to produce the schedule of **real time prices**.

(2)   Each schedule of **real time prices** prepared by the **system operator** must cover 1 **real time pricing period**.

(3)   In preparing each schedule of **real time prices**, the **system operator** must use the methodology in Schedule 13.3.

(4)   The **system operator** must use its reasonable endeavours to complete a new schedule of **real time prices** for a **real time pricing period** as soon as practicable after the relevant **real time pricing period**, provided that the information required to calculate the schedule of **real time prices** (as set out in Schedule 13.3) is available to the **system operator**.

13.89 Publication of schedule of real time prices

The **system operator** must use reasonable endeavours to **publish** each schedule of **real time prices** in accordance with clauses 13.90 to 13.96.

13.90 Process for publishing real time prices

(1) The **system operator** must use reasonable endeavours to **publish**, for each **real time pricing period**, as soon as practicable after the **real time pricing period**, —

    (a) a schedule of **real time prices**; and

    (b) the following additional information for each schedule of **real time prices**:

        (i) the number of transmission **lines** or transformers that have a **MW** arc flow equal to the maximum flow limit (in **MW**) on that transmission line or transformer set by the **grid owner** in accordance with clauses 13.29 to 13.32:

        (ii) the number of groups of transmission **lines** or transformers, or both, that have a total **MW** arc flow equal to the relevant maximum flow limit (in **MW**) as set by the **system operator** in accordance with Schedule 13.3:

        (iii) the aggregate of the following occurrences:

            (A) the number of occurrences at which energy (in **MW**) for a **generator** at a set of **grid injection points** is equal to the minimum and/or maximum generation (in **MW**) for that set of **grid injection points** set by the **system operator** in accordance with Schedule 13.3:

            (B) the number of occurrences at which energy (in **MW**) and reserves (in **MW**) for a **generator** at a set of **grid injection points** is equal to the maximum generation (in **MW**) for that set of **grid injection points** set by the **system operator** in accordance with Schedule 13.3:

            (C) the number of occurrences at which reserve (in **MW**) for a **participant** at a set of **grid exit points** is equal to the maximum reserve (in **MW**) for that set of **grid exit points** as determined under Schedule 13.3:

        (iv) the number of occurrences at which the ramp up rate is equal to the maximum ramp up rate specified in the relevant **offer**:

        (v) the number of occurrences at which the ramp down rate is equal to the maximum ramp down rate as specified in the relevant **offer**:

        (vi) the number of **grid exit points** at which demand was estimated.

(2) The **system operator** must use reasonable endeavours to make available to **participants**, for each **grid injection point** and each **grid exit point**, a time-weighted average of the **real time prices** for each **trading period**.

13.91 Transmission of information through information system

(1) All information that must be made available by the **system operator** under clauses 13.89 to 13.96 must be transmitted through the electronic facility contained in the **information system**.

(2) If the **information system** is unavailable to send information under clauses 13.89 to 13.96, the **system operator** must follow the backup procedures specified by the **market administrator**.

(3) The backup procedures referred to in subclause (2) must be specified by the **market administrator** following consultation with **purchasers**, **generators** and the **system operator**. The **market administrator** must ensure that there is always a backup procedure notified to **purchasers**, **generators** and the **system operator**.

13.92 Transmission of information through website
(1) ~~The information (if any) received from the **system operator** under clause 13.90 must be made available by the **market administrator** by placing that information on a publicly accessible website.~~
(2) ~~If the publicly accessible website upon which information is placed under subclause (1) is no longer available, the **market administrator** is not required to follow any backup procedures, and the **market administrator** is not required to make the information available on the publicly accessible website at a later time.~~

13.93 Market administrator to appoint person to monitor and assess demand side participation and real time prices
(1) ~~The **market administrator** may, or may appoint a person at any time to, monitor and assess the **real time prices** made available by the **system operator** under clauses 13.89 to 13.96 in the context of demand side participation.~~
(2) ~~The **system operator** must use reasonable endeavours to make available to the **market administrator** or the person appointed by the **market administrator** under subclause (1), in a manner agreed between the **system operator** and that person, —~~
(a) ~~if that person is not the **market administrator**, the information the **system operator** makes available to the **participants** and the **market administrator** under clause 13.90; and~~
(b) ~~for each **grid injection point** and each **grid exit point**, a volume weighted average of the **real time prices** for each **trading period**.~~

13.94 System operator may suspend publication of real time prices
~~Despite anything in this Code, the **system operator** may delay the making available and transmitting of **real time prices** and any other information under clauses 13.89 to 13.96 if the **system operator**—~~
(a) ~~issues a **formal notice** in accordance with clause 5 of **Technical Code** B of Schedule 8.3; or~~
(b) ~~reasonably believes that its **principal performance obligations** are not being met for the period specified in the **system operator's** instruction.~~

13.95 Real time prices not binding
~~The **real time prices published** and made available under clauses 13.89 to 13.96 are indicative only and are not **provisional prices**, **interim prices**, **final prices** or binding in relation to the settlement and clearing processes.~~

13.96 Purchaser to co-operate with system operator to manage <u>significant changes in demand</u>~~response to real time prices~~
(1) This clause applies to a **purchaser** that wishes to increase or decrease its total **demand**, other than **demand** for a **dispatch-capable load station** for which a **nominated dispatch bid** is submitted, across 1 or more of its **grid exit points** ~~in response to **real time prices**~~ by—
(a) greater than 50 **MW** in any 15 minute period in the North Island; or
(b) greater than 30 **MW** in any 15 minute period in the South Island.
(2) If this clause applies, the **purchaser** must—

(a) advise the **system operator** by telephone of the increase or decrease at least 5 minutes before the change; and

(b) if instructed by the **system operator** by telephone, manage any such increase or decrease in accordance with the instructions.

…

~~**13.99A Effect of grid emergency on nominated dispatch bids**~~
~~(1) This clause applies—~~
~~(a) if the **system operator** has declared a **grid emergency**; and~~
~~(b) to each **nominated dispatch bid** that is for—~~
~~(i) a **GXP** that is in the affected electrical or geographical region as specified in the **formal notice** issued by the **system operator**; and~~
~~(ii) a **trading period** that is specified in the **formal notice** issued by the **system operator**.~~
~~(2) If this clause applies, a **purchaser** must immediately change each **bid** to which this clause applies from a **nominated dispatch bid** to a **nominated non-dispatch bid**.~~

13.100 Purchasers may change other parameters

Despite clause 13.99, during a **grid emergency**, a **purchaser** may—

(a) increase a **nominated bid's** quantities, or submit **nominated bids** at **GXPs** that were not subject to **nominated bids** before the **grid emergency**, if equivalent decreased quantities are, in substitution, bid for **GXPs** in the affected electrical or geographical region, as specified in the **formal notice** issued by the **system operator**, which were the subject of **nominated bids** made by the **purchaser**; and

(b) decrease a **nominated bid's** quantities.

…

System operator to <u>provide and</u> publish information

13.103 *[Revoked]*

13.104 Information to be published <u>in respect of price-responsive schedule and non-response schedule</u>

(1) As soon as practicable after the **system operator** has completed preparing a **price-responsive schedule** and a **non-response schedule**, the **system operator** must **publish**, for each **trading period** in the **schedule length period**, <u>the information described in clause 1 of Schedule 13.3B.</u>~~—~~
~~(a) the following information in respect of both the **price-responsive schedule** and the **non-response schedule**:~~
~~(i) **forecast prices** and **forecast reserve prices**; and~~
~~(ii) scheduled **non-dispatch-capable load** at each **conforming GXP**; and~~
~~(iii) the aggregate supply curve at each **reference point** incorporating all **offers** from **generators** with **offer** prices adjusted for **forecast marginal location factors**; and~~
~~(iv) the **grid injection points** and **grid exit points** that are **disconnected**; and~~
~~(v) the **grid injection points** and **grid exit points** where an **infeasibility situation** has occurred; and~~

      (vi) ~~the scheduled largest single reserve risk for each **island** as described in clause 13.59(ix); and~~

      (vii) ~~the scheduled levels of **fast instantaneous reserve** and **sustained instantaneous reserve** required in each **island** as described in clause 13.59(x); and~~

      (viii) ~~the **reserve offer** stacks for each **island** as described in clause 13.59(xi); and~~

      (ix) ~~the adjusted **reserve offer** stacks for each **island** as described in clause 13.59(xii); and~~

      (x) ~~*[Revoked]*~~

      (xi) ~~the scheduled **HVDC component flows**; and~~

      (xii) ~~the scheduled **HVDC risk offsets**; and~~

      (xiii) ~~the **expected near-constraint arc flows**; and~~

      (xiv) ~~the **expected near-group-constraint arc flows**; and~~

      (xv) ~~the **group constraint formulas** relating to the **expected near-group-constraint arc flows**; and~~

      (xvi) ~~the expected deficit quantities for energy, **fast instantaneous reserve**, and **sustained instantaneous reserve** (if any); and~~

      (xvii) ~~whether the **HVDC link** is out of service; and~~

  (b) ~~in relation to the **price-responsive schedule**, the aggregate **demand** curve at each **reference point** incorporating the forecast prepared under clause 13.7A(1), and all **bids** from **purchasers** with **bid** prices adjusted for **forecast marginal location factors**; and~~

  (c) ~~in relation to the **non-response schedule**, the scheduled **frequency keeping units** for each **island**.~~

(2) Subclause (3) applies to—

  (a) each **price-responsive schedule** prepared under clause 13.62(1)(a):

  (b) each **non-response schedule** prepared under clause 13.62(1)(a).

(3) Despite subclause (1), for each schedule to which this subclause applies, the **system operator** is not required to **publish** the information <u>referred to</u> ~~set out~~ in subclause (1) for the **trading periods** covered by—

  (a) the **price-responsive schedule** prepared under clause 13.62(1)(b):

  (b) the **non-response schedule** prepared under clause 13.62(1)(b).

<u>13.104A Information to be published in respect of dispatch schedule</u>

(1) <u>The **system operator** must **publish** the information described in clause 2 of Schedule 13.3B through the electronic facility contained in the **information system** each time the **system operator** implements a **dispatch schedule**.</u>

(2) <u>If the **information system** is unavailable to send information, the **system operator** must follow the backup procedures specified by the **Authority**.</u>

(3) <u>The backup procedures referred to in subclause (2) must be specified by the **Authority** following consultation with **purchasers**, **generators**, **ancillary service agents**, and the **system operator**.</u>

(4) <u>The **Authority** must ensure that there is always a backup procedure notified to **purchasers**, **generators**, **ancillary service agents** and the **system operator**.</u>

13.105 *[Revoked]*

13.105A Information to be provided to purchasers, generators, and ancillary service agents

(1)   At the same time as the **system operator** is required to **publish** information in accordance with clause 13.104(1), the **system operator** must—

    (aa)   send to each **dispatchable load purchaser** that has submitted a **nominated dispatch bid**, information from the current **non-response schedule** relating to the scheduling of the **dispatchable load purchaser's nominated dispatch bids** for the **trading periods** covered in the **schedule length period**; and

    (a)   send to each **purchaser** information from the current **price-responsive schedule** relating to the scheduling of the **purchaser's bids** for the **trading periods** covered in the **schedule length period**; and

    (b)   send to each **generator** information from the current **price-responsive schedule** and **non-response schedule** relating to the scheduling of the **generator's offers** for the **trading periods** covered in the **schedule length period**; and

    (c)   send to each **ancillary service agent** who has submitted a **reserve offer** for the **scheduling period**, information from the current **price-responsive schedule** and **non-response schedule** relating to the scheduling of the **ancillary service agent's reserve offers** for the **trading periods** covered in the **schedule length period**.

(2)   Subclause (3) applies to—

    (a)   each **price-responsive schedule** prepared under clause 13.62(1)(a):

    (b)   each **non-response schedule** prepared under clause 13.62(1)(a).

(3)   Despite subclause (1), for each schedule to which this subclause applies, the **system operator** is not required to send the information set out in subclause (1) for the **trading periods** covered by—

    (a)   the **price-responsive schedule** prepared under clause 13.62(1)(b):

    (b)   the **non-response schedule** prepared under clause 13.62(1)(b).

13.106 Transmission of information through information system

(1)   The information required to be **published** by the **system operator** under clauses 13.104 to 13.105A must be transmitted through the electronic facility contained in the **information system**.

(2)   If the **information system** is unavailable to send information the **system operator** must follow the backup procedures specified by the **market administrator**.

(3)   The backup procedures referred to in subclause (2) must be specified by the **market administrator** following consultation with the **system operator**, ~~**pricing manager**~~, **clearing manager**, **purchasers**, **generators** and **ancillary service agents**. The **market administrator** must ensure that there is always a backup procedure notified to the **system operator**, ~~**pricing manager**~~, **clearing manager**, **purchasers**, **generators** and **ancillary service agents**.

…

Subpart 4—Pricing

13.131 Contents of this subpart

This subpart provides for the processes by which—

(a) the ~~pricing~~ <u>clearing</u> **manager** <u>prepares and</u> **publishes** ~~receives data and produces~~ ~~**provisional prices**, **provisional reserve prices**,~~ **interim prices** <u>and</u>~~,~~ **interim reserve prices**<u>; and</u>~~,~~ **~~final prices~~**, ~~and~~ **~~final reserve prices~~**.

(b) <u>**interim prices** and **interim reserve prices** become **final prices** and **final reserve prices**.</u>

~~13.132 Purpose of the pricing process~~

~~The purpose of the pricing process is to achieve an appropriate balance between certainty and accuracy of **final prices** and **final reserve prices** for each **trading period**. As part of the process—~~

~~(a) the **system operator**, the **pricing manager**, a **grid owner**, or a **generator** must take certain steps under this subpart if a **provisional price situation** or **shortage situation** exists; and~~

~~(b) after any **provisional price situation** is resolved, but before **publishing final prices** or **final reserve prices**, the **pricing manager** must **publish interim prices** and **interim reserve prices**; and~~

~~(c) if an **error claimant** claims that a **pricing error** has been made, the **pricing manager** must consider the claim and resolve any **pricing error** that has occurred; and~~

~~(d) the **pricing manager** must produce **final prices** and send them to the **clearing manager**, who will then use them in the clearing and settlement processes; and~~

~~(e) the **pricing manager** must produce **final reserve prices**.~~

~~13.133 Trigger ratio for high spring washer price situation~~

~~The value of the **high spring washer price trigger ratio** is 5.~~

~~13.134 Methodology to resolve high spring washer price situation~~

~~(1) This clause applies if the **pricing manager**, in relation to a **trading period**,—~~

~~(a) gives notice in accordance with clauses 13.144(1), 13.156(1)(e), or 13.159(a)(iii) that a **high spring washer price situation** exists; or~~

~~(b) **publishes provisional prices** and **provisional reserve prices** in accordance with clauses 13.149 or 13.150 because the revised data required by clause 13.146 or the notice required by clause 13.147 in relation to a **high spring washer price situation** have not been given; or~~

~~(c) **publishes provisional prices** and **provisional reserve prices** in accordance with clause 13.153 because the revised data provided in accordance with clause 13.146 or the notice given in accordance with clause 13.147 have given rise to a **high spring washer price situation**.~~

~~(2) If this clause applies, the **system operator** must—~~

~~(a) identify each **transmission security constraint** that has **bound** in the relevant **trading period**; and~~

~~(b) identify the **constraint price** associated with each **transmission security**~~

constraint identified in accordance with paragraph (a); and

(c) apply the **high spring washer price relaxation factor** —

(i) to the maximum flow limit of the **transmission security constraint** with the highest associated **constraint price**; or

(ii) if 2 or more **transmission security constraints** have the equal highest associated **constraint price**, to the maximum flow limit of each of those **transmission security constraint**s.

(2A) *[Revoked]*

(2B) *[Revoked]*

(3) *[Revoked]*

(4) After the **system operator** has applied the **high spring washer price relaxation factor** under subclause (2)(c), the **system operator** must determine whether a **high spring washer price situation** still exists in the **trading period**.

(5) If the **system operator** determines under subclause (4) that a **high spring washer price situation** still exists in the **trading period**, the **system operator** must reapply the **high spring washer price situation methodology** for that **trading period** unless subclause (6) applies.

(6) The **system operator** must not reapply the **high spring washer price situation methodology** under subclause (5) if doing so would require the **system operator** to apply the **high spring washer price relaxation factor** to a maximum flow limit to which the **high spring washer price relaxation factor** has already been applied for the **trading period**.

13.134A Methodology for calculating interim prices

The **clearing manager** must calculate the **interim price** and **interim reserve price** for a **trading period** in accordance with the following formula:

$$I = \frac{\sum_{t=1}^{n} P_t \times (T_{t+1} - T_t)}{1800}$$

where

I   is the **interim price** or **interim reserve price**

t   is the sequential number of a **dispatch price** or **dispatch reserve price** in the set *n* in the **trading period**

n   is the total number of **dispatch prices** or **dispatch reserve prices** that apply during the **trading period**

P_t is the **dispatch price** or **dispatch reserve price** received by the **WITS manager** that applies for the **trading period** at time T_t

T_t is the start time of the sequential numbered *t* **dispatch price** or **dispatch reserve price** for the **trading period**, received by the **WITS manager**

T_1 is the start time of the **trading period**

T_{n+1} is the start time of the next **trading period**, for the case *t=n*

but

if there is no **dispatch price** or **dispatch reserve price** for t =1 in a **trading period**, the **dispatch price** or **dispatch reserve price** (as the case may be) for the t =1 period is the **forecast price** or **forecast reserve price** in the most recent **price-responsive schedule** received by the **clearing manager**

if there is no **dispatch price** or **dispatch reserve price** for t >1 in a **trading period**, the **dispatch price** or **dispatch reserve price** (as the case may be) for the relevant time period is the **dispatch price** or **dispatch reserve price** for t-1.

~~13.135 Methodology used to prepare provisional, interim, and final prices~~
~~The **WITS manager** must calculate in accordance with, The WITS manager must calculate **provisional prices, provisional reserve prices, interim prices, interim reserve prices, final prices** and **final reserve prices** the **pricing manager** must use —~~
~~(a)   the method in clause~~
~~(a)   the **input information** in clause 13.141; and~~
~~(b)   the methodology in Schedule 13.3.~~

~~13.135A Notice of scarcity pricing situation~~
~~(1)   This clause applies if the **pricing manager**, in relation to a **trading period**, gives notice in accordance with clause 13.144(1) that a **shortage situation** exists.~~
~~(2)   If this clause applies, the **pricing manager** must determine whether a **scarcity pricing situation** exists in the relevant **trading period**.~~

(3)   An **island scarcity pricing situation** exists for an **island** if the **pricing manager** gives notice that an **island shortage situation** existed and the **input information** or revised data shows that—

(a)   for the relevant **trading period**, there is no **binding constraint** in the **island** (excluding the **HVDC link**) in which an **island shortage situation** declaration is made; and

(b)   for the relevant **trading period**—

(i)   the **HVDC link** is in service and—

(A)   if the **island** in which the **island shortage situation** declaration is made is the South Island, the price at the Benmore **node** is higher than the price at the Haywards **node**; or

(B)   if the **island** in which the **island shortage situation** declaration is made is the North Island, the price at the Haywards **node** is higher than the price at the Benmore **node**; or

(ii)   the **HVDC link** is out of service.

(4)   A **national scarcity pricing situation** exists if the **pricing manager** gives notice that a **national shortage situation** existed and the **input information** or revised data shows that, for the relevant **trading period**,—

(a)   there is no **binding constraint** in either **island**; and

(b)   the **HVDC link** is in service and there is no **binding constraint** on the **HVDC link**.

(5)   If the **pricing manager** determines that a **scarcity pricing situation** exists, the **pricing manager** must—

(a)   **publish** notice of the **scarcity pricing situation**; and

(b)   specify in the notice each **trading period** affected by the **scarcity pricing situation**; and

(c)   in relation to each **trading period** affected by the **scarcity pricing situation**, specify in the notice whether the **scarcity pricing situation** is an **island scarcity pricing situation** or a **national scarcity pricing situation**.

13.135B Methodology to prepare interim prices and interim reserve prices if scarcity pricing situation exists

Subject to clause 13.135C, if a **scarcity pricing situation** exists in a **trading period**, the **pricing manager** must—

(a)   calculate **interim prices** and **interim reserve prices** in the affected **island** or **islands** for that **trading period** in accordance with the methodology set out in Schedule 13.3A; and

(b)   **publish interim prices** and **interim reserve prices** for the **trading period** by—

(i)   if no **provisional price situation** is notified, 1200 hours in the following **trading day**; or

(ii)   if a **provisional price situation** is notified, 2.5 hours after the **provisional price situation** is resolved.

13.135C Limitation on application of scarcity pricing provisions

Clause 13.135B does not apply—

(a) in the case of an **island scarcity pricing situation**, if the average **island GWAP** in the previous 336 **trading periods** in the **island** affected by the **scarcity pricing situation** exceeds $1,000 per **MWh**; or

(b) in the case of a **national scarcity pricing situation**, if the average **island GWAP** in the previous 336 **trading periods** in either **island** exceeds $1,000 per **MWh**.

Generators to give grid owner half-hour metering information

Cross heading: amended, on 19 December 2014, by clause 27 of the Electricity Industry Participation Code Amendment (Minor Code Amendments) (No 3) 2014.

13.136 Generators to provide half-hour metering information

(1) Each **generator** must give the relevant **grid owner half-hour metering information** under clause 13.138 in relation to **generating plant** that is subject to a **dispatch instruction**—

(a) that injects **electricity** directly into a **local network** or an **embedded network**; or

(b) if the **meter** configuration is such that the **electricity** flows into a **local network** without first passing through a **grid injection point** or **grid exit point metering installation**.

(1A) For the purposes of subclause (1), the relevant **grid owner** is—

(a) in relation to a **generator** (other than an **embedded generator**), the **grid owner** of the **grid** to which the **generator's generation** is **connected**; and

(b) in relation to a **generator** that is an **embedded generator**, the **grid owner** of the **grid** to which the **local network** to which the **embedded generator** is directly or indirectly **connected**, is **connected**.

(2) To avoid doubt, subclause (1) does not apply in respect of—

(a) any **unoffered generation**; or

(b) **electricity** supplied from—

(i) an **intermittent generating station**; or

(ii) a **type B industrial co-generating station**.

13.137 Generators to provide half-hour metering information for unoffered and intermittent generation and type B industrial co-generation

(1) Each **generator** must give the relevant **grid owner half-hour metering information** for—

(a) **unoffered generation** from a **generating station** with a **point of connection** to the **grid**; and

(b) **electricity** supplied from an **intermittent generating station** with a **point of connection** to the **grid**; and

(c) **electricity** supplied from a **type B industrial co-generating station** with a **point of connection** to the **grid**.

(2) To avoid doubt, each **generator** must give the relevant **grid owner** the **half-hour metering information** required under this clause in accordance with the requirements of Part 15 for the collection of the **generator's volume information**.

(3) If the **half-hour metering information** is not available, the **generator** must give the relevant **grid owner** a reasonable estimate of such data.

13.138 Generator's half-hour metering information to be adjusted for losses
(1)   Each **generator** must provide the information required by clauses 13.136 and 13.137 —
       (a)   adjusted for **losses** (if any) relative to the **grid injection point** or, for **embedded generators** the **grid exit point**, at which it offered the **electricity**; and
       (b)   in the manner and form that the relevant **grid owner** stipulates; and
       (c)   by 0500 hours on a **trading day** for each **trading period** of the previous **trading day**.
(2)   To avoid doubt, each **generator** must provide the **half-hour metering information** required under this clause in accordance with the requirements of Part 15 for the collection of that **generator's volume information.**

13.138A Dispatchable load purchaser's half-hour metering information to be adjusted for losses
(1)   Each **dispatchable load purchaser** must provide **half-hour metering information** to the relevant **grid owner** —
       (a)   for each of its **dispatch-capable load stations**; and
       (b)   in accordance with subclause (2).
(2)   Each **dispatchable load purchaser** must provide the **half-hour metering information** —
       (a)   adjusted for **losses**, if any, relative to the **grid exit point** at which the **dispatchable load purchaser** purchases **electricity** for the **dispatch-capable load station**; and
       (b)   in the manner and form advised by the relevant **grid owner**; and
       (c)   by 0500 hours on a **trading day** for each **trading period** of the previous **trading day**.
(3)   To avoid doubt, each **dispatchable load purchaser** must prepare the **half-hour metering information** required under this clause in accordance with the requirements of Part 15 for the collection of the **dispatchable load purchaser's volume information.**
(4)   If the **Authority** or the **system operator** requests a copy of the information specified in subclause (2) from a **dispatchable load purchaser**, the **dispatchable load purchaser** must comply with the request.

13.138B System operator to give list of trading periods
(1)   The **system operator** must give the **pricing manager** and the relevant **grid owner** a list showing, in relation to each **dispatch-capable load station**, each **trading period** in the previous **trading day** for which there is a **nominated dispatch bid**.
(2)   The **system operator** must give the list to the **pricing manager** and the relevant **grid owner** —
       (a)   by 0500 hours on each **trading day**; and
       (b)   in the manner and form agreed by the **pricing manager** and the **system operator**.

13.139 Half-hour metering information part of input information
       The adjusted **half-hour metering information** provided under clauses 13.136 to 13.138A forms part of the input information in the formula in clause 13.141(1)(b)(i).

13.140 Generators and dispatchable load purchasers to notify provision of half-hour metering information

(1)   This clause applies to—
    (a)   a **generator**; and
    (b)   a **dispatchable load purchaser**.
(2)   If a **participant** to which this clause applies provides **half-hour metering information** to a **grid owner** under clauses 13.136 to 13.138, or 13.138A, the **participant** must advise the relevant **grid owner** by 0500 hours on the day the **participant** provided the **half-hour metering information** to the relevant **grid owner**.

13.141 Pricing manager to use certain input information
(1)   The **pricing manager** must use the following **input information**:
    (a)   for existing generation configuration—
        (i)   data specifying the instantaneous **MW injection** at the **grid injection point** at the beginning of each **trading period** for each **generating plant** and each **generating unit** that was the subject of **offers** for that **trading period**; or
        (ii)   if no such data is available, a reasonable estimate of such data:
    (b)   for actual **demand** over the **trading period**,—
        (i)   the **demand half-hour metering information** described as L_{MA} below must be calculated as follows:

        $L_{MA} = G_{EA} + L_{MX} - L_{DCLS}$ (for a **grid exit point**)

        $L_{MA} = G_{EA} - L_{MI} - L_{DCLS}$ (for a **grid injection point**)

        $L_{MA} = L_{MX} - L_{DCLS} - UIG_{EA}$ (for an **intermittent generating station** with a **point of connection** to the **grid**, and/or **unoffered generation** from a **generating station** with a **point of connection** to the **grid**, and/or a **type B industrial co-generating station** with a **point of connection** to the **grid**)

        where

        L_{MA} is the adjusted quantity of **electricity** measured in **MWh** by a **metering installation** at a **grid exit point** or **grid injection point**

        L_{MX} is the unadjusted **half-hour metering information** for the quantity of **electricity** measured in **MWh** at a **grid exit point**

        L_{MI} is the unadjusted **half-hour metering information** for the quantity of **electricity** measured in **MWh** at a **grid injection point**

        L_{DCLS} is the adjusted **half-hour metering information** for the quantity of **electricity** measured in **MWh** used by a **dispatch-capable load station** for the **trading periods** that the **system operator** listed under clause 13.138B

        G_{EA} is the adjusted **half-hour metering information** given to the relevant **grid owner** under clause 13.136

        UIG_{EA} is the information given to the relevant **grid owner** under clause 13.137:

        (ii)   if any of the **half-hour metering information** is not available, an **initial estimate** for each **grid exit point** or **grid injection point**:
        (iii)   to avoid doubt, each **grid owner** must provide the **half-hour metering information** to the **pricing manager** required under this clause in

accordance with Part 15 for the collection of that **grid owner's volume information**:

    (c) the final **offers** for each **trading period** submitted by **generators** and provided to the **pricing manager** by the **system operator** in accordance with clause 13.63:

    (ca) the final **nominated dispatch bid** for each **dispatch-capable load station** (other than a **dispatch-capable load station** for which the final **nominated bid** for the **trading period** was a **nominated non-dispatch bid**) dispatched in each **trading period** that was provided to the **pricing manager** by the **system operator** in accordance with clause 13.63:

    (d) the final **reserve offers** for each such **trading period** as given by **ancillary service agents** in accordance with clauses 13.37 to 13.54:

    (e) the final information provided to the **system operator** by a **grid owner** under clauses 13.29 to 13.34 for each **trading period** that the **system operator** notifies in accordance with clause 13.63.

(1AA) The **pricing manager** must remove all **offers** from the following **participants** from the information specified in subclause (1)(c) before using it in the pricing process:

    (a) **intermittent generators**; and

    (b) **type B co-generators**.

(1A) Each **grid owner** must give the **pricing manager** the information the **pricing manager** is required to use under subclause (1)(a) —

    (a) by 0730 hours on each **trading day**; and

    (b) for each **trading period** of the previous **trading day**; and

    (c) in the manner and form agreed by the **pricing manager** and each **grid owner**.

(2) Each **grid owner** must give the information required by subclause (1)(b) to the **pricing manager** by 0730 hours on a **trading day** for each **trading period** of the previous **trading day**. Each **grid owner** must provide this information in the form specified by the **pricing manager**.

(3) The **pricing manager** must **publish** the information by 1000 hours on a **trading day** for each **trading period** of the previous **trading day**.

(4) If the **pricing manager** receives revised demand **half-hour metering information** in accordance with clauses 13.146(1) and 13.154(1A)(b), and if the revised information resolves a **provisional price situation**, the **pricing manager** must **publish** the revised demand **half-hour metering information** no later than the time at which it is required to **publish interim prices** and **interim reserve prices**.

(5) If the **pricing manager** receives revised information after it has **published** information in accordance with subclause 3, it must **publish** the revised information by replacing the previously **published** information with the revised information.

13.142 Pricing manager to publish interim prices unless provisional price situation or shortage situation notified

(1) The **pricing manager** must implement the process set out in clauses 13.143 to 13.185 and resolve the **provisional price situation** or **shortage situation** if, by 1000 hours on a **trading day**, 1 of the following notices has been **published** for the previous **trading day**:

    (a) a notice **published** by a **grid owner**, in accordance with clause 13.143, which specifies that a **SCADA situation** exists:

    (b) a notice **published** by the **pricing manager**, in accordance with clause 13.144(1),

which specifies that an **infeasibility situation** or a **metering situation** or a **high spring washer price situation** or a **shortage situation** exists.

(2)   However, if by 1000 hours on a **trading day** a notice specified in subclause (1) has not been **published** for the previous **trading day**, the **pricing manager** must **publish interim prices** and **interim reserve prices** for the previous **trading day** by 1200 hours.

13.143 Grid owners to notify SCADA situation

(1)   If a **grid owner** gives any **input information** in accordance with clause 13.141 to the **pricing manager**, the **grid owner** must —
   (a)   **publish** notice that it has given the **pricing manager input information**; and
   (b)   specify in the notice whether the **input information** yields a **SCADA situation**, and if so each **trading period** affected; and
   (c)   give details in the notice of the relevant **grid exit points** and **grid injection points** for which the **SCADA situation** exists.

(2)   A **grid owner** must give the notice required by subclause (1)(a) by 0730 hours on the day on which it gives the relevant **input information**.

(3)   Despite subclause (2), the **grid owner** may **publish** further notices advising that the **grid owner** has found that a **SCADA situation** exists and the **trading periods** that are affected by it.

(4)   A **grid owner** must **publish** each notice **published** in accordance with subclause (3) no later than 0900 hours on the same day that it gave notice under subclause (1)(a).

13.144 Pricing manager to give notice of infeasibility situation, metering situation, high spring washer price situation, or shortage situation

(1)   Subject to subclause (2), if the **pricing manager** receives **input information** that yields an **infeasibility situation**, or a **metering situation**, or a **high spring washer price situation**, or receives notice of a **shortage situation** in accordance with clause 5(1A) of **Technical Code** B of Schedule 8.3, the **pricing manager** must, no later than 0900 hours on the day that the **pricing manager** receives the **input information** or notice, —
   (a)   **publish** notice of the **infeasibility situation**, or **metering situation**, or **high spring washer price situation**, or **shortage situation**; and
   (b)   specify in the notice each **trading period** affected by the **infeasibility situation**, or **metering situation**, or **high spring washer price situation**, or **shortage situation**; and
   (c)   in relation to each **trading period** affected by a **high spring washer price situation**, specify in the notice each **transmission security constraint** that has **bound** in the relevant **trading period** or **trading periods**; and
   (d)   in relation to each **trading period** affected by a **shortage situation**, specify in the notice whether the **shortage situation** is an **island shortage situation** or a **national shortage situation**.

(2)   The **pricing manager** must not give notice of a **high spring washer price situation** or **shortage situation** in accordance with subclause (1) in relation to a **trading period** if an **infeasibility situation**, or a **metering situation**, or a **SCADA situation** exists in that **trading period** and has not been resolved.

13.145 Grid owner to give notice that estimated data given

If a **grid owner** gives the **pricing manager** estimated **input information** in accordance with clauses 13.141(1)(a)(ii) or (b)(ii), the **grid owner** must, by 0730 hours on the day the relevant **input information** is required by clause 13.141 —

(a)   **publish** notice of any **input information** that is estimated; and

(b)   specify in the notice whether the estimated information relates to **SCADA** or **half-hour metering information**; and

(c)   give details in the notice of the **grid exit points** and **grid injection points** to which the estimated information relates; and

(d)   specify in the notice whether the estimated information relates to a **dispatch capable load station** or a **type B industrial co-generating station**; and

(e)   specify in the notice the **trading periods** for which the input information is estimated for each relevant **grid exit point**, **grid injection point**, and **dispatch capable load station**.

13.146 Requirements if provisional price situation or shortage situation exists

(1)   If notice is given by —

(a)   a **grid owner** to the **pricing manager** of a **SCADA situation** in accordance with clause 13.143; or

(b)   the **pricing manager** of a **metering situation** in accordance with clause 13.144(1); or

(c)   the **pricing manager** of an **infeasibility situation** in accordance with clause 13.144(1) —

the relevant **grid owner**, and, in the case of an **infeasibility situation**, the **system operator**, must exercise reasonable endeavours to resolve the **provisional price situation** and to provide revised data to the **pricing manager**.

(2)   If notice is given of a **high spring washer price situation** in accordance with clause 13.144(1), the **system operator** must apply the **high spring washer price relaxation factor** in accordance with the **high spring washer price situation methodology** and provide revised data to the **pricing manager**.

(2A)   If the **pricing manager** gives notice of a **shortage situation** in accordance with clause 13.144(1), the **pricing manager** must determine whether a **scarcity pricing situation** exists in accordance with clause 13.135A and, if a **scarcity pricing situation** does exist, calculate **interim prices** and **interim reserve prices** in accordance with clause 13.135B.

(3)   The revised data required by subclauses (1) and (2) must be provided to the **pricing manager** —

(a)   if the **provisional price situation** arose on a **business day**, by 1000 hours on that day; and

(b)   if the **provisional price situation** arose on a day other than a **business day**, by 1200 hours on the 2nd **business day** after the **provisional price situation** arose.

(4)   If a **generator** or a **dispatchable load purchaser** does not supply **half-hour metering information** to a **grid owner** in accordance with clauses 13.136 to 13.140, and the **pricing manager** has notified a **metering situation** in accordance with clause 13.144(1), the **generator** or the **dispatchable load purchaser** must use

reasonable endeavours to assist the **grid owner** to resolve the **provisional price situation**.

13.147 Revised data to be accompanied by notice

(1)   This clause applies to —
   (a)   a **grid owner**; and
   (b)   *[Revoked]*
   (c)   the **system operator**.
   (d)   *[Revoked]*

(2)   If a **participant** to which this clause applies gives revised data to the **pricing manager** under clause 13.146, the **participant** must —
   (a)   **publish** a notice specifying that it has given revised data; and
   (b)   specify in the notice the revisions that have been made; and
   (c)   in the case of revised data given in relation to a **SCADA situation**, state in the notice whether a **SCADA situation** continues to exist; and
   (d)   in the case of revised data given in relation to a **high spring washer price situation**, state in the notice whether the **high spring washer price relaxation factor** has been applied.

(3)   A **participant** to which this clause applies must comply with subclause (2) within the timeframes specified in clause 13.146(3) as if references to the revised data in clause 13.146(3) are references to a notice under this clause.

13.148 Failure to give revised data and notice not breach

A **participant** that is listed in clause 13.147(1) does not breach clauses 13.146(3) or 13.147(3) if the **participant** has, —
   (a)   in the case of a **provisional price situation** other than a **high spring washer price situation**, exercised reasonable endeavours to remedy the circumstance giving rise to the **provisional price situation**; and
   (b)   in the case of a **high spring washer price situation**, applied the **high spring washer price relaxation factor** in accordance with the **high spring washer price situation methodology**; and
   (c)   used reasonable endeavours to provide the notice required by clause 13.147.

13.149 Pricing manager to publish provisional prices and provisional reserve prices if revised data and notice not given in relation to provisional price situation arising on business day

(1)   This clause applies if —
   (a)   a notice of a **provisional price situation** is given on a **business day**; and
   (b)   a **participant** that is listed in clause 13.147(1) —
      (i)   does not comply with the timeframes specified in clause 13.146(3); or
      (ii)   does not comply with the timeframes specified in clause 13.147(3).

(2)   If this clause applies, the **pricing manager** must —
   (a)   by 1200 hours on that day, **publish** notice of the **provisional price situation** and each **trading period** affected; and
   (b)   by 1200 hours on that day, **publish provisional prices** and **provisional reserve prices**; and
   (c)   by 0900 hours on the following day, inform the **Authority** of the **provisional price situation** in the daily report submitted under clause 13.213.

13.150 Pricing manager to publish provisional prices and provisional reserve prices if revised data and notice not given in relation to provisional price situation arising on day other than business day

(1)   This clause applies if —

    (a)   a notice of a **provisional price situation** is given on a day other than a **business day**; and

    (b)   a **participant** that is listed in clause 13.147(1), —

        (i)   does not comply with the timeframes in clause 13.146(3); or

        (ii)   does not comply with the timeframes in clause 13.147(3).

(2)   If this clause applies, the **pricing manager** must —

    (a)   by 1000 hours on the day that the notice of a **provisional price situation** was given, **publish** notice of the **provisional price situation** and each **trading period** affected; and

    (b)   by 1000 hours on that day **publish provisional prices** and **provisional reserve prices**; and

    (c)   by 0900 hours on the following day inform the **Authority** of the **provisional price situation** in the daily report submitted under clause 13.213.

13.151 Data to be used by pricing manager to determine provisional prices and provisional reserve prices

The **pricing manager** must produce **provisional prices** and **provisional reserve prices** —

    (a)   on a **business day**, by using the latest data given to it by 1000 hours on that day; and

    (b)   on a day other than a **business day**, by using the data given to it by 0730 hours on that day.

13.152 Pricing manager to publish interim prices and interim reserve prices if revised data resolves provisional price situation

(1)   This clause applies if a **participant** that is listed in clause 13.147(1) —

    (a)   gives revised data in accordance with clause 13.146 (that does not itself give rise to a **provisional price situation**); or

    (b)   **publishes** a notice in accordance with clause 13.147.

(2)   If this clause applies, the **pricing manager** must **publish interim prices** and **interim reserve prices** for each **trading period** of the previous **trading day**.

(3)   The **pricing manager** must **publish** the **interim prices** and **interim reserve prices** by 1200 hours on the day that the revised data and notice were required to be given.

13.153 Revised data gives rise to provisional price situation

If revised data provided in accordance with clause 13.146 gives rise to a **provisional price situation**, the **pricing manager** must **publish provisional prices** and **provisional reserve prices** in accordance with clauses 13.149 and 13.150, as if no data had been received.

13.154 Grid owner, generators, dispatchable load purchasers, and system operator to give revised data if provisional prices and provisional reserve prices have been published

(1)   This clause applies if the **pricing manager publishes provisional prices** and **provisional reserve prices** under clause 13.149 or 13.150.

(1A)   If **provisional prices** and **provisional reserve prices** are **published** in relation to —

(a)   an **infeasibility situation** or a **SCADA situation**, the **grid owner** and, in the case of an **infeasibility situation**, the **system operator**, must use reasonable endeavours to resolve the **provisional price situation** and provide revised data to the **pricing manager**; or

(b)   a **metering situation**, the **grid owner** or the **generator** or the **dispatchable load purchaser** (as the case may be) must provide revised **metering information** in accordance with clause 13.166; or

(c)   a **high spring washer price situation**, the **system operator** must apply the **high spring washer price relaxation factor** in accordance with the **high spring washer price situation methodology** and use reasonable endeavours to provide revised data to the **pricing manager**.

(2)   The revised data required by subclause (1A) must be provided to the **pricing manager** by 1200 hours on the 2nd **business day** following the **publication** of the **provisional prices** and **provisional reserve prices**.

13.155 Revised data to be accompanied by notice

If a **participant** that is listed in clause 13.147(1) gives revised data in accordance with clause 13.154 to the **pricing manager**, the **participant** must, by the time prescribed by that clause for giving revised data, —

(a)   **publish** notice that revised data has been given; and

(b)   specify in the notice the revisions that have been made; and

(c)   in the case of revised data given in relation to a **metering situation** or a **SCADA situation**, state in the notice whether a **metering situation** or a **SCADA situation** continues to exist; and

(d)   in the case of revised data given in relation to a **high spring washer price situation**, if the **high spring washer price situation relaxation factor** has been applied, state in the notice that the factor has been applied.

13.156 Pricing manager to publish interim prices following publication of provisional prices and provisional reserve prices unless further provisional price situation arises

(1)   Subject to subclause (2), if the **pricing manager** —

(a)   does not receive revised data in accordance with clause 13.154 and notice in accordance with clause 13.155 in relation to a **provisional price situation** (other than a **high spring washer price situation**), the **pricing manager** must **publish interim prices** and **interim reserve prices** for all **trading periods** of the relevant **trading day** in accordance with clauses 13.163 and 13.164; or

(b)   does not receive revised data in accordance with clause 13.154 and notice in accordance with clause 13.155 in relation to a **high spring washer price situation**, the **pricing manager** must, by 1400 hours on the 2nd **business day** after the **provisional prices** and **provisional reserve prices** were **published**, **publish interim prices** and **interim reserve prices** for all **trading periods** of the relevant **trading day** as if the **high spring washer price situation** did not exist; or

(c)   receives revised data in accordance with clause 13.154 (that does not itself give rise to a **provisional price situation**) and notice in accordance with clause 13.155, the **pricing manager** must, by 1400 hours on the 2nd **business day** after the **provisional prices** and **provisional reserve prices** were **published**, **publish interim prices** and **interim reserve prices** for all **trading periods** of the relevant **trading day**; or

(d) ~~receives revised data in accordance with clause 13.154 and notice in accordance with clause 13.155 and an~~ **~~infeasibility situation~~** ~~arises from that data, the~~ **~~pricing manager~~** ~~must, by 1400 hours on the 2nd~~ **~~business day~~** ~~after the~~ **~~provisional prices~~** ~~and~~ **~~provisional reserve prices~~** ~~were~~ **~~published, publish~~** ~~notice that an~~ **~~infeasibility situation~~** ~~exists, specifying in the notice each~~ **~~trading period~~** ~~affected by the~~ **~~infeasibility situation~~**~~; or~~

(e) ~~receives revised data in accordance with clause 13.154 and notice in accordance with clause 13.155 and a~~ **~~high spring washer price situation~~** ~~arises from that data, the~~ **~~pricing manager~~** ~~must, by 1400 hours on the 2nd~~ **~~business day~~** ~~after the~~ **~~provisional prices~~** ~~and~~ **~~provisional reserve prices~~** ~~were~~ **~~published, publish~~** ~~notice that a~~ **~~high spring washer price situation~~** ~~exists, specifying in the notice —~~

(i) ~~each~~ **~~trading period~~** ~~affected by the~~ **~~high spring washer price situation~~**~~; and~~

(ii) ~~each~~ **~~transmission security constraint~~** ~~that has~~ **~~bound~~** ~~in the relevant~~ **~~trading period~~** ~~or~~ **~~trading periods~~**~~.~~

(2) ~~The~~ **~~pricing manager~~** ~~must not give notice of a~~ **~~high spring washer price situation~~** ~~in accordance with subclause (1)(e) in relation to a~~ **~~trading period~~** ~~if—~~

(a) ~~an~~ **~~infeasibility situation~~** ~~exists in that~~ **~~trading period~~** ~~and it has not been resolved; or~~

(b) ~~the~~ **~~pricing manager~~** ~~has previously given notice that a~~ **~~high spring washer price situation~~** ~~exists in that~~ **~~trading period~~**~~.~~

~~13.157 Requirements if infeasibility situation or high spring washer price situation exists~~

(1) ~~If the~~ **~~pricing manager~~** ~~gives notice of an~~ **~~infeasibility situation~~** ~~in accordance with clause 13.156(1)(d), the relevant~~ **~~grid owner~~** ~~and the~~ **~~system operator~~** ~~must, by 1600 hours on the 2nd~~ **~~business day~~** ~~after the~~ **~~provisional prices~~** ~~and~~ **~~provisional reserve prices~~** ~~were~~ **~~published~~**~~, exercise reasonable endeavours to resolve the~~ **~~provisional price situation~~** ~~and provide revised data to the~~ **~~pricing manager~~**~~.~~

(2) ~~If the~~ **~~pricing manager~~** ~~gives notice of a~~ **~~high spring washer price situation~~** ~~in accordance with clause 13.156(1)(e), the~~ **~~system operator~~** ~~must, by 1600 hours on the 2nd~~ **~~business day~~** ~~after the~~ **~~provisional prices~~** ~~and~~ **~~provisional reserve prices~~** ~~were~~ **~~published~~**~~, apply the~~ **~~high spring washer price relaxation factor~~** ~~in accordance with the~~ **~~high spring washer price situation methodology~~** ~~and provide revised data to the~~ **~~pricing manager~~**~~.~~

~~13.158 Revised data to be accompanied by notice~~

~~If a~~ **~~grid owner~~** ~~or the~~ **~~system operator~~** ~~gives revised data to the~~ **~~pricing manager~~** ~~in accordance with clause 13.157, the~~ **~~grid owner~~** ~~or~~ **~~system operator~~** ~~(as the case may be) must, by the time prescribed by that clause for giving revised data, —~~

(a) **~~publish~~** ~~notice that revised data has been given; and~~

(b) ~~specify in the notice the revisions that have been made; and~~

(c) ~~in the case of revised data given in relation to an~~ **~~infeasibility situation~~**~~, state in the notice whether the~~ **~~infeasibility situation~~** ~~has been resolved; and~~

(d) ~~in the case of revised data given in relation to a~~ **~~high spring washer price situation~~**~~, if the~~ **~~high spring washer price situation relaxation factor~~** ~~has been applied, state in the notice that the factor has been applied.~~

~~13.159 Pricing manager to publish interim prices or publish notice that high spring washer price situation exists~~

~~Subject to clause 13.160, if the~~ **~~pricing manager~~** ~~—~~

(a) ~~receives revised data in accordance with clause 13.157 and notice in accordance with clause 13.158, the~~ **~~pricing manager~~** ~~must,—~~

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(i)   if the revised data does not itself give rise to a **provisional price situation**, by 1800 hours on the 2nd **business day** after the **provisional prices** and **provisional reserve prices** were published, **publish interim prices** and **interim reserve prices** for all **trading periods** of the relevant **trading day**; or

(ii)   if an **infeasibility situation** arises from that data, **publish interim prices** and **interim reserve prices** in accordance with clauses 13.163 and 13.164; or

(iii)   if a **high spring washer price situation** arises from that data, by 1800 hours on the 2nd **business day** after the **provisional prices** and **provisional reserve prices** were **published**, **publish** notice that a **high spring washer price situation** exists, specifying in the notice —

(A)   each **trading period** affected by the **high spring washer price situation**; and

(B)   each **transmission security constraint** that has **bound** in the relevant **trading period** or **trading periods**; and

(b)   does not receive revised data in accordance with clause 13.157 and does not receive a notice in accordance with clause 13.158, —

(i)   in relation to an **infeasibility situation**, the **pricing manager** must **publish interim prices** and **interim reserve prices** in accordance with clauses 13.163 and 13.164; or

(ii)   in relation to a **high spring washer price situation**, the **pricing manager** must **publish interim prices** and **interim reserve prices** by 1800 hours on the 2nd **business day** after the **provisional prices** and **provisional reserve prices** were **published**, as if the **high spring washer price situation** did not exist.

13.160 Prohibition on notice of high spring washer price situation

The **pricing manager** must not give notice of a **high spring washer price situation** in accordance with clause 13.159(a)(iii) in relation to a **trading period** if—

(a)   an **infeasibility situation** exists in that **trading period** and has not been resolved; or

(b)   the **pricing manager** has previously given notice that a **high spring washer price situation** exists in that **trading period**.

13.161 System operator to apply high spring washer price relaxation factor and give notice

(1)   If the **pricing manager** gives notice of a **high spring washer price situation** in accordance with clause 13.159(a)(iii), the **system operator** must, by 1000 hours on the 3rd **business day** after the **provisional prices** and **provisional reserve prices** were **published**, —

(a)   apply the **high spring washer price relaxation factor** in accordance with the **high spring washer price situation methodology**; and

(b)   exercise reasonable endeavours to provide revised data to the **pricing manager**.

(2)   If the **system operator** gives revised data to the **pricing manager** in accordance with subclause (1), the **system operator** must, by the time prescribed by that subclause for giving revised data, —

(a)   **publish** notice that the revised data has been given; and

(b)   specify in the notice the revisions that have been made; and

(c)   if the **high spring washer price relaxation factor** has been applied, state in the notice that the factor has been applied.

13.162 Pricing manager to publish interim prices

If the **pricing manager**—

(a)   receives revised data in accordance with clause 13.161(1) and notice in accordance with clause 13.161(2), the **pricing manager** must, by 1200 hours on the 3rd **business day** after the **provisional prices** and **provisional reserve prices** were **published**, **publish interim prices** and **interim reserve prices** for all **trading periods** of the relevant **trading day**; or

(b)   does not receive revised data in accordance with clause 13.161(1) and does not receive a notice in accordance with clause 13.161(2), the **pricing manager** must, by 1200 hours on the 3rd **business day** after the **provisional** or **provisional reserve price** was **published**, **publish interim prices** and **interim reserve prices** for all **trading periods** of the relevant **trading day** as if the **high spring washer price situation** did not exist.

13.163 Revised data cannot be given or revised data gives rise to provisional price situation (other than high spring washer price situation)

If clause 13.156(1)(a) applies, or the revised data received in accordance with clause 13.157(1) does not resolve an **infeasibility situation** or gives rise to a **provisional price situation** (other than a **high spring washer price situation**), the **pricing manager** must **publish interim prices** and **interim reserve prices** and must give notice to **generators** and **purchasers**—

(a)   for each **trading period** not affected by a **provisional price situation**; and

(b)   on the basis of the information given to it under clause 13.154; and

(c)   by 1800 hours of the 2nd **business day** after it **publishes provisional prices** and **provisional reserve prices**.

13.164 If provisional price situation (other than high spring washer price situation) continues

If clause 13.156(1)(a) applies, or the revised data received in accordance with clause 13.157(1) does not resolve an **infeasibility situation** or gives rise to a **provisional price situation** (other than a **high spring washer price situation**), the **pricing manager** must, for each affected **trading period,**—

(a)   no later than the time at which the **pricing manager** would be required to **publish interim prices** under clause 13.163, **publish** notice that it cannot calculate **interim prices** and **interim reserve prices**, specifying the **trading periods** affected; and

(b)   on the basis of the information given to the **pricing manager** under clause 13.154, calculate and **publish interim prices** for all **grid injection points** and all **net grid exit points** for each affected **trading period** by—

(i)   assigning a price to all **net grid injection points** for each affected **trading period** equal to the highest price at the point that the **loss adjusted demand** intersects with the **offer stack**; and

(ii) assigning a price to all **net grid exit points** equal to 1.05 times the price calculated for all **grid injection points** under subparagraph (i)—

by 1800 hours on the 2nd **business day** after it **publishes provisional prices** and **provisional reserve prices**; and

(c)   calculate and **publish interim reserve prices** by taking the mean of the relevant **final reserve prices** of the corresponding day in each of the 4 previous weeks, by 1800 hours on the 2nd **business day** after it **publishes provisional prices** and **provisional reserve prices**; and

(d) **publish** notice of all **interim prices** and **interim reserve prices** by 1800 hours on the 2nd **business day** after it **publishes provisional prices** and **provisional reserve prices**.

13.165 Authority notified if provisional price situation not resolved

(1) If a **grid owner** or the **system operator** receives notice of an unresolved **provisional price situation** in accordance with clause 13.164, the **grid owner** or **system operator** (as the case may be) must immediately notify the **Authority** of—
   (a) how the unresolved **provisional price situation** arose; and
   (b) the steps taken in attempting to resolve the **provisional price situation**; and
   (c) the reasons for the inability of the **grid owner** or **system operator** (as the case may be) to resolve the **provisional price situation**.

(2) As soon as it receives a notice given under subclause (1), the **Authority** must consider the unresolved **provisional price situation** and urgently address the matters raised in the notice.

13.166 Generator, grid owner, or dispatchable load purchaser to give revised metering information following initial estimate

(1) If clause 13.154(1A)(b) applies, the **generator, grid owner,** or **dispatchable load purchaser** who gave the **initial estimate** to the **pricing manager** in accordance with clause 13.141(1)(b)(ii) must give to the **pricing manager**—
   (a) actual **half-hour metering information**; or
   (b) if actual **half-hour metering information** is not reasonably available, **back-up metering information**; or
   (c) if **back-up metering information** is not reasonably available, **check metering information** (adjusted by the **relevant registration factor** to achieve accuracy equivalent to actual **half-hour metering information**); or
   (d) if **check metering information** is not reasonably available, a **final estimate**.

(2) If a **metering situation** arose, either in whole or in part, from the failure of a **generator** or a **dispatchable load purchaser** to provide **half-hour metering information**, the **generator** or the **dispatchable load purchaser** must use reasonable endeavours to assist the relevant **grid owner** to provide the information required by this clause by the time prescribed in clause 13.154(2).

13.166A Pricing manager to recalculate and publish interim prices if infeasibility situation caused by shortage of instantaneous reserve

(1) If an **infeasibility situation** that has been resolved under this subpart was caused by a shortage of **instantaneous reserve**, the **pricing manager** must recalculate and **publish interim prices** for the relevant **trading period** by adding a virtual provider of **fast instantaneous reserve** and **sustained instantaneous reserve**, at the price as specified in subclause (2), that provides sufficient **fast instantaneous reserve** and **sustained instantaneous reserve** so that prices for **fast instantaneous reserve** and **sustained instantaneous reserve** do not exceed that price.

(2) The price referred to in subclause (1) for a **trading period** is the greater of—

(a)   ~~3 times the highest **offer** scheduled in the relevant **island** during the **trading period** according to the revised data provided to the **pricing manager** under this subpart; and~~

(b)   ~~the highest **reserve offer** scheduled in the relevant **island** during the **trading period** according to the revised data provided to the **pricing manager** under this subpart as follows:~~

(i)   ~~in the case of an **infeasibility situation** caused by a shortage of **fast instantaneous reserve**, the highest **reserve offer** for **fast instantaneous reserve**:~~

(ii)   ~~in the case of an **infeasibility situation** caused by a shortage of **sustained instantaneous reserve**, the highest **reserve offer** for **sustained instantaneous reserve**.~~

Publication of interim prices~~*Interim pricing period*~~

13.167 ~~Pricing~~ Clearing manager to publish interim prices

The ~~**pricing**~~ **clearing manager** must **publish interim prices** and **interim reserve prices** for a **trading period** as soon as practicable after the end of the **trading period**.

(a)   ~~when required to do so by clauses 13.142, 13.152, 13.156(1), 13.159, 13.162, 13.163 or 13.164, by 1200 on each **trading day** for the previous **trading day**; and~~

(aa)   ~~when required to do so by clause 13.135B; and~~

(b)   ~~when required to do so by the **Authority** under clause 13.177(1)(c); and~~

(c)   ~~before **publishing final prices** or **final reserve prices**.~~

Pricing error process

13.168 When pricing error may be claimed or investigated

After~~Once~~ the ~~**pricing**~~ **clearing manager** ~~has~~ **published**~~s~~ **interim prices** and **interim reserve prices**, but before the prices have become **final prices** and **final reserve prices** in accordance with clause 13.182A,—

(a)   a person may make a **pricing error** claim to the **system operator** in respect of those prices under clause 13.170; and

(b)   the **system operator** may investigate a potential **pricing error** in respect of those prices under clause 13.170A.

~~an **error claimant** may claim that the prices contain a **pricing error**.~~

13.169 Error claimant materially affected by pricing error

(1)   ~~Subject to subclause (2),~~ The **system operator** may only consider a claim ~~an **error claimant** may only claim~~ that a **pricing error** has occurred if the error claimant ~~it~~ considers it has been or will be materially affected by the **pricing error**.

(2)   Subclause (1) does not apply in relation to a claim made by—

(a)   the **Authority**; or

(b)   any person who is not a **participant**.

13.170 Method and timing for claiming pricing error has occurred

To claim that a **pricing error** has occurred, an error claimant ~~**error claimant**~~ must—

(a) ~~complete the form set out in Form 9 of Schedule 13.1~~submit a **pricing error** claim to the **system operator** in such manner and form as the **system operator** may specify from time to time; and

(b) include ~~sufficient~~ information in its claim ~~the form~~ to demonstrate,—

   (i) that the error claimant ~~error claimant~~ (other than a claimant ~~an error claimant~~ described in clause 13.169(2)) has been materially affected by the claimed **pricing error**; and

   (ii) the reasons for the claim that a **pricing error** has occurred; and

~~(c) email the completed form to an email address notified by the **pricing manager** for that purpose; and~~

(d) comply with paragraphs (a) and (b) ~~to (c)~~ no later than 1200 hours on the 1st **business day** following the **trading day** on which the ~~pricing~~ **clearing manager published** the **interim price** or **interim reserve price** that the error claimant alleges is the result of ~~contains~~ the **pricing error**.

13.170A System operator may investigate pricing errors

(1) The **system operator** may investigate a potential **pricing error**.

(2) If the **system operator** decides to investigate a potential **pricing error**, it must commence the investigation no later than 1200 hours on the 1st **business day** following the **trading day** on which the **clearing manager published** the **interim price** or **interim reserve price** that the **system operator** alleges is the result of a **pricing error**.

~~**13.171 Pricing manager must publish final prices if no pricing error claimed**~~

~~(1) This clause applies if, by 1200 on the 1st **business day** following the **trading day** on which the **pricing manager published** the **interim price** or **interim reserve price**, no **pricing error** is claimed in respect of the **interim prices** or **interim reserve prices**.~~

~~(2) The **pricing manager** must **publish** the **interim prices** as **final prices**, and **interim reserve prices** as **final reserve prices**, by 1400 hours on the 1st **business day** following the **trading day** on which the **pricing manager published** the **interim prices** or **interim reserve prices**.~~

~~**13.172 Effect of pricing error being claimed**~~

~~If an **error claimant** claims that a **pricing error** is contained in either **interim prices** or **interim reserve prices**, the **pricing manager** must not **publish final prices** or **final reserve prices** until the **pricing manager** has implemented the **Authority's** decision in accordance with clause 13.177.~~

13.173 Process when pricing error ~~claimed~~ received or pricing error investigation commenced

(1) If the ~~**pricing manager**~~ **system operator** receives a **pricing error** claim under clause 13.170 within the time frame specified in that clause~~that an **error claimant** considers that a **pricing error** has occurred~~, or the **system operator** decides to investigate a potential **pricing error** under clause 13.170A, the ~~**pricing manager**~~ **system operator** must—

(a) in relation to a claim submitted under clause 13.170,—

      (i)   check that ~~sufficient~~ the information <u>required by that clause </u>is included in the **pricing error** claim ~~form as required under clause 13.170~~; and

      (ii)   confirm to the error claimant that it has received the **pricing error** claim; <u>and</u>

      (iii) <u>either—</u>

          (A)   <u>confirm that the claim contains the required information; or</u>

          (B)   <u>request that the required information be provided; and</u>

~~(b)   confirm to the **error claimant** that it has received the **pricing error** claim; and~~

(c)   <u>no later than</u> ~~by~~ <u>1300</u>~~1400~~ hours on the 1st **business day** following the **trading day** on which the ~~**pricing**~~ <u>**clearing**</u> **manager published** the **interim prices** or **interim reserve prices** in respect of which the **pricing error** has been claimed <u>or is being investigated</u>, **publish** a notice advising—

      (i)   <u>in relation to a claim submitted under clause 13.170,—</u>

          (A<u>i</u>)   that a **pricing error** has been claimed; and

          (B<u>ii</u>) the name of the <u>error claimant</u> ~~**error claimant**~~; and

          (C<u>iii</u>) the reason ~~for~~ <u>the error claimant has given for the claim</u> ~~**error claimant** believing that a **pricing error** has occurred~~; and

          (D<u>iv</u>) the **trading periods** that <u>the error claimant claims</u> ~~are claimed to~~ have been affected by the **pricing error**; <u>or</u>~~and~~

      (ii)   <u>in relation to an investigation commenced by the **system operator** under clause 13.170A,—</u>

          (A)   <u>that the **system operator** has decided to investigate a potential **pricing error**; and</u>

          (B)   <u>the reason for the investigation; and</u>

          (C)   <u>the **trading periods** that the **system operator** alleges have been affected by the **pricing error**; and</u>

(ca) <u>at the same time as it **publishes** the notice referred to in paragraph (c), advise the **clearing manager** of the information in the notice; and</u>

~~(d)   request that the **error claimant,** a **participant**, or the **Authority**, provide the **pricing manager** with any additional information that the **pricing manager** reasonably requires to determine whether a **pricing error** has occurred; and~~

~~(e)   provide the **Authority** with a copy of all information it has received in relation to the **pricing error** that has been claimed; and~~

~~(f)   determine whether it agrees that a **pricing error** has occurred.~~

(f)   <u>no later than 2 **business days** after the day on which it **published** the notice referred to in paragraph (c), give a report to the **Authority** that includes the following:</u>

      (i)   <u>the **system operator's** view as to whether a **pricing error** has occurred:</u>

      (ii)   <u>if the **system operator** considers that a **pricing error** has occurred, the **system operator's** view as to whether the error is a material error:</u>

      (iii) <u>the reasons for **system operator's** view:</u>

      (iv) <u>a copy of the information the **system operator** considered in forming its view.</u>

(2)   <u>The **system operator** may request that an error claimant or a **participant** provide the **system operator** with any additional information that **system operator** requires in order to determine whether a **pricing error** has occurred.</u>

13.173A Obligation to comply with request from system operator

(1) If the **system operator** requests that a **participant** provide information in accordance with clause 13.173(2), the **participant** must provide the **system operator** with the requested information, within the reasonable time frame advised by the **system operator**.

(2) If an error claimant does not provide the **system operator** with sufficient information to support its claim that a **pricing error** has occurred, and fails to provide additional information when requested under clause 13.173(2), the **system operator** may give the **Authority** a report under clause 13.173(1)(f) that advises the **Authority** to reject the claim (and may omit any other information required by that clause).

13.173B Actions Authority may take while pricing error being investigated

(1) At any time after the **system operator publishes** a notice under clause 13.173(1)(c), but before the relevant **interim prices** or **interim reserve prices** become **final prices** and **final reserve prices**, the **Authority** may give a direction to any **participant** to take any lawful action specified by the **Authority** that will, in the **Authority's** opinion, correct or assist in correcting the **pricing error**.

(2) A **participant** must comply with any direction given to it by the **Authority** under subclause (1).

13.173C Authority to decide whether pricing error has occurred

(1) No later than 2 **business days** after receiving a report from the **system operator** under clause 13.173(1)(f), the **Authority** must either—
   (a) decide whether a material **pricing error** has occurred; or
   (b) if the **system operator** has advised the **Authority** to reject a claim, reject the claim.

(2) The **Authority** must, as soon as practicable after making its decision,—
   (a) advise the **clearing manager** of the decision; and
   (b) **publish** a notice that includes the following information:
      (i) the name of the error claimant (if any):
      (ii) in relation to a claim made under clause 13.170, the reason the error claimant has given for the claim:
      (iii) in relation to an investigation commenced by the **system operator** under clause 13.170A, the reasons for the investigation:
      (iv) the **trading periods** in respect of which a notice was **published** under clause 13.173(1)(c):
      (v) the **Authority's** decision as to the matters described in subclause (1):
      (vi) the **Authority's** reasons for its decision:
      (vii) in relation to a decision that a material **pricing error** has occurred,—
         (A) the **trading periods** affected by the **pricing error**; and
         (B) the **dispatch prices** and **dispatch reserve prices** affected by the **pricing error**; and
         (C) any actions that the **Authority** directs or has directed be taken to correct or resolve the **pricing error** under clause 13.173B.

13.174 Recommendation to Authority

When the **pricing manager** has determined whether it agrees that a **pricing error** has occurred—

(a)   if it agrees that a **pricing error** has occurred, it must—

  (i)   recommend that the **Authority** uphold the claim; and

  (ii)   set out its reasons for agreeing that a **pricing error** has occurred; and

  (iii)   recommend the actions that the **pricing manager** considers are required to correct the **pricing error**; or

(b)   if it does not agree that a **pricing error** has occurred, it must—

  (i)   recommend that the **Authority** not uphold the claim; and

  (ii)   set out its reasons for not agreeing that a **pricing error** has occurred.

13.175 Authority to accept or reject recommendations

If the **Authority** receives a recommendation and reasons from the **pricing manager** under clause 13.174, it—

(a)   must decide whether to accept the **pricing manager's** recommendations; and

(b)   must notify the **pricing manager** of the **Authority's** decision; and

(c)   may direct the **pricing manager**—

(i)   to take any specified action to resolve the **pricing error**; or

(ii)   to direct, on behalf of the **Authority**, another **participant** to take any specified action to resolve the **pricing error**.

13.176 Pricing manager to publish notice

As soon as practicable after the **Authority** has notified the **pricing manager** of its decision under clause 13.175, the **pricing manager** must **publish** a notice specifying—

(a)   the name of the **error claimant**; and

(b)   the reason for the **error claimant** claiming that a **pricing error** has occurred; and

(c)   the trading **periods** that are claimed to have been affected by the **pricing error**; and

(d)   the **Authority's** decision made under clause 13.175; and

(e)   the **Authority's** reasons for its decision under clause 13.175; and:

(f)   if the **Authority** decided that a **pricing error** had occurred, any actions it has directed be taken to correct the **pricing error**.

13.177 ~~Pricing~~ Clearing manager to implement Authority's decision

(1)   If the **Authority** ~~decides~~ advises the **clearing manager** under clause 13.173C that a material **pricing error** has occurred, the ~~**pricing**~~ **clearing manager** must, as soon as practicable after receiving the advice,—

(a)   calculate revised **interim prices** and revised **interim reserve prices** for the **trading periods** affected by the error using the methodology described in clause 13.134A, as if the **dispatch prices** and **dispatch reserve prices** specified in the notice **published** under clause 13.173C(2) had not been included in the relevant **dispatch schedule**:

(b)   **publish** the revised **interim prices** and revised **interim reserve prices**.

(a)   take any action directed by the **Authority** to correct the **pricing error**; and

(b)   ~~direct a **participant** to take any action notified by the **Authority** under clause 13.175(c)(ii) to correct the **pricing error**; and~~

(c)   ~~once those actions have been completed, **republish interim prices** and **interim reserve prices**, using any updated **metering information**.~~

(2)   ~~If the **Authority decides** that a **pricing error** has not occurred, the **pricing manager** must **publish** the **interim prices** and **interim reserve prices** as **final prices** and **final reserve prices**.~~

13.178 ~~**Effect of republishing interim prices**~~ **Further pricing error may be claimed or investigated in respect of revised interim prices**

(1)   If the ~~**pricing**~~ **clearing manager** is required to **publish** revised **interim prices** and **interim reserve prices** under ~~in accordance with~~ clause 13.177~~(1), (c)~~ —

(a)   ~~the **pricing manager** must do so by following the methodology required under clauses 13.135 to 13.179; and~~

(b)   ~~a~~ further **pricing error** may be claimed under clause 13.170, or a further investigation may be commenced under clause 13.170A, in respect of the revised~~republished~~ **interim prices** and **interim reserve prices**.

(2)   Clause 13.170 and 170A apply as if the revised **interim prices** and **interim reserve prices** had been **published** by the **clearing manager** under clause 13.167.

13.179 ~~**Timing for resolution of pricing error claim process**~~

~~The **pricing manager** and the **Authority** must make reasonable endeavours to ensure that, by 1400 hours on the 2nd **business day** after the relevant **pricing error** was claimed, but at least 2 hours after the **pricing manager publishes** the notice under clause 13.176, the **pricing manager** —~~

(a)   ~~**republishes interim prices** and **interim reserve prices** in accordance with clause 13.177(1)(c); or~~

(b)   ~~**publishes final prices** and **final reserve prices** in accordance with clause 13.177(2).~~

13.180 ~~**Actions Authority may take to resolve pricing error**~~

(1)   ~~To correct a **pricing error**, the actions that the **Authority** may take, or that the **Authority** may direct the **pricing manager** to take, include —~~

(a)   ~~delaying the **publication** of **interim prices**, **interim reserve prices**, **final prices** and **final reserve prices** under clause 13.184, if the **Authority** considers that is necessary to allow time for the **pricing error** to be investigated or corrected; or~~

(b)   ~~giving directions to any **participant** to act in a manner that will, in the **Authority's** opinion, correct or assist in correcting the **pricing error**.~~

(2)   ~~However, to avoid any doubt, in resolving a **pricing error**, the **Authority** must not —~~

(a)   ~~act inconsistently with this Code, the **Act**, or any other law; or~~

(b)   ~~require any other **participant** to act inconsistently with this Code, the **Act**, or any other law.~~

13.181 Obligation to comply with pricing manager

(1) If the **pricing manager** asks a **participant** or the **Authority** to provide information in accordance with clause 13.173(d), the **participant** or the **Authority** must provide the **pricing manager** with the requested information, within the reasonable timeframe advised by the **pricing manager**.

(2) Each **participant** must comply promptly with any direction given by the **pricing manager** in accordance with clauses 13.175(c)(ii).

(3) To avoid doubt, if an **error claimant** does not provide the **pricing manager** with sufficient information to support its claim that a **pricing error** has occurred, and fails to provide additional information when requested under clause 13.173(d) the **pricing manager** may recommend under clause 13.174(b) that the **Authority** not uphold the claim.

13.182 No pricing errors notified after final prices calculated

(1) An **error claimant** may only claim that a **pricing error** has occurred in respect of **interim prices** or **interim reserve prices**.

(2) Once **final prices** or **final reserve prices** are **published**, no further **pricing errors** can be claimed in respect of those prices.

Publication of fFinal prices

13.182A Interim prices become final prices if no pricing error claimed or investigated

(1) This clause applies if, by 1300 hours on the 1st **business day** following a **trading day** on which the **clearing manager published interim prices** or **interim reserve prices** (including revised **interim prices** or **interim reserve prices published** under clause 13.177), the **system operator** has not **published** a notice under clause 13.173(1)(c) that a **pricing error** has been claimed or is being investigated in respect of any of the **interim prices** or **interim reserve prices**.

(2) If this clause applies, **interim prices** become **final prices** and **interim reserve prices** become **final reserve prices** at 1400 hours on the 1st **business day** following the **trading day** on which the **clearing manager published** the **interim prices** or **interim reserve prices**.

13.182B Interim prices become final prices if no pricing error exists or claim rejected
Interim prices become **final prices** and **interim reserve prices** become **final reserve prices** 1 hour after the **Authority publishes** a notice under clause 13.173C(2) advising that it has made one of the following decisions in relation to a **pricing error** claim:
(a) no material **pricing error** has occurred:
(B) the claim has been rejected.

13.183 Final prices not to change Republication of final prices
Unless ~~directed to do so by~~ the **Authority** directs otherwise under clause 5.2, when **interim prices** and **interim reserve prices** have become **final prices** and **final reserve prices** in accordance with clause 13.182A or 13.182B, the **final prices** and **final reserve prices** cannot be changed, despite the fact that the **final prices** or **final reserve prices** may be the result of an error. the **pricing manager** must not **republish** the **final**

~~**price** or **final reserve price** for any **trading period** despite the fact that the **final price** or **final reserve price** may contain an error.~~

13.184 Authority may order delay of <u>interim prices becoming</u> ~~publication of~~ final prices

(1) Despite clauses <u>13.134A</u>~~13.135~~ to 13.191<u>,</u> the **Authority** may <u>**publish** a notice preventing</u> ~~order that the **publication** of~~ **interim prices**<u>,</u> and **interim reserve prices**<u>,</u> from becoming **final prices**<u>,</u> ~~or~~ <u>and</u> **final reserve prices** <u>until such time as the **Authority** specifies in the notice</u>~~be delayed~~.

(2) <u>If the **Authority publishes** a notice under subclause (1), the **clearing manager** must not **publish** the **interim prices** as **final prices** or the **interim reserve prices** as **final reserve prices** until the time specified in the notice.</u>

~~13.185 Final prices for more than 1 trading day~~

~~If the **pricing manager** is required to **publish** 1 or more of the following prices for more than 1 **trading day** at a time, the **pricing manager's publishing** deadline is extended by 2 hours for each **trading day**:~~

~~(a) **interim prices**:~~
~~(b) **interim reserve prices**:~~
~~(c) **final prices**:~~
~~(d) **final reserve prices**.~~

Miscellaneous requirements relating to calculation of prices

~~13.186 Revised data for more than 1 trading day~~

~~If the **system operator** or a **grid owner** is required to give revised data for more than 1 **trading day** at a time, that **system operator's** or **grid owner's** deadline is extended by 2 hours for each **trading day**.~~

~~13.187 Daylight saving to be observed~~

~~Despite anything in this subpart, if the **grid owner** gives the **pricing manager** data for an **initial estimate** under clause 13.141(1)(b)(ii) or a **final estimate** under clause 13.166(1)(d), the following provisions apply:~~

~~(a) if a **grid owner** gives data for an **initial estimate** or a **final estimate** using an **equivalent day** and the **equivalent day** is the day on which daylight saving begins, the **grid owner** must replicate the actual data from **trading periods** 5 and 6 of the **equivalent day** into **trading periods** 7 and 8 to produce synthetic data for 48 **trading periods**. This is shown below:~~

~~Used~~	~~1~~	~~2~~	~~3~~	~~4~~	~~5~~	~~6~~	~~7~~	~~8~~	~~9~~	~~10~~	~~11~~	~~12~~	~~13~~	~~14~~	~~15~~	~~16~~	~~17~~	~~18~~	~~19~~	~~20~~	~~21~~	~~22~~	~~23~~	~~24~~
~~Recorded~~	~~1~~	~~2~~	~~3~~	~~4~~	~~5~~	~~6~~	~~5~~	~~6~~	~~7~~	~~8~~	~~9~~	~~10~~	~~11~~	~~12~~	~~13~~	~~14~~	~~15~~	~~16~~	~~17~~	~~18~~	~~19~~	~~20~~	~~21~~	~~22~~
~~Used~~	~~25~~	~~26~~	~~27~~	~~28~~	~~29~~	~~30~~	~~31~~	~~32~~	~~33~~	~~34~~	~~35~~	~~36~~	~~37~~	~~38~~	~~39~~	~~40~~	~~41~~	~~42~~	~~43~~	~~44~~	~~45~~	~~46~~	~~47~~	~~48~~
~~Recorded~~	~~23~~	~~24~~	~~25~~	~~26~~	~~27~~	~~28~~	~~29~~	~~30~~	~~31~~	~~32~~	~~33~~	~~34~~	~~35~~	~~36~~	~~37~~	~~38~~	~~39~~	~~40~~	~~41~~	~~42~~	~~43~~	~~44~~	~~45~~	~~46~~

~~(b) if a **grid owner** gives data for an **initial estimate** or a **final estimate** for the day on which daylight saving begins, the **grid owner** must discard the actual data for~~

trading periods 5 and 6 to produce synthetic data for 46 **trading periods**. This is shown below:

Used	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Recorded	1	2	3	4	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
Used	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46		
Recorded	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48		

(c)   if a **grid owner** gives data for an **initial estimate** or a **final estimate** for the day on which daylight saving ends, the **grid owner** must replicate the actual data from **trading period**s 5 and 6 into **trading periods** 7 and 8 to produce synthetic data for 50 **trading periods**. This is shown below:

Used	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Recorded	1	2	3	4	5	6	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
Used	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50
Recorded	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48

(d)   if a **grid owner** gives data for an **initial estimate** or a **final estimate** using an **equivalent day** and the **equivalent day** is the day on which daylight saving ends, the **grid owner** must discard the actual data from **trading period**s 5 and 6 of the **equivalent day** to produce synthetic data for 48 **trading periods**. This is shown below:

Used	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Record	1	2	3	4	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
Used	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48
Record	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50

13.188 Market administrator to publish annual consumption list

(1)   At least once every 6 months, the **reconciliation manager** must give the **market administrator** an **annual consumption list**.

(2)   The list must rank in descending order the annual consumption of all **grid exit points** and **grid injection points** with annual consumption greater than 300 GWh for the 12-month period ended 3 months prior to the date on which the list is due.

(3)   The **market administrator** must **publish** the list within 1 **business day** of receiving it.

13.189 System operator to give pricing manager and Authority list of model variable values

(1)   *[Revoked]*

(2)   If the value of the model parameters listed in Schedule 13.2 are to be changed, the **system operator** must immediately—
~~(a)   give the **pricing manager** and~~ the **Authority** an updated list of values in writing~~;~~
~~and~~
~~(b)   advise the **Authority**, in relation to the price under clause 13.13(1)(c)(ii), or~~
~~clause 13.13(c)(iii) if there is no price **published** under clause 13.13(1A), if—~~
~~(i)   the price remains appropriate; or~~
~~(ii)   a new price is appropriate.~~
~~(2A)   If the **system operator** advises the **Authority** that a new price is appropriate under~~
~~subclause (2)(b)(ii), the **system operator** must give to the **Authority** in writing the~~
~~proposed new price, and an explanation for the proposed new price.~~
(3)   The ~~**pricing manager** and the~~ **Authority** must acknowledge receipt of the updated list
in writing.
(4)   Changes specified in any updated list must become effective from a date specified by
the **system operator**, subject to agreement in writing from ~~both the **pricing manager**~~
~~and~~ the **Authority**.

~~**13.189A Pricing manager to give clearing manager information about dispatch-capable**~~
~~**load station from schedule of final prices**~~
~~(1)   The **pricing manager** must give the **clearing manager** information about the quantity~~
~~of **electricity** scheduled in the schedule of **final prices** for each **dispatch-capable load**~~
~~**station** for each **trading period** that is both—~~
~~(a)   a **trading period** for which a **nominated dispatch bid** was submitted for the~~
~~**dispatch-capable load station**; and~~
~~(b)   a **trading period** in the **billing period** that is immediately before the **billing**~~
~~**period** in which the information must be provided under subclause (2).~~
~~(2)   The **pricing manager** must provide the information by 1600 hours on the 7th **business**~~
~~**day** of each **billing period**.~~

13.190 All notifications to be unconditional, final and transmitted by information system
(1)   All information and every notice to be given under clauses <u>13.134A</u>~~13.135~~ to 13.191
must be **published** through the **information system**.
(2)   Except as provided for in this Code, **participants** may treat any such information and
notices as final.

13.191 Backup procedures if information system is unavailable
(1)   If the **information system** is unavailable to send information under clauses
<u>13.134A</u>~~13.135~~ to 13.191, each **grid owner** and the ~~**pricing**~~ <u>clearing</u> **manager** must
follow the backup procedures specified by the **market administrator**.
(2)   The backup procedures referred to in subclause (1) must be specified by the **market**
administrator following consultation with **generators**, **purchasers**, **ancillary service**
agents, the **grid owners** and the ~~**pricing**~~ <u>clearing</u> **manager**.
(3)   The **market administrator** must ensure that there is always a backup procedure
notified to all **generators**, **purchasers**, **ancillary service agents**, **grid owners** and the
~~**pricing**~~ <u>clearing</u> **manager**.

Calculation of constrained off amounts

13.192 Constrained off situations may occur

(1)   A **constrained off situation** occurs when—

(a)   a **generator** is not given a **dispatch instruction**, or is not dispatched by the **system operator** to the level expected based on the **generator's offer** compared to the relevant **final price**, for a **trading period** despite the **generator** having offered **electricity** at a price below the **final price** for that **trading period** at the relevant **grid injection point**; or

(b)   in relation to a **block dispatch group** or **station dispatch group**, a **generator** is not given a **dispatch instruction**, or is not dispatched by the **system operator** to the level expected based on the **generator's offer** compared to the **final price**, for the **trading period**, despite the **generator** having offered **electricity** in the **trading period** at a **grid injection point** within the **block dispatch group** or **station dispatch group** below the **final price** at the relevant **grid injection point** in that **trading period**, and the aggregate quantity of those **offers** is greater than the dispatched quantity calculated in accordance with clause 13.194; or

(c)   all load to which a **nominated dispatch bid** (other than a **dispatch notification purchaser bid**) applies is not **dispatched**, despite the price in the **nominated dispatch bid** being above the **final price** at the relevant **GXP**.
~~in relation to a **dispatch-capable load station** (except when the final **nominated bid** for the **dispatch-capable load station** in a **trading period** is a **nominated non-dispatch bid**), the latest **dispatch instruction** issued by the **system operator** for the **dispatch-capable load station** for a **trading period** is for a **MW** amount that is less than the **MW** amount scheduled for the **dispatch-capable load station** in the schedule of **final prices** for the **trading period**.~~

(2)   In this clause,—

(a)   an **offer** made by a **generator** means the last **offer** made by the **generator** which applied during the relevant **trading period**; and

(b)   a **bid** made by a **purchaser** means the last **bid** made by the **purchaser** which applied during the relevant **trading period**.

13.193 Determining affected price bands for block dispatch groups and station dispatch groups

(1)   If a **constrained off situation** occurs for a **block dispatch group** or **station dispatch group** during any **trading period** during a **billing period**, the **clearing manager** must determine the affected price bands for that **block dispatch group** or **station dispatch group** by—

(a)   taking all the **offers** made by that **block dispatch group** or **station dispatch group** in relation to that **trading period**, calculating the differences between each **offer** price and **final price** for each **grid injection point**, and ranking the differences in ascending order; and

(b)   identifying each price band ranked under paragraph (a) in which the aggregate quantity in all previous price bands plus the quantity for that price band is greater than 0 or the dispatched quantity calculated in accordance with clause 13.194, but

is less than the aggregate quantity for all the **generating plant** in that **block dispatch group** or **station dispatch group** calculated by the **clearing manager** using the methodology set out in Schedule 13.3. The **offer** prices corresponding to the ranked price bands identified under this paragraph are the affected price bands for the **block dispatch group** or **station dispatch group** for the purposes of clauses 13.194 to 13.196.

(2)   In this clause, an **offer** made by a **generator** means the last **offer** made by the **generator** which applied during the relevant **trading period**.

13.194 Clearing manager to calculate constrained off amounts

(1)   Despite clause 13.193, if a **constrained off situation** occurs, in relation to a **generator**, during a **trading period**, the **clearing manager** must calculate the **constrained off amounts** for each **generator**, for each affected price band, using the following formula:

$$COF_g = Q_{cof} * (P_f - P_o)$$

where

COF$_g$ is the **constrained off amount** for a **generator**

Q$_{cof}$ is the ~~dispatched~~**dispatched** quantity in **MWh** (calculated under subclause (2)~~as set out below~~) from that price band in the **offer** that was constrained off during a **trading period**, or the positive difference between the **reconciliation information** and the **scheduled quantity**, whichever is less

P$_o$ is the price **offered** for that price band by that **generator** for the quantity of **electricity** from the **generating plant** that was constrained off

P$_f$ is the **final price** for that **trading period** at the **grid injection point**.

(1A)   If a **constrained off situation** occurs in relation to a **dispatch-capable load station** during a **trading period**, the **clearing manager** must calculate the **constrained off amounts** for each **dispatch-capable load station**, for each affected **nominated dispatch bid** price band, using the following formula:

$$ConOffAmt_{disp} = ConOffQ * (P_b - P_f)$$

where

ConOffAmt$_{disp}$ is the **constrained off amount** for a **dispatch-capable load station** for the **nominated dispatch bid** price band

ConOffQ   is the amount in **MWh** by which ~~Q$_{fp}$ exceeds the highest of~~ Q$_{disp}$ ~~and~~exceeds Q$_{rec}$

where

~~Q$_{fp}$~~   ~~is the quantity, in **MWh**, scheduled for the **nominated dispatch bid** price band in the schedule of **final prices**~~

Q$_{disp}$ is the **dispatched**~~latest~~ quantity, in **MWh** in the **trading period**, calculated under subclause (2)~~, dispatched for the **nominated dispatch bid** price band in the **trading period**~~

Q$_{rec}$ is the **reconciled quantity** provided by the **reconciliation manager** under clause 15.20C allocated by the **clearing manager** to the **nominated dispatch bid** price band in the **trading period**

P_b is the price bid for the **nominated dispatch bid** price band for the **dispatch-capable load station** that was constrained off

P_f is the **final price** for the **trading period** at the **grid exit point**.

(2) For the purposes of clauses 13.192 to 13.201, ~~dispatched~~**dispatched** quantity must be calculated taking into account—

    (a) the quantity in **MW** recorded in the log kept by the **system operator** in accordance with clause 13.76 and, if required, the **clearing manager** must aggregate such quantities for—

        (i) **generating stations** or **generating units** in the relevant **station dispatch group**; or

        (ii) **generating units**, if the **clearing manager** requires the ~~dispatched~~**dispatched** quantity to be determined on a **grid injection point** basis; and

    (b) for an **offer**, the ramp rate applying to that **constrained off situation** that is specified in the **offer** submitted by that **generator**, or—

        (i) for a **block dispatch group** or a **station dispatch group**; or

        (ii) for **generating units**, if the **clearing manager** requires the ~~dispatched~~**dispatched** quantity to be determined on a **grid injection point** basis—

the fastest of the ramp rates applying to that **constrained off situation** that are specified in the **offers** submitted by the **generator** in that **block dispatch group**, that **station dispatch group** or those **generation units connected** to the relevant **grid injection point** (as the case may be); and

    (c) plus or minus the **MW** bandwidth applicable for each **generator** affected by a **frequency keeping** requirement as advised by the **system operator** to the **clearing manager**, and, if required, the **clearing manager** must aggregate the **MW** bandwidth applicable to determine the **MW** bandwidth on a **grid injection point** basis.

(3) In this clause,—

    (a) an **offer** made by a **generator** means the last **offer** made by the **generator** which applied during the relevant **trading period**; and

    (b) a **bid** made by a **purchaser** means the last **bid** made by the **purchaser** which applied during the relevant **trading period**.

…

13.201A Dispatched purchasers entitled to constrained off compensation and purchasers to pay constrained off compensation

(1) A **dispatched purchaser** in respect of whose **dispatch-capable load station** there was a **constrained off situation** as described in clause 13.192(c) is owed **constrained off compensation** for the **constrained off amounts** calculated under clause 13.194(1A).

(2) A **purchaser** that purchases **electricity** at a **grid exit point** incurs an amount owing to the **clearing manager** for **constrained off compensation**, calculated under subclause (6).

(2A) The **clearing manager** must advise each **purchaser** of the amount owing by the **purchaser** for **constrained off compensation** for a **billing period** when the **clearing manager** advises amounts owing under subpart 4 of Part 14.

(3)   The **clearing manager** owes **constrained off compensation** received under subclause (2), for each **dispatch-capable load station**, to the **dispatched purchaser** that purchased **electricity** for the **dispatch-capable load station**.

(4)   The **clearing manager** must advise each **dispatched purchaser** of the amount owing to the **dispatched purchaser** for **constrained off compensation** for a **billing period** when the **clearing manager** advises amounts owing under subpart 4 of Part 14.

(5)   *[Revoked]*

(6)   The **clearing manager** must calculate **constrained off compensation** owing by a **purchaser** under subclause (2) for each **trading period** using the following formula:

$$\text{ConOffC}_p = \text{ConOffC}_{DLPs} * (\text{Pur}_i / \text{TotPur})$$

where

ConOffC$_p$ is the **constrained off compensation** owing by a **purchaser**

ConOffC$_{DLPs}$ is the sum of **constrained off compensation** owing to all **dispatched purchasers** for the **trading period**

Pur$_i$ is the total quantity in **MWh** of all purchases by the **purchaser** from the **clearing manager** during the **trading period**, as shown by **reconciliation information** calculated by the **reconciliation manager** under Part 15

TotPur   is the quantity in **MWh** of all purchases by all **purchasers** from the **clearing manager** during the **trading period**, as shown by **reconciliation information** calculated by the **reconciliation manager** under Part 15.

Calculation of constrained on amounts

13.202 Constrained on situations may occur

(1)   ~~Subject to subclause (2), a~~A **constrained on situation** occurs when—

(a)   a **generator** is given a **dispatch instruction** by the **system operator** and the price **offered** by the **generator** for that ~~dispatched~~**dispatched** quantity of **electricity** at the relevant **grid injection point** and **trading period** is higher than the **final price** at that **grid injection point** in the relevant **trading period**; or

(b)   in relation to a **block dispatch group** or **station dispatch group**, a **generator** is given a **dispatch instruction** by the **system operator** and the price **offered** by the **generator** for that aggregate ~~dispatched~~**dispatched** quantity of **electricity** from that **block dispatch group** or **station dispatch group** in the relevant **trading period** is higher than the **final price** in the relevant **trading period**; or

(c)   an **ancillary service agent** is given a **dispatch instruction** by the **system operator** and the price **offered** by the **ancillary service agent** for the ~~dispatched~~**dispatched** **instantaneous reserve** in the relevant **trading period** is higher than the **final reserve price** of the ~~dispatched~~**dispatched** **instantaneous reserve** in the relevant **trading period**.

(d)   any load to which a **nominated dispatch bid** (other than a **dispatch notification purchaser bid**) applies is **dispatched**, despite the price in the **nominated dispatch bid** being below the **final price** at the relevant **GXP**.

       ~~in relation to a **dispatch-capable load station** (except when the final **nominated bid** for the **dispatch-capable load station** in a **trading period** is a **nominated**~~

~~**non-dispatch bid**), the latest **dispatch instruction** issued by the **system operator** for the **dispatch-capable load station** for a **trading period** is for a **MW** amount that is more than the **MW** amount scheduled for the **dispatch-capable load station** in the schedule of **final prices** for the **trading period**.~~

(1A) In this clause,—

    (a)   an **offer** made by a **generator** means the last **offer** made by the **generator** which applied during the relevant **trading period**; and

    (b)   a **bid** made by a **purchaser** means the last **bid** made by the **purchaser** which applied during the relevant **trading period**.

~~(2)   If the **pricing manager** calculates **interim prices** and **interim reserve prices** in accordance with clause 13.135B for a **trading period**, and the scarcity pricing factor in that calculation is determined under clause 1(3)(c) or clause 2(3)(c) of Schedule 13.3A, a **constrained on situation** is deemed not to have occurred in that **trading period** in the **island** or **islands** in which the **scarcity pricing situation** occurred.~~

13.203 Determining affected price bands for block dispatch groups or station dispatch groups

(1)   If a **constrained on situation** occurred for a **block dispatch group** or **station dispatch group** during any **trading period** during the previous **billing period**, the **clearing manager** must determine the affected price bands for that **block dispatch group** or **station dispatch group** by—

    (a)   taking all the **offers** made by that **block dispatch group** or **station dispatch group** in relation to that **trading period**, calculating the differences between each **offer** price and **final price** for each **grid injection point** and ranking the differences in ascending order; and

    (b)   identifying each price band ranked under paragraph (a) in which the aggregate quantity for that price band plus all the quantity in all previous price bands exceeds the aggregate quantity for all the **generating plant** in that **block dispatch group** or **station dispatch group** calculated by the <u>**clearing**</u> ~~**pricing**~~ **manager** using the methodology set out in Schedule 13.3. The **offer** prices corresponding to the ranked price bands identified under this paragraph are the affected price bands for that **block dispatch group** or **station dispatch group** for the purposes of clause 13.204.

(2)   In this clause, an **offer** made by a **generator** means the last **offer** made by the **generator** which applied during the relevant **trading period**.

13.204 Calculation of constrained on amounts

(1)   If a **constrained on situation** occurs during any **trading period** during a previous **billing period**,—

    (a)   the **clearing manager** must calculate the **constrained on amounts** for a **constrained on situation** described in clause 13.202(a) or (b) for each **generator** for each affected price band in accordance with the following formula:

$$COC = Q_{con} * (P_o - P_f)$$

where

COC   is the **constrained on amount** for a **generator**

Q_{con} is the ~~dispatched~~**dispatched** quantity in **MWh** (calculated under paragraph (b) ~~as set out below~~) from that price band in the **offer** that was constrained on during a **trading period**, or the positive difference between the **reconciliation information** and the **scheduled quantity**, whichever is less

P_o is the price offered for that price band by the **generator** for the quantity of **electricity** from the **generating plant** which was constrained on

P_f is the **final price** for that **trading period** at the **grid injection point**; and

(aa) the **clearing manager** must calculate the **constrained on amounts** for a **constrained on situation** described in clause 13.202~~(1)~~(d) for each **dispatch-capable load station** for each affected **nominated dispatch bid** price band, using the following formula:

ConOnAmt = ConOnQ* (P_f-P_b)

where

ConOnAmt is the **constrained on amount** for a **dispatch-capable load station** for the **nominated dispatch bid** price band

ConOnQ is the amount in **MWh** by which ~~the lowest of~~ Q_{disp} ~~and Q_{rec}~~ exceeds $Q_{rec\underline{fp}}$

~~where~~<u>fp</u>

Q_{disp} is the **dispatched**~~latest~~ quantity in **MWh** <u>in the **trading period**, calculated under paragraph (b)</u>~~, dispatched~~ for the **nominated dispatch bid** price band in the **trading period**

Q_{rec} is the **reconciled quantity** provided by the **reconciliation manager** under clause 15.20C allocated by the **clearing manager** to the **nominated dispatch bid** price band in the **trading period**

~~Q_{fp}~~ ~~is the quantity, in **MWh**, scheduled for the **nominated dispatch bid** price band in the schedule of **final prices**~~

P_f is the **final price** for the **trading period** at the **grid exit point**

P_b is the price bid for the **nominated dispatch bid** price band for the **dispatch-capable load station** that was constrained on; and

(b) for the purposes of clauses 13.202 to 13.211 ~~dispatched~~**dispatched** quantity must be calculated taking into account—

(i) the quantity in **MW** recorded in the log kept by the **system operator** in accordance with clause 13.76; and if required, the **clearing manager** must aggregate such quantities for—

(A) **generating stations** or **generating units** in the relevant **station dispatch group**; or

(B) **generating units**, if the **clearing manager** requires a ~~dispatched~~**dispatched** quantity to be determined on a **grid injection point** basis; and

(ii) for an **offer**, the ramp rate applying to that **constrained on situation** that is specified in the **offer** submitted by the **generator**, or—

(A) for a **block dispatch group** or a **station dispatch group**; or

        (B)   for **generating units**, if the **clearing manager** requires the ~~dispatched~~**dispatched** quantity to be determined on a **grid injection point** basis—

the fastest of the ramp rates applying to that **constrained on situation** that are specified in the **offers** submitted by the **generator** in that **block dispatch group**, that **station dispatch group** or those **generating units connected** to the relevant **grid injection point** (as the case may be); and

    (iii)   plus or minus the **MW** bandwidth applicable for each **generator** affected by a **frequency keeping** requirement as advised by the **system operator** to the **clearing manager** under clauses 13.76 to 13.80 and, if required, the **clearing manager** must aggregate the **MW** bandwidth applicable to determine the **MW** bandwidth on a **grid injection point** basis; and

(c)   the **clearing manager** must calculate the **constrained on amounts** for a **constrained on situation** described in clause 13.202(c) for each **ancillary service agent** for each affected price band in accordance with the following formula:

$$COC = Q_{con} * (P_o - P_f)$$

where

COC   is the **constrained on amount** for an **ancillary service agent**

Q_{con} is the ~~dispatched~~**dispatched** quantity of **instantaneous reserve** in **MW** (calculated under paragraph (d)~~as set out below~~) from that price band in the **reserve offer** that was constrained on during a **trading period**

P_o is the price offered for that price band by that **ancillary service agent** for the quantity Q_{con}

P_f is the ~~final~~ **dispatch reserve price** for that **trading period** at the **point of connection** on the **grid**; and

(d)   for the purposes of paragraph (c), in determining the ~~dispatched~~**dispatched** quantity, the **clearing manager** must take into account the quantity in **MW** of **instantaneous reserve** ~~dispatched~~**dispatched** for the **ancillary service agent** recorded in the log kept by the **system operator** in accordance with clause 13.76; and

(e)   the **constrained on amounts** for a **block dispatch group** or **station dispatch group** equal the sum of the amounts calculated in accordance with paragraphs (a) and (b) for the **generating plant** in that **block dispatch group** or **station dispatch group** (as the case may be); and

(f)   in relation to any 2 adjacent **trading periods**, a **generator** is entitled to be paid for the 2nd **trading period** at the **final price** for the **grid injection point** if the **generator**—

    (i)   was in a **constrained on situation** in the 1st **trading period**; and

    (ii)   continues to generate in the 2nd **trading period** as a result of a **dispatch instruction** given for the 1st **trading period**; but

    (iii)   has not made an **offer** in the 2nd **trading period**.

(2)   To avoid doubt, nothing in this clause entitles the **system operator** to issue any instruction to a **generator** in relation to **unoffered generation**.

(3)   In this clause,—

(a)   an **offer** made by a **generator** means the last **offer** made by the **generator** which applied during the relevant **trading period**; and

(b)   a **bid** made by a **purchaser** means the last **bid** made by the **purchaser** which applied during the relevant **trading period**.

13.205 Calculation of constrained on amounts attributable to system operator

If a **constrained on situation** occurs during a **trading period** during a previous **billing period**, and that **constrained on situation** is notified to the **clearing manager** under clauses 13.76 to 13.80, the **clearing manager** must determine the portion of the **constrained on amounts** calculated under clause 13.204 attributable to the **system operator** for each **generator** or each **ancillary service agent** as follows:

(a)   if the **system operator** has advised the **clearing manager** that a **voltage support** or other **constrained on situation** occurred (including but not limited to **over frequency reserve** and **instantaneous reserve**) the **system operator** must be allocated the total **constrained on amount** for that **trading period**:

(b)   if the **system operator** has advised the **clearing manager** that a non-security **constrained on situation** occurred the **system operator** must be allocated a **constrained on amount** calculated in accordance with the following formula:

$$SOCONNS_{go} = TCONP * (SOQconns / TQcon)$$

where

$SOCONNS_{go}$	is the **constrained on amount** attributable to the **system operator** for that non-security **constrained on situation**
TCONP	is the total **constrained on payment** for that **trading period**
SOQconns	is the non-security quantity that was constrained on and advised to the **clearing manager** by the **system operator** under clauses 13.76 to 13.80, or the total quantity constrained on, whichever is less
TQcon	is the total quantity constrained on:

(c)   if the **system operator** has advised the **clearing manager** that a **frequency keeping** situation occurred the **system operator** must be allocated a **constrained on amount** calculated in accordance with the following formula:

$$SOCONFK_{go} = TCONP * (SOQconfk / TQcon)$$

where

$SOCONFK_{go}$	is the **constrained on amount** attributable to the **system operator** for that **frequency keeping constrained on situation**
TCONP	is the total constrained on payment for the **generator** for the **trading period**
SOQconfk	is the **frequency keeping** quantity that was advised to the **clearing manager** by the **system operator** under clause 13.76 to 13.80, or the total quantity constrained on for the **generator**, whichever is less
TQcon	is the total quantity constrained on for the **generator**.

13.206 Time frame for calculating constrained on amounts

The **clearing manager** must calculate **constrained on amounts**—

(a) by 1600 hours on the 8th **business day** of each **billing period** for the previous **billing period** in accordance with clauses 13.204 and 13.205; or

(b) if, ~~publication of final prices is delayed~~ for any **trading period** in the relevant **billing period**, <u>interim prices</u> do not become **final prices** until~~so that final prices for a~~ **trading period** ~~in the~~ **billing period** ~~are~~ **published** ~~later than 1600 hours on the 6th **business day** of the month following the relevant **billing period**,~~ 1 **business day** after all **final prices** for the **billing period** are <u>available</u>~~published~~.

…

13.213 Daily reports

~~(1) On each **trading day** the **pricing manager** must provide the **market administrator** with a written report for the **trading periods** beginning at 0700 hours on the previous **trading day** and ending with the **trading period** beginning at 0630 hours on the **trading day** the report is due to be given, specifying—~~

~~(a) any **provisional prices published**; and~~

~~(b) any **pricing errors** claimed; and~~

~~(c) any situation where the **pricing manager** believes, on reasonable grounds, that it or another **participant** has breached this Code.~~

~~(2) In relation to each alleged breach the report must give details of—~~

~~(a) occasions when prices were or will be **published** late and whether the delay was caused by the **pricing manager**; and~~

~~(b) the time at which the alleged breach took place; and~~

~~(c) the nature of the alleged breach, including details of the person alleged to be in breach and any **generator** or **purchaser** believed to be affected by the alleged breach; and~~

~~(d) the reason for the alleged breach, if the **pricing manager** is aware of the reason.~~

13.214 Market administrator to publish pricing manager reports

~~(1) By the 15th **business day** of each calendar month, the **market administrator** must **publish** the sections of the reports of the **pricing manager** given in the previous calendar month under clause 13.213 that relate to any alleged breaches of this Code by the **pricing manager**.~~

~~(2) By the 15th **business day** of each calendar month the **market administrator** must refer the reports received in the previous calendar month to the **Authority**.~~

13.215 Generators and purchasers have right to information concerning pricing manager's action

~~(1) A **generator** or a **purchaser** may, by notice in writing to the **pricing manager**, request further information relating to any situation set out in a **pricing manager's** report **published** under clause 13.214 that has materially affected the **generator** or **purchaser**.~~

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…

13.221 Node and grid zone area information

(1)   The **Authority** must **publish** annually, on the **information system**,—

(a)   a list of all **nodes** at which the ~~pricing~~ <u>clearing</u> **manager** publishes **final prices**; and

(b)   a corresponding **location factor** for each such **node**; and

(c)   a corresponding **grid zone area** for each such **node**; and

(d)   a list of nominated **zone nodes**, being 1 **node** at which the ~~pricing~~ <u>clearing</u> **manager** publishes **final prices**, within each **grid zone area**.

(2)   For the purposes of subclause (1)(b), the **location factor** for each such **node** must be calculated as follows:

$$LF = A/B$$

where

A   is the average **final price published** at that **node** over the 12 month period preceding the month before the date on which the **location factors** are **published**

B   is the average **final price published** at the relevant nominated **zone node**, as **published** in accordance with subclause (1)(d), for the 12 month period preceding the month before the date on which the **location factors** are **published**

LF   is the **location factor** to be **published** in accordance with subclause (1)(b).

…

Schedule 13.1
Forms 1 to 9

cls 13.9, 13.13, 13.38, 13.64, and 13.170

…

Form 4

Purchaser's nominated bid for electricity

Date: _____

Purchaser: _____

Grid Exit Point: _____

Trading Period: _____ starting at _____ : _____ 0 hours

Type of bid: Nominated dispatch bid ☐

Nominated non-dispatch bid ☐

Dispatch-capable load station identifier (if applicable): _____

Bid is submitted by dispatch notification purchaser: ☐

Nominated bid to buy electricity

Band 1: **From 0 MW to** _____ **MW below $** _____ **per MWh**

Band 2: **plus** _____ **MW below $** _____ **per MWh**

Band 3: **plus** _____ **MW below $** _____ **per MWh**

Band 4: **plus** _____ **MW below $** _____ **per MWh**

Band 5: **plus** _____ **MW below $** _____ **per MWh**

Band 6: **plus** _____ **MW below $** _____ **per MWh**

Band 7: **plus** _____ **MW below $** _____ **per MWh**

Band 8: **plus** _____ **MW below $** _____ **per MWh**

Band 9: **plus** _____ **MW below $** _____ **per MWh**

Band 10: **plus** _____ **MW below $** _____ **per MWh**

…

<center>

Form 9
Claim of pricing error

CLAIM OF PRICING ERROR

</center>

Please email the completed form to the pricing manager

Contact Details (all fields are mandatory)

Claimant: _____

Organisation: _____

Role at organisation: _____

E-mail: _____

Phone: _____

Mobile: _____

Fax: _____

Pricing Error Summary Details (all fields are mandatory)

Date: Trading period(s) affected:

Node: Energy: Yes/No   Reserve: Yes/No

Summary of pricing error:

Section 1 - Basis of claim (only question 1 is mandatory)

    1. What is the nature of the pricing error?

2. Has the pricing error been caused by a Code breach? Yes/No

If yes, please specify the clause that has been breached:

Section 2 – Materiality of pricing error and solution sought by applicant (all questions are mandatory)

1. Describe the effect of this pricing error for your organisation? (if possible please provide financial information to demonstrate the materiality of the claimed pricing error)

2. Describe how, in your view, the claimed pricing error should be resolved.

Schedule 13.2
Model parameters

1   Model parameters

The **system operator** must, in accordance with clause 13.189 of the Code, provide the **Authority** ~~pricing manager~~ with a list specifying the values for the following model parameters:

(a)   deficit bus generation:

(b)   surplus bus generation:

(c)   deficit 6s reserve for a contingent event as defined in clause 12.3 of the Policy Statement:

(d)   deficit 6s reserve for an extended contingent event as defined in clause 12.3 of the Policy Statement:

(e)   deficit 60s reserve for a contingent event as defined in clause 12.3 of the Policy Statement:

(f)   deficit 60s reserve for an extended contingent event as defined in clause 12.3 of the Policy Statement:

(g)   deficit branch group constrained:

(h)   surplus branch group constrained:

(i)   deficit bus group constrained:

(j)   surplus bus group constrained:

(k)   deficit ramp rate:

(l)   surplus ramp rate:

(m)   market node/trader capacity deficit:

(n)   deficit branch flow:

(o)   surplus branch flow:

(p)   deficit M-node constrained:

(q)   surplus M-node constrained.

Schedule 13.3
The Modelling System
cls 13.29, 13.33, 13.57, 13.58, 13.69, 13.83, 13.87, 13.88, 13.90, 13.135, 13.193, and 13.203

Inputs into the modelling system

1   Purpose of modelling system

(1)   The purpose of the modelling system is to provide schedules of quantities and prices that maximise the gross **purchaser** benefit from purchases of **electricity** from the **clearing manager** less the total cost of production of **electricity** and **instantaneous reserves** as specified in this Schedule.

(2)   ~~Schedules covering more than 1 **trading period** must be prepared for each **trading period** independently of the previous **trading period** unless otherwise specified in this Schedule.~~

(2A)   ~~Despite subclause (2), a~~A **price-responsive schedule** and **non-response schedule** must use the scheduled generation at the end of the previous **trading period** as the expected output for the purpose of clause 9A(b).

(3)   The modelling system must provide prices for **electricity** and **instantaneous reserve** that are consistent with the above purpose and the scheduled quantities of **electricity** and **instantaneous reserve**.

(4)   The modelling system must be used, using different inputs, to produce—
        (a)   **price-responsive schedules**; and
        (b)   **non-response schedules**; and
        (c)   **dispatch schedules**.~~; and~~
        (d)   ~~schedules of **real time prices**; and~~
        (e)   ~~schedules of **provisional prices**; and~~
        (f)   ~~schedules of **interim prices**; and~~
        (g)   ~~schedules of **final prices**.~~

~~**2   Contents of each schedule**~~
        ~~Each schedule must contain the information specified in—~~
        ~~(a)   clause 13.59, for a **price-responsive schedule** and a **non-response schedule**; and~~
        ~~(b)   *[Revoked]*~~
        ~~(c)   clauses 13.71 to 13.86, for a **dispatch schedule**; and~~
        ~~(d)   clause 13.135, for a schedule of **provisional prices** or a schedule of **interim prices** or a schedule of **final prices**; and~~
        ~~(e)   clause 13.88, for a schedule of **real time prices**.~~

Inputs used at each stage

3   Specific inputs must be used in schedules
        The schedules must be prepared using the following inputs:
        (a)   for each **price-responsive schedule**, the inputs set out in clause 13.58A(1)~~:; and~~
        (b)   for each **non-response schedule**, the inputs set out in clause 13.58A(2)~~:; and~~
        (c)   for each **dispatch schedule**, the inputs set out in clause ~~7~~13.69B.~~; and~~
        (d)   ~~for each schedule of **provisional prices**, each schedule of **interim prices** and each schedule of **final prices**, the inputs set out in clause 13.141; and~~

(e)   for each schedule of **real time prices**, the inputs set out in clause 6.

4   *[Revoked]*

5   *[Revoked]*

6   **Schedule of real time prices**

For a schedule of **real time prices**, the schedule must use—

(a)   the final information for each **real time pricing period** provided to the **system operator** under subpart 1 of Part 13, including—

    (i)   **offers** revised under clause 13.19; and

    (ii)   **nominated dispatch bids** revised under clause 13.19A; and

    (iii)   **reserve offers** revised under clause 13.47; and

    (iv)   information updated under clause 13.34(1); and

(b)   existing generation configuration specifying the instantaneous **MW injection** at each **grid injection point** at the beginning of the relevant **real time pricing period** for **generating plant** or **generating units** that were the subject of **offers** for the relevant **trading period**, or, if no such information is available, a reasonable estimate of such data; and

(c)   existing **demand** configuration, specifying the average **MW demand** at each **grid exit point**, excluding the **MW demand** at each **dispatch-capable load station** for which a **nominated dispatch bid** is submitted at the **grid exit point**, during the relevant **real time pricing period**, or if no such information is available, a reasonable estimate of such data.

7   **Dispatch schedule**

For a **dispatch schedule**, the schedule must use—

(a)   **offers** and **reserve offers**, excluding the following:

    (i)   **offers** made by an **intermittent generator** under clause 13.6(3):

    (ii)   revised **offers** made by an **intermittent generator** under clause 13.17(3):

    (iii)   **offers** made by a **type B co-generator** under clause 13.6(1) or (2):

    (iv)   revised **offers** made by a **type B co-generator** under clause 13.17(1) or (2); and

(b)   the quantities specified in **nominated bids** (clause 13.7 and 13.7AA) and the quantities specified in revised **nominated bids** (clause 13.19A); and

(c)   the expected profile of demand until the next **dispatch schedule** is produced by the **system operator**; and

(d)   the ramp rates agreed for **intermittent generators** under clause 13.71(e); and

(e)   any additional information regarding the future output of an **intermittent generator**, submitted by an **intermittent generator** in agreement with the **system operator** for the period until the next **dispatch schedule** is produced (clause 13.71(e)); and

(f)   the current output levels of each **generator**; and

(g)   information from the **grid owner** (clauses 13.29 to 13.34) and revised information from the **grid owner** (clause 13.33) about—

    (i)   the AC transmission system configuration, capacity and losses; and

The objective function

8   The objective function

(1)   The objective function of the modelling system is described mathematically as:

$$
\text{Maximise} \left\{
\begin{array}{c}
\overbrace{\sum_{i,j} D_{i,j} \quad \times \quad BP_{i,j}}^{\text{Gross Consumer Benefit}} \\
\text{minus} \\
\overbrace{\sum_{i,j} G_{i,j} \quad \times \quad OP_{i,j}}^{\text{Cost of Generation}} \\
\text{minus} \\
\overbrace{\sum_{i,j} R_{i,j}^{PLSR,f} \times OP_{i,j}^{PLSR,f} + \sum_{i,j} R_{i,j}^{TWD,f} \times OP_{i,j}^{TWD,f} + \sum_{i,j} R_{i,j}^{IL,f} \times OP_{i,j}^{IL,f}}^{\text{Cost of Fast Instantaneous Reserves}} \\
\text{minus} \\
\overbrace{\sum_{i,j} R_{i,j}^{PLSR,s} \times OP_{i,j}^{PLSR,s} + \sum_{i,j} R_{i,j}^{TWD,s} \times OP_{i,j}^{TWD,s} + \sum_{i,j} R_{i,j}^{IL,s} \times OP_{i,j}^{IL,s}}^{\text{Cost of Sustained Instantaneous Reserves}}
\end{array}
\right\}
$$

where

i is a price band of a **bid / offer** or a **reserve offer**

j is a **generating unit** / **generating station**, or a **purchaser**

$D_{i,j}$ is the scheduled demand corresponding to price band *i* of the **bid** for **purchaser** *j* ~~or metered demand, whichever is relevant, and~~ where the relevant **bids** used here are formed from a combination of the following, as appropriate to the schedule being calculated:

(a)   nominated bids:

(b)   the forecast prepared under clause 13.7A(1):

(c)   difference bids (if difference bids are used, the quantities must be added or subtracted, as appropriate, from the forecast prepared under clause 13.7A(1)):

(d)   the system operator's expectation of the profile of demand during the relevant period covered by the schedule being calculated:

(e)   a measure of actual demand during the relevant period

$BP_{i,j}$	is the **bid** prices corresponding to price band i of the **bid** for **purchaser** j
$G_{i,j}$	is the scheduled generation corresponding to price band i of the **offer** for unit / station j
$OP_{i,j}$	is the **offer** price corresponding to price band i of the **offer** for unit / station j
$R_{i,j}^{PLSR,f}$	is the scheduled fast PLSR corresponding to price band i of the fast **reserve offer** for unit / station j
$R_{i,j}^{PLSR,s}$	is the scheduled sustained PLSR corresponding to price band i of the **reserve offer** for unit / station j
$OP_{i,j}^{PLSR,f}$	is the **reserve offer** price corresponding to price band i of the fast PLSR **reserve offer** for unit / station j
$OP_{i,j}^{PLSR,s}$	is the **offer** price corresponding to price band i of the sustained PLSR **reserve offer** for unit / station j
$R_{i,j}^{TWD,f}$	is the scheduled fast TWD corresponding to price band i of the **reserve offer** for unit / station j
$R_{i,j}^{TWD,s}$	is the scheduled sustained TWD corresponding to price band i of the **reserve offer** for unit / station j
$OP_{i,j}^{TWD,f}$	is the **reserve offer** price corresponding to price band i of the fast TWD **reserve offer** for unit / station j
$OP_{i,j}^{TWD,s}$	is the **reserve offer** price corresponding to price band i of the sustained TWD **reserve offer** for unit / station j
$R_{i,j}^{IL,f}$	is the scheduled fast IL corresponding to price band i of the **reserve offer** for **purchaser** j
$R_{i,j}^{IL,s}$	is the scheduled sustained IL corresponding to price band i of the **reserve offer** for **purchaser** j
$OP_{i,j}^{IL,f}$	is the **reserve offer** price corresponding to price band i of the fast IL **reserve offer** for **purchaser** j
$OP_{i,j}^{IL,s}$	is the **reserve offer** price corresponding to price band i of the sustained IL **reserve offer** for **purchaser** j

and where

PLSR	is **partly loaded spinning reserve**
TWD	is **tail water depressed reserve**
IL	is **interruptible load**
fast	is **fast instantaneous reserve**

sustained   is **sustained instantaneous reserve**

(2) The objective must be maximised to an accuracy specified in the **model formulation**.

9   Constraints

In maximising the objective function, the **system operator** ~~or the **pricing manager** (as the case may be)~~ must ensure that the following constraints are met to an accuracy specified in the **model formulation**:

(a) *[Revoked]*

(b) each constraint relating to **generation** set out in clause 9A:

(c) the constraint relating to **demand** set out in clause 10:

(d) each constraint relating to the transmission system set out in clause 11:

(e) each constraint relating to **instantaneous reserve** set out in clause 12.

9A   Constraints relating to generation

The constraints for the purpose of clause 9(b) are that—

(a) for each price band, the modelling system does not schedule **electricity** generation that would result in the scheduled quantity of **electricity** to be generated by a **generator** being greater than the quantity offered by the **generator** for the price band; and

(b) the modelling system schedules **electricity** generation for each **generating unit** or **generating station** in a **trading period** within the offered maximum ramp up and ramp down rates of the **generating unit** or **generating station**, given the expected (or actual) output at the start of the **trading period**.

10   Constraint relating to demand

The constraint relating to **demand** for the purpose of clause 9(c) is that, for each price band, the modelling system does not schedule **electricity demand** that would result in the scheduled quantity of **demand** being greater than the quantity bid by the **purchaser** for the price band.

11   Constraints relating to transmission system

The final schedule provided by the modelling system must have the following characteristics (all of which must be met to an accuracy to be specified in the **model formulation**):

(a) the total scheduled flow into and out of a **grid injection point** or **grid exit point** must equal 0 for all **grid injection points** and **grid exit points**:

(b) the modelling system must calculate **losses** in transmission **lines**, the **HVDC link**, and transformers. Those **losses** must be approximated using the information provided by **grid owners** under clauses 13.29 to 13.31, for transmission **lines**, the **HVDC link** and transformers respectively:

(c) the modelling system must calculate the **electricity** flows into individual transmission **lines** and flows into the **connection** points of transformers **connected** at the same **grid injection point** or **grid exit point** using an established DC power flow technique within the limitations imposed by the technique that—

(i) correctly adjusts flows for transmission system **losses**; and

(ii)   correctly apportions flows in transmission system loops, whether or not those loops contain transmission **constraints**—

provided that the capacity of transformers through which **electricity** is supplied to a **grid exit point** is not included in the model unless the transformer may carry flows of **electricity** other than **offtakes** from that **grid exit point**.

12   Constraints relating to instantaneous reserve

(1)   The modelling system must simultaneously calculate the amount of **fast instantaneous reserve** and **sustained instantaneous reserve** to be provided by each **ancillary service agent** in each **island** to meet the requirements of the **dispatch objective** in each **island**.

(2)   In making the calculation in subclause (1), the modelling system must identify the risk (in **MW**) associated with the largest "Contingent Event" as the largest of—

(a)   the transfer on a single pole of the **HVDC link**; or

(b)   the generation from a single **generating unit** (whether or not this is a **generator's generating unit**); or

(c)   any other risk specified in the **dispatch objective**.

(3)   The modelling system must calculate the total amount of **fast instantaneous reserve** and **sustained instantaneous reserve** required to meet the requirements of the **dispatch objective**. The amount of **fast instantaneous reserve** and **sustained instantaneous reserve** to be provided by each **ancillary service agent** is this amount less any **instantaneous reserve** being provided by any other person who is not an **ancillary service agent** (as notified by the **system operator**).

(4)   The modelling system must not schedule **instantaneous reserve** at a **generating unit** or **generating station** that would result in the scheduled quantity of **electricity** to be generated plus the scheduled quantity of **instantaneous reserve** to be provided that is greater than the maximum **generator** effective reserve capacity of that **generating unit** or **generating station** as specified in the **reserve offer** for that **generating unit** or **generating station**.

13   Adjustments to schedules to meet dispatch objective

(1)   As soon as practicable after each **price-responsive schedule** ~~non-response schedule~~ has been completed and each **dispatch schedule** has been implemented ~~completed~~, the **system operator** must advise~~notify~~ **participants** of any adjustments ~~changes~~ required to the **price-responsive schedule** ~~non-response schedule~~ or **dispatch schedule** (as the case may be) to meet the **dispatch objective**, including adjustments for—

(a)   **voltage support**; and

(b)   **frequency keeping** reserves; and

(c)   over-frequency arming; and

(d)   additional transmission **constraints**; and

(e)   **instantaneous reserve**.

(2)   The adjustments identified in subclause (1) must be made by setting 1 or a combination of the following parameters:

(a)   minimum generation (in **MW**) required at a **grid injection point** or group of **grid exit points**:

(b)   maximum generation (in **MW**) required at a **grid injection point** or group of **grid exit points**:

(c)   minimum flow limits (in **MW**) on a transmission line or a transformer:

(d)   maximum flow limits (in **MW**) on a transmission line or a transformer:

(e)   minimum flow limits (in **MW**) on a group of transmission **lines** or transformers:

(f)   maximum flow limits (in **MW**) on a group of transmission **lines** or transformers:

(g)   the reserve modelling parameters as contained in Form 7 in Schedule 13.1.

(3)   ~~For a **non-response schedule** or a **dispatch schedule**, the adjustments must be made by the **system operator**. For a **dispatch schedule**, this method must be repeated to produce a new schedule. This must continue until the **system operator** is satisfied that the requirements of the **dispatch objective** have been met.~~

(4)   ~~For a schedule of **provisional prices** or a schedule of **interim prices** or a schedule of **final prices**, the adjustments must be made using the adjustments that were used in the **non-response schedule**~~ that applied at the beginning of the **trading period**.

14   Principles to be followed by system operator

In suggesting changes and making adjustments under clause 13, the **system operator** must have regard to the following principles:

(a)   constraints must be imposed on **generating plant** only if the **system operator** has a specific requirement from the **generating plant** to meet the requirements of the **dispatch objective**:

(b)   constraints must be imposed on a transmission line or transformer only if the **system operator** has a specific requirement from the line or the transformer to meet the requirements of the **dispatch objective**:

(c)   adjustments must be made to **instantaneous reserve** modelling parameters only if the **system operator** has a specific requirement for **instantaneous reserve** to meet the requirements of the **dispatch objective**.

~~15   Schedule of prices~~

~~A schedule of **provisional prices** or **interim prices** or **final prices** must use—~~

~~(a)   the information specified in **generator offers** (clause 13.6(1) to (3)); and~~

~~(aa)   the final submitted **nominated dispatch bid** for each **trading period** as specified in clause 13.141(1)(ca); and~~

~~(b)   the information specified in **ancillary service agent reserve offers** (clause 13.38(1)); and~~

~~(c)   the metered demand within the current **trading period** (clause 13.141(1)(b)), including any adjustments made for an **embedded generator**; and~~

~~(d)   the information from the **system operator** and a **grid owner** (clauses 13.29 to 13.34) that was used in the first **dispatch schedule** prepared for that **trading period** about—~~

     ~~(i)   the AC transmission system configuration, capacity and losses; and~~

     ~~(ii)   the capability of the **HVDC link** including its **configuration**, capacity, losses, the direction of any transfer limit, and any minimum or maximum transfer limits, weighted by time for any changes within the **trading period** (clause 13.30); and~~

     ~~(iii) transformer configuration, capacity and losses; and~~

     ~~(iv)   **voltage support**; and~~

     ~~(v)   **instantaneous reserves**; and~~

(e)   ~~adjustments that were made to the~~ **~~dispatch schedule~~** ~~and the~~ **~~non-response~~ ~~schedule~~**~~, which were required to meet the~~ **~~dispatch objective~~** ~~(clause 13.57).~~

16   Calculation of prices, **marginal location factors and reserve prices**
(1)   The modelling system must calculate the following set of prices:
(a)   prices for **electricity** at each **grid injection point** and **grid exit point**, and at each **reference point**:
(b)   **reserve prices** for each **island**:
(c)   marginal **location factors** for each **grid injection point** and each **grid exit point**. Those factors must be determined by dividing the price at that **grid injection point** or **grid exit point** by the price at the **reference point** relevant to that **grid injection point** or **grid exit point**.
(2)   The modelling system must assign a ~~0~~-price for **electricity** at each **grid injection point** and **grid exit point** that is **disconnected**.
(3)   The prices described in subclause (1) must be used—
(a)   for a **price-responsive schedule** or a **non-response schedule**, as—
(i)   **forecast prices**; and
(ii)   **forecast reserve prices**; and
(iii)   ~~**forecast marginal location factors**~~:
(b)   for a **dispatch schedule** or for preparing the information referred to in clause 2 of Schedule 13.3B as—
(i)   **dispatch prices**; and
(ii)   **dispatch reserve prices**.
(b)   ~~for a schedule of~~ **~~provisional prices~~**~~, or a schedule of~~ **~~interim prices~~**~~, or a schedule of~~ **~~final prices~~**~~, as—~~
(i)   ~~**provisional prices, interim prices**, or **final prices**, as the case may be; and~~
(ii)   ~~**provisional reserve prices, interim reserve prices**, or **final reserve prices**, as the case may be; and~~
(iii)   ~~**provisional marginal location factors, interim marginal location factors**, or **final marginal location factors**, as the case may be:~~
(c)   *[Revoked]*
(d)   ~~if this schedule is used as a schedule of~~ **~~real time prices~~**~~, as~~ **~~real time prices~~**~~.~~

17   What modelling system must take into account when calculating prices
The modelling system must calculate the prices in clause 16 consistent with the objective function, and consistent with the quantities of **electricity** and **instantaneous reserve** scheduled, while meeting all constraints, and in particular—
(a)   prices for **electricity** at each **grid injection point** or **grid exit point** must be consistent with the treatment of transmission system **losses** and the transmission system power flow; and
(b)   subject to the rights of the **system operator** described in clause 13, a **generator** at a **grid injection point** must be scheduled to generate a quantity of **electricity** from a price band if the price determined by the modelling system at the **reference point** multiplied by the marginal **location factor** at that **grid injection point** is greater than or equal to the price offered in that price band; and
(c)   subject to the rights of the **system operator** described in clause 13, a **generator** at

a **grid injection point** must not be scheduled to generate a quantity of **electricity** from a price band if the price determined by the modelling system at the **reference point** multiplied by the relevant marginal **location factor** at that **grid injection point** is less than the price offered in that price band; and

(d) for **nominated bids**, subject to the obligations of the **system operator** described in clause 13, a **purchaser** at a **grid exit point**—

    (i) must be scheduled to purchase a quantity of **electricity** from a price band if the price determined by the modelling system at the **reference point** multiplied by the relevant marginal location factor at the **grid exit point** is less than the price bid for the price band; and

    (ii) must not be scheduled to purchase a quantity of **electricity** from a price band if the price determined by the modelling system at the **reference point** multiplied by the relevant marginal location factor at the **grid exit point** is greater than the price bid for the price band; and

(e) for positive **difference bids**, subject to the obligations of the **system operator** described in clause 13, a **purchaser** at a **grid exit point**—

    (i) must be scheduled to increase a quantity of **electricity** if the price determined by the modelling system at the **reference point** multiplied by the relevant marginal location factor at the **grid exit point** is less than the price bid for the price band; and

    (ii) must not be scheduled to increase a quantity of **electricity** if the price determined by the modelling system at the **reference point** multiplied by the relevant marginal location factor at the **grid exit point** is greater than the price bid for the price band; and

(ea) for negative **difference bids,** subject to the obligations of the **system operator** described in clause 13, a **purchaser** at a **grid exit point**—

    (i) must be scheduled to decrease a quantity of **electricity** if the price determined by the modelling system at the **reference point** multiplied by the relevant marginal location factor at that **grid exit point** is greater than the price bid for the price band; and

    (ii) must not be scheduled to decrease a quantity of **electricity** if the price determined by the modelling system at the **reference point** multiplied by the relevant marginal location factor at that **grid exit point** is less than the price bid for the price band; and

(eb) subject to the obligations of the **system operator** described in clause 13, a **purchaser** at a **conforming GXP** that does not submit a **difference bid** in relation to the **GXP**—

    (i) must be scheduled to purchase a quantity of **electricity** from a price band if the price determined by the modelling system at the **reference point** multiplied by the relevant marginal **location factor** at the **grid exit point** is less than the price bid for the price band; and

    (ii) must not be scheduled to purchase a quantity of **electricity** from a price band if the price determined by the modelling system at the **reference point** multiplied by the relevant marginal **location factor** at the **grid exit point** is greater than the price bid for the price band; and

(f)   subject to the rights of the **system operator** described in clause 13, an **ancillary service agent** who has made a **reserve offer** must be scheduled to provide a quantity of **instantaneous reserve** from a reserve price band only if the reserve price determined by the modelling system is greater than or equal to the total price offered for that reserve price band. In the case of a **reserve offer** for a **generating unit**, the total price offered for a price band must be equal to the amount required to ensure that that **ancillary service agent** is indifferent as to whether it generates **electricity** or provides **instantaneous reserve** plus the price **offered** in that reserve price band; and

(g)   subject to the rights of the **system operator** described in clause 13, an **ancillary service agent** who has made a **reserve offer** must not be scheduled to provide a quantity of **instantaneous reserve** from a price band if the reserve price determined by the modelling system is less than the total price offered for that price band. In the case of a **reserve offer** for a **generating unit**, the total price offered for a price band is equal to the amount required to ensure that that **ancillary service agent** is indifferent as to whether it generates **electricity** or provides **instantaneous reserve** plus the price offered in that reserve price band.

Schedule 13.3A ~~cl 13.135B~~

~~Calculation of interim prices and interim reserve prices in scarcity pricing s~~

1 ~~Calculation of interim prices and interim reserve prices in island scarcity pricing situation~~

~~(1)If the **pricing manager** determines under clause 13.135A that an **island scarcity pricing situation** exists in a **trading period**, the **pricing manager** must calculate **interim prices** and **interim reserve prices** in the relevant **island** for that **trading period** in accordance with the following:~~

~~(a)calculate initial **interim prices** and **interim reserve prices** for the relevant **island** for that **trading period** in accordance with clause 13.135:~~

~~(b) calculate the **island GWAP** in accordance with subclause (2):~~

~~(c) calculate the scarcity pricing factor in accordance with subclause (3):~~

~~(d) calculate **interim prices** by multiplying the initial **interim prices** calculated under paragraph (a) by the scarcity pricing factor:~~

~~(e) calculate **interim reserve prices** by multiplying the initial **interim reserve prices** calculated under paragraph (a) by the scarcity pricing factor.~~

~~(2)The **pricing manager** must calculate the **island GWAP** in accordance with the following formula:~~

$$\mathrm{GWAP_{ISL}} = \frac{\sum_{g=1}^{n} (Q_g * P_g)}{\sum_{g=1}^{n} Q_g}$$

~~where~~
~~$\mathrm{GWAP_{ISL}}$ is the **island GWAP**~~
~~Q_g is the scheduled quantity of generation for **generator** g in the **island**~~
~~P_g is the **interim price** at the **node** where **generator** g injects **electricity** in the **island**~~

~~(3) The scarcity pricing factor is determined as follows:~~

~~(a) if the **island GWAP** is greater than or equal to $10,000/**MWh** and less than or equal to $20,000/**MWh**, the scarcity pricing factor is 1:~~

~~(b)if the **island GWAP** is less than $10,000/**MWh**, the scarcity pricing factor is calculated in accordance with the following formula:~~

~~$X = \dfrac{\$10,000}{\mathrm{GWAP_{ISL}}}$~~

~~where~~
~~X is the scarcity pricing factor~~
~~$\mathrm{GWAP_{ISL}}$ is the **island GWAP**~~

~~(c)if the **island GWAP** is greater than $20,000/**MWh**, the scarcity pricing factor is calculated in accordance with the following formula:~~

~~$X = \dfrac{\$20,000}{\mathrm{GWAP_{ISL}}}$~~

~~where~~
~~X is the scarcity pricing factor~~
~~$\mathrm{GWAP_{ISL}}$ is the **island GWAP**~~

~~**2 Calculation of interim prices in national scarcity pricing situation**~~

(1)If the **pricing manager** determines under clause 13.135A that a **national scarcity pricing situation** exists in a **trading period**, the **pricing manager** must calculate **interim prices** and **interim reserve prices** for that **trading period** in accordance with the following:

(a)   calculate initial **interim prices** and **interim reserve prices** for that **trading period** in accordance with clause 13.135:

(b)   calculate the **national GWAP** in accordance with subclause (2):

(c)   calculate the scarcity pricing factor in accordance with subclause (3):

(d)   calculate **interim prices** by multiplying the initial **interim prices** calculated under paragraph (a) by the scarcity pricing factor:

(e)   calculate **interim reserve prices** by multiplying the initial **interim reserve prices** calculated under paragraph (a) by the scarcity pricing factor.

(2)   The **pricing manager** must calculate the **national GWAP** in accordance with the following formula:

$$GWAP_{NAT} = \frac{\sum_{g=1}^{n} (Q_g * P_g)}{\sum_{g=1}^{n} Q_g}$$

where

GWAP$_{NAT}$ is the **national GWAP**

Q$_g$ is the scheduled quantity of generation for **generator** g in both **islands**

P$_g$ is the **interim price** at the **node** where **generator** g injects **electricity** in both **islands**

(3)   The scarcity pricing factor is determined as follows:

(a)if the **national GWAP** is greater than or equal to \$10,000/**MWh** and less than or equal to \$20,000/**MWh**, the scarcity pricing factor is 1:

(b)if the **national GWAP** is less than \$10,000/**MWh**, the scarcity pricing factor is calculated in accordance with the following formula:

$$X = \frac{\$10,000}{GWAP_{NAT}}$$

where

X   is the scarcity pricing factor

GWAP$_{NAT}$ is the **national GWAP**

(c)   if the **national GWAP** is greater than \$20,000/**MWh**, the scarcity pricing factor is calculated in accordance with the following formula:

$$X = \frac{\$20,000}{GWAP_{NAT}}$$

where

X   is the scarcity pricing factor

GWAP$_{NAT}$ is the **national GWAP**

Information to be published in respect of schedules prepared by the system operator

1   Information to be published in respect of price-responsive schedule and non-response schedule

The **system operator** must **publish** the following information under clause 13.104(1):

(a)   in relation to both the **price-responsive schedule** and the **non-response schedule**,—

(i)   **forecast prices** and **forecast reserve prices**; and

(ii)   scheduled **non-dispatch-capable load** at each **conforming GXP**; and

(iii)   the aggregate supply curve at each **reference point** incorporating all **offers** from **generators** with **offer** prices adjusted for **forecast marginal location factors**; and

(iv)   the **grid injection points** and **grid exit points** that are **disconnected**; and

(v)   the scheduled largest single reserve risk class for each **island** as described in clause 13.59(a)(ix); and

(vi)   the scheduled levels of **fast instantaneous reserve** and **sustained instantaneous reserve** required in each **island** as described in clause 13.59(a)(x); and

(vii)   the **reserve offer** stacks for each **island** as described in clause 13.59(a)(xi); and

(viii)   the adjusted **reserve offer** stacks for each **island** as described in clause 13.59(a)(xii); and

(ix)   the scheduled **HVDC component flows**; and

(x)   the scheduled **HVDC risk offsets**; and

(xi)   the **expected near-constraint arc flows**; and

(xii)   the **expected near-group-constraint arc flows**; and

(xiii)   the **group constraint formulas** relating to the **expected near-group-constraint arc flows**; and

(xiv)   the expected deficit quantities for energy, **fast instantaneous reserve**, and **sustained instantaneous reserve** (if any); and

(xv)   whether the **HVDC link** is out of service:

(b)   in relation to the **price-responsive schedule**, the aggregate **demand** curve at each **reference point** incorporating the forecast prepared under clause 13.7A(1), and all **bids** from **purchasers** with **bid** prices adjusted for **forecast marginal location factors**:

(c)   in relation to the **non-response schedule**, the scheduled **frequency keeping units** for each **island**.

2   Information to be published in respect of dispatch schedule

The **system operator** must **publish** the following information under clause 13.104A:

(a)   **dispatch prices** and **dispatch reserve prices**:

(b)   start times (to the nearest second) for each **dispatch price** and each **dispatch reserve price**:

(c)   scheduled **non-dispatch-capable load** at each **conforming GXP**:

(d)   the aggregate supply curve at each **reference point** incorporating all **offers** from **generators** with **offer** prices adjusted for **dispatch marginal location factors**:

(e)   the **grid injection points** and **grid exit points** that are **disconnected**:

(f)   the expected largest single reserve risk for each **island** as described in clause 13.69D(h):

(g)   the expected levels of **fast instantaneous reserve** and **sustained instantaneous reserve** required in each **island** as described in clause 13.69D(i):

(h)   the **reserve offer** stacks for each **island** as described in clause 13.69D(j):

(i)   the adjusted **reserve offer** stacks for each **island** as described in clause 13.69D(k):

(j)   the expected **HVDC component flows**:

(k)   the expected **HVDC risk offsets**:

(l)   the **expected near-constraint arc flows**:

(m)   the **expected near-group-constraint arc flows**:

(n)   the **group constraint formulas** relating to the **expected near-group-constraint arc flows**:

(o)   the expected deficit quantities for energy, **fast instantaneous reserve**, and **sustained instantaneous reserve** (if any):

(p)   whether the **HVDC link** is out of service:

(q)   prices for **electricity** at each **grid injection point** and **grid exit point**, and at each **reference point**:

(r)   marginal **location factors** for each **grid injection point** and each **grid exit point**. Those factors must be determined by dividing the price at that **grid injection point** or **grid exit point** by the price at the **reference point** relevant to that **grid injection point** or **grid exit point**:

(s)   the aggregate **demand** curve at each **reference point** incorporating the forecast prepared under clause 13.7A(1), and all **bids** from purchasers with **bid** prices adjusted for **dispatch marginal location factors**:

(t)   the number of transmission **lines** or transformers that have a **MW** arc flow equal to the maximum flow limit (in **MW**) on that transmission line or transformer set by the **grid owner** in accordance with clauses 13.29 to 13.32:

(u)   the number of groups of transmission **lines** or transformers, or both, that have a total **MW** arc flow equal to the relevant maximum flow limit (in **MW**) as set by the **system operator** in accordance with Schedule 13.3:

(v)   the aggregate of the following occurrences:

    (i)   the number of occurrences at which energy (in **MW**) for a **generator** at a set of **grid injection points** is equal to the minimum and/or maximum generation (in **MW**) for that set of **grid injection points** set by the **system operator** in accordance with Schedule 13.3:

    (ii)   the number of occurrences at which energy (in **MW**) and reserves (in **MW**) for a **generator** at a set of **grid injection points** is equal to the maximum generation (in **MW**) for that set of **grid injection points** set by the **system operator** in accordance with Schedule 13.3:

      (iii)   the number of occurrences at which reserve (in **MW**) for a **participant** at a set of **grid exit points** is equal to the maximum reserve (in **MW**) for that set of **grid exit points** as determined under Schedule 13.3:

(w)   the number of occurrences at which the ramp up rate is equal to the maximum ramp up rate specified in the relevant **offer**:

(x)   the number of occurrences at which the ramp down rate is equal to the maximum ramp down rate specified in the relevant **offer**.

…

…

Approval of dispatch-capable load station

1   Applications for approval
Each application for approval for a **dispatch-capable load station** must—
(a)   be in writing; and
(b)   list a device or a group of devices that the applicant wishes to have approved as a **dispatch-capable load station**; and
(ba)   specify whether the applicant intends to operate the device or group of devices as a **dispatch notification purchaser**; and
(c)   include information to enable the **system operator** to determine the application.

1A   Change to purchaser type
A **dispatchable load purchaser** may, with the approval of the **system operator**, change from operating a **dispatch-capable load station** as a **dispatchable load purchaser** (that is not a **dispatch notification purchaser**) to operating the **dispatch-capable load station** as a **dispatch notification purchaser**, or vice versa.

2   System operator to provide application to Authority and advise others of application
On receipt of an application, the **system operator** must—
(a)   provide a copy of the application to the **Authority**; and
(b)   advise the following **participants** that it has received the application:
       (i)   the relevant **grid owner**:
       (ii)   each **distributor** that has a **network** from which a device that comprises or forms part of the proposed **dispatch-capable load station** draws **electricity**:
       (iii)   ~~the **pricing manager**:~~
       (iv)   the **clearing manager**:
       (v)   the **reconciliation manager**:
       (vi)   the wholesale information trading system provider.

3   Factors that system operator must consider
(1)   Before the **system operator** approves a device or a group of devices to be a **dispatch-capable load station**, it must consider—
(a)   the effect an approval would have on the **system operator's** ability to comply with the **PPOs**; and
(b)   whether the applicant—
       (i)   is able to provide real time indications and measurements to the satisfaction of the **system operator**; and
       (ii)   has in place communication systems that meet the **system operator's** requirements; and
       (iii)   is able to receive **dispatch instructions** or **dispatch notifications** (as the case may be); and
(c)   whether there is a substantial risk that a **dispatch instruction** or **dispatch notification** that changes the level of load of the device or group of devices that is the subject of the application may be offset by changes in **demand** in the same **trading period** from other load controlled by the applicant; and

(d) whether the device or group of devices is technically capable of complying with a **dispatch instruction** <u>or **dispatch notification** (as the case may be)</u> so that it does not adversely affect the **system operator's** ability to comply with the **PPOs**; and

(e) any other matter the **system operator** reasonably considers relevant.

(2) In making a decision under subclause (1), the **system operator** must—

(a) ask the **Authority** for the **Authority's** view; and

(b) consider the **Authority's** view.

4 System operator may request additional information

(1) Subclauses (2) and (3) apply to—

(a) a **participant** that has applied to the **system operator** to have a device or a group of devices approved as a **dispatch-capable load station**; and

(b) a **purchaser** that has a **dispatch-capable load station** that has been approved. <u>and</u>

(2) The **system operator** may request a **participant** to which this clause applies to provide additional information.

(3) The **participant** must provide the requested information to the **system operator**.

(4) As soon as practicable after receiving the requested information, the **system operator** must provide a copy of the information to the **Authority**.

5 Applicant may withdraw or amend application at any time

(1) An applicant may, at any time, amend or withdraw an application.

(2) An applicant must make an amendment or withdrawal—

(a) in writing; and

(b) by submitting it to the **system operator**.

(3) An amendment or a withdrawal takes effect from the date of receipt by the **system operator**.

(4) As soon as practicable after receiving an amendment or a withdrawal, the **system operator** must—

(a) provide the amendment or withdrawal to the **Authority**; and

(b) advise all **participants** listed in clause 2(b) of the amendment or withdrawal.

6 System operator's decision

(1) The **system operator** must decide whether to—

(a) approve an application; or

(b) decline an application.

(2) If the **system operator** decides to approve an application, the **system operator** must assign a **dispatch-capable load station identifier** to each approved **dispatch-capable load station**.

(3) The **system operator** must, as soon as practicable after making a decision, advise the parties listed in subclause (4) in writing of—

(a) the decision; and

(b) if the decision is to approve the application, any conditions that apply to the approval; and

(c) the **system operator's** reasons for the decision.

(4) For the purpose of subclause (3), the **system operator** must advise the following parties:

(a) the applicant:

(b) the **Authority**:

(c) all **participants** listed in clause 2(b).

7 System operator may impose conditions

(1) The **system operator** may impose conditions on any approval it grants under this Schedule.

(2) Conditions may include, but are not limited to, 1 or more of the following:
   (a) a requirement that the applicant has in place real time indications and measurements to the satisfaction of the **system operator**:
   (b) a requirement that the applicant has in place a system for communicating with the **system operator** to the satisfaction of the **system operator**:
   (c) a requirement that the applicant performs tests of load controlling systems on a regular basis.

8 Timeframe for decision

(1) The **system operator** must make a decision under clause 6(1)—
   (a) within 20 **business days** after—
      (i) the date on which the **system operator** receives the application; or
      (ii) if the application is amended under clause 5, the date on which the **system operator** receives the amendment; or
   (b) within any other period of time that has been agreed by the applicant and the **system operator**.

(2) Despite subclause (1), if the **system operator** requests additional information from the applicant under clause 4, the timeframes in subclause (1) are extended by the number of days the applicant takes to provide the additional information.

9 Effect of approval

(1) When approving an application for a **dispatch-capable load station**, the **system operator** must specify a date from which the approval takes effect.

(2) The **system operator** must not set a date from which an approval takes effect that is earlier than 10 **business days** after the date on which the approval was granted.

(3) An approval of a **dispatch-capable load station** takes effect from the date specified in the approval.

10 System operator may amend, revoke, or suspend approval

(1) The **system operator** may, at its own discretion or on the request of the **Authority**, or a **dispatchable load purchaser**—
   (a) amend an approval; or
   (b) revoke an approval; or
   (c) suspend an approval.

(2) An amendment takes effect from—
   (a) the date it is made; or
   (b) a later date specified by the **system operator**.

(3) A revocation takes effect from—
   (a) the date it is made; or
   (b) a later date specified by the **system operator**.

(4) A suspension—
   (a) takes effect from—
      (i) the date it is made; or
      (ii) a later date specified by the **system operator**; and
   (b) remains in effect until a date specified by the **system operator**.

11 System operator to give reasons for amending, revoking, or suspending approval

As soon as practicable after the **system operator** amends, revokes, or suspends a~~n~~<u>n</u> ~~dispatchable load purchaser's~~ approval <u>under this Schedule</u>, the **system operator** must advise the **purchaser**, the **Authority**, and all **participants** listed in clause 2(b) of—

(a)   the revocation, suspension, or amendment; and

(b)   the reasons for the revocation, suspension, or amendment.

12   Authority to keep register of all current approvals

(1)   The **Authority** must keep a register of all current approvals—

(a)   granted under this Schedule; and

(b)   that have been notified to the **Authority** by the **system operator**.

(2)   The **Authority** must keep the register available for public inspection free of charge—

(a)   at its offices, during normal office hours; and

(b)   on its website, at all reasonable times.

(3)   The register must state, for each approval granted,—

(a)   the name of the applicant; and

(b)   the name of the **dispatch-capable load station**; and

(c)   the **dispatch-capable load station identifier**; and

(d)   the date from which the approval takes effect; and

(e)   any conditions.

Part 14
Clearing and settlement

…

<div align="center">Subpart 3—Amounts owing</div>

14.10 Amounts owing for electricity
(1) The **clearing manager** must determine the amount owing for **electricity** purchased under clauses 14.2 to 14.7 using the following formula:

$$Q * P_f$$

where

Q   is the quantity of **electricity** allocated to the **participant** for each **trading period** for each **point of connection** to the **grid** determined in accordance with **reconciliation information** and summarised and loss adjusted **dispatchable load information**

P_f is the **final price** ~~determined by the **pricing manager**~~ for each relevant **point of connection** to the **grid** for each **trading period**

(2) The **clearing manager** must determine the amount owing for **electricity** sold under clauses 14.2 to 14.7 using the following formula:

$$Q * P_f$$

where

Q   is the quantity of **electricity** allocated to the **participant** for each **trading period** for each **point of connection** to the **grid** determined in accordance with **reconciliation information**

P_f is the **final price** ~~determined by the **pricing manager**~~ for each relevant **point of connection** to the **grid** for each **trading period**

(3) The quantity of **electricity** bought by a **purchaser** or sold by a **generator** under subpart 1 must be determined in accordance with clauses 15.20A to 15.26.
(4) The **final price** of **electricity** bought by a **purchaser** or sold by a **generator** under subpart 1 must be determined in accordance with clauses ~~13.135 and 13.171~~13.182A to 13.185.

…

14.16 Calculation of loss and constraint excess
(1) A **loss and constraint excess** accrues for a **billing period** when the total of the amounts owing by the **clearing manager** to **generators** for that **billing period** for the **electricity** sold and purchased in accordance with clause 14.3 is less than the total amount owing to the **clearing manager** for that **billing period** for the **electricity** sold and purchased in accordance with clause 14.6.
(2) The **FTR manager** must—
    (a) determine the amount of **loss and constraint excess** that must be applied to the settlement of **FTRs** in accordance with Schedule 14.3; and
    (b) advise the **clearing manager** of that amount no later than—

    (i) 1600 hours on the 7th **business day** of the month following the relevant **billing period**; or

    (ii) if **publication** of **final prices** is delayed for any **trading period** in the relevant **billing period**, so that **final prices** for a **trading period** in the **billing period** are **published** later than 1600 hours on the 6th **business day** of the month following the relevant **billing period**, 1 **business day** after all **final prices** for the **billing period** are **published**.

(3) Each **grid owner** and the <u>system operator</u> ~~pricing manager~~ must provide information to the **FTR manager** in accordance with Schedule 14.3.

(4) Subject to subpart 8, the **clearing manager** must apply the amount advised under subclause (2) to the settlement of **FTRs**.

(5) Subject to subpart 8, if the amount that the **FTR manager** advises the **clearing manager** under subclause (2) exceeds the amount of the **loss and constraint excess** for the **billing period**, the **clearing manager** must apply all of the **loss and constraint excess** to the settlement of **FTRs**.

(6) The **Authority** must advise the **clearing manager** of the proportion of the **loss and constraint excess** and **residual loss and constraint excess** owing to each **grid owner**.

(7) Unless the **Authority** has directed otherwise under this clause, the amount owing to each **grid owner** in the proportions advised under subclause (6) is—

  (a) the amount of any **loss and constraint excess** less the amount to be applied to the settlement of **FTRs** under subclause (4) or (5); and

  (b) the amount of any **residual loss and constraint excess**.

Schedule 14.3

Calculation of amount of loss and constraint excess to be applied to the settlement of FTRs

1   **Purpose**

The purpose of this Schedule is to set out the formulae and process for the calculation under clause 14.16(2) of the amount of the **loss and constraint excess** to be applied to the settlement of **FTRs**.

2   **Interpretation**

(1)   In this Schedule, unless the context otherwise requires,—

AC line means any AC **branch**

balanced, in relation to an **FTR injection pattern**, means that the total positive and negative **hub injections** sum to 0. A **balanced FTR injection pattern** is consistent with a **grid** in which **losses** are not modelled

binding, in relation to a **constraint**, means that the **constraint** has a non-zero **shadow price**

branch constraint means a **constraint** in which all the **LHS** variables are branch flows

canonical form means a linear programming problem that is expressed in the following form:

maximise $c^T x$

subject to $Ax \leq b$

where

x is the vector of variables to be determined

c and b are vectors of constants

A is a matrix of coefficients

$c^T x$ is the objective function to be maximised

$Ax \leq b$ is the set of **constraints**, each row of Ax being the **LHS** of a **constraint** and each element of b being the corresponding **RHS**

Minimum **constraints** are assumed to have been multiplied through by -1 to form an equivalent maximum **constraint**

Equality **constraints** are assumed to have initially been represented by a pair of minimum and maximum **constraints** with the same **LHS** and **RHS,** and then the resulting minimum **constraint** is assumed to have been multiplied through by -1 to form an equivalent maximum **constraint**

closed, in relation to a **branch**, means that the **branch** is connected at both ends

dispatch interval means the period, within a **trading period**, during which a **dispatch instruction** issued by the system operator remains in effect

feasible region, in relation to an n-dimensional linear programming problem, means the n-dimensional solution space filled by the set of all possible feasible solutions

~~**final pricing schedule** means the schedule that the **pricing manager** uses to produce the interim prices on which **final prices** are based~~

FTR injection pattern means the combination of positive or negative net **hub injections** implied by a combination of **FTRs**

hub injection means the actual or notional flow of **electricity** into the **grid**, if positive, or out of the **grid**, if negative, at any **hub**

HVDC link has the same meaning as in the **model formulation**

LHS means the left hand side of a **constraint** expressed in **canonical form**

mixed constraint has the same meaning as in the **model formulation**

open, in relation to a **branch**, means that the **branch** is disconnected at 1 or both ends

operational system split means an instance where a **grid owner** chooses to operate with a switch or **branch open** for reasons such as—
(a)   breaking loops that would otherwise constrain flows; or
(b)   reducing the size of the maximum fault duty that switchgear needs to withstand

RHS means the right hand side of a **constraint** when expressed in **canonical form**

scheduled, in relation to a variable, means the value of the variable in the ~~**final pricing**~~ **dispatch schedule**

shadow price, in relation to an **AC line** capacity, **branch constraint** or **mixed constraint**, means the absolute value of the shadow price in $/**MWh** for the **AC line** or **constraint** reported in the ~~**final pricing**~~ **dispatch schedule**

simultaneously feasible, in relation to an **FTR injection pattern**, means that the implied flows can be carried by the transmission system, subject to the **constraints** as defined by clause 5(2).

(2)   For the purposes of this Schedule, **constraints** that are not expressed in **canonical form** in the **model formulation** must be translated into the equivalent **canonical form**.

3   Amount of loss and constraint excess to be applied to settlement of FTRs
The amount of the **loss and constraint excess** that must be applied to the settlement of **FTRs** under clause 14.16(4) is the amount calculated under clause 9(6)(b).

4   Grid owner must determine normal grid configuration
(1)   Each **grid owner** must determine a normal **grid** configuration for the **grid owner's grid**.
(2)   The normal **grid** configuration determined under subclause (1) must be a **grid** configuration with all existing **branches** and switches **closed** except where the **grid owner** has implemented **operational system splits** and the **grid owner** considers that the normal state of those **operational system splits** is for the relevant **branch** or switch to be **open**.
(3)   Each **grid owner** must provide to the **FTR manager** the information describing the normal **grid** configuration for the **grid owner's grid** determined under subclause (1).
(4)   Each **grid owner** must determine a new normal **grid** configuration for the **grid owner's grid** if the **grid owner** considers it necessary because, for example, any of the following occur:
(a)   some **grid** equipment is commissioned or decommissioned:
(b)   there is a change in the capacity or impedance of some **grid** equipment:
(c)   the **grid owner** considers that the normal state of any **operational system split** has changed.

(5)   Each **grid owner** must provide new information to the **FTR manager** if the **grid owner** determines a new normal **grid** configuration for the **grid owner's grid** under subclause (4), unless otherwise agreed with the **FTR manager**.

5   FTR manager must determine FTR injection patterns

(1)   The **FTR manager** must determine a set of **balanced** extreme **FTR injection patterns**.

(2)   Each **balanced** extreme **FTR injection pattern** determined under subclause (1) must be **simultaneously feasible** assuming—

(a)   the normal **grid** configuration determined under clause 4; and

(b)   the absence of all other **grid** flows; and

(c)   all **AC line** and **HVDC link** capacity limits applied; and

(d)   all risk and reserve **constraints** disabled; and

(e)   all **branch** variable **losses** set to 0; and

(f)   all **branch** fixed **losses** set to 0.

(3)   The set of **balanced** extreme **FTR injection patterns** determined under subclause (1) must, in the reasonable opinion of the **FTR manager**, be the set of **FTR injection patterns** that best represents the extreme limits of the **feasible region** of **FTR injection patterns** as defined by the assumptions listed under subclause (2).

(4)   The **FTR manager** must determine a new set of **balanced** extreme **FTR injection patterns** if—

(a)   a **grid owner** provides the **FTR manager** with new information under clause 4(5) that results in a change to the **feasible region** of **FTR injection patterns**; or

(b)   there is a change to the **hubs** or set of **hubs** specified in the **FTR allocation plan**.

6   FTR manager must determine matrix of lossless shift factors

(1)   For each ~~trading period~~<u>dispatch interval</u> of the relevant **billing period**, following the **publication** of **final prices**, the **FTR manager** must determine a matrix of lossless shift factors referenced to a set of reference **nodes**~~,~~<u>,</u> from the <u>inputs to the **dispatch schedule** described in clause 13.69B,</u> ~~input **information** or revised data used to produce the **final pricing schedule**,~~ in accordance with the following:

(a)   one reference **node** must be chosen within each electrical island:

(b)   **nodes** are in the same electrical island if a transmission path exists between them.

(2)   The matrix of lossless shift factors determined under subclause (1) must be calculated in accordance with the following matrix formula:

[ShiftFactor] = [AdmittancePrimitive] x [Inc] x [Impedance]

where [ShiftFactor]	is the *m* by *n* matrix of lossless shift factors, which defines the increment in flow in the conventional forward flow direction on any **branch** in the transmission **network** resulting from an increment in net **injection** at any **node** together with an equal decrement in net **injection** at the reference **node** in the electrical island in which the **node** resides, while neglecting the effect of **losses**
[AdmittancePrimitive]	is the *m* by *m* diagonal matrix formed from the set of *m* **branch** susceptances
[Inc]	is the *m* by *n* lossless **branch**-**node** incidence matrix, which denotes the conventional from and to **nodes** for a **branch** by matrix entries of 1 and −1 respectively
[Impedance]	is the *n* by *n* matrix formed from the inverse of [AdmittanceNodal] with the columns and rows associated with the reference **nodes** reinserted and filled with zeroes
[AdmittanceNodal]	is the *n-r* by *n-r* matrix obtained from [AdmittanceNodalComplete] by deleting the column and row associated with each of the reference **nodes**
[AdmittanceNodalComplete]	is the *n* by *n* matrix = $[Inc^T]$ x [AdmittancePrimitive] x [Inc]
$[Inc^T]$	is the *n* by *m* matrix

transpose of [Inc]

(3)   For the purposes of subclauses (1) and (2)—

(a)   the set of inter-**island HVDC links** must be replaced by a single **AC line** with a nominal susceptance value between the Benmore and Haywards HVDC terminal **nodes**, whether or not any **HVDC link** is actually in service during the relevant **dispatch interval**~~trading period~~; and

(b)   the nominal susceptance value determined under paragraph (a) may be any suitable value that will avoid numerical difficulties; and

(c)   any switches between the Benmore HVDC terminal **node** and other Benmore **nodes** operating at the same nominal voltage that are normally **closed** must be treated as **closed**; and

(d)   any switches between the Haywards HVDC terminal **node** and other Haywards **nodes** operating at the same nominal voltage that are normally **closed** must be treated as **closed**; and

(e)   in any **dispatch interval**~~trading period~~ in which any of the **hubs** reside in different electrical islands (as defined in subclause (1)(b)), the shift factor matrix for the previous **dispatch interval**~~trading period~~ in which all the **hubs** resided in the same electrical island must be used.

7   FTR manager must determine branch participation loading and constraint participation loading

(1)   For each **dispatch interval**~~trading period~~ of the relevant **billing period**, the **FTR manager** must determine a **branch** participation loading for each **AC line** k.

(2)   Each **branch** participation loading determined under subclause (1) must be calculated—

(a)   in accordance with the following formula if the **scheduled** flow on the **AC line** is in the conventional forward flow direction:

$$\max\left(\sum_{h \in Hubs} SF_{k,h} \times Inj_{h,p} : p \in 1,...P \right); \text{ and}$$

(b)   in accordance with the following formula if the **scheduled** flow on the **AC line** is in the conventional reverse flow direction:

$$-\min\left(\sum_{h \in Hubs} SF_{k,h} \times Inj_{h,p} : p \in 1,...P \right)$$

where

$SF_{k,h}$ is the shift factor relating flows on **AC line** k to **injections** at **hub** h, determined under clause 6(1)

$Inj_{h,p}$ is the positive or negative **hub injection** at **hub** h in **FTR injection pattern** p in the set of P **balanced** extreme **FTR injection patterns** determined under clause 5(1)

(3) For each **dispatch interval**~~trading period~~ of the relevant **billing period**, for each **binding branch constraint** v involving **AC line** flows, the **FTR manager** must determine a **constraint** participation loading in accordance with the following formula:

$$\max\left(\sum_{k \in ACLineGroup_v}\sum_{h \in Hubs} weight_{k,v} \times SF_{k,h} \times Inj_{h,p} : p \in 1,...P\right) \text{ where}$$

$SF_{k,h}$ and $Inj_{h,p}$ are as defined in subclause (2)

$ACLineGroup_v$ is the set of **AC lines** involved in **branch constraint** v (any **HVDC link** flow terms in the **constraint** must be excluded from this calculation)

$weight_{k,v}$ is the weight associated with **AC Line** k in **branch constraint** v expressed in **canonical form**

(4) For each **dispatch interval**~~trading period~~ of the relevant **billing period**, for each **binding mixed constraint** v (if any) involving **AC line** flow terms or **AC line** variable loss terms, the **FTR manager** must determine a **constraint** participation loading in accordance with the following formula:

$$\max\left(\sum_{k \in ACLineGroup_v}\left(flowweight_{k,v} \times flow_{k,p} + lossweight_{k,v} \times loss_{k,p}\right) : p \in 1,...P\right) \text{ where}$$

$ACLineGroup_v$ is the set of **AC lines** whose flows or variable **losses** are involved in **mixed constraint** v (all other terms in the **mixed constraint** must be excluded from this calculation)

$flowweight_{k,v}$ is the weight associated with the flow on **AC Line** k in **mixed constraint** v expressed in **canonical form**

$lossweight_{k,v}$ is the weight associated with the variable **losses** on **AC Line** k in **mixed constraint** v expressed in **canonical form**

$flow_{k,p}$ is the flow on **AC Line** k due to **FTR injection pattern** p, which equals $\sum_{h \in Hubs} SF_{k,h} \times Inj_{h,p}$

$loss_{k,p}$ is the variable **losses** on **AC Line** k due to $flow_{k,p}$

$SF_{k,h}$ and $Inj_{h,p}$ are as defined in subclause (2)

(5)   For the purposes of this clause, if **hub** *h* is a group of **nodes**, the positive or negative **hub injection** at **hub** *h* must be split into its individual nodal components in a manner consistent with the **hub** definition in the **FTR allocation plan**, and each nodal component must be treated as a separate **hub injection**.

8   FTR manager must assign portions of capacities

(1)   For each **dispatch interval**~~trading period~~ of the relevant **billing period**, the **FTR manager** must assign a portion of the capacity of each **AC line, AC line** loss curve block, **binding branch constraint RHS** and **binding mixed constraint RHS** (if any) for the purpose of determining amounts to be applied to the settlement of **FTRs** under clause 9(3) to (5).

(2)   The portion of the capacity of each **AC line** to be assigned under subclause (1) must be the minimum of—
    (a)   the line capacity applicable in the **trading period** in the **dispatch schedule** relating to the **dispatch interval**~~final pricing schedule~~; and
    (b)   the relevant **branch** participation loading determined under clause 7(1).

(3)   The portion of the capacity of each **AC line** loss curve block to be assigned under subclause (1) must be the portion of the loss curve block that would be utilised by a flow at the level of the capacity of the associated **AC line** assigned, as determined under subclause (2), assuming that loss curve blocks are utilised in order from lowest to highest **loss factor**, in the direction of flow.

(4)   Subject to subclause (5), the portion of the capacity of each **binding branch constraint RHS** or **binding mixed constraint RHS** (if any) to be assigned under subclause (1) must be the minimum of—
    (a)   the **constraint RHS** applicable in the **trading period** in the **dispatch schedule** relating to the **dispatch interval**~~final pricing schedule~~, minus the contribution of any **LHS** terms not involving **AC line** flows or **AC line** variable **losses**, calculated assuming the values of the relevant variables applicable in the **trading period** in the **dispatch schedule** relating to the **dispatch interval**~~final pricing schedule~~; and
    (b)   the relevant **constraint** participation loading determined under clause 7(3) or clause 7(4).

(5)   If the capacity determined under subclause (4) for any **constraint** is negative, the capacity to be assigned for that **constraint** must be 0.

9   FTR manager must calculate amounts to be applied to settlement of FTRs

(1)   The amounts calculated under this clause must be calculated using the flow quantities, nodal prices and **shadow prices** from the **dispatch schedule** relating to each **dispatch interval**~~final pricing schedule~~

(2)   The HVDC **loss and constraint excess** to be applied to the settlement of **FTRs** for each **dispatch interval**~~trading period~~ of the relevant **billing period** must be calculated in accordance with the following formula:

$$\max\left(\begin{array}{l} 0, \sum_{n(NI)} price_n \times \left(\sum_{l \in R_{HVDC}(n)} (HVDCLinkFlow_l - HVDCLinkLosses_l) - \sum_{l \in S_{HVDC}(n)} HVDCLinkFlow_l \right) \\ + \sum_{n(SI)} price_n \times \left(\sum_{l \in R_{HVDC}(n)} (HVDCLinkFlow_l - HVDCLinkLosses_l) - \sum_{l \in S_{HVDC}(n)} HVDCLinkFlow_l \right) \end{array}\right) \times \frac{IntervalDuration}{3600}$$

where

$price_n$	is the energy price at AC **node** n
$n(NI)$	is the set of North Island AC **nodes** to which any **HVDC links** are connected
$n(SI)$	is the set of South Island AC **nodes** to which any **HVDC links** are connected
$HVDCLinkFlow_l$	is the **MW** flow at the sending end **scheduled** for **HVDC link** l
$HVDCLinkLosses_l$	is the variable **MW losses** for **HVDC link** l
$S_{HVDC}(n)$	is the set of **HVDC links** for which n is the sending AC **node**
$R_{HVDC}(n)$	is the set of **HVDC links** for which n is the receiving AC **node**
<u>*IntervalDuration*</u>	<u>is the duration of the</u> **<u>dispatch interval</u>** <u>in seconds</u>

(3) The amount of the **loss and constraint excess** generated by each **AC line** that is to be applied to the settlement of **FTRs** must be calculated in accordance with the following formula:

$$AssignedCapacity_k \times ShadowPrice_k \times \frac{IntervalDuration}{3600}$$

where

$AssignedCapacity_k$	is the portion of the capacity of **AC line** k assigned under clause 8(1)
$ShadowPrice_k$	is the **shadow price** of the line capacity on **AC line** k
<u>*IntervalDuration*</u>	<u>is the duration of the</u>

(4) The amount of the **loss and constraint excess** generated by each **binding branch constraint** and **binding mixed constraint** (if any) involving **AC line** flow terms or **AC line** variable loss terms to be applied to the settlement of **FTRs** must be calculated in accordance with the following formula:

$$AssignedCapacity_v \times ShadowPrice_v \times \frac{IntervalDuration}{3600}$$

where

$AssignedCapacity_v$	is the portion of the capacity of the **RHS** of **branch constraint** or **mixed constraint** v assigned under clause 8(1)
$ShadowPrice_v$	is the **shadow price** of **branch constraint** or **mixed constraint** v
$IntervalDuration$	is the duration of the **dispatch interval** in seconds

(5) The amount of the **loss and constraint excess** generated by each **AC line** loss curve block that is to be applied to the settlement of **FTRs** must be calculated in accordance with the following formula:

$$\min\left(ACLineFlowBlock_{k,j}, AssignedCapacity_{k,j}\right) \times ReceivingEndPrice_k$$
$$\times \left(ACLineLossFactor_{k,m\arg} - ACLineLossFactor_{k,j}\right) \times \frac{IntervalDuration}{3600}$$

where

$$ACLineLossFactor_{k,m\arg} = \min\left(ACLineLoss Factor_{k,j}\right) \quad for \ which$$
$$ACLineFlow Block_{k,j} < ACLineLoss MW_{k,j}$$

$ACLineFlowBlock_{k,j}$	is the **MW** flow on the jth block of the loss curve of **AC line** k in the direction of **scheduled** positive flow, assuming that loss curve blocks are utilised in order from lowest to highest **loss factor**, in each direction

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AssignedCapacity$_{k,j}$	is the portion of the capacity of the jth block of the loss curve of **AC line** k assigned under clause 8(1)
ReceivingEndPrice$_k$	is the nodal energy price at the receiving end of the **scheduled** flow on **AC line** k
ACLineLossFactor$_{k,j}$	is the **loss factor** of the jth block of the loss curve of **AC line** k
ACLineLossMW$_{k,j}$	is the **MW** capacity of the jth block of the loss curve of **AC line** k
IntervalDuration	is the duration of the **dispatch interval** in seconds

(6) The **FTR manager** must calculate the amount of the **loss and constraint excess** that must be applied to the settlement of **FTRs** for each **billing period** by—

(a) determining the sum of the amounts calculated in accordance with subclauses (2) to (5) for each **dispatch interval**~~trading period~~ of the **billing period**; and

(b) determining the sum of the amounts calculated in accordance with paragraph (a) for all **dispatch intervals**~~trading periods~~ of the **billing period**.