

## Section VI Interconnection asset services

### 1. Purpose of this section

The purpose of this section is to:

- 1.1 create incentives on **Transpower**, through enforceable service measures, to provide **interconnection assets** at the capacity ratings required by **designated transmission customers** and other **grid** users;
- 1.2 ensure that **Transpower** provides information on the capacity of **interconnection assets**, and their reliability and availability, to enable **grid** users to monitor the capacity and performance of **interconnection assets**;
- 1.3 establish processes for the identification of **reliability investments** and **economic investments**, and alternatives to such investments, to ensure efficient decision-making on the use of and upgrades to the **grid**; and
- 1.4 specify the circumstances in which **Transpower** may permanently remove **interconnection assets** from service or reconfigure the **grid**.

### 2. Transpower to identify interconnection branches, and propose service measures and levels

- 2.1 **Transpower** must provide the **Board** with the information set out in rule 2.4 and a diagram showing the configuration of the **grid**, other than **connection assets**, as at the date on which this rule comes into effect.
- 2.2 The information and the diagram referred to in rule 2.1 must be provided in the form required by the **Board**.
- 2.3 The information and the diagram referred to in rule 2.1 must be provided within 3 months of the date on which the **Board**, in accordance with rule 2.2, sets the form in which the information and diagram must be provided.
- 2.4 The information required under rule 2.1 is:
  - 2.4.1 for each **interconnection circuit branch**, the following service measures and levels:
    - 2.4.1.1 overall continuous capacity rating of the **interconnection circuit branch**, for both summer and winter periods in MVA and amperes;
    - 2.4.1.2 level of impedance of the **interconnection circuit branch** both **resistive** and **reactive** and for **assets** arranged in both **shunt** and **series** in PU, using a base of 100 MVA, provided the impedance of the **interconnection circuit branch** is equal to or more than 0.0001 PU, using 100 MVA as the base;
    - 2.4.1.3 nominal high voltage rating of each **interconnection circuit branch** in kV; and

2.4.1.4 high voltage range that each **interconnection circuit branch** can be operated over in kV, specified as a maximum and a minimum.

2.4.2 for each **interconnection transformer branch**:

2.4.2.1 overall 24 hour post contingency capacity rating of the **interconnection transformer branch**, for both the summer and winter period, in amperes and MVA as follows:

(a) for 2 Winding **interconnection transformer branches**, overall 24 hour post contingency capacity rating in the units described above; and

(b) for 3 Winding **interconnection transformer branches**, overall 24 hour post contingency capacity rating in the units described above, at HV, MV, and LV;

2.4.2.2 continuous capacity rating of the **interconnection transformer branch** in amperes and MVA as follows:

(a) for 2 Winding **interconnection transformer branches**, continuous capacity rating in the units described above; and

(b) for 3 Winding **interconnection transformer branches**, continuous capacity rating in the units described above, at HV, MV, and LV;

2.4.2.3 level of impedance of the **interconnection transformer branch**, both **resistive** and **reactive** and for **assets** arranged in both **shunt** and in **series** in PU, using a base of 100 MVA, as follows:

(a) for 2 Winding **interconnection transformer branches**, level of impedance of the **interconnection transformer branch** in the units described above; and

(b) for 3 Winding **interconnection transformer branches**, level of impedance of the **interconnection transformer branch** in the units described above, at HV, MV, and LV;

2.4.2.4 nominal high voltage rating of the **interconnection transformer branch** in kV;

2.4.2.5 high voltage range that the **interconnection transformer branch** can be operated over in kV, specified as a maximum, and a minimum;

2.4.2.6 in respect of the tapping steps and ranges of the **interconnection transformer branch**:

- (a) the tap voltage range in volts, specified as a maximum and a minimum;
  - (b) number of tapping steps;
  - (c) the size of each tapping step as a percentage of operational voltage range;
  - (d) whether the tapping step is on-load or off-load;
  - (e) whether on-load tapping capacity is automatic or manual;
  - (f) if on-load tapping capacity is automatic, whether it is auto-selected; and
  - (g) if on-load tapping capacity is manual, the tap step it is normally set to, which for the purposes of this rule is the actual or expected position at winter peak demand;
- 2.4.3 the transfer capacity in the North and South transfer for each **configuration** of the **HVDC link** expressed as follows:
- 2.4.3.1 DC sent in **MW**; and
  - 2.4.3.2 AC received in **MW**;
- 2.4.4 for each **shunt asset**, the following service measures and levels:
- 2.4.4.1 the overall capacity rating, in MVar, in terms of both absorption or provision;
  - 2.4.4.2 the nominal voltage rating of the **shunt asset** in kV: and
  - 2.4.4.3 the maximum and minimum voltage range in kV that the **shunt asset** can operate over.
- 2.4.5 in addition to the information required under rule 2.4.4 in relation to **shunt assets**:
- 2.4.5.1 whether each **shunt asset** is dynamic or static;
  - 2.4.5.2 if the **shunt asset** is dynamic, whether it is an SVC or synchronous compensator; and
  - 2.4.5.3 any **shunt assets** that may directly affect the capacity of the **HVDC link** as set out in rule 2.4.3 and the likely magnitude of such effect; and
- 2.4.6 the dates for the summer and winter periods or other such defined periods as may apply for the purposes of rules 2.4.1 and 2.4.2.
- 2.5 The information provided under rule 2.4:

- 2.5.1 in the case of information provided under rules 2.4.1, 2.4.3, and 2.4.4, must be consistent with the information disclosed by **Transpower** in the most recent **asset capability statement** provided by **Transpower** under rule 2.5 of Technical Code A of schedule C3 of part C; and
  - 2.5.2 in the case of information provided under rule 2.4.2, must be consistent with the **manufacturer's specification** for the component **assets** and the information disclosed by **Transpower** in the most recent **asset capability statement** provided under rule 2.5 of Technical Code A of schedule C3 of part C, if this differs from the **manufacturer's specifications**;
  - 2.5.3 in the case of rule 2.4.1, must be consistent with the thermal design rating of each **interconnection branch**; and
  - 2.5.4 cover every **interconnection asset**, either as part of an **interconnection circuit branch, interconnection transformer branch, the HVDC link** or as a **shunt asset**.
- 2.6 After reviewing the information and diagram provided under rule 2.1, the **Board** may request **Transpower** to reconsider whether any of the information, or the diagram, is accurate, and require **Transpower** to resubmit the information and diagram to the **Board** for reconsideration.
- 2.7 If the **Board** is provisionally satisfied that the information and diagram provided under rule 2.1 or resubmitted under rule 2.6 are correct, the **Board** must **publish** the proposed information and diagram as soon as practicable, as a draft schedule to this section, for consultation with any person that the **Board** thinks is likely to be materially affected by the inclusion of the proposed information and diagram as schedules to the section.
- 2.8 As well as the consultation required under rule 2.7, the **Board** may undertake any other consultation it considers necessary.
- 2.9 When the **Board** has completed its consultation on the proposed information and diagram, it must make recommendations to the **Minister** for inclusion of the proposed information and diagram as schedules to this section.
- 3. Transpower to make interconnection branches and other assets available and keep grid configuration**
- 3.1 Beginning on 1 April 2008, **Transpower** must make each **interconnection circuit branch, interconnection transformer branch, the HVDC link**, and each **shunt asset** identified in the schedule added to this section in accordance with rule 2.9 available for use by the **system operator** for the conveyance of **electricity**:
- 3.1.1 at least at the service levels specified in the schedule in accordance with rule 2; and
  - 3.1.2 in accordance with **good electricity industry practice** and relevant health and safety standards.

- 3.2 Beginning on 1 April 2008, **Transpower** must keep the **grid** in the configuration set out in the diagram included in the schedule added to this section in accordance with rule 2.9.
- 3.3 **Transpower** is not required to comply with rule 3.1.1 or rule 3.2 if rule 4.1 applies.

#### 4. Exceptions to rule 3

4.1 **Transpower** is not required to comply with rule 3.1.1 or rule 3.2 if:

4.1.1 permitted under the **Outage Protocol** made under section VII; or

4.1.2 either:

4.1.2.1 an **interconnection asset** that forms part of an interconnection **branch** or the **HVDC link**, or a **shunt asset**:

- (a) was permanently removed from service, the **grid** was reconfigured, or the transmission capacity of such an asset was reduced, before 1 April 2008 and the decision to remove the **asset** from service or reconfigure the **grid** or reduce the transmission capacity of the **asset**:
- (i) took into account the effect of the removal of the **asset**, reconfiguration of the **grid**, or the reduction in transmission capacity of the **asset**, on other materially affected parties; and
- (ii) was undertaken:
- (A) in order to maintain the health and safety of any person; or
- (B) in order to maintain the safety and integrity of equipment; or
- (C) in accordance with demonstrably prudent economic criteria; or
- (b) has been permanently removed from service, or the **grid** has been reconfigured, on or after 1 April 2008 in accordance with rule 8; or

4.1.2.2 a modification to an **interconnection branch**, the **HVDC link**, a **shunt asset** or to the configuration of the **grid**, has been made as a result of a **reliability investment** or an **economic investment**; or

4.1.2.3 a modification to an **interconnection branch**, the **HVDC link**, a **shunt asset** or to the configuration of the **grid** has been made as a result of an investment made under an **investment contract** entered into in accordance with rule 8 of section III; or

- 4.1.2.4 the voltage range specified in the **AOPOs** for an **interconnection asset** that forms part of an **interconnection branch** is modified, or any **equivalence arrangement** is approved or **dispensation** is granted under rule 7 of section III of Part C in respect of such an **asset**; or
  - 4.1.2.5 **Transpower** and a **designated transmission customer** have agreed otherwise in accordance with rule 11.
- 4.2 Where rules 4.1.2.2, 4.1.2.3, or 4.1.2.4 or 4.1.2.5 apply, or the **grid** is reconfigured under rule 4.1.2.1, **Transpower** must:
- 4.2.1 make the **interconnection branch**, the **HVDC link** or the **shunt asset** available to the **system operator** at least at its modified capacity rating, and at its modified service levels; and
  - 4.2.2 keep the **grid** in its modified configuration.
- 4.3 Where a decision to remove an **asset**, or reconfigure the **grid**, or reduce the transmission capacity of an **asset** has been made under rule 4.1.2.1, **Transpower** must as soon as reasonably possible after 31 March 2008 make publicly available the analysis it undertook in accordance with that rule, or a summary of that analysis.

## 5. **Transpower to maintain interconnection assets**

Transpower must design, construct, maintain and operate all **interconnection assets** in accordance with **good electricity industry practice**.

## 6. **Transpower to propose reliability investments and economic investments**

### 6.1 **Reliability investments**

- 6.1.1 Where a **grid reliability report** identifies, in accordance with rule 12A.1.1.3 of section III, that the power system is not reasonably expected to meet the **N-1 criterion** at a **grid exit point** at all times over the next 5 years following the date that the report is **published** and this is due to an **interconnection asset**, **Transpower** must:
  - 6.1.1.1 as soon as practicable, investigate whether the **interconnection asset** meets the **grid reliability standards**;
  - 6.1.1.2 if the **interconnection asset** does not meet the **grid reliability standards**, consider reasonably practicable options for ensuring that the **grid reliability standards** can be met in respect of that asset;
  - 6.1.1.3 if it considers that an investment or investments are required in respect of that **interconnection asset** in order to meet the **grid reliability standards**, submit a **grid upgrade plan** to the **Board**:

- (a) in sufficient time to avoid a breach of the **grid reliability standards**; or
  - (b) if the **grid reliability standards** have already been breached, within 6 months, or such longer period as the **Board** may allow, of the publication of the **grid reliability report** that sets out the investment or investments that **Transpower** proposes to make; and
- 6.1.1.4 if it considers that an investment is not necessary, **publish** the reasons for this and any alternative measures that **Transpower** proposes to undertake.
- 6.1.2 If a **grid upgrade plan** submitted under this rule is approved by the **Board**, **Transpower** must undertake the investment:
  - 6.1.2.1 prior to the **grid** falling below the **grid reliability standards** for the reason referred to in rule 6.1.1; or
  - 6.1.2.2 if the **grid** had already fallen below the **grid reliability standards**, or if it is not reasonably practicable to undertake the investment as provided in rule 6.1.2.1, as soon as reasonably practicable.
- 6.1.3 **Transpower** does not need to submit a **grid upgrade plan** under rule 6.1.1.3 if the proposed investment to which the **grid upgrade plan** relates has previously been included in a **grid upgrade plan** submitted to the **Board**, and which the **Board** considered under section III.

## 6.2 Economic investments

- 6.2.1 Within 6 months of the date of **publication** of a **statement of opportunities** in each year, or such longer period as the **Board** may allow, **Transpower** must publish a **grid economic investment report** on whether there are **economic investments** that it considers could be made in respect of the **interconnection assets**.
- 6.2.2 The **grid economic investment report** must take into account the scenarios set out in the **statement of opportunities** and any other information that **Transpower** considers may be useful to the **Board** in determining **market development scenarios** under the **grid investment test**, if the **grid investment test** were applied to the **economic investments** set out in the **grid economic investment report**.
- 6.2.3 Where the **grid economic investment report** identifies that there are **economic investments** that could be made, **Transpower** must **publish** within 6 months a report setting out a proposed timetable for **Transpower** to consider whether to submit a **grid upgrade plan** to the **Board** in respect of those possible **economic investments**.

- 6.2.4 The **grid economic investment report** does not need to report on possible **economic investments** that have previously been included in a **grid upgrade plan** submitted to the **Board**, and which the **Board** has considered under section III.

## 7. Information on capacities of individual interconnection assets

- 7.1 **Transpower** must publish the following information in respect of each **interconnection asset**:
- 7.1.1 for each transformer that is an **interconnection asset**, the overall 24 hour post contingency capacity rating of the **asset** in amperes and MVA, for both the summer and winter periods; and
- 7.1.2 for all other **interconnection assets**, the overall capacity rating of the **asset** in amperes and MVA and, if the **interconnection assets** are circuits, for both the summer and winter periods.
- 7.2 The information required under rule 7.1:
- 7.2.1 must be consistent with the **manufacturer's specification** for the **asset** or with the most recent **asset capability statement** provided by **Transpower** under rule 2.5 of Technical Code A of schedule C3 of part C, if this differs from the **manufacturer's specification**;
- 7.2.2 must be provided in a form that allows the **branch** to which each **asset** belongs to be easily identified; and
- 7.2.3 must be published either in the **centralised data set** maintained under rule 11.1 of section III or some other form, if the **Board** so determines. If the **Board** determines that the information must be published in different form, **Transpower** must publish the information in that form as soon as reasonably possible after the **Board** has determined the different form.

## 8. Permanent removal of interconnection assets from service

- 8.1 From 31 March 2008, **Transpower** may only permanently remove **interconnection assets** from service or reconfigure the **grid** for the purposes of rule 4.1.2.1 if removal of the asset or the reconfiguration results in a net benefit, as calculated under the test set out in rule 8.2.
- 8.2 The test that **Transpower** must apply under rules 4.1.2.1 and 8.1 involves:
- 8.2.1 estimating, to the extent that they arise, the following costs:
- 8.2.1.1 any additional fuel costs incurred by any **generators** in respect of any **generating units** that will be dispatched or are likely to be dispatched during or after the removal of the **interconnection asset** or the reconfiguration of the **grid**, as a

result of the removal or reconfiguration;

- 8.2.1.2 the direct labour and material costs that will be incurred by **Transpower** and the **designated transmission customers** undertaking the removal of the **interconnection asset** or the reconfiguration of the **grid**;
- 8.2.1.3 any increase in the estimation of **expected unserved energy** as a result of the removal of the **interconnection asset** or the reconfiguration of the **grid**; and
- 8.2.1.4 any other relevant matter specified in clauses 27.1 to 27.9 of Schedule F4 of section III, where the matter referred to in those clauses is a cost to any person who produces, transmits, retails or consumes **electricity** in New Zealand;

8.2.2 estimating, to the extent that they arise, the following benefits:

- 8.2.2.1 any reduction in estimated maintenance costs resulting from the removal of the **interconnection asset** or the reconfiguration of the **grid** (including **Transpower's** and any **designated transmission customer's** costs);
- 8.2.2.2 any reduction in fuel costs incurred by any **generators** in respect of any **generating units**, arising or likely to arise during or after the removal of the **interconnection asset** or the reconfiguration of the **grid**, as a result of the removal or reconfiguration;
- 8.2.2.3 any decrease in the estimation of **expected unserved energy** as a result of the removal of the **interconnection asset** or the reconfiguration of the **grid**; and
- 8.2.2.4 any other relevant matter specified in clauses 27.1 to 27.9 of Schedule F4 of section III, where the matter referred to in those clauses is a benefit to any person who produces, transmits, retails or consumes **electricity** in New Zealand; and

8.2.3 deducting the costs estimated under rule 8.2.1 from the benefits estimated under rule 8.2.2 to determine whether the proposed removal of the **interconnection asset** or the reconfiguration of the **grid** results in a net benefit.

8.3 **Transpower** may apply the test under this rule 8 at differing levels of rigour in different circumstances, which may include taking into account the number of **assets**, to which the proposed removal or reconfiguration applies, value of the **assets** involved, and the size of the load served by the **assets**.

8.4 **Transpower** is only required to:

- 8.4.1 make a reasonable estimate of the costs and benefits identified in rule 8.2, based on information reasonably available to it at the time it undertakes the test and taking into account the proposed number of **assets** to be

removed or reconfigured, the value of the **assets** involved, and the size of the load served by the **assets**; and

8.4.2 take account of events that can be reasonably foreseen.

8.5 Fuel costs under rule 8.2 must:

8.5.1 in the case of thermal **generating stations**, be based on the fuel costs specified in the **statement of opportunities**; or

8.5.2 in the case of hydroelectric **generating stations**:

8.5.2.1 be a reasonable estimate of the fuel costs, based on the economic value of the water stored at a hydroelectric **generating station**, provided by a suitably qualified person other than:

(a) **Transpower**; or

(b) an employee of **Transpower**; and

8.5.2.2 be published, as provided for in the **Outage Protocol**.

8.6 The direct labour costs under rule 8.2.1 may include any amounts paid to contractors, but must not include any apportionment of the overheads or office costs of **Transpower** or the **designated transmission customers**.

8.7 The material costs of under rule 8.2.1 are the costs of the materials used in carrying out the work during the removal of the **interconnection asset** or the reconfiguration of the **grid**.

8.8 In assessing the costs and benefits under rule 8.2, **Transpower** must consider any reasonably expected operating conditions, the forecasts in the **system security forecast**, likely fuel costs, and any other reasonable assumptions.

8.9 The estimation of **expected unserved energy** under rule 8.2 must be based on the value of unserved energy that applies under clauses 8.3.4 and 8.4.3 of Schedule F4 of section III and **Transpower's** estimate of the amount of **expected unserved energy** in respect of each affected **designated transmission customer** and end use customer.

8.10 For the avoidance of doubt, this rule 8 applies to the removal of **interconnection assets** from service where **Transpower** does not propose to replace those **assets** with another **asset**.

## 9. **Transpower to provide and publish annual report on interconnection asset capacity and grid configuration**

9.1 **Transpower** will provide the **Board** with and **publish** an annual report including:

- 9.1.1 any matter required to be reported on for the purposes of this rule by the **Outage Protocol**;
  - 9.1.2 the extent to which, in the **preceding year**, it has complied with the requirements of rules 3.1.1 and 3.2;
  - 9.1.3 any specific instances where it has not complied with rules 3.1.1 or 3.2;
  - 9.1.4 to the extent practicable, the circumstances that have given rise to any failure to comply with rules 3.1.1 or 3.2;
  - 9.1.5 to the extent practicable, any steps that it intends to take or other options to reduce the likelihood of failing to comply with rules 3.1.1 or 3.2 in the future;
  - 9.1.6 any modifications made to **interconnection circuit branches**, the **HVDC link**, and each **shunt asset** under rules 4.1.3, 4.1.4, and 4.1.5 in the **preceding year** and the extent to which it has complied with rule 4.2 in respect of those modifications, including any specific instances where it has not complied;
  - 9.1.7 any **interconnection assets** that have been permanently removed from service, or any reconfigurations to the **grid** made, in accordance with rule 8.
  - 9.1.8 copies of any agreements made under rule 11 of this section or, in respect of **interconnection assets** only, rule 15 of section VII in the **preceding year**; and
  - 9.1.9 an update of the information and the diagram required under rule 2.1, as at the end of the **preceding year**.
- 9.2 The report referred to in rule 9.1 must be provided and published by **Transpower** by 30 November each year.
- 9.3 The **Board** may recommend to the **Minister** the incorporation of the updated information and diagram referred to in rule 9.1.9 in the schedules added to this section in accordance with rule 2.9. The **Board** may consult with any person the **Board** considers is likely to be materially affected by the proposed amendments to the schedules, as it sees fit. **Transpower** must comply with the schedules added to this part in accordance with rule 2.9, from the date on which they are added.

#### **9A. Transitional requirements for reporting on availability and reliability**

By 30 November 2008, **Transpower** must **publish** and provide to the **Board** a report on the availability and reliability of the **grid** for the year from 1 July 2007 to 30 June 2008 in substantially the same form as, and using the same measures as, **Transpower's** 2005/2006 Quality Performance Report.

## 10. Reporting on availability and reliability

### 10.1 Transpower to submit draft index measures for availability and reliability

- 10.1.1 By 30 September 2008, **Transpower** must provide the **Board** with proposed index measures for availability and reliability for each **interconnection branch, shunt asset** and the **HVDC link**, in accordance with this rule 10.
- 10.1.2 For the purposes of rule 10.1.1, **Transpower** must categorise **interconnection branches** and **shunt assets** into groups of **interconnection branches** and **shunt assets** comprising similar **assets**.
- 10.1.3 The index measures to be provided under rule 10.1.1 are:
- 10.1.3.1 annual unavailability of each **interconnection branch, shunt asset** and the **HVDC link** due to **planned outages** of one minute or longer in hours per year, expressed as a percentage;
  - 10.1.3.2 annual unavailability of each **interconnection branch, shunt asset** and the **HVDC link** due to **unplanned outages** of one minute or longer in hours per year, expressed as a percentage;
  - 10.1.3.3 annual number of **planned interruptions** of one minute or longer caused by **planned outages** of one minute or longer of each **interconnection branch, shunt asset** and the **HVDC link**;
  - 10.1.3.4 annual number of **unplanned interruptions** of one minute or longer caused by **unplanned outages** of one minute or longer of each **interconnection branch, shunt asset** and the **HVDC link**;
  - 10.1.3.5 total unserved energy per year in **MWh** resulting from **planned interruptions** of one minute or longer caused by **planned outages** of one minute or longer of each **interconnection branch, shunt asset** and the **HVDC link**; and
  - 10.1.3.6 total unserved energy per year in **MWh** resulting from **unplanned interruptions** of one minute or longer caused by **unplanned outages** of one minute or longer of each **interconnection branch, shunt asset** and the **HVDC link**.
- 10.1.4 At the same time, **Transpower** must propose availability and reliability index measures for aggregated **interconnection branches** and **shunt assets**, such as by **asset** class or for all of the **grid**.

### 10.2 Requirements for index measures

- 10.2.1 The proposed availability and reliability index measures under rule 10.1.3 must be based on the average annual availability and reliability of each category of **interconnection branch**, or **shunt asset** and of

the **HVDC link** over the 5 year period (being 1 July to 30 June years) immediately prior to this rule coming into force.

10.2.2 The proposed index measures under rule 10.1.3 must be accompanied by an explanation showing how the requirements of rule 10.2.1 were applied.

10.2.3 The index measure for unserved energy under rules 10.1.3.5 and 10.1.3.6 must be determined in accordance with the methodology for determining **expected unserved energy** relating to **outages** of **interconnection assets** specified in the **Outage Protocol**.

10.2.4 In proposing the availability and reliability index measures under rule 10.1.4, **Transpower** must specify its reasons for proposing those measures.

### **10.3 Board may initially approve proposed index measures or refer back to Transpower**

After considering **Transpower's** proposed availability and reliability index measures and accompanying reasons the **Board** may either:

10.3.1 provisionally approve the proposed availability and reliability index measures; or

10.3.2 refer the proposed availability and reliability index measures and accompanying explanation back to **Transpower** if in the **Board's** view:

10.3.2.1 the proposed availability and reliability index measures under rule 10.1 are not consistent with the requirements of rule 10.2.1 or the methodology referred to in rule 10.2.3;

10.3.2.2 the proposed availability and reliability index measures under rule 10.1 do not provide sufficient information to meet the reasonable needs of **grid** users; or

10.3.2.3 the reasons provided with the availability and reliability targets in accordance with rule 10.2 are inadequate,

and **Transpower** must within 20 **business days** (or such longer period as the **Board** may allow) consider the **Board's** concerns and resubmit the proposed availability and reliability index measures and accompanying explanations for consideration by the **Board**.

### **10.4 Amendment of proposed index measures by the Board**

If the **Board** considers that the availability and reliability index measures resubmitted by **Transpower** under rule 10.3.2 are not consistent with the requirements of rule 10.2.1 or the methodology referred to in rule 10.2.3, or do not provide relevant information to **grid** users, the **Board** may make any amendments to the index measures it considers necessary.

## 10.5 Board must consult on proposed index measures

The **Board** must **publish** the proposed availability and reliability index measures, either as provisionally approved by the **Board** or as amended by the **Board**, as soon as is practicable, for consultation with any person that the **Board** thinks is likely to be materially affected by the proposed index measures.

## 10.6 Board may undertake additional consultation

As well as the consultation required under rule 10.5, the **Board** may undertake any other consultation it considers necessary.

## 10.7 Board to recommend index measures

When the **Board** has completed its consultation on the proposed availability and reliability service measures it must make recommendations to the **Minister** for inclusion of the index measures as a schedule to this section.

## 10.8 Transpower to report on availability and reliability

- 10.8.1 By 30 November 2009 and 30 November in each subsequent year, **Transpower** must **publish** and provide to the **Board** information on availability and reliability of **interconnection assets** including:
- 10.8.1.1 annual unavailability of each **interconnection branch**, **shunt asset** and the **HVDC link** due to **planned outages** of one minute or longer in the **preceding year** in hours per year, expressed as a percentage;
  - 10.8.1.2 annual unavailability of each **interconnection branch**, **shunt asset** and the **HVDC link** due to **unplanned outages** of one minute or longer in the **preceding year** in hours per year, expressed as a percentage;
  - 10.8.1.3 annual number of **planned interruptions** of one minute or longer caused by **planned outages** of one minute or longer of each **interconnection branch**, **shunt asset** and the **HVDC link** in the **preceding year**;
  - 10.8.1.4 annual number of **unplanned interruptions** of one minute or longer caused by **unplanned outages** of one minute or longer of each **interconnection branch**, **shunt asset** and the **HVDC link** in the **preceding year**;
  - 10.8.1.5 total unserved energy in the preceding year resulting from **planned interruptions** of one minute or longer caused by **planned outages** of one minute or longer of **interconnection branches**, **shunt assets** and the **HVDC link**;
  - 10.8.1.6 total unserved energy in the **preceding year** resulting from **unplanned interruptions** of one minute or longer caused by **unplanned outages** of one minute or longer of

**interconnection branches, shunt assets and the HVDC link;**

- 10.8.1.7 annual number of **outages** of each **interconnection branch, shunt asset and the HVDC link** that are shorter than one minute in the **preceding year**;
  - 10.8.1.8 the annual number of **interruptions** shorter than one minute caused by **outages** that are shorter than one minute of each **interconnection branch, shunt asset and the HVDC link**, in the **preceding year**;
  - 10.8.1.9 a comparison of the information required by rules 10.8.1.1 to 10.8.1.6 against the availability and reliability index measures for **interconnection branches, shunt assets and the HVDC link** included in a schedule to this section under rule 10.7;
  - 10.8.1.10 to the extent practicable, an explanation of the reasons for not meeting the reliability and availability index measures for **interconnection branches, shunt assets and the HVDC link** included in a schedule to this section under rule 10.7 and any steps or other options it intends to take in future to meet the index measures; and
  - 10.8.1.11 information on its performance against the reliability and availability index measures for aggregated **interconnection branches** included in a schedule to this section under rule 10.7.
- 10.8.2 The information **published** under rule 10.8.1 must be specified in the same units of measurement as the corresponding index measures included in a schedule to this section under rule 10.7.
- 10.8.3 **Transpower** does not breach the rules by reason of any failure to meet the index measures included in a schedule to this section under rule 10.7.

## **10.9 Updating of availability and reliability index measures**

- 10.9.1 This rule 10.9 applies if, after the availability and reliability index measures are included as a schedule to this section in accordance with rule 10.7, **interconnection assets**:
  - 10.9.1.1 are modified or replaced as permitted under rule 4.1; or
  - 10.9.1.2 have been damaged or degraded but, after conducting the investigation required under rule 6.1.1, **Transpower** considers that they still meet the **grid reliability standards**.
- 10.9.2 If this rule 10.9 applies if, after the availability and the reliability or availability index measures for an **interconnection branch, shunt asset and the HVDC link** or aggregated **interconnection branches or shunt assets** no longer meet the requirements of rule 10.2, the availability and reliability index measures included in a schedule to this

section under rule 10.7 must be updated following the procedure specified in this rule 10. **Transpower** must propose the revised index measures under rule 10.1 within 20 business days of the modification or replacement, or such longer period as the **Board** may allow.

**11. Transpower and designated transmission customers may agree on other requirements**

- 11.1 **Transpower** and **designated transmission customers** must comply with this section of the rules, unless agreed otherwise by **Transpower** and the **designated transmission customer** in respect of specified **interconnection circuit branches**, the **HVDC link**, **shunt assets** or **interconnection assets**, or the **designated transmission customer** in accordance with rule 11.2.
- 11.2 Any agreement between **Transpower** and a **designated transmission customer** under this rule may not exclude the application of rule 9.1.8 and must be conditional in all respects on:
- 11.2.1 obtaining agreement from all other potentially affected **designated transmission customers** that this section of the **rules** does not apply to the specified **interconnection circuit branches**, the **HVDC link**, **shunt assets** or **interconnection assets**, or the **designated transmission customer**; and
- 11.2.2 **Transpower** and the **designated transmission customer** certifying to the **Board** that they have consulted with all potentially affected end use customers on this section of the **rules** not applying to the specified **interconnection branches**, **circuit branches**, the **HVDC link**, **shunt assets** or **interconnection assets** or the **designated transmission customer**, and there are no material unresolved issues affecting the interests of those end use customers.
- 11.3 **Transpower** must notify the **Board** as soon as practicable in the event that **Transpower** enters into an agreement with a **designated transmission customer** under this rule.