

# Electricity (Greenhouse Gas Emissions) Benchmark Compliance Rule 2008

Notifiable instrument NI2008— 602

made under the

*Electricity (Greenhouse Gas Emissions) Act 2004*, s 61 (Greenhouse gas benchmark rules)

---

## 1 Name of Instrument

This instrument is the *Electricity (Greenhouse Gas Emissions) Benchmark Compliance Rule 2008*.

## 2 Commencement

This instrument commences the day after it is notified.

## 3 Rule set out in the Schedule

The schedule to this instrument sets out the rule for calculation of the factors listed in section 13 (Factors to be determined and notified before beginning of each year) of the *Electricity (Greenhouse Gas Emissions) Act 2004*, the attributable emissions and greenhouse gas benchmark (for each benchmark participant) for each compliance year, and whether benchmark participants have complied with their greenhouse gas benchmarks.

## 4 Revocation

Electricity (Greenhouse Gas Emissions) Benchmark Compliance Rule 2007 (No 2), being notifiable instrument NI2007—435, is revoked.

Simon Corbell  
Minister for Environment, Climate Change and Water  
23 December 2008

**This is the Schedule to the  
Electricity (Greenhouse Gas Emissions) Benchmark Compliance Rule 2008**

Note: the numbering of this schedule maintains numbering of the equivalent Greenhouse Gas Benchmark Rule (Compliance) made under the *Electricity Supply Act 1995 (NSW)*.

**2 Objects of the Rule**

The objects of this Rule are to provide specific arrangements for the calculation of Greenhouse Gas Benchmarks, Attributable Emissions, and any Greenhouse Shortfall for Benchmark Participants.

**3 Application of the Rule**

Without limiting the persons to whom this Rule applies, this Rule applies to Benchmark Participants listed in section 9 of the Act.

**5 Compliance with Greenhouse Gas Benchmarks**

Note: Clause 5 is used to calculate any Greenhouse Shortfall for which a Benchmark Participant is responsible, on which any penalty will be paid subject to the shortfall allowance provisions under the Act.

- 5.1 A Benchmark Participant has complied with its greenhouse gas benchmark for a Compliance Year if its Greenhouse Shortfall, calculated in accordance with **Equation 1**, is zero.
- 5.2 A Benchmark Participant has failed to comply with its greenhouse gas benchmark for a Compliance Year if its Greenhouse Shortfall, calculated in accordance with **Equation 1**, is greater than zero.

### Equation 1

If Attributable Emissions - Greenhouse Gas Benchmark  $> 0$ , then:

$$\text{Greenhouse Shortfall} = \text{Attributable Emissions} - \text{Greenhouse Gas Benchmark}$$

If Attributable Emissions - Greenhouse Gas Benchmark  $\leq 0$ , then:

$$\text{Greenhouse Shortfall} = 0$$

Where:

- *Greenhouse Shortfall* is in t CO<sub>2</sub>-e
- *Attributable Emissions* (in t CO<sub>2</sub>-e) is calculated using Equation 2
- *Greenhouse Gas Benchmark* (in t CO<sub>2</sub>-e) is calculated using Equation 3

### Equation 2

$$\text{Attributable Emissions} = (\text{Total Electricity Purchased} \times \text{ACT Pool Coefficient}) - \text{NGACs Surrendered} - (\text{RECs Counted} \times \text{ACT Pool Coefficient}) - \text{LUACs Surrendered}$$

Where:

- *Attributable Emissions* is in t CO<sub>2</sub>-e
- *Total Electricity Purchased* (in MWh) is calculated in clause 7.
- *ACT Pool Coefficient* (in t CO<sub>2</sub>-e/MWh) is determined for each Compliance Year by the ICRC using clause 9.1.
- *NGACs Surrendered* (in t CO<sub>2</sub>-e abated) means the total number of NGACs registered to the Benchmark Participant that have been surrendered under the Act, not including any surrendered due to an order under section 35 of the Act.
- *RECs Counted* (in MWh) means the total number of RECs the Benchmark Participant may count under the Regulations.
- *LUACs Surrendered* (in t CO<sub>2</sub>-e abated) means the total number of LUACs registered to the Benchmark Participant that have been surrendered under the Act, not including any surrendered due to an order under section 35 of the Act.

## 6 Calculation of a Greenhouse Gas Benchmark for each Benchmark Participant

Note: Under this clause, the Greenhouse Gas Benchmark of a Benchmark Participant is calculated by reference to its share of Total ACT Electricity Demand in a year, the Territory Greenhouse Gas Benchmark, and the population of the ACT.

A Greenhouse Gas Benchmark in tonnes of carbon dioxide equivalent is to be calculated for each Benchmark Participant using **Equation 3**.

### Equation 3

Greenhouse Gas Benchmark = (Total Electricity Sold / Total ACT Electricity Demand) x  
Electricity Sector Benchmark

Where:

- *Greenhouse Gas Benchmark* is in t CO<sub>2</sub>-e
- *Electricity Sector Benchmark* (in t CO<sub>2</sub>-e) is calculated using Equation 4
- *Total ACT Electricity Demand* is determined by the ICRC under clause 9.2
- *Total Electricity Sold* is calculated for the Benchmark Participant in clause 8

### Equation 4

Electricity Sector Benchmark = Total ACT Population x Territory Greenhouse Gas  
Benchmark for that year

Where:

- *Electricity Sector Benchmark* is in t CO<sub>2</sub>-e
- *Total ACT Population* is determined for each Compliance Year by the ICRC under clause 9.3
- *Territory Greenhouse Gas Benchmarks* (in t CO<sub>2</sub>-e per capita) are set out in section 7 of the Act.

## 7 Calculation of Total Electricity Purchased

Note: To calculate the Attributable Emissions of a Benchmark Participant, this clause is used to calculate the total electricity it has purchased either actually or notionally at the transmission nodes. Where a Benchmark Participant purchases electricity at a Connection Point within a distribution network, this clause calculates its deemed purchases as if those purchases had been made at the transmission level by adjusting for distribution losses. Where a Benchmark Participant acting in a Class 4 Capacity is connected to, and receives supply directly from the transmission network, the distribution loss factor would be 1.000.

7.1 Total Electricity Purchased must be rounded to the nearest whole MWh.

7.2 For a Benchmark Participant acting in a Class 1 or 3 Capacity, *Total Electricity Purchased* is the total of:

- (a) the quantity of electricity that is purchased in that capacity from NEMMCO in a Compliance Year for sale in the ACT as advised to that Benchmark Participant in the final settlement report that NEMMCO has issued with respect to the settlement periods in that Compliance Year; and
- (b) the total of *Total Deemed Generator Purchases* in a Compliance Year in respect of electricity obtained from any Embedded Generating Systems that are located in the ACT that do not trade their electricity through the national electricity market operated by NEMMCO, where *Total Deemed Generator Purchases* for each such Embedded Generating System is calculated in **Equation 5**,

less:

- (c) if a Benchmark Participant is acting in a Class 1 Capacity supplying energy to a Benchmark Participant acting in a Class 4 Capacity, the *Total Deemed End-user Purchases* calculated in **Equation 6**.

**Equation 5**

$$\text{Total Deemed Generator Purchases} = \sum_G \frac{\text{Purchased Generation}_G / \text{Emissions Intensity}}{\text{Adjustment Factor}_G}$$

Where:

- *Total Deemed Generator Purchases* is in MWh
- *Purchased Generation* is the quantity of electricity purchased from that Generating System by that Benchmark Participant acting in a Class 1 or 3 Capacity, and is in MWh
- *Emissions Intensity Adjustment Factor* is the value in Table 3 of Schedule A to this Rule appropriate to whether the Generating System is connected at a user site, to the distribution system, or to the transmission system.
- *G* is each Generating System from which sent out electricity is purchased by that Benchmark Participant acting in a Class 1 or 3 Capacity

**Equation 6**

$$\text{Total Deemed End-User Purchases} = \sum_P \text{Exempt Sales}_P \times \text{DLF}_P$$

Where:

- *Total Deemed End-User Purchases* is in MWh.
- *Exempt Sales* (in MWh) is the total electricity sold (either directly or indirectly) to the Benchmark Participant acting in a Class 4 Capacity by the Benchmark Participant acting in a Class 1 Capacity in the Compliance Year.
- *DLF* is the distribution loss factor specific to each load being managed by a Benchmark Participant acting in a class 4 Capacity or the Distribution Loss Factor in Table 1 of Schedule A to this Rule for the Benchmark Participant acting in a Class 4 Capacity.
- *P* is each Class 4 Benchmark Participant that is sold electricity by the Benchmark Participant acting in a Class 1 Capacity.

- 7.3 For a Benchmark Participant acting in a Class 4 Capacity, *Total Electricity Purchased* is equal to the *Deemed End-User Purchases* in that capacity calculated in **Equation 7**.

**Equation 7**

Deemed End-User Purchases = Exempt Sales x DLF

Where:

- *Deemed End-User Purchases* is in MWh.
- *Exempt Sales* (in MWh) is the total electricity sold (either directly or indirectly) to the Benchmark Participant acting in a Class 4 Capacity by the Benchmark Participant acting in a Class 1 Capacity in the Compliance Year.
- *DLF* is the distribution loss factor specific to that end user as specified in Table 1 of Schedule A to this Rule (which may be 1.0 in the case of users connected directly to the transmission system).

- 7.4 In the event that there is any apparent discrepancy between:

- (a) the value for the quantity of electricity that is purchased from NEMMCO in a Compliance Year used to calculate *Total Electricity Purchased* under this clause 7; and
- (b) any data which the ICRC obtains directly from NEMMCO in respect of a Benchmark Participant,

the ICRC will:

- (c) attempt to resolve the discrepancy with the Benchmark Participant; and
- (d) if (c) is unsuccessful, make a final determination as to the *Total Electricity Purchased*.

## 8 Calculation of Total Electricity Sold

Note: To calculate the Greenhouse Gas Benchmark of a Benchmark Participant, this clause is used to calculate the total electricity it has sold either actually or notionally at the distribution level. Where a Benchmark Participant takes electricity from a transmission network, this clause calculates its deemed sales as if those sales had been made at the distribution level by adjusting for distribution losses.

- 8.1 Total Electricity Sold must be rounded to the nearest whole MWh.
- 8.2 Total Electricity Sold is not to include electricity supplied by Generating Systems not connected to the NSW/ACT Electricity Network.
- 8.3 For a Benchmark Participant acting in a Class 1 Capacity, *Total Electricity Sold* is calculated using **Equation 8**.

### Equation 8

$$\text{Total Electricity Sold} = (\text{NEMMCO Purchases} / \text{DLF}) + \sum_G \text{Purchased Generation}_G / \text{LF}_G - \sum_P \text{Exempt Sales}_P \text{ (if any)}$$

Where:

- *Total Electricity Sold* is in MWh.
- *NEMMCO Purchases* (in MWh) is the quantity of electricity that is purchased from NEMMCO for sale in the ACT in a Compliance Year.
- *DLF* is the appropriate Distribution Loss Factor for that year as specified in Table 1 of Schedule A to this Rule or, if neither DLF is appropriate, a DLF derived from the DLFs specified in Table 1 of Schedule A to this Rule.
- *Purchased Generation* (in MWh) is the quantity of electricity purchased from that Generating System by that Benchmark Participant acting in a Class 1 or 3 Capacity.
- *LF* indicates the value of the distribution losses avoided due to the location of the power plant directly at a point of demand and is:
  - 1.0 for an Embedded Generating System connected at an end-user’s site; or
  - the Distribution Loss Factor in Table 1 of Schedule A to this Rule applying at that location for a Generating System connected at the distribution system level but not connected at an end-user’s site:
    - to determine the appropriate selection of a DLF from the table, the benchmark participant should seek advice from the ICRC.
  - Transmission Loss Factor in Table 2 x Distribution Loss Factor in Table 1 of Schedule A to this Rule for Generating Systems connected to the transmission system.
- *G* is each Class 1 Benchmark Participant that is sold electricity by the Embedded Generating System.
- *Exempt Sales* (in MWh) is the electricity sold (either directly or indirectly) to all Benchmark Participants acting in a Class 4 Capacity by the Benchmark Participant acting in a Class 1 Capacity in the Compliance Year.
- *P* is each Class 4 Benchmark Participant that is sold electricity by the Benchmark Participant acting in a Class 1 Capacity

8.4 For a Benchmark Participant acting in a Class 3 Capacity *Total Electricity Sold* is equal to:

- (a) for those connected to the transmission network as defined in the National Electricity Code, *Total Electricity Purchased* for the use of that Benchmark Participant in that capacity in the ACT calculated using **clause 7**; and
- (b) for those connected to the distribution network as defined in the National Electricity Code, *Total Electricity Purchased* for the use of that Benchmark Participant in that capacity in the ACT calculated using **clause 7** divided by the Distribution Loss Factor for that year as specified in Table 1 of Schedule A to this Rule.

8.5 For a Benchmark Participant acting in a Class 4 Capacity *Total Electricity Sold* is equal to the amount of metered electricity it purchases in that capacity.

## 9 Factors to be determined by the ICRC

### 9.1 ACT Pool Coefficient

Note: Given that the Australian Capital Territory is included in the notional New South Wales Pool, the average emissions per unit of electricity delivered to the ACT is taken to be the same as the NSW pool coefficient.

The ACT Pool Coefficient for a compliance year, commencing in 2006, will be the NSW Pool Coefficient determined by the Tribunal for that year, unless the ICRC otherwise determines.

### 9.2 Total ACT Electricity Demand

The ICRC will for any given year determine the Total ACT Electricity Demand to be the value calculated in accordance with **Method 1**.

#### **Method 1**

##### Step (1)

Determine the projected electricity consumption in the ACT in a given year by:

- (i) if an *Annual Planning Report* or an equivalent document has been published by *TransGrid NSW* or its successors within the year preceding the determination, taking from that Report the average of the medium projected end-use electricity consumption in NSW and the ACT for the two financial years that include the year for which the Total ACT Electricity Demand is being determined; or
  - (ii) if no such Report has been published within the year preceding the determination, taking the actual end-use electricity consumption in NSW and the ACT in the previous financial year and applying the percentage change projected for the most recent corresponding period in the latest *Annual Planning Report* or an equivalent document published by *TransGrid NSW* or its successors,
- and calculating an allowance for sales in the Australian Capital Territory of an amount determined by the ICRC.

##### Step (2)

Calculate the *Total ACT Electricity Demand* by adding to the projected electricity consumption in the ACT the electricity sales corresponding to the total number of NGACs created under the DSA Rule for abatement activities in the ACT in the year that is two years before the year for which the Total ACT Electricity Demand is being determined.

Note: Demand Side Abatement both reduces the electricity demand and creates Abatement Certificates. Consequently, Step (2) is required to overcome the double counting of benefits from NGACs created through Demand Side Abatement.



### 9.3 Total ACT Population

The ICRC will for any given year determine the Total ACT Population by reference to the ACT estimated resident population projected using the most appropriate scenario in the Australian Bureau of Statistics publication *Population Projections, Australia, 2002-2101* (ABS cat. 3222.0), 2 September 2003 edition or the equivalent value most recently determined by the Australian Bureau of Statistics.

### 9.4 Electricity Sector Benchmark

The Electricity Sector Benchmark will be calculated by multiplying the Total ACT Population by the Territory greenhouse gas benchmark per head of population for that Compliance Year specified in section 7(1) of the Act.

## 10 Greenhouse Shortfall not carried forward

An Elective Participant that ceases to be an Elective Participant cannot carry forward to the next year any Greenhouse Shortfall in the Compliance Year in which it ceases to be an Elective Participant.

## 11 Definitions and Interpretation

### 11.1 In this Rule:

“**ACT**” is the Australian Capital Territory.

“**ACT Pool Coefficient**” is defined in the dictionary of the Act and determined by the ICRC in accordance with clause 9.1.

“**Attributable Emissions**” is the number of tonnes of carbon dioxide equivalent of greenhouse gas emissions in that year for which a Benchmark Participant is responsible, calculated in Equation 2.

“**Benchmark Participant**” is defined in section 9(1) of the Act.

“**Class**” refers to classes of Benchmark Participant and in particular:

- (a) “**Class 1 Capacity**” means an entity acting in the capacity described in section 9(1)(a) of the Act;
- (b) “**Class 3 Capacity**” means an entity acting in the capacity described in section 9(1)(b) of the Act;
- (c) “**Class 4 Capacity**” means an entity acting in the capacity described in section 9(1)(c) of the Act; and

“**Compliance Year**” means the calendar year with respect to which a Benchmark Participant’s compliance with its benchmark is measured.

“**Connection Point**” means an agreed point of electricity supply to a transmission or distribution network, established between the person that operates that network and a Generating System.

“**DSA Rule**” means the *Greenhouse Gas Benchmark Rule (Demand Side Abatement) No. 3 of 2003* currently in force under the NSW Act.

**“Generating System”** means a system comprising one or more of the physical generators of electricity and all the related equipment essential to their functioning as single entities.

**“Embedded Generating System”** means a Generating System that is connected to the distribution network, as it is defined in the National Electricity Code.

**“Greenhouse Gas Benchmark”** is defined in the dictionary of the Act, and is calculated in Equation 3.

**“Greenhouse Shortfall”** is defined in section 11 of the Act, and is calculated in Equation 1.

**“ICRC”** is the Independent Competition and Regulatory Commission.

**“LUAC”** means an abatement certificate created in accordance with the LUAC Rule.

**“LUAC Rule”** means the *Greenhouse Gas Benchmark Rule (Large User Abatement Certificates) No. 4 of 2003* currently in force under the NSW Act.

**“NEMMCO”** is defined in the dictionary of the Act.

**“Net Sent Out Generation”** the amount of electricity supplied to the transmission or distribution network at the Connection Points for the Generating System in question less the electricity supplied to the Generating System from the transmission or distribution network.

**“NGAC”** (New South Wales Greenhouse Abatement Certificate) is a transferable abatement certificate under section 97F of the NSW Act

**“NSW/ACT Electricity Network”** means the New South Wales and ACT electricity transmission and distribution networks, as those terms are defined in the National Electricity Code.

**“REC”** means a renewable energy certificate as defined in the dictionary of the Act.

**“Regulations”** means regulations made pursuant to Section 66 of the Act.

**“Scheme Administrator”** is defined in section 51 of the Act.

**“the Act”** means the *Electricity (Greenhouse Gas Emissions) Act 2004*.

**“the NSW Act”** means the *Electricity Supply Act 1995 (NSW)*.

**“Tribunal”** means the NSW Independent Pricing and Regulatory Tribunal.

11.2 Notes in this Rule do not form part of the Rule.

11.3 For the purpose of this Rule the terms and expressions used in this Rule have the same meaning as in the Act or as defined in the Act, except the terms that are expressly defined in this Rule.

## Schedule A - Tables

**Table 1: ACT Distribution Loss Factors for use by Retailers**

<b>Distribution Loss Factor</b>	
High voltage customers	1.0282
Low voltage customers	1.0486

**Table 2: Default Transmission Loss and Scaling Factors**

<b>State</b>	<b>Transmission Loss Factor</b>	<b>Transmission Scaling Factors</b>
New South Wales and ACT	1.026	0.975
Victoria or South Australia	1.026	0.975
Queensland	1.046	0.956

**Table 3: Emissions Intensity Adjustment Factors**

<b>Connection</b>	<b>Emissions Intensity Adjustment Factor</b>
At user site	The Distribution Loss Factor applying at the site as specified in Table 1 in this Schedule
To distribution system	1.0
To transmission system	Transmission Scaling Factor for the State where the Generating System is located from Table 2 in this Schedule