



FACT SHEET

WHEN CAN GENERATORS CREATE NGACs?

The Scheme allows generators to create NSW Greenhouse Abatement Certificates (NGACs) for:

- Producing electricity that has a lower emission intensity than the NSW pool coefficient¹, or
- Improving the efficiency of electricity production and associated reductions in emission intensity.

To work out how many NGACs can be created, generators need to establish what generation category they belong to, what their NSW Production Baseline is, and which calculation approach to use.

Generating system categories and production baselines

The Generation Rule² sets out four generating system categories and assigns generators in each category a different method for establishing their NSW Production Baselines.

The baseline determines what portion of a generator's production can be used to create NGACs when using the relative intensity approach for calculating NGACs (explained in the following pages).

¹ The NSW pool coefficient measures the average emission intensity of electricity sourced from a specified list of Transmission Nodes to supply NSW customers and is adjusted with NGAC creation data to represent a 'business as usual' grid average for NSW. Please refer to the *Calculating the NSW Pool Coefficient* factsheet for further information. Definitions for any terms used in this Fact Sheet may also be referenced from the Scheme Glossary on this website.

² More formally known as *Greenhouse Gas Benchmark Rule (Generation) No. 2 of 2003*

Category A includes only those generators that satisfied the criteria for 'Category A' in the previous voluntary benchmark scheme's Emission Workbook, provided that they continue to satisfy that criteria. This means generators that have a Power Purchase Agreement (PPA) with a retailer whereby this retailer (known as the 'Deemed Retailer') takes direct physical supply from the generator.

In effect, these generators are those prescribed in Schedule C of the Generation Rule, in addition to those generators that satisfied the 'Category A' criteria and claimed to be either 'Category A' or 'Category F' under the previous voluntary benchmark scheme.

Category A generators have a category-specific baseline that determines who is entitled to create NGACs for the electricity that is produced, as well as how many NGACs can be created:

- **For Category A generators using primarily fossil fuels**, the NSW Production Baseline is the maximum output the Deemed Retailer is entitled to purchase under the PPA.

The generator can create NGACs for eligible production above this baseline, while the Deemed Retailer can create NGACs for eligible generation below this baseline.

- **For Category A generators using primarily fossil fuels with a PPA that does not specify maximum output**, the NSW Production Baseline is set at their Net Sent Out Generation per annum. This means that the Deemed Retailer is entitled to create NGACs for all of the generator's production.

- **For Category A generators using primarily Renewable Energy Sources**, the NSW Production Baseline depends on whether the PPA specifies a maximum output *and* whether the generator has been assigned a REC baseline by the Commonwealth Office of Renewable Energy Regulator (ORER).
- For more details, refer to clause 8.1 of the Generation Rule. The Deemed Retailer has the right to create NGACs below the baseline, while the generator has the right to create NGACs above this baseline (see **Figure 2**).

Category B includes the NSW pool generators listed in Schedule B of the Generation Rule. This category comprises the existing large coal-fired and hydro generators located in NSW.

Their NSW Production Baseline depends on what source of fuel they use:

- **Category B generators using primarily fossil fuel** have no production baselines. The total output and emissions of these generators contribute to the NSW pool coefficient (that is, the average emission intensity in NSW)
- **Category B generators using primarily Renewable Energy Sources** as fuel, use the REC baseline assigned to them by ORER as their NSW Production Baseline. Any excess generation can then produce NGACs (if not claiming RECs in respect of that generation).

Category C includes:

- renewable generators that started commercial operation before 1 January 1997;
- fossil fuel generators with production capacity of 30 MW or less that started operation before 30 June 1997; and

- fossil fuel generators with production capacity of more than 30 MW that started operation before 1 January 2002.

The NSW Production Baseline for Category C generators' depends on the primary source of energy used:

- **Category C generators using primarily Renewable Energy Sources** as fuel, use the REC baseline assigned to them by the ORER. If they don't have a REC baseline assigned, their NSW Production Baseline is calculated using a five-year average of Net Sent Out Generation (for calendar years 1997 to 2001), with adjustments for periods of atypical output.
- **Category C generators using primarily fossil fuel** calculate their NSW Production Baseline using a five-year average of Net Sent Out Generation (for calendar years 1997 to 2001), with adjustments for periods of atypical output.

Category D includes all generating systems that commenced operation after 1 January 2002; fossil fuel plant with production capacity of 30 MW or less that started operation after 30 June 1997; and all renewable generation plants established after 1 January 1997.

Because Category D generators are considered as new generation plants – and the scheme is designed to reward investment in new, low-emission generators – their NSW Production baseline is set at zero.

This means that all of their production is eligible for the creation of NGACs.

Calculating how many NGACs generators can create

The Generation Rule sets out two approaches for calculating NGACs from generation.

Relative intensity approach

The first approach, which we have called the *relative intensity (or NSW production baseline) approach*, can be used by generators that produce electricity of lower emission intensity than the NSW pool coefficient.

Only the electricity production over a generator's NSW Production Baseline is eligible for the creation of NGACs using this approach. This electricity production is known as 'eligible generation'.

The number of NGACs (see equation below) that can be created using the relative intensity approach is determined by the generator's level of eligible generation and the difference between the average emission intensity in NSW (the 'NSW Pool Coefficient' with a factor applied) and the generator's own emission intensity over a defined period of time (eg annually, monthly, hourly etc).

In the special case of Category A generators, the Deemed Retailer is also allowed to create NGACs for the production below the NSW Production Baseline.

The relative intensity approach is illustrated in **Figure 1** (for Category C) and **Figure 2** (for Category A) on page 5.

Efficiency improvement approach

The second approach, which we have called the *efficiency improvement approach*, can be used by generators that make improvements in the efficiency of electricity production after 1 January 2002 (and thereby reduce their emission intensity). These improvements may be for plant efficiency gains where the plant is a participant in the Australian Government's Generator Efficiency Standards and there is no change to the plant design or fuel mix (Method 1 – GES Gain); or where changes to the plant design have been made (Method 2 – Performance Improvement Gain); or where changes to the fuel mix have been implemented (Method 3 – Fuel Switch Gain).

Under the efficiency improvement approach, the generator's total production is eligible to create NGACs.

The number of NGACs that can be created is determined by how much electricity a generator has produced ('net electricity sent') and the level by which it has reduced its emission intensity ('change in emission intensity').

The efficiency improvement approach is illustrated in **Figure 3** on page 5.

$$\text{Number of NGACs}^3 = \text{Eligible Generation} \times \left(\text{Pool Coefficient} \times \text{Emission Intensity Adjustment Factor} - \text{Emissions Intensity} \right)$$

³ Equation 1 from the Generation Rule

Which approach should be used?

The Generation Rule details which approach can be used by the different categories of generator. These approaches are shown in **Table 1** below.

All generators which use Renewable Energy Sources can sell either NGACs or RECs for each MWh of eligible generation, but not both. If a generator has previously sold a REC for a MWh, it cannot then sell an NGAC for the same MWh of generation (and visa versa). However, where there is a separate abatement activity taking place alongside the generation of renewable electricity, NGACs can be created. For example, greenhouse gas emissions avoided when electricity is generated from landfill gas, sewage gas, methane manufactured from Qualifying Putrescible Waste, oxidation of Qualifying Putrescible Waste, or cogeneration from Renewable Energy Sources can be the basis for NGAC creation. This is detailed in clause 9.5 of the Generation Rule.

Legal context for this fact sheet

The Scheme Administrator has prepared this Fact Sheet as a general summary of relevant parts of the:

- *Electricity Supply Act 1995*
- *Electricity Supply (General) Regulation 2001*
- *Greenhouse Gas Benchmark Rule (Generation) No. 2 of 2003*

This Fact Sheet should not be relied upon on a substitute for legal advice, and is designed to be read in conjunction with the above source documents.

Table 1 Eligible baseline approaches for different classes of generation

Energy type	Category A	Category B	Category C	Category D
Fossil Fuel	Can only use the Relative Intensity Approach*	Can only use the Efficiency Improvement Approach	Can use either Relative Intensity or Efficiency Improvement Approach	Can use either Relative Intensity or Efficiency Improvement Approach
Renewable	Can only use the Relative Intensity Approach	Can only use the Relative Intensity Approach	Can only use the Relative Intensity Approach	Can only use the Relative Intensity Approach

* Category A generators must first determine whether the ability to create NGACs for the eligible generation rests with them or the Deemed Retailer that purchases their electricity. Like the Category A generator, the Deemed Retailer can only apply the relative intensity approach to create NGACs. This is illustrated in **Figure 2**.

Figure 1. RELATIVE INTENSITY APPROACH

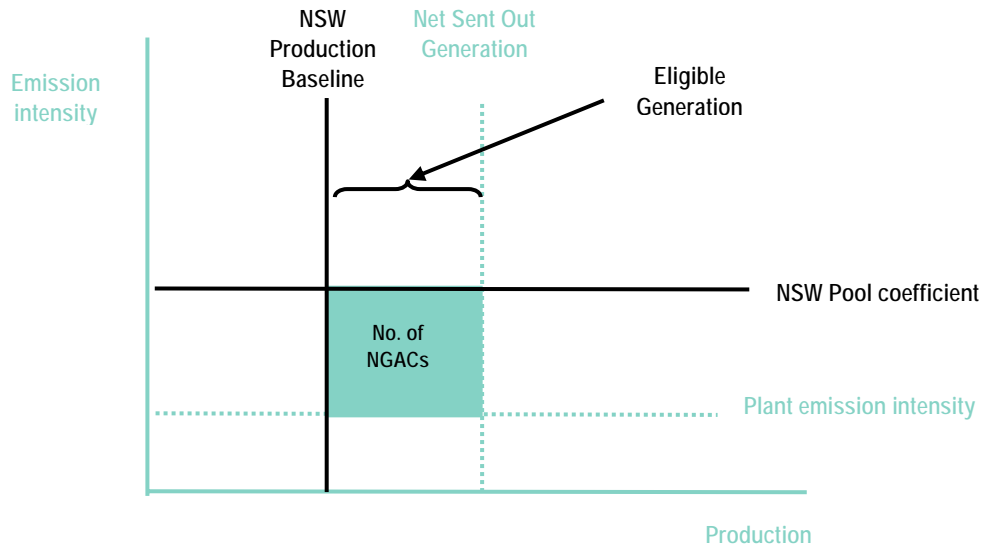


Figure 2. RELATIVE INTENSITY APPROACH FOR CATEGORY A GENERATION

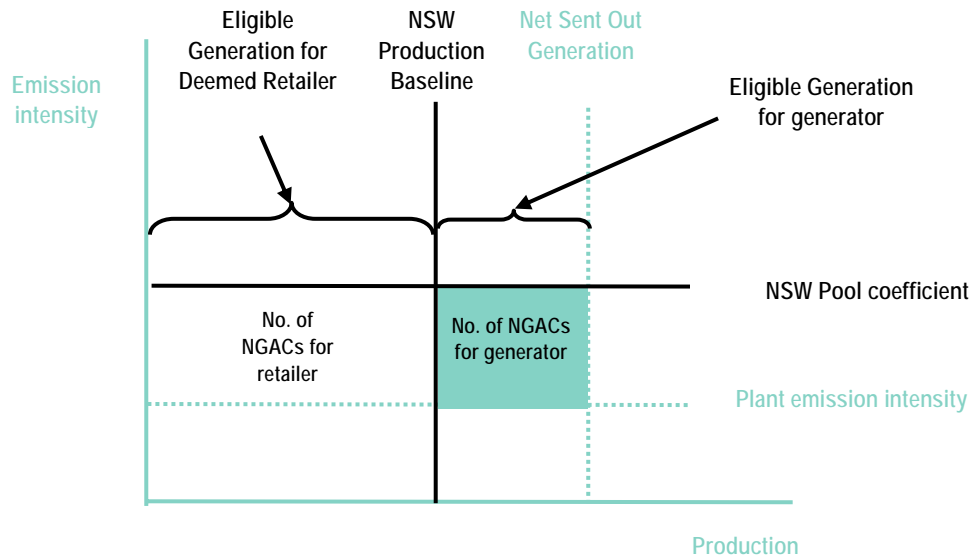


Figure 3. EFFICIENCY IMPROVEMENT APPROACH

