



Australian Government

Department of Climate Change, Energy,
the Environment and Water

Guidance on supplementary approaches to determine default emissions intensity values

Companion document to the Safeguard Mechanism Framework for developing production variables and default emissions-intensity values document



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Definitions

Framework Document	The document titled <i>Safeguard Mechanism Framework for developing production variables and default emissions-intensity values</i> , which sets out how prescribed production variables and associated default emissions intensity values are defined. It is available on the Safeguard Mechanism web page (www.dcceew.gov.au/climate-change/emissions-reporting/national-greenhouse-energy-reporting-scheme/safeguard-mechanism).
NGER Act / NGERs	The <i>National Greenhouse and Energy Reporting Act 2007</i> , which sets out the framework for the National Greenhouse and Energy Reporting scheme.
NGER Measurement Determination	The <i>National Greenhouse and Energy Reporting (Measurement) Determination 2008</i> .
Production variable	A metric that is set out in a Part of Schedule 1. Production variables are the outputs, intermediate products or in some cases the inputs at Safeguard facilities.
Safeguard Rule	The <i>National Greenhouse and Energy Reporting (Safeguard Mechanism) Rule 2015</i> .
Safeguard facility	A Safeguard facility is an NGER-reporting facility that is required to meet the Safeguard Mechanism compliance obligations as set out in the Safeguard Rule and the NGER Act.
The Department	Department of Climate Change, Energy, the Environment and Water

Purpose of this document

This guidance is a companion document to the *Emissions Reduction Fund Safeguard Mechanism Framework for developing production variables and default emissions-intensity values* (Framework Document). The Framework Document sets out the approach for defining production variables and the method for calculating the default emissions intensity value (default EI) that corresponds to each production variable. The default emissions intensity calculation method is followed whenever practical. In cases where the method is not practical, such as insufficient data, supplementary approaches will be considered in consultation with relevant businesses. This companion document provides guidance on the supplementary approaches, summarised as

- Step 1: collect and/or extrapolate data from relevant facilities that may come from different time periods or represent part of a facility.
- Step 2: estimate or forecast data, considering international installations and data, other facilities that use similar technologies or processes, or emissions intensity data that is used in planning or project approval documents.

This guidance does not cover alternative ways for determining prescribed production variables. The Framework Document is the source on how to determine prescribed production variables, whether applicable to new or existing Safeguard facilities.

Background

The Safeguard Mechanism commenced on 1 July 2016 and was reformed in 2023 to reduce emissions at Safeguard facilities by applying a decline rate to facilities baseline on a trajectory consistent with achieving Australia's emissions reduction targets. The Safeguard Mechanism applies to facilities with more than 100,000 tonnes of carbon dioxide equivalent (tonnes CO₂-e) scope 1 (direct) emissions each year. These facilities must keep their net emissions below a legislated baseline. In a simplified way, baselines are worked out for each facility as follows, with the sum below being over the production variables relevant to the facility:

$$\text{Facility baseline} = \sum (\text{Production} \times \text{Emissions Intensity}) \times \text{ERC}$$

The 'production' element of this equation is an annual level of production (or a forecast level of production in the case of calculated baselines) that corresponds to each production variable of a facility (such as tonnes of coal, clinker, alumina etc.). The 'emissions intensity' element that corresponds to the prescribed production variable is fixed over time and could take the form of a **default emissions intensity value** (default EI). These default EIs are determined by the Government and published in the Safeguard Mechanism Rule. The ERC is the emissions reduction contribution representing the baseline decline rate introduced by the 2023 reforms.

Using the Framework Document, the Government has published over 90 default EIs, covering all sectors covered by the Safeguard Mechanism.

Principles of the Framework Document

The Framework Document defines the following principles to guide the selection of production variables and calculation of default emissions intensity values, which also apply in this companion document. In practice, the process involves a balance of these principles.

Principle 1: Effective. Provide a suitable basis for setting baselines that reflect emissions per unit of production.

Principle 2: Consistent. Treat facilities and industries consistently. Provide a suitable reference point that is representative of a sectoral average.

Principle 3: Practical. Be as simple and low cost as possible, avoiding excessive measurement and reporting requirements and building on existing schemes, where possible.

Principle 4: Robust. Be based on high quality data and robust methodology that protects the confidentiality of sensitive industry data.

Recap of default emissions intensity calculation method

The default emissions intensity calculation method in the Framework Document sets out that default values represent the industry average emissions intensity of production, determined as the production-weighted mean using preferably five years of data. This is calculated as follows:

- Calculate the emissions intensity of production for each relevant facility for the five years from 2012-13 to 2016-17 (that is, five data points per facility).
- Determine the production-weighted, average emissions-intensity centred on the median production unit, and targeting around half the production volume.

The standard method set out in the Framework Document further advises:

- Where practical, a minimum of 5 values, from at least 2 facilities should be used. If data is only available for a single facility, it should not be used without that facility's agreement.
- Fewer years may be used if data is not of a sufficient quality. Some facilities or years may be omitted if the data is of a relatively poor quality.
- Emissions data will be drawn from NGERS reports.
- Production data may be drawn from NGERS reports, Renewable Energy Target data or other sources, including public reports and industry databases (for example, AME).
- Relevant facilities include Safeguard Mechanism facilities, and may include other relevant NGERS facilities where data is of a sufficient quality.

The Framework Document sets out that default emissions intensity values should not be adjusted, corrected or discounted for different technologies, geographies, inputs, or practices. This is an important feature of the Safeguard Mechanism's default value framework, and ensures a single default emissions intensity value applies to each output, no matter how it is produced. Setting default emission intensities in this way is fairer because it evenly applies the incentive to manage emissions within and across sectors and also has administrative benefits of being broadly applicable.

Supplementary approaches for setting default emissions intensity values

Maintaining the aim to develop emissions intensity values that are representative of a sectoral average and protect facility specific information, supplementary approaches are set out in two

steps. Step 1 is to source additional data from relevant facilities and Step 2 is to estimate or forecast relevant data. Step 1 should be considered first.

Multiple approaches can be used to acquire the required data and determine the default emissions intensity values, including to cross check the results derived from the different approaches.

Step 1: Source additional data from relevant facilities

Limitations to the standard method may mean there are not enough data points to calculate the default EI. Additional data points may be sourced from relevant facilities as follows:

- Using data from outside the 2012-13 to 2016-17 period. This data may be stand-alone or extrapolated and used to fill gaps in existing data.
- Using emissions data that was not reported to NGERs. For example, data from company records, industry databases, public reports, data estimated consistently with NGER methodologies (such as based on the amount of fossil fuel consumed at a relevant facility in a financial year) or data in applications related to facility specific emissions intensities.
- Extrapolating data points from partial data sources. Including data for part of a year or for part of a facility. Using records from part of a facility is most relevant for a national transport facility.

Step 1 should be carried out with the aim, where practical, of obtaining five data points per relevant facility consistent with the standard method.

Step 2: Use estimates of relevant data

If Step 1 isn't successful, for example when there are limited relevant Australian facilities in operation, then the default EI will need to be derived from estimates or forecasts of production and emissions data.

The Department will engage an independent technical expert to give advice on and assist with implementing Step 2 approaches.

The approaches are listed below in the order in which they will be considered, noting the selected approach(es) should support the emissions-intensity values being calculated using high quality data with a preference for:

- recent data, where it is available and of a sufficient quality
- data that has been subjected to audits, and
- data points derived using higher order methods, where there is evidence that lower order methods are less accurate at the facility level.

This is consistent with the principles of the Framework Document.

Where practical, the data should also represent the range of likely emissions intensities in a sector. This will give confidence the value is being set at the sectoral average.

Step 2 approaches, listed in order of preference:

- **International facilities.** Review information on the emissions intensity for similar international facilities, identifying the elements of the facilities and their operating conditions that are comparable to and different from any relevant Australian facilities.
- **Review other international benchmarking schemes, literature and technical specifications.** This could include looking at databases and specifications for relevant technology, or

equations for chemical reactions in industrial processes that release greenhouse gases. Published default emissions intensities or their equivalent may be available in other countries.

- **Similar technologies.** Consider if representative data could be collected from other industries if the technologies and processes are similar to those of relevant facilities. This could include from domestic and international facilities.
- **Forecast data.** In cases where, for example, the relevant facility is not yet operating, or is still in its ramp-up phase, forecast the expected emissions intensity. Such forecasts may be set out in regulatory approval assessments for major development proposals. Audited forecasted data is preferred.

For overseas data, adjustments may be made to account for significant differences between the nature of overseas jurisdictions and Australian industries.

VERSION HISTORY

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14 December 2023	1.1	Updated for 2023 Safeguard reforms. Formatted for web publication and updated website references.
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