Contents

Abbreviations ........................................................................................................................................... 2
Disclaimer.................................................................................................................................................. 3
Introduction.............................................................................................................................................. 4
What is uncertainty? .................................................................................................................................. 4
What is uncertainty used for? ..................................................................................................................... 4
Uncertainty reporting requirements ............................................................................................................ 5
How to assess uncertainty............................................................................................................................ 5
  Assessing uncertainty where method 1 is used to estimate emissions ...................................................... 5
  Assessing uncertainty where method 2, 3 or 4 is used to estimate emissions ........................................... 5
Reporting uncertainty in the Emissions and Energy Reporting System .................................................... 6
  NGER Uncertainty Calculator ..................................................................................................................... 8
  Assessing uncertainty for industrial process sources with no default uncertainty levels ................. 8
Further information....................................................................................................................................... 9
## Definitions and abbreviations

<table>
<thead>
<tr>
<th>Term</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>NGER</td>
<td>National Greenhouse and Energy Reporting</td>
</tr>
<tr>
<td>NGER Act</td>
<td><em>National Greenhouse and Energy Reporting Act 2007 (Clth)</em></td>
</tr>
<tr>
<td>NGER legislation</td>
<td>NGER Act, NGER Measurement Determination and NGER Regulations</td>
</tr>
<tr>
<td>NGER Measurement Determination</td>
<td><em>National Greenhouse and Energy Reporting (Measurement) Determination 2008 (Clth)</em></td>
</tr>
<tr>
<td>NGER Regulations</td>
<td>National Greenhouse and Energy Reporting Regulations 2008 (Clth)</td>
</tr>
<tr>
<td>Scope 1 emissions</td>
<td>Means the release of greenhouse gas into the atmosphere as a direct result of an activity or series of activities (including ancillary activities) that constitute the facility.</td>
</tr>
<tr>
<td>Scope 2 emissions</td>
<td>Means the release of greenhouse gas into the atmosphere as a direct result of one or more activities that generate electricity, heating, cooling or steam that is consumed by the facility but that do not form part of the facility.</td>
</tr>
<tr>
<td>t CO2-e</td>
<td>Tonnes carbon dioxide equivalence</td>
</tr>
<tr>
<td>EERS</td>
<td>Emissions and Energy Reporting System</td>
</tr>
<tr>
<td>Uncertainty Calculator</td>
<td>NGER Uncertainty Calculator</td>
</tr>
<tr>
<td>Uncertainty Protocol</td>
<td>GHG Protocol guidance on uncertainty assessment in GHG inventories and calculating statistical parameter uncertainty (September 2003 v1.0)</td>
</tr>
</tbody>
</table>
Disclaimer

This guideline should be read in conjunction with the *National Greenhouse and Energy Reporting Act 2007*, the National Greenhouse and Energy Reporting Regulations 2008 and the National Greenhouse and Energy Reporting (Measurement) Determination 2008 (current versions can be found on the [Federal Register of Legislation website](https://federalregister.gov.au)). Changes to the legislation may affect the information in this guideline. This guideline is not intended to comprehensively deal with its subject area or to provide legal advice. Entities are responsible for determining their obligations under the law and for applying the law to their individual circumstances. If you have any concerns, you should seek independent professional advice.
Introduction

Entities registered under the National Greenhouse and Energy Reporting Act 2007 (NGER Act) must submit annual reports to the Clean Energy Regulator. Corporations reporting under section 19 of the NGER Act must report scope 1 and scope 2 emissions, energy production and energy consumption data where one or more of the thresholds under section 13 of the NGER Act are met. Entities reporting under section 22G and section 22X of the NGER Act must also report scope 1 and scope 2 emissions, energy production and energy consumption data.

A report under section 19, 22G or 22X of the NGER Act with scope 1 emissions of more than 25 kilotonnes of CO₂-e from the combustion of a fuel type, or from a source other than fuel combustion at a facility must include an assessment of uncertainty associated with the combustion of the fuel type or the source. Scope 1 emissions are the release of greenhouse gases into the atmosphere as a direct result of an activity, or series of activities (including ancillary activities) that constitute the facility. Sources are defined in section 1.10 of the NGER Measurement Determination and fuel types are set out in Schedule 1 of the NGER Regulations.

This guide provides information about the reporting requirements for uncertainty under the NGER Act. This includes information about:

- background to reporting uncertainty
- reporting requirements
- methods available for uncertainty calculation, and
- how to report uncertainty using the Emissions and Energy Reporting System (EERS).

What is uncertainty?

Uncertainty can be described as the amount of variation in a numerical result consistent with observations. Statistical uncertainty, as measured under NGER legislation, accounts for the level of uncertainty that may be attributed to sampling and statistical variation. Uncertainty is to be reported at the 95 per cent confidence level. For example, an uncertainty assessment of seven per cent identifies that with 95 per cent confidence the true value of scope 1 emissions is within seven per cent of the reported value. From basic statistical principles, the reported figure is more likely to lie near the true value than at the outer limits of the uncertainty range.

What is uncertainty used for?

The uncertainty data provided under NGER legislation will help inform the uncertainty estimates published in Australia’s National Greenhouse Accounts, including:

- meeting Australia’s reporting commitments under the United Nations Framework Convention on Climate Change (UNFCCC)
- tracking progress against Australia’s targets under various international agreements, and
- informing policy makers and the public.

The uncertainty data can also assist corporations in understanding the uncertainties associated with their emission estimates, informing their allocation of resources and their choice of methods under the NGER legislation. It is important to note that the reported uncertainty data is not published annually as part of section 24 of the NGER Act.
More information on the National Greenhouse Accounts can be found on the Department of the Environment and Energy website.

Uncertainty reporting requirements

Regulations 4.08 and 4.17A of the National Greenhouse and Energy Reporting Regulations 2008 (NGER Regulations) detail the thresholds for reporting uncertainty associated with estimated scope 1 emissions from combustion of fuel type, or from a source other than combustion, at a facility. Uncertainty must be reported for a facility if the scope 1 emissions from the combustion of an energy type or for a source are 25,000 t CO2-e or more in a reporting year. Uncertainty is not required to be aggregated to the facility and corporation or group levels.

When reporting under regulation 4.28, a Network/Pipeline is treated as a simple ‘facility’ and is therefore subject to uncertainty reporting requirements.

Uncertainty is not required to be reported for facility aggregates or for estimates of scope 1 emissions reported as incidental under NGER regulations 4.26 and 4.27.

How to assess uncertainty

Uncertainty is required to be assessed in accordance with Chapter 8 of the National Greenhouse and Energy Reporting (Measurement) Determination 2008 (NGER Measurement Determination). Part 8.3 of the NGER Measurement Determination sets out how to assess uncertainty where method 1 is used to estimate scope 1 emissions. Part 8.4 of the NGER Measurement Determination sets out the requirements for assessing uncertainty where method 2, 3 or 4 is used to estimate scope 1 emissions.

Assessing uncertainty where method 1 is used to estimate emissions

Part 8.3 of the NGER Measurement Determination provides default statistical uncertainty levels which can be used to calculate the uncertainty for emissions estimated using method 1. Default uncertainty levels in the NGER Measurement Determination are either aggregated uncertainty levels or uncertainty levels for parameters needed to calculate the emissions, such as energy content or emission factor.

Part 8.3 also allows uncertainty levels to be worked out in accordance with the GHG Protocol guidance on uncertainty assessment in GHG inventories and calculating statistical parameter uncertainty (September 2003 v1.0), known as the Uncertainty Protocol.

Assessing uncertainty where method 2, 3 or 4 is used to estimate emissions

Part 8.4 of the NGER Measurement Determination sets out how to assess uncertainty where method 2, 3 or 4 is used to estimate scope 1 emissions, which requires uncertainty to be assessed in accordance with the Uncertainty Protocol.
Reporting uncertainty in the Emissions and Energy Reporting System

In order to report uncertainty in the Emissions and Energy Reporting System (EERS), reporters must first ensure all relevant activity data has been entered into EERS.

To report uncertainty, click on the 'Data Entry' tab and then click on the 'Report Uncertainty' button found under the entity search function (Figure 1).

Figure 1: ‘Report Uncertainty’ button

The ‘Facility Uncertainty’ reporting screen will appear (see Figure 2) which shows all sources and fuels that exceed the uncertainty reporting threshold for each facility.

The Facility Uncertainty reporting screen includes an ‘Auto-calculate’ function where method 1 has been used to estimate scope 1 emissions, which when selected calculates uncertainty using default values from the NGER Measurement Determination for the fuel type or source. Reporters can choose which method 1 fuel or source items they want to exclude from auto-calculation by unselecting the auto-calculate function (see Figure 2). Note that the auto-calculate function will only be available where only method 1 was used to estimate emissions for the fuel and source item.

To return to the Reporting Entity Information screen, click the 'Exit' button.

**Note:** When using the auto-calculate function, EERS will only calculate the uncertainty after clicking the ‘Auto-calculate’ button (See Figure 2).
Figure 2: ‘Facility Uncertainty’ screen with ‘Auto-calculate’ function

To enter, modify or remove any reported uncertainty value, click the edit symbol in the 'User input' column. This will open the ‘Add/modify entry—Uncertainty’ screen (shown in Figure 3).

On this screen, reporters should enter the uncertainty related to the fuel or source in the 'Uncertainty Percentage' field on the left hand side of the screen. Reporters may choose to use the Clean Energy Regulator’s Uncertainty Calculator to calculate and report uncertainty in accordance with the NGER Measurement Determination.

Figure 3: ‘Add/modify—Uncertainty’ entry screen
Note: It is important to remember to perform uncertainty reporting last, because if any activities relevant to uncertainty reporting are adjusted, uncertainty will need to be re-entered.

**NGER Uncertainty Calculator**

The Clean Energy Regulator has provided a spreadsheet tool that can help reporters assess uncertainty.

The Uncertainty Calculator and the NGER Uncertainty Calculator User Guide are available for download on the [Clean Energy Regulator’s website](#).

Note: It is not compulsory to use the Uncertainty Calculator. Reporters may use their own method, in line with the requirements of the NGER Measurement Determination.

**Assessing uncertainty for industrial process sources with no default uncertainty levels**

The table below (Table 1) specifies industrial process sources that do not have default uncertainty levels in the NGER Measurement Determination. If emissions from these sources involve the combustion of a fuel, then default fuel combustion uncertainty factors may be used for emissions attributable to each fuel. Otherwise, the auto-calculate uncertainty function will use a default uncertainty value of 10 per cent for the source in accordance with the ‘worksheet’ of the Uncertainty Protocol.

<table>
<thead>
<tr>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium cyanide production</td>
</tr>
<tr>
<td>Soda ash production</td>
</tr>
<tr>
<td>Ammonia production</td>
</tr>
<tr>
<td>Carbide production</td>
</tr>
<tr>
<td>Chemical or mineral production (other than carbide production) using a carbon reductant or carbon anode</td>
</tr>
<tr>
<td>Iron, steel or other metal production using an integrated metalworks</td>
</tr>
<tr>
<td>Ferroalloys production</td>
</tr>
<tr>
<td>Aluminium production (where activity is emissions from the production of baked carbon anodes)</td>
</tr>
<tr>
<td>Other metals production</td>
</tr>
</tbody>
</table>
Further information

For more information regarding reporting uncertainty, please contact the Clean Energy Regulator.

Email: reporting@cleanenergyregulator.gov.au

Phone: 1300 553 542 within Australia

Web: www.cleanenergyregulator.com.au