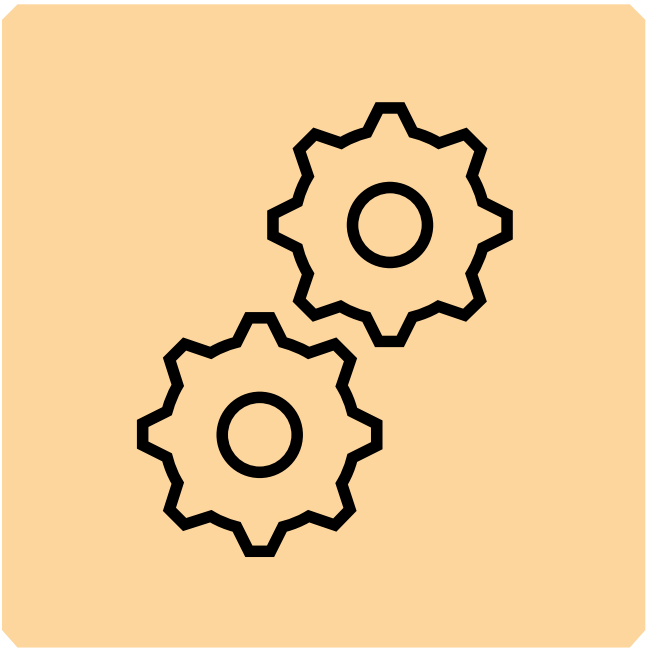
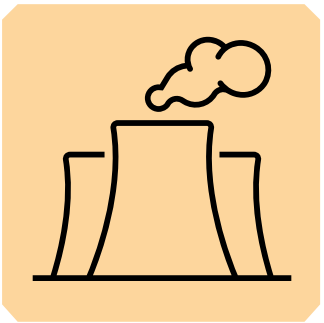
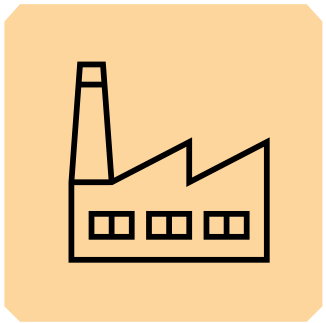
Australian Government
Clean Energy Regulator

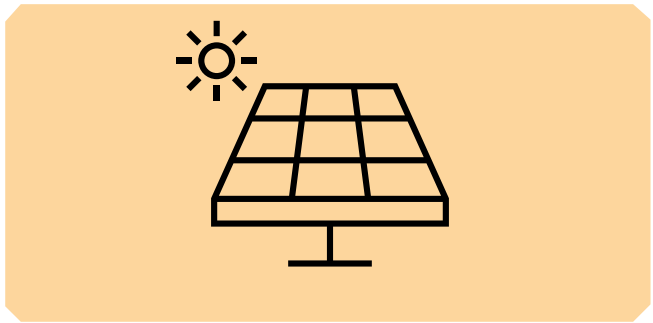


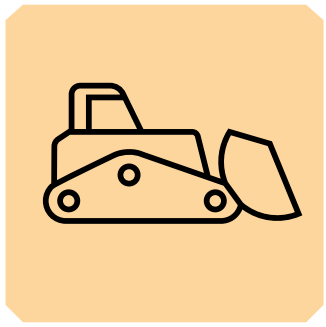
Emissions and Energy Threshold Calculator User Guide

July 2025









C E R National Greenhouse and Energy Reporting

Contents

Definitions and abbreviations

Term	Meaning
Consumption of energy	In relation to a facility, the use or disposal of energy from the operation of the facility, including: » own-use » losses in extraction, production and transmission. See regulation 2.26 of the NGER Regulations[1].
EERS	Emissions and Energy Reporting System
Energy	Includes the fuels and other energy commodities listed in Schedule 1 of the NGER Regulations.
Facility	Has the meaning given by section 9 of the NGER Act[2]. For more information on defining a facility under the NGER Scheme, see What is a Facility[3].
Fuel	A substance mentioned at items 1–57 in Schedule 1 of the NGER Regulations[1].
kL	Kilolitres
NGER	National Greenhouse and Energy Reporting
NGER Act	*National Greenhouse and Energy Reporting Act 2007*
NGER Measurement Determination	National Greenhouse and Energy Reporting (Measurement) Determination 2008
NGER Regulations	National Greenhouse and Energy Reporting Regulations 2008
Reporter	An entity required to report emissions and energy production and consumption to the Clean Energy Regulator under section 19, 22G, or 22X of the NGER Act
Scope 1 emissions	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.

[1] https://www.legislation.gov.au/F2008L02230/latest/versions
[2] https://www.legislation.gov.au/C2007A00175/latest/versions
[3] https://cer.gov.au/schemes/national-greenhouse-and-energy-reporting-scheme/assess-your-obligations#what-is-an-nger-facility

Term	Meaning
Scope 2 emission	Per NGER Regulation 2.24, *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.*
t CO_2-e	Tonnes carbon dioxide equivalence

Terms in NGER legislation may have specific meanings within the law. These key words and phrases are normally identified under a heading such as Definitions, Interpretation or Dictionary or in other parts of the document.

For more information on interpreting legislation see Federal Register of Legislation - Understanding Legislation[4].

Important note

The factors and formulas in the Emissions and Energy Threshold Calculator (Threshold Calculator) are based on the National Greenhouse and Energy Reporting (Measurement) Determination 2008[5] (Measurement Determination). The Measurement Determination is updated periodically, and users should note that some factors and formulas are different for earlier reporting years and may change in future years.

The Threshold Calculator is provided for information only and its use must not be construed as determinative of whether any of the thresholds for and legislative requirements under the *National Greenhouse and Energy Reporting Act 2007*[6] (NGER Act) and associated regulations have been met. The Threshold Calculator must not be used as a substitute for obtaining independent professional advice and/or undertaking independent investigations.

The Clean Energy Regulator (CER) and the Australian Government (the custodians) will not be liable for any loss, damage, expense, or cost incurred by any person or organisation arising out of the use of the Threshold Calculator, the information contained in, or derived from, the Threshold Calculator or the non-availability of the Threshold Calculator. The custodians do not warrant the accuracy, currency, reliability, or completeness of the Threshold Calculator, and in no event will the custodians be liable for any direct, incidental, or consequential loss or damage resulting from the use of the Threshold Calculator, or the information provided through the Threshold Calculator or the availability or non-availability of the Threshold Calculator.

[4] https://www.legislation.gov.au/help-and-resources/understanding-legislation/reading-legislation
[5] https://www.legislation.gov.au/Series/F2008L02309
[6] https://www.legislation.gov.au/Series/C2007A00175

Disclaimer

This guideline has been developed by the Clean Energy Regulator (CER) to assist entities to comply with their reporting obligations under the *National Greenhouse and Energy Reporting Act 2007*[7] (NGER Act) and associated legislation.

This guideline only applies to the 2024–25 NGER reporting year and should be read in conjunction with the NGER Act, National Greenhouse and Energy Regulations 2008[8] (NGER Regulations), and National Greenhouse and Energy Reporting (Measurement) Determination 2008[9] (NGER Measurement Determination), as in force for this reporting period. These laws and their interpretation are subject to change, which may affect the accuracy of the information contained in the guideline.

The guidance provided in this document is not exhaustive, nor does it consider all circumstances applicable to all entities. This guidance is not intended to comprehensively deal with its subject area, and it is not a substitute for independent legal advice. Although entities are not bound to follow the guidance provided in this document, they must ensure they meet their obligations under the National Greenhouse and Energy Reporting (NGER) Scheme[10] at all times. The agency encourages all users of this guidance to seek independent legal advice before taking any action or decision based on this guidance.

CER and the Australian Government will not be liable for any loss or damage from any cause (including negligence) whether arising directly, incidentally, or as consequential loss, out of or in connection with, any use of this guideline or reliance on it, for any purpose.

If an entity chooses to meet their obligations under the NGER Scheme in a manner that is inconsistent with the guidance provided in this document, CER, or an independent auditor, may require the entity to demonstrate that they are compliant with requirements of the NGER Act, NGER Regulations, and/or the NGER Measurement Determination. Entities are responsible for determining their obligations under the law and for applying the law to their individual circumstances.

[7] https://www.legislation.gov.au/Series/C2007A00175
[8] https://www.legislation.gov.au/Series/F2008L0223
[9] https://www.legislation.gov.au/Series/F2008L02309
[10] http://www.cleanenergyregulator.gov.au/NGER/Pages/default.aspx

2024–25 updates

Changes in this document for the 2024–25 reporting year:

- Minor stylistic and formatting changes have been made to this document

Introduction

The Threshold Calculator is a tool that enables operators to estimate emissions and energy consumption/production to assess if a controlling corporation could have an obligation to register and report under the NGER Act.

This guide provides step-by-step instructions and relevant background information to assist operators using the Threshold Calculator.

What does the Threshold Calculator do?

The Threshold Calculator can be used to obtain an estimate of scope 1 and scope 2 greenhouse gas emissions, energy production and energy consumption based on full, or part-year data entered by the operator. It also considers other direct (scope 1) greenhouse gas emissions from non-combustion sources such as waste treatment. For some of these sources, the operator will need to directly enter an estimate of the greenhouse gas emissions.

How do I access the Threshold Calculator?

The Threshold Calculator[11] is available on the CER website and can be accessed without a username or password. We recommend that you download and save it onto your computer before entering data. Users will remain anonymous, and any data entered for a specific session will only be retained if the user saves it onto their computer.

If you have issues accessing the Threshold Calculator or would like to give us feedback on the tool, please call us on 1300 553 542 or email cer-nger-reporting@cer.gov.au.

Greenhouse Gas and Energy Reporting

The 2 types of thresholds that trigger a liability under the NGER Act are 'facility' thresholds and 'corporate' thresholds. Both types have a greenhouse gas threshold and an energy threshold.

Table 1: Facility and corporate thresholds

Facility threshold	Corporate threshold
25,000 tonnes or more of total greenhouse gases (carbon dioxide equivalence (CO_2-e)), or production or consumption of 100,000 gigajoules (GJ) or more of energy.	50,000 tonnes or more of total greenhouse gases (CO_2-e), or production or consumption of 200,000 GJ or more of energy.

Total annual emissions is the sum of the direct (scope 1) and indirect (scope 2) emissions.

[11] https://cer.gov.au/schemes/national-greenhouse-and-energy-reporting-scheme/report-emissions-and-energy/nger-calculators

Data outputs from the Threshold Calculator are presented as scope 1, scope 2, total annual emissions (with sulphur hexafluoride, perfluorocarbons and hydrofluorocarbons excluded), and/or annual energy consumed or produced.

Emissions data is separated into scope 1 and scope 2 emissions. Energy consumption and production are presented as a total only. Where part-year data has been reported, the Threshold Calculator will automatically display extrapolated full-year emissions and energy data in addition to the amount based on entered data.

If the facility and/or corporate thresholds are triggered by combined scope 1 and scope 2 emissions, energy production or energy consumption, registration under the NGER Act is required. If a user's assessment indicates that their facility and/or corporation may have had registration and reporting obligations for a previous reporting year, they must contact the CER on 1300 553 542 immediately.

See the National Greenhouse and Energy Reporting scheme[12] for more information on the NGER Act, registration and reporting obligations.

Using the Threshold Calculator

Start page

The Start page displays information about the Threshold Calculator and provides links to NGER reporting guides[13] on CER's website. Please read the information before entering any data.

Facility worksheets (Facility 1 to 6)

The Threshold Calculator allows the reporting of emissions and energy data for a maximum of 6 facilities. If you need to report for more than 6 facilities, please call the CER on 1300 553 542 or email cer-nger-reporting@cer.gov.au

For each facility, you will need to select if you are reporting full year (default) or part-year data. If you are intending to enter part-year data, please enter the number of days in the field to the right of the drop-down menu.

The Threshold Calculator will calculate full-year data based on the amounts you have entered. The extrapolated data will appear in the Output screen.

Figure 1: Screenshot of facility reporting for full year

[12] https://cer.gov.au/schemes/national-greenhouse-and-energy-reporting-scheme
[13] https://cer.gov.au/schemes/national-greenhouse-and-energy-reporting-scheme/report-emissions-and-energy/nger-reporting-guides

Emissions and energy input

You can enter data under the following sources:

- Transport fuel combustion: this covers the emissions and energy calculations for the combustion of fuels for transport activities. For example, fuels combusted in ships, planes, trains and road registered vehicles.
- Non-transport fuel combustion: this describes the emissions and energy calculations for the combustion of fuels for non-transport activities. This includes fuels combusted in activities that do not meet the criteria of transport. For example, fuels in vehicles that are not road registered.
- Purchased electricity: if you purchase electricity that has been generated outside of your facility, (for example from the main grid in a state/territory) then you will need to enter the amount as purchased electricity. This will result in scope 2 emissions. If you consume electricity that has been produced onsite, the amount will be entered as consumed without combustion. There are no emissions associated with electricity that is consumed without combustion, but the energy consumption is reported.
- Consumed without combustion: certain fuels and energy sources can be consumed without combustion. For example, natural gas can be consumed as a feedstock, solvents may be consumed in painting activities and electricity generated onsite is also consumed. There are no emissions from fuels and energy sources consumed without combustion, but energy consumption is reported.
- Electricity/energy produced: the production of electricity and other energy products contributes to the reporting threshold of a facility/corporation and is, therefore, reportable. Energy sources include electricity generated onsite, saleable coal, crude oil and other fuels and energy sources listed in the 'electricity/energy produced' drop-down menu.
- Fugitive emissions (direct entry): fugitive emissions are associated with several industry sectors including, but not limited to:
  - » mining, for example, methane released as part of coal extraction
  - » oil and gas, for example, release of gas from venting
  - » waste, for example, emissions from decomposition of solid waste or from wastewater treatment.

The Threshold Calculator is not capable of dealing with the complex calculations associated with estimating fugitive emissions, so direct entry is the only option available. See NGER calculators[14] and NGER reporting guides[15] to assist with calculating fugitive emissions.

Reporting under these sources is covered in more detail below.

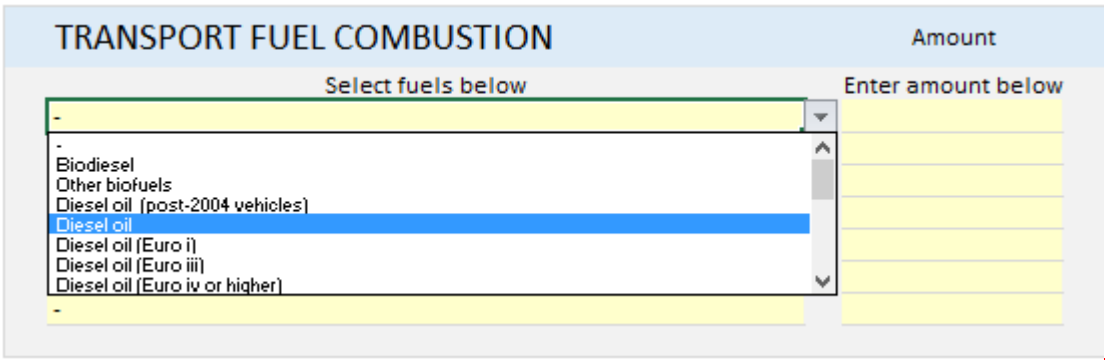
Transport fuel combustion

Emissions and energy are calculated based on the amount of a particular transport fuel that has been combusted. The list of transport fuels is based on those listed in Schedule 1 of the Measurement Determination. You can choose up to 7 transport fuels. If you need more transport fields, please email CER at cer-nger-reporting@cer.gov.au

[14] https://cer.gov.au/schemes/national-greenhouse-and-energy-reporting-scheme/report-emissions-and-energy/nger-calculators

[15] https://cer.gov.au/schemes/national-greenhouse-and-energy-reporting-scheme/report-emissions-and-energy/nger-reporting-guides

Figure 2: Screenshot of transport fuels for combustion



To commence, select the transport fuel from the drop-down menu.

If you select a liquid fuel, the Threshold Calculator will automatically select kilolitres (kL) as the unit of measurement. If you select a gaseous fuel, the Threshold Calculator will automatically select cubic metres (m^3) as the unit of measurement. The units of measurement cannot be changed.

If you measure the amount of your gaseous fuels in GJ, use the gas conversion calculator (located in the Convert and Lookup screen) to convert the amount to m^3 before entering the amount.

Next, enter the amount of fuel combusted in the Amount field. The Threshold Calculator will calculate the emissions and energy associated with the amount of fuel combusted.

Figure 3: Screenshot of transport fuel combustion calculations

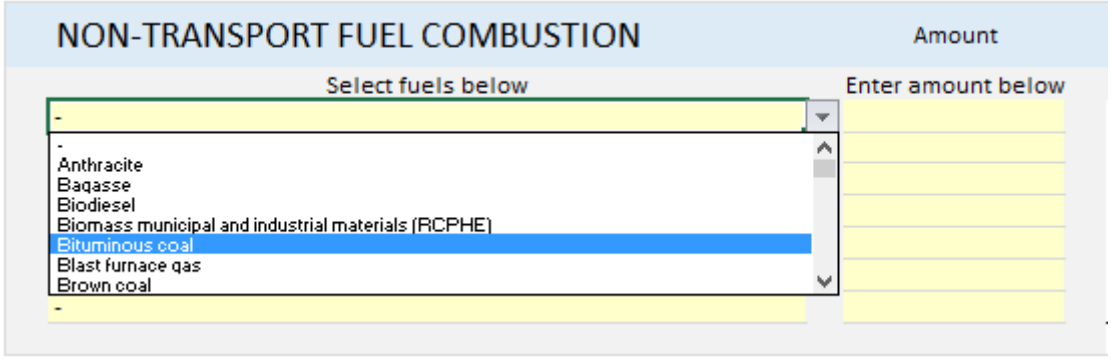
Amount	Unit	Greenhouse gases CO_2	Greenhouse gases CH_4	Greenhouse gases N_2O	Total scope 1 emissions (t CO_2-e)	Total energy (GJ) (Gigajoules)
Enter amount below						
1000.000	kL	2,698	4	15	2,717	38,600
	-					
	-					
	-					
	-					
	-					
	-					
	Total Scope 1 transport emissions (t CO_2-e) and energy consumed (GJ)				**2,717**	**38,600**

Repeat the above for each transport fuel combusted at your facility.

Non-transport fuel combustion

Emissions and energy are calculated based on the amount of a particular non-transport fuel that has been combusted. The list of non-transport fuels is based on those listed in the Measurement Determination. You can choose up to 7 fuels. If you need more fuel fields, please email CER at cer-nger-reporting@cer.gov.au

Figure 4: Screenshot of non-transport fuels for combustion



To commence, select the non-transport fuel from the drop-down menu.

If you select a liquid fuel, the Threshold Calculator will automatically select kL as the unit of measurement.

If you select a solid fuel, the Threshold Calculator will automatically select tonnes as the unit of measurement.

If you select a gaseous fuel, the Threshold Calculator will automatically select m^3 as the unit of measurement. The units of measurement cannot be changed. If you measure the amount of your gaseous fuels in GJ, you can use the gas conversion calculator (located in the Convert and Lookup screen) to convert the amount to m^3.

Next, enter the amount of fuel combusted in the Amount field. The Threshold Calculator will calculate the emissions and energy associated with the amount of fuel combusted.

Figure 5: Screenshot of non-transport fuel combustion calculations

Amount	Unit	Greenhouse gasses CO_2	CH_4	N_2O	Total scope 1 emissions (t CO_2-e)	Total energy (GJ) (Gigajoules)
Enter amount below						
1000.000	tonnes	2,430	1	5	2,436	27,000
	-					
	-					
	-					
	-					
	-					
	-					
	Total Scope 1 non-transport emissions (t CO_2-e) and energy consumed (GJ)				**2,436**	**27,000**

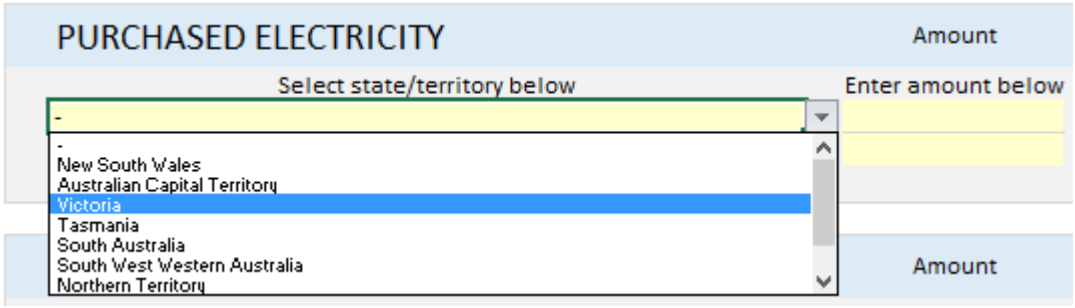
Repeat the above steps for each non-transport fuel combusted at your facility.

Purchased electricity

Purchased electricity is usually provided by the main electricity grid, that is, the grid that supplies the largest population in a state or territory. For example, the main grid in Western Australia is the South West Interconnected System.

To report the purchase of electricity, first select the state your facility is located in. Each state/territory has its own emission factor that reflects how electricity is generated.

Figure 6: Screenshot showing how to select state/territory emissions factors for purchased electricity



The Threshold Calculator enables the operator to select electricity purchased either from the main grid in a state/territory or from another source.

If the facility/corporation purchases electricity from the main grid and from a grid other than the main grid, select 'Not purchased from the main grid' using the drop-down menu.

If 'Not purchased from the main grid' has been selected, use the default emission factor or the one provided by the specific electricity grid supplier.

Figure 7: Screenshot showing how to select non-state/territory emissions factors for purchased electricity

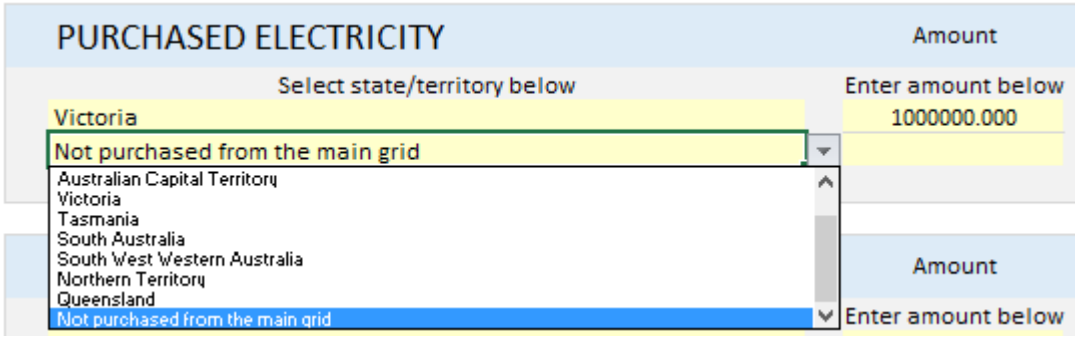


Figure 8: Screenshot of purchased electricity calculations

Amount	Unit	Emission factor EF		Total scope 2 emissions ($t CO_2$-e)	Total energy (GJ) (Gigajoules)
Enter amount below					
1000000.000	kWh	0.770		770	3,600
500000.000	kWh	0.560	You can enter a custom factor for EF	280	1,800
	Total Scope 2 emissions ($t CO_2$-e) and energy consumed (GJ)			**1,050**	**5,400**

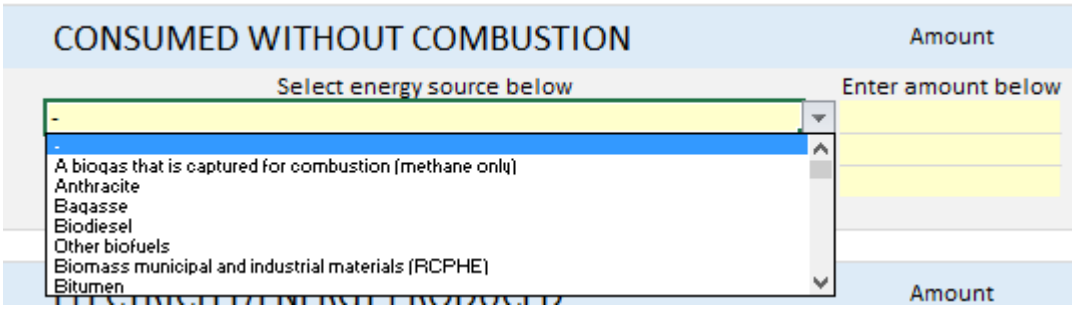
Next, enter the amount of electricity purchased in the amount fields. Electricity is always reported in kilowatt hours (kWh). If you measure electricity in GJ, you can use the electricity conversion calculator (located in the Convert and Lookup screen) to convert the amount to kWh.

Consumed without combustion

A fuel or energy source can be consumed without combustion. This can occur when a fuel is used as a feedstock in a manufacturing process, or when renewable energy is consumed to generate electricity (for example, wind power consumed to drive turbines).

There are no emissions associated with fuel or energy consumed without combustion. However, energy consumption is reportable and contributes to the overall emissions and energy consumption threshold of a facility/corporation.

Figure 9: Screenshot of fuels and other energy sources consumed without combustion



To commence, select the fuel/energy source from the drop-down menu.

If you select a liquid fuel, the Threshold Calculator will automatically select kL as the unit of measurement.

If you select a solid fuel, the Threshold Calculator will automatically select tonnes as the unit of measurement.

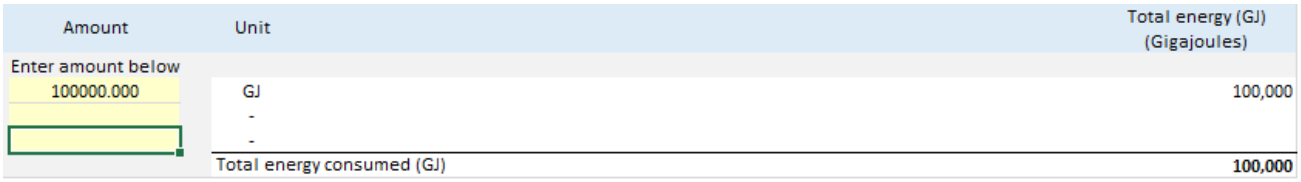
If you select a gaseous fuel, the Threshold Calculator will automatically select cubic metres (m^3) as the unit of measurement.

If you select a renewable energy source used to generate electricity, the unit will be GJ.

The units of measurement cannot be changed. If you measure the amount of your gaseous fuels in GJ, you can use the gas conversion calculator (located in the Convert and Lookup screen) to convert the amount to m^3.

Next, enter the amount of fuel/energy consumed in the Amount field. The Threshold Calculator will calculate the energy associated with the amount of fuel/energy consumed.

Figure 10: Screenshot of amount of fuel/energy

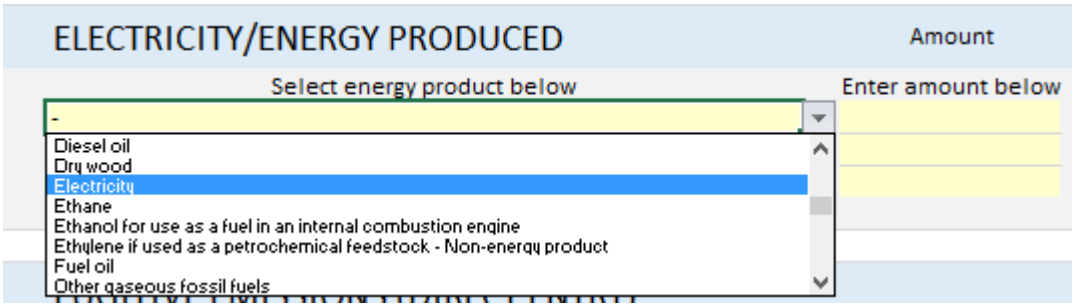


Electricity/energy produced

Energy production at a facility is reportable under the NGER legislation. Energy production can include electricity generated and either used by the facility or sent to a grid. Other energy production sources include saleable coal, crude oil and other fuels and energy sources listed in the electricity/energy produced drop-down menu.

There are no emissions associated with energy produced. However, energy production is reportable and contributes to a facility's reporting threshold.

Figure 11: Screenshot of types of energy (including electricity) can be produced



To commence, select the energy source from the drop-down menu.

The unit of measurement used by the calculator will depend on the type of fuel selected. The units of measurement cannot be changed. If you need to convert between GJ and either m^3 or kWh, you can use the conversion calculators (located in the Convert and Lookup screen).

Next, enter the amount of electricity/energy produced in the 'Amount' field. The Threshold Calculator will calculate the energy associated with the amount of fuel/energy produced.

Figure 12: Screenshot of calculations for electricity/energy production

Amount	Unit	Total energy (GJ) (Gigajoules)
Enter amount below		
1000000.000	kWh	3,600
	-	
	-	
	Total energy produced (GJ)	**3,600**

Fugitive emissions (direct entry)

Fugitive emissions are associated with certain activities including coal mining, oil and gas production and distribution and waste. The Threshold Calculator is not able to perform the calculations associated with fugitive emissions meaning that direct entry based upon measurement of the fugitive emissions is required.

To enter fugitive emissions, first enter the type of gas in the appropriate field (optional). The Threshold Calculator permits the entry of 2 sources of fugitive emissions. If you need more fugitive emission sources, please email CER at cer-nger-reporting@cer.gov.au.

Figure 13: Screenshot of fugitive emissions (direct entry)

FUGITIVE EMISSIONS (DIRECT ENTRY)

Enter gas below
Methane from wastewater

Next, enter the amount of each greenhouse gas in tonnes of CO_2-e.

Figure 14: Screenshot of amount of greenhouse gasses emissions calculations

	Greenhouse gasses (t CO_2-e)			Total scope 1 emissions (t CO_2-e)
	CO_2	CH_4	N_2O	
	Enter custom emissions			
	0.000	791.000	0.000	791
	0.000	0.000	0.000	0
Total Scope 1 emissions (t CO_2-e)				**791**

The Threshold Calculator will add up all the greenhouse gases from fugitive emissions and include them in the total scope 1 emissions from the facility/corporation.

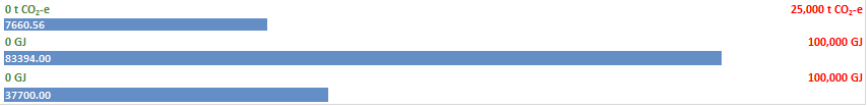
Once all emissions and energy data has been entered for the facility, the Threshold Calculator will display the total emissions and energy consumed/produced as entered. In addition, if you have entered part-year data for emissions and energy reporting, the Threshold Calculator will display the full-year data based on the amounts you have entered for the period.

Figure 15: Screenshot of totals of facility emissions and energy consumed/produced

FACILITY SUMMARY

	Reported emissions		Calculated full-year emissions
Total Scope 1 emissions	6830	t CO_2-e	6830 t CO_2-e
Total Scope 2 emissions	830	t CO_2-e	830 t CO_2-e
TOTAL EMISSIONS	**7661**	**t CO_2-e**	7661 **t CO_2-e**
TOTAL ENERGY CONSUMED	**83394**	**GJ**	**83394 GJ**
TOTAL ENERGY PRODUCED	**37700**	**GJ**	**37700 GJ**

FACILITY REPORTING THRESHOLDS



The Threshold Calculator will also show a graphical display showing how close the facility is to triggering emissions and energy thresholds. The Threshold Calculator will also display a message if thresholds are close to being, or have been, met.

Repeat the above process for each facility.

Output

Based on the data entered, the Threshold Calculator will calculate and display the greenhouse gas emissions, measured in t CO_2-e and energy consumption/production for each facility. The data is presented as scope 1, scope 2, total emissions, energy produced, and energy consumed.

Two tables are displayed on the 'Corporation Output' screen. The top table displays the emissions and energy data based on the data entered in the previous screens. The lower table displays the extrapolated full year data for all facilities. This will indicate the full year emission and energy data for facilities where part-year data has been entered.

Figure 16: Screenshot of emissions & energy totals for each facility

CORPORATION EMISSIONS & ENERGY CALCULATOR

DATA AS ENTERED

	Scope 1 emissions	Scope 2 emissions	TOTAL EMISSIONS	ENERGY CONSUMED	ENERGY PRODUCED	DAYS COVERED
Facility 1	2,722	83,000	85,722	412,060	36,000	365
Facility 2	0	0	0	0	0	365
Facility 3	0	0	0	0	0	365
Facility 4	0	0	0	0	0	365
Facility 5	0	0	0	0	0	365
Facility 6	0	0	0	0	0	365
Total for corporation - as entered	2,722	83,000	**85,722**	**412,060**	**36,000**	

FULL-YEAR DATA

	Scope 1 emissions	Scope 2 emissions	TOTAL EMISSIONS	ENERGY CONSUMED	ENERGY PRODUCED
Facility 1	2,722	83,000	85,722	412,060	36,000
Facility 2	0	0	0	0	0
Facility 3	0	0	0	0	0
Facility 4	0	0	0	0	0
Facility 5	0	0	0	0	0
Facility 6	0	0	0	0	0
Total for corporation - full year	2,722	83,000	**85,722**	**412,060**	**36,000**

The Threshold Calculator will also display:

- which thresholds have been triggered for each facility and the corporation
- a graphical display showing how close the corporation is to triggering emissions and energy thresholds
- a message if thresholds are close to being, or have been, met.

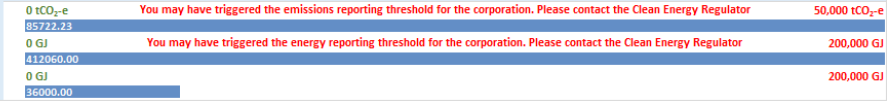
The thresholds are based on full-year data as entered or full-year data extrapolated from entered part-year data.

Figure 17: Screenshot of annual reporting thresholds that have been met/exceeded

ANNUAL REPORTING THRESHOLDS

	EMISSIONS THRESHOLD	ENERGY CONSUMED THRESHOLD	ENERGY PRODUCED THRESHOLD
Facility 1	Threshold met	Threshold met	Not met
Facility 2	Not met	Not met	Not met
Facility 3	Not met	Not met	Not met
Facility 4	Not met	Not met	Not met
Facility 5	Not met	Not met	Not met
Facility 6	Not met	Not met	Not met
Corporation	**Threshold met**	**Threshold met**	**Not met**

ANNUAL CORPORATE REPORTING THRESHOLDS



Next steps

The Threshold Calculator is for information only and its use must not be construed as determinative of whether any of the thresholds for and legislative requirements under NGER Act and the associated Regulations have been met. It must not be used as a substitute for obtaining independent professional advice and/or undertaking independent investigations.

If you have determined you are liable to report under the NGER Act, you must register with the CER. See Register and deregister[16] for information on how to register.

More information

Email: cer-nger-reporting@cer.gov.au

Phone: 1300 553 542 within Australia

Web: www.cer.gov.au

[16] https://cer.gov.au/schemes/national-greenhouse-and-energy-reporting-scheme/register-nger-reporter