Report Id

Emission and Energy Factors

Created On

R1084-156-13000535

Coles

Wed, 29 Mar 2023 18:18:38 +10:00

Report Overview

The Emission and Energy Factors report provides the details of how the CO2e Factors are determined including the source reference for the factors and any assumptions made.

Only factors relating to the available activity data are reflected. Furthermore, not all fields are populated for each factor (for example, % uncertainty is only applicable to selected factors covered by specific regulatory reporting regimes).

Each Factor is reviewed on a regular basis as indicated.

Due to licensing agreement with IEA (International Energy Agency), this report is only available in PDF format.

Emission and Energy Factors

Coles

Factor Name:	Waste - Municipal Solid
Factor ID:	40562
Region:	Australia - All Regions
Data Type:	Waste - Municipal Solid [t]
Sub Type:	
Scope:	Scope 3
Unit:	t
Factor Set:	Managed - NGERS
Total CO2e (kgCO2e/unit):	1600.00000000
CO2 (kgCO2e/unit):	
CH4 (kgCO2e/unit):	
N2O (kgCO2e/unit):	
Indirect (kgCO2e/unit):	
BioCO2e (kgCO2e/unit):	
Energy (GJ/unit):	n/a
Mass (kg/unit):	1000.00000000
Volume (L/unit):	n/a
Area (m2/unit):	n/a
Distance (m/unit):	n/a
Uncertainty Factor (%):	
Review On:	01 Sep 2022
Effective From:	01 Jul 2021
Effective To:	
Published From:	01 Jul 2021
Published To:	
Description:	Waste emission factors for total waste disposed to landfill by broad waste stream category - Municipal Solid Waste
Factor Source:	NGA workbook (where applicable), published Aug 2021.
Notes:	

Start Period	End Period
2022/07/01	2023/06/30

Emission and Energy Factors

Coles

Factor Name:	77 - Electricity - 22-23 - Australian Capital Territory
Factor ID:	44081
Region:	Australia - Australian Capital Territory
Data Type:	Electricity [kWh]
Sub Type:	
Scope:	Scope 2
Unit:	kWh
Factor Set:	Managed - NGERS
Total CO2e (kgCO2e/unit):	0.73000000
CO2 (kgCO2e/unit):	
CH4 (kgCO2e/unit):	
N2O (kgCO2e/unit):	
Indirect (kgCO2e/unit):	0.06000000
BioCO2e (kgCO2e/unit):	
Energy (GJ/unit):	0.00360000
Mass (kg/unit):	n/a
Volume (L/unit):	n/a
Area (m2/unit):	n/a
Distance (m/unit):	n/a
Uncertainty Factor (%):	
Review On:	01 Sep 2023
Effective From:	01 Jul 2022
Effective To:	
Published From:	01 Jul 2022
Published To:	
Description:	NGER Schedule 1, Item 77
Factor Source:	National Greenhouse and Energy Reporting (Measurement) Determination 2008 (compiled 1 July 2022). Sourced from the Federal Register of Legislation at October 2022 and ongoing. For the latest information on Australian Government law please go to https://www.legislation.gov.au. Indirect Factor - NGA workbook (where applicable), published Nov 2022.
Notes:	

Start Period	End Period
2022/07/01	2023/06/30

Emission and Energy Factors

Coles

Factor Name:	17 - Natural Gas GJ - Metro - ACT
Factor ID:	44087
Region:	Australia - Australian Capital Territory
Data Type:	Natural Gas [GJ]
Sub Type:	
Scope:	Scope 1
Unit:	GJ
Factor Set:	Managed - NGERS
Total CO2e (kgCO2e/unit):	51.53000000
CO2 (kgCO2e/unit):	51.40000000
CH4 (kgCO2e/unit):	0.10000000
N2O (kgCO2e/unit):	0.03000000
Indirect (kgCO2e/unit):	13.10000000
BioCO2e (kgCO2e/unit):	
Energy (GJ/unit):	1.00000000
Mass (kg/unit):	n/a
Volume (L/unit):	n/a
Area (m2/unit):	n/a
Distance (m/unit):	n/a
Uncertainty Factor (%):	5.83842037
Review On:	01 Sep 2023
Effective From:	01 Jul 2022
Effective To:	
Published From:	01 Jul 2022
Published To:	
Description:	NGER Schedule 1, Item 17 - Natural gas distributed in a pipeline
Factor Source:	National Greenhouse and Energy Reporting (Measurement) Determination 2008 (compiled 1 July 2022). Sourced from the Federal Register of Legislation at October 2022 and ongoing. For the latest information on Australian Government law please go to https://www.legislation.gov.au. Indirect Factor - NGA workbook (where applicable), published Nov 2022.
Notes:	

Start Period	End Period
2022/07/01	2023/06/30

Emission and Energy Factors

Coles

Factor Name:	17 - Natural Gas GJ - Metro - ACT - A
Factor ID:	44089
Region:	Australia - Australian Capital Territory
Data Type:	Natural Gas [GJ]
Sub Type:	A
Scope:	Scope 1
Unit:	GJ
Factor Set:	Managed - NGERS
Total CO2e (kgCO2e/unit):	51.53000000
CO2 (kgCO2e/unit):	51.40000000
CH4 (kgCO2e/unit):	0.10000000
N2O (kgCO2e/unit):	0.03000000
Indirect (kgCO2e/unit):	13.10000000
BioCO2e (kgCO2e/unit):	
Energy (GJ/unit):	1.00000000
Mass (kg/unit):	n/a
Volume (L/unit):	n/a
Area (m2/unit):	n/a
Distance (m/unit):	n/a
Uncertainty Factor (%):	5.83842037
Review On:	01 Sep 2023
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Description:	NGER Schedule 1, Item 17 - Natural gas distributed in a pipeline
Factor Source:	National Greenhouse and Energy Reporting (Measurement) Determination 2008 (compiled 1 July 2022). Sourced from the Federal Register of Legislation at October 2022 and ongoing. For the latest information on Australian Government law please go to https://www.legislation.gov.au. Indirect Factor - NGA workbook (where applicable), published Nov 2022.
Notes:	

Start Period	End Period
2022/07/01	2023/06/30

Emission and Energy Factors

Coles

Factor Name:	77 - Electricity - 22-23 - New South Wales
Factor ID:	44104
Region:	Australia - New South Wales
Data Type:	Electricity [kWh]
Sub Type:	
Scope:	Scope 2
Unit:	kWh
Factor Set:	Managed - NGERS
Total CO2e (kgCO2e/unit):	0.73000000
CO2 (kgCO2e/unit):	
CH4 (kgCO2e/unit):	
N2O (kgCO2e/unit):	
Indirect (kgCO2e/unit):	0.06000000
BioCO2e (kgCO2e/unit):	
Energy (GJ/unit):	0.00360000
Mass (kg/unit):	n/a
Volume (L/unit):	n/a
Area (m2/unit):	n/a
Distance (m/unit):	n/a
Uncertainty Factor (%):	
Review On:	01 Sep 2023
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Published From:	01 Jul 2022
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Description:	NGER Schedule 1, Item 77
Factor Source:	National Greenhouse and Energy Reporting (Measurement) Determination 2008 (compiled 1 July 2022). Indirect Factor - NGA workbook (where applicable), published Nov 2022.
Notes:	

Start Period	End Period
2022/07/01	2023/06/30

Emission and Energy Factors

Coles

Factor Name:	17 - Natural Gas GJ - Metro - NSW
Factor ID:	44110
Region:	Australia - New South Wales
Data Type:	Natural Gas [GJ]
Sub Type:	
Scope:	Scope 1
Unit:	GJ
Factor Set:	Managed - NGERS
Total CO2e (kgCO2e/unit):	51.53000000
CO2 (kgCO2e/unit):	51.40000000
CH4 (kgCO2e/unit):	0.10000000
N2O (kgCO2e/unit):	0.03000000
Indirect (kgCO2e/unit):	13.10000000
BioCO2e (kgCO2e/unit):	
Energy (GJ/unit):	1.00000000
Mass (kg/unit):	n/a
Volume (L/unit):	n/a
Area (m2/unit):	n/a
Distance (m/unit):	n/a
Uncertainty Factor (%):	5.83842037
Review On:	01 Sep 2023
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Published From:	01 Jul 2022
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Notes:	

Start Period	End Period
2022/07/01	2023/06/30

Emission and Energy Factors

Coles

Factor Name:	17 - Natural Gas GJ - Metro - NSW - A
Factor ID:	44112
Region:	Australia - New South Wales
Data Type:	Natural Gas [GJ]
Sub Type:	A
Scope:	Scope 1
Unit:	GJ
Factor Set:	Managed - NGERS
Total CO2e (kgCO2e/unit):	51.53000000
CO2 (kgCO2e/unit):	51.40000000
CH4 (kgCO2e/unit):	0.10000000
N2O (kgCO2e/unit):	0.03000000
Indirect (kgCO2e/unit):	13.10000000
BioCO2e (kgCO2e/unit):	
Energy (GJ/unit):	1.00000000
Mass (kg/unit):	n/a
Volume (L/unit):	n/a
Area (m2/unit):	n/a
Distance (m/unit):	n/a
Uncertainty Factor (%):	5.83842037
Review On:	01 Sep 2023
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Notes:	

Start Period	End Period
2022/07/01	2023/06/30

Emission and Energy Factors

Coles

Factor Name:	17 - Natural Gas GJ - Metro - NSW - AAA
Factor ID:	44113
Region:	Australia - New South Wales
Data Type:	Natural Gas [GJ]
Sub Type:	AAA
Scope:	Scope 1
Unit:	GJ
Factor Set:	Managed - NGERS
Total CO2e (kgCO2e/unit):	51.53000000
CO2 (kgCO2e/unit):	51.40000000
CH4 (kgCO2e/unit):	0.10000000
N2O (kgCO2e/unit):	0.03000000
Indirect (kgCO2e/unit):	13.10000000
BioCO2e (kgCO2e/unit):	
Energy (GJ/unit):	1.00000000
Mass (kg/unit):	n/a
Volume (L/unit):	n/a
Area (m2/unit):	n/a
Distance (m/unit):	n/a
Uncertainty Factor (%):	5.83842037
Review On:	01 Sep 2023
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Published From:	01 Jul 2022
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Factor Source:	National Greenhouse and Energy Reporting (Measurement) Determination 2008 (compiled 1 July 2022). Sourced from the Federal Register of Legislation at October 2022 and ongoing. For the latest information on Australian Government law please go to https://www.legislation.gov.au. Indirect Factor - NGA workbook (where applicable), published Nov 2022.
Notes:	

Start Period	End Period
2022/07/01	2023/06/30

Emission and Energy Factors

Coles

Factor Name:	83 - Electricity - 22-23 - Northern Territory
Factor ID:	44128
Region:	Australia - Northern Territory
Data Type:	Electricity [kWh]
Sub Type:	
Scope:	Scope 2
Unit:	kWh
Factor Set:	Managed - NGERS
Total CO2e (kgCO2e/unit):	0.54000000
CO2 (kgCO2e/unit):	
CH4 (kgCO2e/unit):	
N2O (kgCO2e/unit):	
Indirect (kgCO2e/unit):	0.07000000
BioCO2e (kgCO2e/unit):	
Energy (GJ/unit):	0.00360000
Mass (kg/unit):	n/a
Volume (L/unit):	n/a
Area (m2/unit):	n/a
Distance (m/unit):	n/a
Uncertainty Factor (%):	
Review On:	01 Sep 2023
Effective From:	01 Jul 2022
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Published From:	01 Jul 2022
Published To:	
Description:	NGER Schedule 1, Item 83
Factor Source:	National Greenhouse and Energy Reporting (Measurement) Determination 2008 (compiled 1 July 2022). Sourced from the Federal Register of Legislation at October 2022 and ongoing. For the latest information on Australian Government law please go to https://www.legislation.gov.au. Indirect Factor - NGA workbook (where applicable), published Nov 2022.
Notes:	

Start Period	End Period
2022/07/01	2023/06/30

Emission and Energy Factors

Coles

Factor Name:	79 - Electricity - 22-23 - Queensland
Factor ID:	44139
Region:	Australia - Queensland
Data Type:	Electricity [kWh]
Sub Type:	
Scope:	Scope 2
Unit:	kWh
Factor Set:	Managed - NGERS
Total CO2e (kgCO2e/unit):	0.73000000
CO2 (kgCO2e/unit):	
CH4 (kgCO2e/unit):	
N2O (kgCO2e/unit):	
Indirect (kgCO2e/unit):	0.15000000
BioCO2e (kgCO2e/unit):	
Energy (GJ/unit):	0.00360000
Mass (kg/unit):	n/a
Volume (L/unit):	n/a
Area (m2/unit):	n/a
Distance (m/unit):	n/a
Uncertainty Factor (%):	
Review On:	01 Sep 2023
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Published From:	01 Jul 2022
Published To:	
Description:	NGER Schedule 1, Item 79
Factor Source:	National Greenhouse and Energy Reporting (Measurement) Determination 2008 (compiled 1 July 2022). Sourced from the Federal Register of Legislation at October 2022 and ongoing. For the latest information on Australian Government law please go to https://www.legislation.gov.au. Indirect Factor - NGA workbook (where applicable), published Nov 2022.
Notes:	

Start Period	End Period
2022/07/01	2023/06/30

Emission and Energy Factors

Coles

Factor Name:	17 - Natural Gas GJ - Metro - QNLD
Factor ID:	44145
Region:	Australia - Queensland
Data Type:	Natural Gas [GJ]
Sub Type:	
Scope:	Scope 1
Unit:	GJ
Factor Set:	Managed - NGERS
Total CO2e (kgCO2e/unit):	51.53000000
CO2 (kgCO2e/unit):	51.40000000
CH4 (kgCO2e/unit):	0.10000000
N2O (kgCO2e/unit):	0.03000000
Indirect (kgCO2e/unit):	8.80000000
BioCO2e (kgCO2e/unit):	
Energy (GJ/unit):	1.00000000
Mass (kg/unit):	n/a
Volume (L/unit):	n/a
Area (m2/unit):	n/a
Distance (m/unit):	n/a
Uncertainty Factor (%):	5.83842037
Review On:	01 Sep 2023
Effective From:	01 Jul 2022
Effective To:	
Published From:	01 Jul 2022
Published To:	
Description:	NGER Schedule 1, Item 17 - Natural gas distributed in a pipeline
Factor Source:	National Greenhouse and Energy Reporting (Measurement) Determination 2008 (compiled 1 July 2022). Sourced from the Federal Register of Legislation at October 2022 and ongoing. For the latest information on Australian Government law please go to https://www.legislation.gov.au. Indirect Factor - NGA workbook (where applicable), published Nov 2022.
Notes:	

Start Period	End Period
2022/07/01	2023/06/30

Emission and Energy Factors

Coles

Factor Name:	17 - Natural Gas GJ - Metro - QNLD - A
Factor ID:	44147
Region:	Australia - Queensland
Data Type:	Natural Gas [GJ]
Sub Type:	A
Scope:	Scope 1
Unit:	GJ
Factor Set:	Managed - NGERS
Total CO2e (kgCO2e/unit):	51.53000000
CO2 (kgCO2e/unit):	51.40000000
CH4 (kgCO2e/unit):	0.10000000
N2O (kgCO2e/unit):	0.03000000
Indirect (kgCO2e/unit):	8.80000000
BioCO2e (kgCO2e/unit):	
Energy (GJ/unit):	1.00000000
Mass (kg/unit):	n/a
Volume (L/unit):	n/a
Area (m2/unit):	n/a
Distance (m/unit):	n/a
Uncertainty Factor (%):	5.83842037
Review On:	01 Sep 2023
Effective From:	01 Jul 2022
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Published From:	01 Jul 2022
Published To:	
Description:	NGER Schedule 1, Item 17 - Natural gas distributed in a pipeline
Factor Source:	National Greenhouse and Energy Reporting (Measurement) Determination 2008 (compiled 1 July 2022). Sourced from the Federal Register of Legislation at October 2022 and ongoing. For the latest information on Australian Government law please go to https://www.legislation.gov.au. Indirect Factor - NGA workbook (where applicable), published Nov 2022.
Notes:	

Start Period	End Period
2022/07/01	2023/06/30

Emission and Energy Factors

Coles

Factor Name:	80 - Electricity - 22-23 - South Australia
Factor ID:	44163
Region:	Australia - South Australia
Data Type:	Electricity [kWh]
Sub Type:	
Scope:	Scope 2
Unit:	kWh
Factor Set:	Managed - NGERS
Total CO2e (kgCO2e/unit):	0.25000000
CO2 (kgCO2e/unit):	
CH4 (kgCO2e/unit):	
N2O (kgCO2e/unit):	
Indirect (kgCO2e/unit):	0.08000000
BioCO2e (kgCO2e/unit):	
Energy (GJ/unit):	0.00360000
Mass (kg/unit):	n/a
Volume (L/unit):	n/a
Area (m2/unit):	n/a
Distance (m/unit):	n/a
Uncertainty Factor (%):	
Review On:	01 Sep 2023
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Published From:	01 Jul 2022
Published To:	
Description:	NGER Schedule 1, Item 80
Factor Source:	National Greenhouse and Energy Reporting (Measurement) Determination 2008 (compiled 1 July 2022). Sourced from the Federal Register of Legislation at October 2022 and ongoing. For the latest information on Australian Government law please go to https://www.legislation.gov.au. Indirect Factor - NGA workbook (where applicable), published Nov 2022.
Notes:	

Start Period	End Period
2022/07/01	2023/06/30

Emission and Energy Factors

Coles

Factor Name:	17 - Natural Gas GJ - Metro - SA
Factor ID:	44169
Region:	Australia - South Australia
Data Type:	Natural Gas [GJ]
Sub Type:	
Scope:	Scope 1
Unit:	GJ
Factor Set:	Managed - NGERS
Total CO2e (kgCO2e/unit):	51.53000000
CO2 (kgCO2e/unit):	51.40000000
CH4 (kgCO2e/unit):	0.10000000
N2O (kgCO2e/unit):	0.03000000
Indirect (kgCO2e/unit):	10.70000000
BioCO2e (kgCO2e/unit):	
Energy (GJ/unit):	1.00000000
Mass (kg/unit):	n/a
Volume (L/unit):	n/a
Area (m2/unit):	n/a
Distance (m/unit):	n/a
Uncertainty Factor (%):	5.83842037
Review On:	01 Sep 2023
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Description:	NGER Schedule 1, Item 17 - Natural gas distributed in a pipeline
Factor Source:	National Greenhouse and Energy Reporting (Measurement) Determination 2008 (compiled 1 July 2022). Sourced from the Federal Register of Legislation at October 2022 and ongoing. For the latest information on Australian Government law please go to https://www.legislation.gov.au. Indirect Factor - NGA workbook (where applicable), published Nov 2022.
Notes:	

Start Period	End Period
2022/07/01	2023/06/30

Emission and Energy Factors

Coles

Factor Name:	82 - Electricity - 22-23 - Tasmania
Factor ID:	44187
Region:	Australia - Tasmania
Data Type:	Electricity [kWh]
Sub Type:	
Scope:	Scope 2
Unit:	kWh
Factor Set:	Managed - NGERS
Total CO2e (kgCO2e/unit):	0.17000000
CO2 (kgCO2e/unit):	
CH4 (kgCO2e/unit):	
N2O (kgCO2e/unit):	
Indirect (kgCO2e/unit):	0.01000000
BioCO2e (kgCO2e/unit):	
Energy (GJ/unit):	0.00360000
Mass (kg/unit):	n/a
Volume (L/unit):	n/a
Area (m2/unit):	n/a
Distance (m/unit):	n/a
Uncertainty Factor (%):	
Review On:	01 Sep 2023
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Description:	NGER Schedule 1, Item 82
Factor Source:	National Greenhouse and Energy Reporting (Measurement) Determination 2008 (compiled 1 July 2022). Sourced from the Federal Register of Legislation at October 2022 and ongoing. For the latest information on Australian Government law please go to https://www.legislation.gov.au. Indirect Factor - NGA workbook (where applicable), published Nov 2022.
Notes:	

Start Period	End Period
2022/07/01	2023/06/30

Emission and Energy Factors

Coles

Factor Name:	78 - Electricity - 22-23 - Victoria
Factor ID:	44199
Region:	Australia - Victoria
Data Type:	Electricity [kWh]
Sub Type:	
Scope:	Scope 2
Unit:	kWh
Factor Set:	Managed - NGERS
Total CO2e (kgCO2e/unit):	0.85000000
CO2 (kgCO2e/unit):	
CH4 (kgCO2e/unit):	
N2O (kgCO2e/unit):	
Indirect (kgCO2e/unit):	0.07000000
BioCO2e (kgCO2e/unit):	
Energy (GJ/unit):	0.00360000
Mass (kg/unit):	n/a
Volume (L/unit):	n/a
Area (m2/unit):	n/a
Distance (m/unit):	n/a
Uncertainty Factor (%):	
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Description:	NGER Schedule 1, Item 78
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Notes:	

Start Period	End Period
2022/07/01	2023/06/30

Emission and Energy Factors

Coles

Factor Name:	17 - Natural Gas GJ - Metro - VIC
Factor ID:	44205
Region:	Australia - Victoria
Data Type:	Natural Gas [GJ]
Sub Type:	
Scope:	Scope 1
Unit:	GJ
Factor Set:	Managed - NGERS
Total CO2e (kgCO2e/unit):	51.53000000
CO2 (kgCO2e/unit):	51.40000000
CH4 (kgCO2e/unit):	0.10000000
N2O (kgCO2e/unit):	0.03000000
Indirect (kgCO2e/unit):	4.00000000
BioCO2e (kgCO2e/unit):	
Energy (GJ/unit):	1.00000000
Mass (kg/unit):	n/a
Volume (L/unit):	n/a
Area (m2/unit):	n/a
Distance (m/unit):	n/a
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Description:	NGER Schedule 1, Item 17 - Natural gas distributed in a pipeline
Factor Source:	National Greenhouse and Energy Reporting (Measurement) Determination 2008 (compiled 1 July 2022). Sourced from the Federal Register of Legislation at October 2022 and ongoing. For the latest information on Australian Government law please go to https://www.legislation.gov.au. Indirect Factor - NGA workbook (where applicable), published Nov 2022.
Notes:	

Start Period	End Period
2022/07/01	2023/06/30

Emission and Energy Factors

Coles

Factor Name:	17 - Natural Gas GJ - Metro - VIC - A
Factor ID:	44207
Region:	Australia - Victoria
Data Type:	Natural Gas [GJ]
Sub Type:	A
Scope:	Scope 1
Unit:	GJ
Factor Set:	Managed - NGERS
Total CO2e (kgCO2e/unit):	51.53000000
CO2 (kgCO2e/unit):	51.40000000
CH4 (kgCO2e/unit):	0.10000000
N2O (kgCO2e/unit):	0.03000000
Indirect (kgCO2e/unit):	4.00000000
BioCO2e (kgCO2e/unit):	
Energy (GJ/unit):	1.00000000
Mass (kg/unit):	n/a
Volume (L/unit):	n/a
Area (m2/unit):	n/a
Distance (m/unit):	n/a
Uncertainty Factor (%):	5.83842037
Review On:	01 Sep 2023
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Description:	NGER Schedule 1, Item 17 - Natural gas distributed in a pipeline
Factor Source:	National Greenhouse and Energy Reporting (Measurement) Determination 2008 (compiled 1 July 2022). Sourced from the Federal Register of Legislation at October 2022 and ongoing. For the latest information on Australian Government law please go to https://www.legislation.gov.au. Indirect Factor - NGA workbook (where applicable), published Nov 2022.
Notes:	

Start Period	End Period
2022/07/01	2023/06/30

Emission and Energy Factors

Coles

Factor Name:	17 - Natural Gas GJ - Metro - VIC - AAA
Factor ID:	44208
Region:	Australia - Victoria
Data Type:	Natural Gas [GJ]
Sub Type:	AAA
Scope:	Scope 1
Unit:	GJ
Factor Set:	Managed - NGERS
Total CO2e (kgCO2e/unit):	51.53000000
CO2 (kgCO2e/unit):	51.40000000
CH4 (kgCO2e/unit):	0.10000000
N2O (kgCO2e/unit):	0.03000000
Indirect (kgCO2e/unit):	4.00000000
BioCO2e (kgCO2e/unit):	
Energy (GJ/unit):	1.00000000
Mass (kg/unit):	n/a
Volume (L/unit):	n/a
Area (m2/unit):	n/a
Distance (m/unit):	n/a
Uncertainty Factor (%):	5.83842037
Review On:	01 Sep 2023
Effective From:	01 Jul 2022
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Published From:	01 Jul 2022
Published To:	
Description:	NGER Schedule 1, Item 17 - Natural gas distributed in a pipeline
Factor Source:	National Greenhouse and Energy Reporting (Measurement) Determination 2008 (compiled 1 July 2022). Sourced from the Federal Register of Legislation at October 2022 and ongoing. For the latest information on Australian Government law please go to https://www.legislation.gov.au. Indirect Factor - NGA workbook (where applicable), published Nov 2022.
Notes:	

Start Period	End Period
2022/07/01	2023/06/30

Emission and Energy Factors

Coles

Factor Name:	81 - Electricity - 22-23 - Western Australia
Factor ID:	44223
Region:	Australia - Western Australia
Data Type:	Electricity [kWh]
Sub Type:	
Scope:	Scope 2
Unit:	kWh
Factor Set:	Managed - NGERS
Total CO2e (kgCO2e/unit):	0.51000000
CO2 (kgCO2e/unit):	
CH4 (kgCO2e/unit):	
N2O (kgCO2e/unit):	
Indirect (kgCO2e/unit):	0.04000000
BioCO2e (kgCO2e/unit):	
Energy (GJ/unit):	0.00360000
Mass (kg/unit):	n/a
Volume (L/unit):	n/a
Area (m2/unit):	n/a
Distance (m/unit):	n/a
Uncertainty Factor (%):	
Review On:	01 Sep 2023
Effective From:	01 Jul 2022
Effective To:	
Published From:	01 Jul 2022
Published To:	
Description:	NGER Schedule 1, Item 81
Factor Source:	National Greenhouse and Energy Reporting (Measurement) Determination 2008 (compiled 1 July 2022). Sourced from the Federal Register of Legislation at October 2022 and ongoing. For the latest information on Australian Government law please go to https://www.legislation.gov.au. Indirect Factor - NGA workbook (where applicable), published Nov 2022.
Notes:	

Start Period	End Period
2022/07/01	2023/06/30

Emission and Energy Factors

Coles

Factor Name:	17 - Natural Gas GJ - Metro - WA
Factor ID:	44229
Region:	Australia - Western Australia
Data Type:	Natural Gas [GJ]
Sub Type:	
Scope:	Scope 1
Unit:	GJ
Factor Set:	Managed - NGERS
Total CO2e (kgCO2e/unit):	51.53000000
CO2 (kgCO2e/unit):	51.40000000
CH4 (kgCO2e/unit):	0.10000000
N2O (kgCO2e/unit):	0.03000000
Indirect (kgCO2e/unit):	4.10000000
BioCO2e (kgCO2e/unit):	
Energy (GJ/unit):	1.00000000
Mass (kg/unit):	n/a
Volume (L/unit):	n/a
Area (m2/unit):	n/a
Distance (m/unit):	n/a
Uncertainty Factor (%):	5.83842037
Review On:	01 Sep 2023
Effective From:	01 Jul 2022
Effective To:	
Published From:	01 Jul 2022
Published To:	
Description:	NGER Schedule 1, Item 17 - Natural gas distributed in a pipeline
Factor Source:	National Greenhouse and Energy Reporting (Measurement) Determination 2008 (compiled 1 July 2022). Sourced from the Federal Register of Legislation at October 2022 and ongoing. For the latest information on Australian Government law please go to https://www.legislation.gov.au. Indirect Factor - NGA workbook (where applicable), published Nov 2022.
Notes:	

Start Period	End Period
2022/07/01	2023/06/30

Emission and Energy Factors

Coles

Factor Name:	17 - Natural Gas GJ - Metro - WA - A
Factor ID:	44231
Region:	Australia - Western Australia
Data Type:	Natural Gas [GJ]
Sub Type:	A
Scope:	Scope 1
Unit:	GJ
Factor Set:	Managed - NGERS
Total CO2e (kgCO2e/unit):	51.53000000
CO2 (kgCO2e/unit):	51.40000000
CH4 (kgCO2e/unit):	0.10000000
N2O (kgCO2e/unit):	0.03000000
Indirect (kgCO2e/unit):	4.10000000
BioCO2e (kgCO2e/unit):	
Energy (GJ/unit):	1.00000000
Mass (kg/unit):	n/a
Volume (L/unit):	n/a
Area (m2/unit):	n/a
Distance (m/unit):	n/a
Uncertainty Factor (%):	5.83842037
Review On:	01 Sep 2023
Effective From:	01 Jul 2022
Effective To:	
Published From:	01 Jul 2022
Published To:	
Description:	NGER Schedule 1, Item 17 - Natural gas distributed in a pipeline
Factor Source:	National Greenhouse and Energy Reporting (Measurement) Determination 2008 (compiled 1 July 2022). Sourced from the Federal Register of Legislation at October 2022 and ongoing. For the latest information on Australian Government law please go to https://www.legislation.gov.au. Indirect Factor - NGA workbook (where applicable), published Nov 2022.
Notes:	

Start Period	End Period
2022/07/01	2023/06/30

Emission and Energy Factors

Coles

Factor Name:	China Electricity - 2019
Factor ID:	40914
Region:	China - All Regions
Data Type:	Electricity [kWh]
Sub Type:	
Scope:	Scope 2
Unit:	kWh
Factor Set:	Default
Total CO2e (kgCO2e/unit):	0.62570000
CO2 (kgCO2e/unit):	0.62240000
CH4 (kgCO2e/unit):	0.00030000
N2O (kgCO2e/unit):	0.00300000
Indirect (kgCO2e/unit):	0.02980000
BioCO2e (kgCO2e/unit):	
Energy (GJ/unit):	0.00360000
Mass (kg/unit):	n/a
Volume (L/unit):	n/a
Area (m2/unit):	n/a
Distance (m/unit):	n/a
Uncertainty Factor (%):	
Review On:	01 Nov 2022
Effective From:	01 Jan 2019
Effective To:	
Published From:	01 Jan 2022
Published To:	
Description:	
Factor Source:	International Energy Agency - Emission Factors 2021
Notes:	Factor provided through a paid subscription to IEA and must not be distributed or used outside of Envizi.

Start Period	End Period
2022/07/01	2023/06/30

Emission and Energy Factors

Coles

Factor Name:	default conversion
Factor ID:	24090
Region:	Earth - Earth
Data Type:	Waste Recycled [t]
Sub Type:	Onsite Recycled
Scope:	No Scope
Unit:	t
Factor Set:	Default
Total CO2e (kgCO2e/unit):	
CO2 (kgCO2e/unit):	
CH4 (kgCO2e/unit):	
N2O (kgCO2e/unit):	
Indirect (kgCO2e/unit):	
BioCO2e (kgCO2e/unit):	
Energy (GJ/unit):	n/a
Mass (kg/unit):	1000.00000000
Volume (L/unit):	n/a
Area (m2/unit):	n/a
Distance (m/unit):	n/a
Uncertainty Factor (%):	
Review On:	
Effective From:	
Effective To:	
Published From:	
Published To:	
Description:	
Factor Source:	
Notes:	

Start Period	End Period
2022/07/01	2023/06/30

Emission and Energy Factors

Coles

Factor Name:	R744 - Commercial refrigeration
Factor ID:	32036
Region:	Earth - Earth
Data Type:	Refrigerant R744 [kg]
Sub Type:	Commercial refrigeration
Scope:	Scope 1
Unit:	kg
Factor Set:	Default
Total CO2e (kgCO2e/unit):	1.00000000
CO2 (kgCO2e/unit):	
CH4 (kgCO2e/unit):	
N2O (kgCO2e/unit):	
Indirect (kgCO2e/unit):	
BioCO2e (kgCO2e/unit):	
Energy (GJ/unit):	n/a
Mass (kg/unit):	1.00000000
Volume (L/unit):	n/a
Area (m2/unit):	n/a
Distance (m/unit):	n/a
Uncertainty Factor (%):	30.00000000
Review On:	
Effective From:	
Effective To:	
Published From:	
Published To:	
Description:	Commercial grade CO2
Factor Source:	
Notes:	

Start Period	End Period
2022/07/01	2023/06/30

Emission and Energy Factors

Coles

Factor Name:	Refrigerant R290 (Propane) - GWP of 3.3
Factor ID:	39001
Region:	Earth - Earth
Data Type:	Refrigerant R290 [kg]
Sub Type:	Commercial refrigeration
Scope:	Scope 1
Unit:	kg
Factor Set:	Default
Total CO2e (kgCO2e/unit):	3.30000000
CO2 (kgCO2e/unit):	
CH4 (kgCO2e/unit):	
N2O (kgCO2e/unit):	
Indirect (kgCO2e/unit):	
BioCO2e (kgCO2e/unit):	
Energy (GJ/unit):	n/a
Mass (kg/unit):	1.00000000
Volume (L/unit):	n/a
Area (m2/unit):	n/a
Distance (m/unit):	n/a
Uncertainty Factor (%):	
Review On:	
Effective From:	
Effective To:	
Published From:	
Published To:	
Description:	R290 = Propane
Factor Source:	Guidelines to Defra/DECC's GHG Conversion Factors for Company Reporting.
Notes:	The conversion factors in Table 5b incorporate (GWP) values published by the IPCC in its Fourth Assessment Report.

Start Period	End Period
2022/07/01	2023/06/30

Emission and Energy Factors

Coles

Factor Name:	R452A AR5 GWP
Factor ID:	39048
Region:	Earth - Earth
Data Type:	Refrigerant R452A [kg]
Sub Type:	Commercial refrigeration
Scope:	Scope 1
Unit:	kg
Factor Set:	Managed - NGERS
Total CO2e (kgCO2e/unit):	1945.07000000
CO2 (kgCO2e/unit):	
CH4 (kgCO2e/unit):	
N2O (kgCO2e/unit):	
Indirect (kgCO2e/unit):	
BioCO2e (kgCO2e/unit):	
Energy (GJ/unit):	n/a
Mass (kg/unit):	1.00000000
Volume (L/unit):	n/a
Area (m2/unit):	n/a
Distance (m/unit):	n/a
Uncertainty Factor (%):	30.00000000
Review On:	01 Sep 2023
Effective From:	01 Jul 2020
Effective To:	
Published From:	01 Jul 2020
Published To:	
Description:	R1234yf/R32/R125 (30.0/11.0/59.0) R1234yf AR5 GWP = 1 R32 AR5 GWP = 677 R125 AR5 GWP = 3170
Factor Source:	IPCC Fifth Assessment Report, 2014 (AR5)
Notes:	

Start Period	End Period
2022/07/01	2023/06/30

Emission and Energy Factors

Coles

Factor Name:	R448A AR5 GWP
Factor ID:	40572
Region:	Earth - Earth
Data Type:	Refrigerant R448A [kg]
Sub Type:	Commercial refrigeration
Scope:	Scope 1
Unit:	kg
Factor Set:	Managed - NGERS
Total CO2e (kgCO2e/unit):	1274.00000000
CO2 (kgCO2e/unit):	
CH4 (kgCO2e/unit):	
N2O (kgCO2e/unit):	
Indirect (kgCO2e/unit):	
BioCO2e (kgCO2e/unit):	
Energy (GJ/unit):	n/a
Mass (kg/unit):	1.00000000
Volume (L/unit):	n/a
Area (m2/unit):	n/a
Distance (m/unit):	n/a
Uncertainty Factor (%):	
Review On:	01 Sep 2023
Effective From:	01 Jul 2020
Effective To:	
Published From:	01 Jul 2020
Published To:	
Description:	Blend components 26% R32 (GWP 677) 26% R125 (GWP 3170) 21% R134a (GWP 1300) 7% R1234ze (GWP <1) 20% R1234yf (GWP <1)
Factor Source:	IPCC Fifth Assessment Report, 2014 (AR5)
Notes:	

Start Period	End Period
2022/07/01	2023/06/30

Emission and Energy Factors

Coles

Factor Name:	R449A AR5
Factor ID:	40573
Region:	Earth - Earth
Data Type:	Refrigerant R449A [kg]
Sub Type:	Commercial refrigeration
Scope:	Scope 1
Unit:	kg
Factor Set:	Managed - NGERS
Total CO2e (kgCO2e/unit):	1282.00000000
CO2 (kgCO2e/unit):	
CH4 (kgCO2e/unit):	
N2O (kgCO2e/unit):	
Indirect (kgCO2e/unit):	
BioCO2e (kgCO2e/unit):	
Energy (GJ/unit):	n/a
Mass (kg/unit):	1.00000000
Volume (L/unit):	n/a
Area (m2/unit):	n/a
Distance (m/unit):	n/a
Uncertainty Factor (%):	
Review On:	01 Sep 2023
Effective From:	01 Jul 2020
Effective To:	
Published From:	01 Jul 2020
Published To:	
Description:	Blend components 24.3% R32 (GWP 677) 24.7% R125 (GWP 3170) 25.7% R134a (GWP 1300) 25.3% R1234yf (GWP <1)
Factor Source:	IPCC Fifth Assessment Report, 2014 (AR5)
Notes:	

Start Period	End Period
2022/07/01	2023/06/30

Emission and Energy Factors

Coles

Factor Name:	R438A - Commercial air conditioning
Factor ID:	43337
Region:	Earth - Earth
Data Type:	Refrigerant R438A [kg]
Sub Type:	Commercial air conditioning
Scope:	Scope 1
Unit:	kg
Factor Set:	Managed - NGERS
Total CO2e (kgCO2e/unit):	2059.00000000
CO2 (kgCO2e/unit):	
CH4 (kgCO2e/unit):	
N2O (kgCO2e/unit):	
Indirect (kgCO2e/unit):	
BioCO2e (kgCO2e/unit):	
Energy (GJ/unit):	n/a
Mass (kg/unit):	1.00000000
Volume (L/unit):	n/a
Area (m2/unit):	n/a
Distance (m/unit):	n/a
Uncertainty Factor (%):	30.00000000
Review On:	01 Sep 2023
Effective From:	01 Jul 2022
Effective To:	
Published From:	01 Jul 2022
Published To:	
Description:	R438a AR5 GWP = 2059 Blend made of: HFC-32:8.5%; HFC-125: 45%; HFC-134a: 44.2%; R-600:1.7%; R-601a:0.06%;
Factor Source:	IPCC Fifth Assessment Report, 2014 (AR5)
Notes:	

Start Period	End Period
2022/07/01	2023/06/30

Emission and Energy Factors

Coles

Factor Name:	R438A - Commercial refrigeration
Factor ID:	43338
Region:	Earth - Earth
Data Type:	Refrigerant R438A [kg]
Sub Type:	Commercial refrigeration
Scope:	Scope 1
Unit:	kg
Factor Set:	Managed - NGERS
Total CO2e (kgCO2e/unit):	2059.00000000
CO2 (kgCO2e/unit):	
CH4 (kgCO2e/unit):	
N2O (kgCO2e/unit):	
Indirect (kgCO2e/unit):	
BioCO2e (kgCO2e/unit):	
Energy (GJ/unit):	n/a
Mass (kg/unit):	1.00000000
Volume (L/unit):	n/a
Area (m2/unit):	n/a
Distance (m/unit):	n/a
Uncertainty Factor (%):	30.00000000
Review On:	01 Sep 2023
Effective From:	01 Jul 2022
Effective To:	
Published From:	01 Jul 2022
Published To:	
Description:	R438a AR5 GWP = 2059 Blend made of: HFC-32:8.5%; HFC-125: 45%; HFC-134a: 44.2%; R-600:1.7%; R-601a:0.06%;
Factor Source:	IPCC Fifth Assessment Report, 2014 (AR5)
Notes:	

Start Period	End Period
2022/07/01	2023/06/30

Emission and Energy Factors

Coles

Factor Name:	Refrigerant R22 - kg
Factor ID:	43351
Region:	Earth - Earth
Data Type:	Refrigerant R22 [kg]
Sub Type:	Commercial air conditioning
Scope:	Scope 1
Unit:	kg
Factor Set:	Managed - NGERS
Total CO2e (kgCO2e/unit):	1760.00000000
CO2 (kgCO2e/unit):	
CH4 (kgCO2e/unit):	
N2O (kgCO2e/unit):	
Indirect (kgCO2e/unit):	
BioCO2e (kgCO2e/unit):	
Energy (GJ/unit):	n/a
Mass (kg/unit):	1.00000000
Volume (L/unit):	n/a
Area (m2/unit):	n/a
Distance (m/unit):	n/a
Uncertainty Factor (%):	
Review On:	01 Sep 2023
Effective From:	01 Jul 2022
Effective To:	
Published From:	01 Jul 2022
Published To:	
Description:	AR5 GWP
Factor Source:	IPCC Fifth Assessment Report, 2014 (AR5)
Notes:	

Start Period	End Period
2022/07/01	2023/06/30

Emission and Energy Factors

Coles

Factor Name:	Refrigerant R22 - kg
Factor ID:	43352
Region:	Earth - Earth
Data Type:	Refrigerant R22 [kg]
Sub Type:	Commercial refrigeration
Scope:	Scope 1
Unit:	kg
Factor Set:	Managed - NGERS
Total CO2e (kgCO2e/unit):	1760.00000000
CO2 (kgCO2e/unit):	
CH4 (kgCO2e/unit):	
N2O (kgCO2e/unit):	
Indirect (kgCO2e/unit):	
BioCO2e (kgCO2e/unit):	
Energy (GJ/unit):	n/a
Mass (kg/unit):	1.00000000
Volume (L/unit):	n/a
Area (m2/unit):	n/a
Distance (m/unit):	n/a
Uncertainty Factor (%):	
Review On:	01 Sep 2023
Effective From:	01 Jul 2022
Effective To:	
Published From:	01 Jul 2022
Published To:	
Description:	AR5 GWP
Factor Source:	IPCC Fifth Assessment Report, 2014 (AR5)
Notes:	

Start Period	End Period
2022/07/01	2023/06/30

Emission and Energy Factors

Coles

Factor Name:	Refrigerant HFC-32 - kg
Factor ID:	43356
Region:	Earth - Earth
Data Type:	Refrigerant R32 [kg]
Sub Type:	Commercial air conditioning
Scope:	Scope 1
Unit:	kg
Factor Set:	Managed - NGERS
Total CO2e (kgCO2e/unit):	677.00000000
CO2 (kgCO2e/unit):	
CH4 (kgCO2e/unit):	
N2O (kgCO2e/unit):	
Indirect (kgCO2e/unit):	
BioCO2e (kgCO2e/unit):	
Energy (GJ/unit):	n/a
Mass (kg/unit):	1.00000000
Volume (L/unit):	n/a
Area (m2/unit):	n/a
Distance (m/unit):	n/a
Uncertainty Factor (%):	
Review On:	01 Sep 2023
Effective From:	01 Jul 2022
Effective To:	
Published From:	01 Jul 2022
Published To:	
Description:	AR5 GWP
Factor Source:	IPCC Fifth Assessment Report, 2014 (AR5)
Notes:	

Start Period	End Period
2022/07/01	2023/06/30

Emission and Energy Factors

Coles

Factor Name:	Refrigerant HFC-32 - kg
Factor ID:	43357
Region:	Earth - Earth
Data Type:	Refrigerant R32 [kg]
Sub Type:	Commercial refrigeration
Scope:	Scope 1
Unit:	kg
Factor Set:	Managed - NGERS
Total CO2e (kgCO2e/unit):	677.00000000
CO2 (kgCO2e/unit):	
CH4 (kgCO2e/unit):	
N2O (kgCO2e/unit):	
Indirect (kgCO2e/unit):	
BioCO2e (kgCO2e/unit):	
Energy (GJ/unit):	n/a
Mass (kg/unit):	1.00000000
Volume (L/unit):	n/a
Area (m2/unit):	n/a
Distance (m/unit):	n/a
Uncertainty Factor (%):	
Review On:	01 Sep 2023
Effective From:	01 Jul 2022
Effective To:	
Published From:	01 Jul 2022
Published To:	
Description:	AR5 GWP
Factor Source:	IPCC Fifth Assessment Report, 2014 (AR5)
Notes:	

Start Period	End Period
2022/07/01	2023/06/30

Emission and Energy Factors

Coles

Factor Name:	40 - Diesel Stationary
Factor ID:	43504
Region:	Earth - Earth
Data Type:	Diesel Stationary [L]
Sub Type:	
Scope:	Scope 1
Unit:	L
Factor Set:	Managed - NGERS
Total CO2e (kgCO2e/unit):	2.70972000
CO2 (kgCO2e/unit):	2.69814000
CH4 (kgCO2e/unit):	0.00386000
N2O (kgCO2e/unit):	0.00772000
Indirect (kgCO2e/unit):	0.13896000
BioCO2e (kgCO2e/unit):	
Energy (GJ/unit):	0.03860000
Mass (kg/unit):	n/a
Volume (L/unit):	1.00000000
Area (m2/unit):	n/a
Distance (m/unit):	n/a
Uncertainty Factor (%):	3.19180906
Review On:	01 Sep 2023
Effective From:	01 Jul 2022
Effective To:	
Published From:	01 Jul 2022
Published To:	
Description:	NGER Schedule 1, Item 40 - Diesel oil Energy Content = 38.6 GJ/kL CO2: 38.6 GJ/kL * 69.9 kgCO2e/GJ = 2698.14 kgCO2e/kL CH4: 38.6 GJ/kL * 0.1 kgCO2e/GJ = 3.86 kgCO2e/kL N2O: 38.6 GJ/kL * 0.2 kgCO2e/GJ = 7.72 kgCO2e/kL Total CO2e: 2709.72 kgCO2e/kL
Factor Source:	National Greenhouse and Energy Reporting (Measurement) Determination 2008 (compiled 1 July 2022). Indirect Factor - NGA workbook (where applicable), published Aug 2021.
Notes:	

Start Period	End Period
2022/07/01	2023/06/30

Emission and Energy Factors

Coles

Factor Name:	40 - Diesel Stationary - A Other Stationary
Factor ID:	43506
Region:	Earth - Earth
Data Type:	Diesel Stationary [L]
Sub Type:	A - Other Stationary
Scope:	Scope 1
Unit:	L
Factor Set:	Managed - NGERS
Total CO2e (kgCO2e/unit):	2.70972000
CO2 (kgCO2e/unit):	2.69814000
CH4 (kgCO2e/unit):	0.00386000
N2O (kgCO2e/unit):	0.00772000
Indirect (kgCO2e/unit):	0.13896000
BioCO2e (kgCO2e/unit):	
Energy (GJ/unit):	0.03860000
Mass (kg/unit):	n/a
Volume (L/unit):	1.00000000
Area (m2/unit):	n/a
Distance (m/unit):	n/a
Uncertainty Factor (%):	3.19180906
Review On:	01 Sep 2023
Effective From:	01 Jul 2022
Effective To:	
Published From:	01 Jul 2022
Published To:	
Description:	NGER Schedule 1, Item 40 - Diesel oil Energy Content = 38.6 GJ/kL CO2: 38.6 GJ/kL * 69.9 kgCO2e/GJ = 2698.14 kgCO2e/kL CH4: 38.6 GJ/kL * 0.1 kgCO2e/GJ = 3.86 kgCO2e/kL N2O: 38.6 GJ/kL * 0.2 kgCO2e/GJ = 7.72 kgCO2e/kL Total CO2e: 2709.72 kgCO2e/kL
Factor Source:	National Greenhouse and Energy Reporting (Measurement) Determination 2008 (compiled 1 July 2022). Indirect Factor - NGA workbook (where applicable), published Aug 2021.
Notes:	

Start Period	End Period
2022/07/01	2023/06/30

Emission and Energy Factors

Coles

Factor Name:	65 - Diesel Transport post-2004
Factor ID:	43528
Region:	Earth - Earth
Data Type:	Diesel Transport post-2004 [L]
Sub Type:	
Scope:	Scope 1
Unit:	L
Factor Set:	Managed - NGERS
Total CO2e (kgCO2e/unit):	2.71782600
CO2 (kgCO2e/unit):	2.69814000
CH4 (kgCO2e/unit):	0.00038600
N2O (kgCO2e/unit):	0.01930000
Indirect (kgCO2e/unit):	0.13896000
BioCO2e (kgCO2e/unit):	
Energy (GJ/unit):	0.03860000
Mass (kg/unit):	n/a
Volume (L/unit):	1.00000000
Area (m2/unit):	n/a
Distance (m/unit):	n/a
Uncertainty Factor (%):	3.20263037
Review On:	01 Sep 2023
Effective From:	01 Jul 2022
Effective To:	
Published From:	01 Jul 2022
Published To:	
Description:	NGER Schedule 1, Item 65 - Diesel oil Energy Content = 38.6 GJ/unit CO2: 38.6 GJ/unit * 69.9 kgCO2e/GJ = 2698.14 kgCO2e/unit CH4: 38.6 GJ/unit * 0.01 kgCO2e/GJ = 0.386 kgCO2e/unit N2O: 38.6 GJ/unit * 0.5 kgCO2e/GJ = 19.3 kgCO2e/unit Total CO2e: 2717.826 kgCO2e/unit
Factor Source:	National Greenhouse and Energy Reporting (Measurement) Determination 2008 (compiled 1 July 2022). Indirect Factor - NGA workbook (where applicable), published Aug 2021.
Notes:	

Start Period	End Period
2022/07/01	2023/06/30

Emission and Energy Factors

Coles

Factor Name:	64 & 67 - E10 Ethanol Transport post-2004 - NGER 64-Petrol and NGER 67-Ethanol
Factor ID:	43597
Region:	Earth - Earth
Data Type:	Ethanol E10 Transport post-2004 [L]
Sub Type:	
Scope:	Scope 1
Unit:	L
Factor Set:	Managed - NGERS
Total CO2e (kgCO2e/unit):	2.08228000
CO2 (kgCO2e/unit):	2.07457200
CH4 (kgCO2e/unit):	0.00108360
N2O (kgCO2e/unit):	0.00662400
Indirect (kgCO2e/unit):	0.11080800
BioCO2e (kgCO2e/unit):	
Energy (GJ/unit):	0.03312000
Mass (kg/unit):	n/a
Volume (L/unit):	1.00000000
Area (m2/unit):	n/a
Distance (m/unit):	n/a
Uncertainty Factor (%):	5.20285396
Review On:	01 Sep 2023
Effective From:	01 Jul 2022
Effective To:	
Published From:	01 Jul 2022
Published To:	
Description:	E10 (post-2004) is a mix of 10% ethanol and 90% petrol: Petrol NGER Schedule 1, Item 64 - Gasoline (other than for use as fuel in an aircraft) Energy Content = 34.2 GJ/unit CO2: 34.2 GJ/unit * 67.4 kgCO2e/GJ = 2305.08 kgCO2e/unit CH4: 34.2 GJ/unit * 0.02 kgCO2e/GJ = 0.684 kgCO2e/unit N2O: 34.2 GJ/unit * 0.2 kgCO2e/GJ = 6.84 kgCO2e/unit Total CO2e: 2312.604 kgCO2e/unit Ethanol NGER Schedule 1, Item 67 - Ethanol for use as fuel in an internal combustion engine Energy Content = 23.4 GJ/unit CO2: 23.4 GJ/unit * 0 kgCO2e/GJ = 0 kgCO2e/unit CH4: 23.4 GJ/unit * 0.2 kgCO2e/GJ = 4.68 kgCO2e/unit N2O: 23.4 GJ/unit * 0.2 kgCO2e/GJ = 4.68 kgCO2e/unit Total CO2e: 9.36 kgCO2e/unit E10-mix NGER Schedule 1, Item 64 & 67 - E10 CO2: 0.9 * 2305.08 kgCO2e/kL + 0.1 * 0 kgCO2e/kL = 2074.572 kgCO2e/kL CH4: 0.9 * 0.684 kgCO2e/kL + 0.1 * 4.68 kgCO2e/kL = 1.0836 kgCO2e/kL N2O: 0.9 * 6.84 kgCO2e/kL + 0.1 * 4.68 kgCO2e/kL = 6.624 kgCO2e/kL Total CO2e: 2082.28 kgCO2e/kL Indirect CO2e: 0.9 * 34.2 GJ/kL *3.6 kgCO2e/GJ = 110.808 kgCO2e/kL
Factor Source:	National Greenhouse and Energy Reporting (Measurement) Determination 2008 (compiled 1 July 2022). Indirect Factor - NGA workbook (where applicable), published Aug 2021.
Notes:	

Start Period	End Period
2022/07/01	2023/06/30

Emission and Energy Factors

Coles

Factor Name:	44 - LPG Stationary
Factor ID:	43704
Region:	Earth - Earth
Data Type:	LPG Stationary [L]
Sub Type:	
Scope:	Scope 1
Unit:	L
Factor Set:	Managed - NGERS
Total CO2e (kgCO2e/unit):	1.55742000
CO2 (kgCO2e/unit):	1.54714000
CH4 (kgCO2e/unit):	0.00514000
N2O (kgCO2e/unit):	0.00514000
Indirect (kgCO2e/unit):	0.09252000
BioCO2e (kgCO2e/unit):	
Energy (GJ/unit):	0.02570000
Mass (kg/unit):	n/a
Volume (L/unit):	1.00000000
Area (m2/unit):	n/a
Distance (m/unit):	n/a
Uncertainty Factor (%):	8.63330138
Review On:	01 Sep 2023
Effective From:	01 Jul 2022
Effective To:	
Published From:	01 Jul 2022
Published To:	
Description:	NGER Schedule 1, Item 44 - Liquefied petroleum gas Energy Content = 25.7 GJ/kL CO2: 25.7 GJ/kL * 60.2 kgCO2e/GJ = 1547.14 kgCO2e/kL CH4: 25.7 GJ/kL * 0.2 kgCO2e/GJ = 5.14 kgCO2e/kL N2O: 25.7 GJ/kL * 0.2 kgCO2e/GJ = 5.14 kgCO2e/kL Total CO2e: 1557.42 kgCO2e/kL
Factor Source:	National Greenhouse and Energy Reporting (Measurement) Determination 2008 (compiled 1 July 2022). Indirect Factor - NGA workbook (where applicable), published Aug 2021.
Notes:	

Start Period	End Period
2022/07/01	2023/06/30

Emission and Energy Factors

Coles

Factor Name:	44 - LPG Stationary - A Stationary
Factor ID:	43705
Region:	Earth - Earth
Data Type:	LPG Stationary [L]
Sub Type:	A - Other Stationary
Scope:	Scope 1
Unit:	L
Factor Set:	Managed - NGERS
Total CO2e (kgCO2e/unit):	1.55742000
CO2 (kgCO2e/unit):	1.54714000
CH4 (kgCO2e/unit):	0.00514000
N2O (kgCO2e/unit):	0.00514000
Indirect (kgCO2e/unit):	0.09252000
BioCO2e (kgCO2e/unit):	
Energy (GJ/unit):	0.02570000
Mass (kg/unit):	n/a
Volume (L/unit):	1.00000000
Area (m2/unit):	n/a
Distance (m/unit):	n/a
Uncertainty Factor (%):	8.63330138
Review On:	01 Sep 2023
Effective From:	01 Jul 2022
Effective To:	
Published From:	01 Jul 2022
Published To:	
Description:	NGER Schedule 1, Item 44 - Liquefied petroleum gas Energy Content = 25.7 GJ/kL CO2: 25.7 GJ/kL * 60.2 kgCO2e/GJ = 1547.14 kgCO2e/kL CH4: 25.7 GJ/kL * 0.2 kgCO2e/GJ = 5.14 kgCO2e/kL N2O: 25.7 GJ/kL * 0.2 kgCO2e/GJ = 5.14 kgCO2e/kL Total CO2e: 1557.42 kgCO2e/kL
Factor Source:	National Greenhouse and Energy Reporting (Measurement) Determination 2008 (compiled 1 July 2022). Indirect Factor - NGA workbook (where applicable), published Aug 2021.
Notes:	

Start Period	End Period
2022/07/01	2023/06/30

Emission and Energy Factors

Coles

Factor Name:	17 - Natural Gas
Factor ID:	43766
Region:	Earth - Earth
Data Type:	Natural Gas [GJ]
Sub Type:	
Scope:	Scope 1
Unit:	GJ
Factor Set:	Managed - NGERS
Total CO2e (kgCO2e/unit):	51.53000000
CO2 (kgCO2e/unit):	51.40000000
CH4 (kgCO2e/unit):	0.10000000
N2O (kgCO2e/unit):	0.03000000
Indirect (kgCO2e/unit):	
BioCO2e (kgCO2e/unit):	
Energy (GJ/unit):	1.00000000
Mass (kg/unit):	n/a
Volume (L/unit):	n/a
Area (m2/unit):	n/a
Distance (m/unit):	n/a
Uncertainty Factor (%):	5.83842037
Review On:	01 Sep 2023
Effective From:	01 Jul 2022
Effective To:	
Published From:	01 Jul 2022
Published To:	
Description:	NGER Schedule 1, Item 17 - Natural gas distributed in a pipeline
Factor Source:	National Greenhouse and Energy Reporting (Measurement) Determination 2008 (compiled 1 July 2022). Indirect Factor - NGA workbook (where applicable), published Aug 2021.
Notes:	

Start Period	End Period
2022/07/01	2023/06/30

Emission and Energy Factors

Coles

Factor Name:	17 - Natural Gas - A
Factor ID:	43767
Region:	Earth - Earth
Data Type:	Natural Gas [GJ]
Sub Type:	A
Scope:	Scope 1
Unit:	GJ
Factor Set:	Managed - NGERS
Total CO2e (kgCO2e/unit):	51.53000000
CO2 (kgCO2e/unit):	51.40000000
CH4 (kgCO2e/unit):	0.10000000
N2O (kgCO2e/unit):	0.03000000
Indirect (kgCO2e/unit):	
BioCO2e (kgCO2e/unit):	
Energy (GJ/unit):	1.00000000
Mass (kg/unit):	n/a
Volume (L/unit):	n/a
Area (m2/unit):	n/a
Distance (m/unit):	n/a
Uncertainty Factor (%):	5.83842037
Review On:	01 Sep 2023
Effective From:	01 Jul 2022
Effective To:	
Published From:	01 Jul 2022
Published To:	
Description:	NGER Schedule 1, Item 17 - Natural gas distributed in a pipeline
Factor Source:	National Greenhouse and Energy Reporting (Measurement) Determination 2008 (compiled 1 July 2022). Indirect Factor - NGA workbook (where applicable), published Aug 2021.
Notes:	

Start Period	End Period
2022/07/01	2023/06/30

Emission and Energy Factors

Coles

Factor Name:	64 - Petrol Transport post-2004
Factor ID:	43849
Region:	Earth - Earth
Data Type:	Petrol Transport post-2004 [L]
Sub Type:	
Scope:	Scope 1
Unit:	L
Factor Set:	Managed - NGERS
Total CO2e (kgCO2e/unit):	2.31260400
CO2 (kgCO2e/unit):	2.30508000
CH4 (kgCO2e/unit):	0.00068400
N2O (kgCO2e/unit):	0.00684000
Indirect (kgCO2e/unit):	0.12312000
BioCO2e (kgCO2e/unit):	
Energy (GJ/unit):	0.03420000
Mass (kg/unit):	n/a
Volume (L/unit):	1.00000000
Area (m2/unit):	n/a
Distance (m/unit):	n/a
Uncertainty Factor (%):	5.19333233
Review On:	01 Sep 2023
Effective From:	01 Jul 2022
Effective To:	
Published From:	01 Jul 2022
Published To:	
Description:	NGER Schedule 1, Item 64 - Gasoline (other than for use as fuel in an aircraft) Energy Content = 34.2 GJ/unit CO2: 34.2 GJ/unit * 67.4 kgCO2e/GJ = 2305.08 kgCO2e/unit CH4: 34.2 GJ/unit * 0.02 kgCO2e/GJ = 0.684 kgCO2e/unit N2O: 34.2 GJ/unit * 0.2 kgCO2e/GJ = 6.84 kgCO2e/unit Total CO2e: 2312.604 kgCO2e/unit
Factor Source:	National Greenhouse and Energy Reporting (Measurement) Determination 2008 (compiled 1 July 2022). Indirect Factor - NGA workbook (where applicable), published Aug 2021.
Notes:	

Start Period	End Period
2022/07/01	2023/06/30

Emission and Energy Factors

Coles

Factor Name:	HFC-134a - kg - Commercial Air Conditioning
Factor ID:	43944
Region:	Earth - Earth
Data Type:	Refrigerant HFC-134a [kg]
Sub Type:	Commercial Air Conditioning
Scope:	Scope 1
Unit:	kg
Factor Set:	Managed - NGERS
Total CO2e (kgCO2e/unit):	1300.00000000
CO2 (kgCO2e/unit):	
CH4 (kgCO2e/unit):	
N2O (kgCO2e/unit):	
Indirect (kgCO2e/unit):	
BioCO2e (kgCO2e/unit):	
Energy (GJ/unit):	n/a
Mass (kg/unit):	1.00000000
Volume (L/unit):	n/a
Area (m2/unit):	n/a
Distance (m/unit):	n/a
Uncertainty Factor (%):	30.00000000
Review On:	01 Sep 2023
Effective From:	01 Jul 2022
Effective To:	
Published From:	01 Jul 2022
Published To:	
Description:	GWP from AR5
Factor Source:	National Greenhouse and Energy Reporting (Measurement) Determination 2008 (compiled 1 July 2022). Indirect Factor - NGA workbook (where applicable), published Aug 2021.
Notes:	

Start Period	End Period
2022/07/01	2023/06/30

Emission and Energy Factors

Coles

Factor Name:	HFC-134a - kg - Commercial Refrigeration
Factor ID:	43945
Region:	Earth - Earth
Data Type:	Refrigerant HFC-134a [kg]
Sub Type:	Commercial refrigeration
Scope:	Scope 1
Unit:	kg
Factor Set:	Managed - NGERS
Total CO2e (kgCO2e/unit):	1300.00000000
CO2 (kgCO2e/unit):	
CH4 (kgCO2e/unit):	
N2O (kgCO2e/unit):	
Indirect (kgCO2e/unit):	
BioCO2e (kgCO2e/unit):	
Energy (GJ/unit):	n/a
Mass (kg/unit):	1.00000000
Volume (L/unit):	n/a
Area (m2/unit):	n/a
Distance (m/unit):	n/a
Uncertainty Factor (%):	30.00000000
Review On:	01 Sep 2023
Effective From:	01 Jul 2022
Effective To:	
Published From:	01 Jul 2022
Published To:	
Description:	GWP from AR5
Factor Source:	National Greenhouse and Energy Reporting (Measurement) Determination 2008 (compiled 1 July 2022). Indirect Factor - NGA workbook (where applicable), published Aug 2021.
Notes:	

Start Period	End Period
2022/07/01	2023/06/30

Emission and Energy Factors

Coles

Factor Name:	R404A - kg
Factor ID:	43957
Region:	Earth - Earth
Data Type:	Refrigerant R404A [kg]
Sub Type:	Commercial refrigeration
Scope:	Scope 1
Unit:	kg
Factor Set:	Managed - NGERS
Total CO2e (kgCO2e/unit):	3942.80000000
CO2 (kgCO2e/unit):	
CH4 (kgCO2e/unit):	
N2O (kgCO2e/unit):	
Indirect (kgCO2e/unit):	
BioCO2e (kgCO2e/unit):	
Energy (GJ/unit):	n/a
Mass (kg/unit):	1.00000000
Volume (L/unit):	n/a
Area (m2/unit):	n/a
Distance (m/unit):	n/a
Uncertainty Factor (%):	30.00000000
Review On:	01 Sep 2023
Effective From:	01 Jul 2022
Effective To:	
Published From:	01 Jul 2022
Published To:	
Description:	GWP from AR5: R-125/143a/134a (44%/52%/4%)
Factor Source:	National Greenhouse and Energy Reporting (Measurement) Determination 2008 (compiled 1 July 2022). Indirect Factor - NGA workbook (where applicable), published Aug 2021.
Notes:	

Start Period	End Period
2022/07/01	2023/06/30

Emission and Energy Factors

Coles

Factor Name:	R407C
Factor ID:	43962
Region:	Earth - Earth
Data Type:	Refrigerant R407C [kg]
Sub Type:	Commercial air conditioning
Scope:	Scope 1
Unit:	kg
Factor Set:	Managed - NGERS
Total CO2e (kgCO2e/unit):	1624.21000000
CO2 (kgCO2e/unit):	
CH4 (kgCO2e/unit):	
N2O (kgCO2e/unit):	
Indirect (kgCO2e/unit):	
BioCO2e (kgCO2e/unit):	
Energy (GJ/unit):	n/a
Mass (kg/unit):	1.00000000
Volume (L/unit):	n/a
Area (m2/unit):	n/a
Distance (m/unit):	n/a
Uncertainty Factor (%):	30.00000000
Review On:	01 Sep 2023
Effective From:	01 Jul 2022
Effective To:	
Published From:	01 Jul 2022
Published To:	
Description:	GWP from AR5: R-32/125/134a (23%/25%/52%)
Factor Source:	National Greenhouse and Energy Reporting (Measurement) Determination 2008 (compiled 1 July 2022). Indirect Factor - NGA workbook (where applicable), published Aug 2021.
Notes:	

Start Period	End Period
2022/07/01	2023/06/30

Emission and Energy Factors

Coles

Factor Name:	R407F - kg
Factor ID:	43966
Region:	Earth - Earth
Data Type:	Refrigerant R407F [kg]
Sub Type:	Commercial refrigeration
Scope:	Scope 1
Unit:	kg
Factor Set:	Managed - NGERS
Total CO2e (kgCO2e/unit):	1674.10000000
CO2 (kgCO2e/unit):	
CH4 (kgCO2e/unit):	
N2O (kgCO2e/unit):	
Indirect (kgCO2e/unit):	
BioCO2e (kgCO2e/unit):	
Energy (GJ/unit):	n/a
Mass (kg/unit):	1.00000000
Volume (L/unit):	n/a
Area (m2/unit):	n/a
Distance (m/unit):	n/a
Uncertainty Factor (%):	30.00000000
Review On:	01 Sep 2023
Effective From:	01 Jul 2022
Effective To:	
Published From:	01 Jul 2022
Published To:	
Description:	GWP from AR5: R-32/125/134a (30%/30%/40%)
Factor Source:	National Greenhouse and Energy Reporting (Measurement) Determination 2008 (compiled 1 July 2022). Indirect Factor - NGA workbook (where applicable), published Aug 2021.
Notes:	

Start Period	End Period
2022/07/01	2023/06/30

Emission and Energy Factors

Coles

Factor Name:	R410A - kg
Factor ID:	43969
Region:	Earth - Earth
Data Type:	Refrigerant R410A [kg]
Sub Type:	Commercial refrigeration
Scope:	Scope 1
Unit:	kg
Factor Set:	Managed - NGERS
Total CO2e (kgCO2e/unit):	1923.50000000
CO2 (kgCO2e/unit):	
CH4 (kgCO2e/unit):	
N2O (kgCO2e/unit):	
Indirect (kgCO2e/unit):	
BioCO2e (kgCO2e/unit):	
Energy (GJ/unit):	n/a
Mass (kg/unit):	1.00000000
Volume (L/unit):	n/a
Area (m2/unit):	n/a
Distance (m/unit):	n/a
Uncertainty Factor (%):	30.00000000
Review On:	01 Sep 2023
Effective From:	01 Jul 2022
Effective To:	
Published From:	01 Jul 2022
Published To:	
Description:	GWP from AR5: R-32/125 (50/50)
Factor Source:	National Greenhouse and Energy Reporting (Measurement) Determination 2008 (compiled 1 July 2022). Indirect Factor - NGA workbook (where applicable), published Aug 2021.
Notes:	

Start Period	End Period
2022/07/01	2023/06/30

Emission and Energy Factors

Coles

Factor Name:	R410A - kg
Factor ID:	43970
Region:	Earth - Earth
Data Type:	Refrigerant R410A [kg]
Sub Type:	Commercial air conditioning
Scope:	Scope 1
Unit:	kg
Factor Set:	Managed - NGERS
Total CO2e (kgCO2e/unit):	1923.50000000
CO2 (kgCO2e/unit):	
CH4 (kgCO2e/unit):	
N2O (kgCO2e/unit):	
Indirect (kgCO2e/unit):	
BioCO2e (kgCO2e/unit):	
Energy (GJ/unit):	n/a
Mass (kg/unit):	1.00000000
Volume (L/unit):	n/a
Area (m2/unit):	n/a
Distance (m/unit):	n/a
Uncertainty Factor (%):	30.00000000
Review On:	01 Sep 2023
Effective From:	01 Jul 2022
Effective To:	
Published From:	01 Jul 2022
Published To:	
Description:	GWP from AR5: R-32/125 (50/50)
Factor Source:	National Greenhouse and Energy Reporting (Measurement) Determination 2008 (compiled 1 July 2022). Indirect Factor - NGA workbook (where applicable), published Aug 2021.
Notes:	

Start Period	End Period
2022/07/01	2023/06/30

Emission and Energy Factors

Coles

Factor Name:	R507 or HFC-507A - kg
Factor ID:	43972
Region:	Earth - Earth
Data Type:	Refrigerant R507A [kg]
Sub Type:	Commercial refrigeration
Scope:	Scope 1
Unit:	kg
Factor Set:	Managed - NGERS
Total CO2e (kgCO2e/unit):	3985.00000000
CO2 (kgCO2e/unit):	
CH4 (kgCO2e/unit):	
N2O (kgCO2e/unit):	
Indirect (kgCO2e/unit):	
BioCO2e (kgCO2e/unit):	
Energy (GJ/unit):	n/a
Mass (kg/unit):	1.00000000
Volume (L/unit):	n/a
Area (m2/unit):	n/a
Distance (m/unit):	n/a
Uncertainty Factor (%):	30.00000000
Review On:	01 Sep 2023
Effective From:	01 Jul 2022
Effective To:	
Published From:	01 Jul 2022
Published To:	
Description:	GWP from AR5: R-125/143a (50/50)
Factor Source:	National Greenhouse and Energy Reporting (Measurement) Determination 2008 (compiled 1 July 2022). Indirect Factor - NGA workbook (where applicable), published Aug 2021.
Notes:	

Start Period	End Period
2022/07/01	2023/06/30

Emission and Energy Factors

Coles

Factor Name:	R513A - kg - Commercial Refrigeration
Factor ID:	44254
Region:	Earth - Earth
Data Type:	Refrigerant R513A [kg]
Sub Type:	Commercial refrigeration
Scope:	Scope 1
Unit:	kg
Factor Set:	Managed - NGERS
Total CO2e (kgCO2e/unit):	573.00000000
CO2 (kgCO2e/unit):	
CH4 (kgCO2e/unit):	
N2O (kgCO2e/unit):	
Indirect (kgCO2e/unit):	
BioCO2e (kgCO2e/unit):	
Energy (GJ/unit):	n/a
Mass (kg/unit):	1.00000000
Volume (L/unit):	n/a
Area (m2/unit):	n/a
Distance (m/unit):	n/a
Uncertainty Factor (%):	30.00000000
Review On:	01 Sep 2023
Effective From:	01 Jul 2022
Effective To:	
Published From:	01 Jul 2022
Published To:	
Description:	GWP from AR5
Factor Source:	IPCC Fifth Assessment Report, 2014 (AR5)
Notes:	

Start Period	End Period
2022/07/01	2023/06/30

Emission and Energy Factors

Coles

Factor Name:	Refrigerant R502 - kg
Factor ID:	48119
Region:	Earth - Earth
Data Type:	Refrigerant R502 [kg]
Sub Type:	Commercial Refrigeration
Scope:	Scope 1
Unit:	kg
Factor Set:	Managed - NGERS
Total CO2e (kgCO2e/unit):	4785.92000000
CO2 (kgCO2e/unit):	
CH4 (kgCO2e/unit):	
N2O (kgCO2e/unit):	
Indirect (kgCO2e/unit):	
BioCO2e (kgCO2e/unit):	
Energy (GJ/unit):	n/a
Mass (kg/unit):	1.00000000
Volume (L/unit):	n/a
Area (m2/unit):	n/a
Distance (m/unit):	n/a
Uncertainty Factor (%):	
Review On:	01 Jul 2023
Effective From:	
Effective To:	
Published From:	
Published To:	
Description:	R-22/115 (48.8/51.2) R-115 AR5 GWP =7670 * 51.2% = 3927.04 R-22 AR5 GWP =1760 * 48.8% = 858.88
Factor Source:	IPCC Fifth Assessment Report, 2014 (AR5)
Notes:	

Start Period	End Period
2022/07/01	2023/06/30

Emission and Energy Factors

Coles

Factor Name:	Refrigerant R600A - kg
Factor ID:	49184
Region:	Earth - Earth
Data Type:	Refrigerant R600A [kg]
Sub Type:	Commercial Refrigeration
Scope:	Scope 1
Unit:	kg
Factor Set:	Managed - NGERS
Total CO2e (kgCO2e/unit):	3.00000000
CO2 (kgCO2e/unit):	
CH4 (kgCO2e/unit):	
N2O (kgCO2e/unit):	
Indirect (kgCO2e/unit):	
BioCO2e (kgCO2e/unit):	
Energy (GJ/unit):	n/a
Mass (kg/unit):	1.00000000
Volume (L/unit):	n/a
Area (m2/unit):	n/a
Distance (m/unit):	n/a
Uncertainty Factor (%):	
Review On:	01 Sep 2023
Effective From:	
Effective To:	
Published From:	
Published To:	
Description:	AR5 GWP
Factor Source:	IPCC Fifth Assessment Report, 2014 (AR5)
Notes:	

Start Period	End Period
2022/07/01	2023/06/30