

Emissions Factors August 2021

Australia

Background

Eden Suite uses emission factors published by the Federal Department of Climate Change and Energy Efficiency (DCEE) in their National Greenhouse Account (NGA) factors. These factors are used for Scope 1 and 2 emissions and some Scope 3 (e.g. Waste). Advice from DCEE is that the NGA factors from the year before should be applied to the following year's emissions. For example, the NGA Factors released in July 2011 should be applied to 2011-12 reporting. Where no factors are provided by DCEE other sources are used, primarily DEFRA (UK) for air travel and Victorian EPA for paper and water.

Links

- Department of Climate Change and Energy Efficiency, [National Greenhouse Account Factors, August 2021](#)
- Environment Protection Authority Victoria (EPA Victoria), [Greenhouse Gas Inventory Management Plan 2012-13](#)
- The UK Government Department for Business, Energy & Industrial Strategy, [2021 Government emission conversion factors for greenhouse gas company reporting](#)

Emissions factors

The table below provides the emission factors used by Eden Suite (NOTE: for 2021/22 the emission factors for NGERs were different for most states to those used in the NGA factors. Expert advice is to continue to use NGA factors for GHG inventory calculations as NGERs use their own factors through their portal)

Emissions source	Unit	Emissions conversion factor into kg (per unit)	Reference
Direct emissions (Scope 1)			
Petrol for vehicles	GJ	67.62	National Greenhouse Account Factors, August 2021, Table 4
LPG for vehicles	GJ	61	National Greenhouse Account Factors, August 2021, Table 4
Automotive diesel oil for vehicles (ADO)	GJ	70.41	National Greenhouse Account Factors, August 2021, Table 4
Ethanol for vehicles	GJ	0.40	National Greenhouse Account Factors, August 2021, Table 4
E10 (calculated as 90% gasoline and 10% ethanol)	GJ	60.898	National Greenhouse Account Factors, August 2021, Table 4
Avgas for aircraft	GJ	67.66	National Greenhouse Account Factors, August 2021, Table 4
Avtur for aircraft	GJ	70.21	National Greenhouse Account Factors, August 2021, Table 4
Natural gas	GJ	51.53	National Greenhouse Account Factors, August 2021, Table 2
LPG (stationery energy)	GJ	60.6	National Greenhouse Account Factors, August 2021, Table 3
Diesel oil (stationery energy)	GJ	70.2	National Greenhouse Account Factors, August 2021, Table 3

Emissions source	Unit	Emissions conversion factor into kg (per unit)	Reference
Indirect emissions (Scope 2)			
Purchased electricity (Victoria)	kWh	0.91	National Greenhouse Account Factors, August 2021, Table 46 (NGERs uses 0.96)
Purchased electricity (NSW)	kWh	0.78	National Greenhouse Account Factors, August 2021, Table 46 (NGERs uses 0.79)
Purchased electricity (QLD)	kWh	0.8	National Greenhouse Account Factors, August 2021, Table 46 (NGERs also uses 0.8)
Purchased electricity (SA)	kWh	0.3	National Greenhouse Account Factors, August 2021, Table 46 (NGERs uses 0.35)
Purchased electricity (WA) - SWIMS	kWh	0.67	National Greenhouse Account Factors, August 2021, Table 46 (NGERs uses 0.68)
Purchased electricity (TAS)	kWh	0.14	National Greenhouse Account Factors, August 2021, Table 46 (NGERs uses 0.16)
Purchased electricity (NT)	kWh	0.54	National National Greenhouse Account Factors, August 2021, Table 46 (NGERs uses 0.57)
Indirect emissions (Scope 3)			
Purchased electricity (Victoria)	kWh	0.1	National Greenhouse Account Factors, August 2021, Table 46
Purchased electricity (NSW)	kWh	0.07	National Greenhouse Account Factors, August 2021, Table 46
Purchased electricity (QLD)	kWh	0.12	National Greenhouse Account Factors, August 2021, Table 46
Purchased electricity (SA)	kWh	0.07	National Greenhouse Account Factors, August 2021, Table 46
Purchased electricity (WA)	kWh	0.01	National Greenhouse Account Factors, August 2021, Table 46
Purchased electricity (TAS)	kWh	0.02	National Greenhouse Account Factors, August 2021, Table 46
Purchased electricity (NT)	kWh	0.04	National Greenhouse Account Factors, August 2021, Table 46
Emissions from fuel extraction for natural gas (VIC)	GJ	4.0	National Greenhouse Account Factors, August 2021, Table 43
Emissions from fuel extraction for natural gas (NSW)	GJ	13.1	National Greenhouse Account Factors, August 2021, Table 43
Emissions from fuel extraction for natural gas (QLD)	GJ	8.8	National Greenhouse Account Factors, August 2021, Table 43

Emissions source	Unit	Emissions conversion factor into kg (per unit)	Reference
Emissions from fuel extraction for natural gas (SA)	GJ	10.7	National Greenhouse Account Factors, August 2021, Table 43
Emissions from fuel extraction for natural gas (WA)	GJ	4.1	National Greenhouse Account Factors, August 2021, Table 43
Emissions from fuel extraction for petrol	GJ	3.6	National Greenhouse Account Factors, August 2021, Table 45
Emissions from fuel extraction for LPG	GJ	3.6	National Greenhouse Account Factors, August 2021, Table 45
Emissions from fuel extraction for ADO	GJ	3.6	National Greenhouse Account Factors, August 2021, Table 45
Emissions from fuel extraction for E10	GJ	3.6	National Greenhouse Account Factors, August 2021, Table 45

Emissions source	Unit	Emissions conversion factor into tonnes (per unit)		Reference
Municipal solid waste (generic)	tonnes	1.6		National Greenhouse Account Factors, August 2021 table 49
Flights*	Passenger km	<463km	0.00024587	UK Government Department for Business, Energy & Industrial Strategy Conversion factors 2021 - Full set (for advanced users) – Business travel - air Note: these factors include radiative forcing and uplift factors The 463km limit for short-haul flights has been defined following the classification used by UK DEFRA (see table 32), based on the guidance from CORINAIR (originally referenced here). CORINAIR sets 250 nautical miles (463km) as the upper limit for 'short flights'
		463-3700km		
		Average	0.00015353	
		Economy	0.00015102	
		Business	0.00022652	
		>3700km		
		Average	0.00018362	
		Economy	0.000140625	
		Premium Economy	0.000225	
		Business	0.00040781	
First Class	0.00056251			
Emissions from fuel extraction for aircraft gasoline	Passenger km	<463km	0.00002691	UK Government Department for Business, Energy & Industrial Strategy Conversion factors 2021 - Full set (for advanced users) – WTT - Business travel - air Note: these factors include radiative forcing and uplift factors
		463-3700km		
		Average	0.00001681	
		Economy	0.00001654	
		Business	0.0000248	
		>3700km		
		Average	0.00002011	
		Economy	0.0000154	
Premium Economy	0.00002464			

Emissions source	Unit	Emissions conversion factor into tonnes (per unit)		Reference
		Business	0.00004466	
		First Class	0.00006159	
Office copy paper**	kg	100% Recycled	0.00152	EPA Victoria, Greenhouse Gas Inventory Management Plan 2012-13
		Virgin	0.0013	
Adelaide	kl	0.001045455		National performance report 2019-20: urban water utilities
Canberra	kl	0.001638614		National performance report 2019-20: urban water utilities
Darwin	kl	0.000571046		National performance report 2019-20: urban water utilities
Melbourne	kl	0.001878378		National performance report 2019-20: urban water utilities
Perth	kl	0.003088106		National performance report 2019-20: urban water utilities
South East Queensland	kl	0.001259259		National performance report 2019-20: urban water utilities
Sydney	kl	0.000925926		National performance report 2019-20: urban water utilities
Tasmania	kl	0.001129534		National performance report 2019-20: urban water utilities
Optional indirect emissions (Scope 3)				
Staff commuting	km	See reference		EPA Victoria, Greenhouse Gas Inventory Management Plan 2012-13, page 28
Catering	\$ expenditure	See reference		EPA Victoria, Greenhouse Gas Inventory Management Plan 2012-13 page 27
Public transport	\$ expenditure	See reference		EPA Victoria, Greenhouse Gas Inventory Management Plan 2012-13, page 22
Taxi	\$ expenditure	See reference		EPA Victoria, Greenhouse Gas Inventory Management Plan 2012-13, page 22
Couriers	\$ expenditure	See reference		EPA Victoria, Greenhouse Gas Inventory Management Plan 2012-13, page 30
Colour publications	sheets	See reference		EPA Victoria, Greenhouse Gas Inventory Management Plan 2012-13, page 31

***Flights**

Note: these factors include radiative forcing and uplift factors

****Office Paper**

It is assumed that 1 ream= 2.5kgs

For more detail, see EPA Victoria Greenhouse Gas Inventory Management Plan 2012-13 for how to apply these emissions factors.

*****Reticulated water**

Where 1 kL= 1m³

For more detail, see EPA Victoria Greenhouse Gas Inventory Management Plan 2012-13.