

Emissions Factors October 2020

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 2019](#)
- Environment Protection Authority Victoria (EPA Victoria), [Greenhouse Gas Inventory Management Plan 2012-13](#)
- The UK Government Department for Business, Energy & Industrial Strategy, [2019 Government emission conversion factors for greenhouse gas company reporting](#)

Emissions factors

The table below provides the emission factors used by Eden Suite
(NOTE: for 2020/21 the emission factors for Tasmanian electricity for NGERs was different to that 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, October 2020, Table 4
LPG for vehicles	GJ	61	National Greenhouse Account Factors, October 2020, Table 4
Automotive diesel oil for vehicles (ADO)	GJ	70.41	National Greenhouse Account Factors, October 2020, Table 4
Ethanol for vehicles	GJ	0.40	National Greenhouse Account Factors, October 2020, Table 4
E10 (calculated as 90% gasoline and 10% ethanol)	GJ	60.898	National Greenhouse Account Factors, October 2020, Table 4
Avgas for aircraft	GJ	67.66	National Greenhouse Account Factors, October 2020, Table 4
Avtur for aircraft	GJ	70.21	National Greenhouse Account Factors, October 2020, Table 4
Natural gas	GJ	51.53	National Greenhouse Account Factors, October 2020, Table 2
LPG (stationery energy)	GJ	60.6	National Greenhouse Account Factors, October 2020, Table 3
Diesel oil (stationery energy)	GJ	70.2	National Greenhouse Account Factors, October 2020, Table 3

Emissions source	Unit	Emissions conversion factor into kg (per unit)	Reference
Indirect emissions (Scope 2)			
Purchased electricity (Victoria)	kWh	0.98	National Greenhouse Account Factors, October 2020, Table 44
Purchased electricity (NSW)	kWh	0.81	National Greenhouse Account Factors, October 2020, Table 44
Purchased electricity (QLD)	kWh	0.81	National Greenhouse Account Factors, October 2020, Table 44
Purchased electricity (SA)	kWh	0.43	National Greenhouse Account Factors, October 2020, Table 44
Purchased electricity (WA) - SWIMS	kWh	0.68	National Greenhouse Account Factors, October 2020, Table 44
Purchased electricity (TAS)	kWh	0.15	National Greenhouse Account Factors, October 2020, Table 44 (NGERS uses 0.17)
Purchased electricity (NT)	kWh	0.62	National National Greenhouse Account Factors, October 2020, Table 44
Indirect emissions (Scope 3)			
Purchased electricity (Victoria)	kWh	0.11	National Greenhouse Account Factors, October 2020, Table 44
Purchased electricity (NSW)	kWh	0.09	National Greenhouse Account Factors, October 2020, Table 44
Purchased electricity (QLD)	kWh	0.12	National Greenhouse Account Factors, October 2020, Table 44
Purchased electricity (SA)	kWh	0.09	National Greenhouse Account Factors, October 2020, Table 44
Purchased electricity (WA)	kWh	0.02	National Greenhouse Account Factors, October 2020, Table 44
Purchased electricity (TAS)	kWh	0.02	National Greenhouse Account Factors, October 2020, Table 44
Purchased electricity (NT)	kWh	0.07	National Greenhouse Account Factors, October 2020, Table 44
Emissions from fuel extraction for natural gas (VIC)	GJ	4.0	National Greenhouse Account Factors, October 2020, table 41
Emissions from fuel extraction for natural gas (NSW)	GJ	13.1	National Greenhouse Account Factors, October 2020, table 41
Emissions from fuel extraction for natural gas (QLD)	GJ	8.8	National Greenhouse Account Factors, October 2020, table 41
Emissions from fuel extraction for natural gas (SA)	GJ	10.7	National Greenhouse Account Factors, October 2020, table 41
Emissions from fuel extraction for natural gas (WA)	GJ	4.1	National Greenhouse Account Factors, October 2020, table 41
Emissions from fuel extraction for petrol	GJ	3.6	National Greenhouse Account Factors, October 2020, table 43

Emissions source	Unit	Emissions conversion factor into kg (per unit)	Reference
Emissions from fuel extraction for LPG	GJ	3.6	National Greenhouse Account Factors, October 2020, table 43
Emissions from fuel extraction for ADO	GJ	3.6	National Greenhouse Account Factors, October 2020, table 43
Emissions from fuel extraction for E10	GJ	3.6	National Greenhouse Account Factors, October 2020, table 43

Emissions source	Unit	Emissions conversion factor into tonnes (per unit)		Reference
Municipal solid waste (generic)	tonnes	1.6		National Greenhouse Account Factors, October 2020 table 47
Flights*	Passenger km	<463km	0.0002443	UK Government Department for Business, Energy & Industrial Strategy Conversion factors 2020 - 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	0.00015553	
		Economy	0.00015298	
		Business	0.00022947	
		>3700km		
		Average	0.00019085	
		Economy	0.00014615	
		Premium Economy	0.00023385	
		Business	0.00042385	
		First Class	0.00058462	
Emissions from fuel extraction for aircraft gasoline	Passenger km	<463km	0.00002674	UK Government Department for Business, Energy & Industrial Strategy Conversion factors 2020 - Full set (for advanced users) – WTT - Business travel - air Note: these factors include radiative forcing and uplift factors
		463-3700km		
		Average	0.00001703	
		Economy	0.00001675	
		Business	0.00002513	
		>3700km		
		Average	0.0000209	
		Economy	0.000016	
		Premium Economy	0.00002561	
		Business	0.00004641	
		First Class	0.00006402	
Office copy paper**	kg	100% Recycled	0.00152	EPA Victoria, Greenhouse Gas Inventory Management Plan 2012-13
		Virgin	0.0013	
Reticulated water supply***	kL	0.00136		EPA Victoria, Greenhouse Gas Inventory Management Plan 2012-13

Emissions source	Unit	Emissions conversion factor into tonnes (per unit)	Reference
Adelaide	kl	0.002148515	National performance report 2018–19: urban water utilities
Canberra	kl	0.001779412	National performance report 2018–19: urban water utilities
Darwin	kl	0.000565789	National performance report 2018–19: urban water utilities
Melbourne	kl	0.001649007	National performance report 2018–19: urban water utilities
Perth	kl	0.002328767	National performance report 2018–19: urban water utilities
South East Queensland	kl	0.001265823	National performance report 2018–19: urban water utilities
Sydney	kl	0.000904523	National performance report 2018–19: urban water utilities
Tasmania	kl	0.001026178	National performance report 2018–19: 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.