

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.