



### **Electricity generated from uranium: Greenhouse Gases**

Electricity generated from uranium produces around 30 times less greenhouse gases than coal power. Nuclear power plants generate around 11% of the world's electricity, but none of these are in operation in Australia.

#### **How is electricity generated around the world?**

Commercial nuclear power reactors using uranium as the fuel source provide 11% of the world's electricity. About 40% of the world's electricity generation comes from coal-fired power stations. Other sources of global electricity include gas (22%), hydro (17%), solar and wind (3%) and other minor technologies (7%).

Australia currently uses no nuclear power as roughly 85% of our electricity is fossil fuel-dependent. Around 15% of Australia's electricity comes from renewable sources.

#### **How is the greenhouse-friendliness of power generation actually measured?**

Greenhouse gas emissions are typically expressed as tonnes of carbon dioxide (CO<sub>2</sub>); carbon dioxide has weight even as a gas.

The unit used to express greenhouse gas emissions as a function of the production of electricity is CO<sub>2</sub>eq/GWh. This expresses tonnes of CO<sub>2</sub>-produced (and emitted to the atmosphere) per GigaWatt hour of electricity generated.

In 2011 the World Nuclear Association (<http://www.world-nuclear.org/>) published a report that pulled together data from 21 studies to calculate average greenhouse gas emissions for each source of electricity generation.

Fuel	Emissions
Lignite	1,054
Coal	888
Oil	733
Natural Gas	499
Solar PV	85
Biomass	45
Nuclear	29
Hydroelectric	26
Wind	26

Data from the World Nuclear Association, showing greenhouse gas emissions (expressed as CO<sub>2</sub>eq/GWh) associated with fuel types as an average figure from 21 studies.

Australia's current annual emission of greenhouse gas is approximately 430 million tonnes. It has been estimated that Australia's current exports of uranium creates an annual reduction of 240 million tonnes of CO<sub>2</sub>, around half of our emissions.