



Calculating greenhouse gas emissions for your business

Australia has the world's highest greenhouse gas emissions per person in the world. Efforts to reduce greenhouse gas emissions and improve energy efficiency deliver environmental benefits. Such efforts can also enhance business competitiveness by reducing costs and by improving relationships with local communities. If a truly sustainable solution is to be achieved, all members of the community must play their part.

In Victoria, most of our electricity is produced from brown coal briquettes. Brown coal is the most greenhouse intensive electricity production in Australia. Victoria's emission factor is 1.467 and is the highest in Australia.

Calculating greenhouse gas emissions

To determine greenhouse gas emissions in tonnes of carbon dioxide equivalent (CO₂ -e), the following formula should be used:

$$\text{Greenhouse gas emissions (CO}_2\text{ -e)} = \frac{\text{Energy consumption} \times \text{Emissions factor}}{1000}$$

Energy consumption is expressed in kWh for electricity and GJ for gas.

Emission factor is the coefficient in kg CO₂ -e/kWh. This value differs for electricity and gas consumption, and also differs for each state or territory in Australia.

Calculate your businesses greenhouse gas emissions (energy consumption is available from your electricity bills and can be calculated quarterly, yearly etc)

Type of energy	Energy consumption	Emission factor	Calculation: $\frac{\text{Energy consumption} \times \text{Emission factor}}{1000}$	Greenhouse gas emissions (tonnes CO ₂ -e)
Electricity example	148,000 kWh	1.467	$\frac{148,000 \times 1.467}{1000}$	217.116 tonnes CO ₂ -e
Electricity	kWh	1.467		
Gas	GJ	63.9		

Save on lighting

An easy way to reduce your lighting bills is to replace standard incandescent globes with compact fluorescent globes. Compact fluorescent globes are suitable for most areas, particularly toilets, offices, tea rooms and service areas.

Calculate how much your business will save by replacing incandescent globes

	No. globes to replace	Wattage of globes	Wattage of fluorescents	Hours of operation (hours per day)	Calculation (Wattage of globes – Wattage of fluorescents) × No. globes to replace × Hours of operation	Energy savings (kWh per day)*
Example	5	100W	20W	12 hours per day	$(100W - 20W) \times 5 \times 12$	4800 kWh per day
		100W	20W			
		75W	16W			
		60W	11W			
		40W	9W			
		25W	5W			
TOTAL						

* This kWh figure can be converted into dollar savings by multiplying by the tariff. It can also be converted into greenhouse gas emissions using the formula on the previous page.



For more information

To find out more about the greenhouse gas emissions produced by your business, contact the Sustainable Traders Project Officer on (03) 9209 6474 or email karcher@portphillip.com.au, or visit <http://www.portphillip.vic.gov.au/ecoedge.html>

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