



EPA's Carbon Neutral Update 2006-07

In 2005-06 EPA Victoria became carbon neutral and made a public commitment to maintain this status each year.

In 2006-07 EPA again calculated its GHG footprint and took appropriate steps, following the Carbon Management Principles to ensure all its emissions were neutralized.

For more information on how to better manage your organisations GHG emissions please visit www.epa.vic.gov/greenhouse or join EPA Carbon Innovators Network at carbon.innovators@epa.vic.gov.au. For more information on EPA's carbon neutral strategy contact EPA's EMS Coordinator on (03) 9695 2722 or email ems.coordinator@epa.vic.gov.au.

Throughout 2006-07 public awareness about climate change has continued to increase, with a substantial movement in the corporate and industrial sectors to reduce carbon footprints and to combat climate change. The concept of carbon neutrality remains a hotly debated topic therefore EPA will continue to achieve carbon neutrality so we understand the challenges involved. This will allow EPA to help raise the quality of this debate and assist Victorian businesses in tackling them.

Measure

EPA again used the WRI/WBCSD GHG Protocol framework to develop our GHG inventory (for more information see www.ghgprotocol.org). EPA has committed to including two additional GHG emissions sources in our inventory each year. This year we chose to include the emissions associated with office paper usage and reticulated (ie. mains) water usage.

Avoid and reduce

Despite having only implemented our carbon neutral strategy in February 2007, leaving only 4 months to implement avoidance and reduction strategies, EPA still managed to reduce our overall GHG emissions by 4.66%, with a 3% reduction in total electricity use. This was achieved through the implementation of a number of initiatives, for example, the rollout of LCD screens on EPA computers and the installation of low flow shower-heads (which reduced hot-water consumption, therefore reducing electricity needed to heat the water).

EPA remains committed to achieving our 2010 target of a 10% direct reduction in overall GHG emissions. Throughout 2007-08, EPA will implement a range of projects to further reduce our GHG emissions. This will include conducting energy audits across all EPA sites and, as a minimum, implementing any projects that have a 4 year pay back or less.

Offsets and Green Power

EPA is committed to purchasing cost-competitive, accredited green power products for 100% of our electricity GHG emissions. In 2006-07, this green power was sourced from a range of electricity providers. EPA purchased a majority of our GreenPower from a Victorian wind farm to ensure the energy purchased displaces the Victorian GHG intensive electricity that would have been otherwise used.

In 2006-07, EPA has attempted to source a portfolio of robust, accredited carbon offset products to neutralise our residual GHG emissions. EPA is committed to purchasing high quality carbon offsets from a portfolio of projects that are verified, demonstrate additionality and are transparent to neutralise our residual emissions. During our investigations for our 2006/07 purchases, we found that many international projects met these high standards, including projects accredited under the Clean Development Mechanism of the Kyoto Protocol and under the Gold Standard. As a consequence we purchased a combination of robust Australian and international products (see inventory overleaf).

Financial Driver

In 2006-07 EPA's internal cost of carbon rose to \$26.63 per tonne, which is significantly higher than the \$22 per tonne price of 2005-06. This increase is the result of increased offset and Green Power prices. This financial driver has encouraged EPA to internalise the cost of carbon into EPA operations, for example EPA aims to implement an internal carbon cap and trade scheme.

EPA does not view carbon neutrality as an expense, but rather as a necessary responsibility as an organisation. Implementation of this process allows EPA to better provide guidance and assistance to Victorian businesses on how to better manage their own GHG emissions.

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Emissions source	Consumption units	Consumption	CO ₂ -e (tonnes)	Proportion of total inventory (%)	Change from 2005-06 (%)
Direct emissions (Scope 1)					
Petrol for vehicles	kL	105.21	252.50	5.59	1.53
LPG for vehicles	kL	120.46	192.74	4.26	-4.18
Petrol for boats	kL	5.97	14.33	0.32	-50.09
Vehicle airconditioner (A/C) refrigerant leakage	kg	72.34	14.11	0.31	28.80
Automotive diesel oil (ADO) for vehicles	kL	1.91	5.17	0.11	-34.37
Building A/C refrigerant leakage at leased space where EPA is the sole tenant	kg	4.38	4.64	0.10	0.00
Back-up diesel generators at leased space where EPA is sole tenant (CES)	kL	0.20	0.54	0.01	0.00
Kitchen and laboratory refrigerator refrigerant leakage	kg	0.21	0.34	0.01	0.00
Total Scope 1			484.36	10.71	-4.14
Indirect emissions (Scope 2)					
Purchased electricity for tenant power and light at all facilities and base building power where EPA is the sole tenant	kWh	1805816.00	2237.41	49.49	1.45
Purchased high-temperature hot water	GJ of natural gas fuel input	8631.43	447.97	9.91	0.00
Total Scope 2			2685.38	59.40	1.20
Optional emissions included (Scope 3)					
Purchased electricity for base building power at leased space where EPA is not the sole tenant	kWh	552339.38	684.35	15.14	-14.98
Emissions from fuel extraction and transmission & distribution line losses for all purchased electricity	kWh	2358155.38	202.80	4.49	-2.94
Flights*	km	632465.20	197.59	4.37	-33.02
Emissions from fuel extraction for natural gas	GJ	9349.40	109.39	2.42	0.54
Natural gas at leased space where EPA is not the sole tenant (Geelong, Southbank)	GJ	717.97	37.26	0.82	15.46
Emissions from fuel extraction for petrol	kL	111.18	33.35	0.74	-3.81
Emissions from fuel extraction for LPG	kL	129.01	25.80	0.57	-3.28
Reticulated water supply*	Meters cubed	8310.20	19.45	0.43	-28.41
Office paper*	Reams	3101.00	14.78	0.33	-23.76
Taxi	kL of LPG	8.55	13.68	0.30	11.54
Public transport (expenditure)	\$	25654.10	7.78	0.17	-9.07
Paper and cardboard waste	tonnes	1.07	2.09	0.05	204.91
Municipal solid waste (generic)	tonnes	1.00	0.89	0.02	-34.81
Food waste	tonnes	1.00	0.70	0.02	-3.63
Emissions from fuel extraction for ADO	kL	1.91	0.57	0.01	-34.38
Back-up diesel generators at leased space where EPA is not the sole tenant	kL	0.14	0.38	0.01	3.78
Commingled waste	tonnes	0.13	0.09	0.00	-46.75
Building A/C refrigerant leakage at leased space where EPA is not the sole tenant	kg	227.46	0.00	0.00	0.00
Total Scope 3*			1350.94	29.88	-14.65
SCOPE 1 + 2 + 3*			4520.68	100.00	-4.66
Reduction measures					
Green power					
Australian CO ₂ Exchange Green Power Product	kWh	1772000.00	-2195.51	-48.57	n/a
Origin Green Power - HWT	kWh	389493.00	-482.58	-10.67	n/a
Country Green Power Premium - CES	kWh	130582.00	-161.79	-3.58	n/a
AGL Green Power - Wangaratta	kWh	29936.00	-37.09	-0.82	n/a
Green Power - Traralgon	kWh	28777.00	-35.65	-0.79	n/a
TRU Energy Green Power Premium - Geelong	kWh	8093.76	-10.03	-0.22	n/a
Offsets					
Climate Friendly CDM accredited China wind farm offsets	tonnes CO ₂ -e	900.00	-900.00	-19.91	n/a
VicFleet Offset program	kL	see vehicle fuel use above	-450.41	-9.96	n/a
Carbon Reduction Institute NSW GGAS accredited demand side abatement offsets	tonnes CO ₂ -e	200.00	-200.00	-4.42	n/a
Climate Friendly Gold Standard accredited Turkey wind farm offsets	tonnes CO ₂ -e	150.00	-150.00	-3.32	n/a
CO ₂ Logic CDM accredited India biomass energy offsets	tonnes CO ₂ -e	100.00	-100.00	-2.21	n/a
NET EMISSIONS			-202.38	-4.48	

* Data back-cast for new methodologies for purpose of comparison with 2005-06 data



EPA INFORMATION CENTRE www.epa.vic.gov.au
 40 City Road, Southbank, Victoria 3006 GPO Box 4395QQ, Melbourne, Victoria 3001
 T: 03 9695 2722 F: 03 9695 2780