



Cutting Emissions for Ballarat – Climate of Change Project

stats & facts

Ballarat region energy use and emissions profile

Emissions from use of electricity in Ballarat are derived from:

- Industry ~ 50%
- Business / other commercial ~ 19%
- Domestic / household ~ 31%

General statistics:

- Energy use is growing – last year ~ 9% growth
- Super pipe water pumping ~ 2.5% total electricity consumption.
- Energy use for cooling is projected to rise by a factor of five for the period 1990-2020 (national statistic).
- Most people in Ballarat travel by car (one person – no passengers ~ 67%)
- 28% of domestic / household emissions are embodied in food
- Approximately 5,000 Ballarat households use electric hot water systems (BREAZE survey – 16% of households have electric hot water)
- BREAZE members on average (based on survey) are likely to use 48% less electrical energy than other Ballarat households.

Table 1 – Ballarat’s total and domestic electricity consumption, and associated emission, 2007 & 2008

Year	Electricity consumption		Total emissions*		Per person emissions	
	Total electricity used in Ballarat (Megawatt hours)	Domestic electricity use (based on 31% of total (Megawatt hours))	Total emissions from electricity consumption in Ballarat (tonnes)	Total emissions from domestic electricity use (tonnes)	Per person emissions total electricity use (tonnes)	Per person emissions domestic energy use (tonnes)
2007	591,193 ¹	183,270	817,436	253,405	9.1	2.8
2008	629,209	195,055	870,000	269,700	9.7	3

* Note – based on emissions for Victorian coal fired electricity generation

¹ DSE energy consumption data 2009

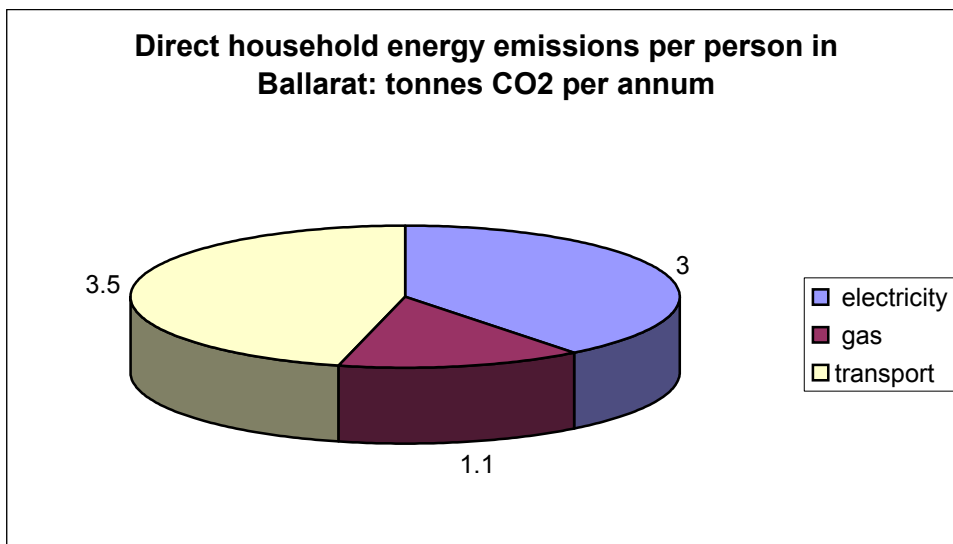


Figure 1 - Direct household energy emissions per person in Ballarat

Cutting Emissions in the Ballarat Region

- Total emissions for the Ballarat region are 1,442,000 tonnes; and consist broadly of 60% from electricity generation and use, 12% from gas use and 28% from transport.
- Average electrical energy use for BREAZE member households responding to the Climate of Change survey in 2008 was estimated to be 52% of the 2007 average for Ballarat and 39% of the national average (total average BREAZE member usage = 1097 kilowatt hours per person). BREAZE members have implemented a range of energy efficiency and micro renewable energy generation actions and have a lot of useful information to share about how they minimise their energy consumption.
- Approx. 50% Ballarat's electricity consumption is for industrial purposes, and from a relatively small customer base. Projects that engage with local industry to generate renewable energy and reduce energy consumption may result in substantial emissions reductions.
- A 10% input (i.e. purchase of Green power) from wind power could cut emissions for Ballarat by close to 87,000 tonnes, i.e. 10% of total electricity purchased from greenpower.
- BREAZE has directly facilitated the installation of 234 KW of solar panels in the Ballarat district (as of Aug 2009) which are generating 304 Megawatts of clean energy per year². This represents a reduction of 420 tonnes of CO₂ per annum (or 0.15% of Ballarat's domestic emissions from electricity) if these systems replace standard coal fired powered electricity. Installation of 5,000 domestic 1 kw systems in the next year could reduce 9,000 tonnes of greenhouse gas emissions (approx. 10% of emissions from electricity).
- Approximately 5,000 Ballarat households use electric hot water systems (BREAZE survey – 16% of households have electric hot water). If all these households switched to solar hot water it would save a total of 26,000 tonnes of CO₂ per year (assuming similar climatic conditions to Melbourne).
- The majority of residents in Ballarat commute via private vehicle. Substantial emissions savings could be achieved through use of sustainable transport and alternatives such as car pooling.
- Encouraging water efficiency measures and eliminating the need for pumped water supply through the super pipe could save 22,000 tonnes of greenhouse gas
- BREAZE's activities have focused on reducing direct emissions from household activities. This represents a significant but minor proportion (35%) of total emissions per person.

² Based on a measured generating capacity of of 1300kw per year from systems installed in Ballarat

Indirect³ emissions generated as a result of government, industry and agriculture to support households accounts for 65% of total emissions per person. Large emissions reductions can be made by targeting these sectors and reducing emissions intensive consumption.

- Climate change, carbon emissions pricing and oil constraints will present new challenges to long food supply chains, and greater access to locally produced basic foods will help with increased economic resilience, food security, regional development, personal health and emissions reduction benefits.

[3 Indirect emissions largely occur off-site from the household and are not directly related to the household's behaviour. Indirect emissions are embodied in purchases made by individuals and households, and make up a surprisingly large proportion: two thirds of the total emissions for the average Australian.](#)