Energy in Australia

How do we use energy?

In Australia we use 32% of our energy in industry, 41% in transport, 20% in homes and shops, and 7% in mines and farms. Much of this is in the form of electricity, but we also use large amounts of petrol and diesel for transport and industry, and gas for heating in our homes.

How much energy do we use?

Imagine how much electrical energy you would use if you ran three 1000 watt bar heaters continuously throughout the year. The energy used would be about 94 thousand million joules (94×10^9 J). This might seem an enormous amount, but it is the average energy each person in Australia uses each year. It is almost four times the world average, and 12 times more than our neighbours in Indonesia use.

Energy needed per person per kilometre (10^6 joules)	
cycling	39
walking	54
by train	390
by bus	480
by car	1350
by plane	1890

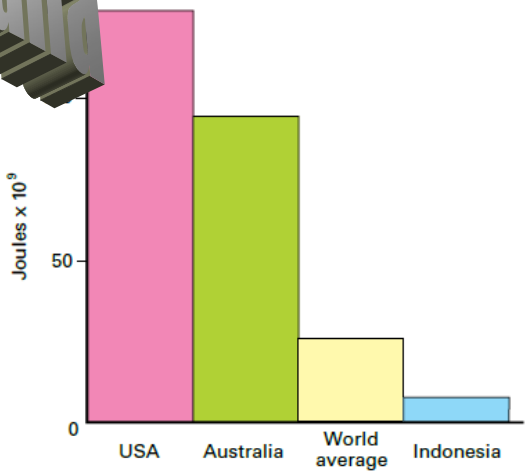


Fig 2 Energy used per person per year in selected countries, based on data from *BP Statistical Review of World Energy*, June 2006

Energy reserves	'Lifetimes' of world reserves from 2005 (in years)	Known Australian reserves in 2005 ($\times 10^{18}$ joules)	Annual Australian production ($\times 10^{18}$ joules)
oil	41	8	0.4
natural gas	65	96	0.5
coal	155	632	3.3
uranium	70	366	4.6 (all exported)

Source: *BP Statistical Review of World Energy*, June 2006, and data from Australian Uranium Association

We use almost all our oil as a fuel, but it may be wiser to use more of it to make other materials. For example, you might be surprised to learn that the oil needed to make 100 litres of petrol (about two tankfuls) could provide the raw materials and energy to make a large number of useful items: for example about 20 polyester shirts, 6 garbage bags, 20 acrylic jumpers, a car tyre, 20 bicycle tubes and 500 pairs of pantihose!

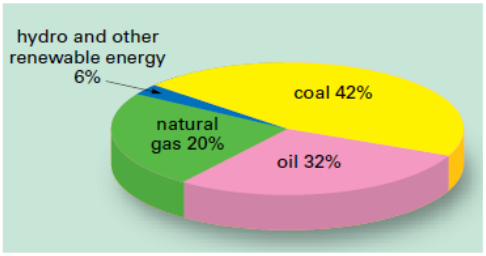


Fig 4 Australia's energy consumption (2005)

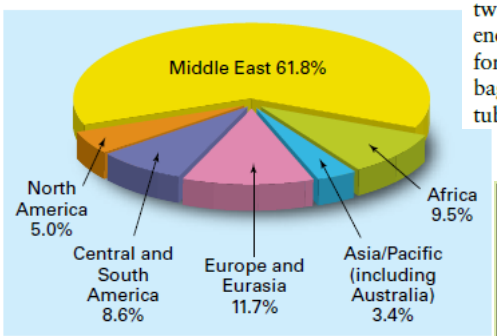


Fig 5 World oil reserves in 2005

Type of lighting	Unit cost	Lifetime (hours)	Power (watts)
incandescent globe	$1	1000	60
fluorescent tube	$4	5000	40
compact fluorescent	$10	8000	15

From Fig 4 you can see that in Australia we obtain 94% of our energy from fossil fuels—coal, oil and gas. These are non-renewable energy sources. Once used they are not replaced, or replaced only very slowly, by natural processes.

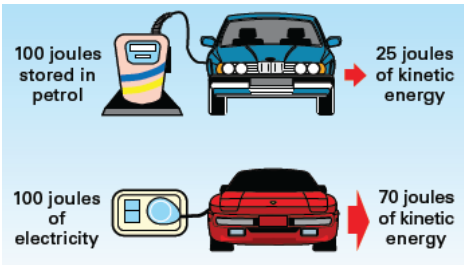
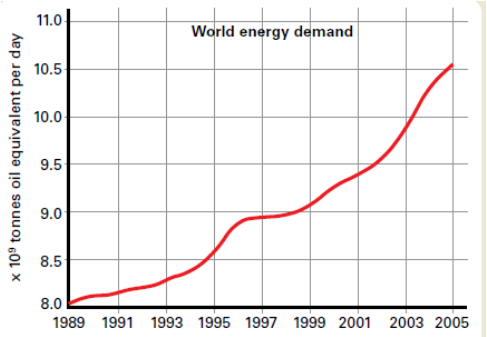


Fig 28 Battery-powered electric cars are more efficient than petrol-powered cars.

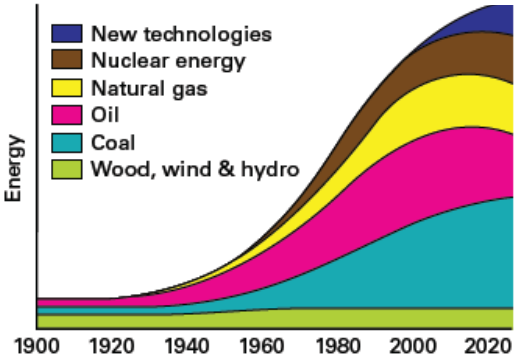


Year	Nuclear energy production (million tonnes of oil equivalent)
1981	189
1984	282
1987	393
1990	453
1993	495
1996	545
1999	571
2002	611
2005	627

World Nuclear Energy Production

Australia's production and consumption of oil (in thousands of barrels per day)		
Year	Production	Consumption
1981	449	624
1984	568	611
1987	628	625
1990	651	694
1993	572	720
1996	619	794
1999	625	843
2002	731	846
2005	554	884

Source: BP Statistical Review of World Energy, June 2006



World energy production by method