



WHERE DOES YOUR ELECTRICITY COME FROM?

TASK: use Google Earth to explore the locations of power stations around Australia, both those using renewable energy sources and those using fossil fuels.

WHAT YOU WILL NEED: a computer with access to the Internet and with Google Earth.

Remember, **fossil fuels** (e.g. coal, natural gas, oil) are limited resources. These fuels were created when dead plant material (from swamps and bogs) was buried deep beneath the earth for long periods of time. The heat, pressure, and bacteria living in the earth converted the dead plant material into fossil fuel over millions of years!

As we use these fuels, we use up all of the easy to reach ones first – this means that fossil fuels are becoming harder and harder to find; and more and more expensive to get out of the ground when they are found. Once removed from the ground, the fuel must then be processed (to make it useable) and then shipped around the globe to the places that need it. In addition, accidents such as the Deepwater Horizon Oil Spill in 2010, which impacted much of the south coast of the US and the Gulf of Mexico fishing industry, remind us that getting these fuels can come at great cost to our environment.








Renewable energy sources (e.g. wind, water, sun) will not run out. They are continuously replenished, or renewed, as we use them. The wind will continue to blow, rivers will continue to flow, and the sun will continue to shine even if we use them to collect energy and convert it to electricity. We do not have to dig deep into the earth to find these resources either. So why do we still use fossil fuels?

Activity – Part 1: Renewable Energy in Australia

Let's look at renewable energy power plants across Australia first. Go to this website:

http://www.oresomeresources.com/interactives_view/resource/interactive_renewable_power_stations_in_australia

Select "View Interactive" and the map will download. Open this in Google Earth. Click on at least one of each of the symbols below. What renewable resource does each one use? Where in Australia is each type commonly found? (e.g. East Coast, desert inland, etc.)

Symbol	Renewable Resource (Fuel Type)	Where Found
		
		
		
		
		
		
		

**Activity – Part 3: Electricity Generation in Alice Springs**

Finally, let's find out where YOUR electricity comes from.

Simultaneously display the symbols for both renewable and fossil fuel power stations. Then zoom in on Alice Springs until you can see all of the symbols clearly. How many different stations can you find? What types of fuel does each one use? What is the *installed capacity* of each station?

Station Name	Type of Fuel	Installed Capacity

The **installed capacity** refers to how much electricity can be produced by the station. Notice that sometimes this is listed as kilowatts (kW), and sometimes as megawatts (MW).

1 kilowatt = 1,000 watts

1 megawatt = 1,000,000 watts

1 MW = 1,000 kW

Use the conversion to compare the stations.

Does Alice Springs get more electricity from fossil fuels or from renewable resources?

Extension Activity – Do the same thing for Darwin, then for other capital cities in Australia. Which cities or states generate the biggest proportion of their electricity with renewable resources? Why might this be?