



## Fact Sheet - geothermal energy

Geothermal generation is energy derived from the Earth's intense heat.

Fluid from highly pressurised, natural geothermal systems is brought to the surface by wells that vary in depth from a few hundred metres to 2.5 kilometres. At the surface this fluid is separated into two streams, one of steam and the other of water. The steam is used in a turbine to generate electricity and the hot geothermal water is either injected back into the ground or drained away.

Greenhouse gas emissions from geothermal power plants are significantly less than for a conventional thermal power station, although other gases, such as hydrogen sulphide, may be emitted with the geothermal steam.

In addition to Sorik Marapi, Origin has interests in a number of 'non-conventional' geothermal exploration joint ventures located in the Cooper Basin, South Australia.

These joint ventures are focussing on two distinct sources of geothermal energy including: Enhanced Geothermal Systems (EGS) which seeks to extract heat from hot fractured granites at over 4 kilometres depth and, hydrothermal systems which will seek to commercialise heat from lower temperature sandstone reservoirs at depths of approximately 2 kilometres below the Earth's surface.

### Sorik Marapi

Sorik Marapi is located in Northern Sumatra, Indonesia, approximately 590km south of the city of Medan.

The Sorik Marapi concession has a total area of 629km<sup>2</sup>. It encompasses more than 50 kilometres of the Sumatra Fault Zone which is the major geologic tectonic structure that runs the length of Sumatra and controls the location of most of the volcanic and geothermal activity on the island.



