

## Renewable Energy in Antarctica

The use of Renewable Energy is very important in Antarctica because otherwise resources will be wasted in transporting materials used to generate non-renewable energy such as diesel or coal. Some people think that solar hot water should not be used in Antarctica. They are wrong.

Wind and solar power are the two best renewable energy sources that can be applied in Antarctica according to antarcticstation.org website. However, solar energy is only available for half a year. The Princess Elisabeth Station which is part of Belgian polar research program is hoping to generate power from wind turbines from the force of katabatic winds. While photovoltaic solar panel generates electricity thermal solar panels heat up the water, melting the snow.

Solar hot water systems were introduced at British:

- King Edward Point,
- South Georgia
- Signy Island
- and Bird Island

All those places are part of the British Antarctic Survey (BAS). There is a lot of potential for renewable energy at Rothera Research Station.

The first attempt to introduce renewable energy into Antarctica by Australian Antarctic division was attempted in 1949. It was unsuccessful due to wind forces and effects of cold on mechanical components. Little success was achieved in attempts to use renewable energy in 1960s. It was not until the 1980s that wind power was successfully implemented and the use of solar power was introduced. In 2003 two 300 kW turbine were installed in Mawson.

Information on New Zealand's Ross Island Wind power generators is published on antarcticnz.govt.nz website. According to the website, in one year the three 333 kW turbines will reduce the amount of diesel consumed by 463,000 litres and amount of carbon emissions by 1242 tonnes.

Additional information on New Zealand, United States and Italian Antarctic programs is provided by International Antarctic Centre in Christchurch, New Zealand: <http://iceberg.co.nz>

Generating power from renewable in Antarctica was an easier problem than in capital cities due to smaller demands.

## References

<http://iceberg.co.nz>

[http://antarcticstation.org/station/renewable\\_energies](http://antarcticstation.org/station/renewable_energies)

[http://antarctica.ac.uk/about\\_antarctica/environment/energy/renewable.php](http://antarctica.ac.uk/about_antarctica/environment/energy/renewable.php)

<http://antarctica.gov.au/about-antarctica/history/technological-developments/renewable-energy-timeline>

<http://antarcticnz.govt.nz/scott-base/ross-island-wind-energy>

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