

GEELONG GEOTHERMAL POWER PROJECT (GGPP)

Greenearth Energy is a renewable energy resource company, with a particular emphasis on geothermal energy, committed to developing sustainable energy production into the future. Greenearth Energy is committed to reducing carbon emissions and meeting the challenge of climate change head on through responsible economic, environmental, and social development of renewable energy resources.

Greenearth Energy has identified a prospective geothermal resource in the area between Anglesea and Geelong, Victoria that has the potential to generate up to 140 MW of electricity providing the community with a source of clean, base load, renewable energy.

Geelong Geothermal Power Project

Recently Greenearth Energy was successful in being awarded \$32 million in Federal and State Government grants, which has allowed the company to progress the development of the Geelong Geothermal Power Project (GGPP).

The development of the Geelong Geothermal Power Project will involve addressing a number of key issues and progressing the project through a number of stages including:

1. Regulatory – obtaining the necessary approvals, licences and permits
2. Technical – obtaining the most appropriate technologies, accessing and utilising the geothermal resource and electricity distribution
3. Economic and Financial – achieving economic viability and raising capital
4. Environmental and Social – minimising impacts on the environment and the community

Each stage requires a number of environmental and operational permits to be obtained. The process of obtaining these permits includes ensuring that all relevant stakeholders, including the community, are appropriately engaged and are included in the development process.

GGPP Development Stages

The key development stages of the GGPP will include:

- A. A preliminary works stage
- B. Stage 1 - Initial Drilling (Proof-of-Concept)
- C. Stage 2 - Demonstration
- D. Stage 3 - Commercialisation

A. Preliminary Works Phase

The Government funding awarded to the company is contingent upon Greenearth Energy successfully meeting a number of milestones including:

- completing its own capital raising
- obtaining any necessary environmental approvals
- successfully completing various survey's, studies and tenders

B. Stage 1 - Initial Drilling (Proof-of-Concept)

Upon successful completion of the above list of tasks it is planned to drill two wells to a depth of 4 km and flow test geothermal fluids sometime in the second half of 2010. The drilling operation requires an area of approximately 1.5 hectares and will take 3-4 months to complete.

The key objectives of the initial drilling are to:

- confirm the temperature at depth
- confirm the flow rate of geothermal fluids
- demonstrate an adequate geothermal resource for Stage 2

Confirmation of adequate flow and temperature conditions at depth are critical considerations that would enable Greenerth Energy to proceed to the next stage.

During this stage Greenerth Energy will continue its investment attraction and stakeholder and community engagement activities.

C. Stage 2 - Demonstration 12 MW_e Power Plant

The aim of the initial 12 MW_e power plant is to demonstrate power generation and establish the commercial viability of this type of geothermal energy development in this location.

With the establishment of the necessary fluid flow and temperature at depth from the initial drilling, the next steps are for Greenerth Energy to:

- obtain all relevant licenses and permits (production)
- conduct its own capital raising
- stakeholder and community engagement
- obtain all necessary environmental approvals

Greenerth Energy can then proceed with the drilling of two more deep wells from the same site, and the construction of a 12 MW_e Organic Rankine Cycle (ORC) power plant.

The type of power plant envisaged covers a small area (approximately 4 hectares) compared to conventional power plants previously constructed in Victoria.

D. Stage 3 - Construction of Further 12 MW_e Power Plant Modules (Commercialisation)

If it is successfully demonstrated that the generation of electricity from a 12 MW ORC unit is commercially viable, Greenerth Energy will continue to:

- obtain all relevant licenses and permits (production)
- conduct its own capital raising
- stakeholder and community engagement
- obtain all necessary environmental approvals

As this project is still in a preliminary stage the location and layout of power plant modules are purely conceptual and are subject to technical, environmental and community requirements.

The location of the initial 12 MW_e plant and further power plant modules and infrastructure will require community and stakeholder engagement, particularly with the local community, landowners and planning authorities.

It is likely that there will be the ability to vary sites and particular infrastructure layout as the project progresses. These processes will be undertaken with a view of minimising any environmental and social impacts.

Stakeholder input and the technical requirements of the project will inform project development and operation, including site selection, vegetation screening, and appropriate routing and potentially the undergrounding of power lines.

