

ASX ANNOUNCEMENT AND MEDIA RELEASE, 7 December 2009

GEELONG GEOTHERMAL POWER PROJECT TICKS ALL THE BOXES

- **Distinct Advantages of the Geelong Geothermal Power Project**
- **Multiple Benefits to be Derived by Greater Geelong Industry and Community**

Greenearth Energy Limited (Greenearth Energy) (ASX:GER) is providing a summary of the key benefits of the company's flagship Victorian geothermal energy project - the Geelong Geothermal Power Project (GGPP).

Upon review of the previous announcements regarding the GGPP, it is evident that Greenearth Energy's project really does tick all the boxes with regards to providing Geelong, Victoria and Australia with a substantial base load renewable energy development opportunity.



Proven Geothermal Systems

Electricity is being generated from an increasing number of hydrothermal resources worldwide utilising established binary Organic Rankine Cycle (ORC) and Kalina Cycle (KC) technology. Australia's only geothermal power plant is at Birdsville, Queensland and while only small, is an example of a Hot Sedimentary Aquifer (HSA) geothermal resource successfully generating since 1992. Greenearth Energy is focussed on HSA systems from which electricity has been commercially generated for over 20 years.

HSA systems are found in areas such as Australia, the USA and Germany where within sedimentary basins, favourable temperatures are found at depths of 3 km plus, with warm fluids generally trapped within aquifers beneath insulating sedimentary cover. For further information on HSA geothermal developments worldwide please refer Greenearth Energy's ASX Announcement of 13 October 2009.

Greenearth Energy's Geelong Geothermal Power Project is planning to deploy proven Organic Rankine Cycle (ORC) plant technology.

Greenearth Energy's ASX Announcement dated 13 October 2009, highlighted the number, nature and size of geothermal plants currently operating worldwide that successfully utilise either Organic Rankine Cycle (ORC) or Kalina Cycle Plant (KC) technology.

The characteristics of the eleven operational plants (including Australia's only operating geothermal plant situated in Birdsville, Queensland) are shown to be very similar to that proposed by Greenearth Energy and lead technical consultants Sinclair Knight Merz (SKM) for the Geelong Geothermal Power Project.



Proven Plant Technology



Greenearth Energy's planned Proof-of-Concept drilling, scheduled for the second half of 2010, represents Stage 1 of a phased development for the Geelong Geothermal Power Project.

The Stage 1 Proof-of-Concept involves drilling two deep geothermal wells, one production and one injection well, which, if successful, will enable long term flow testing to fully characterise the HSA resource 9 km's northwest of the township of Anglesea. Present indications of temperature and permeability imply that the Stage 1 Proof-of-Concept may deliver sufficient fluid to achieve production of 4 to 6 MW_e Nett (depending on the temperature and permeability actually achieved) and may be practical for power generation by means of deploying a single modular ORC power plant.

Drilling a further two wells (upon successful Proof-of-Concept stage) would suit supplying ORC plant modules that are now available in the 10 to 15 MW_e range. This size modular plant lends itself to potential replication across the entire geothermal resource as an alternative to a larger centralised power plant. A pre-feasibility study of the intended Geelong Geothermal Power Project has been undertaken by leading geothermal technical consultants SKM, who have developed the concept of 12 modular 12 MW_e plants being deployed across the reservoir to deliver a total potential of up to 140 MW_e geothermal power.

This phased development approach provides a number of benefits such as reduced number and length of above ground hot geothermal fluid pipe runs, multi use of drilling pads for both drilling, phased erection of standard modular units and a staged investment and development approach to the project over a modest time frame, while generating cashflow.

The proposed site of the Geelong Geothermal Power Project is 9 km northwest of the township of Anglesea.

Greenearth Energy's flagship geothermal power generation project is also ideally located approximately 9 km from existing grid infrastructure and a number of potential direct offtakers. Proximity to existing grid infrastructure and potential offtakers can positively impact project economics by substantially reducing the cost and timing of generation connection.

An additional advantage afforded to the Geelong Geothermal Power Project due to its proximity to the grid infrastructure, is a positive marginal loss factor. As electricity flows through the transmission and distribution networks, energy is lost due to electrical resistance. Energy losses are factored in at all stages of electricity production and transport to ensure the delivery of adequate supply. Every power plant is awarded a Marginal Loss factor based on a range of variables including distance to main grid infrastructure, power flow and grid capacity. Given the position of the Geelong Geothermal Power Project close to large industrial load within an established grid infrastructure, it will enjoy a favourable marginal loss factor of greater than 1. Since electricity exported from a generator is multiplied by the marginal loss factor to determine the amount deemed to be exported and sold into the grid, a loss factor of greater than one results in the GGPP receiving income for more energy than it actually exports. This impacts favourably on project economics and revenues generated.

Greenearth Energy's Geelong Geothermal Power Project is one of Australia's most advantageously located base-load, emissions free renewable energy projects.





Base Load Power Generation

In addition to its proximity to existing grid infrastructure and potential direct offtakers, the Geelong Geothermal Power Project, being a geothermal renewable energy development, provides, continuous, base load power generation.

This is an enormous benefit over the majority of other renewable energy sources which cannot guarantee a consistent flow of energy.

Greenearth Energy's Geelong Geothermal Power Project by its continuous base load generation capability will afford the project lower grid connection costs and drive higher project revenues by attracting higher contracted electricity prices due to its continuous and predictable nature.

Upon successful deployment of the Geelong Geothermal Power Project, Greenearth Energy's technical consultants SKM predicts the delivery of substantial CO₂ displacement as early as the Stage 2 12MW_e demonstration stage.

Estimates are that the initial 12 MW_e demonstration stage of the Geelong Geothermal Power Project will displace approximately 112,000 tonnes of CO₂ equivalent per annum. Full commercialisation of the Geelong Geothermal Power Project (140 MW_e) has the potential to displace 1,316,000 tonnes of CO₂ equivalent per annum.

Based on Greater Geelong's Community Greenhouse Gas Emission 2006 summary report, the displacement impact full commercialisation could have would be 28% of total estimated emissions and 59% of total estimated industrial emissions for the Greater Geelong Region. Further detail has been released in ASX Announcement dated 21 September 2009.



Substantial Potential CO₂ Displacement



Community Benefits

Communities such as the greater Geelong region have been home to a number of industries which, to date, have been heavily reliant on traditional fossil fuels.

Currently these industries face mounting pressure to reduce emissions while concurrently competing to remain profitable, maintain their workforces and grow their businesses. All of these industries play a vital role in supporting regional communities such as the greater Geelong region.

Greenearth Energy's Geelong Geothermal Power Project has the potential to provide local employment opportunities during each stage of the project as well as, upon successful deployment of Stages 2 and 3 of the project, substantial emissions displacement and base load renewable energy options for local industries.

Greenearth Energy has applied for complimentary Australian Government and State Government funding to fast track the Geelong Geothermal Power Project (please refer ASX releases on 6 August 2009 and on 1 September 2009)

Greenearth Energy's application for \$7m funding under the Australian Government's Geothermal Drilling Program (GDP) is for Stage 1 Proof-of-Concept of the Geelong Geothermal Power Project which is estimated to cost \$29.8m and approximately 18 months to complete.

Complimentary funding has been sought by the company for Stage 2 of the Geelong Geothermal Power project, the 12MW_e demonstration stage, from the Victorian State Government under its Energy Technology Innovation Strategy (ETIS) program. The demonstration stage of the Geelong geothermal Power Project is estimated to cost \$74.2m and take 18 months to complete.



Complimentary Grant Applications



Community Support for Greenearth Energy's flagship Victorian geothermal project has been overwhelming.

Leaders from the Greater Geelong community have been extremely supportive of the Geelong Geothermal Power Project. Testaments and encouragement has been received by Greenearth Energy from various groups as evidenced in the company's ASX Announcement dated 9 November 2009.

Greenearth Energy is thankful for the support received from the Greater Geelong Region including, but not limited to, the Committee for Geelong, Darren Cheeseman, Federal Member for Corangamite, Geelong Manufacturing Council, City of Greater Geelong, Sarah Henderson, Liberal Member for Corangamite, Surf Coast Shire and leading environmental advocate Rob Gell.

Greenearth Energy's Managing Director Mark Miller commented "Greenearth Energy has worked diligently over the last 2 years developing, in our opinion one, of the most attractive renewable energy propositions in Victoria, if not Australia.

"In the Geelong Geothermal Power Project we have a unique opportunity to harness a significant, nearby, geothermal resource by employing proven geothermal drilling techniques, by deploying proven ORC plant technology and connecting base load, emissions free, renewable energy to either nearby local industry or export that same energy to the national grid. All from the one small footprint geothermal plant on the doorstep of Australia's most carbon exposed industrial community.

"In our opinion, the Geelong Geothermal Power Project ticks all the boxes"

For more information, please contact Mark Miller on (03) 9620 7299 or 0407 035 800

A blue ink handwritten signature of Mark Miller, consisting of a series of fluid, connected loops and a long horizontal stroke at the end.

Mark Miller
Managing Director
Greenearth Energy Limited