ASX ANNOUNCEMENT AND MEDIA RELEASE, 4 December 2008

INFERRED GEOTHERMAL RESOURCE OFFERS GEELONG AREA A SUBSTANTIAL "GREEN ENERGY ALTERNATIVE"

- **Inferred Geothermal Resource of 260,000PJ**
- **First Published Geothermal Resource Prospect in Victoria**
- **Potential to produce 150 times Victoria's energy requirements**
- **Dual Geothermal System Opportunity**
- **Potential for Geelong Area to be developed into a Significant Renewable Energy "Hub"**
- **Adjacent to new Urban Growth Area - Armstrong Creek**

Greenearth Energy Limited ("GER") is pleased to announce the results of its Inferred Resource work, completed for the Anglesea area contained within its Geothermal Exploration Permit GEP10, which encompasses the Geelong Region. The results of the work completed for Greenearth Energy by consultants Hot Dry Rocks Pty Ltd have produced an estimation of a significant inferred resource of approximately 260,000 petajoules (PJ) encompassing a dual Hot Sedimentary Aquifer (HSA) and Engineered Geothermal System (EGS) geothermal prospect.

The Inferred Resource estimate of "stored heat energy" covers an area of 462 squared kilometres (km^2) and is contained in 656 cubic kilometres (km^3) volume of rock. This resource estimation is the first geothermal resource published for a Victorian geothermal prospect and has the potential to host a significant producing geothermal field. The Inferred Resource Estimate complies with the Australian Code for Reporting Exploration Results, Geothermal Resources and Geothermal Reserves (2008 Edition). The Statement of Estimated Geothermal Resources for the Anglesea Geothermal Play, GEP10 is attached.

Greenearth Energy's Managing Director, Mark Miller said today: "This is a major step forward in our quest for renewable, sustainable, base load, emissions free energy. Given its location close to two major Victorian cities, Geelong and Melbourne, intersecting with existing infrastructure the possibilities it presents for both the State and the company are very exciting. We have here the potential to deliver hundreds of megawatts (MW's) of clean, safe, renewable energy at the doorstep of our two great Victorian cities.

"On receipt of this work, we were delighted at the potential and proximity to markets of this significant renewable energy resource and will endeavour to proceed to bring this play to fruition by way of partnering with community, industry and government. It is our mission to work together with all stakeholders to establish Geelong as Victoria's first renewable energy hub. Given that published data from the Bureau of Statistic quotes Australia's total domestic energy use as 5,641 petajoules (PJ) in 2005-2006, of which Victoria's energy use represented 26% (1,466 PJ), our inferred resources of 260,000 PJ represents a significant long-term renewable energy proposition that demands development."

"Progression to the next stage will be to include the resource estimation as part of our Geothermal Drilling Program (GDP) application. We are aware that this opportunity fulfils the requirements specified by the Victorian Government's future funding for Sustainable Energy Large Scale Demonstration Projects and will be pursuing this funding stream as well."

Mark Miller
Managing Director
Greenearth Energy Limited
For more Information, please contact Mark Miller (03) 9620 7299

GREENEARTH ENERGY LIMITED
Statement of Estimated Geothermal Resources
Anglesea, GEP10 as at 4 December 2008

Anglesea Geothermal Play, Victoria (GER 100%)

Greenearth Energy Limited is the 100% holder of Geothermal Exploration Permit (GEP) 10, which was granted on 14 May 2007 for 5 years and is 8,440 km^2 in area. The permit is being explored for both Hot Sedimentary Aquifer (HSA) electricity generation, 'direct use' applications and Engineered Geothermal Systems (EGS) electricity generation.

Note that this Statement is a summary of a full report prepared for Greenearth Energy Limited by Dr Graeme Beardsmore. Neither Greenearth Energy Limited nor Dr Beardsmore takes any responsibility for selective quotation of this Statement or if quotations are made out of context.

Location and Geological Setting

GEP10 is located west and south-west of Melbourne and includes the industrial City of Geelong. The southern portion of the tenement covers the northern-eastern onshore portion of the Otway Basin, while the northern portion of the tenement mainly comprises a Palaeozoic succession with a relatively thin Tertiary volcanic and sedimentary cover (Figure 1).

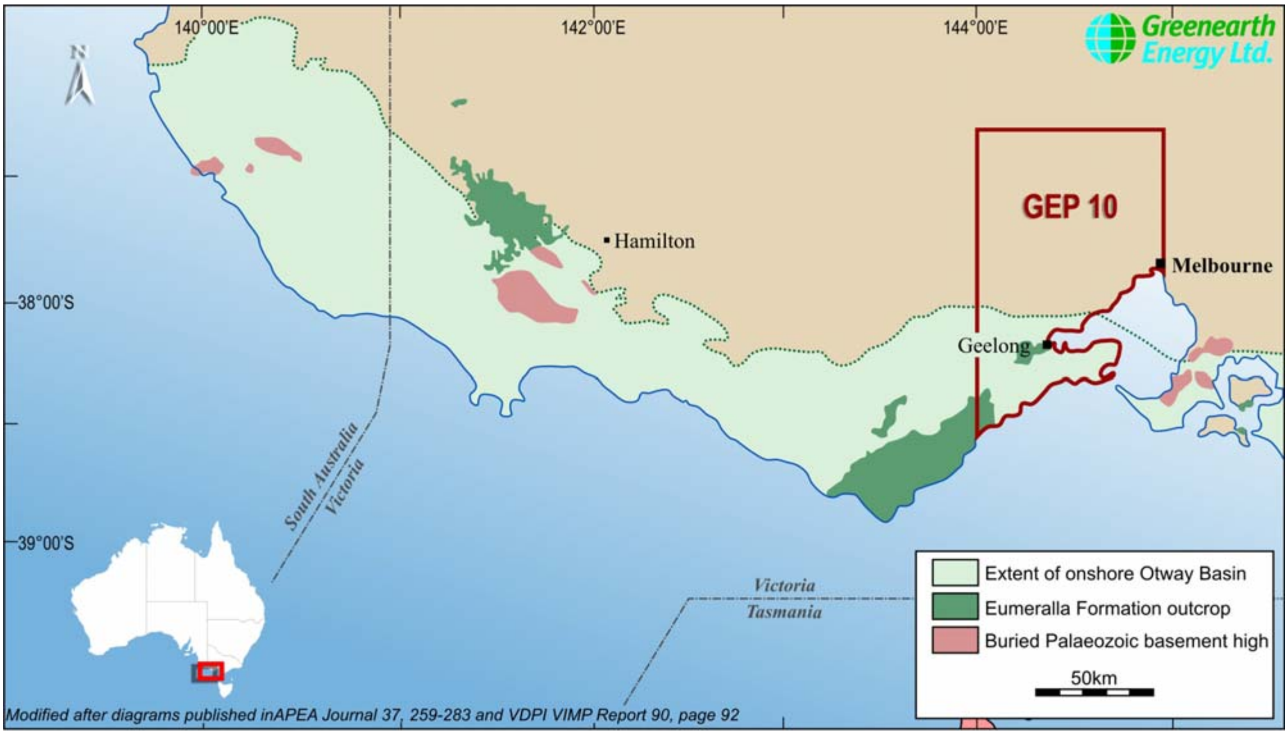

Figure 1. Location of GEP10 and the onshore Otway Basin.

The Otway Basin is a Mesozoic age rift basin (accumulation of sediments) established during the separation of Australia from surrounding continents. It stretches over 500km east-west along the southern margin of Australia from the offshore Great Australian Bight in the west to the Mornington Peninsula near Melbourne in the east. The Otway Basin has been the target of significant petroleum exploration (offshore and onshore) and a number of operating gas fields exist outside of GEP10, mainly reservoired within the Early Cretaceous Crayfish Group sandstones or Late Cretaceous sandstones. The Crayfish Group sandstones form the major onshore petroleum reservoir target and are likely to have considerable viability as a sedimentary geothermal reservoir in deeper/hotter parts of the basin.

The stratigraphy of the northern margin of the Otway Basin within GEP10 is represented in the Hindhaugh Creek-1 well (drilled in 1970), the deepest well drilled in the area. The well intersects a thin cover of Tertiary sediments and basalt (115.8m) before entering and terminating in the Early Cretaceous Eumeralla Formation (total depth at 2371.6m). The well did not intersect the sandstones of the Pretty Hill Formation, part of the Crayfish Group of rocks. Interpretation of the complete basin and basement sequence is assisted by interpretation of a number of seismic lines (and other work previously performed by hydrocarbon explorers and developers). By analogy and stratigraphic matching to other parts of the Otway Basin, the lower part of the Crayfish Group includes some potentially permeable sandy units. Devonian granites have intruded into the basement which lies beneath the Otway Basin sedimentary sequence.

The Anglesea Geothermal Play lies in the eastern extent of the Colac sub-basin. Syndepositional faulting and half-graben development controlled deposition of the Early Cretaceous rift sediments. Thickness of sediments within the area under consideration are up to 6.8 km. The structural development within the basin has been strongly influenced by pre-existing Palaeozoic faults. These structures may play a significant role in EGS reservoir permeability considerations.

A schematic interpretive cross section of the sequence comprising the subject of this report is shown in Figure 2. No well has penetrated into the Pretty Hill Sandstone or the Palaeozoic granites or basement in GEP10. In the Hindhaugh Creek area the NE-trending seismic line OGF92A-402 is particularly helpful in the interpretation (see Figure 4 for location).

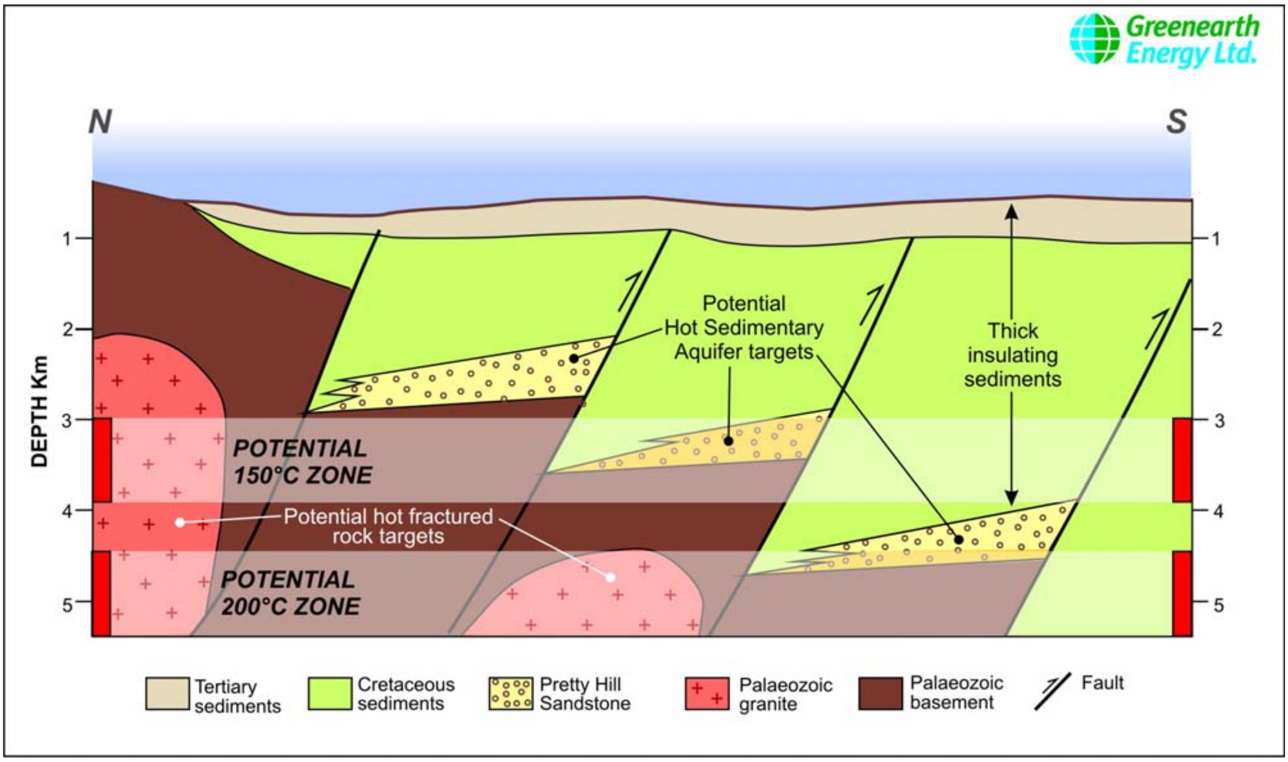

Figure 2. Schematic interpretative cross section through the area comprising the subject of this report showing relationship between the geological units.

Hot Sedimentary Aquifer Target

Principle of Hot Sedimentary Aquifer (HSA) geothermal plays

Certain rock formations, particularly coarser grained sedimentary rocks such as sandstones, grits and conglomerates are permeable to water and gasses ('fluids') under pressure and the fluids may move laterally through the formation, including up or down if the formation is not flat lying. Where they hold such fluids, such formations may be called a reservoir. Faults may allow the fluids to move out of the host reservoir into another rock sequence or even close to the surface.

Generally, the temperature of rocks increases with depth so fluids in deeper buried rocks are usually hotter than shallower reservoirs. Recent volcanic rocks and naturally hot granites can also heat fluids in adjacent sedimentary formations. If the rocks are permeable, then under pressure, the hot waters can move from a deeper or more remote location to one which is accessible by drilling, say within 4km from the surface. If this is the case, then a well penetrating the hot reservoir can bring hot water to the surface, where it can be used to generate electricity or be used directly in heating and drying applications. The heat depleted fluid is then returned 'downstream' in the reservoir via a second well.

HSA reservoir within GEP10

The Late Jurassic to Early Cretaceous sediments of the Crayfish Group within GEP10 provide the most suitable targets for the development of a HSA type geothermal play.

Regional studies of both the Victorian and South Australian portions of the onshore Otway Basin have demonstrated that the most permeable sand development in the Early Cretaceous succession occurs beneath the *Lower F. Wonthaggiensis* zone, also referred to as the Pretty Hill Formation. Deposition in the Otway Basin at this time was characterised by coarse clastic quartzose sands deposited in stream channels, sourced from the north. These channel sands have been a major onshore petroleum reservoir target and the same characteristics make this formation an attractive geothermal target.

Seismic sequence stratigraphic studies undertaken by Greenearth Energy Limited's consultant Hot Dry Rock Pty Ltd (HDRPL) have identified a number of possible reservoir sequences using available 2D seismic data and well logs. Two of these possible horizons within the Crayfish Group have been mapped in the Hindhaugh Creek area and may correspond with sand bodies. These two sequences are described as markers F and E1.

Engineered Geothermal Systems Target

Principle of Engineered Geothermal Systems (EGS) geothermal plays

Certain rock types contain radioactive minerals which generate heat as their unstable elements break down, and/or act as excellent conductors of heat generated from below. This heat joins other sources of heat and results in an elevated heat flow over the source. If the heat producing or conducting rock is overlain by a sequence of other rocks which by nature of their thickness or composition are good insulators, then some of the heat will be retained within the lower rock body. If the circumstances are right, these rocks may heat up to 150°C or more at depths shallow enough to be reached by drilling (at present about 5km depth).

If then the heated body can have its porosity or permeability increased by the stimulation or 'engineering' of fractures, then water pumped down an injection well into the fracture field may travel through the fractures, absorbing heat, and it may be returned to the surface via a second well. With sufficient volume and temperature at the surface, the hot water may be used in either a binary or flash steam generator to produce electricity. The used water is then returned back underground to repeat the process.

EGS reservoir within GEP10

Studies by Greenearth Energy Limited identified that EGS potential in GEP10 lies within the Pre-Cambrian to Cambrian basement rocks of the Ordovician-Silurian Lachlan Fold Belt turbidite sequence. These units may have potential to host an artificially stimulated reservoir.

The present-day stress-state of the Eastern Otway Basin is regarded to be transitional between compression and strike-slip. In general terms, and subject to ongoing geomechanical modelling, this means that existing faults and fractures which are oriented as a low angle to the regional stress tensor, may be more likely to be reactivated. GEP10 has a number of mapped faults which are optimally oriented for reactivation based on this relationship. In particular, the area west of Geelong in GEP10, is a major structural zone. Mapping suggests that a number of faults in the southern GEP10 area may be optimally oriented with regards to shear reactivation and permeability enhancement, particularly in relation to their vicinity to fault overlap zones. Heat flow modelling and projection of temperature to depth indicates that temperatures required for geothermal resources (i.e. >150°C) occur in the area surrounding the Hindhaugh Creek-1 well at approximately 3,000 m, and that the 200°C isotherm occurs at approximately 4,100 m within the Palaeozoic basement.

Resource Estimation

Methodology

HDRPL used a 'stored heat' method to estimate the geothermal resource in the sedimentary reservoir units and the basement that together make up the geothermal play. This is a technique for estimating the total heat energy contained within a target volume, for which a realistic chance exists for economic extraction. The method requires the estimation of the volume, density, specific heat capacity and temperature of the target reservoir units, a consideration of the realistic lowest economically extractable temperature ('cut-off temperature') and the amount of thermal energy that might be extracted from the resource fluids (related to the 'rejection temperature').

The principal tool Hot Dry Rocks used to estimate the geothermal resource is a numerical three-dimensional temperature inversion algorithm. This algorithm populates a numerical 3D model of the geothermal play with values of rock density, specific heat, thermal conductivity and heat generation. The software then solves the steady state conductive heat flow equation throughout the model space, constrained by surface heat flow and surface temperature data. The inferred equilibrium temperature distribution within the Crayfish Group sandstone units and the basement was subsequently used for a volumetric calculation of stored heat.

Geological model and thermal properties

Interpretation of available 2D seismic data provided the framework for a 3D numerical geological model. The model consists of eight units representing stratigraphic groupings from the Basement (oldest unit) up to the Tertiary (youngest unit). The thermal conductivity values were derived from measured thermal conductivity from the Otway Basin. Lithological proportions for different formations were initially derived from geological logs. Each lithology was then attributed a measured thermal conductivity value and the bulk conductivity of the formation derived from a weighted harmonic mean. Where a particular lithology had no measured thermal conductivity, then an appropriate value from a similar formation was applied. Where no thermal conductivity value was available from a similar formation, then a value was applied based on published thermal conductivity data for similar lithologies. Depth corrected formation tops interpreted from seismic data were used to generate a 3D volume that was subsequently imported into a numerical temperature inversion software module.

A 3D view of the EGS reservoir geological model is shown in Figure 3.

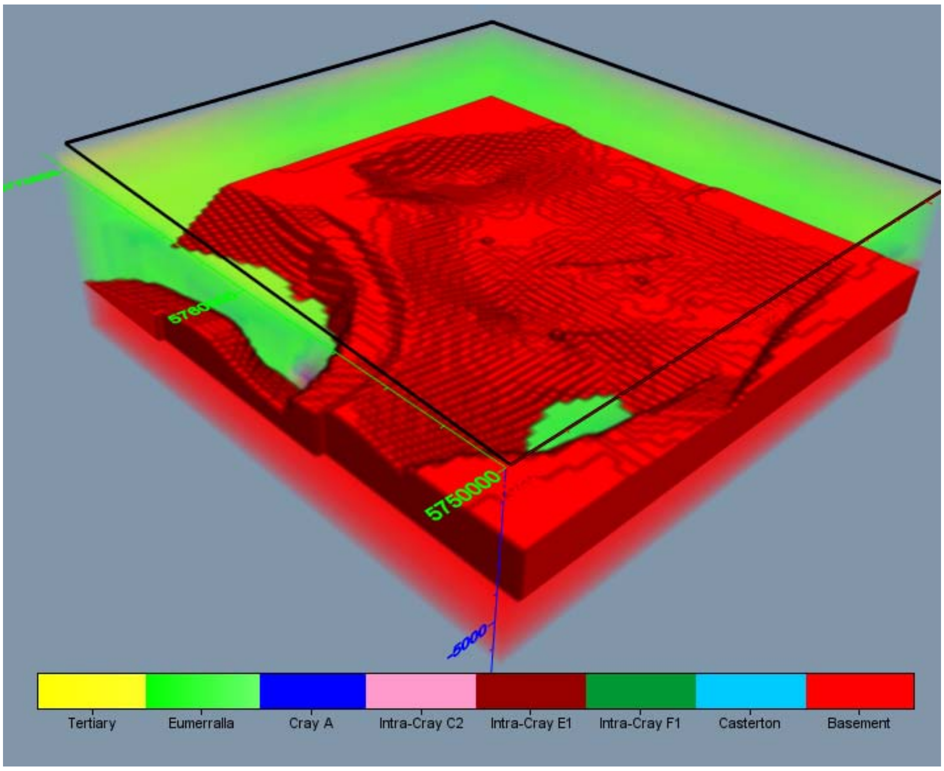

Figure 3 Example output from the reservoir 3D geological model, looking north-east. The basement (EGS) reservoir unit is red; other units are semi-transparent.

Heat flow

Heat flow has been constrained at only one location in the Resource area. Measured temperature data from wells Bellarine 1 and Hindhaugh Creek 1, and measured thermal conductivity values for formations intersected by those wells, were used to estimate heat flow. Temperature data were extracted from well completion reports and provided by Greenearth Energy Limited. The data were of fair to good quality. These temperature data were the deepest and also most reliable temperature information available from the geothermal play. An average annual air temperature of 14.4°C was calculated using data from three weather stations in the area (Aireys Inlet, Lorne and Geelong). Three degrees Celsius was added to estimate the average ground surface temperature in the geothermal play as 17.4°C.

Heat flow was estimated utilising newly measured thermal conductivity data and the combined temperature data. 1D heat flow modelling indicated a heat flow of 90 ± 9 mW/m^2. The uncertainty was derived from the uncertainty in thermal conductivity estimates. There is supporting temperature evidence for comparable heat flow in other wells in the region (ie high temperature gradients), but a lack of coincident thermal conductivity data prevents a confident estimate of heat flow in those wells. However, this supporting temperature information lends confidence that relatively high heat flow is wide spread in the region and the value estimated at Bellarine 1 / Hindhaugh Creek 1 is valid for other parts of the Resource area. This supporting evidence includes comparable corrected temperatures reported by the Victorian Department of Primary Industry for Warracbarunah 2 well situated 16.5 km to the east of the tenement, and also high gradients from precise temperature measurements taken in water bores near Anglesea.

Cut-off and rejection temperatures

The ‘cut-off temperature’ is the *minimum economic reservoir fluid temperature for commercial energy extraction*. The cut-off isotherm may therefore define the upper surface of a resource volume and is an essential input to the volumetric calculations required to infer a resource. In GEP 10 the upper surface of the HSA resource volume is mostly defined by the top of Crayfish Group marker units F or E1 (see above) as these are hotter (generally) than the cut-off isotherm. Similarly the upper surface of an EGS resource volume (under the basin) is mostly defined by the basement surface. The 'rejection temperature' is the *temperature of the geothermal fluid once it has passed through a power conversion process, prior to reinjection*. It puts an upper limit on the amount of thermal energy that can be extracted from a Geothermal Resource of any given temperature.

The geothermal resources in this report have been estimated assuming a cut-off temperature of 125°C for the HSA reservoir and 150°C for the EGS reservoir. In both estimates a rejection temperature of 70°C has been applied. A rejection temperature of 70°C is commonly assumed in pre-feasibility studies for geothermal developments. Both cut-off and rejection temperatures are strongly dependent on the technology used to convert thermal energy into electrical energy. Greenearth Energy Limited believes the above values are appropriate for currently available organic rankine cycle (ORC) technology.

Reservoir volume

The lateral extent of the geothermal resource for all reservoir units is defined by the reasonable limit of interpretation that the available seismic data allows. The vertical extent of each reservoir is constrained by top and bottom surfaces. For the HSA reservoir, the top surface is the deepest of: a) the top of the reservoir unit (units E1 and F), or b) the intersection of the unit with the 125°C isotherm. The base of the HSA reservoir is the shallowest of: a) the base of the reservoir unit, or b) 5,000 m. For the EGS target reservoir the top surface is the deepest of: a) the top of the basement surface or b) the intersection of the unit with the 150°C isotherm. The base of the EGS reservoir is 5,000 m below surface.

The HSA resource reservoir has an estimated volume of 107 km^3 (two units, E1 and F) and the EGS resource reservoir has an estimated volume of 549 km^3.

Reservoir density and specific heat

The density and specific heat of the Crayfish Group (HSA reservoir) were measured on four core specimens of Crayfish Group sandstone. Three samples of each core were measured.
The mean density of the twelve samples was 2.5 t/m^3 and the mean specific heat, measured at 68°C, was 927 J/kgK.

The density of the EGS reservoir unit was derived from a published basement interpretation and published density data. The density used in the EGS resource estimation is 2.9 t/m^3. The specific heat of the EGS reservoir was estimated according to its temperature using a formula.

Heat generation

The modelled temperature (thus the geothermal resource) in a reservoir depends on the amount of internal heat generation in the particular reservoir and also in the overlying units. This is because surface heat flow is a constraint on temperature at depth. Greenearth Energy Limited consultants HDRPL relied on published data to estimate heat generation of 1 $\mu W/m^3$ within the overlying, clay rich Eumeralla Formation, and 0 $\mu W/m^3$ for all other units except the basement. As the basement forms the EGS reservoir, heat generation within the basement will affect the modelled temperature (thus the geothermal resource). In the absence of direct measurements from the basement, the value for pelites (2.52 $\mu W/m^3$) from the Lachlan Fold Belt was used for the heat generation capacity of the basement.

Reservoir temperature

HDRPL utilised a numerical three-dimensional temperature inversion algorithm to estimate the store heat within the reservoir(s).

The algorithm operated on the principle of 'inversion'. Known information about surface temperature and surface heat flow was entered into the software module and an iterative process then computed in three dimensions the simplest distribution of temperature that fit the observations, while respecting the laws of conductive heat transfer and the thermal properties of the geological strata. The temperature dependence of thermal conductivity was also taken into account.

Three models were run with three different heat flow values (81, 90 and 99 mW/m^2, respectively), in line with the heat flow range stated above, to give the upper, middle and lower limits of the range of inferred temperature distribution. The solutions to the models revealed that the temperature within the Crayfish

Group HSA reservoirs most probably ranges between 150°C and 225°C, with an uncertainty range of ±15°C.

Classification of Resource

Taking into account the density of data, the level of confidence in the data used in the estimation, and the requirements of the *Australian Code for Reporting of Exploration Results, Geothermal Resources and Geothermal Reserves (2008 Edition)*, it is appropriate to classify both the HSA and EGS resources at the Anglesea geothermal play as Inferred Geothermal Resources.

Anglesea Inferred Geothermal Resource (100% Greenearth Energy)

For the model parameters and constraints given above, the geothermal algorithm computed the simplest temperature distribution to explain the observed surface heat flow value. For each discrete modelled cell of the basement (EGS target) and intra-Crayfish Group reservoirs (HSA target) within the reservoir model, the Inferred Geothermal Resource was calculated from the volume, density, specific heat and temperature of the cell. The total inferred stored heat (thermal energy in place) for each of the target reservoir types was found from the sum of all individual cells within that unit. The estimated Inferred Geothermal Resource is given in Table 1.

Table 1 Inferred Geothermal Resource estimates (petajoules) for identified reservoirs, rounded to two significant figures.

	Inferred Geothermal Resource (100% GER)		
Heat Flow	**81 mW/m^2**	**90 mW/m^2**	**99 mW/m^2**
Crayfish Group Reservoir E1	22,000 PJ	27,000 PJ	33,000 PJ
Crayfish Group Reservoir F	11,000 PJ	13,000 PJ	16,000 PJ
Basement EGS	180,000 PJ	220,000 PJ	260,000 PJ
Total	**210,000 PJ**	**260,000 PJ**	**310,000 PJ**

No estimates of the recoverable thermal energy or the net generating potential of its Inferred Geothermal Resources have been made.

The above estimates assume that commercially available air cooled, organic rankine cycle binary plants would be used to harness the thermal energy brought to the surface and that no additional energy is conducted or convected into the respective reservoirs during future possible production.

The location of the surface projection of the Inferred Geothermal Resource is shown in Figure 4, together with relevant infrastructure and features used in estimating the resource. Appendix 1 summarises the key assumptions and parameters involved in the above estimate and selected terms are explained in Appendix 2.

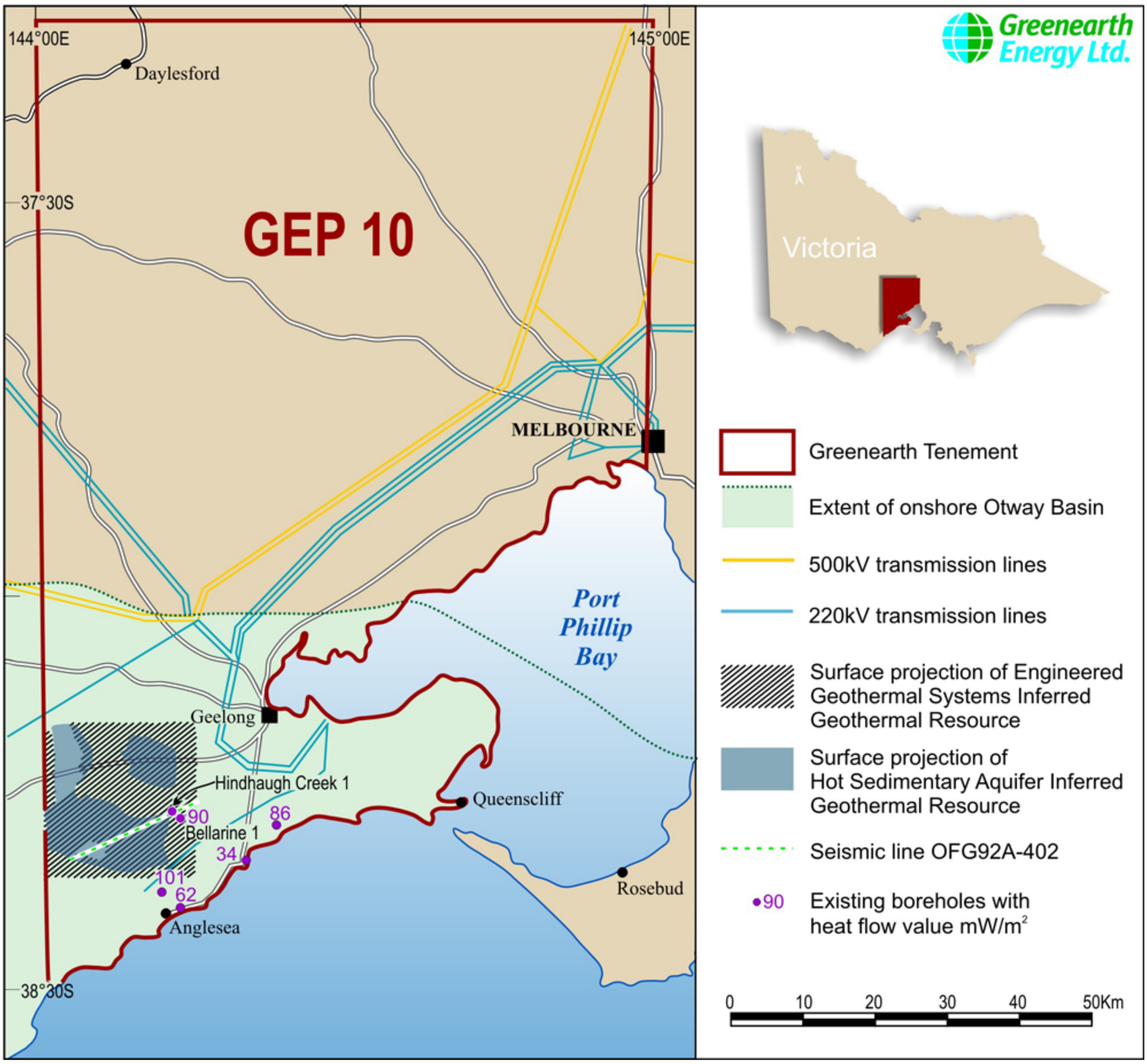

Figure 4 GEP10 showing surface projection of Inferred Geothermal Resource, wells with measured heat flow, major transmission lines, roads and the seismic line referred to in the text.

The information in this Statement that relates to Geothermal Resources has been compiled by Dr Graeme Beardsmore, an employee of Hot Dry Rocks Pty Ltd. Dr Beardsmore has over 15 years experience in the determination of crustal temperatures relevant to the style of geothermal play under consideration, is a member of the Australian Society of Exploration Geophysicists and abides by the Code of Ethics of that organization.

Dr Beardsmore qualifies as a Competent Person as defined in the *Australian Code for Reporting of Exploration Results, Geothermal Resources and Geothermal Reserves (2008 Edition).* Dr Beardsmore consents to the public release of this Statement in the form and context in which it appears.

Appendix 1. Summary of key assumptions and parameters used in the estimate

	HSA play	EGS play
Cut-off temperature	125°C	150°C
Rejection temperature	70°C	70°C
Base of reservoir	Basement	5.0 km
Heat flow	90 +/- 9 mW/m^2	90 +/- 9 mW/m^2
Reservoir volume	107 km^3 (over two units)	549 km^3
Density of reservoir	2.523 t/m^3	2.900 t/m^3
Specific heat of reservoir	1074 J/kgK @ 192°C	964 J/kgK @ 192°C
Heat generation	0 – 1 $\mu W/m^3$	2.52 $\mu W/m^3$

Appendix 2. Selected glossary

Basalt	A type of volcanic rock.
Basement	The lowest most horizon considered in a geological assessment.
Basin	A three dimensional accumulation of sediments, usually thicker in the middle than on the edges.
Cover sequence	A series of rocks which over-lie the horizons of principal interest.
Cut off temperature	The minimum economic reservoir fluid temperature for commercial energy extraction.
Density	A physical property of matter such as rocks measured in mass per unit volume (eg tonnes per per cubic metre, t/m^3).
Fault	A planar break in geological strata.
Heat flow	The rate of thermal energy passing through a standard area, usually expressed as milliWatts per square metre (mW/m^2).
Isotherm	A line joining points of equal temperature
Organic rankine cycle	A process whereby relatively low temperature geothermal heat is transferred via a heat exchanger to a high molecular mass organic fluid then converted into useful work, that can itself be converted into electricity. Used in certain geothermal electricity generating plants where the fluid temperature is suitable.
Rejection temperature	The temperature of the geothermal fluid once it has passed through a power conversion process, prior to reinjection.
Reservoir	A body of rock with certain permeability and density characteristics which enable it to hold fluids of economic interest.
Sandstone	A coarse grained sedimentary rock chiefly composed of silica grains.
Seismic line	A line across the ground surface along which a seismic survey (involving the reading of vibrations induced in the shallow earth by a source) has or will be read.
Specific heat	The amount of energy required to raise the temperature of the body by 1°C; otherwise known as relative heat capacity, usually measured in Joules per kilogram per degree Kelvin ($J\ kg^{-1}K^{-1}$)
Turbidite	A coarse grained sedimentary rock, interpreted to have been deposited in oceans.
Well	A bore hole.