



**Greenearth  
Energy Ltd.**

A.C.N 120 710 625



**QUARTERLY  
ACTIVITIES REPORT  
FOR THE THREE  
MONTHS ENDED  
31 DECEMBER 2008**

**Directors**

Simon R. Molesworth AM, QC (Chairman)  
Robert J. Annells (Non-executive Director)  
John T. Kopcheff (Non-executive Director)  
Robert L. King (Executive Director)

**Managing Director**

Mark Miller (Managing Director)

**Company Secretary**

Vicki M. Kahanoff BBus CPA

**Registered Office**

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Melbourne Victoria 3000

**Telephone:** (03) 9620 7299

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**Stock Exchange**

Australian Stock Exchange Limited  
Level 3 530 Collins Street  
Melbourne Victoria 3000  
ASX code: GER

**Auditors**

Pitcher Partners

**Bankers**

Westpac Banking Corporation

**Address for Correspondence**

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**Web site:** [www.greeneearthenergy.com.au](http://www.greeneearthenergy.com.au)

**Share Registry**

Computershare Investor Services Pty. Ltd.  
Yarra Falls 452 Johnston Street  
Abbotsford Victoria 3067  
(03) 9415 5000

**Legal Advisors**

Baker & McKenzie

The company operates a web site ([www.greeneearthenergy.com.au](http://www.greeneearthenergy.com.au)) which directors encourage you to access for the most recent information on the Greenearth Energy Group.

## HIGHLIGHTS

- ❖ INFERRED RESOURCE PUBLISHED FOR 2 AREAS
- ❖ TWO APPLICATIONS MADE TO THE COMMONWEALTH'S GEOTHERMAL DRILLING PROGRAM (GDP)
- ❖ MT SURVEY COMPLETED IN GEELONG (GEP 10)
- ❖ MICRO EARTHQUAKE SONDE PLACED IN LOY YANG -2

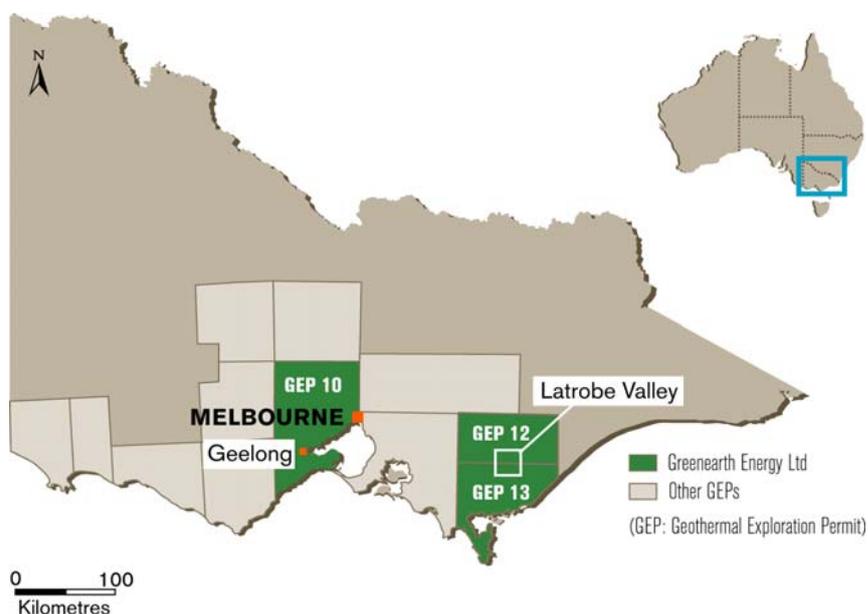
### ABOUT GREENEARTH ENERGY LIMITED

Greenearth Energy Limited (Greenearth) listed on the Australian Stock Exchange (ASX) on 4 February 2008.

The company holds permits in Victoria where the major energy companies are situated and any potential geothermal resource found will be close to existing infrastructure. Initial geological work is indicating that the company's acreage has the ability to contain hot sedimentary aquifer (HSA) systems as well as Hot Dry Rock (HDR) or Enhanced Geothermal Systems (EGS).

Greenearth Energy is also strategically interested in other areas in Australia, New Zealand and the wider Pacific Rim.

A number of potential end users within its permits have been identified and discussions are continuing with various parties with the aim to establish a number of mutually beneficial working relationships.



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## REVIEW OF OPERATIONS

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### CORPORATE DIRECTIONS

Greenearth Energy Limited's latest quarter has been active in both the Corporate and Technical area. The company has taken a large leap towards achieving its strategic objectives in terms of its Victorian permits with work previously undertaken being completed and culminating in the establishment and publishing of an Inferred Resource statement for areas contained in two of its Geothermal permits.

On 4 December 2008, Greenearth Energy released its statement of Inferred Resource for the Anglesea area, which is contained in GEP 10. The Inferred Resource consists of a combined Hot Sedimentary Aquifer (HSA) and an Engineered Geothermal System (EGS) geothermal prospect. An area of 462 squared kilometres ( $\text{km}^2$ ) and approximately 656 cubic kilometres ( $\text{km}^3$ ) volume of rock contains an estimated resource of approximately 260,000 petajoules (PJ) which represents a significant resource for the Geelong and Anglesea area. The Inferred Resource Estimate complies with the Australian Code for Reporting Exploration Results, Geothermal Resources and Geothermal Reserves (2008 Edition).

During the quarter, work was also completed on the Inferred Resource of the Wombat Field. The Statement of Inferred Resource was released to the ASX on 5 January 2009. This Inferred Resource was calculated on the basis of a Hot Sedimentary Aquifer (HSA) geothermal prospect only and encompassed a very small area of 29 square kilometres ( $\text{km}^2$ ) and was estimated at 3,600 petajoules (PJ). The area included in the calculation of the inferred resource is less 1% of the total area of the GEP13 permit area, however is critical in establishing the geothermal potential of Onshore Gippsland, and the Power and Industrial companies situated in the Latrobe Valley.

Further details on both the Statement of Inferred Resources can be obtained on our website.

The Inferred Resource work was a critical element of the Commonwealth's Geothermal Drilling Program (GDP) applications. The completion and calculation of two inferred resources, allowed Greenearth Energy to complete two robust applications, fulfilling its original intentions as signalled in the Expressions of Interest (EOIs) previously submitted.

The applications, one for the Geelong/Anglesea area (GEP10) and one for the Gippsland/Wombat Field area (GEP13) include plans for proof-of-concept pair (couplet) of wells and are seeking the maximum funding allowed of \$7million per application. Our submissions include various letters of support from industry and community members, who have been recipients of informative presentations about the geothermal potential contained in our permits. It is expected that indications will be given in March 2009 as the successful nature of one or both of the applications.

## OPERATIONAL ACTIVITIES Gippsland Basin (GEP 12 and 13) - 100% Equity

Activities within the Gippsland Basin have been numerous and varied during the quarter. The completion and the ongoing nature of some of these activities have given the company a very sound geological picture of the potential of our permits.

### Heat flow mapping

The second phase of Heat flow mapping continued in this permit. The company contracted Hot Dry Rocks Pty Ltd to carry out this program. The temperature measurement and thermal conductivity analysis is designed to validate and build upon the first phase of heat flow mapping carried out in 2007. The ongoing findings of this work have been used together with other data, such as results of a 3D seismic survey undertaken in the area in the Inferred Resource calculations.

### Micro Earthquake (MEQ) Monitoring – Pilot Trial

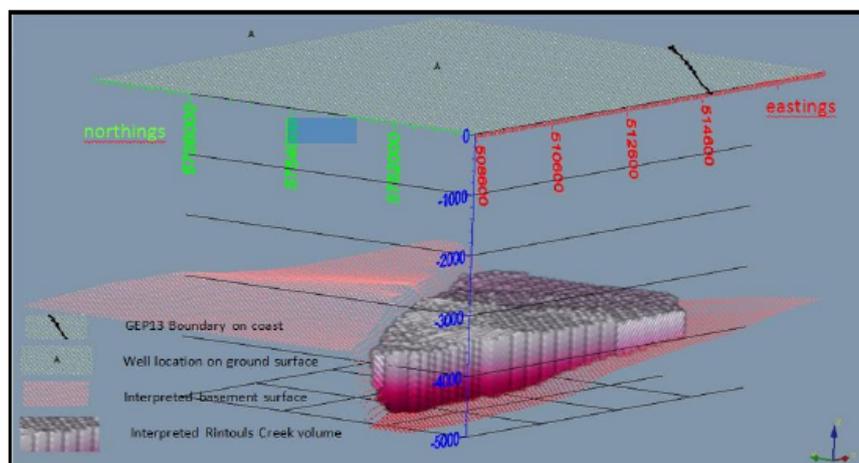
Greenearth Energy, together with the University of Auckland, successfully placed a geophone or sonde at 1,350m in the Loy Yang-2 well. This well is owned by Lakes Oil N.L. and Greenearth Energy is able to access this well due to an ongoing agreement between the two companies. Another geophone has been placed at the surface. The sondes have commenced recording frequency of events (small earthquakes) and the first data has been downloaded and sent for processing and analysis. It is planned to have further deployment of sondes via a network of wells in the future to enable better delineation of subsurface structures.

### Inferred Resource defined near Seaspray

Greenearth Energy estimated an Inferred Geothermal Resource in the southern part of GEP 13. The Inferred Resource is confined to approximately 28 km<sup>2</sup> area which is governed by the Wombat 3D seismic survey conducted early in 2008, by Lakes Oil N.L. The Inferred Resource calculation of 3,600 petajoules (PJ) is based on a Hot Sedimentary Aquifer (HSA) geothermal system, and indicates the geothermal potential of Greenearth Energy's Gippsland permits.

Interpretation of the Wombat 3D seismic data provided the framework for a 3D numerical geological model. The model consists of six units representing stratigraphic groupings from the Basement (oldest unit) up to the Tertiary (youngest unit). Mean thermal conductivity values for the units were derived from values measured on samples from the Gippsland Basin.

A 3D view of the EGS reservoir geological model is provided below:



Example of output from the reservoir 3D geological model, looking north-east, showing as solid the Rintouls Creek formation

The HSA target reservoir for this model comprises the Rintouls Creek Formation in the hanging wall of the Wombat fault. The fault defines the edge of an Early Cretaceous half graben with thickening succession towards the southwest.

The assessment indicated the heatflow in the Wombat Geothermal Play is 70+- 7 mW/m<sup>2</sup>. The average reservoir temperature is estimated to be 157<sup>0</sup>C at around 4,100m depth. No estimate has been made of extractable or recoverable energy. However, by way of illustration only 2.8% of the stored heat would have to be recovered over a 30 year project life to generate a constant flow of 10 MWe.

The Inferred Resource estimation area covers less than 1% of the permit area. Greenearth Energy and its consultants considers the Rintouls Creek Formation to be regionally extensive, including in the Latrobe Valley area and to be prospective for permeability and porosity parameters sufficient to support geothermal development.

## **Otway Basin- Geelong Area (GEP 10) - 100% Equity**

### **Heat flow mapping**

The second phase of heat flow mapping continued in this permit. The company contracted Hot Dry Rocks Pty Ltd to carry out this program. The temperature measurement and thermal conductivity analysis is designed to validate and build upon the first phase of heat flow mapping carried out in 2007. Work concluded to date, has been used in the calculation of the Inferred Resource for the Anglesea area.

### **Magnetotelluric survey**

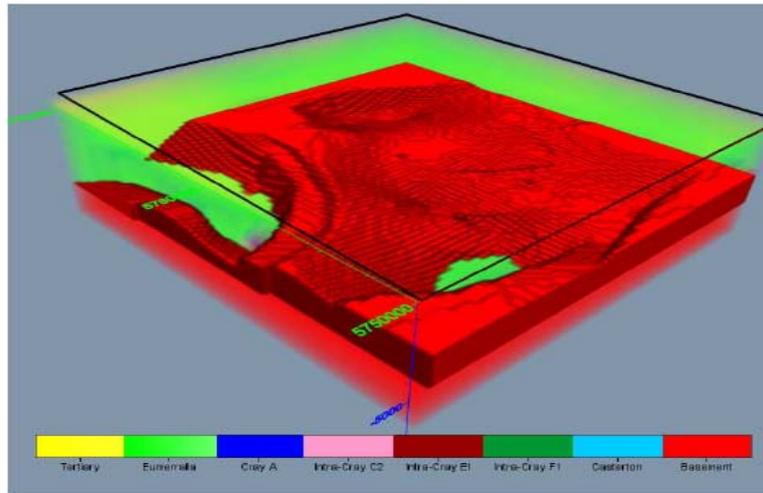
A 53 km line magnetotelluric survey was carried out in November 2008. The magnetotelluric survey method is an important tool in mapping the shape of the basement and the location of the overlying potential target hot sedimentary aquifers.

Greenearth contracted the Brisbane based Quantec Geoscience Pty Ltd to carry out the survey. The survey started just east of Lake Modewarre, ran eastward adjacent to Blackgate Road and then along the Bellarine Peninsula to Drysdale, concluding at St Leonards. The survey was carried out to assist mapping of the subsurface rocks in the area south of Geelong. The data has been sent for processing and analysis.

### **Inferred resource estimation**

Greenearth Energy released a geothermal inferred resource for the area between Anglesea and Geelong in December 2008. The estimate was prepared for Greenearth Energy by Hot Dry Rocks Pty Ltd and is compliant with the Geothermal Reporting Code published by the Australian Geothermal Energy Association. The Inferred Geothermal Resource is approximately 260,000 petajoules (PJ) (thermal) of stored heat energy within a 462 km<sup>2</sup> area and a 656 km<sup>3</sup> volume of rock.

A 3D view of the EGS reservoir geological model is shown below:



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

The resource is split between 40,000 PJ in Hot Sedimentary Aquifers and 220,000 PJ in Basement Engineered Geothermal System (Hot Fractured Rock). Greenearth Energy is aware of the benefits of having a dual geothermal system present, as it provides the opportunity to target the HSA in the short term and developing the EGS geothermal prospect in the longer term.

The assessment assumed a heatflow in the area of 81, 90 and 99 mW/m<sup>2</sup>. Modelling a heatflow of 90 mW/m<sup>2</sup> a temperature of 192°C is predicted at a depth of 3,900m.

No estimate has been made of extractable or economically recoverable energy. However, by way of illustration, the Hot Sedimentary Aquifer inferred resource of 40,000 PJ, is located in a 227 square km Area of Interest to the southwest of Geelong. Only 1.2% of the stored heat would have to be recovered over a 30 year project life to generate a constant flow of 50 MWe

**Signed on behalf of Greenearth Energy Ltd.**

Robert L King  
Executive Director  
Dated 9 January 2009



**Appendix 5B – Greenearth Energy Limited (GER)**  
**Mining exploration entity quarterly report – 31 DECEMBER 2008**

	Current quarter \$A'000	Year to date (6 months) \$A'000
1.13 Total operating & investing cash flows (brought forward)	<b>(657)</b>	<b>(2,054)</b>
<b>Cash flows related to financing activities</b>		
1.14 Proceeds from issues of shares options, etc.	<b>1</b>	<b>2</b>
1.15 Proceeds from sale of forfeited shares	-	-
1.16 Proceeds from borrowings	-	-
1.17 Repayment of borrowings	-	-
1.18 Dividends paid	-	-
1.19 Farm-in/Joint Venture contributions	-	-
<b>Net financing cash flows</b>	<b>1</b>	<b>2</b>
<b>Net increase (decrease) in cash held</b>	<b>(656)</b>	<b>(2,052)</b>
1.20 Cash at beginning of quarter/year to date	<b>6,908</b>	<b>8,304</b>
1.21 Exchange rate adjustments to item 1.20	-	-
1.22 Cash at end of quarter	<b>6,252</b>	<b>6,252</b>

**Payments to Directors of the entity and associates of the Directors;  
Payments to related entities and associates of the related entities.**

	Current quarter \$A'000
1.23 Aggregate amount of payments to the parties included in item 1.2	<b>105</b>
1.24 Aggregate amount of loans to the parties included in item 1.10	-

1.25 Explanation necessary for an understanding of the transactions

Directors Fees: \$64,037

Consulting and professional fees paid to Director-related entities: \$40,600

**Non-cash financing and investing activities**

2.1 Details of financing and investing transactions which have had a material effect on consolidated assets and liabilities but did not involve cash flows

None

2.2 Details of outlays made by other entities to establish or increase their share in projects in which the reporting entity has an interest

None

**Appendix 5B – Greenearth Energy Limited (GER)**  
**Mining exploration entity quarterly report – 31 DECEMBER 2008**

**Financing facilities available**

*Add notes as necessary for an understanding of the position.*

	Amount available \$A'000	Amount used \$A'000
3.1 Loan facilities	-	-
3.2 Credit standby arrangements – Bank overdraft	-	-

**Estimated cash outflows for next quarter**

	\$ A'000
4.1 Exploration and evaluation	<b>250</b>
4.2 Development	-
<b>Total</b>	<b>250</b>

**Reconciliation of cash**

Reconciliation of cash at the end of the quarter (as shown in the consolidated statement of cash flows) to the related items in the accounts is as follows.

	Current quarter \$A'000	Previous quarter \$ A'000
5.1 Cash on hand and at bank (item 1.22)	<b>6,252</b>	<b>6,908</b>
5.2 Deposits at call	<b>45</b>	<b>45</b>
5.3 Bank overdraft	-	-
5.4 Investments in listed companies (market value)	<b>94</b>	<b>137</b>
<b>Total: cash at end of quarter</b>	<b>6,391</b>	<b>7,090</b>

**Changes in interests in mining tenements**

	Tenement reference	Nature of interest (note (2))	Interest at beginning of quarter	Interest at end of quarter
6.1	Interests in mining tenements relinquished, reduced or lapsed			
6.2	Interests in mining tenements acquired or increased			

**Appendix 5B – Greenearth Energy Limited (GER)**  
**Mining exploration entity quarterly report – 31 DECEMBER 2008**

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**Issued and quoted securities at end of current quarter**

*Description includes rate of interest and any redemption or conversion rights together with prices and dates.*

	Number issued	Number quoted	Issue price per security (see note 3) (cents)	Amount paid up per security (see note 3) (cents)
7.1 <b>Preference securities</b> <i>(description)</i>	-	-		
7.2 Changes during quarter	-	-		
(a) Increases through issues				
(b) Decreases through returns of capital, buy-backs, redemptions				
7.3 <b>+Ordinary securities</b>	66,780,766	42,714,100		
7.4 Changes during quarter				
(a) Increases through issues	4	4	-	-
(b) Decrease through returns of capital, buy-backs	-	-		
7.5 <b>+Convertible debt securities</b> <i>(description)</i>	-	-		
7.6 Changes during quarter				
(a) Increases through issues	-	-		
(b) Decreases through securities matured, converted	-	-		

**Appendix 5B – Greenerth Energy Limited (GER)**  
**Mining exploration entity quarterly report – 31 DECEMBER 2008**

7.7	<b>Options</b>			<i>Exercise price</i>	<i>Expiry date</i>
	<i>Directors</i>	4,500,000	-	45 cents	30 September 2012
	<i>Staff</i>	1,500,000	-	45 cents	30 September 2012
	<i>Man. Director</i>	1,000,000	-	20 cents	30 September 2010
	<i>Man. Director</i>	2,000,000	-	20 cents	30 September 2012
	<i>Third parties</i>	33,333,333	-	45 cents	30 September 2012
	<i>Third parties</i>	2,000,000	-	45 cents	30 September 2012
	<i>Third parties</i>	22,260,118	14,237,897	30 cents	15 April 2009
	<b>TOTAL</b>	<u>66,593,451</u>	<u>14,237,897</u>		
7.8	Issued during the quarter	-			
7.9	Exercised during the quarter	-			
7.10	Expired during the quarter	-	-	-	-
7.11	<b>Debentures</b> <i>(totals only)</i>	-	-		
7.12	<b>Unsecured notes</b> <i>(totals only)</i>	-	-		

**Compliance statement**

- 1 This statement has been prepared under accounting policies which comply with accounting standards as defined in the Corporations Law or other standards acceptable to ASX (see note 4).
- 2 This statement does give a true and fair view of the matters disclosed.



Sign here: ..... Date: 9 January 2008  
*Company Secretary*

Print name: **Vicki Kahanoff**

**Notes**

- 1 The quarterly report provides a basis for informing the market how the entity's activities have been financed for the past quarter and the effect on its cash position. An entity wanting to disclose additional information is encouraged to do so, in a note or notes attached to this report.

**Appendix 5B – Greenearth Energy Limited (GER)**  
**Mining exploration entity quarterly report – 31 DECEMBER 2008**

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- 2 The “Nature of interest” (items 6.1 and 6.2) includes options in respect of interests in mining tenements acquired, exercised or lapsed during the reporting period. If the entity is involved in a joint venture agreement and there are conditions precedent which will change its percentage interest in a mining tenement, it should disclose the change of percentage interest and conditions precedent in the list required for items 6.1 and 6.2.
- 3 **Issued and quoted securities** The issue price and amount paid up is not required in items 7.1 and 7.3 for fully paid securities.
- 4 The definitions in, and provisions of, AASB 1022; *Accounting for Extractive Industries* and AASB 1026: *Statement of Cash Flows* apply to this report.
- 5 **Accounting Standards** ASX will accept, for example, the use of International Accounting Standards for foreign entities. If the standards used do not address a topic, the Australian standard on that topic (if any) must be complies with.

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