# SB

# 242

# SENATE COMMITTEE REPORT
## First Committee of Referral

DATE: 1/27/10

FURTHER: Finance

**Date of 5-Day Notice:** _____
(in accordance with Uniform Rule 23)

DATE TURNED IN TO OFFICE: _____

**Resources Committee** considered SENATE BILL NO. 242

SB 242 GEOTHERMAL RESOURCE TAX CREDITS

"An Act providing income tax credits for geothermal resource exploration and development."

and recommends:

[ ] be **replaced** with [ ] **SCS** or [✓] **CS** SB 242 (RES)

[ ] adopt **previous** [ ] **SCS** or [ ] **CS** _____ (_____)

[ ] attached amendment(s)

[ ] adopt _____ Letter of Intent

[ ] further referral to _____ Committee

**SENATE BILL:**
[✓] Same Title
[ ] New Title

**HOUSE BILL:**
[ ] Same Title
[ ] Technical Title Change
[ ] New Title w/ SCR #_____

**NEW FISCAL NOTE(S):**

| Department | Date | Fiscal | Indet. | Zero | FN# |
|---|---|---|---|---|---|
| REV | 02/10 | ✓ | | | |
| DNR | 02/10 | | | ✓ | |
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| | | | | | |
| | | | | | |

**PREVIOUS FISCAL NOTE(S):**

| Department | Date | Fiscal | Indet. | Zero | FN# |
|---|---|---|---|---|---|
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| | | | | | |
| | | | | | |

[ ] **APPROPRIATION - no fiscal note**

| SIGNATURES AND RECOMMENDATIONS | PRINTED LAST NAME | DO PASS | DO NOT PASS | NO REC | AMEND |
|---|---|---|---|---|---|
| | Stevens | | | X | |
| | French | | | ✓ | |
| | WAGONER | ✓ | | | |
| | | | | | |
| | | | | | |
| CO-CHAIR: | McGuire | ✓ | | | |
| CO-CHAIR: | Wielechowski | | | X | |

26-LS1347\E
Bullock
3/10/10

**CS FOR SENATE BILL NO. 242(RES)**

IN THE LEGISLATURE OF THE STATE OF ALASKA

TWENTY-SIXTH LEGISLATURE - SECOND SESSION

**BY THE SENATE RESOURCES COMMITTEE**

**Offered:**
**Referred:**

**Sponsor(s): SENATOR MCGUIRE**

**A BILL**

**FOR AN ACT ENTITLED**

**"An Act providing income tax credits for geothermal resource exploration and development."**

**BE IT ENACTED BY THE LEGISLATURE OF THE STATE OF ALASKA:**

*** Section 1.** AS 43.20 is amended by adding a new section to article 1 to read:

**Sec. 43.20.046. Geothermal resource tax credits.** (a) In addition to any other credit authorized to the person by this chapter, a person may take a credit against the tax due under this chapter for geothermal resource exploration and development as provided by this section.

(b) A person is eligible for a geothermal resource exploration credit for qualified exploration expenditures incurred after the effective date of this section and before July 1, 2018, in the amount of 30 percent of the qualified exploration expenditures incurred for exploration for a geothermal resource. An unused geothermal resource exploration credit may not be carried forward for more than 20 years immediately following the year in which the geothermal resource first generates

gross income.

(c) A person is eligible for a geothermal resource development credit in the amount of 30 percent of the qualified development expenditures incurred to develop a geothermal resource. An unused geothermal resource credit may not be carried forward for more than 20 years immediately following the year in which the geothermal resource is first used to generate gross income.

(d) A credit under (b) or (c) of this section may be transferred to a person who is a successor in interest in the geothermal resource project that resulted from the exploration qualifying for an exploration credit under (b) of this section or qualifying for a development credit under (c) of this section. Subject to appropriation, an unused credit for

(1) an exploration expenditure under (b) of this section is refundable on an annual basis;

(2) a development expenditure under (c) of this section is refundable after the geothermal resource first generates gross income.

(e) In this section,

(1) "geothermal resource" has the meaning given to "geothermal resources" in AS 38.05.965;

(2) "qualified development expenditure" means an expenditure

(A) incurred after two wells capable of commercial production have been drilled, completed, and flow tested;

(B) to develop a known geothermal resource; and

(C) that is reasonable and necessary

(i) to acquire, lease, or rent real property, including an expenditure for engineering services, surveying, title insurance, recording fees, legal services, site improvements, site restoration, access roads, and fencing;

(ii) for the construction of the facility to develop and use the geothermal resource, including an expenditure for drilling development wells; materials; labor; travel and transportation related to facility design; and the costs of startup, commissioning, and testing;

(iii) for equipment used in the operation of the facility;

(iv) for safety measures and environmental protection;

(v) for financial and legal services related to obtaining licenses and permits and preparing an environmental impact statement;

(vi) for capitalized interest during the construction period;

(3) "qualified exploration expenditure" means an expenditure

(A) to explore a previously unknown geothermal resource; and

(B) that is reasonable and necessary for goods, services, or rental of personal property required for the surface preparation, drilling, and assessment of the commercial potential of a geothermal resource.

# ALASKA STATE LEGISLATURE

SENATOR LESIL McGUIRE
SENATOR BILL WIELECHOWSKI
*Co-Chairs, Senate Resources Committee*

**MEMORANDUM**

# Memorandum

**To:** Leg. Legal

**From:** Shalon Szymanski, Committee Aide
Senate Resources Committee

**Date:** March 19, 2010

**Re:** Final CS Request

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Please create a FINAL Senate Resources CS for SB 242 mirroring work order number 26-LS1347\E but also incorporate the two attached amendments.

If you have any questions or need further information, please feel free to contact me on my direct line, 465-4522

Thank you!

PASSED

**Amendment #1**

Offered in the Senate By Senator McGuire

To: CS SB 242 (RES), Draft Version "E"

Page 1, line 14 – page 2 line 1: Delete "the geothermal resource first generates gross income."

Insert: "the exploration expenditure was incurred."

Page 3, line 8: Delete "previously unknown"

PASSED

26-LS1347\R.1
Bullock
3/16/10

**AMENDMENT**

OFFERED IN THE SENATE BY SENATOR WIELECHOWSKI

TO: SB 242

Page 2, following line 19:

Insert a new subsection to read:

"(e) A person that receives a credit under (b) or (c) of this section,

(1) shall reduce a cost related to the geothermal resource that would otherwise be included in a proceeding for determining a just and reasonable rate under AS 42.05.381 by the amount of the credit; and

(2) may not elect to be exempt from the provisions of AS 42.05."

Reletter the following subsection accordingly.

# ALASKA STATE LEGISLATURE

Session
State Capitol Building, Room 125
Juneau, Alaska 99801-1182
Phone (907) 465-2995
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Chair
Senate Special Committee on Energy
Senate Committee on World Trade, Technology and Innovations

Co-Chair
Senate Resources Committee

Member
Senate Judiciary Committee

## SENATOR LESIL MCGUIRE

## Changes to SB 242 (26-LS1347\R) in CS SB 242 (26-LS1347\E)

Section 1: The CS SB 242 makes the following changes to the geothermal exploration and development tax credits.

1. The tax credits may only be taken for expenditures made after the effective date of the act.
2. The differentiation between credits for exploration on state land (50%) and non-state land (25%) has been removed.
    a. Exploration credits are fixed at a flat 30% of qualified expenditures.
    b. Exploration credits are made refundable annually.
    c. Unused[1] exploration credits may be carried forward for 20 years rather than the original five to seven.
3. Development credits are increased to 30% from 10% in the original bill.
    a. Development credits are refundable after the project produces gross revenues.
    b. Unused development credits may be carried forward for 20 years.
4. A definition of when exploration becomes development has been added to the bill on page 2, lines 20-21.

[1] Refundable credits are subject to appropriation. The carry forward language has been included in case an appropriation is not made.

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Co-Chair
Senate Resources Committee

Member
Senate Judiciary Committee

## SENATOR LESIL MCGUIRE

Date: 2/8/10
Version: 26-LS1347\R

# SPONSOR STATEMENT – SB 242

**"An Act providing income tax credits for geothermal resource exploration and development."**

Electric power generated from geothermal sources is a clean, sustainable and environmentally friendly alternative to fossil fuels. It can play a major part in meeting the future energy needs of the railbelt and other regions.

Unlike many other types of renewable energy, geothermal power requires a capital intensive exploration program that carries risks similar to the oil and gas development Alaskans are more familiar with. Senate Bill 242 provides an incentive for the exploration and development of geothermal resources that is similar to those currently in statute for oil and gas projects. SB 242 allows a company exploring for a geothermal resource to receive a credit against their future corporate income taxes for expenses incurred in exploring for, and developing a geothermal resource. Therefore, SB 242 contains two distinct credits; one for exploration and one for development.

Under SB 242 a company would receive a credit in the amount of 50% of their exploration expenditures for work conducted on State land, and 25% for work conducted on other lands within the State of Alaska. The total exploration credits a company would be eligible for would be capped at $20 million. When a company began developing a geothermal resource, SB 242 would then provide a credit of 10% of the expenditures made to develop the resource.

However, the combined credits envisioned by SB 242 could not be used to reduce a taxpayer's annual tax bill by more than 50%. This provision ensures that while the State is incentivizing geothermal development, it would still receive revenue from geothermal development.

The clean, reliable power provided by geothermal resources has formed the foundation of the economy of Iceland for years. SB 242 will provide the incentives necessary to attract world-class geothermal development to Alaska; and potentially help establish a new, sustainable economy in Alaska.

# LEGAL SERVICES

DIVISION OF LEGAL AND RESEARCH SERVICES
LEGISLATIVE AFFAIRS AGENCY
STATE OF ALASKA

(907) 465-3867 or 465-2450
FAX (907) 465-2029
Mail Stop 3101

State Capitol
Juneau, Alaska 99801-1182
Deliveries to: 129 6th St., Rm. 329

**MEMORANDUM** January 28, 2010

**SUBJECT:** Sectional summary for SB 242 (Work Order No. 26-LS1347\R)

**TO:** Senator Lesil McGuire
Attn: Mike Pawlowski

**FROM:** Donald M. Bullock Jr.
Legislative Counsel

You have requested a sectional summary of the above-described bill.

As a preliminary matter, note that a sectional summary of a bill should not be considered an authoritative interpretation of the bill and the bill itself is the best statement of its contents. If you would like an interpretation of the bill as it may apply to a particular set of circumstances, please advise.

**Section 1.** Adds a new section to AS 43.20 -- AS 43.20.046 -- that provides an income tax credit for geothermal resource exploration and development. States the amount of the credit and the period in which expenditures may be made to qualify for the credit. Provides limitations on the carry-forward of unused credit and limitations on the amount of credit that may be applied. Includes definitions for terms used in the section, including definitions for the expenditures that qualify for the credit.

DMB:ljw
10-047.ljw

BRIEFING PAPER

# THE CASE IN SUPPORT OF SB242 FOR PROVIDING INCOME TAX CREDITS FOR GEOTHERMAL RESOURCE EXPLORATION AND DEVELOPMENT

## EXECUTIVE SUMMARY

Geothermal power offers reliable baseload power that delivers consistent megawatt-hours 24 hours per day, 365 days per year, which is something that most other forms of renewable resources cannot provide. In fact, for a utility or regional transmission organization, a geothermal power plant shows up in a resource plan much like a conventional power plant. Geothermal power is also unique in its lack of emissions, minimal land use, low visual impact and other environmental merits.

Geothermal energy is extremely cost competitive when compared to other forms of renewable energy and fossil-fuel based processes (e.g. natural-gas based plants, as indicated by studies performed by the California Energy Commission[1] [2]).

Geothermal development is also an effective means to create long term and diversified jobs. A report by the Geothermal Energy Association concludes that a typical 50 MW geothermal plant provides opportunities for 212 direct, indirect, and induced full-time jobs[3].

Although believed to be rich in geothermal resources in various regions around the state, Alaska has yet to develop a single utility-size geothermal power plant. One major hurdle for geothermal development is the relatively high capital cost associated with exploration, drilling and development. This hurdle is even bigger in Alaska compared to other states, due to the remoteness of the resources and the harsh terrain and climate. While capital costs for development and construction of geothermal power plants in other states is typically around $4,000/kW[4], in Alaska estimates typically increase 25%-50%.

Similar to oil & gas exploration, exploring for geothermal resource involves both non-intrusive exploration but primarily high-cost exploration drilling, in order to identify, confirm and delineate the geothermal resource. This endeavor is not only capital-intensive, but also of high risk. While in several western states substantial exploration drilling for geothermal resources took place primarily in the 1970's and 1980's, the geothermal resources in Alaska are mostly "Greenfields", thereby increasing the cost required to confirm these resources and the associated risk.

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[1] http://www.energy.ca.gov/2009publications/CEC-200-2009-017/CEC-200-2009-017-SD.PDF

[2] http://www.energy.ca.gov/2007publications/CEC-200-2007-011/CEC-200-2007-011-SD.PDF

[3] http://www.geo-energy.org/publications/reports/Socioeconomics%20Guide.pdf

[4] Climate Change Business Journal, April/May 2009

Even after a geothermal resource is explored and successfully confirmed, the additional costs associated with developing a power plant utilizing that resource are still great, and include developing the well-field by drilling of additional production and re-injection wells as well as by putting in place the required pumping and piping infrastructure, building a power plant, and the supporting infrastructure.

The state of Alaska has recognized the similar financial challenges associated with oil & gas exploration and development, and has therefore put in place tax credits in attempt to reduce some of the risk and cost.

The suggested amendments to AS.43.20 come to recognize that: (a) geothermal exploration and development are similar in their cost and risk nature to those of oil & gas; and (b) promoting the development of geothermal resources is no less important to Alaska's economy than developing oil & gas resources, as it helps achieving Alaska's goals of increasing its renewable energy portfolio in order to diversify its energy resources, stabilize long-term power prices, fight climate change as well as providing long term jobs, primarily in rural areas.

The proposed amendments will serve to incentivize exploration of geothermal resources, and are therefore expected to boost exploration and confirmation of previously unconfirmed resources, thereby generating more opportunities for geothermal development.

The suggested amendments will also serve to incentivize development of new geothermal power plants by reducnig the total capital investment required for such development.

Financial analysis indicates that the combined credits, if made refundable, will lower the total cost of geothermal development by more than 10%, and are therefore expected to lower the total cost of power to the ratepayer by 5-10%

Therefore, by introducing these incentives, the state will recognize both the merits and the financial challenges associated with geothermal power, will promote new development and will help reduce the total cost to the ratepayer.

ANNEX: ORMAT COMMETS TO THE SUGGESTED LANGUAGE IN SB242

While greatly in support of this bill we would like to raise some concerns related to its potential impact on boosting geothermal exploration and development.

| Page | Line | Note |
|---|---|---|
| 1 | 6 | **Point of Consideration:** "person"<br>**Note:** The term "person" is used on this line as well as throughout the document to describe the eligible recipients. The term "person" is a term of art and is defined under Alaska Code Title 43.20.340(8) as "an individual, a trust or estate, a partnership, or a corporation." The term "taxpayer" is likewise defined at Title 43.20.340(10) to mean a "person subject to a tax imposed by this chapter." The rest of Title 43 generally uses the term "taxpayer" when describing the entity eligible for claiming a credit. We are concerned that use of "person" rather than "taxpayer" creates ambiguity as to who can claim a credit and who it is applicable to. **We suggest substituting the term "taxpayer" for "person" as it is less open to potential conflicting interpretations.** |
| 2 | 1 | **Point of Consideration:** Clarification of "$20,000,000" limitation per project<br>**Note:** There is no time period stated to which the limitation applies, just the "project." This might preclude additional credit opportunities in the future if significant investment is needed to expand a certain project, though such expansion may be similarly capital-intensive a the original exploration and development . **We suggest considering a "per year" time period or a stronger definition of the term project.** |
| 2 | 3 - 11 | **Point of Consideration:** "years"<br>**Note:** The term "years" is generally interpreted as "tax years." If the statute is interpreted as such, unintended consequences could adversely affect the carry-forward period. If, perhaps, for a variety of reasons a developer is required to file a "short-year" return for any of these years, that could dramatically reduce the carry-forward period. Potentially, then, the credit carry-forward period could expire before the plant is either placed in service or generates "gross income." **We suggest to instead state "60 months" for example, instead of "five years".** |
| 2 | 3-7 | **Major Point of Consideration:** Carry-forward time<br>**Note:** Geothermal exploration and development greatly defers from oil&gas in the duration of the process. It may very well take more than 5 years from start of exploration until a geothermal plant is placed in service (due to permitting, weather and other delays). Furthermore, it typically takes more than 7 years from the date when a plant is placed in service until it accumulates substantial taxable income against which the credits can be claimed. Under the current language it is likely that the carry-forward period expires before all credits can be used. **We suggest extending the carry-forward periods in item (1) to 8 years and in item (2) to 20 years upon facility being "placed in service".** |

| | | |
|---|---|---|
| 2 | 16-19 | **Major Point of Consideration:** "Successor in interest" language will greatly limit our ability to enjoy the credit<br>**Note:** As currently stated the credit is only able to be transferred to a successor in interest. This is a term of art which, generally, would mean the purchaser of the facility (the successor in ownership to a business that is carried on substantially as it was before). As written, the bill will not help a developer to monetize the credit in a timely manner. Geothermal projects typically only start generating taxable income 5-7 years after commercial operation at the earliest. Therefore, the carry-forward period will probably elapse before the developer has a chance to utilize the credits. Furthermore, the current language will probably not allow the developer to recover any portion of their loss in case the exploration work does not lead to a revenue generating plant (in case a commercial-size resource is not confirmed). **We suggest changing this item (2) to read: "may be sold, assigned, exchanged, conveyed, or otherwise transferred, or refunded in whole or in part").** |
| 3 | 7 | **Point of Consideration:** "capitalized interest"<br>**Note:** The current phrasing "capitalized interest" could potentially limit the types of costs that qualify. **We suggest using "capitalized costs", which may cover a substantially broader scope.** |
| 3 | 10 | **Major Point of Consideration:** "unknown"<br>**Note:** The current phrasing "unknown" could potentially leave room for interpretation or argument as to whether a certain location being explored in "unknown" or not. As an example, a certain location may be known to have hot spring, but may still require substantial geothermal exploration in order to confirm the existence of a commercial-size resource.. **We suggest using the term "unconfirmed" as used by the Geothermal Energy Association and others.** |

ORMAT®

Ormat Technologies, Inc.
**2008 Sustainability Report**




## Table of Contents

## Message from Mr. Lucien Bronicki, Chairman and Chief Technology Officer

Developing clean, reliable, and sustainable energy systems has been our mission and core business for more than four decades.

From the first product Ormat created - a solar pump in Mali, Africa - to the 48 MW Olkaria geothermal power plant we now operate in Kenya - Ormat's focus on creating value-added sustainable energy products is unchanged. Our proprietary technology – the Ormat Energy Converter, which effectively converts low and medium temperature heat into electrical energy – has been successfully applied to geothermal power plants and to recovered energy generation systems using waste heat from process industries and gas pipeline compressors.

Despite an economic environment characterized by volatility and uncertainty in the second half of 2008, Ormat continued to demonstrate solid, steady growth. Our revenues increased 16.5% for the year to approximately $345.0 million, Ormat-owned generating capacity increased by 109 megawatts (MW) and demand for our geothermal and recovered energy products continued to grow, resulting in a record product backlog of $194.0 million as of February 2009

These results speak to the growing awareness, acceptance and demand for sustainable energy sources that are able to produce electricity with no or significantly less emissions of $CO_2$ and other pollutants such as nitrogen oxides, than fossil fuel generated electricity. We believe geothermal and recovered energy sources are poised to play a significant role in the cleaner energy mix of the future – and our company is committed to advancing new opportunities and the technologies that will be necessary to enhance their availability and effectiveness on a larger scale.

In the US, Ormat is a lead participant in research and development work on Enhanced Geothermal Systems, in concert with several academic institutions and the US Department of Energy (DOE). These initiatives, while still in the early stages, are focused on innovative technologies that could more than double geothermal megawatt potential in the US.

We are also committed to continuing to support the future growth of our company. In 2008, Ormat added 150,000 acres of new leases to our exploration development inventory. This includes securing the geothermal rights to 35,000 acres of land in an area close to Anchorage, Alaska, an active volcanic region with high potential for discovery of a large geothermal field, compared with the more mature geological formations in Nevada and California, where our current base of operations is concentrated.



Ormat Technologies, Inc.
**2008 Sustainability Report**

Regardless of where we operate, in more developed jurisdictions or in countries that are just beginning to build their energy infrastructure, Ormat recognizes the importance of effective community and stakeholder engagement, of providing opportunities for local employment and training, as well as investing in initiatives that make a lasting difference at the local community level. In this sustainability report you'll be introduced to our company, our technologies and our business practices as they relate to each of these areas. You'll also learn more about geothermal and recovered energy production.

Thank you for your interest in Ormat Technologies, Inc. We welcome your questions, comments and feedback about this report and look forward to continued dialogue.

Sincerely,

Lucien Bronicki
Chairman and Chief Technology Officer

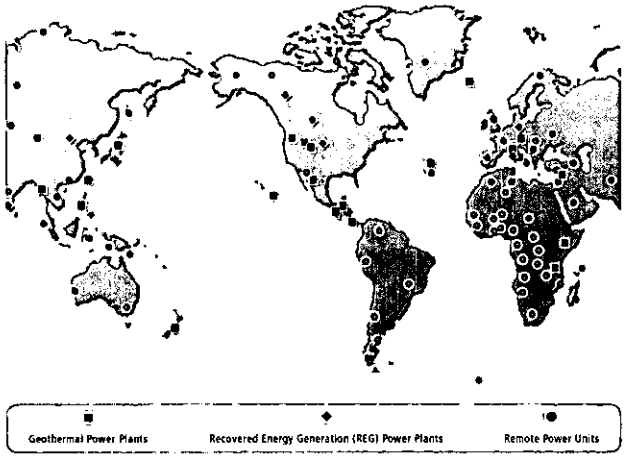
## Organizational Profile

Ormat Technologies, Inc. (Ormat) is the world's leading vertically integrated company primarily engaged in the geothermal and recovered energy power businesses. Ormat explores, develops, designs, manufactures and sells equipment for geothermal and recovered energy-based electricity generation (REG), as well as remote power unit. In addition, our company provides services relating to the engineering, procurement, construction, operation and maintenance of geothermal and recovered energy power plants.

Collectively, our products and services are covered by 75 United States (US) patents.

Ormat Technologies, Inc. is a public company traded on the New York Stock Exchange, under the symbol ORA and is headquartered in Reno, Nevada. Our current generating portfolio includes the following geothermal and recovered energy-based power plants: in the United States - Brady Complex, Heber Complex, Mammoth, Ormesa Complex, Puna, Steamboat Complex, OREG 1, OREG 2; in Guatemala - Zunil and Amatitlan; in Kenya - Olkaria Complex; in Nicaragua - Momotombo and in New Zealand - GDL.

**Global Presence - Geothermal and REG power plants and Remote Power Units installed by Ormat worldwide**








**Ormat Project Financing Recognized as "Best Sustainability Deal"**

The project financing transaction supporting Ormat's new 48 MW Olkaria III Geothermal Power Plant in Kenya was recognized by EMEA (Europe Middle East Africa) Magazine as the "Best EMEA Sustainability Deal for 2008". The 10-year project finance loan for US $105 million was arranged by global agent Deutsche Investitions und Entwicklungsgesellschaft mbH (DEG), in association with a group of European Development Finance Institutions. The magazine annually highlights financial transactions in the EMEA region that represent innovation and excellence.


Our company is the second-largest geothermal power plant owner in the US. Ormat currently owns and operates nine geothermal and recovered-energy power plants complexes that generated, in 2008, approximately 2.5 million megawatt hours (MWh) of electricity produced without nitrogen oxide emissions and with significantly lower emissions of carbon dioxide ($CO_2$) compared with fossil fuel generated electricity. Virtually all of the electricity generated by our geothermal and recovered-energy power plants is currently sold pursuant to long-term power purchase agreements, providing generally predictable cash flows. In the United States, the purchasers of power from our projects are typically investor-owned electric utility companies. Outside of the United States, the purchaser is typically a state-owned utility or a privately-owned entity and we typically operate our power plants pursuant to rights granted to us by a governmental agency pursuant to a concession agreement.

In 2008, Ormat generated revenues of $345 million, earned net income of approximately $50 million and at December 31st, employed 1,069 people worldwide.

**Ormat's Growth Plants**

Ormat is one of the fastest growing geothermal and recovered power generation companies in the United States, as measured by growth in generating capacity.

**Ormat Revenues ($ millions)**

| 2006 | 2007 | 2008 |
|---|---|---|
| $269.0 | $296.0 | $345.0 |

**Growth in Ormat-Owned Generating Capacity (MW)**

| 2006 | 2007 | 2008 |
|---|---|---|
| 400 | 410[1] | 505[2] |

At the end of 2008, Ormat owned a total of 505 MW of geothermal and recovered energy generating capacity worldwide. 377 MW is generated by our power plants in the US and the remaining 128 MW is generated by our international power plants. Between 82 MW and 94 MW of geothermal and recovered energy generation projects will be added to Ormat's generation portfolio through new construction targeted for completion by the end of 2010. In addition, Ormat has between 150 MW and 170 MW currently under development.

Our company plans to continue building a geographically balanced portfolio of geothermal and recovered energy assets, as well as to continue our record of leadership as a manufacturer and provider of products and services related to sustainable energy.

[1] On September 25, 2007, Leyte transferred its power plants in the Philippines to the off taker pursuant to a Build, Operate, and Transfer agreement. This transfer reduced our owned foreign generation capacity by 39 MW
[2] Including 50 MW of the North Brawley power plant in California which is in the start up phase.

## Our Power Generation Portfolio

### Power Plants Owned and Operated by Ormat - in the USA

| State | Project | Capacity (MW)* | Technology | Year** |
|---|---|---|---|---|
| California | North Brawley | 50*** | Geothermal | 2008 |
| California | Heber Complex | 92 | Geothermal | 1993, 2006, 2008 |
| California | Ormesa Complex | 57 | Geothermal | 1988-9,2003, 2007 |
| California | Mammoth Complex | 14.5**** | Geothermal | 1994 |
| Nevada | Steamboat Complex | 84 | Geothermal | 1986-8, 1992, 2005-8 |
| Nevada | Brady Complex | 22 | Geothermal | 2002 |
| North Dakota | OREG II | 5.5 | REG | 2008 |
| South & North Dakota | OREG I | 22 | REG | 2006-7 |
| Hawaii | Puna | 30 | Geothermal | 1992, 2004 |

### Power Plants Owned and Operated by Ormat - Rest of the World

| Country | Project | Capacity (MW)* | Technology | Year** |
|---|---|---|---|---|
| New Zealand | GDL | 8 | Geothermal | 2008 |
| Nicaragua | Momotombo | 28 | Geothermal | 2002 |
| Guatemala | Amatitlan | 20 | Geothermal | 2007 |
| Guatemala | Zunil | 24 | Geothermal | 1999 |
| Kenya | Olkaria III Complex | 48 | Geothermal | 2000, 2008 |





### Power Plants Under Construction or Under Development

| Country | Project | Capacity (MW)* | Technology |
|---|---|---|---|
| California, USA | East Brawley | 30 | Geothermal |
| California, USA | Imperial Valley | 50 | Geothermal |
| California, USA | Mammoth | 10 - 15**** | Geothermal |
| Hawaii, USA | Puna | 8 | Geothermal |
| Nevada, USA | McGinness Hills | 30 | Geothermal |
| Nevada, USA | Carson Lake | 18- 30 | Geothermal |
| Nevada, USA | Jersey Valley | 18 - 30 | Geothermal |
| Colorado, USA | OREG IV – Peetz | 4 | REG |
| Minnesota, USA | OREG III – GRE | 5.3 | REG |
| North Dakota, Minnesota & Montana, USA | OREG II | 16.5 | REG |
| Indonesia | Sarulla | 43***** | Geothermal |

* Net to the grid at design point
** In power plants that were built in phases, the year of each new phase is indicated
*** The project is in start-up phase
**** In partnership with Constellation, represent Ormat's 50% interest in the project
***** Ormat owns 12.75% interest in the Sarulla Consortium
For further details, including full disclosure of our offtaker see, see our 10K report

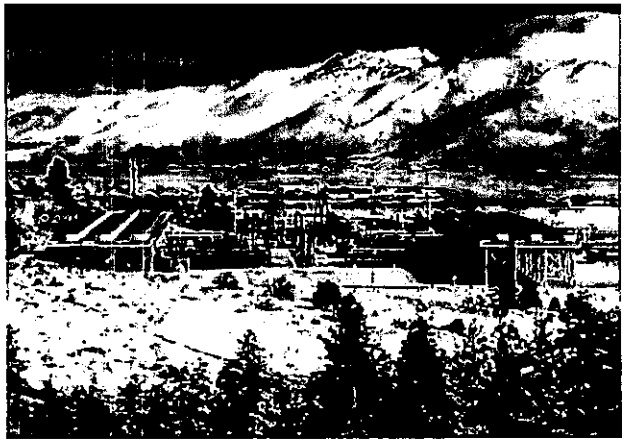
Ormat's Desert Peak II geothermal power plant, part of the Brady complex in Nevada, delivers 11 MW of clean electricity

## About This Report

This is the first sustainability report published by Ormat Technologies, Inc. and is for the calendar year 2008. On a go-forward basis, Ormat plans to publish sustainability reports annually. Questions concerning any of the information contained about Ormat's sustainability performance may be directed to sustainability@ormat.com.

This report was prepared referencing the Global Reporting Initiative's G3 Guidelines, however we have not self-declared a level of disclosure at this time. As our first sustainability reporting effort, Ormat is working to develop internal frameworks and processes to facilitate more comprehensive reporting in the future. While the financial and operational data presented in this report has been verified for corporate financial disclosure purposes, a formal external verification of the information presented herein has not been conducted.

Ormat Technologies, Inc. or Ormat refers to the entire company and its subsidiaries. Dollar figures are US unless otherwise noted.



Ormat's 84 MW geothermal complex at Steamboat, Nevada supplies all of Reno's households with electricity





## Corporate Governance

**Ormat's Code of Business Conduct & Ethics is intended to:**

- Promote honest and ethical conduct, including fair dealing and the ethical handling of conflicts of interest and corporate opportunities;
- Promote the protection and proper use of Corporation assets;
- Maintain the confidentiality of information acquired in the course of business;
- Promote compliance with applicable laws and governmental rules and regulations;
- Encourage the prompt reporting of any illegal or unethical behavior;

The full Code of Business Conduct and Ethics document can be found at the Ormat website under the investor realation tab.

Ormat stands behind the principles of honesty, openness, fairness and trust as pillars of our approach to corporate governance. These principles are reflected in the exacting standards that are set out in our Corporate Governance Guidelines, and our Code of Business Conduct and Ethics, both of which were adopted in 2004 and took effect as our company was formally registered for trading on the New York Stock Exchange. Each provides a framework that is aligned with regulatory requirements and reflects 'best practices' principles.

Ormat established and maintains adequate internal control over financial reporting and is in compliance with Sarbanes-Oxley Act (SOX). The effectiveness of Ormat's internal control has been audited by Price Waterhouse Coopers (PWC, one of the "Big Four" global accounting firms).

Ormat is a publicly traded company managed by a seven-member Board of Directors. Mr. Lucien Bronicki is Chairman and Chief Technology Officer, Mrs. Yehudit "Dita" Bronicki is a Director and Chief Executive Officer and Mr. Yoram Bronicki is President and Director and Chief Operating Officer of the company. The other four directors serving on Ormat's board are non-executive and classified as independent. They are: Robert F. Clark, Roger W. Gale, Jacob J. Worenklein, Dan Falk.

In 2008, Ormat's Board of Directors met 13 times to review the business affairs of the company and provide oversight. Key committees of the Board of Directors include: Audit, Compensation, and Nominations & Corporate Governance.

The Audit Committee's purpose is to assist the Board in its oversight responsibilities as they relate to Ormat's accounting policies and internal controls, financial reporting process and legal and regulatory compliance, as well as to maintain ongoing open lines of communication between the Board and Ormat's financial management, internal auditors and independent auditors. Among the key responsibilities the Audit Committee performs is the review and discussion of Ormat's annual audited financial statements and disclosures under "Management's Discussion and Analysis of Financial Condition and Results of Operations".

Ormat's Compensation Committee's primary purpose is to review and approve corporate goals and objectives relevant to compensation of our CEO, evaluate the performance of the CEO against those goals and objectives and determine and approve CEO compensation, as well as compensation of any of the five other most highly compensated executive officers. Recommendations to the Board for non-CEO compensation, incentive compensation plans and equity based plans are also under the committee's responsibilities.

The Nominating and Corporate Governance Committee is responsible for identifying and recommending individuals to serve as members of Ormat's Board of directors, to oversee the evaluation of the Board's performance and CEO and to take a leadership role in shaping the corporate governance of the company.

Corporate Charters for each committee of the Board are contained in full on Ormat's website under "Corporate Governance".

All directors, officers and employees of Ormat are expected to read and be familiar with our company's Code of Business Conduct and Ethics and Corporate Governance Guidelines, as appropriate, and are also expected to affirm their agreement to adhere to these standards by signing a compliance certificate.

Ormat's Secretary of the Board of Directors fulfills the role of Code of Ethics contact person for our company. Shareholders of the company as well as employees are invited to participate in the Annual General Meetings Ormat hosts, where dialogue concerning the company's plans, progress and operations is encouraged. Our company also regularly hosts meetings for employees, where they are encouraged to learn more about company operations and share their questions and/or concerns. Employees also are informed of several tools they can use should they wish to report unethical behavior or file an anonymous complaint: a letter box, a telephone line and the website www.ethicspoint.com, on which Ormat has a section.

Ormat's Environmental Management System has been regularly audited and certified as complying with the International Standard ISO 14001.

Ormat's Puna geothermal power plant, located in Hawaii, which delivers 30 MW of clean electricity





**Ormat selected for SB20 List**

Ormat is now a member of the SB20 (Sustainable Business 20) a ranking of the world's 20 most innovative companies that are playing a leading role in creating the sustainable economy of the future. Compiled by the Progressive Investor newsletter, the judging panel for the SB20 is comprised of leading green stock analysts who use both sustainability and financial criteria to identify the most compelling green companies.

The 20 companies selected are noted for their advancement of sustainability, must have made significant progress toward achieving their stated goals, demonstrate strong management and be leading influencers in their particular sector.

**Corporate Memberships**

Ormat Technology, Inc. is a member of the following organizations:

- Centre for Energy Efficiency and Renewable Technologies (CEERT)
- Geothermal Energy Association (GEA)
- Geothermal Resources Council (GRC)
- Reno-Sparks Chamber of Commerce
- Economic Development Authority of Western Nevada (EDAWN)
- Nature Conservancy of Nevada
- National Renewable Energy Laboratory (NREL)
- American Council On Renewable Energy (ACORE)
- International Energy Agency (IEA)
- The International Solar Energy Society (ISES)

**Sustainability Index Participation**

Ormat's expertise and innovation in developing geothermal energy has been recognized by a growing number of sustainability indexes worldwide:

- The Cleantech Index™ – www.cleantechindex.com
- The SB20 List – www.SustainableBusiness.com
- NEX WilderHill New Energy Global Innovation Index – www.nexindex.com
- The Domini 400 SocialSM Index (DS400) – www.kld.com/indexes/ds400index/index.html
- The WilderHill Clean Energy Index – ECO – www.wildershares.com/stock.php
- RENIXX® - Renewable Energy Industrial Index – www.renewable-energy-industry.com/stocks/

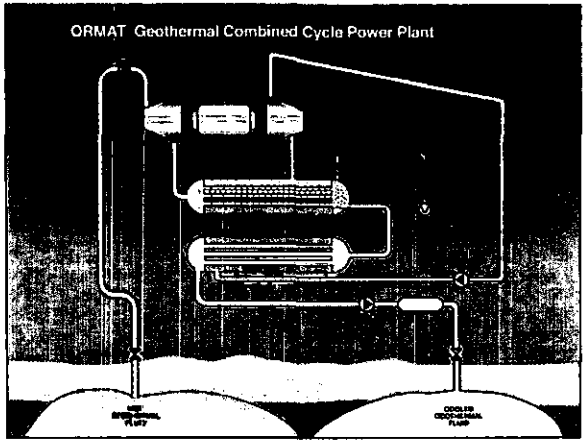
## Environmental Leadership

**The Environmental Benefits of Geothermal and Recovered Energy**

Geothermal energy is heat energy that comes from the earth's molten interior deep in the earth's crust. This valuable heat is brought near to the surface due to movements in the earth's crustal plates by intrusion of molten magma and by deep circulation of groundwater. Reservoirs of hot water under pressure are formed. By drilling wells into these reservoirs, steam and high-pressure hot water can be captured and directed to drive turbines in power plants, completing the conversion of this earth-bound energy from heat to electrical energy.

Cooled geothermal fluid is injected back to the reservoir where it is reheated and preserves the resource mass balance and sustainability. The advantages of geothermal energy are enormous; it harnesses a natural locally available energy source, it offers base load electricity 24/7 year-round supply with high reliability and provides an environmentally friendly energy alternative which produces no NOx emissions and negligible $CO_2$ emissions.

Geothermal energy is used as a source of direct heat and electrical power generation in over 29 countries today, providing approximately 10,000 MW of electricity[3] which is enough to power between 10 and 12 million average homes.




[3] Source: GEA and Earth Policy Institute





Ormat also develops products that produce electricity from recovered energy or so-called "waste heat". Recovered energy represents residual heat that is generated as a by-product of a variety of industrial processes, such as cement manufacturing and gas compression stations. This residual heat, which would otherwise be wasted, may be captured in the recovery process and used by recovered energy power plants to generate electricity without burning additional fuel and/or generating emissions.

Ormat (and its parent company Ormat Industries Ltd.) has developed and manufactured over 1,200 MW of geothermal and recovered energy generation power plants with zero fossil fuel consumption and negligible emissions.

We are committing considerable effort towards exploring the vastly untapped geothermal and recovered energy resources available, and are working to develop and to innovate our geothermal power plants and technology.

We believe the importance of renewable energy as an alterative to fossil fuel will continue to grow and be aided by state, federal and international regulatory frameworks that are intended to reduce carbon emissions, promote renewable energy use, introduce market-based emissions trading systems and provide economic stimulus in a sustainable context. In the US, actions in these frameworks have been introduced through the implementation of the Renewable Portfolio Standards and, most recently the provision under the American Recovery and Reinvestment Act of 2009 (Stimulus Act).

**Ormat Power Projects Eligible for Greenhouse Gas Emissions Trading**

In December 2008, the Executive Board of the United Nations Framework Convention on Climate Change (UNFCCC) officially registered Ormat's Amatitlan Geothermal Project in Guatemala as a Clean Development Mechanism (CDM). The project is expected to offset emissions of approximately 83,000 tons of $CO_2$ per year. With Amatitlan registered under the CDM, the project will be eligible to receive certified emission reduction credits, each equivalent to one ton of carbon dioxide, which can be traded or sold. The project has a long-term contract to sell all of its emission reduction credits to a European buyer.

Ormat's GDL power plant in New Zealand is also working towards participation in the JI mechanism and the Olkaria III power plant is working towards participation in the CDM mechanism.

**Ormat's Energy Consumption**

In 2008, the amount of electricity consumed by all of our manufacturing facilities was 3,514 MWh, all of which is derived from the grid and whose souce are fossil fuel based power plants. Still, this amount is negligible, as these 3,514 MWh are equivalent to less than 11 hours of operation of clean, low-carbon energy produced by Ormat's fleet of geothermal and REG power plants.

### Ormat's 2008 Geothermal and REG Power Production

Ormat's geothermal and recovered energy power plants produce green, fossil fuel free electricity. To accurately calculate the emissions our renewable generation sources mitigate, we have calculated mitigation factors for several other potential energy sources which could have been used to provide electricity.

As Ormat's power plants provide baseload (constant, year-round) electricity, we compared them with other baseload energy sources: coal, oil, and natural gas. The comparison is based on a 2002 EIA study[4].

In 2008, power plants owned by Ormat have produced more than 3 million MWh of electricity. According to the calculation, this means our power plants mitigated 2.6 million tons of $CO_2$ compared with coal, 2.4 million of $CO_2$ compared with oil and 1.5 million tons of $CO_2$ compared with natural gas-fired electricity.

The power plants which Ormat sold to third parties produced in 2008 approximately the same amount of electricity, thus mitigating a similar amount of $CO_2$. We are unable to provide exact figures as we do not operate these power plants. However, in aggregate, in 2008 all power plants using Ormat's technology have mitigated approximately 5.2 million tons of $CO_2$ compared with coal, 4.8 million tons of $CO_2$ compared with oil, and 3 million tons of $CO_2$ compared with natural gas.

### Improving Environmental Performance

Ormat's generating portfolio as of the end of 2008 includes a total of 14 geothermal and recovered energy power plant in the United States, Guatemala, Kenya, Nicaragua and New Zealand. While each power plants in our portfolio provides a positive alternative to carbon-intensive electricity generation, our company remains committed to ongoing action to minimize the environmental impact of our operations through reducing, reusing, recycling and applying leading edge technology. In fact, this approach is encapsulated in the Ormat Quality, Environmental, Health and Safety Policy, which guides these initiatives.

[4] Bloomfield, K., Moore, J.N., and R.M. Neilson Jr. (2003), Geothermal Energy Reduces Greenhouse Gases. Geothermal Research Council, GRC Bulletin, April 2003. www.geothermal.org/articles.html

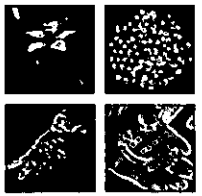




**Wildlife Studies Enhance Conservation**

Thymeleaf buckwheat is an endangered plant species and as such, is one of the plants that Ormat's operations take precise measures to protect. From our Steamboat power plant in Nevada, Ormat has donated to the Nevada Department of Wildlife, the state agency responsible for the restoration and management of fish and wildlife resources, to further study sagebrush in the region. Other species we work to develop and maintain include the Flat Tailed Horned Lizard, Sage Grouse, Desert Tortoises and Burrowing Owls.

We recognize the value of cultural resources on the sites that we develop and provide cultural resource surveys at a number of power plants to promote awareness of the archeological and biological significance of the land.



**Ormat's Quality, Environmental, Health and Safety Policy**

Ormat's QEHS policy is an integral part of our corporate policy and includes the following elements:

- Active communications between Ormat and its customers and suppliers in order to achieve understanding of customers' requirements, expectations, customer satisfaction and to provide effective product support.
- Compliance with applicable environmental, health and safety regulations where Ormat operates.
- continuous efforts to achieve:
  - High standards of safety in the production, construction and operational phases of our products in order to minimize risks to personnel and the public, improved product performance and reliability
  - Reduced costs and time to market
  - Prevent of pollution
  - Savings in energy and materials
- Implementation and certification of an integrated management system in accordance with ISO 9001 and 14001 international standards.
- Top management committed to dedicate resources and attention in order to comply with the requirements and continually improve the effectiveness of the integrated management system.

In Ormat's offices , efforts are in place to reduce the unnecessary use of paper products and preserve forests. Due to our widespread corporate geography, our company relies extensively on the Internet to enhance communication between head office and operating locations. We also reduce travel time and conduct training using "webinars", rather than through meetings. Car pooling is also encouraged for employees engaged in any travel on behalf of the company, as well as for regular commuting.

Most of our power plants are air cooled consuming no water. In addition a number of initiatives are underway throughout our facilities to reduce the amount of water and energy our operations consume. For example, we are investigating different ways to use recycled water in the power plants we operate in California and Nevada, and through the use of recuperators, we are reducing the water consumption of each new power plant we construct.

**Compliance with Environmental Laws**

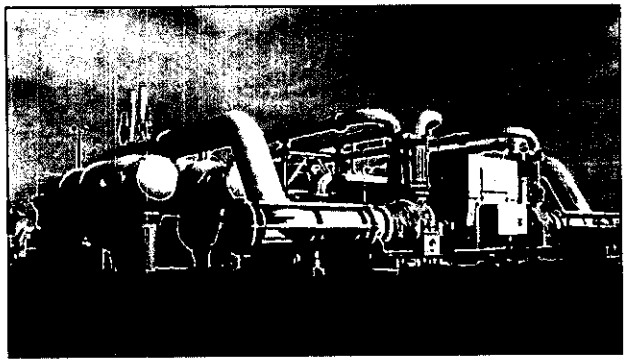
Ormat's US operations operate in compliance with the National Environmental Policy Act (NEPA) on public lands and the California Environmental Quality Act (CEQA) on private lands. This compliance includes performing environmental studies and implementing a variety of measures to mitigate any identified significant impact.

Scrap metal, used oil, and plastics & glass from used computers are the major categories of recyclables currently collected at Ormat facilities. All facilities benefit from our efforts to maximize the efficiency of our operations. We've introduced more efficient turbine units at our Steamboat 2/3 plants, which have resulted in lower oil consumption. The use of variable speed drives on key well pump motors has increased their output and productivity, while decreasing oil consumption. In addition, rigorous technical evaluation of geophysical data helps us reduce drilling risk and the number of holes that are required to maximize the output of geothermal reservoirs.

**Drilling with a Difference**

Ormat's operating procedures require all employees, as well as drilling contractor personnel, to be educated about and adhere to our company's policy regarding the standards for environmental protection we apply to our drilling activities and ongoing operations. Drilling geothermal wells is, in many respects, similar to the drilling procedures used for conventional oil and gas drilling. Our overarching goal is to minimize disturbance to the site from the outset, to protect wildlife, land and ground water throughout the well's operating life and to restore the site to its natural state when the well is no longer productive. Our environmental protocols for drilling geothermal wells include prevention of soil erosion, surface and ground water quality protection, by using steel casing cemented to below these zones, the use of only non-toxic, non-hazardous drilling mud constituents, the containment of all waste drilling mud, cuttings and runoffs, air quality protection and noise prevention. These measures may be implemented either prior to construction, during construction or during operations of the plant, depending on the specific measure.

Throughout 2008, Ormat did not incur any fines for environmental incidents or infractions.



Ormat's Ormesa geothermal complex, located in California, which delivers 57 MW of clean electricity

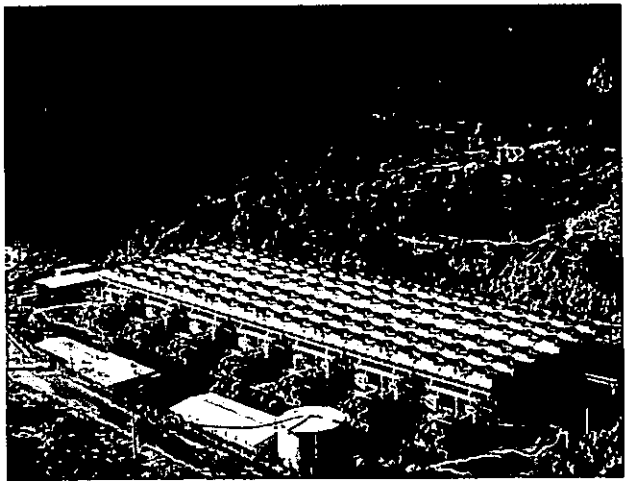




## Community and Stakeholder Involvement

**Connecting with the Community**

As a responsible and responsive corporate citizen, Ormat believes it is important to cultivate positive relationships with a wide variety of stakeholders who have an interest in our geothermal and recovered energy power plants. To do so, we employ a variety of activities and communications tools which include websites about our power plants and ongoing projects that affect the local community; a community relations program that encourages employee volunteerism and purchasing from local vendors; participation in local boards such as the Mammoth Lakes Alternative Energy Task Force; the maintenance of an extensive list of stakeholders with whom we stay in touch with via email, phone calls, meetings, and tours of the power plant; and by providing local support to community organizations. These combined efforts ensure that stakeholders are provided with timely and accurate information about our operations and development plans and that they are able to learn more about geothermal energy and how it contributes to the local economy and a cleaner environment.



Ormat's Zunil geothermal power plant, located in Guatemala, which delivers 24 MW of clean electricity

### Support for Education

Ormat is a strong supporter of education as the foundation for positive, life-long learning and the path to fulfilling and brighter economic futures. Wherever we operate, we look for innovative ways to help improve the educational opportunities available within the local community, to advance research and development in the geothermal industry, to strengthen the array of tools and resources available and to further the academic careers of students by funding student scholarships and internships.

### Advancing Higher Learning

Ormat has developed several close relationships with the institutes of higher learning in Nevada, where our corporate headquarters are located. We work with the Nevada System of Higher Education, which includes three institutions – the University of Nevada, Reno (UNR) which includes the Great Basin Center for Geothermal Energy, the University of Nevada Las Vegas and the Desert Research Institute.

In addition to providing direct funding support, Ormat also supports these institutions in different ways: senior Ormat employees regularly deliver lectures on geology and engineering projects; we support research and development initiatives that will further the understanding of geothermal energy; and we utilize and hire interns who work in our operations, gaining first-hand experience in geothermal energy production.

Ormat is an associate member of the Massachusetts Institute of Technology Energy Initiative (MITEI). Our company's contribution to this leading institution in 2008 provides funding for Energy Fellowship support for students. Ormat supports UNR with a grant as well as offering internship for students. Oramt is also a supporting member in the leadership council of the University of Colorado-Boulder Renewable and Sustainable Energy Institute (RASEI).





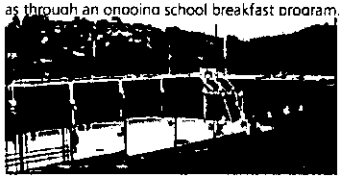
### Opening Educational Doors

Ormat operates geothermal power plants in Guatemala, Nicaragua and Kenya – countries where local residents are challenged by limited access to education. In these countries, Ormat helps meet more basic needs.

For example, in 2008 in Kenya, our company provided funding to seven local primary schools to sponsor the salary costs for 21 teachers. While providing resources for instruction is important, helping to supplement the nutritional needs of the students is also a priority. In 2008, Ormat sponsored a feeding program at the Narasha Primary School throughout the academic year. Providing construction funding for a new classroom, and channeling support for secondary school fees are other practical ways our funds opened doors to the future for Kenyan students.

In Guatemala, Ormat provides similar types of support to ensure local resident who reside in the communities close to Ormat's Amatitlan plant – El Cedro, Bejucal, San Francisco las Sales, San Jose Calderas and Pepinal – benefit from our presence. In 2008, Ormat created a trust fund to manage all community affairs programming and provided seed funding of $150,000 to launch the fund. The trust is concentrating on education, health and eco-tourism initiatives to help develop economic opportunities at the local community level and is managed by three individuals – a representative from the local community, a representative from Ormat's Amatitlan plant and an independent advisor.

Our support for education is expressed through scholarships to students who excel in their studies, funding for computers, books, maintenance and other classroom resources, as well as through an ongoing school breakfast program.



Enhancing local educational opportunities in the South American and African countries where we operate is an investment in the future of local communities.

**Providing a Hand-Up**

While supporting educational initiatives is the primary focus of Ormat's community investment outreach, there are many other ways in which our company reaches out to the local people who live close to our power plants.

In Nicaragua in 2008, our company contributed to a wide variety of social, recreational, community infrastructure and building projects, which included providing medicine, buying Christmas gifts for disadvantaged children, supplementing the local fire fighting facilities and contributing to the construction of the Momotombo Church.

In Kenya, support provided by Ormat in 2008 for the local Narasha community helped them repair a leading water tank. Other gifts helped channel monthly support to the Kenya Wildlife Service's education assistant, the Kenya NEMA annual environmental conference, the Aberdare National Park Rhino Ark, the Lake Naivasha Riparian Association (LNRA) world conservation day and LNRA membership. At this year's inauguration ceremony, Ormat contributed to the National Famine Relief Fund.

In Guatemala, Ormat's connection with the local community close to the Zunil power plant resulted in medical visits for students and the local school and the distribution of vitamins throughout the community.

Many of Ormat's community investments help supplement existing infrastructure and contribute in an important way to the local quality of life.





## Human Resources Policies

Ormat recognizes that engaged, motivated and energized employees are the key to our success as a leading geothermal and renewable energy innovator. Wherever we operate around the globe, it is Ormat policy to hire locally and to ensure that our employees are trained and ready to realize their potential. In all of our power plants, all employees, from the plant manager down, are locals.

Wherever our company operates, Ormat respects and adheres to the laws of each country. We are an equal opportunity employer and comply with all state and federal laws prohibiting discrimination based upon race, color, national origin, marital status, religion, sex, age, sexual orientation, mental condition, medical disability, veteran or other protected status. Ormat did not record any legal action or complaints with respect to our human resources activities in 2008.

In addition to competitive salaries, Ormat provides employees with an attractive series of employee benefits, which include an employer-sponsored retirement plan, an employee assistance program, voluntary benefits for four types of insurance, emergency travel assistance, and leave time for illness, bereavement and jury duty time.

Ormat is an equal opportunity employer. Wherever we operate, we hire locally and empower our employees to realize their potential.

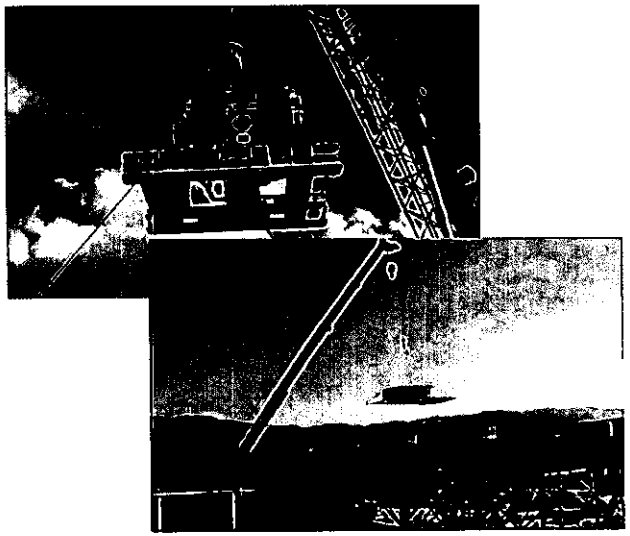
## Safety & Health Performance

Safety is a significant priority at Ormat. We believe training – in face-to-face and on-line forums – continually reinforces the importance of applying the right procedures and helps keep safety awareness, values and attitudes at the top of our employees and contractors minds during their day-to-day activities inside our power plants and other operating facilities.

In 2008, Ormat recorded a Total Case Incident Rate (TCIR) of 2.4 across all of our operations in North America and worldwide. TCIR is calculated based on the number of recordable incidents a company experiences in a year, multiplied by 200,000 and divided by the total hours worked by employees during that year. The 2.4 TCIR Ormat achieved compares favorably with the industry average TCIR of 4.7 in 2008.

Also in 2008, Ormat recorded a Days Away and Restricted Time (DART) performance of 1.6, compared with the industry average of 2.9.

No fatal incidents were recorded in any of Ormat's operations in 2008.



Construction of an Ormat Power Plant





**Safety Training Priorities**

Ormat employees with operational responsibilities are required to complete annual coursework which is aligned with Ormat's safety procedures and for which completion is mandatory. Employees are tested to verify their knowledge at the end of each course, which include the following:

- Blood Borne Pathogen Guidelines.
- Breeching and Hot Tapping – This involves procedures for developing a work plan for breeching working fluid piping components as well as hot brine piping and components.
- Cold Weather Awareness – Guidelines for safe operations in cold weather, including personal protection.
- Confined Space Entry Program – This program outlines requirements for determining and mitigating confided space hazards and controlling entry into confined space areas.
- Contractor Safety.
- Cranes/Rigging/Lifting Devices.
- Electrical Safety Procedure – This program includes guidelines for NFPA 70e clothing and process.
- Emergency Action Plan requirements, which are site specific.
- Ergonomics.
- Excavation and Trenching.
- Fall Protection.
- Fire Prevention – Employees receive annual training on plant fire systems and fire extinguisher usage.
- First Aid/CPR.
- HAZCOM – includes Material Safety Data Sheets (MSDS) and chemical awareness.
- Heat Illness Awareness – Required in California and covered at all other plant sites.
- Hearing Conservation – Employees exposed to noise levels above 85dba receive training and hearing screening annually.
- Hot Work/Cutting and Welding.
- Injury and Illness Prevention Plan, Written Workplace Safety Plan.
- Lockout/Tagout – This involves control of energy for safe work.
- Personal Protective Equipment (PPE).
- Process Safety Management – Three-year rotating classes on elements of PSM that are not covered under general safety training.
- Respiratory Protection – Those employees who are required to wear respiratory PPE receive annual pulmonary and respiratory screening.
- Safety Policy/Safety Responsibilities.

### Ormat's Safety Resource Structure

Ormat operates 14 different geothermal and recovered energy generation plants in several different countries. To ensure that a consistent approach is applied to safety throughout our company we have created an overarching Strategy Safety Committee. This committee includes Ormat's Vice-President of Operations, Manager of Business Processes, Operations Planning Coordinator, Human Resources and Plant Manager, and outlines the expectations and safety plan for the company.

An Operations Safety Improvement Team regularly meets and consists of representatives from each Ormat power plant. Together, they share their experiences, review incidents and ways to prevent them from reoccurring, identify best practices, evaluate new equipment, programs and services and provide an important conduit to Ormat's corporate management about plant issues and opportunities from a safety context. This team also conducts regular safety audits at each power plant.

Safety Improvement Teams are plant site specific and feature cross-functional plant representation. These teams work with plant management to develop and implement safety plans, review incidents and provide support in resolving issues and develop projects designed to enhance the safety performance of the power plant.

Ormat has an Industrial Hygiene function currently managed by contract with an outside vendor who is charged with developing and maintaining sampling plans for noise, heat, dust, chemicals, welding emissions and asbestos-free verification.

Ormat achieves a consistent company-wide approach to safety through an overarching Strategy Safety Committee.





### Safe Harbor Statement

Information provided in this sustainability report may contain statements relating to current expectations, estimates, forecasts and projections about future events that are "forward-looking statements" as defined in the Private Securities Litigation Reform Act of 1995. These forward-looking statements generally relate to Ormat's plans, objectives and expectations for future operations and are based upon its management's current estimates and projections of future results or trends. Actual future results may differ materially from those projected as a result of certain risks and uncertainties. For a discussion of such risks and uncertainties, see "Risk Factors" as described in Ormat Technologies, Inc.'s Annual Report on Form 10-K filed with the Securities and Exchange Commission on March 5, 2008 and on Quarterly Report on Form 10-Q filed with the Securities and Exchange Commission on November 6, 2008.

These forward-looking statements are made only as of the date hereof, and we undertake no obligation to update or revise the forward-looking statements, whether as a result of new information, future events or otherwise.

**For further information about Ormat's operations, please visit www.ormat.com**

ORMAT®

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CLEAN. RELIABLE. SUSTAINABLE