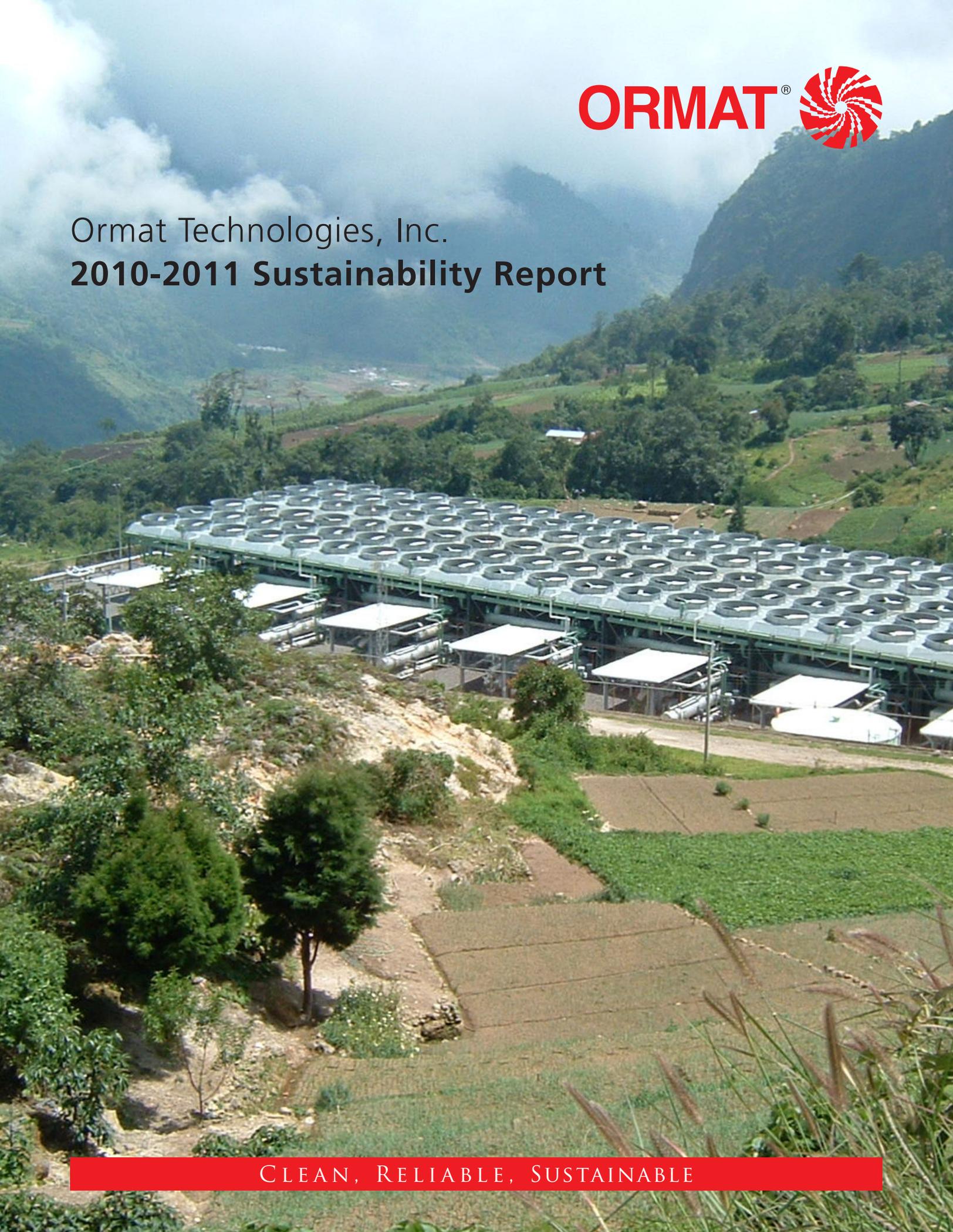




Ormat Technologies, Inc.  
**2010-2011 Sustainability Report**



CLEAN, RELIABLE, SUSTAINABLE

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## About This Report

Ormat Technologies, Inc. (Ormat) is a clean energy company with industry-leading expertise in geothermal, recovered energy and remote power solutions. Ormat regularly reports on the progress we make on our sustainability journey, most recently in 2009. This is the third sustainability report Ormat has produced to date and it consolidates our sustainability performance for the calendar years 2010 and 2011.

Ormat plans to continue publishing sustainability reports on a regular basis, as well as updating the Sustainability section in our website at [www.ormat.com/sustainability](http://www.ormat.com/sustainability). We believe an important part of our sustainable commitment involves sharing our successes, as well as the challenges that come with being an innovator and leader in the clean energy industry.

Transparency, accountability and credibility are critical factors in sustainability reporting, which is why this document was prepared with reference to the Global Reporting Initiative (GRI) G3 Guidelines. The GRI is a non-profit organization that promotes economic, environmental and social sustainability through a comprehensive sustainability reporting framework that is widely used around the world. The GRI framework is a recognized reporting baseline that enables companies to compare their environmental, economic and social performance to other leading sustainable organizations, and is the most widely used standard for corporate sustainability reporting.

Ormat has not self-declared a level of GRI disclosure at this time, while we continue to work towards developing stronger internal processes to facilitate more robust reporting in the future. As a publicly traded company (NYSE: ORA), all financial and operational data presented in this report has been verified for corporate financial disclosure purposes in accordance with the U.S. SOX regulations, however the sustainability reporting content has not been externally verified.

Ormat Technologies, Inc. or Ormat refers to the entire company and its subsidiaries. Dollar amounts are presented in U.S. currency unless otherwise noted.

The information provided in this report is based on our disclosure in the 2011 10K report filed on February 29, 2012. For updates on recent developments please see our quarterly reports and press releases at [www.ormat.com](http://www.ormat.com).

We welcome any questions or comments about our sustainability performance or the content of this report. Please direct them to [sustainability@ormat.com](mailto:sustainability@ormat.com).

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



For more than four decades, Ormat's performance has been singular, consistent and focused.

Our mission is to create clean energy systems fueled primarily by geothermal and recovered energy sources. Each of these energy generation systems offers significant advantages – chief among them is the fact they deliver clean energy the world needs. They emit near-zero amounts of carbon dioxide (CO<sub>2</sub>) or other greenhouse gases, while harnessing natural energy sources or capturing energy from existing industrial processes that generate excess energy that would otherwise be wasted. Both approaches create considerable value as they maximize energy potential while minimizing most of the impacts associated with creating reliable base-load electricity.

The past two years have proven to be a very active, eventful time for Ormat and all of our employees. We have worked hard to extend the geographic reach of our organization to new markets across the globe, while strengthening our leadership in the geothermal industry. This includes, among others, sales in Costa Rica and Turkey, project development initiatives in Kenya and Chile, as well as pioneering exploration efforts in the U.S.

In 2011, our company had a banner year. We increased total revenues by 17 percent to \$437 million while substantially enlarging our portfolio. We continued to develop a suite of world-class geothermal projects, including the Puna Expansion in Hawaii and Tuscarora located in our home state of Nevada. These facilities generate clean, renewable electricity that will be sold to HELCO and NV Energy, Inc., assisting in meeting the renewable energy portfolio requirements in both states.

We've also continued to express our commitment to geothermal research and development through an ongoing partnership with the Department of Energy's Geothermal Technologies Program (GTP) that aims to expand geothermal use in Nevada and the rest of the U.S. The GTP and Ormat have invested millions in grants to further understand geothermal exploration, structural modeling, drilling, CO<sub>2</sub> sequestration and enhanced geothermal systems. The result is a cluster of geothermal excellence that is continuing to expand in Nevada, with the potential to add significant economic development and employment opportunities in what is a labor and knowledge-intensive industry.

One of the key operational challenges Ormat contends with is the permitting process for geothermal projects. Long lead times increase development risk and project costs and delay timelines. Ormat has worked closely with the Nevada Bureau of Land Management office to encourage streamlining of the geothermal permitting process contained in the National Environmental Policy Act, at state, federal and local levels, without compromising environmental integrity. The geothermal industry believes permit streamlining will offer greater opportunities to realize the renewable energy resources that are ready to be unlocked.

Contained in our third Sustainability Report, you will find more information and reporting data outlining Ormat's sustainability performance from an economic, environmental and social perspective.

Ormat applies the same rigorous and responsible operating standards with all of our facilities to ensure the electrical power we produce from geothermal and recovered energy sources is safe, cost-effective and meets the growing demand for clean energy.

We invite you to learn more about Ormat and our clean energy operations at [www.ormat.com](http://www.ormat.com).

Sincerely,

**Lucien Y. Bronicki**  
Chairman and Chief Technology Officer;  
Ormat Technologies, Inc.

## Corporate Profile

Ormat Technologies, Inc. (Ormat) is a publicly traded company listed on the New York Stock Exchange. Our shares trade under the symbol ORA and our corporate headquarters is located in Reno, Nevada. As of December 31, 2011, Ormat holds the position of the U.S.'s second-largest geothermal power producer. We own and operate 556 MW of installed capacity in 17 complexes and power plants in the U.S. and internationally, in Nicaragua, Guatemala and Kenya.

In 2011, Ormat generated almost 4 million MWh of electricity, earning revenues of \$437 million, while employing more than 1,200 people across our worldwide network.

### **Our Business**

We conduct our business activities in two business segments, which we refer to as our electricity segment and product segment. In our electricity segment, we develop, build, own and operate geothermal and Recovered Energy Generation (REG) power plants in the U.S. and geothermal power plants in other countries around the world and sell the electricity they generate. We have expanded our activities in the electricity segment to include the ownership and operation of power plants that produce electricity generated by solar photovoltaic systems that we do not manufacture. In our product segment, we design, manufacture and sell equipment for geothermal and recovered energy based electricity generation, remote power units and other power generating units and provide services relating to the engineering, procurement, construction, operation and maintenance of such power plants.

### **Vertically Integrated**

Ormat is the only vertically integrated geothermal power company. Our company is actively involved in every facet of the green energy business, including exploring, developing, designing, manufacturing, owning and operating our fleet, as well as designing, manufacturing and selling geothermal power units, and other power-generating equipment and related services to our customers. We currently hold 82 U.S. patents protecting the original designs of turbines, pumps and heat exchangers and the formulation of non-ozone depleting organic motive fluids our company has created.

**Our Growth Strategy**

Securing leases, expanding exploration and developing and constructing high-performance geothermal and REG projects are the three cornerstones of Ormat's growth strategy. In 2010 and 2011, we continued to advance each part of this strategy. We pursued exploration for new lands with high-potential geothermal targets, for example, in northern Chile adding to our extensive land position. At year-end 2011, Ormat held 675,000 acres worldwide and, of this, approximately 264,000 acres or 40 leases were targeted for future development.

Our growth strategy was further strengthened by the multiple expansion efforts we have successfully stewarded over the past two years, with new capacity added to our existing geothermal plants in Puna, Hawaii, and soon in Olkaria, Kenya. We have also branched out into new territories, developing geothermal assets in Oregon and Chile.

We are building a geographically balanced portfolio of geothermal and REG, as well as solar photovoltaic assets, and continue to be a leading manufacturer and provider of products and services related to sustainable energy.

**2<sup>nd</sup>**  
largest geothermal producer  
in the U.S.

**556**  
MW  
owned and operated

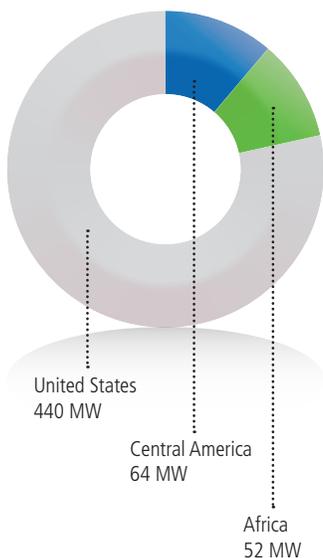
**17**  
complexes and  
power plants are  
owned and operated

**437**  
\$MILLION  
of gross revenue  
generated in 2011

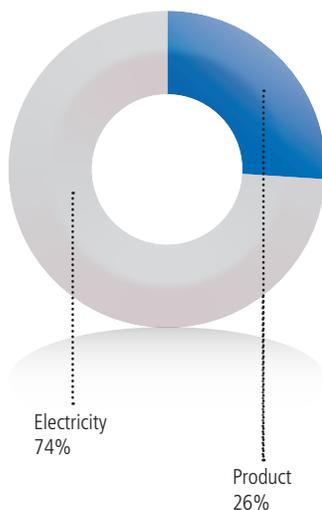
**1,200+**  
employees  
worldwide

**1,430+**  
MW  
supplied over the years

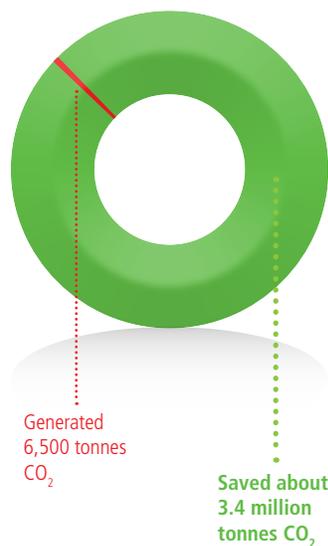
**Geographic Generation Summary**



**2011 Revenue by Business Segment**



**2011 Greenhouse Gas Emissions Generated & Saved**



## Corporate Governance

Ormat's corporate governance practices are reflected in the standards set out in our Corporate Governance Guidelines, and our Code of Business Conduct and Ethics. We have adhered to these principles since Ormat was created, and formalized them in 2004 when our company registered for trading on the New York Stock Exchange (NYSE). Each document provides a framework aligned with regulatory requirements and industry best practices.

Ormat established and maintains adequate internal control over financial reporting and is in compliance with the Sarbanes-Oxley Act (SOX). Ormat has a dividend policy that is expected to distribute at least 20% of annual profits, and an equivalent amount may be distributed as bonuses to employees. The effectiveness of Ormat's internal financial control systems has been independently verified by the registered global professional services firm, PricewaterhouseCoopers LLP.

Ormat is a publicly traded company managed by an eight-member Board of Directors four of whom are independent members. In 2010 and 2011, Ormat's Board of Directors met a total of eight and nine times respectively, to review the business affairs of the company. Key Committees of the Board of Directors include Audit, Compensation and Nominations and Corporate Governance.

All directors, officers and employees of Ormat have the responsibility to familiarize themselves with our Code of Business Conduct and Ethics and Corporate Governance Guidelines. As a condition of engagement, each individual is also expected to sign a compliance certificate affirming their intent to adhere to these standards.

Ormat has appointed a Code of Ethics contact person for our company, which is the individual occupying the role of Secretary to the Board of Directors. Shareholders and employees are invited to participate in Ormat's Annual Generating Meetings, where we review our plans, progress and operating results and provide a forum for questions from our stakeholders. We also regularly host internal meetings where our employees are invited to learn more about our operations and raise questions, share concerns or provide input. Employees are also regularly informed of the tools they may use should they wish to report unethical behavior or file an anonymous complaint. Ormat provides a letter box, a dedicated and confidential telephone line and the website [www.ethicspoint.com](http://www.ethicspoint.com), an online portal that provides corporate reporting management.

**Board Committee Mandates**

**Audit Committee**

- Assist the Board with Ormat’s accounting policies and internal controls, financial reporting process and legal and regulatory compliance
- Open lines of communication between the Board and Ormat’s financial management, internal auditors and independent auditors
- Review and discuss Ormat’s annual audited financial statements and disclosures

**Compensation Committee**

- Review and approve corporate goals and objectives relevant to CEO compensation
- Evaluate CEO performance against goals and objectives, determine and approve CEO compensation and senior executive compensation
- Provide recommendations to the Board for non-CEO compensation, incentive compensation plans and equity-based plans

**Nominating and Corporate Governance Committee**

- Identify and recommend suitable candidates to serve as members of Ormat’s Board of Directors
- Oversee the evaluation of Board and CEO performance
- Provide leadership for the ongoing evolution and continuous improvement of Ormat’s corporate governance practices

Corporate charters for each committee of the Board are available at the Ormat website at [www.ormat.com/governance](http://www.ormat.com/governance).



Ormat’s Olkaria III geothermal power plant, located in Kenya, which delivers 52 MW

### **Corporate Memberships**

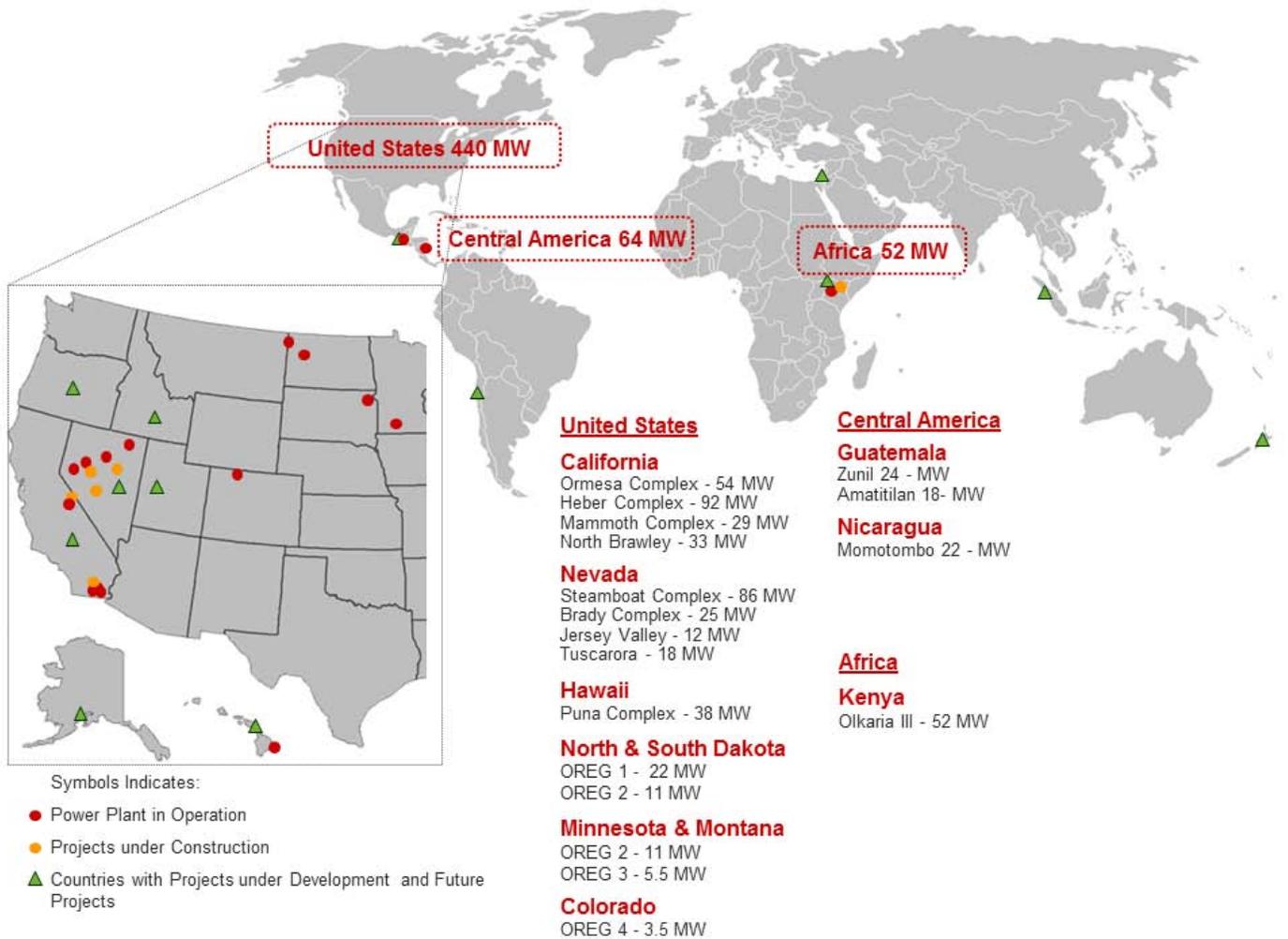
- American Council on Renewable Energy
- Brawley, El Centro and Holtville Chambers of Commerce
- Center for Energy Efficiency and Renewable Technologies (CEERT)
- Economic Development Authority of Western Nevada (EDAWN)
- Geothermal Energy Association (GEA)
- Geothermal Resources Council (GRC)
- International Geothermal Association (IGA)
- International Energy Agency – Geothermal Implementation Agreement (IEA-GIA)
- Nevada Geothermal Council
- Nevada Mining Association
- Northwest Public Power Association
- Renewable Energy Alaska Project
- Reno-Sparks Chamber of Commerce
- United States Clean Heat and Power Association
- Utah Clean Energy

### **Sustainability Index Participation**

Ormat is included in a number of leading sustainability and renewable energy indexes, including:

- The Cleantech Index™ – [www.cleantechindex.com](http://www.cleantechindex.com)
- NEX WilderHill New Energy Global Innovation Index – [www.nexindex.com](http://www.nexindex.com)
- The Wilderhill Clean Energy Index – ECO – [www.wildershaes.com/stock.php](http://www.wildershaes.com/stock.php)
- RENIXX® – Renewable Energy Industrial Index – [www.renewable-energy-industry.com/stocks/](http://www.renewable-energy-industry.com/stocks/)
- MSCI KLD 400 Social Index – [www.msibarra.com](http://www.msibarra.com)
- MSCI Global Climate Index – [www.msibarra.com](http://www.msibarra.com)
- MSCI Global Alternative Energy Index – [www.msibarra.com](http://www.msibarra.com)
- MSCI Global Environment Index – [www.msibarra.com](http://www.msibarra.com)

## Our Power Generation Portfolio



## Environmental and Technological Leadership

Over the past three decades, Ormat has developed and manufactured over 1,430 MW of geothermal and Recovered Energy Generation (REG) power plants. These plants have operated with zero fossil fuel consumption and virtually no emissions.

As a vertically integrated company, we have the resources in-house to develop complete projects from start to finish, from land acquisition, permitting, geological exploration and drilling to equipment design, manufacturing, construction, and commissioning. Furthermore, owning and operating over 550 MW of our own technology directly improves quality, accelerates innovation and expands experience.

### A Balanced Energy Mix

Ormat owns 17 geothermal and REG complexes and power plants. These plants operate in the U.S., Guatemala, Kenya and Nicaragua. Ormat's power plants produce electricity from alternative energy sources rather than from the combustion of fossil fuels (natural gas, coal). This drastically minimizes the emission of pollutants and greenhouse gas emissions, which contribute to global climate change. When compared with conventional power generation, Ormat's geothermal generation produces virtually no greenhouse gas emissions and is considered environmentally friendly.

Ormat sees a future where geothermal and recovered energy resources play an increasingly important role in contributing to a more balanced, lower-carbon energy future. Our company anticipates that continued emphasis will be placed by state, federal and international regulators on frameworks intended to reduce carbon emissions, promote renewable energy use, and introduce market-based emissions trading systems. An example of existing initiatives can be seen in the U.S., currently 37 states and Washington D.C. have introduced a Renewable Portfolio Standard mechanism – which legislates specific guidelines for the percentage of a state's electricity load that must be generated from renewable sources.

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### Minimal Impact Power Plants

“Over the past 24 years, the Soda Lake power plants, which were developed, engineered and built by Ormat, have generated over 1.7 million MWh from the geothermal resource with minimal-to-no impact on the local environment. This carbon-free fuel source of power generation is one of the most reliable and sustainable in service today.”

— Monte Morrison, Vice President of Operations, Alterra Power Corp.

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Ormat continues to direct considerable effort towards exploring the largely untapped geothermal and recovered energy resources available around the world. We also continue applying our record of innovation when it comes to prudent exploitation of these resources and believe the importance of renewable energy as a viable and preferable alternative to fossil fuels will continue to grow.

### Geothermal Energy – Harnessing the Earth’s Heat

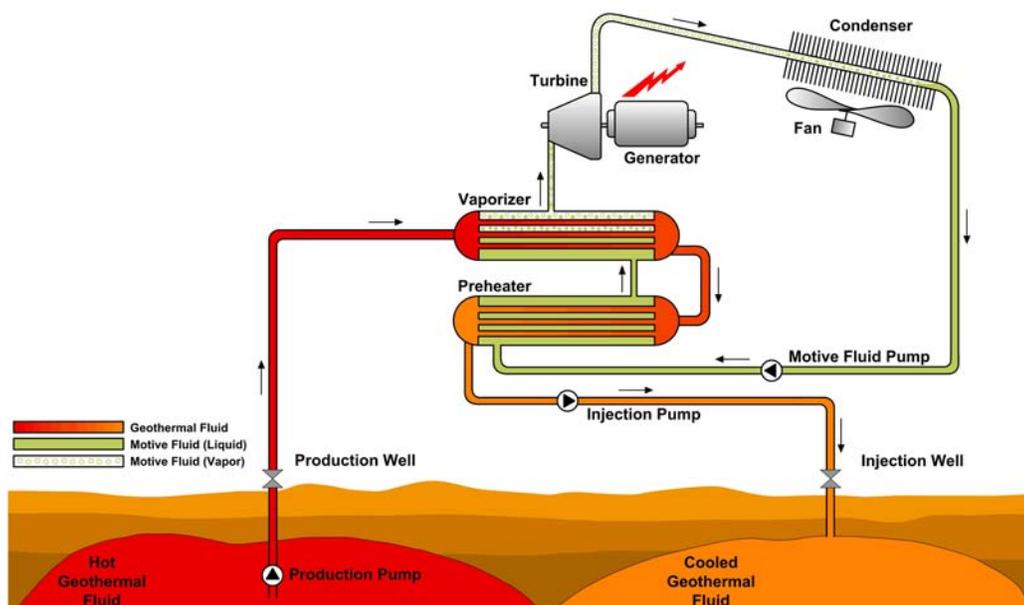
Geothermal energy is heat energy that comes from the earth’s molten interior and is transported to the surface due to the movements of the earth’s crustal plates, intrusion of molten magma and deep circulation of groundwater. Reservoirs of hot water under pressure are the result of these actions – and these are the underground reservoirs Ormat targets in our exploration, drilling and development activities. Drilling wells into geothermal reservoirs enables the steam and high-pressure hot water to be captured and then directed to drive turbines in power plants, converting earth-bound energy into electrical energy.

Cooled geothermal fluid is injected back into the reservoir where it is reheated and preserves the underground resource’s mass balance and sustainability. Geothermal energy offers multiple benefits for a world that is seeking alternatives to fossil fuel generated energy.

### The Benefits of Geothermal Energy:

- a natural and locally available energy source
- Provides firmly flexible reliable, year-round base-load electricity
- Offers a low carbon energy alternative
- consumes less land and water and exerts significantly less environmental impact than fossil fuel combustion

**Air-Cooled Binary Geothermal Power Plant**



The geothermal energy industry has grown substantially in the past decade. According to the REN21 Renewables 2012 Global Status Report<sup>1</sup>, global geothermal electricity capacity was 11.2 GW in 2011 and geothermal power plants operate in at least 24 countries, with the vast majority of global capacity in eight countries: the United States (3.1 GW), the Philippines (1.9 GW), Indonesia (1.2 GW), Mexico (just under 1 GW), Italy (0.8 GW), Iceland (0.7 GW), New Zealand (nearly 0.6 GW), and Japan (0.5 GW).



DORA II, the 11 MW geothermal power plant in Turkey owned by MEGE, was commissioned in 2010

Geothermal has a vast untapped potential. The Western Governors Association estimates that 13,000 MW of identified geothermal resources will be developed by 2025. In a report issued in April 2010 for the World Geothermal Congress, Ruggero Bertani forecasted that by 2015 the worldwide installed capacity will increase by approximately 73% from 10,715 MW in 2010 to 18,500 MW in 2015. The report identifies the U.S., Indonesia, the Philippines, New Zealand and Mexico as the main contributors to the forecasted growth.

The U.S. has the greatest concentration of geothermal electricity production, which is where Ormat Technologies, Inc. is headquartered and where a large part of our geothermal development activities are focused.

### ***Recovered Energy Generation (REG) – Capturing Added Energy Value***

Ormat has developed specialized expertise in providing solutions that produce electricity from recovered energy – waste heat sources that are a by-product of a wide range of industrial processes. Cement manufacturing and gas pipeline compression stations are examples of processes and equipment that create residual heat which, when captured, can generate electricity without burning additional fuel and/or generating GHG emissions.

<sup>1</sup> Renewables 2012 Global Status Report, REN21, [www.ren21.net/REN21Activities/Publications/GlobalStatusReport/tabid/5434/Default.aspx](http://www.ren21.net/REN21Activities/Publications/GlobalStatusReport/tabid/5434/Default.aspx)

**Outstanding Reliability for REG Projects**

“Ormat has remained committed to providing NRGreen with very professional technical and operational support which has enabled our team to overcome many of the challenges inherent in maintaining this standard of equipment reliability. In 2011, our Recovered Energy Generation projects at Kerrobert, Alameda, Estlin and Loreburn achieved a combined availability of 97.9%, which exceeds industry standards for projects of this type. We commend Ormat for its continued dedication to sustained support.”

— Jim Walsh, Vice President, NRGreen Power



Kerrobert, the 5.8 MW REG power plant in Canada, owned by NRGreen Power

**Environmental Considerations**

*Environmental Policy and Management of Environmental Hazards*

In addition to providing low-carbon energy, in alignment with our environmental policy, Ormat’s power plants integrate environmentally friendly solutions. Ormat is committed to taking measures and finding technological solutions and other opportunities for continuous improvement in environmental protection, reduction and prevention of environmental impact. For example, Ormat continually strives to prevent or minimize noise and emissions from our power plants throughout their entire lifecycle, from the initial development stage through operation. Another example is our approach to water use; most of our power plants employ air cooling systems that do not consume water and the geothermal brine is re-injected into the reservoir thus ensuring its sustainability.

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### Stringent Development Criteria

The National Environmental Policy Act (NEPA) applies a rigorous analysis to proposed geothermal facility developments, which includes a thorough assessment of:

- biological resources
- cultural resources
- proposed land use
- facility aesthetics
- air quality including greenhouse gas emissions
- geology
- noise
- hazardous materials used
- hazardous wastes generated

These factors are evaluated, along with the proposed socio-economic impacts of each proposed geothermal development.

In keeping with our goal of minimizing environmental impacts prior to beginning work at any site, Ormat conducts an environmental baseline study. Baseline studies include the mapping of plants and animals in the area to determine potential impacts and how they may be most effectively minimized. The site location is sometimes determined based on these studies, in order to further reduce environmental impacts to flora and fauna. When no alternative location is available, the protected animal or plant whose habitat may be impacted is transferred to another protected habitat or land is purchased to offset the impact. While drilling wells, Ormat takes steps to prevent soil or groundwater contamination or erosion, such as lining wells with cement and steel, and using non-toxic or non-hazardous drilling fluids.

Additionally, in the course of our regular operating activities, Ormat collects scrap metals, used lubricants, plastic, and glass from obsolete computers for recycling. Ormat also takes a variety of measures to reduce lubricant consumption and enhance turbine efficiency.

Ormat's environmental policy applies to all of our activities, both in the field and in our offices. And all Ormat employees and subcontractors are expected to adhere to our company's environmental protection principles. We prevent the unnecessary use of paper and practice recycling in communities where available. We rely on extensive use of the Internet in lieu of traveling for business meetings. Ormat also encourages employees to organize car pools for shared travel to work.



Ormat's Amatitlan geothermal power plant in Guatemala delivers 18 MW

### *Adhering to Environmental Legislation*

Most of Ormat's target countries have local environmental protection laws, which are designed to address the following issues:

- The effect on the environment outside of the power plant, including restrictions on noise, air emissions and discharge of pollutants and contaminants;
- Air quality and noise levels inside our power plants, in order to protect employees; and,
- Safety and general requirements, including ventilation, fire protection, personal protection, railings, electric protection, and employee training on relevant issues.

Ormat maps and monitors the laws applicable to every site we operate. Ormat also has a multi-year plan for the improvement of our environmental performance.

In addition to meeting the requirements of the law in the multiple jurisdictions in which we operate, Ormat meets the terms of various international operating standards and has earned ISO14001 certification.

Ormat's general liability insurance policy provides coverage for unexpected events. Under this policy, Ormat's insurers will cover environmental damage to third parties resulting from unexpected events that do not involve negligence.

In the period covered by this report, the calendar years 2010 and 2011, neither Ormat nor its officers were involved in legal or administrative proceedings relating to environmental issues.

### *Minimizing Impacts to Local Resources*

Ormat strives to minimize the environmental footprint of every geothermal facility we operate. All of the geothermal and recovered energy sites Ormat develops in the U.S. must operate in accordance with National Environmental Policy Act (40 CRS 1500.1) if they are sited on public land. Ormat interacts with a number of government and regulatory agencies in the U.S., most often the federal Bureau of Land Management (BLM), as well as the U.S. Forest Service (USFS) and the Department of Defense (DOD). Other federal agencies that we regularly consult with on proposed geothermal projects or during the permitting application and review process may include:

- U.S. Fish and Wildlife Service (USFWS)
- U.S. Army Corp of Engineers (ACOE)
- Advisory Council on Historic Preservation (ACHP)
- U.S. Environmental Protection Agency (EPA)
- Department of Energy (DOE)
- National Park Service (NPS)
- State Historic Preservation Office (SHPO)

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## Environmental Protection Expenditures

Ormat continually strives to reduce the overall impact and environmental footprint of our geothermal and REG operations. We do so by conducting thorough pre-development baseline studies of proposed drilling and plant sites, carefully assessing the local biological resources and creating development plans that incorporate stringent levels of protection for all wildlife, land, air and water. From incorporating steel casing in well bores and using non-toxic drilling muds, to timing our activities in support of sage grouse breeding and nesting activities, and ensuring reclamation processes restore lands to natural states – all are part of our company's commitment to respecting the earth and the source of clean energy.

In the past two years, Ormat has invested significant capital to protect the local environment, which includes \$2.3 million and \$2.6 million in 2010 and in 2011, respectively.

### Ormat's Approach

As one of the world's most experienced and leading geothermal developers, Ormat employs a number of environmental protection practices when developing geothermal projects. Firstly, we take steps to avoid areas where it is likely that biological and cultural resources will be encountered and impacted, rather than attempting to mitigate them by relocation or offsets at different locations. Site selection, therefore, is a critically important factor in minimizing the potential impacts of geothermal development.



The Sage Grouse bird

In addition, the Tuscarora facility blends with the surrounding landscape, thanks to the use of environmental color standards for its exterior paint, adhering to guidelines established by the Bureau of Land Management.

Our Tuscarora, Nevada facility, which came online in 2011, is an excellent example of our environmentally sensitive siting practices. The geothermal well field that feeds the plant was situated to avoid sage grouse habitats. Further, to prevent disruption or barriers to wildlife and livestock movement, the facility's pipeline systems were designed to allow under crossing, following the natural undulations of existing terrain. In

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### Commitment to the Environment

“The Bureau of Land Management (BLM) has worked with Ormat for many years, with the shared objective of preserving the Sage Grouse population near their Tuscarora and McGinness Hills facilities. Ormat's efforts are characterized by a number of thoughtful approaches to facility design, as well as operating standards. These efforts have enabled Ormat to balance the recovery of geothermal resources with reduced impact to the local Sage Grouse habitat, by avoiding sensitive areas, minimizing plant noise and other surface impacts. They are also committed to fully rehabilitating lands that have been disturbed by geothermal drilling activities.”

— Sheila Mallory, Program Lead, BLM Nevada State Office

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Ormat's drilling programs conform to siting protocols for our facilities by avoiding cultural sites and moving well locations and access roads to areas without critical resources. In certain locations, our drilling activities are conducted only when they will avoid disruption to animal

breeding and nesting activities. All of Ormat’s drilling activities are conducted in accordance with environmental regulations and containment strategies, to ensure that materials from the drilling process do not contaminate surface and ground water or the land. Ormat’s wholly owned drilling company, GeoDrill, is permitted to drill under the California Air Resources Board Portable Engine Registration Program (PERP). PERP regulations are among the most stringent emission requirements for diesel engines in the U.S.

Ormat also makes concerted efforts to limit the noise and disruption caused by our operating facilities. For example, to mitigate the effects of noise on the community at our Orzunil operations, we changed all of the outdated non-condensable gas (NCG) silencers to reduce noise generated by these facilities. In addition, we continually monitor and conduct monthly tests to ensure noise is kept within acceptable parameters.

Geothermal power production compares favorably to natural gas and coal-fired electricity production when it comes to conserving water resources. The majority of the geothermal power plants Ormat operates are air-cooled, consuming no water for power production. We also have a number of initiatives underway across our facility fleet to reduce the amount of water and energy our operations consume. For example, we are evaluating the potential of employing desalinization of the geothermal brine in our geothermal operations and we continue to investigate different ways to use recycled water in the power plants we operate in California and Nevada.

Following the useful life of a geothermal facility - including the plant, wells and gathering system - Ormat reclaims the site by removing access roads and reseeding the land with native vegetation. All reclamation efforts are monitored to meet the required regulatory standards.

**Resource Sustainability - 100% Reinjection**

The earth’s core is the source of geothermal energy – an abundant energy resource far from being depleted. What is in danger of running out, however, is the hot water that carries that heat from deep underground to geothermal power plants on the earth’s surface.

Therefore a major sustainability driver for geothermal power generation lies in conserving and recycling the water that carries the energy and ensuring it is not depleted.

If geothermal fluid is consumed, or otherwise wasted at the surface, then the natural recharge from precipitation may not be sufficient to maintain fluid levels, thus depleting the aquifer. Over time this has occurred in many of the world’s geothermal fields. For example, the output of the Geysers Plants in California dropped from 2500 MW to less than 1000 MW.



Mokai, the 110 MW geothermal power plant in New Zealand, owned by Tuaropaki Power Co.

At Ormat, we place great emphasis on resource management, almost all of our plants are air-cooled without requiring make-up water. We pioneered reinjecting 100% of the exploited geothermal fluid (condensate and brine) back into the reservoir.

### **Ormat's 2010 and 2011 Geothermal and REG Power Production and Emissions Mitigation**

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

Ormat's power plants produce base-load electricity, which is constant and available on a 24/7 basis. We therefore compare Ormat's generation with other base-load energy sources: coal, oil and natural gas. These comparisons are based on data from an EIA study<sup>2</sup>.

<sup>2</sup> 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](http://www.geothermal.org/articles.html)

### *Geothermal and Recovered Energy vs. Fossil Fuel-Based Generation*

In 2011, Ormat-owned facilities generated approximately 3 million MWh of electricity, which when compared with fossil fuel-based electricity generation, mitigated:

- 3.4 million tons of CO<sub>2</sub> compared to coal
- 3.2 million tons of CO<sub>2</sub> compared to oil
- 2.0 million tons of CO<sub>2</sub> compared to natural gas

Ormat’s operating activity from all of our offices, manufacturing facilities, cars and other factors resulted in carbon dioxide (CO<sub>2</sub>) emissions of approximately 6,550 tons. This was the first year Ormat calculated such emissions.

When viewing Ormat’s CO<sub>2</sub> emissions on a ratio basis, the amount of CO<sub>2</sub> our company emitted (6,550 tons) compared with the amount we’ve mitigated, results in a 1 to 500 ratio, or of approximately 0.002.

Furthermore, we estimate the plants Ormat has sold have generated at least the same amount of electricity in 2011 as those that we own, and therefore mitigated the same amount of CO<sub>2</sub>. But as we cannot verify these figures we have not included them in the comparison.

### *Two Geothermal Power Plants Registered Under UN Clean Development Mechanism*

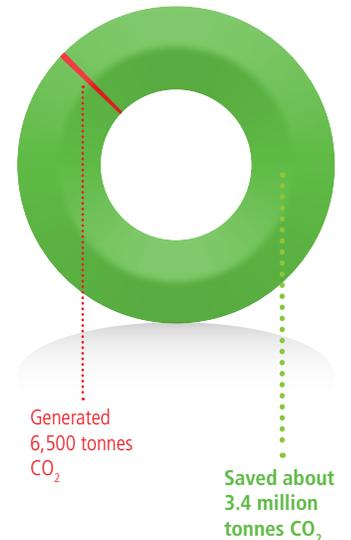
Ormat’s Amatitlan Geothermal power plant in Guatemala was officially registered by the Executive Board of the United Nations Framework Convention on Climate Change as a Clean Development Mechanism (CDM) project in 2008. The power plant is expected to offset approximately 83,000 tons of CO<sub>2</sub> annually, and is also eligible to receive certified emissions reduction credits. Each credit is equivalent to one ton of carbon dioxide, which can be traded or sold.

In 2010, Ormat’s Olkaria III power plant also received CDM registration, adding the potential to offset about another 180,000 tons of CO<sub>2</sub> per year. In 2011, Ormat continued work designed to commercialize the certified emission reduction credits at both facilities.

### **Achieving High Levels of Plant Availability**

At Ormat, we focus on three areas – design, operations and maintenance – as the keys to enabling industry-leading availability performance at all of our operating facilities and we monitor this performance and strive for continuous improvement.

**2011 Greenhouse Gas Emissions Generated & Saved**



Ormat's geothermal and recovered energy generation facilities have redundancies built into critical areas, which prevents a problem in one area from shutting down an entire facility. In addition, our facilities employ binary systems, which do not expose sensitive turbines to external or natural elements that may cause corrosion or the accumulation of sediments.

The operating systems featured in our facilities are almost entirely automated, minimizing manual operations and the likelihood of human error. The comprehensive training we provide for our plant operators is an investment in safe and reliable plant performance.

Ormat uses a principle called "On Condition Maintenance" as the guide for the maintenance we perform on our generating assets. On Condition Maintenance involves constant monitoring of the critical plant components, such as rotating equipment. Plant operations are stopped only when repairs are needed, not according to a pre-set schedule, and the continual monitoring enables operators to identify and address malfunctions before they escalate, thus reducing shutdown time.

Periodic maintenance is conducted on simpler plant elements based on Ormat's experience and a phased approach enables workers to isolate and complete maintenance on individual plant units, again, reducing production loss.

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### **Strong Operation Record in New Zealand**

“Top Energy Group is a community-owned electricity business in the Far North of New Zealand. We have approximately 32,000 consumers in an area of 6,822 km<sup>2</sup>. Our network consists of 3,000 km of lines with a peak demand of 82 MW.

Top Energy owns two Ormat power plants, the first was purchased in 1997, the second in 2006. The power plants are located at Ngawha, 7 km from Kaikohe in the Far North of New Zealand. Together the power generated provides 60% of the Far North district's base power demand. Given the nature of the geothermal resource in the Far North this is done in an efficient and cost-effective manner.

Ormat's years of experience in manufacturing geothermal power plants, and the services that they provide to partner with their clients have enabled Top Energy to supply our community with reliable and price-competitive electricity.

The Ngawha power stations utilize natural geothermal fluid to generate power. As part of our strict consent requirements and reservoir management 100% of the geothermal fluid is re-injected into the geothermal reservoir. This ensures the protection of the

local environment and maintains the geothermal resource for the long term. In addition, our consents require a wide range of other environmental factors such as noise, hydrogen sulfide and CO<sub>2</sub> to be monitored. The plant has continuously operated without any concerns from the monitoring authorities or the local residents for a period of 14 years.

The two Ormat geothermal plants have proven to be sound investments for Top Energy that provide reliable base-load electricity to the consumers of the Far North in an efficient, sustainable and cost-effective manner.”

— Russell Shaw, Chief Executive, Top Energy Group



Naghwa geothermal power plant in New Zealand, owned by Top Energy Group

## Community and Stakeholder Involvement

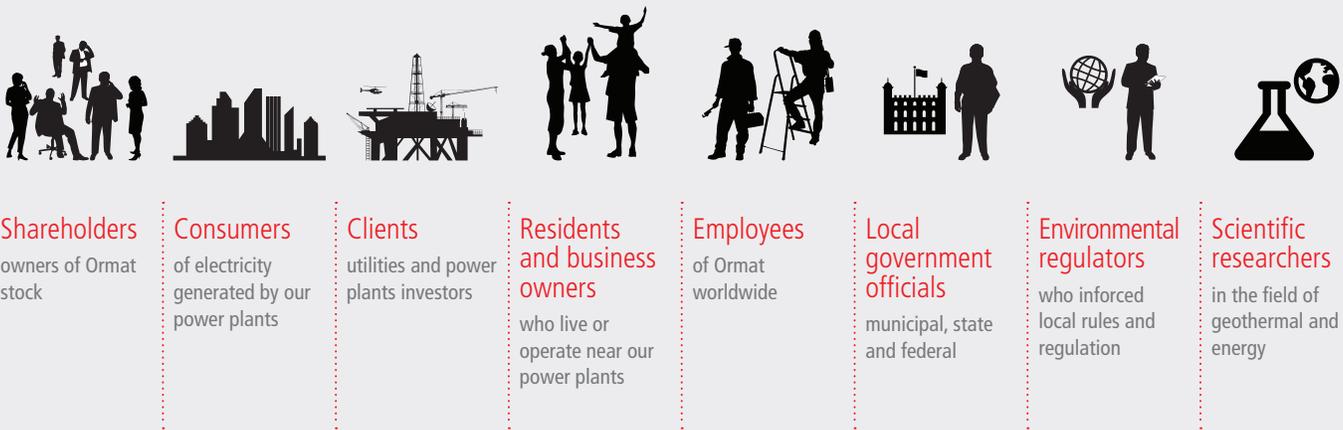
### An Active and Engaged Neighbor

Ormat believes cultivating long-term, mutually beneficial relationships with the many stakeholders who have an interest in our geothermal and recovered energy power plants is both a privilege and a responsibility. To encourage a spirit of ongoing connection and cooperation, Ormat continually seeks opportunities to reach out to our stakeholder audiences, using a wide variety of communications tools and ongoing programming, including:

- A website that we regularly update with information on the operation of our power plants and developing projects;
- A proactive community relations program that promotes employee volunteerism and emphasizes participation in local economic development, Chambers of Commerce and other community-based organizations;
- Active involvement on local boards, including the Nevada Geothermal Council, Hawaii Clean Energy Initiative and Utah Clean Energy, among others; and,
- A mandate to source products and services from local vendors and suppliers and continuous communication with stakeholders, using e-mail, phone calls, conferences, Shareholder meetings, Analyst Days, face-to-face meetings and facility tours.

Collectively, these activities provide our stakeholder audiences with transparent and timely information about our operations and development plans. They also enable stakeholders to become more informed about geothermal energy and its contributions to the local economy and a cleaner environment.

#### Who are Ormat's Stakeholders?



## Giving Back to the Community - Education, A Lifelong Value Driver

At Ormat, we recognize the value of education as a key contributor to healthy, viable and vibrant communities. We believe that supporting educational endeavors, particularly as they relate to furthering understanding of geothermal energy resources, is an exceptionally worthwhile investment. Funding scholarships for students and internships for schools are ways we help promote academic opportunities and future careers.

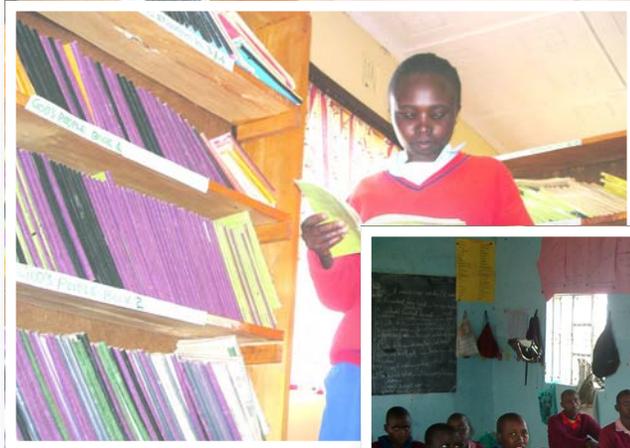
We have also cultivated strong relationships with a number of schools located in Nevada, in the U.S., where our corporate headquarters are located. We partner with the University of Nevada Reno (UNR) and its affiliates, the Great Basin Centre for Geothermal Energy, the University of Nevada, Las Vegas and the Desert Research Institute. In addition to direct funding support, we promote involvement and cooperation between these institutions and our company and employees. We do this by:

- Delivering lectures on business development, geology and engineering projects, sharing the insight of senior Ormat employees;
- Contributing to research and development initiatives that further the understanding of geothermal energy;
- Helping support internships in various departments and facilities to provide first-hand experience for students pursuing geothermal energy production studies; and,
- Offering tours of our power plant facilities to local educational organizations and individuals. In 2010 and 2011, Ormat conducted over 350 public and private tours, 78 of which were for student groups.

We also have direct involvement with the inaugural National Geothermal Academy hosted at the University of Nevada, Reno and the new power plant operators program at Truckee Meadows Community College. Ormat served as a consultant for the power plant operators program where our expert staff contributed to the curriculum and class materials. Staff also worked with students attending the National Geothermal Academy to help provide a real-world understanding of geology, technology and business development.

Ormat supports various institutions through internships, graduate student funding and/or research include Truckee Meadows Community College, the Colorado School of Mines Colorado Energy Research Institute, the University of California, Santa Cruz, Oregon State University and the University of Utah.

Our company has served as an associate member of the Massachusetts Institute of Technology Energy Initiative and as a member of the leadership council of the University of Colorado-Boulder Renewable and Sustainable Energy Institute (RASEI).



All of this participation is designed to contribute to quality education in the sustainable energy sector and advance opportunities for students pursuing studies in this area.

In addition to post-secondary support, Ormat regularly contributes to local primary, middle and secondary school programs in the communities where we operate. Ormat has built schools for these communities and provides funds for building upkeep, teacher salaries and supplies. In other cases, mostly for older children, Ormat provides scholarships for them to attend schools.

In Reno, Nevada Ormat made a donation to the Terry Lee Wells Nevada Discovery Museum which keeps young minds thriving through interactive, hands-on activities. The museum features a renewables wing that includes a geothermal activity that was designed by Ormat. We also support the Western Nevada Regional Science Fair by sponsoring the winner's trip to the National Science Fair each year.

Ormat also operates a vocational high school next to one of its manufacturing facilities in Yavne.

## Giving Back to the Community - Making a Meaningful Difference

Ormat operates in several countries outside of the U.S., including Nicaragua and Guatemala in Latin America and Kenya in Africa.

In the municipality of Zunil, located near Quetzaltenango in Guatemala, Ormat is involved with the local school and provides medical and dental care; we bring doctors to the local community to provide medical care and distribute vitamins and medicines to supplement what is available locally. We also have helped improve the lives of the people in these communities by constructing a sports court, supporting local celebrations and providing repairs to the drinkable water supply line.

In Kenya, Africa, Ormat operates the Olkaria III 52 MW geothermal power plant. The closest stakeholders to this facility are several hundred members of the Maasai, who live in Narasha village in the Naivasha District. Ormat employs local community members at our power plant and we have helped establish the local Narasha primary school, built teacher's homes and provided bursaries to secondary school students, among other support services.

Regardless of where we operate, we work to ensure that our community outreach and engagement efforts are directed at the areas of greatest need, while being culturally appropriate and respectful of the local people.



*Response to Natural Disasters in Guatemala*

Guatemala was hard hit by several natural disasters in 2010, including the eruption of Volcano Pacaya and severe flooding and mudslides that were the result of the Tropical Depression Agatha. Local residents from the towns of San Francisco de Sales, San Jose Caldera, El Cedro, El Bejucal and El Pepinal were impacted by these events. Each of these local towns is located near Ormat's Amatitlan geothermal power plant, which sits at the foot of Mount De Pacaya.

While Ormat's power plant was slightly damaged by landslides, many members of the local community were severely impacted by the volcanic eruption, which destroyed town rooftops and main roads.

Aaron Choresh, Ormat's VP of Operations, commented "Our first goal was to assist the local community in restoring the most fundamental living conditions local residents lost after the eruption, such as shelters, food, utility water and rooftops. Our next goal was to coordinate a massive rooftop distribution center for the 600 families living near our power plant."

Within a week, Ormat distributed 3,000 tin roofs to cover the homes of all 600 families living in the surrounding area and the Orpacaya Trust Fund, which was established by Ormat in 2009, donated an additional 1,000 rooftops.



The Orpacaya Trust Fund continues to fund diverse projects that contribute to the health, security and wellbeing of the indigenous people. From local health and dental clinics, funding for in-school breakfast programs and scholarships for students, a wide variety of needs continue to be met through the ongoing dispersal of funds from the community trust.

In addition to the destruction of local infrastructure, the 2010 events destroyed a large number of trees. Efforts were made in 2011 to create a reforestation program with the goal of planting 10,000 Cypress trees, to help restore the forested areas and minimize erosion and future landslides. Students from local schools joined with members of the Peace Corp and Ortitlan employees in the effort, which included an Ecology Drawing competition for the students to motivate and encourage their involvement.

***Protecting the Environment in Nicaragua with the Local Community***

Ormat regularly meets with several community organizations that are working to improve the environmental, health and social conditions for local residents who reside close to our Momotombo power plant in Nicaragua. We provide support to the National Civil Brigades from Leon, who provide local policing and prevent illegal hunting and wood extraction from protected areas.

In 2011, Ormat personnel participated in a joint committee with MARENA (Ministry of the Environment) and the Leon municipality. The goal of the committee is to coordinate activities to better manage and preserve natural resources within the protected areas of Momotombo.

In addition to these initiatives, Ormat provides support to the local municipality of La Paz Centro, where we provide transportation for local school teachers, support a local health center, the local Red Cross, a rehabilitation center and a foster home.

***Supporting Sustainable Summer Camps and Other Community Activities in the U.S.***

In 2011, Ormat’s Puna Geothermal Venture (PGV) contributed toward the University of Hawaii at Hilo’s Imiloa Astronomy Center, which helped subsidize program tuition costs for local school children to attend Imiloa’s Summer Camp programs that are focused on sustainable technology. The gift will also enable Imiloa to expand its outreach into school classrooms in the Keaau, Pahoa and Puna areas of the Big Island.

Ka’iu Kimuar, Executive Director of Imiloa Astronomy Center of Hawaii, commented, “We appreciate the investment and commitment Ormat has made to the community. These programs are important because they help engage our local school children in the concepts of science, technology, engineering and math in meaningful and relevant ways.” He added, “It was exciting to see children’s faces light-up when the engineering designs they worked so diligently on were tested and found to be successful – we live for those moments.”

The camp program, named Sustainability through Technology, engages youth in grades 5–8 in the science behind technology through hands-on activities. The children had the opportunity to create geothermal plant models using hydrodynamics kits that taught them about valve technology, turbines and pumps. Children also had the opportunity to experiment with fuel cell car kits and build a take-home wind turbine kit.

Ormat is very active in Reno, Nevada, U.S. which is where our corporate headquarters is located. During the 12th Annual Susan G. Komen Race for the Cure, Ormat's Turbine Truckers Cruised through the race where, in an effort to support the northern Nevada Susan G. Komen foundation, Ormat's 58-person Turbine Truckers team raised money to help cure breast cancer. The Turbine Truckers participated in a 5K running competition, 5K walk, t-shirt and team spirit challenges. While the sun may have been hiding that day, the Turbine Truckers shined with our handcrafted Ormat semi truck, team chant and homemade uniforms. Another example was when Ormat Employees Help Struggling Families during Ronald McDonald House Cookout. As they were busy in the kitchen, guests spoke to the Ormat crew about the illnesses their children suffer from and how staying at the Ronald McDonald House helps make hospital stays easier.



## A Progressive Workplace

As of year-end 2011, Ormat employed 1,226 people in our operations around the world, of which 526 employees are in the U.S. We recognize that employees who are engaged and motivated to be their best play a critical role in our overall competitiveness and ability to meet the growing demands of the global marketplace.

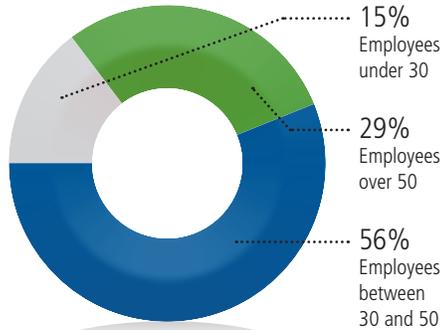
Ormat invests in a wide variety of initiatives designed to foster a workplace where innovation and initiative are encouraged and rewarded. In addition to competitive salaries, Ormat employees receive a generous employee benefits package, which include insurance and retirement savings plans.

Our company invests in employees by offering opportunities for ongoing professional development. We ensure our employees understand the expectations we have for ethical and responsible behavior in all aspects of their roles and facilitate this with training in specific areas such as inter-cultural communications and the prevention of sexual harassment. Employees participate in internal training related to the specifics of their jobs in larger group settings and also engage in external courses.

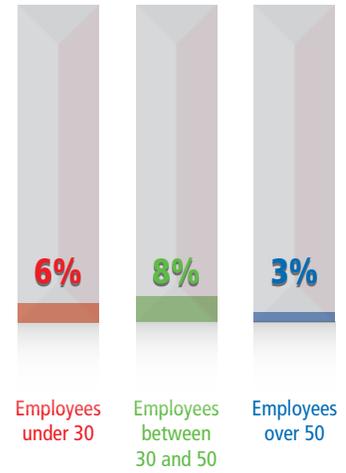
All of Ormat's operating employees must complete annual course work aligned with our safety procedures, to ensure that employees understand how they are expected to perform their roles. Completion of annual coursework is mandatory and employees are tested to verify their knowledge at the conclusion of each course. This strong commitment to creating a highly capable operations workforce reinforces our belief that every employee and contractor who works in an Ormat facility shares the responsibility of contributing to a safe and healthy work environment.

Ormat's commitment to working with local trades in the communities where we operate also generates significant economic benefits and is a top priority of the company. In 2011, Ormat contracted with many vendors in Nevada. Most of the power plants we operate provide long-term opportunities for local vendors as they operate for decades. Our Olkaria geothermal plant in Kenya maintains an ongoing employment contract with the Narasha Community Development Group, where community members work as general laborers and in environmental and maintenance capacities. At the Ormat Amatitlan geothermal power plant, people from the local community work in two-month cycles, in order to give job opportunities to even more residents during the year.

Employees by Age - 2011



Employee Turnover Rates – 2011



Ormat recognizes the importance of attracting and retaining a diverse employee population and strives to engage workers of all ages.

In 2011, Ormat's operations recorded a total employee turnover rate of 7%, with the highest turnover rates occurring within the 30-to-50 age group.



## Health and Safety Performance

Ormat's commitment to sustainability recognizes that protecting the health and safety of our employees, contractors, the public and the environment is directly linked to our success as an organization. Ormat maintains a comprehensive safety program that continually reinforces the importance of safety awareness, values and attitudes as key contributors to an incident-free workplace.

### Working Safely

In 2010 and 2011, Ormat recorded a Total Case Incidence Rate (TCIR) of 4.2 and 5.3 respectively across our worldwide operations.

Ormat's 2010 and 2011 performance for Days Away, Restricted, and Transferred (DART) rate was 3.1 and 3.7 respectively across our worldwide operation.

No fatal incidents were recorded in any of Ormat's operations in 2010 or 2011.



### Ormat's Safety Resource Structure

While Ormat operates 17 different geothermal and REG plants in a number of different countries, we strive to apply a consistent and comprehensive approach to safety in every facility. We work towards this goal through the efforts of our Strategy Safety Committee. It includes Ormat's Vice-President of Operations, Manager of Business Processes, Operations Planning Coordinator, Human Resources and Plant Managers, and outlines the expectations and safety plan for the company.

To further support this effort, the 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 site-specific to each plant 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 them, and develop projects designed to enhance the safety performance of each power plant.

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

### **Safety Training Priorities**

Safety is more than a standard at Ormat. Through an ongoing training program, all of Ormat's operating employees keep safety top-of-mind by completing annual course work that is aligned with our company's safety procedures. The goal of this ongoing training effort is to ensure that all of our workers understand the performance expectations associated with their roles and that they continue to add to their knowledge base and have the opportunity to practice procedures and refresh skills. Participation in the annual course work is mandatory and employees are tested to verify their knowledge. Ormat offers a wide variety of safety course programming, which include Contractor Safety, Confined Space Entry, Electricity Safety Procedures, Site Specific Emergency Action Plans, Fall Protection, Personal Protective Equipment and Process Safety Management, among others.





The control room in Steamboat remotely monitors 21 of Ormat's power plants

### **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 communication between Ormat and our customers and suppliers in order to achieve understanding of customers' requirements, expectations, satisfaction and to provide effective product support;
- Compliance with applicable environmental, health and safety regulations in every jurisdiction Ormat operates within;
- Continuous efforts to achieve:
  - high standards of safety in the production, construction and operational phases of our products to minimize risks to employees, contractors and the public;
  - improved product performance and reliability;
  - reduced costs and time to market;
  - prevention of pollution; and,
  - savings in energy and materials.
- Implementation and certification of an integrated management system in accordance with ISO 9001 and ISO 14001 international standard; and,
- Senior management commitment to dedicate resources and attention to comply with all safety requirements and continually improve the effectiveness of the integrated management system.

### **Ormat's 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 February 29, 2012.

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.



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CLEAN, RELIABLE, SUSTAINABLE