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ADVANCING GENDER IN THE ENVIRONMENT: GENDER-RESPONSIVE GEOTHERMAL GENERATION

Powering energy and social benefits in El Salvador



USAID Grant Number:

AID-EGEE-IO-13-00004

This document was produced by IUCN for USAID's Office of Gender Equality and Women's Empowerment within the Bureau of Economic Growth, Education and Environment in Washington, D.C.

February 2019

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Acknowledgments: Special thanks go to Rossy Escobar, Rubén Loy, Ana Silvia de Arévalo, Blanca Luz de González, Mónica Ricardez, Doris Elena Miranda, Carlos Melgar, FundaGeo's employees and staff from the Wildlife Refuge for sharing information and experiences.

ABOUT THIS CASE STUDY

This case study highlights the various ways in which LaGeo—a geothermal energy utility in El Salvador—developed strategies throughout its corporate mission and operations to adhere to national laws on gender equality and national development goals, resulting in environmental, social, and women’s empowerment outcomes, as well as positive impacts on business outcomes.

This case study shows how utilities can increase gender equality and promote women’s empowerment through institutional policies, examining management structures, and utilizing corporate social responsibility (CSR). It also highlights how LaGeo used CSR initiatives across numerous impact areas, such as livelihood activities, reforestation and mitigation efforts, social infrastructure development, conservation work, education, and health initiatives to demonstrate the benefits of geothermal energy in delivering environmental sustainability and employment. In turn, these efforts build strong community relations to help mitigate and prevent vandalism. The case provides recommendations and selected resources for further reading that other companies, across sectors, might consider.

This *Energy Case Study* is produced by Advancing Gender in the Environment (AGENT), showcasing advancements towards the achievement of gender equality in the energy sector. It was developed with the guidance and support of the Gender and Renewable Energy (G-REEN) network of experts hosted by AGENT.

ABOUT AGENT

AGENT is a ten-year program launched by the United States Agency for International Development (USAID) in 2014 and implemented by the International Union for Conservation of Nature (IUCN). The purpose of the partnership is to increase the effectiveness of USAID’s environment programming through the robust integration of gender considerations, improving gender equality and women’s empowerment outcomes in a broad range of environmental sectors. Recognizing women as agents of change, and the value of diverse knowledge, experiences and capacities of women and men alike, AGENT envisions a world that approaches environmental work at all levels with gender-responsive policy and action. AGENT drives transformation toward a more sustainable and equitable future for all.



INTRODUCTION

Around the world, 64 of 72 (89%) countries where USAID operates has at least one utility-scale energy service that is provided via full or partial national ownership. In many of these contexts, there are opportunities to implement national commitments on gender equality, women's empowerment, and community development through the corporate strategies of utility-scale energy services. When policy and programming relating to utility-scale energy services promote gender equality and women's empowerment, multiplied results follow—particularly for environmental and community benefits.

In El Salvador, several national laws and policies promote gender equality in the workplace. In 2011, the *Law of Equality, Fairness and the Elimination of Discrimination Against Women* took effect, mandating equal pay for equal work between women and men. El Salvador has also legalized twelve weeks of paid maternity leave and grants nursing mothers daily one-hour breaks.

As one of the world's top ten geothermal energy producers, El Salvador has national plans to increase installed capacity for its geothermal plants by 33% by 2020, with the Geothermal Energy Association predicting a global increase of 14.5-17.6% in geothermal installed capacity. Currently, LaGeo is an El Salvadorian geothermal energy utility that provides 27% of the country's electric power production. Until 2015, it was run as a joint venture between Enel Green Power and state-owned outfit Inversiones Energeticas S.A. de C.V. It is now run by Grupo CEL and under full control



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of the El Salvadorian government.¹ LaGeo therefore offers opportunities to advance gender equality by empowering women in its workforce and by working inclusively with local women in its delivery of CSR activities that generate environmental and economic outcomes.

When LaGeo was formed in 1999 as a part of El Salvador’s modernization process. Its formation included a mandate to contribute to the socio-economic development of the country through reliable and affordable energy while working comprehensively to improve the quality of life for its shareholders, customers, workers, and neighboring communities. In applying these national standards to its business philosophy, LaGeo enforces a code of ethics, an occupational health and safety program, an anti-harassment and discrimination policy, a collective contract, and a gender policy to ensure compliance.

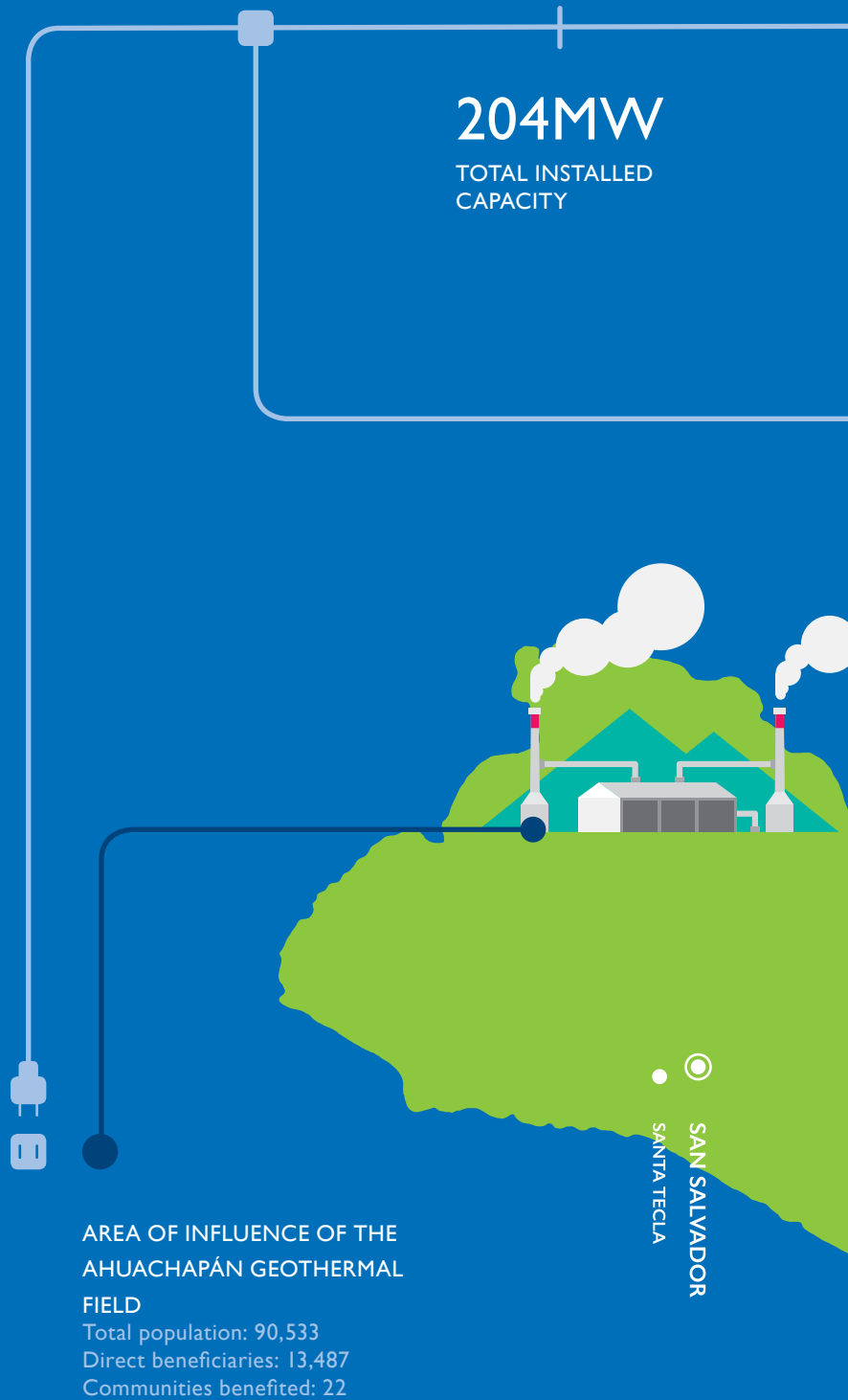
THE RESULTS ARE TRANSFORMATIVE

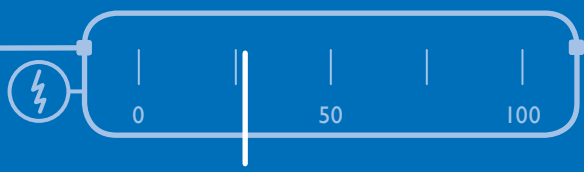
Not only has LaGeo increased women’s participation in the geothermal sector, it has also used CSR initiatives to generate business outcomes—such as preventing vandalism due to positive community relations and using its community education projects to create local talent pools for recruiting human resources (HR) professionals.

¹ Grupo CEL is made up of four companies in the Salvadoran electricity sector: LaGeo, S.A. de CV (LaGeo), Inversiones Energéticas, S.A. de C.V. (INE), Electricity Transmitting Company of El Salvador, S.A. de C.V. (ETESAL), Cucumacayán Electric Company, S.A. de C.V. (CECSA).

ABOUT LAGEO

LaGeo's headquarters are located in Santa Tecla, adjacent to the capital city of San Salvador. Its two geothermal plants of Ahuchapán and Berlín are located in the departments of Santa Ana and Usulután, respectively. The Chinameca geothermal field, where explorations and evaluations are currently being carried out, is located in the department of Usulután. This map shows the location of these plants and the geothermal field, as well as the number of people directly benefited by activities.



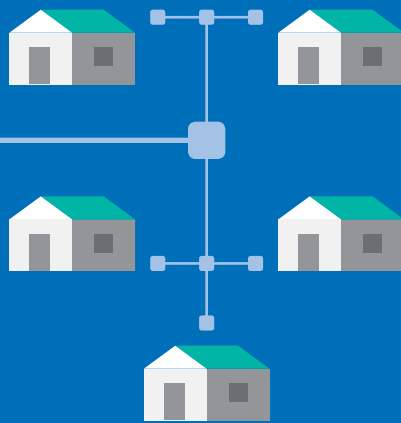


27%

OF EL SALVADOR'S
ELECTRIC POWER

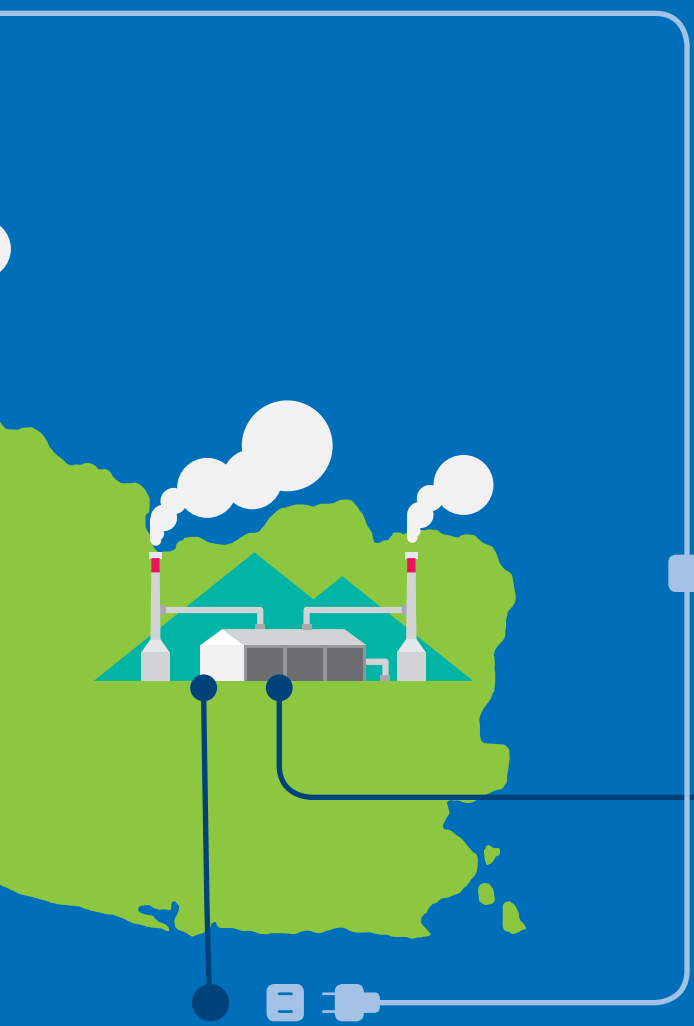
50

NEIGHBORING COMMUNITIES



75,374

BENEFICIARIES



**AREA OF INFLUENCE OF THE
CHINAMECA GEOTHERMAL FIELD**

Total population: 21,275
Direct beneficiaries: 3,545
Communities benefited: 5

**AREA OF INFLUENCE OF THE
GEOTHERMAL FIELD BERLIN**

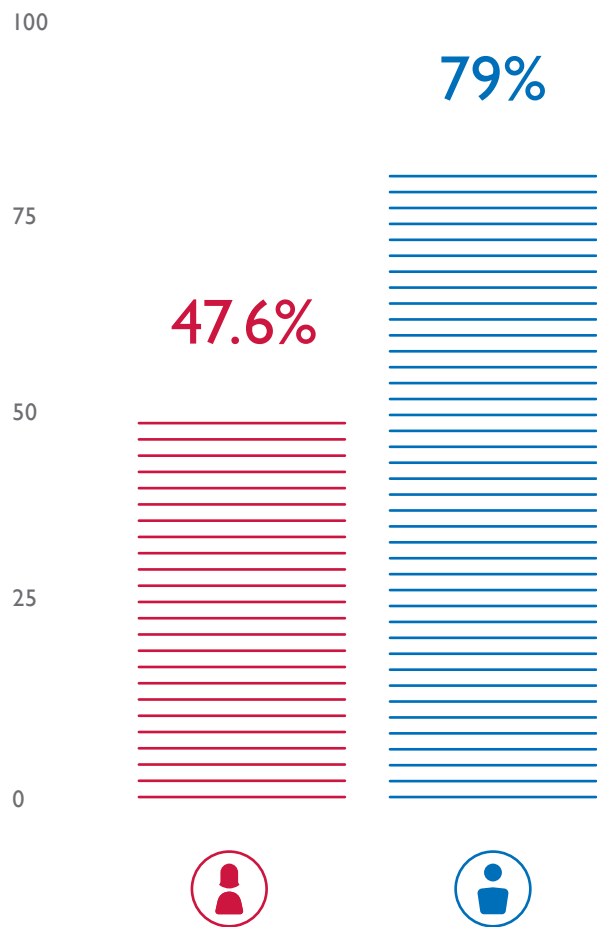
Total population: 45,570
Direct beneficiaries: 12,561
Communities benefited: 24

THE GOAL

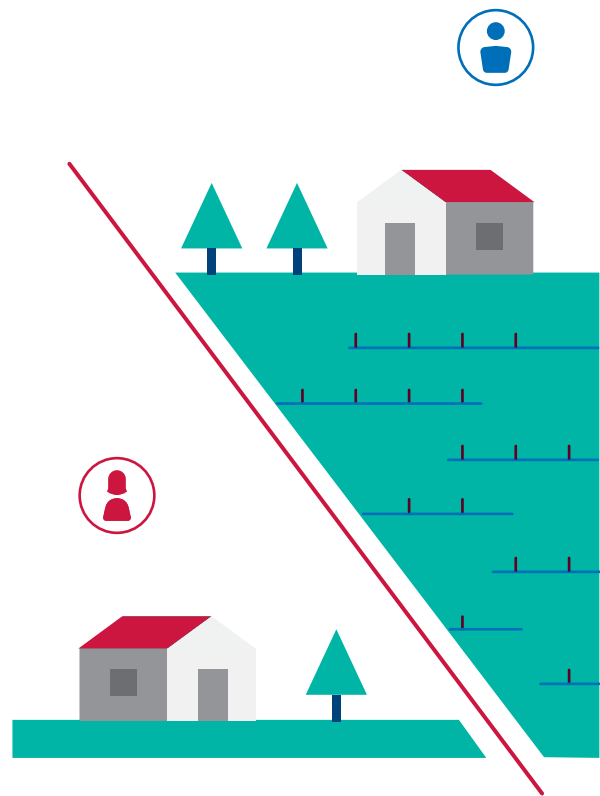
Reduce gender inequality and promote women's economic empowerment in the energy sector.

CHALLENGES

AVERAGE PARTICIPATION OF WOMEN AND MEN IN EL SALVADOR'S LABOR MARKET



DISPARITIES IN RURAL AREAS ARE WIDER





SUCCESSFUL STRATEGIES

Although gender equality has been promoted for many years at LaGeo, the formation of the Grupo CEL in 2015 and an increased focus on the integration of national gender equality mandates led to greater gender and empowerment results. In 2016, LaGeo conducted an institutional gender assessment to determine the degree to which gender equality is addressed in its corporate policies and activities. The assessment also identified progress made in past years and where further improvements are needed.

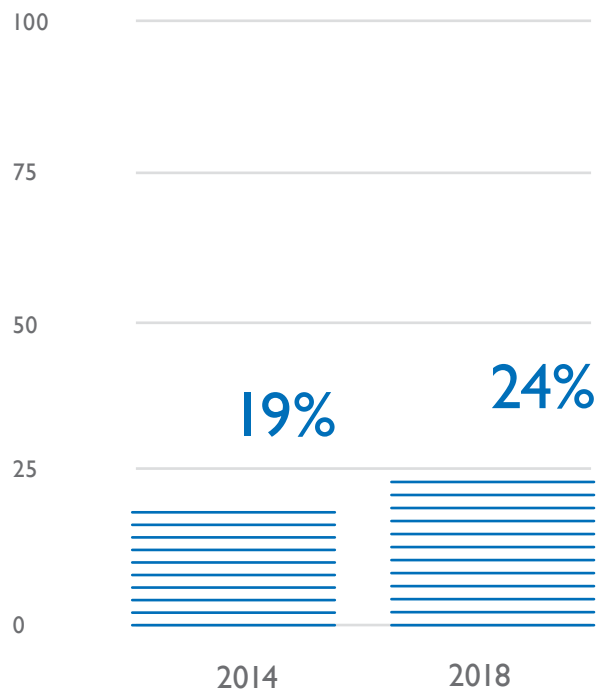
The following strategies demonstrate some of the various ways LaGeo invested in advancing gender equality, which LaGeo is formalizing through an upcoming gender policy:

- In 2016, the Grupo CEL, working with the Ministry of Labor and Social Welfare, launched the Educa Mujer program to create an institutional platform that promotes the improvement of women's technical skills through a scholarship exchange for technical studies—including at the post-graduate and masters level—and English language courses. The target of these scholarships were all working women at Grupo CEL, regardless of their academic level.
- Gender equitable company policies that adhere to national laws were implemented, including:
 - » Women are paid according to the position they occupy, at equal pay to men;
 - » Gender sensitization trainings are regularly conducted,
 - » Women and men have access to labor benefits, such as legally mandated maternity and breastfeeding conditions; and
 - » A nursery was opened to benefit women and men alike.
- LaGeo hires more than 50 women from local communities as general helpers for the annual maintenance of the geothermal plants.
- Seasonal workers receive training in industrial safety and instructions on maintenance activities such as the lubrication and cleaning of mechanical parts and components of the generation plants.
- LaGeo has supported its female personnel in starting a local chapter of the Women in Geothermal initiative (WING) that seeks to increase the participation of women in the geothermal industry.



RESULTS

BY INTEGRATING GENDER-RESPONSIVE APPROACHES AND ACTIVITIES, IN FOUR YEARS, LAGEO HAS INCREASED WOMEN'S PARTICIPATION AT ITS PLANTS AND OFFICES BY 5%



50 WOMEN

are hired and trained from local communities each year to conduct annual maintenance work

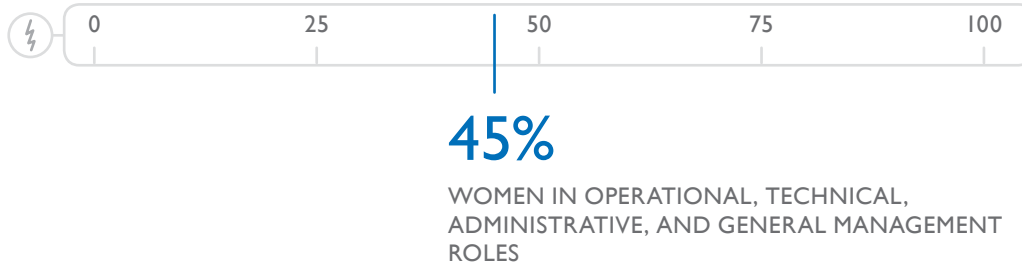
PERMANENT STAFF AT LAGEO:



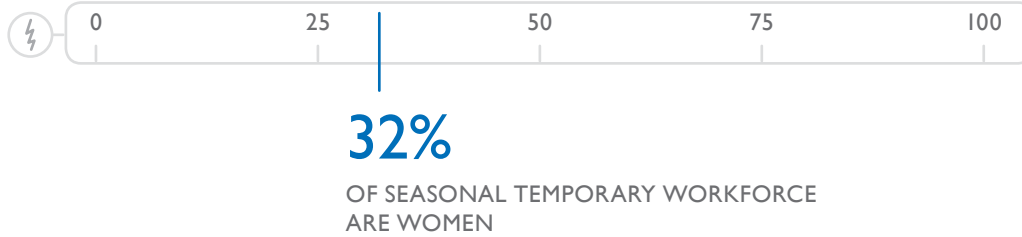
30%

WOMEN IN OPERATIONAL, TECHNICAL, ADMINISTRATIVE, AND GENERAL MANAGEMENT ROLES

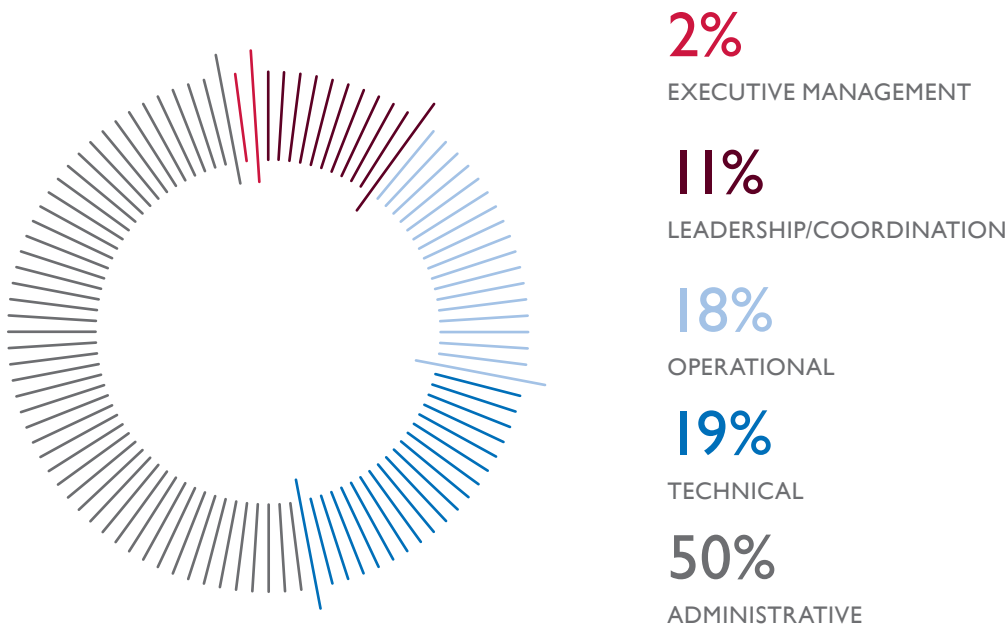
PERMANENT STAFF AT GRUPO CEL:



TEMPORARY WORKFORCE:



WOMEN IN PERMANENT STAFF POSITIONS AT LAGEO:

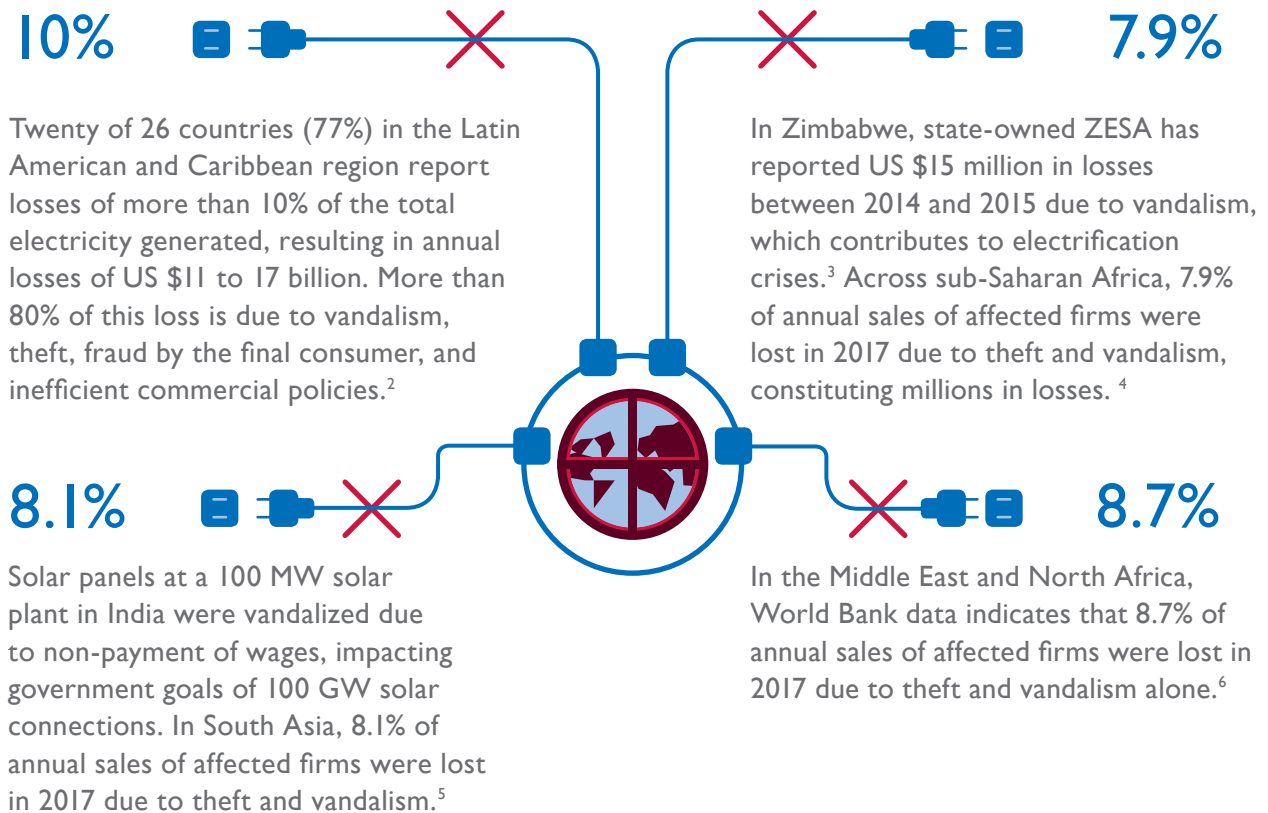


THE GOAL

Use Corporate Social Responsibility (CSR) initiatives to increase employment opportunities in local communities, particularly for women, while demonstrating the benefits of geothermal energy to strengthen community relations and prevent vandalism.

CHALLENGES

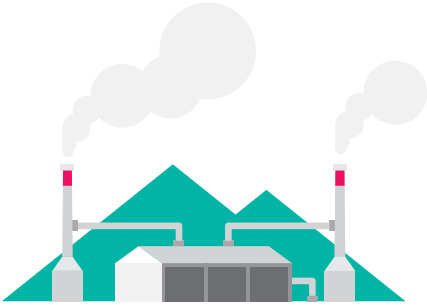
Globally, many large-scale energy utilities experience service delays and vandalism due to poor community relations.



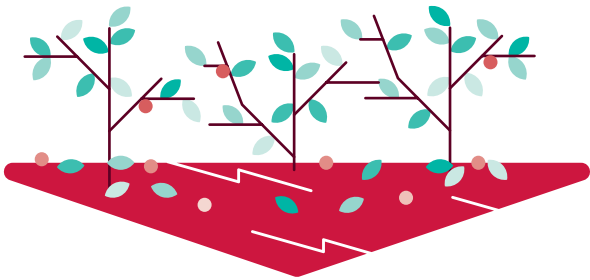
2 Serebrisky, T. and Jimenez, R. (2015). 'Antes de correr aprende a caminar: reducir las pérdidas de electricidad como primer paso para garantizar la seguridad energética'. *Cambio Climatico*. Inter-American Development Bank. Available [here](#).
3 Kaseke, N. et al. (2013). "Emergence Of Electricity Crisis In Zimbabwe, Reform Response And Cost Implications." *Journal of Business Management & Social Sciences Research*. Vol. 2, No. 10. Available [here](#).
4 World Bank. (2018). 'Firms experiencing losses due to theft and vandalism (% of firms)'. World Bank, Enterprise Surveys. Available [here](#).
5 Climate Samurai. (2018). 'Watch: Solar panels at 100 Mw solar plant in Maharashtra vandalized due to non payment of wages'. Available [here](#).
6 World Bank. (2018). 'Firms experiencing losses due to theft and vandalism (% of firms)'. World Bank, Enterprise Surveys. Available [here](#).



IN EL SALVADOR, MANY OF LAGEO'S LOCAL COMMUNITIES LIVE IN POVERTY WITH LIMITED ECONOMIC OPPORTUNITIES



Employment opportunities in communities near the geothermal fields are scarce. LaGeo is the main provider of employment in its localities while the remaining economic sectors consist of small-scale commercial and agricultural activities.



Local livelihoods are linked to agriculture in which carbon intensive agricultural practices have generated low production rates. Meanwhile, hydrological changes due to climate fragility have led to crop loss, resulting in low income for local farmers.

EXTREME POVERTY RATES SURROUNDING LAGEO'S GEOTHERMAL FIELDS ARE HIGH.



17-23%

AHUACHAPÁN

14-17%

BERLIN

13-14%

CHINAMECA



SUCCESSFUL STRATEGIES

- From 2000 to 2005, LaGeo implemented a Community Care Program (PACO) based on the voluntary participation from its employees that included the establishment of a Corporate Social Responsibility (CSR) Policy in 2004.
- LaGeo's CSR Policy establishes its commitment to local communities: to respect their physical integrity; their assets and their environment by preventing pollution; and ensuring the active participation of local communities in their local development plans.
- In 2006, LaGeo founded FundaGeo, a non-profit to replace the PACO program and improve management and social investment efforts, while implementing LaGeo's CSR Policy.
- FundaGeo maintains strategic alliances with the municipalities, community development associations (ADESCO), the Ministry of Environment, Ministry of Education, Ministry of Health units, non-governmental organizations such as the Fundación Educando un Salvadoreño (FESA), and various institutions such as the Red Cross.
- LaGeo also created the VIDA project (translates roughly to the "lifetime" project) that is tasked with the objective of reforesting the areas adjacent to the company's geothermal plants, with a target workforce made up of 70% women.

A DEEPER LOOK AT LAGEO'S CSR ACTIVITIES ACROSS SECTORS

Through FundaGeo and the VIDA project, LaGeo implemented a series of CSR initiatives to benefit local communities, economically empower women, improve the environment, and promote positive community engagement. The following provides a snapshot of these initiatives across sectors:

IMPROVED LIVELIHOODS

- LaGeo not only provides local communities with geothermal steam and surplus condensate for free but also seed capital, training, and infrastructure to allow communities to dehydrate fruits and vegetables with geothermal steam.
- LaGeo also provides surplus condensates and land for fish farming, irrigation, agriculture, forest landscape restoration, and coffee and poultry farms.

REFORESTATION AND MITIGATION

- Women and men participate in a reforestation project with organic coffee and cocoa plantations that increases income; the project includes access for women to training and opportunities to earn the same wages as their male counterparts.



- Reforestation projects inspired further VIDA projects to reforest the basins of the Lempa and Torola rivers. The project is developed by the Grupo CEL and intends to plant 3 million trees in three years with the participation of local women.
- LaGeo's improved livelihoods activities result in 1.8 tons of CO₂ emissions saved per year.

BASIC SOCIAL INFRASTRUCTURE

- FundaGeo builds and improves infrastructure works that facilitate connectivity, access to education, community health services, potable water, and electric power for local communities.
- FundaGeo facilitates the construction of schools to help local community members study for their baccalaureate degrees. This initiative has been a key factor in creating a local pool of qualified HR staff in area of LaGeo's geothermal plants for recruitment.

CONSERVATION

- Under the Clean Development Mechanism (CDM), LaGeo worked with the Ministry of Environment to create a wildlife protection park and provide its geothermal condensate for cleaning and irrigation. The park employs women and men equitably as animal keepers and runs an education program led by a woman to educate children about conservation.
- Women and men are represented equally as staff members at the wildlife park.
- Women and men are trained in reforestation, conservation of natural resources, environmental legislation, environmental education, the management of wild species, and how to assist veterinarians.

EDUCATION

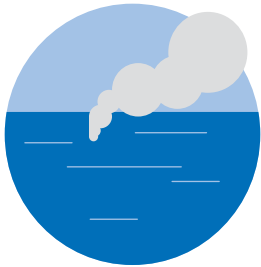
- Reforestation schools provide environmental education on protecting and stabilizing soils.
- *Ventana al mundo* (Window to the world) is an educational program that trains children and young people in science, technology, English, computing, and ethics. The initiative also has a scholarship program at the baccalaureate level, technical and university studies, summer courses, and work training.

HEALTH

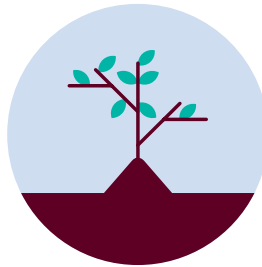
- Working with community health centers, preventative and curative medical care is provided equitably to local communities.



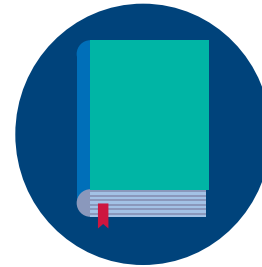
RESULTS



Women in the municipality of Berlin use geothermal steam to dehydrate fruit, producing 15kg of product in each batch worth up to US \$75.



15 women from local communities are hired for six months a year to plant trees, earning an average of US \$5.19 per day, the same wage as men.



In addition to *Ventana al mundo*, LaGeo works with the Ministry of Education to deliver a 9-month curriculum that serves 2,500 students from 22 schools, empowering girls to learn new skills.



One project with USAID and RTI provided health services and education to 17 communities, reaching 12,000 people, enhancing outreach efforts.



Women at the wildlife park earn US \$400 per month, a significant salary when compared with national standards (US \$3.94/day).



To date, FundaGeo has opened 1,250 km of powerlines that helps prevent energy theft. Strengthened community relations by paving and setting 3,675 m of roads, building three vehicular bridges, 11 pedestrian walkways, and more.

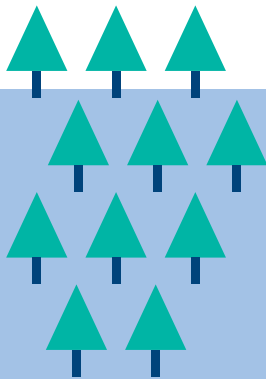


3 million

TREES
will be planted by Grupo CEL

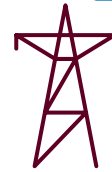
111,824m²

OF FORESTS
are protected for wildlife
conservation



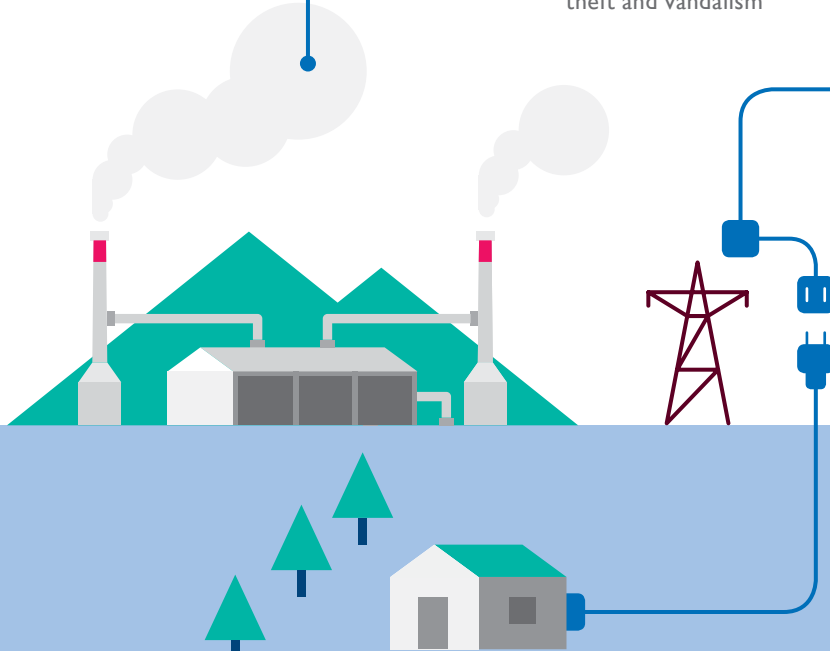
1.8 tons CO₂

EMISSIONS
are avoided per year by replacing
traditional energy with geothermal
steam in local livelihood activities



1.2 km

OF POWERLINES
One project constructed
powerlines that serve
more than 200 homes in
Ahuachapán, mitigating
theft and vandalism



INCREASED WOMEN'S ECONOMIC
EMPOWERMENT



0 INCIDENTS OF VANDALISM DUE TO
POSITIVE COMMUNITY RELATIONS

KEY TAKEAWAYS

- Large-scale national energy utilities have the opportunity to integrate and implement national laws and principles on gender equality by taking gender-responsive approaches to business operations and community engagement.
- Energy utilities can rely on gender analysis tools and good practices to ensure their human resources practices are gender-responsive and provide benefits to both women and men.
- Energy utilities can develop innovative ways to increase benefit sharing with their neighboring communities, a practice that reduces or eliminates potential social conflicts.
- By developing gender-responsive corporate social responsibility activities, utilities can generate transformative outcomes, effectively reducing gender gaps and contributing to healthier and more resilient local economies.



Click on the icon to stay updated on USAID's *Engendering Utilities* resources.

RECOMMENDATIONS

Energy utilities should, as a minimum, integrate the national gender equality laws and principles of the country in which they are based, ensuring these principles and rights permeate their business operations, HR policies, and community engagement plans. Development agencies, governments, and partners can support energy utilities to:

- Recognize gender equality principles and laws in their HR policies, integrating them into the company's institutional culture;
- Conduct a gender analysis to identify existing gender gaps and areas of improvement in HR policies;
- Research or identify good practices on the development of gender-responsive HR policies, to inform the development of their own policies and a gender strategy;
- Invest in the sensitization of women and men with regards to the effect gender roles have in their work (both within the institution as with neighboring communities);
- Conduct a gender analysis as a part of impact assessments to inform the development of CSR activities, to ensure the differentiated needs of women and girls, men and boys in the neighboring communities are addressed; and
- Ensure institutional buy-in of corporate management to sustain and improve gender-responsive actions.



Click on the icon to access a framework on HR entry points for promoting gender equity within utilities, developed by USAID's *Engendering Utilities* program.



Click on the icon to learn how Itaipu, a bi-national generation company, addresses gender equality within its company activities both in Brazil and Paraguay.

ADDITIONAL RESOURCES

WEBSITES

- LaGeo: <http://www.lageo.com.sv/>
- Women in Geothermal: <https://wing.wildapricot.org/>
- IUCN GGO Gender and Renewable Energy (G-REEN) platform: <http://genderandenvironment.org/energy/>

VIDEOS AND WEBINARS

- *Harvesting Geothermal Energy | El Salvador*: Available [here](#).
- IUCN GGO. (2018). *Gender implications for energy infrastructure*. AGENT Webinar. Available [here](#).
- IUCN GGO. (2017). *Fomentar la participación de las mujeres en el sector energetico*. AGENT Webinar. Available [here](#).
- IUCN GGO. (2017). *Addressing gender considerations in large-scale energy infrastructure, policies and project development*. AGENT Webinar. Available [here](#).
- IUCN GGO. (2017). *Transversalizando el enfoque de género en la infraestructura energética a gran escala*. AGENT Webinar. Available [here](#).
- IUCN GGO. (2015). *Gender equality in the energy sector: Understanding how renewable energy contributes to empowerment*. “Large-scale energy infrastructures, if they are not gender neutral why do we hear so little about it?” AGENT Webinar presentation by Vanessa Janik-Lopes. Available [here](#).
- IUCN GGO. (2015). *Gender in large-scale energy infrastructure*. AGENT Webinar. Available [here](#).

*This case study was developed as part of AGENT. It was prepared by IUCN with the support of USAID.
Related energy-specific briefs and information can be found at
<http://genderandenvironment.org/energy/>.*



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