

Geothermal Resource Development in Saint Lucia (ID 5812)

1) Overview of the project

Tourism is Saint Lucia's main source of jobs and income, accounting for 65 percent of the GDP and 61 percent of employment. The energy sector, particularly electricity, is a key contributor to economic activity and growth as it is essential for many sectors to thrive. While electricity is supplied reliably in Saint Lucia, it remains completely dependent on diesel-based generation, resulting in high electricity tariffs and substantial price volatility due to the exposure to world market oil prices that are transacted on global markets based on the US Dollar. The volatile and high cost of electricity is a major impediment that erodes the country's competitiveness, even as it seeks to attract a larger share of tourism revenues.

The objective of the geothermal resource development project is to help the Government of Saint Lucia (GoSL) make informed decisions regarding geothermal exploration and development by undertaking key upstream preparatory activities. This project helped the GoSL carry out surface studies and related activities, including aerial light-detection-and-ranging mapping surveys, hire a technical coordinator, and conduct a pre-feasibility study and an environmental and social impact assessment. The surface exploration studies have indicated three sites with characteristics that warrant further exploration through an exploration drilling program, with the goal of confirming the existence of a geothermal reservoir of sufficient size for geothermal energy production. With support of the World Bank and GEF, the project created an enabling environment for the first geothermal energy project in the country.

2) Role of GEF funding and key outcomes of the project

The Project benefits from two Trust Funds: a \$1.0 million grant from the Global Environmental Facility (GEF, TF018581) and a \$0.92 million grant from Energy Sector Management Assistance Program's Small Island Developing States Program (ESMAP SIDSDOCK, TF18390). Successful implementation of these upstream activities has informed the GoSL to consider exploration drilling, under the WB-led, US\$22.54 million Saint Lucia Renewable Energy Sector Development Project ("RESD," P161316).

This Renewable Energy Sector Development (RESD) Project aims to support the Government of Saint Lucia in assessing the viability of harnessing indigenous renewable energy resources, in particular geothermal energy. The project consists of a geothermal exploration drilling phase including consultations with the local community, and capacity building and technical assistance to mitigate risk of the development of this first potential geothermal power plant in St. Lucia.

Geothermal resource development in Saint Lucia would lead to the following benefits:

- Reduce consumption of nonrenewable fossil fuels by providing a reliable source of clean renewable energy;
- Help Saint Lucia meet its Paris Accord targets for renewable energy production and climate change mitigation; and
- Increase Saint Lucia's energy independence by reducing reliance on imported fossil fuels.

3) Features of the project

To support Saint Lucia progress on the path of geothermal development, the RESD project follows up on the positive findings of the surface exploration studies by supporting geothermal exploration drilling in the areas of interest.

Given the high risk involved in the early stage geothermal project, public sector de-risking of the exploration drilling phase has strongly improved the overall economics of geothermal development. Provided that the exploration drilling phase demonstrates a geothermal resource of high quality, the GoSL would invite a qualified private sector Independent Power Producer (IPP) developer to invest private capital into further developing the project in a timely manner. The private sector developer would be expected to invest, within an agreed timeline, its own capital for delineation drilling to confirm availability of sufficient quantity of steam to support a feasible generation capacity. This will be followed by the developer's investment in production and injection wells and subsequently, in the steam collection infrastructure and the power plant.

The updated procurement plan includes legal and transaction advisory services to support the GoSL conduct due diligence on the structure of the envisioned private sector-led development of the future power plant, if and when the RESD project confirms a viable geothermal resource. Although power plant development is outside the scope of the RESD project, which only entails exploration drilling, existing legal obligations of the government with a particular private developer could impact the ability of the GoSL to develop a power plant with a private investor at a sustainable tariff. Accordingly, The World Bank has requested the GoSL to employ legal advisory services to understand the validity of its outstanding MOU with the private developer.