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Project Information Document/ Integrated Safeguards Data Sheet (PID/ISDS)

Concept Stage | Date Prepared/Updated: 30-May-2017 | Report No: PIDISDSC21189



BASIC INFORMATION

A. Basic Project Data

Country St. Lucia	Project ID P161316	Parent Project ID (if any)	Project Name Renewable Energy Sector Development Project (P161316)
Region LATIN AMERICA AND CARIBBEAN	Estimated Appraisal Date Jan 15, 2018	Estimated Board Date Apr 26, 2018	Practice Area (Lead) Energy & Extractives
Financing Instrument Investment Project Financing	Borrower(s) Ministry of Finance, Economic Growth, Job Creation, External Affairs and the Public Service, Government of Saint Lucia	Implementing Agency Ministry of Education, Innovation, Gender Relations and Sustainable Development, Project Coordination Unit	

Proposed Development Objective(s)

The development objective of the Renewable Energy Sector Development (RESD) Project is to support the Government of Saint Lucia to assess the viability of harnessing indigenous renewable energy resources, in particular geothermal energy.

Financing (in USD Million)

Financing Source	Amount
Borrower	1.00
Clean Technology Fund	9.69
Support for Small Island Developing States (SIDS) DOCK Suppo	1.85
Free-standing Single Purpose Trust Fund	5.00
International Development Association (IDA)	5.00
Total Project Cost	22.54

Environmental Assessment Category B-Partial Assessment	Concept Review Decision Track II-The review did authorize the preparation to continue
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Other Decision (as needed)

Country Context

Saint Lucia is a nation in the Eastern Caribbean. It is an upper middle income country, with a population of approximately 185,000 inhabitants in 2015, for a Gross National Income (GNI) per capita, and Gross Domestic Product (GDP) of USD 7,350 and USD 1.43 billion respectively. GDP growth reached 1.8 percent in 2015, with transportation and hotels (tourism) mostly contributing to the economic recovery. The current account deficit has narrowed significantly. However, the financial sector continues to be impaired by nonperforming loans, public debt continues to rise reaching almost 80 percent of GDP owing to non-concessional interest rates and low growth.

External sector competitiveness is weakened by an overvalued exchange rate, and credit to private sector continued is on the decline¹. The 2008 financial crisis had wide negative impacts on the Eastern Caribbean economies and recovery across the island nations remains fragile. Although Saint Lucia was less affected by the crisis compared to neighboring countries, unemployment in the country reached historically high levels of 24.4 percent in 2014, when youth unemployment, in particular, reached 41.8 percent.

The country's economy has historically relied on agricultural exports, mainly sugar-cane and bananas, but due to high production costs and declining competitiveness, economic growth and development is now primarily driven by the success of its tourism industry and associated activities. Saint Lucia's industrial sector represents around 20 percent of the economy and includes light manufacturing and assembly plants to produce paper, cardboard, apparel, electronic components, and plastic products². Tourism is Saint Lucia's main source of jobs and income, accounting for 65 percent of the GDP and 61 percent of employment. Tourism-related labor is highly inclusive of women, youth, and marginalized groups. Tourism receipts were USD 360 million, and tourism arrival numbers were rather low (338,000) in 2014.

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 (see figure 1 and 2 below) that are transacted on global markets on the basis of the US Dollar. The volatile and high cost of electricity – in recent years in excess of USD 0.33 per kWh – is a major impediment that erodes the country's competitiveness, even as it seeks to attract a larger share of tourism revenues. High electricity costs weaken growth in business and services, create hardship and burden private consumers, especially the poor, while price volatility discourages local investments. A 2010 survey of businesses indicates that over 55 percent of the firms identified the high cost of electricity as a major constraint to doing business in Saint Lucia³. Although oil prices dropped dramatically until early 2016 before stabilizing at levels around USD 45/barrel, a fully diesel-based electricity supply remains costly and insecure as long-term price estimates continue to be both uncertain and significantly above current levels⁴.

Saint Lucia's future competitiveness and growth potential is therefore highly dependent on its ability to ensure low and stable energy costs without over-dependence on fossil fuel imports and related exposure to global oil price

¹ IMF Saint Lucia Country Report, February 2016

² IDB, Challenges and Opportunities for the Energy Sector in the Eastern Caribbean, October 2015

³ World Bank. 2010. "Enterprise Survey Country Bulletin: Saint Lucia."

⁴ The World Bank Commodities Price Forecast (January 2016) estimate crude oil avg. spot prices at USD 55.8/barrel in 2020 and USD 82.6/barrel in 2025.



fluctuations. Moreover, utilization of diesel for power generation results in local environmental impacts and also contributes to global climate change due to the emission of greenhouse gases (GHGs). Investments in renewable energy options can contribute to the government’s objective of developing indigenous energy resources as a means of diversifying the current power supply mix and ultimately benefiting the consumer through low-cost and stable power supply.

In this context, recent findings from the completion of surface exploration of geothermal resources point to the potential of promising geothermal reserves, making the full exploration of this potential a high priority for the government, LUCELEC and other key stakeholders. The Government’s strategy in the Energy Sector is to promote cost-effective renewable and indigenous energy resources that would not only increase Saint Lucia’s economic competitiveness but also help the country transition to a green economy and expand opportunities for eco-tourism. Together with ongoing efforts to increase resilience to natural disasters, the government’s commitment to promote the development of indigenous renewable energy resources constitute a comprehensive strategy to foster economic, energy and climate resilience. This approach must be viewed in the context of sustainable economic development, and is fully supportive of the government’s policy to position and develop Saint Lucia as a leader in high-end eco-tourism.

Figure 1: Electricity Tariffs in the Caribbean

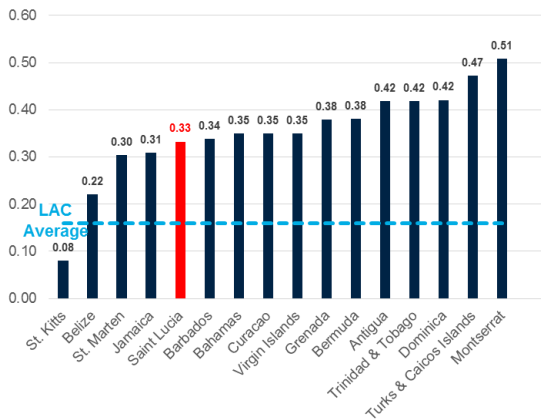
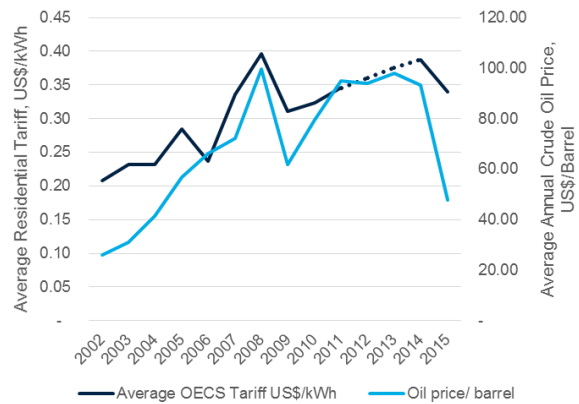


Figure 2: Correlation between OECS Tariffs and Oil Price



Sectoral and Institutional Context

Saint Lucia is highly dependent on imported fossil fuels to meet its energy demand and apart from limited usage of combustible renewables and waste, virtually all of its energy is imported, mainly from Trinidad and Tobago. Notwithstanding this situation, the island state has significant indigenous resources and potential for wind, solar, and geothermal energy. The dependence on oil for electricity generation and other energy needs leads to highly volatile prices in the sector with generation cost averaging between USD0.18-0.33 per kWh in recent years. The overwhelming dependence on imported oil for electricity generation and other energy needs leads to highly volatile prices in the sector, even though the island state has significant resource potential for wind, solar, and geothermal energy.

The power system in Saint Lucia is small, with peak demand reaching about 59 MW in 2015 while the average demand was about 38 MW. Power demand has increased at an average of less than 1 percent annually over the past five years. Saint Lucia Electricity Services Limited (LUCELEC), the island nation’s only electricity utility, is majority privately owned and has the concession to generate, transmit and distribute electricity in Saint Lucia until 2045. The government effectively controls 45.56 percent of LUCELEC’s shares since, in addition to its direct stake (12.44 percent), government bodies control an additional 33.12 percent through the National Insurance Corporation and the Castries City Council.



LUCELEC's concession is governed by the Electricity Supply Act of 2001, which also defines the sector's tariff-setting mechanism and minimum service standards. LUCELEC's regulatory regime is largely self-regulation and there is little oversight over its adherence to the required standards and service levels (IADB, 2012).

In 2015, LUCELEC generated 338 GWh of electricity that was distributed amongst its 67,011 customer base, comprising 59,766 residential customers and 7,226 commercial and industrial customers. LUCELEC operates 88.4 MW of name-plate generation capacity at a single power plant, the Cul De Sac Power Station ("CDSPPS"), utilizing diesel, although the actual firm generation output capabilities are lower (68 MW) due to the advanced age of some of the generation units. LUCELEC also operates and maintains a 66 kV transmission and an 11 kV distribution network. LUCELEC's 66 kV transmission network runs close to the location of the areas of potential geothermal interest. In 2016 for the first time, LUCELEC added 75 kW of solar PV generation capacity and plans to add a further 3 MW of utility scale solar PV and 12 MW of wind energy, both intermittent generation.

Based on current consumption and growth rates, and the old age and condition of the current diesel plant, LUCELEC needs to make a firm investment decision on new capacity expansion no later than 2020. The utility has indicated a willingness to consider alternatives to the default option of a tri-fuel (natural gas, light fuel oil (LFO), or heavy fuel oil (HFO)) fossil-based power plant that would lock in carbon-intensive, oil import dependent electricity generation. Continuing on the path of potentially expensive fossil fuel-based generation could undermine the country's tourism-based development trajectory and calls for a consideration of viable, cost-competitive alternatives with the potential to boost competitiveness by reducing the island's vulnerability to highly volatile fuel prices.

Saint Lucia has made strong domestic and international commitments to diversifying its energy mix, notably to achieving a "35% Renewable Energy Target by 2025 and 50% by 2030 based on a mix of geothermal, wind and solar energy sources" as part of the island nation's contribution to a global effort to mitigate climate change. As geothermal surface exploration surveys have been completed, exploration and delineation drilling are required to confirm the presence, the quality and the quantity of the geothermal resource for power generation. The results of these activities will provide valuable inputs into the country's medium-to-long-term power generation plan. Moreover, they will inform the decision regarding the optimal mix of the different technologies available: thermal options versus renewable options, including geothermal, wind and solar.

If successfully confirmed and developed, a 30 MW geothermal facility will help Saint Lucia transform its energy sector well beyond its renewable generation target as outlined in Saint Lucia's Sustainable Energy Plan to as high as 65-70 percent of renewable energy generation – and even higher if renewables such as solar and wind are also developed at scale and properly integrated into the grid. If geothermal energy is found to be unviable, the country will need to invest in a scale-up of solar and wind power and integrate these intermittent resources with investment in battery storage to integrate these in the grid with any new fossil-based generation. In both scenarios, addition of battery storage capacity can help maximize the amount of dispatchable renewable energy and minimize the need for new fossil fuel generation. The Government of Saint Lucia (GoSL) plans to implement the exploration drilling phase using public resources. If the exploration phase is successful, the GoSL will handover further development of the geothermal project to a qualified private sector project developer. The government's approach recognizes the attractiveness of the benefits derived from developing geothermal energy successfully, including the potential for stable and cost-effective tariffs. Moreover, the government is mindful of LUCELEC's need to make timely optimal investments that will define the country's energy mix going forward over the next 15 to 20 years, making it imperative to immediately conduct geothermal exploration and assess the viability of other sources of clean energy. The government is planning to de-risk the next stages of geothermal resource exploration through the use of grant and concessional financing for exploration drilling. De-risking the resource exploration phase by providing public financing will also make it more likely that the government can attract an experienced private sector project developer as a partner to invest in the power generation phase on mutually acceptable terms.

Relationship to CPF

The proposed Renewable Energy Sector Development (RESD) Project in Saint Lucia is fully consistent with the GoSL's



national energy policy objectives and with the objectives of the World Bank's OECS Regional Partnership Strategy (RPS) for the period 2015-2019. The high-level objective of the RPS is to assist the countries in laying the foundation for a return to sustainable inclusive growth after the negative effects of the global financial crisis. In order to achieve this objective, the RPS identifies three thematic areas for support (i) Enhancing productivity, competitiveness and employment; (ii) Modernizing the public sector with particular focus on public financial management (PFM) and institutional capacity, including for public private partnerships (PPPs); and (iii) Building social and climate resilience. The second area of engagement recognizes the need for public private partnerships (PPPs) to better leverage private investment in infrastructure and service provision. The third area "resilience", has the objective to address social vulnerabilities as well as exposure to natural disasters.

The proposed project lays the foundation for the development of renewable energy, contributing to all of the aforementioned goals. It will support private sector participation which enhances competitiveness and productivity (first area of engagement) as well as institutional capacity to leverage private investment. The development of indigenous energy will contribute to fiscal sustainability by providing more stable and lower electricity rates. It will also reduce fossil fuel imports which increases economic and climate resilience through lower risk of supply disruptions due to extreme weather events such as hurricanes. The introduction of a geothermal power plant in the Soufrière region, along with additional solar and wind energy would increase resilience of the power system to climate related risks. Finally, more stable and cheaper electricity will translate into lower production and services costs for businesses, and increased competitiveness across the economy, including tourism.

The project will support Saint Lucia's renewable energy and climate change goals. The country's commitment is reflected in its Energy Policy (2010) and Electricity Supply Services Act to help to create an enabling environment to achieve this goal. With Saint Lucia's submission of its INDC to the UNFCCC on November 17, 2015, the country committed to the climate change agreements reached in Paris during COP21, specifically to a renewable energy target of 35 per cent by 2025 and 50 per cent by 2030 based on a mix of geothermal, wind and solar energy sources. The INDC also targets improvements to Grid Distribution and Transmission Efficiency. In addition, the project will contribute toward Saint Lucia's achievement of its INDC GHG mitigation targets of 16 per cent and 23 per cent in 2025 and 2030, respectively, against a Business As Usual (BAU) projection, corresponding to emission reductions of 121 gigatons and 188 gigatons CO₂-eq from all sectors.

The proposed project is in line with the recommendation of the IMF to reform the energy sector and to implement the renewable energy initiatives to diversify sources and reduce costs. In addition, the IMF suggests to complete regulatory reforms, including revisiting the allowable rate of return to the electricity supplier.

C. Proposed Development Objective(s)

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The development objective of the Renewable Energy Sector Development (RESD) Project is to support the Government of Saint Lucia to assess the viability of harnessing indigenous renewable energy resources, in particular geothermal energy.

Key Results (From PCN)

The following are the expected key results of the proposed project:

- Preparation of an Exploration Drilling Program (EDP) acceptable to a Technical Panel led by government and stakeholder representatives;



- Launch of EDP and drilling of a minimum of two exploration wells or more as determined by EDP Technical Panel;
- Exploration Drilling Results Report completed and submitted to the Technical Panel and finalized for inform decision on the feasibility of the geothermal field for high quality steam production fit for electricity production;
- Better information and lower risk profile to secure optimal terms of agreement with and experienced private developer leading to a more stable tariff. If the exploration is successful, this will, in turn, lead to generation of power from renewable energy resulting in lower GHG emissions.

The proposed project is expected to unlock the country's geothermal potential by confirming the resource and thereby paving the way for the development of a 30 MW geothermal power plant and thus reducing its dependence on imported fuel for power generation and enhance Saint Lucia's energy security and reduce greenhouse gas emissions.

The long-term goals of this project are to:

- a. Generate electricity at lower cost than currently available in Saint Lucia, and in turn to reduce the retail tariff to consumers;
- b. Help stabilize electricity prices in order to assist business and industry, specifically the tourism sector
- c. Dispatch a domestic energy resource to reduce the country's dependence on volatile-priced imported fossil fuels and enhance its energy security;
- d. Encourage new private sector investment in the country's energy matrix; and
- e. Reduce the carbon footprint of the country.

D. Concept Description

Geothermal development in Saint Lucia has a long history and there have been numerous efforts to explore the resources in the in the past. The Sulphur Springs area in the Soufrière region in the south-western part of the island has been considered to be the center of geothermal potential in Saint Lucia and it has been studied since 1951 via reconnaissance investigations sponsored by the United Nations, and via drilling in the 1970s and 1980s. The previous drilling in the Sulphur Springs area did not validate all of the major field characteristics necessary to confirm commercial viability. The location of the Sulphur Springs are within the Pitons Management Area (PMA) also risks the environmental viability of geothermal development in that location.

From 2014 to 2016 the GoSL, with support from the World Bank, has identified and carried out new surface exploration. The final findings from these surface exploration studies suggest the possible existence of a geothermal reservoir outside the Sulphur Springs area that had not been identified by previous studies. This potential resource is expected to be located approximately 10-15 km ESE of the Sulphur Springs (Area 1a and 1b in figure 2), and – importantly - outside of the PMA and the Qualibou Depression. The geoscientific studies included geologic mapping, geochemical sampling of thermal waters, aeromagnetic surveys, a LiDAR survey, and magneto-telluric studies. The synthesized results of these investigations revealed the existence of a 1,000 to 2,000 meter thick low electrical resistivity horizon overlying a higher resistivity body. The low resistivity horizon extends broadly beneath an area bounded by Fond St. Jaques on the northeast, Belle Plaine on the northwest, and Saltibus on the south. This horizon has been interpreted to be impermeable, altered rock created by contact with fluids and/or gaseous emanations from an underlying geothermal reservoir. This reservoir may or may not be one that can be commercially developed. Its actual physical characteristics and thus its suitability for development can only be ascertained by exploration drilling. Although the subsurface electrical resistivity patterns in this area are consistent with the existence of a geothermal reservoir the lack of major surface manifestations in the prospect area is a risk factor that needs to be mitigated prior to proceeding with the full



financing and development of a geothermal power plant. In order to support Saint Lucia progress on the path of geothermal development, the proposed project follows up on the positive findings of the surface exploration studies by supporting geothermal exploration drilling in the area of interest.

The proposed project consists of an (i) exploration drilling program, undertaken by the Government of Saint Lucia, which is designed to confirm and characterize the resource base, and thus mitigate risks for the development of the first geothermal power plant in Saint Lucia; (ii) the procurement of shared infrastructure such as energy storage system (ESS) to facilitate the integration of renewable energy in Saint Lucia's power system.

Through the exploration drilling program, the project intends to publically finance a targeted exploration drilling campaign, specifically drilling of several 2000 m deep exploration wells and related geo-technical services, enabling shared infrastructure, and technical assistance. Given the high risk involved in the early stage geothermal project, public sector de-risking of the exploration drilling phase will strongly improve the overall economics of geothermal development. At the completion of the public sector-funded exploration drilling campaign, the delivered exploration drilling report will provide sufficient data and information to confirm with a relatively high degree of confidence whether a geothermal resource of sufficient quality exists in the area of interest (areas 1a and 1b on Figure 3). 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.

Project Scope: The proposed project, a geothermal exploration drilling program, undertaken by the Government of Saint Lucia, is designed to confirm and characterize the resource base, and thus mitigate risks for the development of the first geothermal power plant in Saint Lucia. The project intends to publically finance a targeted exploration drilling campaign, including specifically the drilling of three – five deep exploration wells (up to 2000 meters) and related geo-technical services, enabling shared infrastructure, and technical assistance. Public sector de-risking of the exploration drilling phase will strongly improve the overall economics of geothermal development. The completed exploration drilling report delivered at the close of this operation will provide sufficient data and information to confirm with a relatively high degree of confidence whether or not a geothermal resource of sufficient quality to support power generation exists in the area of interest (areas 1a and 1b on Figure 3).

Figure 3: Areas of Potential Geothermal Interest

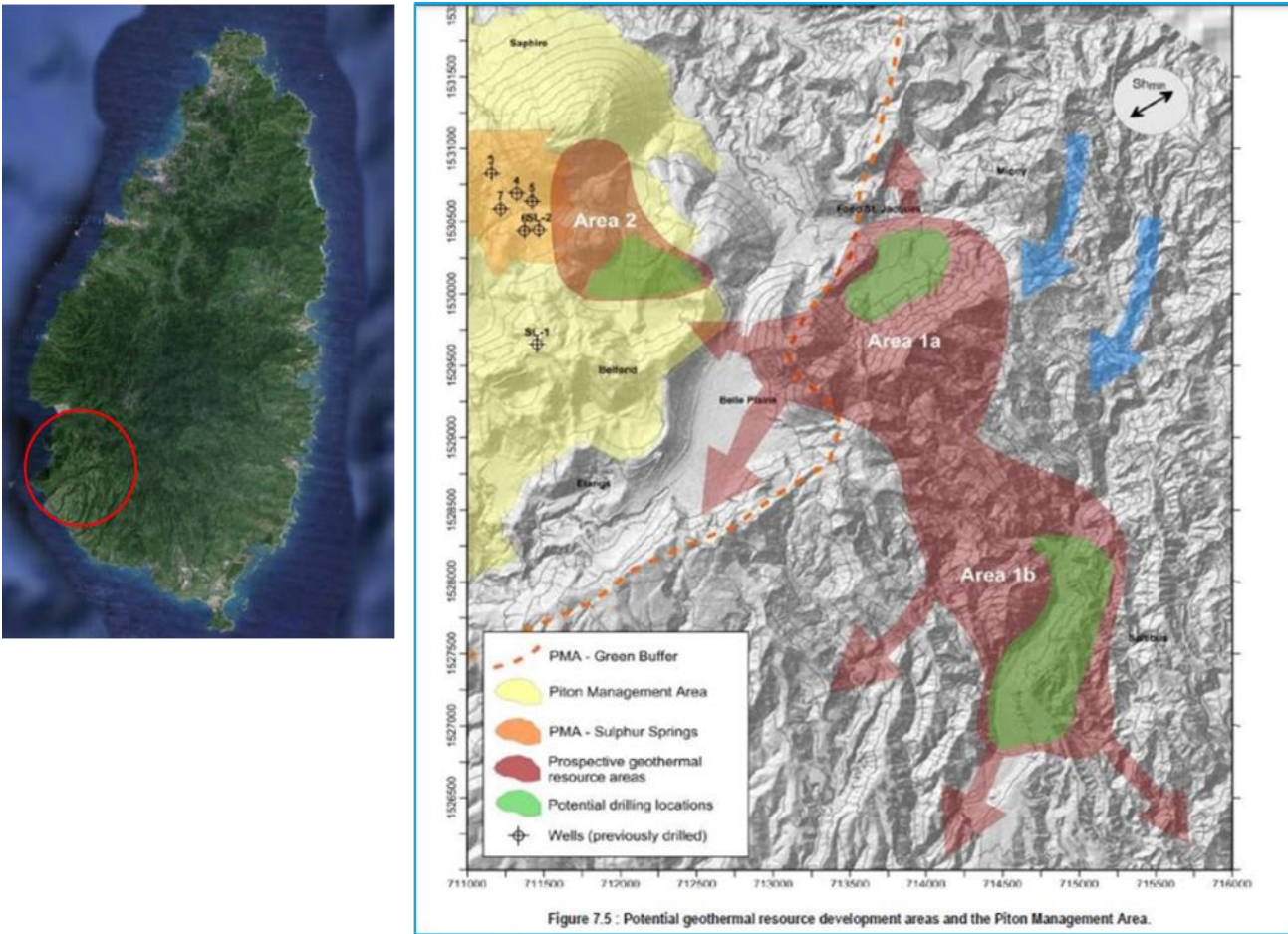


Figure 7.5 : Potential geothermal resource development areas and the Piton Management Area.

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SAFEGUARDS

A. Project location and salient physical characteristics relevant to the safeguard analysis (if known)

The general proposed project area is within the larger, about one square kilometer, prospect zones denominated Area 1a & 1b, between 5 - 8 km southeast of the town of Soufriere. However, the specific lands which may be affected by exploration work have not yet been defined, and will be selected as part of the ESIA process to minimize social and



environmental impacts. Areas 1a and 1b are located outside of the Pitons Management Area (PMA, an UNESCO World Heritage Site) but a small part of Area 1a might overlap at the margins of the PMA’s Buffer Zone. Excluded from the project is another area with geothermal potential (Area 2) which is located within the Sulphur Springs area of the PMA and would therefore present very complex environmental challenges. As noted in the Limits of Acceptable Change (LAC) document, geothermal development is allowed within the PMA but outside of the Sulphur Spring area, “subject to an Environmental Impact Assessment” (section 13.4); thus, the project follows the LAC guidelines. Exploration drilling work will require construction of infrastructure for ancillary work such as well pads, access roads and water supply. The proposed drilling technique will use a diamond core rig and slim-hole borings, which will minimize potential impacts because the footprints required for drilling and access are reduced in comparison to full-size production-stage wells. Slim-hole well pads can be as small as 100 square meters, and water supplies are also minimal (1,200-gallon tanker trucks can suffice). Access roads can be little more than farm tracks, although the project terrain is rugged and some new roads will be required, particularly in Area 1a where existing roads traverse only the ridge tops and do not reach the valley floors. For this reason the potential impacts from new road construction will be the main environmental concern. The area is highly prone to landslides, so special attention should be paid to minimize landslide potential when cutting new access roads, and good construction practice should be employed to minimize erosion impacts. Typical construction related impacts such as dust, noise, and worker health and safety would also be expected. Other impacts specific to geothermal exploration activities could occur from poor management of drilling fluids, chemicals, and sanitary wastes, as described in the relevant WBG EHS Guidelines. Community health and safety issues could arise from access, traffic, and emergency response.

B. Borrower’s Institutional Capacity for Safeguard Policies

Saint Lucia has experience with World Bank funded projects in other sectors, currently in both preparation and implementation phase, as for the case of the Regional Disaster Vulnerability Reduction Project (RDVRP) as well as the Regional Tourism Competitiveness project. The Bank has been supporting capacity building and training for the specialists in change of environment and social safeguards design and implementation.

The Project Coordination Unit (PCU) will manage the supervision of environmental compliance through two Project Engineers who have received training and currently support the RDVRP, supported by the addition of an environmental specialist or the hiring of a special consultant specifically for the project. Regional safeguards training workshops have also been recently conducted, focusing on practical environmental management for DVRP projects in OECS countries, to strengthen ties and enhance practice within the region. A World Bank Environmental Specialist will further provide additional technical support with periodic field supervision.

The TORs for the ESIA has been reviewed and approved by the World Bank under P149959. The ESIA and ESMP produced will also be forwarded to the Bank for review prior to the development of specific contracts.

C. Environmental and Social Safeguards Specialists on the Team

Michael J. Darr, Gloria Malia Mahama

D. Policies that might apply

Safeguard Policies	Triggered?	Explanation (Optional)
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Environmental Assessment OP/BP 4.01	Yes	The team proposes the project as Category B, based on the project's limitation to exploratory drilling using small-diameter wells, and the location of impacts either completely outside of the PMA or at the margins of its buffer zone. However, given the proximity of the Project to the Pitons Management Area, a UNESCO World Heritage Site, and the impact of potential geothermal energy generation in further phases of development, responsibility for oversight of this Project will be retained by the RSA. OP/BP 4.01 is triggered as the project activities (particularly road construction) could cause negative environmental and social impacts. An ESIA is being prepared under a related project (P149959) and will include an ESMP specific to the exploration drilling activities proposed under the current project. Any future activities would be addressed under a separate Project and an associated ESIA with its own category designation will be prepared at that time. If there will be a private entity involved the application of OP4.03 will be considered for the future project.
Natural Habitats OP/BP 4.04	Yes	This policy is triggered because the project may affect forests, riparian areas, or other areas of natural habitat particularly due the influence of any new roads. In addition the presence of the PMA triggers the policy because there may be effects to the Buffer Zone of a protected natural area (the PMA).
Forests OP/BP 4.36	Yes	Access road construction could affect forests (e.g. by induced access from road construction), and would be addressed under OP4.04; however, OP4.36 is triggered as a precaution.
Pest Management OP 4.09	Yes	The project may require small amounts of pesticide use in construction areas, and herbicide may be required to keep access roads clear. The ESIA and ESMP will include procedures for small amounts of pesticide and herbicide use; and no Pest Management Plan is needed because only incidental amounts should be used during the project and significant pest management issues would not be anticipated.
Physical Cultural Resources OP/BP 4.11	Yes	This policy is triggered because earth-moving activities could affect resources of physical, cultural, and/or historical importance. Suggestions for the wording of chance finds and procedures will be provided for eventual insertion into construction contracts/bidding documents. Potential indirect effects on visual or other resources that could affect the PMA will also be



		identified and addressed in the ESIA.
Indigenous Peoples OP/BP 4.10	No	Policy OP/BP 4.10 is not triggered. The screening activities confirmed that there are not indigenous communities present in the project area who identify themselves as distinct indigenous group, with customary cultural, economic, social or political institutions separate from those of the dominant society and culture. Nor do they have an indigenous language different from the official language of the country. Therefore, in the project area there are not indigenous groups as defined by the Bank’s Policy OP/BP 4.10.
Involuntary Resettlement OP/BP 4.12	Yes	The general project area is known (prospect zones are about one square kilometer) however the eventual specific location for construction of the drill pads, access roads and other ancillary facilities within the general areas are unknown at this stage. Undertaking these activities may affect agricultural land and livelihood activities (e. g coffee, cacao, tress, and pastures). Considering that the specific locations are not known, Resettlement Policy Framework (RPF) will be developed to define the objectives and principles of the Bank policy as well as those of the national regulation to mitigate and compensate for any adverse social impacts. The RPF will guide the preparation of follow up Resettlement Action Plan (RAP), or Abbreviated Resettlement Action Plan for each sub-project once the specific sites are identified during implementation. The RPF will be disclosed before appraisal. The follow up RAPs/ARAPs will also be disclosed and implemented before any civil works commences.
Safety of Dams OP/BP 4.37	No	The project will not support the construction or rehabilitation of dams nor will it support other investments which rely on the services of existing dams.
Projects on International Waterways OP/BP 7.50	No	The project will not affect international waterways as defined under the policy.
Projects in Disputed Areas OP/BP 7.60	No	The project will not affect disputed areas as defined under the policy.

E. Safeguard Preparation Plan

Tentative target date for preparing the Appraisal Stage PID/ISDS

Mar 15, 2018



Time frame for launching and completing the safeguard-related studies that may be needed. The specific studies and their timing should be specified in the Appraisal Stage PID/ISDS

The ESIA is underway through related project P149959 and should be drafted and finalized no later than December 2017, in time to support the exploration drilling. The ESIA which is ongoing under P149959 will result in a comprehensive Environmental and Social Management Plan (ESMP) specific to the exploratory drilling work envisioned under the current project P161316. If there are any future phases of development possible based on the outcome of the project's exploratory boreholes, then a new ESIA would have to be developed under a separate future project; however, much of the baseline information would already have been collected from the ESIA of the current project. The ESMP for the exploratory drilling will be developed as part of the ESIA, and will minimize environmental and social impacts by optimizing the locations of roads and drilling sites as part of alternative assessment, and by establishing best management requirements for all the project activities. The ESMP will provide the necessary compliance requirements to achieve approval of national laws as well as the provisions of the World Bank Environmental and Social Safeguards Policies. The ESIA includes consideration of the PMA UNESCO World Heritage Site and will evaluate any special requirements e.g. the Limits of Acceptable Change (LAC) for the PMA, even though any exploration activities in Area 2 are to be specifically excluded under the proposed operation, as a precaution to manage any indirect impacts of any proposed activities in Areas 1a and 1b on the PMA .

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