Report

Pathways to Implementing GST Recommendations in the Caribbean

Country Report: Saint Lucia

Author: Kory Hall

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Introduction

This supplementary country report is developed to highlight the current endeavours of Caribbean SIDS on the road to addressing the recommendations of Paragraph 28 of the Global Stocktake, and staying within the 1.5°C global warming limit. It also will assess progress to date and identify areas to possibly further accelerate the achievement of targets in line with the findings of the regional analysis.

Recalling that the recommendations from the main report are:

1. **Strengthen Data and Monitoring Systems**

Expand the scope and reach of the joint CARICOM and OLACDE Energy Information System (sieCARICOM), to cover additional CARICOM member states thus creating a standardized data repository to facilitate improved analysis and decision making.

2. **Streamline Regulatory Frameworks**

Expand the remit of C-SERMS to review the legislation covering the generation of electricity in each territory, thus developing customized yet harmonious legal frameworks and permitting processes that promote more efficient inter-agency cooperation (regionally & nationally). It requires deliberate actions by governments to remove barriers to the development of RE projects the progression of the energy transition.

3. **Support Capacity Building**

Develop a regional skill improvement program that improves internal negotiating capabilities and development fundamentals. By investing in technical training and institutional capacity building for Caribbean nationals, countries will mitigate the risk of increased project costs and low investor confidence in RE projects.

4. **Promote Regional Collaboration**

Expand the remit of C-SERMS to advance the development of shared procurement mechanisms, and regional project development processes in the advancement of energy transition targets.

This country report identifies policies and activities that might be considered best practice and can be replicated in other Caribbean countries, whilst also identifying gaps that other countries should address if the gap exists in their local context.

For the rest of the region, Saint Lucia has demonstrated the need for effective policy and planning in creating an enabling environment for the deployment of renewable energy resources. As an example to the rest of the Caribbean, Saint Lucia has developed key planning documents that guide the island's energy transition and provides a de-risking element to potential investment in renewable energy projects by private entities.

This was accomplished via:

- The National Energy Policy (NEP) that aims to develop fiscal structures, supplementary policies, and capacity building tools that create consistent pathways to renewable energy development.

- The National Energy Transition Strategy (NETS) which focused on developing a plan that resulted in a more reliable, cost-effective, and independent energy future for Saint Lucia, and demonstrates that combining strategic planning with renewable energy projects is more effective for SIDS energy transitions than focusing on individual stand-alone projects.

- The St Lucia Integrated Resource Plan which took guidance from the NETS to develop a multi-factor assessment (cost, grid status and other elements) of renewable energy technologies and their suitability in driving Saint Lucia's transition.

Saint Lucia is in the process of creating a policy landscape that facilitates the transformation of its electricity generation sector. Each policy and strategy reviewed is focused on removing roadblocks and smoothening the path to renewable energy development on the island.

Background – Saint Lucia

Saint Lucia is a small, beautiful island nation in the Eastern Caribbean. Famously known for its iconic Pitons, the island is home to roughly 180,000 people spread across 616 km^2[i]. Its growing economy is heavily reliant on a service-based tourism (accounting for approximately 86.9% of GDP[ii]), however with ambitious plans for sustainable development as evidenced by its 2023-2030 National Energy Policy (NEP) which has set an ambitious target of 50% renewable energy by 2030[iii].

Saint Lucia has taken definitive steps to position itself as a regional leader in energy transition. In fulfilment of its obligations under Article 4, paragraph 2 of the Paris Agreement, and in response to the findings of the GST, Saint Lucia has developed and submitted its third Nationally Determined Contribution (NDC 3.0) which represents a progression in the island nation's ambition under the Paris Agreement[iv]. Commitments to emissions reductions from energy and transport sectors are to move from 7% to 14% by 2030, and then to 22% by 2035. These are targeted to be achieved by the rollout of enhanced RE sources with battery-based stability measures[v].

Figure 1: Castries, Saint Lucia from Britannica.com

Saint Lucia's contribution to global greenhouse gas (GHG) emissions is negligible (0.01% in 2021[vi]). At the same time, the country is exposed to the worst impacts of climate change on an annual basis, including hurricanes, flooding, and sea level rise[vii]. These climate events directly threaten the country's economy and the livelihoods of its citizens in various ways. First, they impact the island's natural environment, such as the beaches and coral reefs, which are crucial to the sustainability of the country's main revenue earner - the tourism sector. Second, these worsening climate events lead to the destruction of roads, utilities and the decreased ability of public agencies to render key services to the public, further exacerbating the impact on the population[viii]. In acknowledgement of this, Saint Lucia is attempting to create a policy and legal framework that will enable the achievement of its NDC goals and the establishment of a reliable cleaner electricity grid.

Current Policies Enabling Saint Lucia's Transition

Established in 2023, Saint Lucia's national renewable energy target of 50% of electricity generation from renewable sources by 2030 can be considered to represent the tripling required under the GST, as the country's RE penetration stands at just 5.0% (as of 2023)[ix]. The country's 3rd NDC submission has since updated targets to reflect the current landscape, hoping to achieve a renewable energy penetration share of at least 46% by 2035[x]. Regarding implementation, the country has thus far focused on the development of enabling policy, regulatory and legal frameworks. This approach can be viewed as systematically and deliberately building a strong foundation for RE deployment, energy stability and resilience, as well as the uptake of new technologies.

Policy and Legal Framwork

- Saint Lucia National Energy Policy 2023 - 2030
- Energy Action Plan
- Saint Lucia National Energy Transition Strategy and Integrated Resource Plan
- Saint Lucia National Energy Policy from 2023 to 2030 Action Plan
- The Saint Lucia National Energy Transition Strategy (NETS)
- National Utilities Regulatory Commission Act
- Electricity Supply Act (First Enacted 1991)
- Amended Cabinet Conclusion #282 of 2014
- Geothermal Resources Development Bill (Draft)

Figure 2: Saint Lucia's policy, Legal and Regulatory Framework

The policy, legal and regulatory amendments and additions made by the Saint Lucian Government are centred around removing roadblocks to the adoption of RE technologies, improving oversight and regulatory controls and creating an avenue for increased private investment in clean energy generation[xixii].

These policies have been finalised based on feedback and guidance received from key stakeholders, [xiii]. Additionally, as policy reviews continue to address emerging challenges, fossil fuel subsidies remain a barrier to achieving these ambitious targets[xiv].

Pursuing renewable energy and energy efficiency investments requires strategic planning to mitigate against the risks associated with an ever-changing global energy market[xvxvi]. Often it is the economic requirements of an energy transition that derail the best of intentions in securing a green energy future[xvii].

In the development of the National Energy Transition Strategy (NETS) and Integrated Resource Plan (IRP), Saint Lucia addressed this economic risk by first defining its energy transition goals and then undertaking the data-based scenario analysis of RE technology options and associated costs.

Figure 3: The process of Integrated Resource Planning. Source The Carbon Collective

The IRP at its core optimizes the allocation and utilization of energy resources to meet current and future energy needs while mitigating environmental impact risks[xviii]. The scenario that was evaluated and eventually recommended is discussed in a subsequent section.

Progressing to Net-Zero

Current Electricity Generation Sources

Saint Lucia's electricity system is operated and maintained by the Saint Lucia Electricity Services Limited (LUCELEC) with oversight from the National Utilities Regulatory Commission (NURC). This system has an installed generating capacity of 88.4 MW[xix] which is mainly fuelled by imported diesel. The Cul De Sac Power Station, which was designed with redundancy and reliability in mind, is only required to supply a peak demand of approximately 62 MW[xx].

Figure 4: Cul De Sac Power Station, Saint Lucia. Source: LUCELEC

Unfortunately, in terms of the deployment of RE generation, as of 2023 Saint Lucia's renewable generation capacity stood at approximately 5 MW, which comprised the La Tourney 3 MW farm and approximately 1.7 MW of distributed PV.

Figure 5: La Tourney Solar Plant, Saint Lucia. Source: LUCELEC

With the announced goal of 50% of electricity generation capacity coming from RE sources by 2030 (approximately 42MW of RE), and the current installed capacity only accounting for approximately 5% of total installed generation, Saint Lucia has significant ground to cover the next five years in order to meet its announced targets.

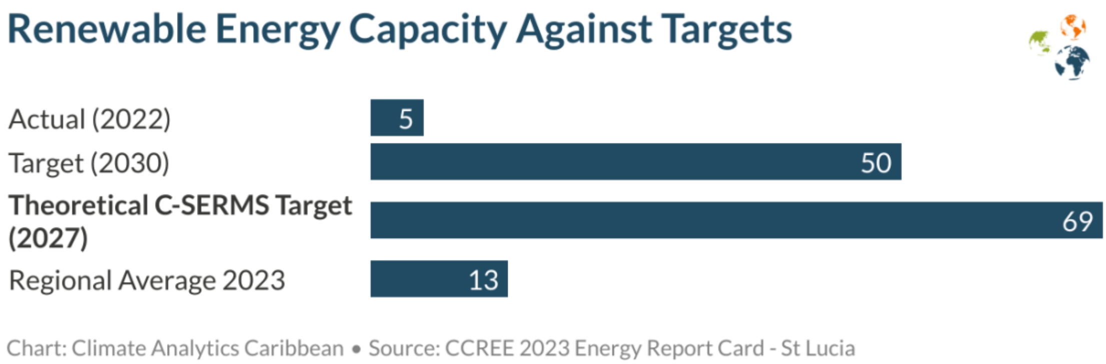

Figure 6: Figure: A comparison of actual deployment versus published targets and theoretical RE targets. Source 2023 Energy Report Card - Saint Lucia

Developing the pathway to net-zero

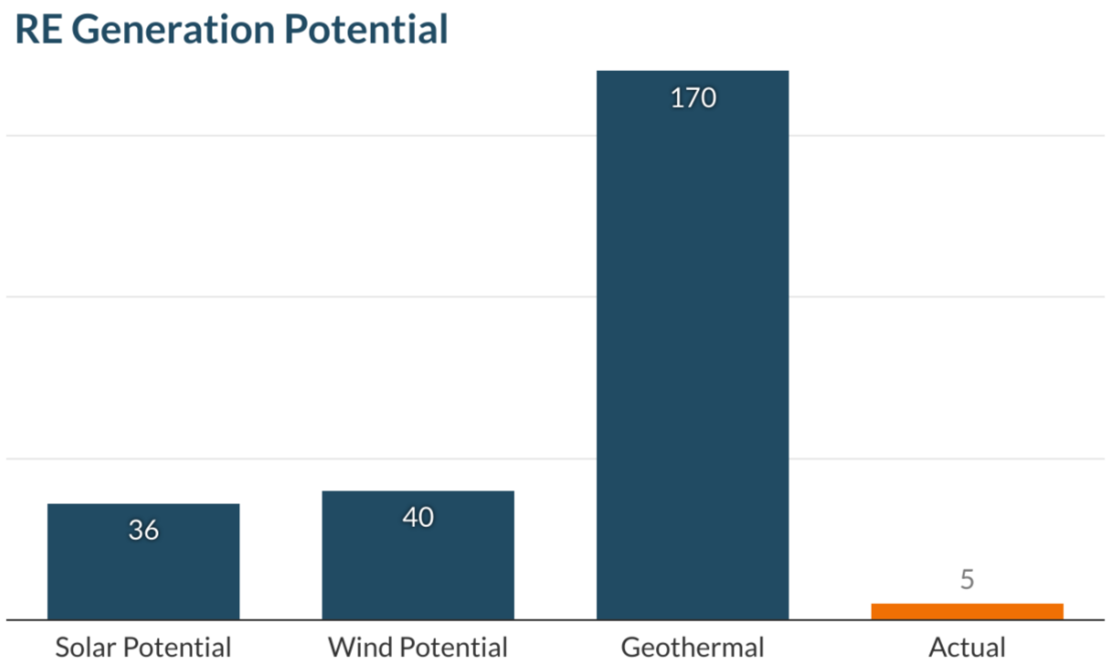

Figure 7: Saint Lucia's Renewable Energy Potential. Source: 2023 Energy Report Card - Saint Lucia

The IRP that was completed in support of Saint Lucia's energy transition, took into consideration the Government's inherent responsibility to provide its citizens with access to an affordable and reliable supply of energy, whilst also considering that as a utility, LUCELEC cannot operate in a financial loss-making position. Focused scenarios for a sustainable energy system were evaluated and a recommendation made that aligned with the country's intentions (RE targets), as well as financial constraints.

SCENARIO	TOTAL COST TO OPERATE (Millions of Eastern Caribbean Dollars over 20 years)[1]	2025 RENEWABLE PENETRATION (by energy)	DESCRIPTION OF GENERATION ASSETS (in 2025)
1. Diesel Fuel Only (Reference Case)	$6,173	0%	Continued diesel, new diesel installed in 2023 (12.4 MW)
2. Natural Gas	$5,821	0%	Natural gas (40 MW) from retrofits and diesel (46.3 MW with new 12.4 MW in 2023)
3. Solar, Decentralized—Debt Constrained	$5,497	18.6%	Solar (47 MW, 60% owned by LUCELEC), storage (16 MWh), and continued diesel
4. Solar—Hybrid Ownership	$5,514	33.1%	Solar (54 MW, 80% owned by LUCELEC), storage (18 MWh), and diesel
5. Solar, Wind—Centralized. Recommended	$5,533	38.9%	Solar (54 MW), wind (18 MW), and storage (27 MWh), diesel—optimal rate reduction
6. Solar, Geothermal, Wind—Centralized	$5,595	75.3%	Solar (23 MW), wind (12 MW), geothermal (30 MW), storage (19 MWh), and diesel

Figure 8: Description of focused scenarios evaluated and the associated costs to operate of an upgraded power generation matrix. Source: Saint Lucia NETS and IRP

The recommended option proposes a combination of technologies to assist in Saint Lucia's transition that includes Solar, Wind, Battery Energy Storage Systems (BESS) and upgraded diesel generation that will operate at a reduced rate. This option was expected to increase Saint Lucia's renewable share to 38.9%, which remains short of the proposed 50% target, however recent revisions to the NETS and updated NDC targets indicate greater ambition.

Of the six options presented, it is noted that diesel fuel will continue as an energy source for power generation. In an ideal world, a transition to an energy matrix without hydrocarbons is the goal, however cost and infrastructure constraints play a part in a government's decision-making processes. **Should the government of Saint Lucia be willing to take the risk, and updated option 6, revised to reflect updated ambitions, which explores the possible deployment of geothermal energy, creates an avenue of high potential in achieving net-zero. Should seismic and thermal potential assessments indicate a high potential for geothermal electricity generation (in excess of 30MW to cover existing diesel capacity), geothermal can replace the diesel generation in the satisfaction of stable baseload supply.**

Implementing the Plan

Saint Lucia's policy, legal and regulatory framework enables the implementation of the IRP's recommendations and provides a solid case study for other territories that have not developed an IRP or Integrated Resource and Resilience Plan (IRRP) to date. Key to achieving the full benefit of the IRP's solution options will be the introduction of geothermal energy. The current draft Geothermal Resource Development Bill of 2012 is set to be reviewed and updated to facilitate the pursuit of geothermal projects that satisfies the country's needs under the Renewable Energy Sector Development Project (RESDP). Proposed updates to the bill are set to address:

- The procedures to be followed to apply for a license to explore, produce and drill for thermal sources.
- The controls that guide the issuance of permits, concessions and exemptions, applicable fees and royalty payments[xxi].

For the success of the RESDP, these updates and the adoption of the bill will further legitimise and de-risk all future activities in geothermal development and show that the pursuit of such projects are fully supported by the state.

Promoting regional collaboration

Like a few of its other island neighbours, there are opportunities for Saint Lucia to advance its geothermal imperative through regional collaboration. With three potential sites identified for further exploratory work, St Lucia anticipates that adding geothermal generation by 2035 could see a 32% reduction of energy sector emissions relative to 2010 levels. If a suitable site is confirmed, it is estimated that establishing the geothermal plant will costs approximately USD 178 million, with an additional spend of USD 84 million for grid upgrades[xxii].

As the islands with geothermal resources pursue their individual goals, collaboration under an improved C-SERMS in the pursuit of funding, technical services and overall procurement, offers the possibility of savings in development costs, as well as in improvement in the attractiveness of projects to investors by the increase in scale due to the combined capacity.

A regional alliance of these potential geothermal territories can be established to increase accessibility and development of these resources. Similar to an economic alliance, this potential "Eastern Caribbean Geothermal Alliance" can act on behalf of nation members in the pursuance of geothermal project development. Given that many of the nations with geothermal potential are already members of the Organisation of Eastern Caribbean States (OECS), the possibilities of the creation of a successful alliance to promote and develop the use of this clean energy source are evident.

Conclusion

Saint Lucia stands at a critical moment in its pursuit of sustainable energy security and climate resilience. Eliminating its reliance on imported diesel, reducing its risk exposure to volatile global fuel markets and alleviating its citizens of some of the highest electricity costs in the Caribbean, will drive the policy direction set by the government. A diversified portfolio of solar, wind, and geothermal resources, coupled with improvements in energy efficiency, supported by the Renewable Energy Sector Development Project, demonstrates a desire for strong international financing support, and the incorporation of private sector participation and independent power producers into the market.

Saint Lucia's pathway to achieving its renewable energy targets and eventually net-zero, will require sustained attention to policy coherence, creating a fertile space for public-private partnerships, and targeted investment in both infrastructure and human capacity. Strategically, the energy transition for the island holds the promise of not only lowering energy costs and emissions but also positioning Saint Lucia as a model for small island developing states seeking to reconcile climate resilience with economic growth.

In support of this Saint Lucia must:

- Pursue an accelerated plan to modernize the electricity grid to accommodate increased RE generation, smart efficiency measures and promote investment in energy storage systems.
- Continue strengthening the policy, legal and regulatory framework by finalising proposed reforms to the Electricity Supply Act to expand the role of independent power producers, and further oversight by enhancing the authority of the National Utilities Regulatory Commission (NURC).
- Advance geothermal development as a strategic priority, giving stated preference to replacing all fossil fuel generation with clean baseload geothermal power. Achieving this is highly dependent on the execution of the required potential assessments, which will lower upfront investor risks.
- Further explore the scaling of distributed solar and energy efficiency initiatives to reduce grid demand at the residential and commercial level. This can be achieved via managed net metering caps to avoid oversupply to the grid by residential customers, whilst enabling larger commercial and tourism-sector based users the opportunity to create system that provide operational resilience.

Using the C-SERMS framework and member network, explore:

- Collaborations to develop technical competence and capacity across the region via training programs for renewable energy technicians, engineers, and policy specialists, as well as research partnerships with regional academic institutions and organisations.
- Expanding cross-Caribbean partnerships on renewable procurement and technology sharing, to access savings opportunities that are associated with the principles of economies of scale.

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