CEO Endorsement (CEO) entry - Medium sized Project Child – GEF - 7

Support the Shift to Electric Mobility in Saint Lucia

Part I: Project Information

Name of Parent Program
Global Programme to Support Countries with the Shift to Electric Mobility.

GEF ID
10283

Project Type
MSP

Type of Trust Fund
GET

CBIT/NGI
- ☐ CBIT
- ☐ NGI

Project Title
Support the Shift to Electric Mobility in Saint Lucia

Countries
St. Lucia

Agency(ies)
UNEP

Other Executing Partner(s)
Department of Sustainable Development, Ministry of Education, Innovation, Gender Relations and Sustainable Development

Executing Partner Type
Government

GEF Focal Area
Climate Change

Taxonomy
Focal Areas, Climate Change, Climate Change Mitigation, Sustainable Urban Systems and Transport, Influencing models, Strengthen institutional capacity and decision-making, Transform policy and regulatory environments, Demonstrate innovative approache, Stakeholders, Civil Society, Academia, Non-Governmental Organization, Community Based Organization, Trade Unions and Workers Unions, Type of Engagement, Participation, Consultation, Information Dissemination, Communications, Awareness Raising, Education, Public Campaigns, Behavior change, Private Sector, Capital providers, Financial intermediaries and market facilitators, Large corporations, Individuals/Entrepreneurs, SMEs, Gender Equality, Gender Mainstreaming, Beneficiaries, Women groups, Gender results areas, Access to benefits and services, Capacity, Knowledge and Research, Knowledge Exchange, Learning, Innovation, Knowledge Generation, Capacity Development

Rio Markers
Climate Change Mitigation
Climate Change Mitigation 2

Climate Change Adaptation
Climate Change Adaptation 0

Submission Date
4/10/2021

Expected Implementation Start
7/1/2021

Expected Completion Date
6/30/2024

Duration

48In Months

Agency Fee($)

70,712.00

A. FOCAL/NON-FOCAL AREA ELEMENTS

Objectives/Programs	Focal Area Outcomes	Trust Fund	GEF Amount($)	Co-Fin Amount($)
CCM-1-2	Promote innovation and technology transfer for sustainable energy breakthroughs for electric drive technology and electric mobility	GET	785,688.00	4,196,863.00
		Total Project Cost($)	**785,688.00**	**4,196,863.00**

B. Project description summary

Project Objective

Accelerate the introduction of electric mobility in Saint Lucia through capacity-building and electric vehicle demonstration and prepare it for scaling-up and replication through the development of electric mobility policies, business models and finance schemes.

Project Component	Financing Type	Expected Outcomes	Expected Outputs	Trust Fund	GEF Project Financing($)	Confirmed Co-Financing($)
Component 1. Institutionalization of low-carbon electric mobility	Technical Assistance	1. The Saint Lucian government enhances coordination, planning and capacity for promoting electric mobility	1.1: An inter-sectorial coordination body is established within the government 1.2: Sustainable Passenger Mobility Policy delivered for governmental approval 1.3: National low-carbon e-mobility strategy delivered for governmental approval 1.4: Key public and private stakeholders trained on e-mobility technologies, including through the global programme on e-mobility	GET	173,600.00	500,000.00

Component 2. Short term barrier removal through low-carbon e-mobility demonstrations	Investment	2. The Saint Lucia government gains confidence in using electric vehicles	2.1: Monitoring, reporting and verification (MRV) system to track demonstration performance is implemented 2.2: Demonstration of at least 15 electric vehicles in public and private fleets conducted and new charging infrastructures installed 2.3: Professional training delivered (electric vehicle safety, driving, and maintenance) and demonstration results communicated to national and local decision makers and other stakeholders in Saint Lucia	GET	297,112.00	2,564,778.00

Component 3. Preparing for scale-up and replication of low-carbon electric mobility	Technical Assistance	3. The Saint Lucian government takes action towards implementing an enabling environment and business models for promoting low-carbon electric mobility	3.1: Regulatory and tax reforms for the uptake of electric vehicles in Saint Lucia delivered to the government for approval 3.2: Business models, financial schemes and procurement guidelines for electric vehicle fleets and charging stations delivered to government and car dealers	GET	107,650.00	400,000.00

Component 4. Long-term environmental sustainability of low-carbon electric mobility	Technical Assistance	4. The Saint Lucian government takes action towards implementing policy frameworks for ensuring the long-term sustainability of low-carbon electric mobility	4.1: Analysis of current management of vehicles at their end-of-life undertaken and recommendations based on international best practice delivered to government for approval 4.2: Updated legislation on end-of-life vehicle management, including electric vehicles and second-life use of their batteries, delivered to the government for adoption 4.3: New business models, including the responsibility of vehicle distributors, delivered to the government and ELV management companies 4.4: Awareness and capacity of public, private and civil society stakeholders on management of electric vehicles at their end of life enhanced	GET	96,500.00	400,000.00

Monitoring and Evaluation	-	-	GET	39,400.00	
			Sub Total ($)	**714,262.00**	**3,864,778.00**
Project Management Cost (PMC)					
			GET	71,426.00	332,085.00
			Sub Total($)	**71,426.00**	**332,085.00**
			Total Project Cost($)	**785,688.00**	**4,196,863.00**

C. Sources of Co-financing for the Project by name and by type

Sources of Co-financing	Name of Co-financier	Type of Co-financing	Investment Mobilized	Amount($)
Recipient Country Government	Ministry of Education, Innovation, Gender Relations and Sustainable Development. Department of Sustainable Development	Public Investment	Investment mobilized	1,400,000.00
Recipient Country Government	Ministry of Education, Innovation, Gender Relations and Sustainable Development Department of Sustainable Development	In-kind	Recurrent expenditures	300,000.00
Recipient Country Government	Ministry of Infrastructure, Ports, Energy and Labour. Department of Infrastructure, Ports and Energy.	Public Investment	Investment mobilized	2,124,500.00
Recipient Country Government	Ministry of Infrastructure, Ports, Energy and Labour. Department of Infrastructure, Ports and Energy.	In-kind	Recurrent expenditures	32,085.00
Recipient Country Government	Ministry of Finance, Economic Growth, Job Creation, External Affairs and Public Service	Public Investment	Investment mobilized	340,278.00
			Total Co-Financing($)	4,196,863.00

Describe how any "Investment Mobilized" was identified

• The Ministry of Education, Innovation, Gender Relations and Sustainable Development (MEIGRSD), through its Department of Sustainable Development, will mobilize new investment of US$1,400,000 through the project “Implementation of transport & energy contributions in the Caribbean (ITECC) - transforming the energy and transport sectors towards a low-carbon and climate-resilient future”, funded by the German Federal Ministry for the Environment, Nature Conservation, and Nuclear Safety (BMU). The investment, to begin late 2020, will support Saint Lucia in accelerating the implementation and raising the ambition of it NDCs in the energy and transport sectors, including through demonstrations in renewable energy and transport. • The Ministry of Infrastructure, Ports, Energy and Labour (MIPEL), through its Energy Division, will undertake new investment for the deployment of public charging stations, notably the new solar carport at Hewanorra International airport. This 750 kW facility, US$2,124,500, is financed with the support of the United Arab Emirates (UAE)-Caribbean Renewable Energy Fund, providing rapid charging to electric vehicles. • The Ministry of Finance, Economic Growth, Job Creation, External Affairs and Public Service, through its Department of Finance, will make a direct co-financing commitment to the project, through the purchasing of 10 sedan vehicles for the government fleet over the years 2022-2024. Through component 2, the GEF project will cover the incremental costs between a conventional internal combustion engine vehicle and an electric one, ensuring that these 10 government vehicles are all electric vehicles as part of the project’s demonstrations.

D. Trust Fund Resources Requested by Agency(ies), Country(ies), Focal Area and the Programming of Funds

Agency	Trust Fund	Country	Focal Area	Programming of Funds	Amount($)	Fee($)
UNEP	GET	St. Lucia	Climate Change	CC STAR Allocation	785,688	70,712
				Total Grant Resources($)	**785,688.00**	**70,712.00**

E. Non Grant Instrument

NON-GRANT INSTRUMENT at CEO Endorsement

Includes Non grant instruments? **No**

Includes reflow to GEF? **No**

F. Project Preparation Grant (PPG)

PPG Required ☐

PPG Amount ($)

40,000

PPG Agency Fee ($)

3,600

Agency	Trust Fund	Country	Focal Area	Programming of Funds	Amount($)	Fee($)
UNEP	GET	St. Lucia	Climate Change	CC STAR Allocation	40,000	3,600
				Total Project Costs($)	**40,000.00**	**3,600.00**

Core Indicators

Indicator 6 Greenhouse Gas Emissions Mitigated

Total Target Benefit	(At PIF)	(At CEO Endorsement)	(Achieved at MTR)	(Achieved at TE)
Expected metric tons of CO_2e (direct)	0	206322	0	0
Expected metric tons of CO_2e (indirect)	0	480023	0	0

Indicator 6.1 Carbon Sequestered or Emissions Avoided in the AFOLU (Agriculture, Forestry and Other Land Use) sector

Total Target Benefit	(At PIF)	(At CEO Endorsement)	(Achieved at MTR)	(Achieved at TE)
Expected metric tons of CO_2e (direct)				
Expected metric tons of CO_2e (indirect)				
Anticipated start year of accounting				
Duration of accounting				

Indicator 6.2 Emissions Avoided Outside AFOLU (Agriculture, Forestry and Other Land Use) Sector

Total Target Benefit	(At PIF)	(At CEO Endorsement)	(Achieved at MTR)	(Achieved at TE)

Expected metric tons of CO_2e (direct)	206,322
Expected metric tons of CO_2e (indirect)	480,023
Anticipated start year of accounting	2021
Duration of accounting	15

Indicator 6.3 Energy Saved (Use this sub-indicator in addition to the sub-indicator 6.2 if applicable)

Total Target Benefit	Energy (MJ) (At PIF)	Energy (MJ) (At CEO Endorsement)	Energy (MJ) (Achieved at MTR)	Energy (MJ) (Achieved at TE)
Target Energy Saved (MJ)		5550269168.0000000000		

Indicator 6.4 Increase in Installed Renewable Energy Capacity per Technology (Use this sub-indicator in addition to the sub-indicator 6.2 if applicable)

Technology	Capacity (MW) (Expected at PIF)	Capacity (MW) (Expected at CEO Endorsement)	Capacity (MW) (Achieved at MTR)	Capacity (MW) (Achieved at TE)

Indicator 11 Number of direct beneficiaries disaggregated by gender as co-benefit of GEF investment

	Number (Expected at PIF)	Number (Expected at CEO Endorsement)	Number (Achieved at MTR)	Number (Achieved at TE)

Female		663		
Male		658		
Total	0	1321	0	0

Part II. Project Justification

1a. Project Description

Changes in project design

The following changes have been made to the project design as contained in this document as compared to the child project concept note included in the programme framework document:

- The overall components remain the same, however the title of component 2 has changed from “Electric vehicle demonstration” to “Short term barrier removal through low-carbon e-mobility demonstrations” and the title of component 4 from “Promotion of long-term sustainability of electric mobility” to “Long-term environmental sustainability of low-carbon electric mobility”. The other two components had minor editorial changes to the titles.

- - The budget has been redistributed in accordance with the scope of the final project outputs, resulting in a decrease in the demonstration in component 2 from $380,000 to $306,562 (from 48% to 39% of the total GEF budget) and an increase in the other components. This is due to the change in the scope of the project demonstration, as 30-seater electric buses will not be included, due to the difficulties in introducing them in the current public transport system and their limited availability globally and especially in the Caribbean.
- - The expected GHG emissions mitigated (direct and indirect) and beneficiaries disaggregated by gender have been estimated with more detail, based on the final scope of the demonstration and other project activities. There has been an increase in the estimated indirect GHG emission savings compared to the concept note.

Total co-financing has increased in all components compared to the child project concept note, almost doubling, from USD $2,450,000 to USD $4,196,863.

Co-finance partner	Estimated co-finance contribution as per the programme framework document (USD$)	Committed co-finance at CEO endorsement (USD$)	Explanation for the changes
Ministry of Infrastructure, Ports, Energy and Labour. Department of Infrastructure, Ports and Energy (investment mobilized, United Arab Emirates Caribbean Renewable Energy Fund 500kW solar carport/charging facility at the airport for Saint Lucia)	$2,420,000	$2,124,500	Amount revised down due, following further investigation during full project development. For description of co-financing see table C.
Ministry of Infrastructure, Ports, Energy and Labour. Department of Infrastructure, Ports and Energy (in-kind)	$275,000	$32,085	Amount revised down due to budget restraints, including due to COVID. For description of co-financing see table C.
Ministry of Education, Innovation, Gender Relations and Sustainable Development. Department of Sustainable Development (investment mobilized)	$0	$1,400,000	Additional co-financing identified during project development. For description of co-financing see table C.
Ministry of Education, Innovation, Gender Relations and Sustainable Development Department of Sustainable Development (in-kind)	$0	$300,000	Additional co-financing identified during project development. For description of co-financing see table C.
Ministry of Finance, Economic Growth, Job Creation, External Affairs and Public Service	$0	$340,278	Additional co-financing identified during project development. For description of co-financing see table C.

1a. Project Description

1) Global environmental and/or adaptation problems, root causes and barriers that need to be addressed

Global environmental problem:

A global transition to low- and zero- emission mobility is essential to meet international climate commitments, including the Paris Climate Agreement. The transport sector is currently responsible for approximately one quarter of energy-related carbon dioxide emissions;[1] this is expected to grow by 2050. In addition, the transport sector is a leading contributor to short-lived climate pollution, especially black carbon.

The global vehicle fleet is set to double by 2050, and almost all this growth will take place in low- and middle-income countries. By 2050, three out of five cars will be found in developing countries.[2] This means that achieving global climate targets will require a shift to zero emissions mobility in all countries, including low- and middle-income ones.

In 2018, greenhouse gas (GHG) emissions in Saint Lucia reached 509 Gg CO_{2e} including LULUCF,[3] an increase of 64% compared to 2000 levels. Saint Lucia contributes about 0.002% of global GHG emissions, but per capita emissions are relatively high (2.7 tons CO_{2e} per capita in 2018) compared to other countries with similar GDP per capita. Furthermore, the island state is disproportionately vulnerable to global climate change.[4] Saint Lucia is also highly exposed to global oil price changes, since 98% of the country's energy demand is covered through oil imports: power generation in Saint Lucia depends on the operation of ten prime movers (diesel generators), resulting in expensive and high carbon footprint electricity. The Government of Saint Lucia (GoSL) and the Saint Lucia Electricity Services Limited (LUCELEC), the sole electricity utility, aim to reduce price volatility and diversify the country's energy mix by integrating renewable energy sources into the grid, through solar, geothermal and wind energy projects (see baseline section below).

The share of the transport sector in GHG emissions has been slightly increasing over time: from 30.5% in 2000 to 31.6% in 2010. More than 98% of the sector's emissions are due to road transportation, with the rest from maritime modes. In accordance with its third national communication, the Government of Saint Lucia expects transport emissions to steadily grow in the absence of mitigation measures (see Figure 1 below) at a similar average rate to its total GHG emissions, by 1.5% per year.

As 63% of total fuel consumption is due to transport, mobility growth constitutes a major strategic challenge in terms of energy security and import dependence. Although direct and indirect taxes provide for more than 80% of total tax revenue, vehicle and fuel excises still constitute a relevant source of revenue for the GoSL and will have to be adapted to the new context of electrification, as in other countries. There is no data available on air quality in Saint Lucia, but there is significant space for quick improvements, as fuel standards still allow the use of high-sulphur fuels (500 ppm) and vehicle approval regulations did not impose minimum emission standards until 2015.[5]

Road safety remains an issue in Saint Lucia, in accordance with the last global World Health Organization (WHO) report,[6] with an estimated rate of road traffic fatalities of 35.4 in 2016; national statistics are incomplete, reporting just a fraction of road fatalities (e.g. 7 reported in 2016).

Root causes and barriers to the adoption of electric vehicles:

There are four main barriers to the deployment of electric mobility (e-mobility) solutions in Saint Lucia, preventing their contribution to curb GHG emissions from passenger road transport. They are described below together with their respective root causes:

1. Fragmented institutions, with insufficient coordination, planning and technical capacities. The key root causes for this barrier are the following:

a) Governmental action on e-mobility is not fully coordinated, and the distribution of competencies among departments remains unclear;

b) Existing transport plans do not provide a sustainable mobility vision, and do not consider the potential of e-mobility;

c) Electricity production remains highly dependent on fossil fuels and the strategies to increase the share of renewables are not being implemented consistent with rates required to achieve national goals and are not coordinated with a sound deployment strategy of charging infrastructure for electric vehicles;

d) Technical know-how and capacities within the public and private sectors are insufficient to undertake the transition effort towards sound transport electrification within a sustainable mobility perspective.

2. Insufficient knowledge of the potential of e-mobility in passenger transport. The general public and also key stakeholders in the transport and energy sectors have a lack of knowledge on e-mobility. Stakeholders remain attached to business as usual practices and have a lack of knowledge to implement new concepts and technologies, particularly on electric vehicles, due to the following root causes:

a) Most car fleet owners and managers are unaware of the potential of electric vehicles.

b) Weak public transport and taxi operators, with limited technical capacities to undertake the necessary reforms to make public transport more attractive to users and to make use of the opportunities provided by electrification.

c) The transport sector at large is not aware of the quick progress electric vehicles (EV) are making globally and remain skeptical about its actual performance and viability in Saint Lucia.

3. Policies and regulations are unsuited to e-mobility, leading to a mobility market dominated by high-carbon solutions. The introduction and consolidation of e-mobility is jeopardized by the following root causes:

a) The transport regulatory framework (technical approval of vehicles, public transport and taxi services) does not incentivize the use of the most efficient internal combustion engine (ICE) vehicles and electric vehicles; the same applies to the fiscal framework which, while introducing recent incentives for EVs, does not yet fully incentivize the transformation to electric vehicles, and disincentivize the purchase and use of high fuel-consuming vehicles.

b) Business models and financial schemes applied in other countries (e.g. leasing options or public incentives) are not adequate to the specific national circumstances of Saint Lucia.

c) Due to the small size of the market and population of the country, global EV manufacturers are not considering Saint Lucia in their short- to medium-term marketing plans, and electric vehicles are not yet available in the national market. Essential market actors (e.g. importers, dealers, repairs) do not plan to be active in e-mobility under the current context and EVs are difficult if not impossible to be procured in Saint Lucia for the few innovative “early adopters” that would be

interested.

4. Insufficient development of end-of-life vehicle (ELV) management systems, to which EV would put additional pressure to deal with batteries and other potentially hazardous components. This is a key barrier as it creates reluctance for policymakers to facilitate the introduction of electric vehicles when they are uncertain of the end-of-life costs of EVs and consequences for the island on soil contamination due to inappropriate disposal of vehicles and batteries at their end of life. This is due to the following root causes:

a) Understanding of impacts is limited. The end-of-life challenges of electric vehicles for Caribbean island countries are insufficiently analyzed, introducing an additional source of uncertainty to an already weak sector;

b) Understanding of how to treat end-of-life of electric vehicles is limited, including on related costs. The government, vehicle distributors (dealers and importers) and ELV stakeholders need to develop a sound approach for end-of-life management of batteries and other EV components in small countries like Saint Lucia. As a prerequisite, ELV management of conventional vehicles has to be significantly improved by waste management authorities.

Baseline scenario for the energy sector

Saint Lucia relies almost entirely on fossil fuel imports to cover its energy demands. Electricity is supplied by diesel generation by St. Lucia Electricity Services Limited (LUCELEC), which is majority privately owned and currently has the exclusive right to generate from fossil fuels, transmit and distribute electricity in Saint Lucia.[7] The main generating facility is LUCELEC's computerized Cul-de-Sac Power Station, which houses 10 generators and has an available capacity of 86.2 MW. There is a 2.2 MW generating facility in Soufriere and 3 MW solar in the south of the island. Saint Lucia has a fully integrated electricity system and access to electricity is guaranteed in the whole island. Maximum demand in 2018 was 61.7 MW or 70% of a total available generation power of 88.4 MW.

The National Utilities Regulatory Commission (NURC) Act and the Amendment to the Electricity Supply Act of 2016 allow an independent regulatory for the electricity sector. The current draft electricity bill consists of LUCELEC generation of electricity through fossil fuels, but it also opens opportunities for independent power producers (IPPs) for renewable energy generation.

Dependency on diesel-generated electricity results in high GHG emissions from the electricity generation sub-sector, with it being responsible for close to 39% of total national GHG emissions. The country's energy matrix is dependent on diesel fuel used for electricity generation in LUCELEC's power plant, which in 2018 provided 97% of the total installed power generation capacity, with the remaining 3% being solar photovoltaic (PV) generation. The latter includes 1 MW of distributed generation and LUCELEC's 3 MW solar farm in Vieux Fort, commissioned in April 2018.[8]

LUCELEC operates an efficient grid with 6.87% in system loses in 2018. The transmission grid operates at 66 kV voltage across 73.32 miles of transmission lines. Distribution voltage is 11kV across 2,566 miles of distribution lines. LUCELEC is engaged in the modernization of the grid to improve remote control capabilities, efficiency, reliability and resilience, including the completion of a fiber optic network on LUCELEC's distribution poles.[9] The expansion of the Distribution Automation programme with the deployment of auto reclosers and remotely controlled switches has allowed LUCELEC to remotely reconfigure the system when

faults occur, significantly reducing the length of outages, fault finding and response times (https://www.lucelec.com/content/lucelecs-operations). These improvements also facilitate the subsequent installation and connection to the grid of RE distributed generation systems and electric vehicle charging stations. It is estimated that the electricity grid would be able to host the 20 MW of renewable generation plants foreseen by the 2018 National Energy Transition Strategy (NETS) within the next eight years, without violating established reliability criteria or the need for major system upgrades. All these developments have significantly increased the resilience of the electricity generation and distribution system in the event of extreme weather events. The Climate Change Adaptation Policy,[10] developed in 2015, considered the vulnerability of the electricity grid within it analysis, but concluded not including it as a priority sector for adaptation (see the risks section for further details).

Electricity costs in Saint Lucia are volatile due to the county's dependence on imported diesel fuel and as a result of the pass-through of diesel oil costs to the consumer, with a historic peak of USD 0.33/kWh and moving down to USD 0.25/kWh in 2016[11], and USD 0.27/kWh in 2020.[12] This scenario is in addition to a carbon intensive energy system, with an emission intensity of around 780 kg of CO2/MWh consumed.[13] Electricity demand is almost stable, growing at less than 1% per year in average in the last years and by 0.5% in 2018.

Based on current consumption and growth rates, and the old age and condition of the Cul-de-Sac diesel plant, Saint Lucia has identified the need to expand capacity to allow for the disconnection of older diesel generators as their service life is completed. Accordingly, the country has identified more than 20 MW of additional renewable power generation capacity that could be deployed. Besides the already operational 3 MW solar farm in Vieux Fort, this includes a 12 MW wind farm project[14] and a 10 MW Troumasse solar power station with 7 MW battery storage project,[15] which has just received an ADFD loan of US$15 million (approved in January 2020). The Troumasse project is consistent with the need of implementing electricity storage systems in parallel with the expansion of renewables, as the generation system becomes less flexible and older diesel plants are disconnected in the future. Considering that Saint Lucia's energy demand is almost stable, this increase in renewable energy capacity due to the wind farm and Troumasse solar projects has the potential to increase the percentage of renewable energy in the grid from 3% to up to almost 30% in the next 5 to 10 years.

These efforts at increasing the percentage of renewable energies in power generation are in direct correlation with the country's NDC conditional mitigation targets.[16] This states that by 2025 its energy matrix should include a share of renewables of 35%, and is consistent with projections presented in the draft First Biennial Update Report currently under preparation by the Government of Saint Lucia. As the efficiency of the distribution and transmission grid is improved and higher penetration of renewable power generation is deployed, vehicle fleet electrification becomes more beneficial in terms of GHG emission mitigation.

Baseline scenario for the transport sector

The GoSL (2017) provides transport emission forecasts in its Third National Communication (Figure 1). In the absence of mitigation measures, transport emissions are driven by mobility demand growth (as currently individual mobility is low, around 3,000 km per capita and year), fleet growth (by 1.5% to 2% per year) and population growth (below 1% per year). The current modal split (30% share for public transport buses, 70% for private cars and taxis) is expected to remain stable.

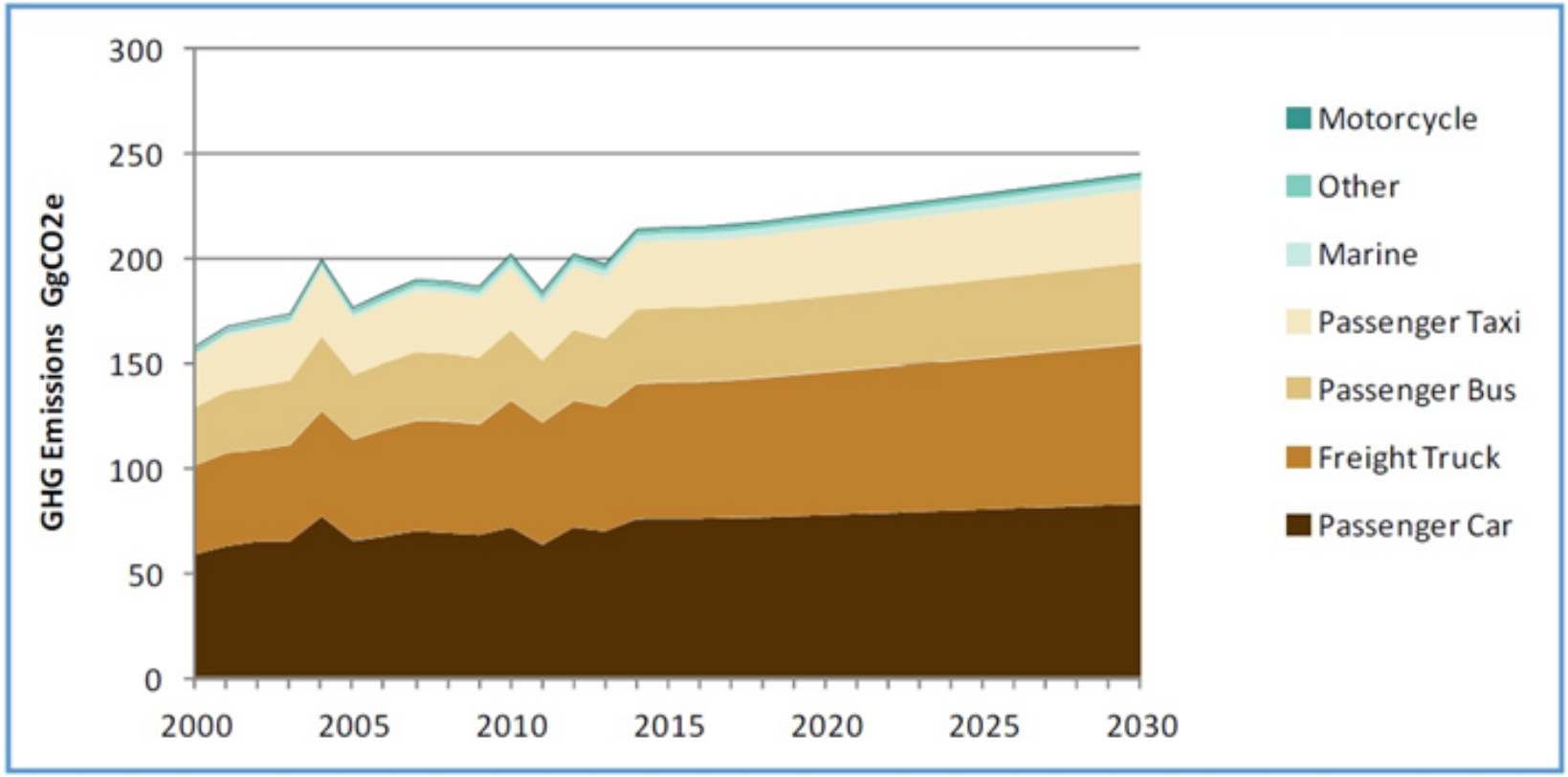

Figure 1: Emission baseline projection for transport (Gg CO_{2e})

Therefore, the transport sector will remain as the second major source of GHG emissions in Saint Lucia, growing at the same path as total emissions (1.5% annually), as motorization continues to rise.[17] Although there are no reliable statistics (vehicles are not systematically deregistered, so that there is no information on the fleet size on the road), it is generally agreed that the average age of Saint Lucia's fleet is high, as cheap second-hand vehicles are imported on a massive scale, and regular vehicle technical inspections are not compulsory. The country's fleet is dominated by gasoline-powered private vehicles followed by goods vehicles, taxis and passenger vans. The need to replace a significant share of Saint Lucia's fleet in the coming years presents an opportunity for the country to shift to low emission vehicles.

The government established a National Climate Change Committee in 1998, in which the main relevant government units participate, with the exception of the departments in charge of transportation. There is no formal coordination among the different bodies relevant for the promotion e-mobility, including the Department of Transport (vehicle approval, public transport policy), the Renewable Energy Division (energy efficiency), the National Utility Regulatory Commission (electricity market), the Department of Sustainable Development (climate change) and Saint Lucia Solid Waste Management Authority (SLSWMA, waste management).

The public transport network in the island consists of 33 routes, structured in 5 corridors. The service is provided by a total of 1294 vehicles (most of them combi or crew vans with 12-16 seats). Vehicles are authorized individually to provide service on a specific route, and take on the full demand risk as there are no public subsidies. Some of them are driven by their owners, others are rented by the owner. Tariffs are fixed and set by the government. As the service has low regulations, it results in low quality: vehicles in the peak hour reach full capacity at the terminals, and passengers at intermediate stops have to wait until one vehicle with an empty seat comes. This also results in uncertain schedules, as drivers wait until the vehicle is full to start the route, there is an uncertain service after the afternoon peak hour, and there may be long stopping times for boarding and alighting. In this context, those who have access to a car or are able to afford taxi services generally do not use public transport. In spite of its insufficient quality, the public transport share of demand is 29.6%, and is expected to remain stable in government's forecasts until 2030. Electrifying the existing public transport system is not an option for two main reasons: (1) the electrification of this vehicle segment is still in its infancy, with manufacturers offering very few models and at high prices (as much as 5 times more compared to conventional ones) for the types of vans used through-out the island; (2) the basic problems of unreliability, low comfort and poor working conditions would remain unchanged, leaving public transport unattractive compared to car use. Therefore, it is necessary to reform the public transport system as a preliminary step, including the use of bigger vehicles and scheduled services. Under this reformed framework, the aim is to ensure the use of electric buses - rather than conventional ones - be an attractive option in those routes with higher demand.

The quality of taxi services is also low and prices are high. There are 997 authorized taxis on the island, with no metering. Consequently, tariffs are negotiated before taking the ride, although locals benefit from preferential tariffs. Taxi drivers (and also public transport drivers) owning their vehicle make use of it also as a family vehicle; this results in a preference for large vehicles and crew vans, usually circulating with low occupancy.

Passenger cars (up to 9 seats) account for 88% of the vehicle fleet; most of them (62.2%) are cars for private or corporate use, but they also include a large fleet of sport utility vehicles (SUVs) (16.5%) and cars for hire (7.4% of the total fleet). The annual fleet growth rate is substantially higher for SUVs (6.5%) and for-hire vehicles (7.4%) than for the private cars (2.0%) and the total fleet (2.5%). The increase in annual mileage travelled can be estimated by the trends in gasoline imports, which have grown at an average annual rate of 3.4% in the last years (2012-2017); the government's forecast is that annual growth will be lower in the future, between 2.2% and 2.5%.

Emission trends in the three subsectors initially targeted by the project (public transport vehicles, taxis and private cars) are forecasted by the government as growing at an average annual rate, respectively of 0.6%, 0.0% and 0.5% under the baseline scenario.

There are no fuel subsidies for electricity or transport in Saint Lucia (although under the recent COVID-19 crisis, some discussions have been started on this topic), and fuel prices are similar to other countries in the region, with an excise tax of ECD 4 per gallon. Provision for the establishment of emission standards and maximum levels of air contaminants from motor vehicles is made under the Motor Vehicles and Road Traffic Act (2005) in Section 193; however, there are no regulations on fuel efficiency for new or used vehicles that can be imported to Saint Lucia. Import taxes are generally high: they include an import duty, an excise tax, service charge and VAT and in total can more than double the original invoice vehicle price. Since 2014 the import duty for electric and hybrid vehicles have been reduced to the range of 5% to 10% (it is 35% for conventional vehicles). As for the excise duty (which ranges from ECD 4,000 to ECD 6,000 plus 56% of the actual price for conventional vehicles depending on age, engine size and fuel type), for electric and hybrid vehicles it ranges from ECD 1,000 to ECD 6,000 plus 10% of the actual price, depending on the vehicle age and, in the case of hybrid vehicles, engine capacity. It is estimated that the incremental additional up-front cost of a sedan electric car is approximately USD 10,000. These tax incentives have not had much impact on consumers' choices, i.e. due to the fact that cheap imported second-had vehicles get the lion's share of the car market and the lack of availability on the island for most electric and even hybrid models. Furthermore, consumers do not yet have awareness on the total cost of ownership of electric vehicles versus internal combustion engines, as local studies have not been undertaken. The aforementioned regulations will be reformed through the project, to further incentivize the uptake of electric vehicles and disincentivize the purchasing of internal combustion vehicles.

Vehicles are imported in Saint Lucia by official car dealers and by other importers who are generally based in Barbados, as a sub-regional hub. Official car dealers agree on selling targets with their providers (vehicle manufacturers or, more often, intermediary companies in charge of the whole Caribbean region).[18] Other vehicle importers usually negotiate the vehicle purchase with dealers in countries with a larger market (e.g. Japan or the United Kingdom), with some uncertainty for the consumer about the ability of such distributors to provide spare parts and technical assistance when needed. Therefore, there is a mix of local actors and regional actors, with the latter offering an opportunity for a regional-wide effort to introduce EVs. CARICOM[19] is actively engaged in this, implementing the Technical Assistance Programme for Sustainable Energy in the Caribbean (TAPSEC) Project, and now preparing a Regional Electric Vehicle Strategy (REVS) through a Regional Electric Vehicle Working Group and in partnership with its Caribbean Center for Renewable Energy and Energy Efficiency (CCREEE). Within these regional initiatives, it has been stated that the higher upfront costs of EVs are compensated by lower maintenance costs and fuel savings, considering the relatively high fuel prices in the region. Saint Lucia is fully aligned with these regional initiatives. However, the experience (including the 2014 tax rebate for EVs) shows that most consumers in the region cannot afford such higher upfront payment costs and those that can afford it prefer to purchase a bigger conventional car. Thus the current offer of EVs is not well aligned with the Caribbean consumers' financial capacities and preferences. Furthermore, consumers are likely to be concerned about the ability of car dealers and importers to provide adequate EV maintenance. The project in Saint Lucia will address these questions, working with all the stakeholders, liaising with regional initiatives and developing adequate arrangements for maintenance and warranty at the procurement stage.

The 2004 Saint Lucia Solid Waste Management Authority Act (Cap. 6.10) established the Saint Lucia Solid Waste Management Authority (SLSWMA), and provides for waste management planning, licensing of facilities including waste haulers, regulation of operations, and for powers of authorized officers. Under article 38 of this Act, the owner of a derelict vehicle is expected to take it to an approved landfill site or to other site approved for its management. However, SLSWMA stated in its latest published annual report (Annual Report, 2014) its lack of capacity to enforce regulations on derelict vehicles, and the situation has not improved since then, in accordance with the information gathered during project design interviews and a recent assessment of the World Bank[20] (see description of output 4.1 for further details). In 2016, a Waste Management Strategy was prepared with UNEP support, but this strategy has not been implemented. There are no regulations regarding EV or EV-batteries. For e-waste management,[21] the management system is of a basic level. As of 2017 there were four e-waste recyclers in St. Lucia, collecting and exporting e-waste without recycling it, (i.e., mostly packing e-waste as received for exporting to overseas refineries, mainly in China and Canada). Thus, the e-waste value chain in St. Lucia is basically limited to collection, storage and exportation. To some extent, this makes sense, as the volumes of e-waste are small and do not justify further treatment in such a small market.

Baseline scenario – policies and strategies

Saint Lucia completed its Third National Communication on Climate Change in 2017, which informed on mitigation measures on electricity generation and transportation, such as taxation and subsidies to encourage efficient vehicles, improvement and expansion of public transit and mandatory efficiency standards, improved traffic management, vehicle maintenance programs, road charges, and ferry transport as an alternative to intercity road travel. This document follows the previous Second National Communication and the Nationally Determined Contributions (NDC) communicated in 2015, in which the government set the ambitious goal to reduce GHG emissions by 16% (121 Gg CO2e) by 2025 and 23% (188 Gg CO2e) by 2030 against business as usual projections. Actions similar to those included in the Third National Communication regarding renewable energy (with a 35% target by 2030 and 50% by 2050), and transportation (vehicle efficiency and improved and expanded public transport) were included in the NDC.

In this context, the country has made efforts in recent years to adopt strategies to reduce GHG emissions in its energy sector, particular on transport and electricity generation. Its 2008 Saint Lucia National Vision Plan[22] focused on large scale tourism development and the corresponding route network upgrading to cope with high traffic volumes. It has been recently revised in what refers to Castries by a new approach integrating sustainability concerns: Castries Vision 2030.[23] Similarly, the lack of a transport plan or policy will be addressed through the formulation of an *Integrated, Sustainable Road Transport Policy and Strategic Roadmap for Implementation*, focusing on infrastructural aspects.[24] In the energy sector, a roadmap (*Developing the Saint Lucia Energy Roadmap*) was completed in 2016,[25] and was followed by the *Saint Lucia National Energy Transition Strategy and Integrated Resource Plan**[26]*** (NETS), completed in 2017, and the subsequent opening in 2018

of the first utility-scale solar power plant in the country (3 MW). The NETS presents a five-year plan of cost-effective energy efficiency programs, renewable energy integration and energy storage investments to set Saint Lucia on a pathway to meet its energy transition goals. Several projects in the expansion of renewable energy have been implemented or are in the pipeline – particularly on geothermal and solar energy.

Baseline projects

Plans and projects regarding e-mobility have also been drafted in recent years. In 2015, Siemens supported the Government in preparing an inception report for a project on "*Electric Mobility Solutions in the Caribbean*", but the project did not materialize. The Rocky Mountain Institute (RMI), within the Islands Energy Program and with United Nations Development Programme (UNDP) and GEF support, completed in 2017 the *Saint Lucia Government Electric Vehicle Study*, identifying 131 vehicles within the government's fleet as suitable to be replaced by electric vehicles, on the grounds that the fuel saving costs they would provide would compensate their higher capital cost. This was complemented by three electric cars donated by the Government of Italy, which are currently being used by the Government of Saint Lucia. Additionally, the Caribbean Community (CARICOM) and Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ), with other partners, have undertaken the preparation of a project to support the implementation of the NDC measures in several Caribbean countries, including Saint Lucia. The project is called: "*Implementation of transport & energy contributions in the Caribbean (ITECC) - transforming the energy and transport sectors towards a low-carbon and climate-resilient future*." The CARICOM/GIZ pilot in Saint Lucia foresees to build upon the previous studies of the government's fleet to support its electrification; it would focus on the deployment of charging stations, providing complementarity with the World Bank's activities in Saint Lucia through the Energy Sector Management Assistance Programme (ESMAP). The proposal has been submitted to the German International Climate Initiative (IKI) and is estimated to commence in 2021.

These initiatives have consolidated a long-term commitment of the Government of Saint Lucia with low-carbon energy and mobility, and provide excellent complementarity with this project in two key dimensions: first, the transition of the country's electricity generation system towards renewables, without which the GHG mitigation potential of e-mobility would be significantly reduced. Second, the sustained commitment of the government of Saint Lucia in the electrification of its fleet, beyond the niche vehicle category and service requirements addressed by the project.

The St. Lucia Electricity Services Limited (LUCELEC) is operating the first solar farm in Saint Lucia, with an installed power of 3 MW. The GoSL in partnership with LUCELEC also envisages to build a 10 MW solar power station in Troumasse, for which it has received a USD 15 million loan from the IRENA/ADFD[ld a 10 MW solar power station in Troumasse, for which it has received a USD 15 million loan from the IRENA/ADFD[27] Project Facility in January 2020. The UAE-Caribbean Renewable Energy Fund also envisages to fund a 750 kW carport, close to Hewanorra International Airport, providing rapid charging to EVs (included as project co-financing). Furthermore, there is also a 12 MW wind farm project in Anse Cannot, Dennery, which is in the pipeline. These initiatives are expected to reduce the grid emission factor, estimated in 2014 at 0.78 kg CO_2/kWh[28].

LUCELEC has received approval from the Development Control Authority of the Ministry of Planning for the installation of 5 additional electric vehicle charging points across the island. These will be fast-charging 7.4 kW single phase points (240 V, 2 x 32 A sockets). Four of them have already been installed, although are not operational yet (at Groo Centre –Dennery, Old Trafford Bus terminal –Soufriere, Vieux Library – Vieux Fort and JQ Mall – Rodney Bay – Gros Islet). The other two will be installed in Castries, at Massy Mega (Choc) and Massy Stores (Cul de sac). All these charging ports will be grid connected, including those installed together with solar carports; therefore, the energy use will be reduced by the installed renewable energy supply. Through the NETS and the NDCs the Government is also working to increase renewable energy penetration in the grid (as noted previously).

It is worth noting that Saint Lucia's local context also provides unique conditions well-suited to the use of EVs, as the size and geographical characteristics of the island make range constraints and charging infrastructure more manageable than in most countries. This proposed GEF project, with the support of the global program, will build upon the assessment on electrifying government vehicles previously carried out by the

RMI and will review and enhance supportive policies, implement demonstration projects and prepare for upscaling and replication to accelerate the introduction of electric mobility in Saint Lucia, thus reducing air pollution and GHG emissions.

3) Proposed alternative scenario with a description of project components, outcomes, outputs and deliverables

The project's objective is to accelerate the introduction of electric mobility through capacity-building and electric vehicle demonstration and to prepare the country for scaling-up and replication through the development of electric mobility policies, business models and finance schemes. It aims at creating the enabling conditions for the deployment of EVs in Saint Lucia's public and private fleets.

This project aims at the integration of electric mobility within a wider effort to work towards a sustainable, low carbon and resilient energy system in St. Lucia. It aims at working together with renewable power projects, since electric mobility is a key enabler for the integration of high shares of variable renewable power in Small Island Developing States. Deployed at scale, EVs can serve for load shifting or for electricity storage, both necessary for the decarbonization of the power sector in small islands with limited ability to use geographical variance of renewable power sources and no connection to regional power grids. The project aims at achieving an understanding that e-mobility in combination with decentralized renewable power supply will be key to improve resiliency of St. Lucia against extreme weather events and to reduce energy use and emissions from fossil fueled back-up power.

The project envisions the deployment of e-mobility in Saint Lucia as an opportunity to accelerate the transition towards both, sustainable mobility and a resilient, low-carbon energy system. In this sense, the project is well aligned with Castries Vision 2030, a spatial planning document for the capital approved in 2019 and aiming at revitalizing the city with a sustainability focus; transport plays a prominent role in this Vision, promoting sustainable mobility through projects such as sidewalk rehabilitation, pedestrianization of William Peter Boulevard, the construction of a road bypass to divert through traffic and the relocation of public transport terminals. The National Energy Transition Strategy is also well aligned with the project, as it calls for the sustained growth in the share of renewable energy and improved efficiency. In particular, the acceleration of the introduction of EV opens additional opportunities for the country to transition to a low carbon energy sector, coupling transport with the power sector in a variety of ways; once EVs become ubiquitous on the island, they can increase the resilience of the electricity system, moving towards a more decentralized renewable-based power generation, offering additional back-up storage capacity (reducing the need for diesel back-up power), and providing economic and GHG savings.

Component 1 strengthens institutions and coordination for facilitating the transformation to electric mobility, producing (1) a public transport policy and (2) an e-mobility strategy; the former will make it possible to create a framework in which EVs can play a role in increasing the quality and affordability of the public transport and taxi services in Saint Lucia, a necessary pre-requisite for e-mobility to be able to improve current service conditions; the latter will provide a consistent framework for stakeholders (car dealers, electricity providers, fleet managers and consumers at large) to take decisions within a well-defined environment in terms of charging infrastructure availability, guaranteed support services and regulations.

Component 2 will serve to demonstrate the feasibility of EV operations on the island, through the inclusion of at least 15 electric cars in the government's fleet and electric vehicles in interested private fleets, and the monitoring and subsequent dissemination of results among other public and private fleet managers, as well as public transport operators and taxi owners. It is expected that these activities will increase the interest and support among these stakeholders to electrify their fleets, and address myths and technical and management uncertainties still associated with EVs which are held by national stakeholders. The demonstration will provide evidence to better integrate the deployment of e-mobility with the expansion of renewables, and to evaluate the potential impact of vehicle-to-grid (V2G) concepts on the resilience of the system, and on the reduction of diesel back-up power needs in private and public buildings.

Component 3 will move one step forward, in order to mainstream EVs as a feasible option for a larger variety of potential users, by creating the appropriate financial schemes and business models to stimulate the availability of EVs in the national market, and an adequate array of incentives and support for early adopters. The project will work with EV manufacturers and dealers to allow for the selling of EVs in Saint Lucia.

Component 4 will complement the efforts of Component 3 by providing the necessary arrangements for adequate management of EVs at their end of life. It will start by strengthening the current framework for ELV management, as current regulation is insufficient to provide an adequate treatment and disposal of vehicles. It is foreseen that the introduction of a sound ELV management approach, putting the responsibility of ELV management on vehicle importers, will provide a stronger and more reliable framework in which the additional environmental challenges raised by EVs compared to conventional vehicles can be adequately addressed.

Capacity-building activities are foreseen in components 1, 2 and 4. In all cases, the project follows a “train the trainers” approach, in order to attain wide coverage with the limited resources available and undertakes an affirmative action policy to give priority to women in accessing these activities.

Component 1: Institutionalization of low-carbon electric mobility

Component 1 addresses the existing institutional barriers that restrict the introduction of EVs in Saint Lucia, with a focus on private and public fleets, public transport and taxis. The project intends to create an institutional body within the National Climate Change Committee (NCCC) in order to coordinate the relevant actions currently dispersed among the departments in charge of transportation policy, vehicle approval, energy efficiency, electricity market, climate change and waste management so that a consistent e-mobility strategy can be prepared, agreed and implemented by relevant stakeholders.

The strategy will also be consistent with a policy effort in the transportation sector to improve passenger mobility, prioritizing sustainable options, as a pre-requisite to electrification. The collection of reliable data of passenger transport demand and supply, to be updated periodically, is a key project contribution for the development of the strategy and the future development of sound transport policies and adequate monitoring of GHG emissions from transport.

Outcome 1: The Saint Lucian government enhances coordination, planning and capacity for promoting electric mobility.

Outputs:

Output 1.1: An inter-sectorial coordination body is established within the government.

The new coordination body will serve to develop the e-mobility strategy, and to coordinate the strategy’s actions to be implemented by the different stakeholders; in particular, it will seek for consistency among the government’s policies on transportation, energy, and climate change. This output engages all the governmental departments with competences in e-mobility. Additionally, it will engage private stakeholders in different ways, facilitating networking and knowledge-sharing among those interested in e-mobility. The coordination body’s activities will facilitate awareness-raising in the country, and the implementation of the e-mobility strategy; the knowledge produced during the project (studies, workshop

conclusions, data collection and analysis, training materials, interaction with the global project) will be disseminated through a national website platform under the responsibility of the coordination body. Key non-governmental stakeholders to be involved include car dealers and importers, transport operators, large fleet managers, academia and civil society (including as related to gender). The following deliverables will be provided:

- D.1.1.1: Draft terms of reference and work plan for the body, with identification of all participating ministries and public institutions.
- D.1.1.2: Quarterly body meetings and reports from date of inception.
- D.1.1.3: Stakeholder consultation strategy presented for approval.
- D.1.1.4: Knowledge management and dissemination platform operational (information platform and website containing products including quarterly online workshops and quarterly position papers).
- D.1.1.5: Report with recommendations on the body's workplan and its sustainable operation (including the platform) after project completion.

Output 1.2: Sustainable Passenger Mobility Policy delivered for governmental approval.

The absence of a comprehensive mobility policy in Saint Lucia has led to the mass adoption of unsustainable options: the quality of public transport services is not attractive for those that can afford a private car, no matter how old or inefficient; most fleets include suboptimal vehicles in terms of size and performance (too big in the case of taxis and fleet cars, too small in the case of public transport), and large social groups have constrained mobility conditions. The Ministry of Infrastructure, Ports, Energy and Labour leads the development of transport infrastructure in the country, and is currently undertaking a series of investments to improve road quality and other supporting infrastructure. It also plans to initiate a process in 2021 for the formulation of an *Integrated, Sustainable Road Transport Policy and Strategic Roadmap for Implementation*. This policy will focus on infrastructure, continuing the Ministry's focus to date. The policy will focus on the identification of infrastructure needs to develop a multi-modal, integrated, sustainable transport policy, which makes provision for future road transport demands for Saint Lucia. It will focus on three main areas:

1. Establishment of a multi-modal transportation system that reduces reliance on any single mode of transport and encourages walking and cycling and promotes energy efficiency;
2. Movement of persons and goods efficiently and safely, and;
3. Promotion of public/private partnerships.

The policy will not focus on non-infrastructure actions and reforms necessary to make public transport services more convenient and desirable for citizens, and better aligned with the GoSL's energy-efficiency and climate-mitigation objectives. To address this gap, the GEF project will complement this policy by providing a detailed policy for reforming the public transport and taxi sectors. Through such efforts, it will create the pre-conditions in which EVs can become attractive for public transport service operators in a market that will stop shrinking and will regain users from private cars. The proposed policy will also provide non-infrastructure measures for the promotion of alternative sustainable transport modes (such as car-sharing). The development of the *Integrated, Sustainable Road Transport Policy and Strategic Roadmap for Implementation* was intended to occur in 2021 prior to the commencement of the GEF project. Due to the COVID pandemic, work to develop this policy has slowed. Consequently, the two policies will be developed in parallel, with the inter-sectorial coordination body (output 1.1) ensuring cohesion, complementarity and the building of synergies between the two policies. Both policies will support the reforming of incentives and the development of business models under component 3.

Output 1.2 will also support efforts to strengthen the availability of statistics and data on passenger mobility and its environmental footprint. Saint Lucia lacks mechanisms for data collection and monitoring of demand and supply in the passenger transport sector, which jeopardizes the design, implementation and monitoring of effective policies and regulations to promote sustainable mobility, including the use of electric vehicles. The lack of data also complicates the ability to monitor GHG emissions from transport and the impact of mitigation measures. Under this output, a review of the contents and organization of information and data management of public entities for the transport sector will be undertaken. Critical gaps will be identified and recommendations will be provided to address gaps. The information collected will provide the necessary foundation for the design of the *Sustainable Passenger Mobility Policy*. Besides the relevant governmental departments, this output will mobilize public transport and taxi associations and unions, as well as consumers' associations and other non-governmental organizations (NGOs). It will provide the following deliverables:

o D.1.2.1: Gender-sensitive data collection and analysis of passenger mobility demand.

o D.1.2.2: Study on sustainable alternatives for the public transport system and road safety, including gender analysis. The activity includes the collection of available passenger mobility data, with a focus on public transport (for example: km travelled, seats offered, fleet characteristics, passengers and passengers-km served, travel time variability and reliability), as a basis for the development of sustainable alternatives, as well as an assessment of the current and future necessities in terms of data management for transport institutions.

o D.1.2.3: Sustainable and safe passenger mobility policy including gender action plan. To be developed by the coordination body (output 1.1) in cooperation and under the supervision of the relevant transportation authorities. It will include quality improvement of public transport and taxis, and road safety challenges for sustainable transport modes.

o D.1.2.4: Recommendations for the improvement of passenger transport statistics and GHG monitoring to support, inter alia, the implementation of the mobility policy. Based on data collection and needs analysis undertaken in D.1.2.2, this activity will review international practices, and will provide recommendations regarding the regular collection of transport information and the implementation of adequate data collection protocols and systems, with a focus on public transport, as well as recommendations for the adaptation of existing data management systems available in the relevant institutions to integrate the additional information.

Output 1.3: National low-carbon e-mobility strategy delivered for governmental approval.

The strategy will provide the much-needed strategic framework for the action of the government, the public and the private sector and the individuals until 2030, so that all stakeholders can take their decisions concerning e-mobility with a reasonable confidence about the future environment. It will also serve as a key input into the development of the national long-term low greenhouse gas emission development strategy to be developed and submitted to the UNFCCC secretariat[29] and other long-term development and transport plans. The activities will build upon the sustainable passenger mobility policy in output 1.2 to develop the contribution that e-mobility could provide to sustainable passenger mobility. To produce this strategy, the project will build upon the different documents already prepared for the government in recent years, such as the Saint Lucia Energy Roadmap (RMI, 2016), the 2017 NETS and various e-mobility studies, so that the introduction of EV is consistent with the expansion of renewables. Furthermore, the National e-mobility strategy will provide a vision on the long-term role of EVs in a low carbon energy sector, their contribution to gain resiliency in combination with decentralized renewable energy generation and their potential to reduce dependency on diesel back-up power. Besides the relevant governmental departments, this output will mobilize a wide variety of public and private stakeholders (electricity providers and professionals, car-dealers and maintenance professionals, fleet managers, financial sector), as well as political stakeholders, civil society associations and the public within a collaborative policy design approach. The e-mobility strategy will follow an approval process similar to NETS, with three ministries (MEIGRSD, MIPEL, MEDHURTCA) preparing the final document with the project's support and submitting it to the Cabinet of Ministers for adoption.[30] LUCELEC is expected to play a key role in this output, as it has started to deploy charging stations in the country and is likely to become one key provider of these services in the future. This output will provide the following deliverables:

o D.1.3.1: Gender-sensitive fleet electrification feasibility analysis: public and private fleets, public transport.

o D.1.3.2: Study on the integration of renewable power and e-mobility in the energy system. It includes good practice recommendations to benefit from the synergies between RE expansion and e-mobility deployment; these recommendations may include contingency plans for RE plants and design recommendations for ensuring resilience.

o D.1.3.3: National charging network analysis: Impact analysis on the electricity sector and deployment of charging points. This analysis includes the consideration of the vulnerability to extreme weather events and the adoption of the necessary adaptation measures to ensure a resilient charging network.

o D.1.3.4: Draft national e-mobility strategy (including gender action plan) circulated for stakeholder consultation and validated.

o D.1.3.5: Final national e-mobility strategy (Vision 2030) submitted for government adoption. This includes technical assistance to support the ministerial units in submitting a final version for adoption by the Cabinet of Ministers.

Output 1.4: Key public and private stakeholders trained on e-mobility technologies, including through the global program on e-mobility.

The project will cover under this output the initial capacity-building needs on e-mobility to make sure that key governmental officials and actors in the public and private sectors receive sufficient technical and legal training on e-mobility to be able to undertake the activities in the other project components and to assure the sustainability of the e-mobility strategy beyond project completion. This output will target public and private decision-makers with a *train the trainers* approach to maximize impact, and will address human resource development as well as organizational and institutional aspects. Professional technical e-mobility training targeting job-seekers and employees in the transport sector is provided for in component 2 (see output 2.3). This output will draw upon the capacity-building activities organized within the Global Program, in which Saint Lucia will participate, particularly in the Light Duty Vehicles (LDV) Working Group. Saint Lucia will join the regional platform established by the Global Program for Latin America and make use of the services provided, especially the *E-mobility workplace*, through which contacts with global technology providers and original equipment manufacturers will be facilitated. Furthermore, the regional platform will gather GEF-7 participating countries, like Antigua and Barbuda, Grenada, Jamaica and Saint Lucia and with common needs and manage them through customized activities. Where needed, trainings and workshops will be developed at sub-regional level for the Caribbean SIDS. Saint Lucia representatives who participate in the global programme will channel global and regional experiences, good practices and lessons-learned to the training activities at the national level, which will be provided to a larger and broader group of local stakeholders. For further information, see section 1.D. Child Project. This output will mobilize, besides the stakeholders involved in the preparation of the e-mobility strategy, local educational institutions with the ambition to establish a permanent component on e-mobility within technical curricula offered by higher education institutions in Saint Lucia. It will provide the following deliverables:

o D.1.4.1: E-mobility communication plan completed and implemented (the website referred to in 1.1.5 will serve as the key channel for the communication plan). It will address educational centers and the public to foster the use of EVs, and will identify capacity building needs.

o D.1.4.2: Capacity-building materials targeting decision-makers and other government officials.

o D.1.4.3: Training activities on sustainable transport and e-mobility policies, standards and regulations, addressing civil servants, and public and private decision-makers, including activities and lesson-sharing exchanges within the global e-mob programme.

o D.1.4.4: Knowledge management guidelines and training materials addressing electricity and transport specialists.

Component 2: Short term barrier removal through low-carbon e-mobility demonstrations

The project demonstration intends to provide first-hand evidence to fleet managers, government officials, key transport stakeholders and the general public about the performance of EVs in the particular context of Saint Lucia. EVs are already used in a variety of sectors around the world, including public and private fleets, public transport services, taxis, and by individuals. These experiences show the need to properly identify those mobility needs where the characteristics of EVs can be put to work to the advantage of their users. In the case of Saint Lucia, the project is building

upon the assessment undertaken in 2018 by RMI and other partners to shift 131 vehicles of the governmental fleet to electric. The study found that electrifying selectively the fleet would reduce not only operational costs but also fleet emissions by 82% (RMI, 2018). Under the project, the electrification of a fraction (at least 15) of these vehicles will be financed by the project, on an incremental basis (i.e. the project will cover the extra cost of the EV compared to a similar internal combustion engine (ICE) vehicle). This will serve to mobilize the governmental services and the private sector to establish the appropriate procurement documents, to undertake the necessary staff training and to implement the necessary charging infrastructure. Additionally, the MRV system will serve to improve the fleet management practices within the government and to raise awareness, reaching out to the private sector, and to vehicle dealers and importers. The project will ensure that the government fleet EVs will be highly visible and that the required additional charging infrastructure is publicly accessible. It will align with and be complementary to co-financed initiatives under the project "*Implementation of transport & energy contributions in the Caribbean (ITECC) - transforming the energy and transport sectors towards a low-carbon and climate-resilient future*" financed by the German government.

Outcome 2: The Saint Lucia government gains confidence in using electric vehicles.

Outputs:

Output 2.1: MRV system to track demonstration performance is implemented.

This output includes the general design of the demonstration and the subsequent preparation of a monitoring, reporting and verification (MRV) plan. It will mainstream gender considerations, based on output 1.2. The engagement or car-dealers during the design stage is expected to facilitate the subsequent procurement of the vehicles to be included in the demonstration, as well as the scaling-up of the project. The evaluation of the demonstration and the subsequent recommendations provided by this output feed into outputs 1.3, 3.1 and 3.2, which creates the conditions for the long-term scaling up of EVs in Saint Lucia (e.g. making use of tracking and energy consumption tools implemented in the pilot). This output will engage the providers of the EVs, the car fleet managers in which the pilots are conducted and the local academia; the analysis of the information, collected through GPS tracking, will also serve to improve the performance of the fleet managers involved. This output will provide the following deliverables:

o D.2.1.1: Demonstration design, including its monitoring, reporting and verification (MRV) plan.

o D.2.1.2: Evaluation report and knowledge management of demonstration (to be included in the website referred to in 1.1.5). Monitoring data will be recorded by the beneficiaries on a weekly basis, as part of their commitments to receive the project's contribution to the procurement of the EVs, and reported every month to the project CTA. Monitoring data will include energy consumption, GHG emissions and energy savings as well as savings in the emissions of air pollutants, and will monitor some ICE cars in the same fleet for comparison.

Output 2.2: Demonstration of at least 15 electric vehicles in public and private fleets conducted and new charging infrastructures installed.

The demonstration will include electric cars replacing conventional ones in the governmental fleet, as well as EVs from private fleets (such as those from major retailers and couriers, see box 1). All participating partners will benefit from the project MRV system and communication campaigns, and will receive financial support to cover the incremental EV costs. It is estimated that the cost of an electric sedan car will be USD 40,000, of which approximately USD 30,000 per car will be provided by the beneficiary (this is the cost of a similar ICE sedan car) and the remaining approximately USD 10,000 (i.e., the incremental cost) by the project. The Ministry of Finance, Economic Growth, Job Creation, External Affairs and Public Service, which is responsible for public procurement, has committed direct co-financing of USD $ 340,278 for the purchasing of at least 10 sedan vehicles for output 2.2, with the project to cover the incremental cost to ensure all 10 vehicles are electric.[31] Private sector actors, such as the Massy Group Ltd., have expressed interest to also participate in the project, ensuring that at least 15 vehicles are demonstrated in public and private fleets as part of the output. Private sector commitment will be confirmed during project execution, as the first public purchases through the Ministry will play an important role in building local momentum and taking initial steps to establish a local supply chain. Incorporating the Ministry

of Finance, Economic Growth, Job Creation, External Affairs and Public Service's co-financing commitment of USD 340,278 and private sector commitments to be mobilized during the project, it is expected that the total investment mobilized for the project will be at least USD 430,000.[32] This will be mobilized over the three years of the project.

The Department of Finance of the Ministry of Finance, Economic Growth, Job Creation, External Affairs and Public Service will be the primary implementing partner for the procurement of the electric vehicles. It will directly procure the electric vehicles to be included in the government's fleet, and will launch an open request for proposals to provide the incremental funding to those companies (such as the Massy Group and FedEx) willing to add electric vehicles to their fleets, under the commitment to run them for a minimum mileage and to include them in the project's monitoring scheme. The vehicles will be purchased by the beneficiaries and will remain in their fleets as an asset after the end of the project.

During the project, participating partners will be supported by the project in order to mainstream gender and to attain the project's targets regarding female participation in the demonstration. In the case of the government's fleet, the EV procurement process will provide information to support the development of business models and financial schemes under output 3.2, so that the reduced operating costs of EVs can be capitalized to purchase additional EVs in the future (i.e. the units receiving EVs will also see their annual assignments for fuel and maintenance reduced, so that these resources can be channeled to the purchase of additional EVs for other administrative units; similar schemes will be analyzed with the participating private fleets). The use of the EVs (mileage) will be maximized by introducing a modern fleet management concept, and exploring the possibility that each vehicle is not assigned to a single driver, while respecting COVID-19 restrictions. Finally, besides the charging points installed at the governmental fleets' depots, LUCELEC and other project partners will install public charging points in the country at their own expense (additional investment mobilized, which will also be tracked), providing alternative charging to the project's fleet and increasing the visibility of the project. These charging stations will be connected to the grid, with the renewable energy projected to provide up to 30% of total electricity in the next five to ten years (see section 2 for further information). This output will include the following deliverables:

o D.2.2.1: Demonstration plan, including selection of car fleets participating in the pilot demonstration, technical characteristics of electric vehicles and charging stations, locations of charging stations, and workplan for successful implementation of the demonstrations. The plan includes a vulnerability study of the locations selected to install the charging stations. If necessary, the installation of grid-interactive renewable energy systems at the pilot's vehicle charging locations will be assessed.

o D.2.2.2: Procurement of pilot vehicles including technical support. Resources will be transferred to the Ministry of Finance, Economic Growth, Job Creation, External Affairs and Public Service to cover the incremental cost[17] of EVs included in the demonstration compared to a conventional vehicle of similar performance, and the cost of low-charging infrastructure, if needed. The procurement process will also include the minimum technical requirements to the suppliers in order to cover maintenance needs and costs during the demonstration.

o D.2.2.3: Procurement and installation of charging points for the government fleet. In accordance with the government's strategy on renewable energy, charging points will be connected to the grid.

Box 1. Description of demonstration of e-vehicles

The demonstration of e-vehicles will consist of the following elements:

- At least 15 electric light duty vehicles (LDV) in total.
- Government of Saint Lucia: replacing conventional cars in government fleets. Cars will be chosen to ensure frequent usage and visibility. Up to 10 s low level 2 charging points installed at the vehicle depots. Attempts will be made to ensure these are publicly accessible, were possible. The projec t will cover the cost differential of a conventional car of similar performance. The GoSL is prepared to obtain at least 10 vehicles, which cost estim ates indicating that its co-financing contribution and the project support together will be able to cover at least 12.
- Private sector: the Massy Group will consider replacing LDVs it provides to charities by EVs. Slow charging points would be installed at the vehicle depots. LUCELEC will install fast charging stations at Massy Group store locations. Other private sector actors, such as the hotel sector, will also b e mobilized during project execution, once the first public procurements have occurred (needed to build confidence and momentum for the private sector).
- Fast-charging stations. LUCELEC has already installed 4 fast charging points on the island, and will install at least 2 more fast charging stations in Castries area at Massy Group store locations.
- The UAE-Caribbean Renewable Energy Fund also envisages to fund the provision of a 750 kW solar carport, close to Hewanorra International Airpo rt, providing rapid charging to EVs.

The Department of Finance will be the primary implementing partner for the procurement of the electric vehicles. It will directly procure the electric vehicles to be included in the government's fleet, and will launch an open request for proposals to provide the incremental funding to those compa nies (such as the Massy Group or FedEx) willing to add electric vehicles to their fleets, under the commitment to run them for a minimum mileage and to include them in the project's monitoring scheme. The vehicles will be purchased by the beneficiaries and will remain in their fleets as an ass et after the end of the project.

The demonstration will be monitored for at least 18 months with GPS tracking and energy consumption recording. It is intended that savings in ope rating costs will be reassigned by the participating organizations and companies to the replacement of additional conventional vans and cars with EVs after project completion, so that a business model can be provided to support scale-up after project completion. After demonstration completi on, the EVs in the government fleets will remain part of the government fleets.

Output 2.3 Professional training delivered (EV safety, driving and maintenance) and pilot results communicated to national and local decision makers and other stakeholders in Saint Lucia.

This output will provide professional training on EV driving and maintenance to ensure the successful demonstration as per output 2.2, targeting women and socially disadvantaged groups, as a way to empower them to access the new jobs that the deployment of e-mobility is expected to offer; it will build upon the training workshops already provided by the Energy Division (in the context of the current small pilot with 3 electric cars donated to GoSL) and will also train first-response/emergency services on the specificities of EVs. Where possible, the project will follow a *train-the-trainers* approach to maximize impact. It will also serve to disseminate the demonstration's progress and results, better informing decision makers and the society at large in order to encourage them to select the most sustainable options when choosing their vehicles. This output is expected to engage the local automotive sector, as well as the corporate fleet management community. It will be completed through the following deliverables:

o D.2.3.1: Communication plan for the project demonstrations, including awareness raising actions addressed to the public.

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• Private sector: the Massy Group will consider replacing LDVs it provides to charities by EVs. Slow charging points would be installed at the vehicle depots. LUCELEC will install fast charging stations at Massy Group store locations. Other private sector actors, such as the hotel sector, will also be mobilized during project execution, once the first public procurements have occurred (needed to build confidence and momentum for the private sector).

• Fast-charging stations. LUCELEC has already installed 4 fast charging points on the island, and will install at least 2 more fast charging stations in Castries area at Massy Group store locations.

• The UAE-Caribbean Renewable Energy Fund also envisages to fund the provision of a 750 kW solar carport, close to Hewanorra International Airport, providing rapid charging to EVs.

The Department of Finance will be the primary implementing partner for the procurement of the electric vehicles. It will directly procure the electric vehicles to be included in the government's fleet, and will launch an open request for proposals to provide the incremental funding to those companies (such as the Massy Group or FedEx) willing to add electric vehicles to their fleets, under the commitment to run them for a minimum mileage and to include them in the project's monitoring scheme. The vehicles will be purchased by the beneficiaries and will remain in their fleets as an asset after the end of the project.

The demonstration will be monitored for at least 18 months with GPS tracking and energy consumption recording. It is intended that savings in operating costs will be reassigned by the participating organizations and companies to the replacement of additional conventional vans and cars with EVs after project completion, so that a business model can be provided to support scale-up after project completion. After demonstration completion, the EVs in the government fleets will remain part of the government fleets.

o D.2.3.2: Communication materials on the project demonstrations, including materials for the general public, focused on raising awareness about the advantages of e-mobility as shown in the pilots.

o D.2.3.3: Training materials on EV and charging infrastructure technology and maintenance.

o D.2.3.4: Professional training activities on EV safety (emergency services), driving and maintenance.

Component 3: Preparing for scale-up and replication of low-carbon electric mobility

This project component seeks to provide the enabling conditions for the broad and long-term deployment of EVs, by building upon the favorable institutional framework developed under component 1 and the evidence provided by component 2. It aims to establish the financial, regulatory and operational conditions for new and imported used EVs to be introduced in public and private fleets, public transport, taxis, and purchased by individuals. The regulatory and tax reforms, business models and financial schemes to be made available through the component will build and be aligned with the *Integrated, Sustainable Road Transport Policy and Strategic Roadmap for Implementation* developed by GoSL and the *Sustainable Passenger Mobility Policy* developed through output 1.2 and strategy developed under 1.3. These will also be informed by the monitoring and evaluation of the demonstrations (output 2.1).

This component provides direct support to scaling-up the project demonstration (Component 2) within and outside the government's fleet, providing the necessary support to other public and private early adopters. The incentives and business models developed within this component will provide a level playing field to EV car dealers and to fleet managers willing to benefit from the lower operating costs and higher reliability of EVs. The experience gained by the government, in combination with other project outputs, will empower governmental departments to engage with private and public fleet managers to discuss electrification options and will facilitate the design by early adopters of fleet renewal plans including EVs. Building upon the policies and strategies developed under component 1, public transport operators will obtain the necessary guidance and incentives to make use of EVs, instead of regular diesel buses. Furthermore, as governmental fleets test electric vehicles through a direct governmental co-financing in component 2, they will gather an understanding of the lower operational and maintenance costs. Incentives and business models developed under component 3 will support governmental agencies to replicate this experience and scale up the adoption of electric vehicles firstly in government fleets. With the positive experiences in the government sector, component 3 will also target car rental companies and the tourism sector, as a key secondary group of agents for change. Thirdly, through the development of the sustainable passenger mobility policy (component 1), component 3 will target the public transport sector and general consumers.

Through output 3.1 the project will support the Government of Saint Lucia in enhancing existing incentives and creating new ones for incentivizing the uptake of electric vehicles by private entities. Output 3.2 will consist of business models that are made available to the Government and key private actors, to support them in maximizing the benefits of the incentives, taking into consideration the different nature of financing an electric vehicle (e.g. through a consideration of the total cost of ownership). Focus will be on those user segments with higher potential to become early adopters in Saint Lucia, such as hotels and resorts, car rental companies, and the government and public transport and taxi operators. The development of both outputs 3.1 and 3.2 will take into account the experiences, good practices and lessons learned of other countries including through participation in activities and drawing upon services of the global programme (see section 1.D. Child project for more information).

Outcome 3: The Saint Lucian government takes action towards implementing an enabling environment and business models for promoting low-carbon electric mobility.

Outputs:

Output 3.1: Regulatory and tax reforms for the uptake of EV in Saint Lucia delivered to the government for approval.

In 2015, Saint Lucia implemented the Motor Vehicles and Road Traffic Act– Section 193, which makes provisions for establishing emission standards and maximum levels of air contaminants from motor vehicles. Based on this legislation, the project will propose comprehensive legislation on vehicle authorization and technical inspection establishing (1) future emission standards for motor vehicles (in collaboration with the Saint Lucia Bureau of Standards, including CO2, as well as pollutants), converging with global practice; (2) inclusion of EV vehicles in the motor vehicle legislation; (3) periodic technical inspection. This legislative proposal will be complemented by one on vehicles taxes in order to link them to CO2 emissions, to discourage the importation of large, energy-inefficient and polluting vehicles (particularly second-hand) and encourage the purchase of EVs, with an assessment of the impact of electrification on fiscal revenues. Together, these regulatory and tax reform proposals consist of a key series of legislative measures to level the playing field for electric vehicles and incentivize their uptake, at the same time as disincentivizing the continued adoption of internal combustion engine vehicles. These will be aligned with and build upon the policy and strategy developed under outputs 1.2 and 1.3. The legislative proposals will also take into account the social impact of such legislation, with a particular focus on women and socially disadvantaged groups. Key stakeholders include the governmental services as well as car dealers and importers, financial and insurance institutions, regulators, and civil society. This output will be completed through the following deliverables:

o D.3.1.1: Regulatory proposal on vehicle approval and periodic technical inspection, including electric vehicles. Based on international standards, this deliverable will propose changes in current standards and regulations on the technical conditions for importing new and used vehicles in Saint Lucia, so that inefficient and high-polluting vehicles will be phased-out.

o D.3.1.2: Regulatory proposal on technical approval and installation of public and private charging stations.

o D.3.1.3: Regulatory proposal on public transport authorizations and concession contracts to improve quality and stimulate electrification.

- D.3.1.4: Tax reform proposal to facilitate fiscal stability while Saint Lucia transitions towards e-mobility.
- D.3.1.5: Stakeholder consultations on regulatory reforms.

Output 3.2: Business models, financial schemes and procurement guidelines for electric vehicle fleets and charging stations delivered to government and car dealers.

The dissemination of the factual evidence provided by the demonstrations will create more favorable conditions for EV adoption, and the project will undertake an assessment of the new opportunities for electrification, building on the aforementioned RMI study, with a focus on governmental fleets, rental car companies, the tourism sector and taxis. Without the financial support of the project, the procurement of EVs in these sectors will need to be based on alternative financial schemes (balancing the operational savings with the increased capital costs, developing alternative lending or leasing schemes adapted to the higher residual value of the vehicle, etc.) and car dealers' (and users') business models (e.g. to look for car dealers' alternatives to the loss of revenue from now less-frequent and cheaper maintenance operations). Car dealers and importers, as well as users, will be supported in the development of alternative business models for these vehicles. They, and the financial sector, will be the key stakeholders in this output, and the project will support their cooperation with the public sector through partnerships, to be defined within the coordination body (output 1.1). The development of these financial instruments will be aligned with and build upon the policy and strategy developed under outputs 1.2 and 1.3. The following deliverables will be provided:

- D.3.2.1: Scenarios on the potential of the electric vehicle market in Saint Lucia. Aligned with the market studies made in other countries participating in the global programme. A first scenario will be provided in year 1, as an input to outputs 1.2 (sustainable passenger mobility policy) and 1.3 (draft e-mobility strategy), and revised in year 2, taking into consideration the experience on the design of the demonstration. It will also provide guidance to rationalize the government's fleet in terms of size and technologies.
- D.3.2.2: Development of business models for electrification of public and private fleets in Saint Lucia. For the development of business models, car dealers and fleet managers will benefit from coaching and technical support from the project.
- D.3.2.3: Development of financial schemes to support fleet electrification.
- D.3.2.4: E-mobility recommendations and procurement guidelines to fleet managers published and disseminated. These recommendations will be published and disseminated through the platform established in component 1.

Component 4: Long-term environmental sustainability of low-carbon electric mobility

The environmental sustainability of e-mobility strongly relies on extending the lifespan of the batteries through second-life use, and assuring proper management of them, as well as of the other vehicle components at their end-of-life. Whereas at the global level these challenges are being addressed by establishing alternative battery use and creating large recycling plants for adequate recycling of battery components, there are a few key challenges in Saint Lucia: first, the weak management system in the country for vehicles at their end of life, which implies that, in the absence of specific project action, the deployment of EVs could increase the current environmental hazards; second, the difficulties to effectively integrate Saint Lucia (due inter alia to the challenge of engaging not only car-dealers, but also importers), as well as the rest of the Caribbean region, within the global chains being established for recycling; and third, the difficulties to develop battery re-use options (and notably reuse as energy storage systems) in the country due to the limited integration of the electricity grid. This component addresses these challenges so that the ELV management system in the island is strengthened, the necessary burden is fairly shared by car-dealers and importers, and batteries and other EV components are managed following international best practice.

Outcome 4: The Saint Lucian government takes action towards implementing policy frameworks for ensuring the long-term sustainability of low-carbon electric mobility.

Outputs:

Output 4.1: Detailed analysis of current management of vehicles at their end-of-life undertaken and recommendations based on international best practice delivered to government for approval.

These project activities are a preliminary step to provide the necessary information for subsequently undertaking regulatory changes and sector reform. Derelict vehicles are ubiquitous in the island, in spite of the Saint Lucia Solid Waste Management Authority's (SLSWMA) efforts[18] and the regulations established in the 2004 Waste Management Act. In cooperation with SLSWMA and drawing on the on-going World Bank's study, the project will provide recommendations to improve ELV management and the recycling of vehicle components, with the involvement of the local recycling industry. The following deliverables will be provided:

o D.4.1.1: Assessment of local conditions and characteristics of ELV management.

o D.4.1.2: Forecast of ELV components generation, considering internal combustion and electric vehicles.

o D.4.1.3: Recommendations on ELV management in Saint Lucia, based on international best practice, submitted to the government for adoption. Including vulnerability assessment and guidance to ensure that extreme weather events and sea-level rises do not lead to increased contamination.

Output 4.2: Updated legislation on end-of-life vehicle management, including electric vehicles and second-life use of their batteries, delivered to the government for adoption.

As a follow-up to output 4.1, and in close cooperation with SLSWMA, car dealers and importers and the local recycling industry, the project will provide recommendations on end-of-life management of all vehicles, including EVs and their lithium batteries. Based on international best practice provided by D.4.1.3, the project will explore the feasibility of strengthening the responsibility of distributors in the ELV management system, so that EV car-dealers and importers will become responsible for end-of-life battery management. In cooperation with LUCELEC and the electricity regulator, the project will provide proposals for establishing a second-life program for EV batteries based on their use for flexible storage of energy. The following deliverables will be provided:

o D.4.2.1: Report summarizing international and regional regulations on ELV management, including EV components and second-life use of their batteries.

o D. 4.2.2: Comprehensive review of existing and planned international regulations on second-life battery use and recommendations for the Saint Lucia context.

- D.4.2.3: Proposal for ELV regulation submitted to the government for adoption. This proposal, to be submitted to the government for adoption, will be aligned with national waste management priorities and will be developed in close coordination with the identified relevant private stakeholders.

Output 4.3: New business models, including the responsibility of vehicle distributors, delivered to the government and ELV management companies.

Building upon the regulatory recommendations provided in the previous output, the project will support SLSWMA, car dealers and importers, as well as the local recycling industry and LUCELEC in establishing financial schemes (to assure funding of ELV management operations) and business models (to help the sector to transition to the new framework) to consolidate sustainable ELV management. The project will provide a

roadmap to the government to support its central role in the ELV management transition process, through the implementation and enforcement of the regulatory changes. The following deliverables will be provided:

o D.4.3.1: Screening and systematization of successful financial and business models on ELV components and second-life battery use.

o D.4.3.2: Development of commercially viable business models for ELV components and EV batteries, including cost benefit analysis estimating investment needs and financing schemes.

o D.4.3.3: Development of a roadmap on sustainable and commercially viable ELV and battery management submitted to government for adoption.

Output 4.4: Awareness and capacity of public, private and civil society stakeholders on management of electric vehicles at their end of life enhanced.

The activities to achieve this output aim at providing the necessary capacity building to all the stakeholders involved in the end-of-life management of batteries and other EV components, essential for the successful implementation of the roadmap delivered within output 4.3. Besides the involvement of all the stakeholders already identified in other outputs within this component (government, SLSWMA, LUCELEC, car dealers and importers), it will be necessary to mobilize the local academia, so that they can be able to provide ELV management training in the future. Surveys will be undertaken to check knowledge before and after training. The following deliverables will be provided within this output:

o D.4.4.1: Design and delivery of a training programme for policymakers and local academia, and available for wider dissemination. The programme will follow a *train-the-trainers* approach to maximize impact.

o D.4.4.2: Provision of technical and managerial support to producers and importers, with a focus on the local industry.

o D.4.4.3: Design and implementation of a national campaign to raise awareness among consumers.

2) Alignment with GEF Focal Area and/or Impact Program strategies

This program is aligned with Objective 1 of the Climate Change Focal Area to “Promote innovation and technology transfer for sustainable energy break-throughs”, through CCM 1-2 - Promote innovation and technology transfer for sustainable energy breakthroughs for electric drive technologies and electric mobility.

3) Incremental/additional cost reasoning and expected contributions from the baseline, the GEFTF, LDCF, SCCF, and co-financing

The project is covering the incremental costs of barrier removal activities with the contributions of the GEF Trust Fund (GEFTF), which add to the activities and investments envisaged by the project partners (various Departments of the GoSL, in charge of Climate Change and Sustainable Development, Energy, Transportation, Finance, and Solid Waste Management, LUCELEC, UAE, car dealers and importers, couriers and retailers). GEFTF funds will serve to overcome the policy barriers by providing technical assistance and enabling participation and networking of the country in the global e-mob programme, as well as training and capacity building. GEFTF will also cover the incremental costs of the EVs to be used in the demonstration compared to conventional vehicles (although EV costs are decreasing, these vehicles are not readily available in Saint Lucia, making their procurement more expensive and cumbersome than in other countries). Furthermore, GEFTF will provide the technical assistance necessary to introduce the reforms required for the public transport sector to be enabled to make use of EVs, and to establish adequate financial and business models that will allow operators and users to access EV at reasonable costs once the demonstration and policy reforms improve the perception of local and international financial institutions towards the risks associated with the use of EV in Saint Lucia.

In addition, the support from the global e-mobility programme (including networking with the other projects in the Caribbean region, Antigua and Barbuda, Grenada and Jamaica, and with the rest of the Latin America and Caribbean region through a regional platform) is expected to serve to maximize the impact of the incremental financing provided by GEFTF, through the optimization of capacity building and knowledge management activities, bundling of EV procurement, provision of generic tools for business and financial modelling, etc.

4) Global environmental benefits (GEFTF) and/or adaptation benefits (LDCF/SCCF)

GHG emission mitigation has been estimated by the UNEP Air Quality and Mobility (AQM) Unit using its GHG emission reduction calculation model. Full details are provided in Annex M. Based on official gross domestic product (GDP) and population statistics (available until 2017 and 2018 respectively), an approximate hypothesis has been established for future annual GDP and population growth.

The model estimates light-duty vehicle (LDV) sales based on GDP per capita, with an elasticity of 0.7 until GDP per capita reaches USD 20,000 and 0.5 afterwards. In the baseline model, alternative technologies to ICE are not considered to enter the country before 2036. The electric mobility scenario considers that the introduction of electric vehicles (EVs) will start with the 15 electric LDV provided by the project in 2022. Direct GHG emission reductions are considered only for the lifespan (12 years) of these vehicles provided by the project.

An average LDV consumption of 0.14 kWh/km has been considered. As electricity in Saint Lucia is mostly generated from diesel plants, an average emission factor for electricity generation of 0.78 kg CO2/kWh has been included.[35] This factor is expected to decrease by 20% in 2030 and by 30% in 2040, as a result of the implementation of the renewable energy strategy. Even under the initial unfavorable circumstances, EVs are able to provide specific CO2 emissions (109 g/km) significantly lower than those measured in the government's fleet.

As an influence of the project policies, it is considered that a progressive introduction of additional electric LDV will start in 2025 with a 5% share of the LDV sales in 2025, increasing by 2 percentage points per year afterwards (26% in 2036). The emissions avoided by these vehicles are used for computing the indirect benefits of the project. Other indirect emission reductions are due to the public transport policies developed by the project, which are expected to induce modal change from car use to public transport after project completion. These indirect emission reductions are estimated for a 15-year period after the beginning of the project. A causality factor of 80% is used to quantify the amount of the benefits obtained as a result of the project execution and its influences. The project GHG emission reductions and energy saving impacts are summarized in the table below.

GHG reductions and energy savings estimation for Saint Lucia	
Project information · Project duration: 3 years. Starting in 7/2021 and ending in 6/2024. · Time frame for indirect effects: 15 years. Starting in 2021 and ending in 2036. (Effects produced by policy developed during the project and coming scale-up projects). · Causality factor: 80 %	
Total project emissions reductions, t CO_2	**686,345**
Total direct emission mitigation from demonstration projects, t CO_2	**206,322**
Primary direct emission mitigation (LDV passenger and commercial, considering end of life of vehicle as 12 years)	1,102
Secondary direct emission mitigation (policy measures)	205,220
Total indirect emission mitigation, t CO_2	**480,023**
Total project energy savings, MJ	**7,935,874,327**
Total direct energy savings from demonstration projects, MJ	**2,385,605,159**
Primary direct emission mitigation (LDV passenger and commercial, considering end of life of vehicle as 12 years)	12,744,370
Secondary direct emission mitigation (policy measures)	2,372,860,789
Total indirect energy savings, MJ	**5,550,269,168**

5) Innovativeness, sustainability and potential for scaling up

Innovativeness:

The project deliverables provide technical, financial-management and social innovations:

- Technical: E-mobility is still incipient in Saint Lucia, with only a handful of vehicles and limited knowledge and awareness among stakeholders and users. The project will introduce in the country the EV and charging technologies at a wider scale, and will explore the use of EV in different services.
- Business innovativeness. The project will provide demonstration-based financial and business models to facilitate the transition of car dealers and users towards a global market increasingly dominated by EVs. In this new context, higher capital costs are expected to be balanced by lower operational costs, opening new opportunities (e.g. leasing could be a more interesting option than ownership for public and private fleets, the business model for car dealers would be less dependent on maintenance services and will consider the inclusion of new services, such as car-sharing based mobility services, fleet management services or battery leasing). The small size of Saint Lucia and the particular profile of its financial sector (including the expansion of credit unions and microfinance companies) requires the development of tailored solutions, to be provided by the project, such as the expansion of the car leasing market.

- Environmental. The introduction of an environmentally-friendly and commercially sustainable approach to ELV management is challenging in the current local context, as most of the manufactured products consumed in Saint Lucia are imported; the project provides a unique opportunity to modernize the waste management sector, to be eventually expanded to other products, such as electronic appliances. If successful, it will provide guidance to other countries heavily dependent on imports of manufactured products and to integrate small island countries in the global re-use and recycling chains associated to the expansion of e-mobility.
- Social: The project will provide regulatory reforms in the public transport and taxi subsector in Saint Lucia, necessary to improve its quality and coverage, and the mobility conditions of vulnerable groups and women, as well as to foster electrification in this subsector.
- Governance: The project will require strong cooperation from the government's departments in charge of transportation, energy, climate change, and waste management, formalized through a coordination body and opened to the participation of private stakeholders and the civil society. This is innovative in the Saint Lucian context, particularly in what refers to the transportation sector, and will provide an opportunity to strengthen synergies within the government.

Environmental Sustainability:

From an emission-mitigation perspective, the environmental sustainability of the project is strongly related to the ability of Saint Lucia to increase its share of renewables in energy generation, together with its ability to create a growing market for EV and to promote sustainable passenger mobility options. Since 2014, the GoSL has set ambitious targets for the share of renewables, subsequently confirmed in its Third National Communication, its Intended National Determined Contribution and its National Energy Transition Strategy. Although Saint Lucia is not on track to achieve the foreseen 35% share for renewables by 2025, it is working in the right direction with the active involvement of LUCELEC (which is expected to continue playing a leading role in the national e-mobility strategy, the provision of public charging stations and the promotion of e-mobility after project completion) and the support of international institutions[20] in order to transition towards a sustainable electricity generation system. In that framework, the expansion of EV, fueled by the expected growth in EV manufacturing and decrease in battery prices, will pay off, resulting in more substantial GHG emission reductions. Global and regional trends on sustainable mobility and public transport improvement are expected to facilitate the GoSL's implementation of the Sustainable Passenger Mobility Policy provided by the project.

The project also supports the GoSL in establishing more sustainable passenger mobility policies, and more specifically to strengthen the public transport sector, so that it can provide higher quality services and entice citizens to use it rather than private cars. This would reduce the number of cars on the road and their associated GHG emissions.

From a solid waste management perspective, the project actively contributes to the correction of the currently unsustainable patterns in ELV management, so that the expansion of EV is undertaken within a context in which they do not become the source of additional environmental hazards. The project undertakes an integrated approach, targeting all vehicles and not only EV, as otherwise this would create an additional barrier to the latter compared to conventional vehicles. Accordingly, the project activities within component 4 are also effective in addressing these environmental risks, as discussed in the risk management section.

Sustainability of market development after the project:

Several project deliverables are expected to ensure the sustainability of market development:

- LUCELEC is expected to respond and consolidate the new market opportunities opened by the project, such as infrastructure charging or EV leasing concepts based on energy provision.

- Networking of private and public stakeholders will be continued after project conclusion with the provision of a work plan and a legal framework to facilitate the continuation of the cooperation of all project partners.
- Demonstrations and the development of business models will empower the more dynamic car dealers and importers in the island to include a growing number of EVs in their commercial offer, facilitating access to electric technology to those users better positioned to get advantage of the EV performance (high annual mileage, foreseeable daily mobility needs, or medium-to-large size fleets).

Furthermore, subject to its adoption by the government, the following project deliverables are expected to ensure the sustainability of market development:

- Investment in e-mobility will be facilitated by tax incentives and regulatory reforms, technology de-risking through capacity building and demonstrations as well as by the new financial models developed by the project.
- The e-mobility coordination body established by the project within the government's Climate Change Committee will steer the implementation of the e-mobility strategy, including expansion of EV in different submarkets.
- Policy reforms in the public transport and taxis subsectors will create the conditions to expand local demand at the expense of private car use, to facilitate the emergence of financially-stronger operators and to prioritize the use of EVs in the best suited service niches.

Potential for scaling-up:

The potential for scaling up of e-mobility after project completion is different from the various subsectors:

- Managers of public and private fleets can be expected to become keenly interested in including EVs in their fleets, due to barrier removal provided by the project (EVs more easily available on the island, incentives, technological de-risking, capacity building) and the availability of financing tools competitive with those of conventional cars. Considering the experience in other countries, the government exemplary role in the electrification of its fleet and the project activities, this potential is very high.
- The community of taxi operators is identified as a priority for the project. The project focuses on creating the enabling conditions for electrification in this sector (which implies a regulatory framework aware of the environmental performance of taxis, the use of smaller and newer vehicles and the provision of more affordable services (e.g. para-transit, at least for locals). The prospects for the project to succeed in establishing these enabling conditions are high, considering the general dissatisfaction with current services and the government's commitment.
- Similarly, the project's approach to public transport focuses on creating the enabling conditions that will make it more attractive to users (increasing demand at the expense of private car use). To become technologically attractive, e-mobility requires that services in at least some public transport routes to be provided by full-size buses instead of the current crew or combi vans. This is also a prerequisite to improve the quality of service, as experienced in many countries, but has a strong impact on the companies and workers in the subsector. The project will provide support to the government in order to undertake the required public transport reform, but this effort will need to be followed by governmental decisions after project completion in order to open the public transport subsector to electrification.
- Although small passenger cars (under 2800 lbs.) still dominate the markets, small SUVs (up to 2800 lbs.) are becoming popular on the island among consumers. The project will support reforms in vehicle authorization legislation in order to avoid the importation of inefficient vehicles, particularly second-hand cars and SUVs. This will increasingly reduce the cost-differential between ICE vehicles and EVs. Furthermore, the motorization rate in Saint Lucia (260 vehicles/1000 inhabitants in 2018[21]) has a strong potential to grow, and future governmental project campaigns will follow the project's communication experience, encouraging consumers to choose energy-efficient vehicles, and those car dealers and importers more engaged with EVs will outreach to individual consumers, in order to expand their potential market.
- The financial schemes developed by the project will increase the interest of the local financial sector in financing the procurement of EVs, and will facilitate the implementation of sound financial incentives to targeted consumers, including less affluent ones.

- The business models developed by the project will support existing companies (car dealers, maintenance workshops, ELV management companies, public transport and taxi operators) and new entrepreneurs to competitively operate in this emerging market and benefit from its associated business opportunities.

As a consequence of the global e-mobility program and its regional platform, Caribbean countries may also strengthen their cooperation on sustainable mobility and EVs, eventually implementing market integration initiatives in the CARICOM framework to provide a more attractive market to global EV manufacturers.

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[1] CO2EMISSIONS FROM FUEL COMBUSTION Highlights (2019 edition), IEA 2019.

[2] IEA Mobility Model, 2017.

[3] Saint Lucia National Inventory Report, 21st August 2020. AETHER consulting.

[4] International Monetary Fund (2018). St. Lucia Climate Change Policy Assessment.

[5] Motor Vehicles and Road Traffic Act– Section 193

[6] World Health Organization (WHO) (2018) Global Status Report on Road Safety.

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[7] World Bank (2018). Renewable Energy Sector Development Project.(Report Number PAD2362)

[8] LUCELEC (2019). 2018 Annual Report

[9] LUCELEC (2019). 2018 Annual Report

[10] Ministry of Sustainable Development, Energy, Science and Technology (2015). The Saint Lucia Climate Change Adaptation Policy

[11] World Bank (2018). Renewable Energy Sector Development Project (Report Number PAD2362)

[12] Average of domestic and commercial fares; the fuel adjustment factor is currently slightly negative, due to low international fuel prices: https://www.lucelec.com/content/rates-service-standards

[13] Based on OLADE (2014), Saint Lucia Energy Balances 2010-2014. Accessed at http://biblioteca.olade.org/opac-tmpl/Documentos/old0332.pdf

[14] The estimated cost of the wind farm is USD 37 million. LUCELEC, the national energy utility, is leading the development of the project, with a new developer not yet identified. This project will be the first of its kind in the country and can be scaled up in the future thanks to the favorable wind regime. The initial data from the 18-month wind study showed a Net Capacity Factor of 36%. The project will also reduce fuel usage by approximately 1.88 million imperial gallons per annum. Although the effective implementation is subject to the selection of a partner, the government's expectations are to complete the windfarm by 2025, in order to meet the country's NDC. A town hall meeting was effective in informing the communities about the wind farm and its benefits to them and the country.

[15] LUCELEC (2019). 2018 Annual Report

[16] GoSL (2015). Intended Nationally Determined Contribution under the UNFCCC.

[17] Government of Saint Lucia (2017). Third National Communication on Climate Change for Saint Lucia.

[18] Interviews with the main car dealers in the country showed minimum interest of their providers to introduce EV in Saint Lucia. Nissan is prioritizing Barbados and Jamaica, Toyota is prioritizing Jamaica (as it owns the local dealer in that country); however, one of the local dealers (representing several brands: Suzuki, Mercedes, Audi, Chevrolet) was following EV progress carefully and well aware of the opportunities ahead. The first EVs introduced in the country by Italian cooperation had to be procured through an independent importer (Gearing Up, Ltd), which obtained them from a UK dealer.

[19] Julliard, Y (2015), GIZ REETA – CARICOM: Electric Mobility Solutions in the Caribbean.

[20] World Bank (2019). Saint Lucia Solid Waste Management Sector Assessment.

[21] CTMG, 2017, E-waste management policy and regulatory framework for Saint Lucia, https://www.itu.int/en/ITU-D/Climate-Change/Documents/E-waste%20Management%20Policy%20and%20Regulatory%20Framework%20for%20Saint%20Lucia.pdf

[22] Provided by the consultant IDEA in 2008.

[23] D'Hondt, F & Wells, H (2019). BEYOND THE PLAN: Building In-House Capacity to Plan, Design and Implement Urban and Territorial Transformations, Case of 'Castries Vision 2030'.55th ISOCARP Congress.

[24] Initially intended to be undertaken in 2020, the process to initiate the work has been put on hold due to the COVID-19 pandemic. It is intended that this work will be re-initiated in 2021. This document is expected to focus on road improvements, new roads, and other additional infrastructure (bike parks, car pool lots, bus terminals) with a multimodal focus. It will also cover freight transport and logistics, but it will not address the reform of the reorganization and delivery of public transport services.

[25] Torbert, Roy, Kaitlyn Bunker, Stephen Doig, Justin Locke, Stephen Mushegan, Siana Teelucksingh. *Developing the Saint Lucia Energy Roadmap,* Rocky Mountain Institute, 2016.

[26] With the support of the Rocky Mountain Institute (RMI), the RM-CWR Islands Energy Program, the Clinton Foundation, LUCELEC and DNV-GL.

[27] International Renewable Energy Funding (IRENA) and Abu Dhabi Fund for Development (ADFD).

[28] OLADE (2014). Saint Lucia Energy Balances 2010-2012: http://biblioteca.olade.org/opac-tmpl/Documentos/old0332.pdf

[29] Saint Lucia is at a preliminary stage of consideration of the development of the long-term strategy. Timing and proposed delivery date are still to be confirmed.

[14] The NETS approval process included the review of the document delivered by the consultants and the preparation of a Cabinet memo by the relevant Government Agency. The Cabinet reviews and can request a presentation by the Government Agency before approving the document.

[30] Based on approximate costs of conventional sedan and electric vehicles, it is estimated that the Ministry's contribution will cover at least 12 vehicles.

[31] This will be monitored through the project M&E system and also through the MRV system of output 2.1.

[32] It is estimated that the final cost of a sedan electric car will be some USD 40,000, of which USD 30,000 per car will be provided by the beneficiary (this is the cost of a similar ICE sedan car) and the remaining USD 10,000 (i.e., the incremental cost) by the project.

[33] World Bank (2019). Saint Lucia Solid Waste Management Sector Assessment.

[34] Based on OLADE (2014), Saint Lucia Energy Balances 2010-2014. Accessed at http://biblioteca.olade.org/opac-tmpl/Documentos/old0332.pdf.

[35] RMI (2017). Saint Lucia National Energy Transition Strategy and Integrated Resource Plan, Rocky Mountain Institute, 2017. This Strategy considers it feasible to achieve the 35% target in the share of renewables by 2022.

[36] Own estimate, based on national fleet statistics

1b. Project Map and Coordinates

Please provide geo-referenced information and map where the project interventions will take place.

Project activities will be undertaken at the island level and through-out the island. The location of charging stations will be determined during project implementation. Additional charging points will be provided within the UAE's project on solar energy at the airport. LUCELEC is expected to provide additional charging points in other parts of the island.

Demonstration sites	*Latitude*	*Longitude*
Saint Lucia	*13.9*	*-61.0*


SAINT
LUCIA

Figure 2: Project location

1c. Child Project?

If this is a child project under a program, describe how the components contribute to the overall program impact.

The current project is hosted under the “Global Programme to Support Countries with the Shift to Electric Mobility”, led by UNEP.

The Global Programme is based on the following four components:

- Component 1: Global thematic working groups and knowledge materials
- Component 2: Support and Investment Platforms
- Component 3: Country project implementation
- Component 4: Tracking progress, monitoring and dissemination

The Global Programme has put in place the monitoring framework below to track progress both globally and at the level of the country child projects. 12 indicators have been designed for this purpose: 6 relying on global level information (highlighted in blue) and 6 relying on country level information (highlighted in green).

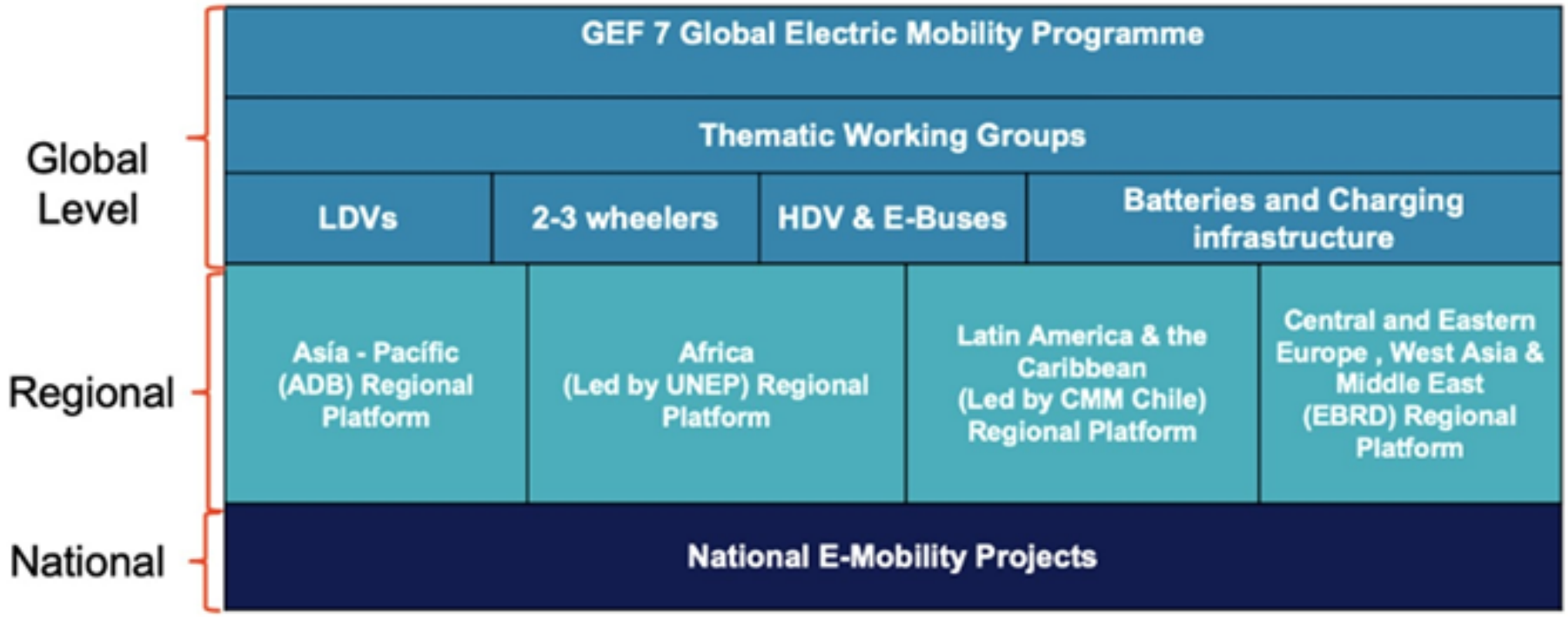
Global E-mobility Programme Monitoring Framework			
Global level monitoring		Country level monitoring	
Objective level indicators			
Indicator A: Direct and Indirect Greenhouse Gas Emissions Mitigated (metric tons of CO2) mitigated			
Indicator B: Direct and Indirect enegy savings (MJ)			
Indicator C: Number of direct beneficiaries (disaggregated by Gender)			
Component 1 **Global thematic working groups and knowledge materials**	**Component 2** **Support and Investment Platforms**	**Component 3** **Country project implementation (Child Projects)**	**Component 4** **Tracking progress, monitoring and dissemination**
Outcome 1 Knowledge products are generated to support policy making and investment decision-making through four global thematic working groups	**Outcome 2** Conditions are created for market expansion and investment in electric mobility through support and investment platforms	**Outcome 3** Conditions are created at country and city level for the introduction of electric mobility demonstration projects, and wider up take of electric mobility	**Outcome 4** Projects and electric mobility markets are tracked, and key developments, best practices and other lessons learned are shared to promote wider uptake of electric mobility.
Indicator 1.1 # of knowledge products developed by the four thematic working groups and used by the Support and Investment platforms in their training and outreach activities	Indicator 2.1 % of countries using services and knowledge products offered by the Support and Investment Platform	Indicator 3.1 % of countries with an improved institutional framework and a strategy to promote the uptake of low-carbon electric mobility	Indicator 4.1 % of countries generating and sharing best practices and other lessons learned on low-carbon electric mobility with the global programme
	Indicator 2.2 # of e-mobility scale-up and / or replication concepts facilitated as a result of the match-making	Indicator 3.2 % of countries with nationally generated evidence of the technical, financial and/or environmental benefits of low-carbon electric mobility	Indicator 4.2 # of e-mobility knowledge products refined based on evidence coming from the country projects
	Indicator 2.3 # of financial institutions / development banks (national/regional) that have been engaged through the Global Programme and are actively supporting e-mobility projects	Indicator 3.3 % of countries that have improved preparedness to accelerate market transformation towards low-carbon electric mobility	Indicator 4.3 # of non-e-mobility programme countries committing to actively promote the uptake of low-carbon e-mobility
	Indicator 2.4 # of US$ leveraged to scale-up low-carbon electric mobility through the support and investment platforms	Indicator 3.4 % of countries with measures in place to ensure the long-term environmental sustainability of low-carbon electric mobility	

The global project will report against this framework on an annual basis, using (1) the global level data from the Global Thematic Working Groups and from the Support and Investment Platforms, and (2) country level data provided by each country project during their annual Project Implementation Review (PIR) process.

For this purpose and whenever applicable, the global level indicators highlighted in green are translated into a country-level indicator in the Project Results Framework located in Annex A of the present CEO Endorsement Document. During project implementation, CRUSA, the executing agency, will be requested to report against the indicators of the country Project Results Framework (Annex A) on an annual basis, during the PIR process, in addition to the usual GEF Core Indicators (mentioned at the top of the table above).

At the global level, a steering committee led by the United Nations Environment Programme will coordinate and monitor the implementation and the outputs of the GEF 7 Electric Mobility Programme. On technical gaps, four thematic working groups at the global level will support the rapid introduction of electric mobility in GEF recipient countries. These working groups will generate universal knowledge products that contain best practices, factsheets, interactive tools and guidance, as

well as experiences from countries that have advanced their e-mobility market. The working groups will be integrated by representatives from the global programme regional platforms, GEF-7 countries, IEA, vehicle manufacturers, utilities, researchers and the civil society. The governance structure is presented in the figure below.



Governance structure between the global programme, the national e-mobility projects, and the regional Support and Investment Platform:

The coordination between the global program, the steering committee, the thematic working groups, and the national projects will be facilitated by the regional Support and Investment Platform. The role of the regional platform is to provide customized technical assistance to ensure the success of the country projects. Moreover, knowledge products developed by the working groups will be adapted and disseminated by the regional platform according to the regional and national context, specific needs and languages.

The 4 Support and Investment Platform will interact with and support participating countries in the region to link with each other through the following activities:

- The creation of a community of practice for the GEF 7 regional countries;
- Facilitation of knowledge transfer between countries, and regions, especially those with common characteristics like SIDS;
- The creation of thematic groups in light-duty vehicles (LDVs), 2-3 wheelers, and buses at regional level;
- A marketplace between countries, technology providers and financial institutions;

- Help desk for technical assistance to GEF 7 countries;
- Personalized assistance from international experts in electric mobility;
- Generation of training sessions and workshops.

The national child projects will generate a learning curve on electric mobility that can be transferred to other countries within and outside of the region through the global programme. As a first contact point, the regional Support and Investment Platform will facilitate the flow of learnt lessons from child projects, such as: data and demonstration results, working business models, operational know-how, working financial instruments, and working policies and regulations. At the global level, the scenarios proposed to share country knowledge and experiences on electric mobility are the thematic working groups, while at the regional level the countries will participate in the community of practice, the thematic regional groups, the marketplace, trainings and workshops.

The project in St. Lucia will benefit the Regional Support and Investment Platform and the Global Programme through its five key elements:

1. Platform. Information on the St Lucia project's experiences, good practices and lessons learned will be stored on an online toolbox that will act as repository of knowledge products, as key information for the consideration of other countries and actors in the region and beyond. Such information will be publicly available on the platform and also diffused through reports, flyers, presentations, webinars and social media content developed by the regional and international programme teams.

2. Community of practice and task teams. Tasks teams on LDVs, batteries, and charging infrastructure will draw on the experiences, good practices and lessons learned from St Lucia, supporting them in developing recommendations for other countries in the region and beyond.

3. E-mobility marketplace. St Lucia's experiences in engaging with electric vehicle suppliers and financial institutions will support regional marketplace activities by encouraging such actors to participate in marketplace activities. Furthermore, such private sector experiences will be shared with other private sector actors in the Caribbean as a way of encouraging them to also participate in the scale up of electric mobility through learning from the experiences of others.

4. Regional e-mobility training. The development of training curriculum will draw upon and be updated based on the experiences, good practices and lessons learned from the St Lucia national project.

5. Help desk and onsite / virtual meetings. Similarly, the help desk will draw upon and continue to improve its support services based on a dynamic consideration of the experiences, good practices and lessons learned from the St Lucia national project.

St Lucia will concretely benefit from the global thematic and regional support and investment platforms in the following way:

1. Platform. The platform will serve a function for St Lucia in two ways. On the one hand, it will support the country to access international best practice knowledge products, developed by the Global Thematic Working Groups, that it can draw upon in designing and executing project interventions. On the other hand, it will support St Lucia to disseminate to a broad Caribbean regional and international audience its ambitious advances on electric mobility, creating a positive political feedback loop that will encourage it to further advance and accelerate efforts.

2. Community of practice and task teams. The community of practice will bring to the forefront the main barriers being faced to develop and scale-up e-mobility projects in the region as well as the main lessons learned for successful execution of these initiatives. The community of practice will create task teams on LDVs and batteries that will support St Lucia to identify good practices in the undertaking the detailed pilot design (component 2) and enhancement of business models for scaling up electric vehicles (output 3.2). They will also support in providing input on effective design of updated legislation on end-of-life vehicle management under component 4.

3. E-mobility marketplace. The marketplace will play a key role in supporting St Lucia to scale-up its interventions on public procurement of electric vehicles. These events will serve as opportunities for the country to share information on its interventions and connect with private sector actors interested in building upon the project pilot's to take it to the next level, including developing business models under output 3.1.

4. Regional E-mobility Training. The platform will support St Lucia to develop capacity and strategies to plan the pilot project and the large-scale market introduction of electric vehicles. In the first training, experts from the electric light duty vehicle working group will be invited to train the country stakeholders on the requirements and considerations of developing demonstration projects, including as related to accompanying policies and standards. The second training will focus on the challenges and issues to be considered when operating and maintaining EV fleets including grid integration, state of health of batteries and their second-life use, disposal and or recycling, especially important for component 4.

Help desk and onsite / virtual meetings. At St Lucia's request, a help desk will support the country to develop any aspects of the project. This may include pilot design, policy analysis, identification of techniques on stakeholder consultation, and enhancement of financial instruments. Moreover, at the country project team's request, the platform staff will plan onsite or virtual meetings with the country teams to take stock of progress, help with initiating and planning the pilots and providing technical support as required by local stakeholders.

2. Stakeholders

Please provide the Stakeholder Engagement Plan or equivalent assessment.

The Stakeholder Engagement Plan (SEP) is designed to ensure effective engagement of all relevant stakeholders throughout the project lifecycle in Saint Lucia. This plan builds upon the interviews and workshops conducted during project preparation. The project will aim at maintaining fluid and two-way dialogue with the relevant national and local government institutions and agencies, the private sector, and civil society for national activities, as well as with local and international NGOs, the international community and other participating countries at the global programme level.

Legal requirements for public consultation in Saint Lucia

For this project, public consultation will follow any relevant national guidelines and the GEF Guidelines,[1] which require that all GEF-funded projects meet best international practice and specifically the requirements for stakeholder engagement and public consultations. The project stakeholder engagement activities will be robust, and disclosure of information will be made in order to promote better awareness and understanding of its strategies, policies and operations. During disclosure, the project will: (1) identify people or communities that are or could be affected by the project as well as other interested parties; (2) ensure that such stakeholders are appropriately engaged on environmental and social issues that could potentially affect them, through a process of information disclosure and meaningful consultation; and (3) maintain a constructive relationship with stakeholders on an on-going basis through meaningful engagement during project implementation. The stakeholder consultations will be an on-going process taking place during the project life and will ensure that stakeholders are informed about environmental and social consequences of the project implementation and ensure the opportunity for feedback.

Identification of stakeholders for engagement and methods of communication

In order to ensure inclusive participation and consultation, the following stakeholders have been identified for consultation. The list includes the identified social groups that are associated with the project in different ways: those directly or indirectly engaged in the outcomes of project implementation; those directly or indirectly participating in the project, and those with a capacity to influence and decide on project implementation and outcomes.

- National government. The Department of Sustainable Development (DSD), the Ministry of Infrastructure, Ports, Energy and Labour, through its Renewable Energy, Public Utilities Division and Electrical Departments, and the Department of Economic Development, Civil Aviation and Transport through its Transport Division have prioritized e-mobility within their policies to reduce climate change emissions and increase energy efficiency in the transport sector. Other ministries identify some opportunities, such as urban development regulations (Ministry for Economic Development, Housing, Urban Renewal, Transport and Civil Aviation). The National Utilities Regulatory Commission (NURC) is in charge of the regulation of electricity supply services in Saint Lucia pursuant to the National Utilities Regulatory Commission Act of No.3 of 2016.
- The local government of Castries is engaged in implementing, in partnership with the national government, its strategic plan “Vision 2030”, which includes actions for the improvement of the public space, including public transport stops, and the mobility conditions of non-motorized transport modes.
- Public Transport Route Associations and National Council on Public Transport (NCPT). These are the key partners in the project effort to improve public transport quality and to introduce larger buses, where EVs can be a feasible alternative. These partners are expected to be interested in improving public transport quality to attract more customers, and in knowing EV as an emerging technology, with lower operating costs and higher reliability.

- The financial sector is a key project partner to facilitate the access of operators to EVs. The Saint Lucia Development Bank, re-established by Parliament Act No. 12 of 2008, provides finance for the expansion and strengthening of the economic development of Saint Lucia. The Bank of Saint Lucia, a subsidiary of East Caribbean Financial Holding Company (ECFH), provides development banking services on the island, which could include financial support to the electrification of public and private fleets. As EV provide a substantial reduction in operating costs in exchange of higher upfront capital costs, it offers a significant business opportunity to the financial sector to develop appropriate loans and leasing schemes. The Saint Lucia Development Bank and the Bank of Saint Lucia will be invited to participate in the project, and the Bankers Association and Credit Union Associations, as well as private banks, will be invited to project activities.
- EV dealers and importers are essential for the deployment of EV in Saint Lucia. The project includes as partners the official national dealers and importers of global EV producers. For them, the project provides an opportunity to enter a fast-growing market, in accordance with public and private fleet renewal forecasts.
- LUCELEC is the sole electricity utility in Saint Lucia. Its main shareholders are Emera (Saint Lucia) Limited, First Citizens' Bank Ltd, National Insurance Corporation (20% each), Castries Constituencies Council (15.5%) and the Government of Saint Lucia (10.05%); the remaining shares are distributed among a large number of minority shareholders. The project provides an opportunity to increase electricity demand at a time in which the country is implementing its National Energy Transition Strategy (NETS), increasing the share of renewables (a 3MW solar farm already operational and a 10 MW solar farm and a 12 MW wind farm projects in the pipeline). LUCELEC is expected to play a key role in the development and implementation of the national e-mobility strategy, the provision of public charging stations and the promotion of e-mobility. LUCELEC will benefit from the project's support to consolidate new market opportunities, such as infrastructure charging or EV leasing concepts based on energy provision.
- Public and private managers of large car fleets are the key stakeholders targeted by the project for its demonstration and upscaling activities. They include the GoSL's procurement services, the police, MASSY, LUCELEC and the participating delivery companies.
- The higher education system in Saint Lucia includes the Sir Arthur Lewis Community College and the regional University of the West Indies, which operates in St Lucia through the University of the West Indies Open Campus. These academic institutions are keen in participating in the project, providing their knowledge and looking for upcoming challenges to accommodate e-mobility technologies within their curricula and their research agendas.
- The Civil Society Organizations Coalition for Sustainable Development in Saint Lucia or Coalition of Civil Society Organizations (CCSO) is a network of associations involved in diverse areas of interest throughout Saint Lucia. The coalition was established as a platform for engaging civil society as equal partners with the public and private sectors in the sustainable development of Saint Lucia and will facilitate the project's contact with grassroots associations and civil society stakeholders active in urban mobility from different sensitivities: the environment, gender, urban living conditions, social equity, safety and security.

During its planning stage, the project has organized one design workshop in October 2019 and a final validation workshop in February 2020. Interviews with all the stakeholders identified above have taken place in order to identify their concerns and priorities and to integrate their know-how. As a result, the project is taking appropriate responsive measures throughout its lifespan to consolidate and maintain the wide current support built up during the planning stage. As a result of the project design activities, the interests and concerns of the key stakeholder groups have been identified and are presented in the table below.

Stakeholder group	Key expectations	Key concerns	Recommendations for project implementation
National government	Project supports policies on climate change mitigation, energy efficiency and sustainable transport. National e-mobility strategy delivered by the project	Fiscal costs of policies incentivizing EV. Impacts on the electricity sector (infrastructure, tariffs).	An institutional coordination body is needed for the various activities developed by different governmental services on e-mobility

	Quicker deployment of EV in Saint Lucia		
Local governments	Improvement in quality of service of public transport and taxis. Improved air quality. Guidance on installation of charging points.	Public's acceptance of EVs Compatibility of EVs with urban development strategy (Castries Vision 2030)	Involvement of local governments in PSC. Regular coordination of project activities at local level.
Vulnerable social groups	Affordable mobility services, better tailored to the particular needs and priorities of women and vulnerable social groups. Women benefit from new jobs associated to e-mobility.	E-mobility increases public transport fares, primarily affecting women and disadvantaged social groups – the major users of public transport- or focuses on affluent users.	Involvement of women and vulnerable groups in key project deliverables. Project's training activities tailored to women and vulnerable groups, when relevant.
Public and private car fleet managers	Support to access EV technologies at reasonable costs, in order to benefit from lower fuel consumption and maintenance. Capacity building on EV technology, its potential and limitations, as well as on fleet management.	Higher upfront costs of EV. EV availability and maintenance support. Range reliability. Charging options.	Request for proposal for selection of EV providers, including maintenance during vehicle life span.
National Council on Public Transport (NCPT) and public transport route associations	Improvement of public transport service quality and support to access EV technologies at reasonable costs, in order to benefit from lower fuel consumption and maintenance. Capacity building on public transport operations and EV technologies.	Impacts of public transport reforms on revenues and employment. Affordability of EVs and impact on operational costs. Professional training needs. Additional investment needs.	Deliverable on public transport policy produced through a co-creation process actively involving operators and NGOs, and based on international best practice.
Taxi associations	Support to access EV technologies at reasonable costs, in order to benefit from lower fuel consumption and maintenance. Capacity building on EV technolog	Uncertainty on the commercial feasibility of EVs compared to current large crew vans and cars in taxi services. Affordability of EVs and training nee	Deliverable on taxi policy produced through a co-creation process based on international best practice.

	y, its potential and limitations.	ds. Availability of charging infrastructur e	
Financial sec tor	New financial schemes and busine ss opportunities associated to e-m obility	EVs more expensive, with uncertaint ies and limited experience in key iss ues such as reliability or lifespan. Li mited experience in and knowledge on financing EV acquisitions.	New business models develo ped. Technological-risk reduced thr ough demonstrations
EV dealers a nd importers	Clear EV regulations established	Anarchic market competition of ICE vehicles and EV due to lack of or ina ppropriate regulations.	Stakeholders' involvement in t he development of the projec t's regulatory proposals.
Electricity uti lity (LUCELE C)	Increased electricity consumption outside peak demand period. New business opportunities linked to charging infrastructure and serv ices.	EV market developing without clear regulations, and imposing additional burdens on LUCELEC	Charging infrastructure and a ctions in the electricity sector included in the national e-mob ility strategy.
Academia	New research and educational opp ortunities linked to EV	Insufficient research resources and l imited ability of the project to influen ce on this	Networking with other project s and research partners within the e-mob programme.
NGOs and ci vil society or ganizations	Implementation of sustainable mo bility practices in Saint Lucia. Impr ovement of urban mobility conditio ns of vulnerable groups and wome n.	EV focus could compete for scarce r esources and efforts with other prior ities in sustainable mobility needs (p edestrians, car restrictions…).	The project approach intends to mobilize additional resourc es and efforts from private st akeholders

Additionally, the expectations and concerns of transport sector workers and vulnerable groups have been identified during the project preparation and validation workshops:

- Poor working conditions in the public transport sector, including road safety (high accident risk on Saint Lucia's roads), security concerns (cashless tickets would reduce this to some extent, but have not been introduced due to structural issues), and uncertainty linked to the eventual transition to larger EV buses (as drivers get their income partially from the fares collected from users, and this system would need to change if large buses are introduced).
- Vulnerable groups tend to live farther away from bus stops, with difficult and at times unsecured access to them; the affordability of public transport is also an issue for vulnerable groups, as subsidies are not generally available, as well as to the accessibility to the vans and small buses currently used, in the case of disabled people.

The existing activities already undertaken or envisaged by key stakeholders are identified in the table below. Based on this information, their potential contributions to the project components are also identified.

Stakeholder main group	Stakeholder name	Existing activities with potential to be leveraged	Content engagement, contributions to the project (identified by Component)
National government	Department of Sustainable Development (DSD)	Implementation of NDC	Component 1: e-mobility strategy, coordination body, training activities.
	Renewable Energy and Public Utilities Division	Implementation of NETS	Component 1: e-mobility strategy, coordination body, training activities.
	National Utilities Regulatory Commission (NURC)	Implementation of NETS	Component 1: e-mobility strategy, coordination body, training activities.
	Transport Division	Formulation and implementation of an Integrated, Sustainable Road Transport Policy and Strategic Roadmap for Implementation	Component 1: public transport strategy, e-mobility strategy, coordination body, training activities. Component 2: MRV system Component 3: regulatory and tax reforms
	Ministry for Economic Development, Housing, Urban Renewal, Transport and Civil Aviation	Implementation of Castries Vision 2030 Revision and implementation of the National Vision Plan	Component 1: e-mobility strategy
	SLSWMA	Solid waste management sector assessment and reform	Component 4: analysis and reform of ELV management; regulations on management of batteries and EV components
Local governments	Local government of Castries	Implementation of its strategic plan “Castries Vision 2030”. Regulation of permits for the installation of public charging stations.	Component 2: demonstrations (charging stations) Component 3: regulatory reforms.
Public and pri	Ministry of Finance,	Annual fleet procurement plan	Component 2: demonstration of e-cars in the gove

vate car fleet managers	Financial Administration Unit	s. Fleet management improvement	rnment's fleet. Component 3: financial model for the electrification of the government's fleet
	MASSY	Procurement of commercial vans for distribution	Component 2: e-vans included in the demonstration
	FedEx	Procurement of commercial vans for courier and delivery services	Component 2: e-vans included in the demonstration
	Hotel Association	Procurement of cars and other vehicles for customers' services	Component 3: Development of business and financial models.
NCPT and public transport route associations	NCPT	Improvement of working conditions and service quality. Public transport regulatory reform	Component 1: Public transport policy Component 3: Financial and business models
	Route Association 1 A	Optimization of services	Component 1: Public transport policy Component 3: Financial and business models
	Route Association 1 B	Optimization of services	Component 1: Public transport policy Component 3: Financial and business models
	Route Association 2 H	Optimization of services	Component 1: Public transport policy Component 3: Financial and business models
Taxi associations		Awareness on EV technologies	Component 1: Public transport policy Component 3: Financial and business models
Financial sector	Bank of Saint Lucia	Vehicle loans to companies and transport operators. Vehicle leasing?	Component 3: Financial and business models Component 4: Financial and business models
EV dealers and importers	Nissan	Awareness on EV technologies and manufacturers' deployment strategies	Component 1: Regulations on technical approval and taxes Component 2: Procurement of EV for demonstration. MRV

			Component 2: EV driving and maintenance training. Component 3: Financial and business models; promotion of national e-mobility network Component 4: Implementation of sustainable ELV management
	Beachcomber	Awareness on EV technologies and manufacturers' deployment strategies	Component 1: Regulations on technical approval and taxes Component 2: Procurement of EV for demonstration. MRV Component 2: EV driving and maintenance training. Component 3: Financial and business models; promotion of national e-mobility network Component 4: Implementation of sustainable ELV management
	JQ Motors	Awareness on EV technologies and manufacturers' deployment strategies	Component 1: Regulations on technical approval and taxes Component 2: Procurement of EV for demonstration. MRV Component 2: EV driving and maintenance training. Component 3: Financial and business models; promotion of national e-mobility network Component 4: Implementation of sustainable ELV management
	Car importers	Importing e-cars in Saint Lucia	Component 1: Regulations on technical approval and taxes Component 2: Procurement of EV for demonstration. MRV Component 2: EV driving and maintenance training.

			Component 3: Financial and business models; promotion of national e-mobility network Component 4: Implementation of sustainable ELV management
Electricity utility	LUCELEC	Investment in renewable electricity generation Deployment of public charging stations Expansion and management of its own EV fleet	Component 1: e-mobility strategy Component 2: public charging stations as part of the demonstration Component 3: Development of business and financial models. Component 4: Regulations for re-use of car batteries for energy storage.
Academia	Sir Arthur Lewis Community College	Professional training on e-mobility	Component 1: E-mobility training to stakeholders Component 2: EV driving and maintenance training. Component 2: MRV and evaluation of demonstrations Component 3: Promotion of national e-mobility network Component 4: ELV management training
	University of the West Indies	Professional training on e-mobility	Component 3: Promotion of national e-mobility network
NGOs and civil society organizations	CCSO	Social equity and gender issues in mobility	Component 1: e-mobility strategy; PT policy. Component 3: Regulatory and tax reforms
International Donors	UAE- IRENA-Caribbean Renewable Energy Fund	Deployment of a solar farm in the vicinity of the airport	Component 1: e-mobility strategy Component 2: demonstration (charging stations)

[1] GEF (2014). Guidelines for the Implementation of the Public Involvement Policy. Accessed at http://www.thegef.org/sites/default/files/council-meeting-documents/39_EN_GEF.C.47.Inf_.06_Guidelines_for_the_Implementation_of_the_Public_Involvement_Policy_4.pdf in December 2019.

In addition, provide a summary on how stakeholders will be consulted in project execution, the means and timing of engagement, how information will be disseminated, and an explanation of any resource requirements throughout the project/program cycle to ensure proper and meaningful stakeholder engagement.

Stakeholders will be consulted in project execution through different channels, in accordance with their profile:

- Stakeholders from the national government will participate as full members of the Project Steering Committee (PSC) (meetings foreseen at least once per year). A representative from the Coalition of Civil Society Organizations (CCSO) will also participate as a full PSC member.
- The other stakeholders (including non-governmental participants and observers in the coordination body established by Component 1) will be invited to participate as full members in the project working groups (meetings foreseen at least quarterly), in accordance with their area of interest, and as observers at the PSC meetings. Further information on the steering committee is available in section 6 and annex K.

Project information will be available to stakeholders through the project website envisaged in D.1.4.1. The project will endeavor to make information available to stakeholders and to the public, so that they can know the environmental and social risks and impacts associated with the project, as well as the opportunities it provides. Project data will enable them to take better-informed decisions on e-mobility. The project will provide disclosure and consultation on the project's environmental and socio-economic performance to all stakeholders through project briefs and annual reporting, available in the project website. The project will also provide:

- An update on the project achievements and its contributions to enhancing transparency.
- An overview of the stakeholder engagement process and how affected parties can participate and provide feedback through meetings or other channels.
- Project impacts and how the government is using the project data to enhance the mobility of Saint Lucia residents and to reduce national GHG emissions.

Select what role civil society will play in the project:

Consulted only; No

Member of Advisory Body; Contractor;

Co-financier;

Member of project steering committee or equivalent decision-making body; Yes

Executor or co-executor;

Other (Please explain)

3. Gender Equality and Women's Empowerment

Provide the gender analysis or equivalent socio-economic assesment.

Gender analysis

The Government has ratified a number of international conventions related to the rights of women, including the Convention on the Elimination of All Forms of Discrimination against Women (CEDAW) (accession 8 October 1982), and the Inter-American Convention on the Prevention, Punishment and Eradication of Violence Against Women ("Convention of Belem de Para", ratified 8 March 1995). It has not signed nor ratified the 1999 Optional Protocol to the Convention. Saint Lucia has also ratified the following fundamental International Labour Organization (ILO) conventions such as the Equal Remuneration Convention, 1951 (No. 100, ratified 18 August 1983) and the Discrimination (Employment and Occupation) Convention, 1958 (No. 111, ratified 18 August 1983). The country also has been involved and upholds key international and regional instruments related to the advancement of women, including the Nairobi Forward-looking Strategies for the Advancement of Women (1985); the Beijing Declaration and Platform for Action (1995); the Millennium Development Goals (2000); and the Strategic Plan 2016–2021 of the Inter-American Commission of Women (CIM 2011).

While the country's constitution provides for protection before the law regardless of sex, the definition of discrimination against women as defined in Article 1 of CEDAW is not explicitly stated. The UN CEDAW Committee has urged constitutional reform so as to include the definition in the Constitution or other national legislation. Relevant legislation includes the Domestic Violence (Summary Proceedings) Act Chapter 4.04 "2005 Rev", and the Criminal Code (Chapter 3.01 "2005 Rev") in what refers to sexual offences. Sexual harassment is also not adequately addressed, as it is only considered as an offence in the workplace (Equality of Opportunity & Treatment in Employment & Occupation Act of 2001).

The Gender analysis has taken into considered the general context sketched above, and is based on the information provided at the stakeholder workshops held in October 2019 and February 2020, as well as the feedback received during stakeholder consultations. It also makes use of the information provided by the following country gender reviews:

- Ranjitsingh, Aleah N. (2015). Country Gender Assessment St. Lucia. Presented to Caribbean Development Bank.
- Ministry of Education, Innovation, Gender Relations and Sustainable Development (2019). Voluntary National Review (VNR) on the implementation of the 2030 Agenda for Sustainable Development at the High-level Political Forum on Sustainable Development (HLPF).
- Government of Saint Lucia (2019). Report on the Comprehensive National Level Review of the Status of Implementation of the Beijing Declaration and Platform for Action.
- Government of Saint Lucia (2016). Thirteenth Session of the Regional Conference on Women in Latin America and the Caribbean. Country Report of Saint Lucia.

Furthermore, the Gender Relations Division within the Ministry of Education, Innovation, Gender Relations and Sustainable Development is presently implementing the Caribbean Development Bank (CDB) supported project "Mainstreaming Gender Equality in Saint Lucia's National Sustainable Development Plan. The aim of the project is to enhance the capacity of the Government of Saint Lucia to systematically address gender equality priorities in its planning and programming processes.

The project outcomes provide a good basis for mainstreaming gender within the project institutional and policy-related actions, particularly the National e-mobility Strategy and the Sustainable and Safe Passenger Mobility Policy (component 1).

The multiple roles, including the disproportionate responsibility for caregiving, often assumed early in life, has contributed to limited access to various opportunities for women to pursue education and skills training and participation in the job market. A pervasive gap in the unemployment rate of women and men has remained in the last decade (in 2018, 22.1 % of women unemployed compared to 18.5 % of men). Some economic sectors including “transportation and storage” remain relatively closed to women: whereas 45.0% of all jobs in the country are occupied by women, this percentage falls to only 12.8% in the transportation and storage sector.

In accordance with ECLAC’s Gender Equality Observatory for Latin America and the Caribbean[1], women occupy 20% of ministerial positions the Saint Lucia’s Cabinet, 16.7% of the seats in the national legislative bodies. The percentage of women in governmental bodies varies widely among ministries: 34% in average, with more than 70% in some Departments like Justice or Finance and less than 30% in Home Affairs.[2]

The educational attainment is higher for women than for men in Saint Lucia (Ranjitsingh, 2015). In particular, for tertiary education, women account for 64% of all the students enrolled in Sir Arthur Lewis Community College; however, this percentage decreases to 48% for technical education and management studies. However, this does not translate in terms of women reaching decision-making positions in the public and private sectors.

The project undertakes an affirmative action policy to give priority to women in accessing to capacity building and training activities and establishes gendered targets in this area.

Sexual harassment and violence remain a pervasive challenge in Saint Lucia. In accordance with the GoSL report,[3] there is a high incidence of reported cases of violence against women and children in Saint Lucia; of particular concern is the alarming number of reported cases of rape of females of various ages in communities around the country. However, after peaking in 2017 (435 offenses reported or detected), sexual offenses have decreased in 2018 (334 offenses reported or detected).

The availability of gender-sensitive information in the transport sector is low. During the project design, it was possible to obtain the number of women driving minibuses in the public transport system (just 5 of a total of 1294), and for the number of driving licenses issued to women in the last six months (just 33% of the total), but not for other key indicators such as the number of taxi licenses held by women, or the number of cars and other vehicles owned and registered by women. There was no information on the percentage of women making use of public transport services or the number of women involved in traffic accidents for the different categories (and particularly for the more vulnerable ones, like pedestrians). During the gender workshop, participants agreed that women working in the tourism industry have difficulties to safely get home, if they do not have access to a car or employers do not provide them with transport shuttles, as public transport is unreliable and even non-existent after 5-6 pm in many routes. There was also agreement in the fact that for many average women it takes longer to get a loan to buy a car than it is for men of a similar economic profile.

The qualitative information provided during bilateral meetings and workshops was consistent in highlighting the following traits:

- Women's mobility in Saint Lucia is characterized, as in many other countries, with a higher percentage of chained trips and accompanying trips than in the case of men; women's mobility is jeopardized with lower car ownership compared to men, and with the poor quality of public transport.
- The low participation of women in jobs provided by the transportation sector can be linked to working conditions, and a hostile environment for women (e.g. security issues and cash-handling in public transportation). EV features (for drivers) can be more appealing to women than the vehicles currently used in the public transport sector, as they provide advanced driving assistance and require less physical effort while driving on the hilly roads of the island.
- Adequate accessibility to working places is a critical issue in the service (including tourism) sector; many women work in these sectors, many times in low-wage jobs, with no access to a private car. The project could provide some recommendation to improve women's access to these jobs, for example through legal obligations to employers to provide better transportation to their staff.
- Access to financing is also harder (and longer) for women, which makes it more difficult for women to get a car loan, for private use or for business.

There is no information available in Saint Lucia on transport demand and therefore there is no data on gender differences in mobility. Considering the prevailing patterns in other countries in the region[4] and the limited evidence collected on employment, it can be reasonable to assume that the project will need to face both a "mobility gap" and a "job gap" concerning gender mobility challenges in Saint Lucia:

- The mobility gap is related to the low quality of public transport services compared to car use. Circulation and parking restrictions to car use are rare. Minibuses do not have reserved lanes and do not follow a reliable schedule. This gap in the quality of mobility conditions between cars and public transport is likely to be disproportionately suffered by women and other social groups without access to private car use. The gender gap in mobility conditions implies that many women will face long travel times to reach jobs and social services. The gender mobility gap is sustained by widespread acceptance of the privileges of car users, in spite of their social and environmental consequences.
- Violence against women is likely to be favored by poor public transport services; for instance, physical contact in minibuses, waiting at stops poorly lighted and protected, and lack of services outside peak hours (long waiting times in poor lit stops). All these conditions are likely to increase the perception of insecurity by women travelling in public transport in Saint Lucia.
- The job gap can be linked to a conservative management culture in the transport sector, including service operators in the taxi and public transport sector. On the one side this conservative culture has been unable to attract additional passengers, even in a context of population growth; on the other hand, the resistance to change can also explain the low share of employed women in the sector.

The current operational conditions of the public transport system are also poorly suited to cope with many women's needs. Operations have been designed historically to cope with the needs of daily home-to-work trips at peak hours. As such they perhaps do not adequately address mobility needs in Saint Lucia related to social reproduction (household shopping, socializing children or providing support to dependent adults); there is wide evidence[5] that these trips are frequently chained by users, and are poorly served by the existing public transport system.

Primary potential risks of the project

The information collected allows to conclude that the transportation sector remains strongly male-dominated at the decision making and labor levels, and that the particular mobility needs and expectations of women compared to men are not sufficiently considered. Without effective consultation and inclusion of women in project activities, the introduction of EV could serve to:

- Consolidate the current gender imbalance, as the new technology would be implemented in a male-dominated context in which it is likely to be used to serve primarily the mobility needs of those already enjoying better mobility conditions.
- Facilitate the development and implementation of policies and strategies on public transport that are not gender-sensitive, locking-in the existing male-dominated hegemony and approach on public transport systems.
- Facilitate the development of an EV charging station network that does not consider the modal use of women in using private vehicles.
- Continue to promote unsafe conditions for women in public transport systems, if a gender-inclusive and gender-sensitive approach is not adopted in both design and implementation of the policies and strategies.
- Introduce ineffective business models and financial mechanisms which do not take into consideration how women access financial products and instruments, particularly in the Caribbean.
- Introduce negative health impacts on women and children, due to soil contamination by the inappropriate disposal of vehicles and batteries at their end of life, if women are not involved effectively in design and implementation of policies and strategies on end-of-life vehicle management, including EVs.

Opportunities

However, the introduction of EV technologies can also be transformative, serving as an opportunity to implement changes, so that EVs improve the mobility conditions of women (implementing vehicles in mobility services used by women), and to facilitate a more balanced access to transportation jobs (targeting driving, maintenance and fleet management training on women during project activities). By involving women effectively in project design and implementation, and ensuring that interventions are gender sensitive, the project may support the introduction of increased economic opportunities for women in the transport and electricity sectors and support a just-transition of the workforce from existing high-emission technologies. The project MRV system can also serve to introduce gender-sensitive indicators within national transport statistics.

Gender Action Plan:

Implementation of the gender action plan has been embedded within the project structure as follows:

- The integration of gender issues within public policies addressing e-mobility will be developed through component 1, output 1.2 and output 1.3, and a consultancy on gender analysis and action plan has been budgeted to support this. The Sustainable Passenger Mobility Policy will provide the factual evidence and the appropriate actions to mainstream gender issues in transport policy. The discussion above suggests that women may be more concerned about safety and personal security; furthermore, women tend to have less access to different transport options, and tend to have multiple purposes in their trips, many times during off-peak hours, to accommodate the conflicting needs of work, household and childcare. Transport quality- related topics of high relevance for women probably include off-peak service quality, convenient transfers, and good coverage of key destinations by the network. The project intends to explore these challenges in order to define future public transport quality priorities from a gender perspective. The e-mobility strategy provides the adequate framework for a comprehensive consideration of the opportunities and challenges associated with the deployment of EVs to advance equality between women and men and to improve the mobility conditions, employment opportunities and empowerment of women.

- The alignment of the characteristics of EVs with women's priorities and needs is addressed within component 2, output 2.1. The guidelines prepared for the project demonstrations are expected to facilitate the involvement of women within the demonstrations as EV fleet managers, drivers or in maintenance provision.
- Access to jobs in the transport sector is addressed within component 2, output 2.3, supporting the involvement of women in EV operations, and in component 3, output 3.2, in which the guidelines for transport operators are expected to include considerations on the need of a corporate strategy to facilitate women's access to jobs in the future. Current barriers to jobs in the transport sector for women have been discussed during project design, although few conclusions can be advanced at this stage: these barriers are probably associated to tradition, to conservative management and to unfriendly working environments, as in many other countries. A pro-active strategy has been agreed, so that the introduction of electric vehicles (EVs) is taken as an opportunity to foster women participation in jobs by giving priority to women for accessing the new jobs linked to EV (driving, maintenance and management) in the companies associated with the project pilots. The project should facilitate further streamlining of policies to facilitate the access of women to jobs in the transport sector based on these pilots and replication activities. At the upscaling stage after project completion, the public transport sector should benefit from providing a working environment more attractive for women, as their communicative and people-oriented skills can be of great value to improve the quality of the service.

Gender-oriented actions will be conducted by the Chief Technical Advisor (CTA) with the following partners:

- Government of Saint Lucia, particularly the units exploiting the new EV during the demonstration.
- The Ministries in other governmental institutions responsible for the design of public policies in the areas of passenger transport, energy efficiency and sustainable development.

The following activities addressing gender issues have been included in the project:

- Project Component 1:
- Output 1.2. The preparation of the Sustainable Passenger Mobility Policy will include a gender analysis and action plan in order to mainstream gender since the first preparatory stages of this policy document.
- Output 1.3. The preparation of the e-mobility strategy will include a gender analysis and action plan in order to mainstream gender since the first preparatory stages of this policy document.
- Output 1.4. Training of civil servants on e-mobility and the regulatory and fiscal incentives will prioritize female civil servants.
- Project component 2:
- Output 2.1 and 2.2. The preparation of the guidelines for the design of the e-mobility pilots will address considerations on the potential contribution of EVs to improve the mobility and working conditions of women.
- Output 2.3 provides professional training. These training activities will target in priority women, as a way to facilitate their access to the new jobs generated from the deployment of electric vehicles.
- Project component 3:
- Output 3.2. EV procurement guidelines will target transport operators and fleet managers and will include considerations on mainstreaming gender issues within their recruitment strategy, training plans and companies' business models for future expansion.

In terms of budget, besides budget line 1203 (Consultancy on Gender Analysis and Action Plan), 15% of the budget lines 1202 and 1205 is now dedicated (as mentioned in the ToR) to gender issues. As an effect of the affirmative action on training, it can be expected that at least 25% of budget lines 1201 and 1208 will benefit women. This amounts to USD 57,162.

This approach is expected to be sustained after project termination through the inclusion of the project's recommendations within the practice of the national government and urban public transport authorities, as well as within the private sector.

The proposed project monitoring approach includes some gender-sensitive indicators within the Project Results Framework (PRF), which will provide the necessary information for monitoring the Gender Action Plan:

- Indicators 1.2 (delivery of national sustainable passenger mobility policy) and 1.3 (delivery of national e-mobility strategy) include as a mid-point target the completion of a gender analysis and action plan for the draft strategy.
- Indicator 1.4 will provide the number of women and men working for the government as civil servants and receiving training on the legal and fiscal dimensions of the promotion of e-mobility.
- Indicator 2.1 will provide the number of female drivers on EV vehicles.
-
- Indicator 3.2 (government's EV procurement guidelines) includes a mid-point target on the inclusion of women's quality priorities within the draft document.
- Indicator 4.3 (number of women and men professionally trained on end-of-life EV management) include gendered mid-term and final targets.

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[1] https://oig.cepal.org/en

[2] Data for 2011 as reported at Ranjitsingh, Aleah N. (2015). Country Gender Assessment St. Lucia. Presented to Caribbean Development Bank.

[3] GoSL (2016). Thirteenth Session of the Regional Conference on Women in Latin America and the Caribbean. Country Report of Saint Lucia.

[4] E.g. ECLAC (2019). Gender determinants in urban mobility policies in Latin America.

[5] ECLAC (2019). Gender determinants in urban mobility policies in Latin America. FAL Bulletin 371.

Does the project expect to include any gender-responsive measures to address gender gaps or promote gender equality and women empowerment?

Yes

Closing gender gaps in access to and control over natural resources;

Improving women's participation and decision making Yes

Generating socio-economic benefits or services or women

Will the project's results framework or logical framework include gender-sensitive indicators?

Yes

4. Private sector engagement

Elaborate on private sector engagement in the project, if any

The project is engaging the private sector in a variety of ways:

- As project beneficiary: project's activities are expected to increase demand for EV in Saint Lucia, to the benefit of car-dealers and importers interested in trading and providing maintenance services to EV. Furthermore, these stakeholders will benefit from additional supporting actions from the project, such as the development of business and financial schemes, which should be instrumental for developing their own market strategies.
- Owners of private fleets will benefit from the project's demonstration and other supporting actions to transition towards the progressive introduction of EVs in their own fleets. Initially, the project is engaging a few of these companies as project partners (Massy, FedEx and other companies in the Courier & Delivery sectors). Companies and individuals in the public transport and taxi sector will also benefit from project activities in order to gain access to the benefits provided by EVs within a more favorable legal and financial framework.

Some private stakeholders will be particularly active as project partners providing co-financing to some project-related activities:

- The UAE Caribbean Renewable Energy Fund is contributing through its renewable power project to build and operate a 750 kW solar carport close to the Hewanorra International airport. There are other renewable energy projects under development in the island, but it is uncertain that they can reach the operational stage during the project life span.
- Some private companies (e.g. Massy) have confirmed their interest to include some EV in their fleets during the project lifetime, and to have them monitored and evaluated within the project's MRV effort.

The private sector is also targeted by most of the capacity-building activities included in the project:

- Capacity building activities within component 1 are targeting decision makers and professionals in the public and private sector, and will focus on the technical advantages of EVs, and their growth prospects.
- Capacity building activities within component 2 will serve to increase the number of drivers and maintenance specialists in the country familiar with EV technologies. This will serve as a strong support for those private companies interested in using EVs.
- Capacity building activities within component 4 will facilitate the involvement of private companies in the management of EVs at their end of life, opening up new business opportunities in this sector.

Finally, the involvement of the private sector in EV policy decision making will be supported by the project:

- The private sector is expected to participate in the new E-mobility subcommittee as well as in the design of the e-mobility strategy and the Sustainable Passenger Mobility Policy.
  The project will support and encourage active private sector stakeholders to network in order to foster the deployment of e-mobility

5. Risks to Achieving Project Objectives

Elaborate on indicated risks, including climate change, potential social and environmental risks that might prevent the project objectives from being achieved, and, if possible, the proposed measures that address these risks at the time of project implementation.(table format acceptable):

Risk table

The potential risks, including climate change, potential social and environmental risks that might prevent the project objectives from being achieved, are presented in the table below, with the proposed mitigation measures to address them at the time of project implementation.

Risk description	Main categories	Risk level rating	Probability and impact	Risk Mitigation Strategy and Safeguards	By Whom / When?
Leadership change: change in leadership and priorities in the government	Political / Institutional	Low	Probability: very low, as there is high political consensus on energy policy and transport electrification. Impact: high, as government's involvement and support are critical for the project	E-mobility is not a controversial political issue, and is expected to gain bipartisan support. E-mobility strategy is developed to formalize such political consensus. However, national elections are foreseen in 2021 and could or could not result in changes in institutional arrangements	Project team to provide E-mob strategy by end Year 1
Higher upfront cost of electric vehicles may pose a barrier to implementation and scale up of activities	Economic	Medium	Probability: low, as the price of EVs is consistently going down. Impact: high, as final users are highly sensitive to high upfront costs compared to low operational costs or environmental advantages of EVs	Study on market scenarios will provide evidence and assess expected decrease of batteries and EVs at the global level. Financial schemes, and regulatory and fiscal incentives developed by the project will include these facts to persuade decision-makers and early adopters.	Project team and GoSL by end Y3
Objection or low commitment from industry (car dealers an	Political / Economic	Medium	Probability: High, as most car dealers and corporate end-users in Saint Lucia are strongly attac	The project will work with those car dealers more open to innovations; project procurement for demonstrations offer a good business opportunity t	Project team by end of Y1

d corporate end-users) to technology changes.			hed to business as usual practices. Impact: Medium, as new players (e.g. new importers) can seize the opportunity to enter an emerging EV market.	o them, and demonstration results will raise EV demand from early adopters on the Island.	
Time lag of results: Major legislation, policies, regulations developed through the project may not be approved by GoSL before the end of the project period.	Political	Medium	Probability: Medium; even if the GoSL is fully aligned with the project and there is wide political consensus, other emerging priorities (such as post-COVID recovery) could slow-down the decision-making process. Impact: high, as the project's sustainability and legacy would be compromised.	The project develops its proposals on regulations, taxes, strategies and policies collaboratively with key stakeholders and delivers them early enough to facilitate legislative or governmental approval. Additional support provided to government to help with adoption of some legislation. Awareness-raising campaigns to gain public support.	Project team. All proposals needing GoSL's approval delivered by 1st quarter Y3.
Inadequacy of the exit strategy and lack of ownership of the program after the end of the GEF funded activities and inability to source resources to continue the program's activities in the medium/long term (including thematic working groups and support and investmen	Political / Financial	Medium	Probability: Low, as there is a global trend towards electrification, and a number of converging projects in Saint Lucia (renewables, energy efficiency, etc.). Impact: Medium, as an inadequate exit strategy and lack of ownership would jeopardize EV deployment and result in a negative image for consumers with delays in the deployment of EVs.	The project provides an e-mobility strategy and subcommittee as the key instruments for project ownership and sustainability. The project encourages the development of revolving-fund schemes in the participating fleets, based on the operating costs saved by EVs. The project provides financial schemes and business models, as well as projections on cost reduction of EVs and when they will become competitive or least cost, to facilitate the sustainability of the fleet electrification effort. The project provides a policy for publ	Project team and GoSL: Subcommittee established by 2nd quarter Y1. Project team delivers financial models by end Y2. Project team establishes national e-mobility network by 2nd quarter Y3

t platforms).				ic transport and taxi sector reforms, that will subsequently facilitate the electrification of these fleets.	
Materials from EVs (e.g. from batteries) generate environmental pollution.	Environmental	Low	Probability: Low; even if waste management in Saint Lucia is facing severe challenges, the salvage value of EV batteries is attractive for recyclers, and demand for second-life batteries is likely to raise associated to the energy transition to renewables. Impact: Low, as the number of EVs mobilized by the project is not high, and ownership is focusing on institutions and corporations.	Recycling and tracking of these materials are integrated into the approach, through component 4, including the prior improvement of ELV management in Saint Lucia. Awareness campaign of ELV management, including batteries	Project team delivering proposals to be adopted by GoSL by end of project
Traditional gender barriers in the transport sector remain, and women are marginalized in accessing new e-mobility jobs.	Social	High	Probability: Medium, as current women participation in the transport sector is very low. Impact: High, as gender-related project objectives would not be achieved.	Specific professional training activities are envisaged within the project, targeting women in priority.	Project team by end Y1.
Higher public transport fares due to additional costs of higher quality services, jeopardizing mobility of low-income groups.	Social	Low	Probability: Low, as the new mobility policy envisages to fully integrate equity issues and recommend a strategy based on increasing PT use and decreasing operational costs.	The project will include affordability as a key element within its sustainable passenger mobility policy. In fact, use of higher capacity, electric buses should result in lower operating costs.	Project team and GoSL by end Y1.

			Impact: Low; the implementation of the mobility policy will occur after project termination and any pressure in transport fares can be anticipated and properly managed by the GoSL without creating social stress.		

Climate risk assessment, climate risks and risk mitigation

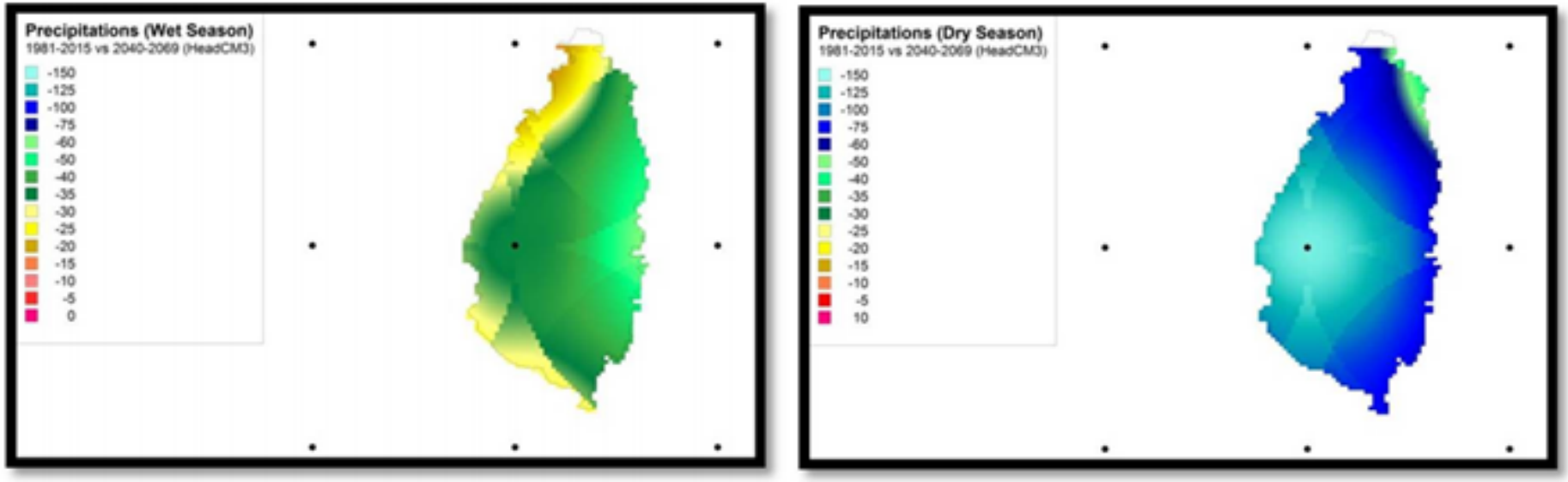
(i) How will the project's objectives or outputs be affected by climate risks over the period 2020 to 2050, and have the impact of these risks been addressed adequately?

Studies rate St. Lucia as a country which faces moderate potential impacts due to climate change. The Notre Dame Global Adaptation Initiative ranks it the 38th least vulnerable country in the world to climate change impacts, and 73rd in terms of climate readiness.[1] The climate risk assessment for St. Lucia in the context of the electric mobility project is as follows:

1. Hazards

The World Bank notes that key hazards for St. Lucia are tropical storms, such as cyclones (or hurricanes), which frequently affect the Caribbean region and cause both direct coastal impacts, as well as indirect impacts through floods, landslides, etc. The country is also susceptible to earthquakes, which are common since the country's islands are situated over a seismically active zone.[2] "Although many of the tremors pass unnoticed, Saint Lucia experienced its strongest earthquake on March 19, 1953, measuring around 7.5 on the Richter scale."[3] The World Bank further noted that landslide potential is particularly great in Saint Lucia and they occur primarily as a secondary effect of heavy storms, floods or seismic activity. Saint Lucia has experienced a number of wildfires during the dry season (January-June), most commonly within the northern coastal regions, which have dense populations.[4] Finally, in its third national communication to the UNFCCC Saint Lucia notes that a further hazard is related to sea level rise.

Precipitation anomalies (1981-2015 vs 2040-2069) during the wet season and dry season for Saint Lucia according to the PRECIS downscaled HadCM3 global climate model[5]



Future Sea Level Scenarios for 2040-2069 (a: 0.47 m) and 2081-2100 (b: 0.91m) combined with a Category 5 Hurricane (5.87 m: 2040-2069) and (6.31 m: 2081-2100) combined with a Category 5 Hurricane showing the coastal zones of Saint Lucia that will be inundated[6]

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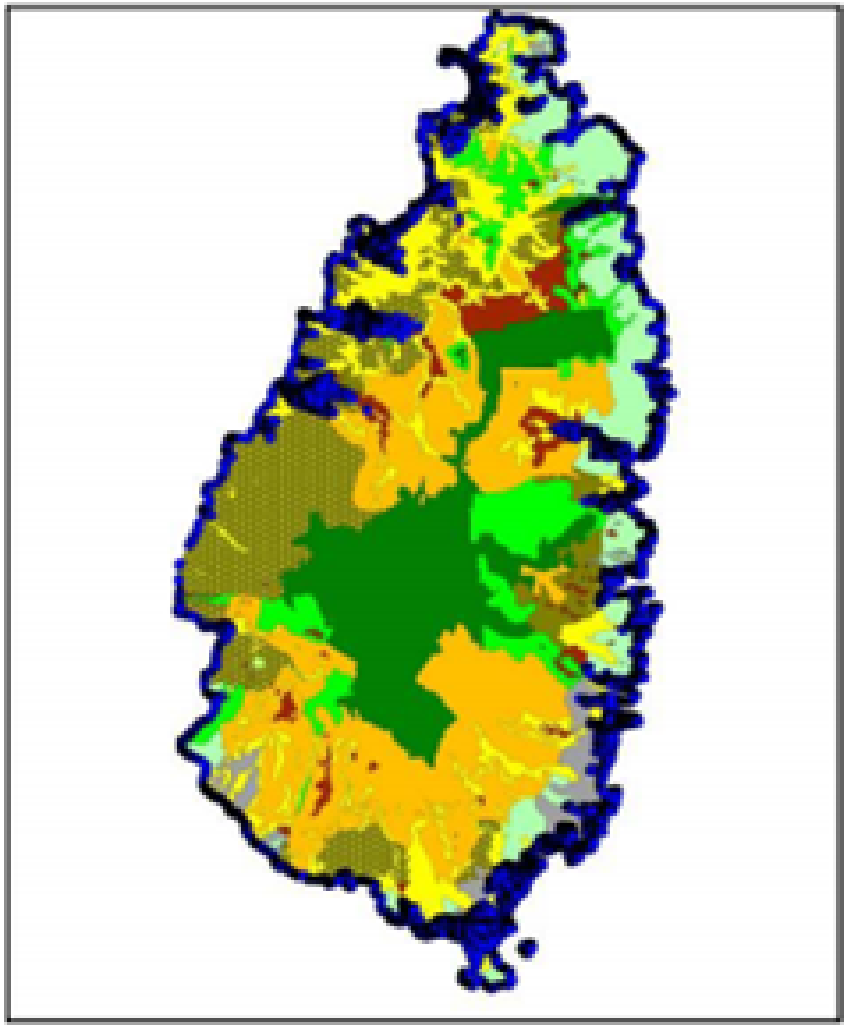
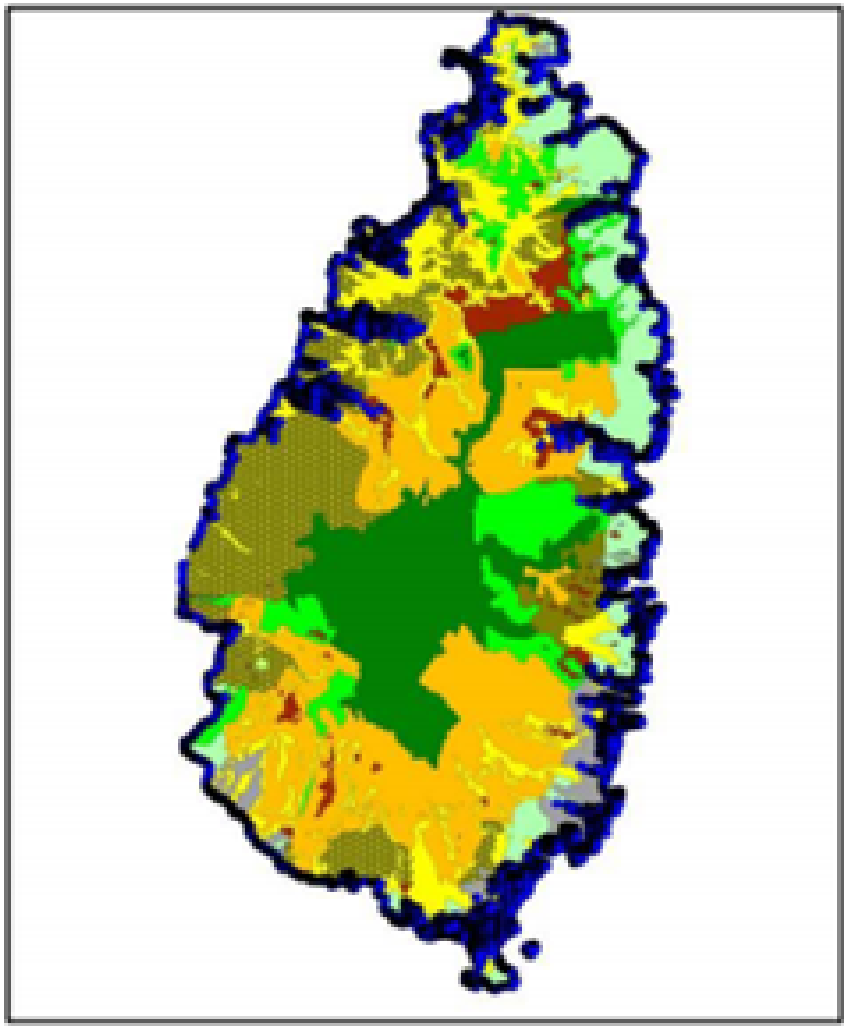




2. Vulnerability and exposure

Saint Lucia notes in its 2018 national adaptation plan that the country is vulnerable to climate change due to three main conditions:

a. “Its small geographical area, which accounts for the fact that disasters take on country-wide proportions;

b. “Its location in one of the highest-risk areas of the planet. These risks include, high volcanic and seismic activity, being situated in the tropical cyclone belts, and direct exposure to the forces of the oceans; and

c. “Its dependence on few sources of income (the agriculture and tourism sectors) for a substantial part of its GDP. These sources of income have been severely reduced for months on end by single climate-related disasters.”

“Another critical indicator of Saint Lucia’s vulnerability, is its limited capacity to reactivate the development process after a devastating weather event. There are other non-climatic factors that may contribute to the country’s vulnerability and exacerbate the adverse effects of climate change, including, inter alia, issues pertaining to building codes, agriculture practices, chemicals and waste management, public awareness and sensitization, planning and development and unemployment and poverty.”

As a small island nation that relies on natural systems to provide services and livelihoods, almost all sectors will be impacted by climate change in Saint Lucia. In accordance with IPCCC reports, it is estimated that with global warming these extreme events will increase in frequency and severity between 2020 and 2050. As a small island nation that relies on natural systems to provide services and livelihoods, almost all sectors will be impacted by climate change in Saint Lucia, but the priority areas for action are water, agriculture and fisheries, as well as tourism, ecosystems, infrastructure, education and health. These are Saint Lucia’s primary economic sectors, and are especially at risk due to increases in temperature, sea level rise, increased intensity of storms, and changes in precipitation patterns. The current National Adaptation Plan (NAP, 2018) includes actions for sectors including the infrastructure and spatial planning sector. Major power supply networks are generally further inland, but the distributions centers are located in populated areas, along the coast. In the NAP, St. Lucia notes:

“The 58,891 households of the island are concentrated within 10 km of the sea, along the coast or inland along ridge lines, spurs and plateaus and approximately half of the population lives in and around the low-lying city of Castries…. The island’s size, location and topography leave critical infrastructure, local housing and livelihoods highly exposed to climate change impacts, that is, those associated with SLR, floods, landslides, stronger storm surges and high winds from more intense hurricanes and beach and shoreline instability (as beaches erode and shorelines retreat).”

The NAP accordingly calls for phased relocation of vital infrastructure to less vulnerable areas. The World Bank also notes that building construction over hillside areas and loss of natural vegetation have exacerbated the country’s vulnerability to landslides.[7]

3. Risks

Climate risks in Saint Lucia were first systematically identified and assessed in the National Climate Change Policy in Adaptation Plan (NCCPAP) in 2002. In 2011, this Plan was revised, leading to the current Climate Change Adaptation Policy (2015) and the Climate Change Baseline Assessment Report (2016). Based on both documents, a more detailed National Adaptation Plan (NAP) includes actions and plans, including for the infrastructure and spatial planning sector. With Saint Lucia identifying its infrastructure sector as a key sector at risk due to the impacts of climate change, through its 2018 National Adaptation Plan it identifies risks related to this sector, which is essentially the sector within which the electric mobility project operates:

"Many settlements are already at risk of landslides and flooding during extreme weather events. Hurricane Tomas in 2010, caused extensive landslides, severe flooding and damage to housing and critical infrastructure to an estimated cost of > USD 350 million (43.4% of GDP). Ninety-two percent of this cost was due to housing damages, while communities with limited road access were particularly vulnerable, such as Soufriere, which was cut off and isolated. Such storm events may also pose the greatest risk to critical infrastructure, as recent hurricanes have been particularly disastrous, causing significant long-term impacts on the island's infrastructure, resulting in tremendous economic setbacks and constituting major recovery costs."

The infrastructure sector, including energy, can also be negatively affected by extreme weather events: In 2010, Hurricane Thomas disrupted energy production and distributions, including generating facilities, transmissions lines, and pipelines, and roads disrupted by landslides; coastal area infrastructure proved to be vulnerable to see level rise, storm surge, and flooding. The 2010 events served to develop recovery strategies and to update the National Disaster Management Plan.

4. Measures to manage risks

The 2018 NAP has a series of actions for supporting risk mitigation for the infrastructure and spatial planning sector. For instance, the NAP calls for phased relocation of vital infrastructure to less vulnerable areas away from the coast. On top of the adaptation measures envisaged within this plan, this GEF project aims at mitigating these risks through building resilience into the design of all project activities and outputs, to achieve low-carbon and climate resilient electric mobility. In this sense, the key climate risk faced by the project is the eventual disruption of electricity supply due to extreme weather events. The project undertakes the following additional actions to build resilience:

a. Within output 1.3, deliverable 1.3.2, by including good practice recommendations to benefit from the synergies between RE expansion and e-mobility deployment; these recommendations may include contingency plans for RE plants (e.g. removing the panels before a category 4 or 5 hurricane alarm), and design recommendations to ensure resilience (e.g. to promote the installation of charging stations close to RE plants, with a direct connection, so that they can remain operational even in case of disruptions in the grid).

b. Within output 1.3, deliverable 1.3.3 by including a vulnerability and resilience analysis within the study of the future national charging network.

c. Within output 2.2, deliverable 2.2.1, by undertaking a vulnerability study of the locations selected to install the charging stations. As the project demonstration is focusing on public car fleets (mainly police cars), it can be anticipated that the vulnerability of the site (the police depot) will be low, as the site is a critical infrastructure, with low probability of suffering disruption in electricity supply. If necessary, the installation of grid-interactive renewable energy systems at the pilot's vehicle charging locations will be assessed. These grid-interactive systems located at the charging locations would ensure that in the event of a grid blackout, electric vehicles would still be able to be charged. In addition, the grid-interactive systems would ensure resilience of the installed solar panels and charging stations (e.g. protecting them from grid instability).

d. Recommendations for regulating the disposal of vehicles (output 4.1, deliverable 4.1.3) will be designed to ensure that extreme weather events and sea-level rises do not lead to increased contamination. It is not perceived that an increase in the sea level will impact the project beyond this output.

(ii) Has the sensitivity to climate change, and its impacts, been assessed?

The project's sensitivity to climate change at different IPCC representative concentration pathways and its impacts has been assessed, based on existing assessments undertaken by GoSL for its third national communication to the UNFCCC (2017) and its national adaptation plan (2018). It can be concluded that Saint Lucia already has an appropriate framework for climate change adaptation and building resilience. The deployment of electric mobility raises additional challenges that will be appropriately addressed within the current framework. Accordingly, the project focuses on providing adequate contingency plans and resilience options to the potential vulnerabilities created by the new technology, which mainly refers to the adequate resilience of the charging network.

(iii) Have resilience practices and measures to address projected climate risks and impacts been considered? How will these be dealt with?

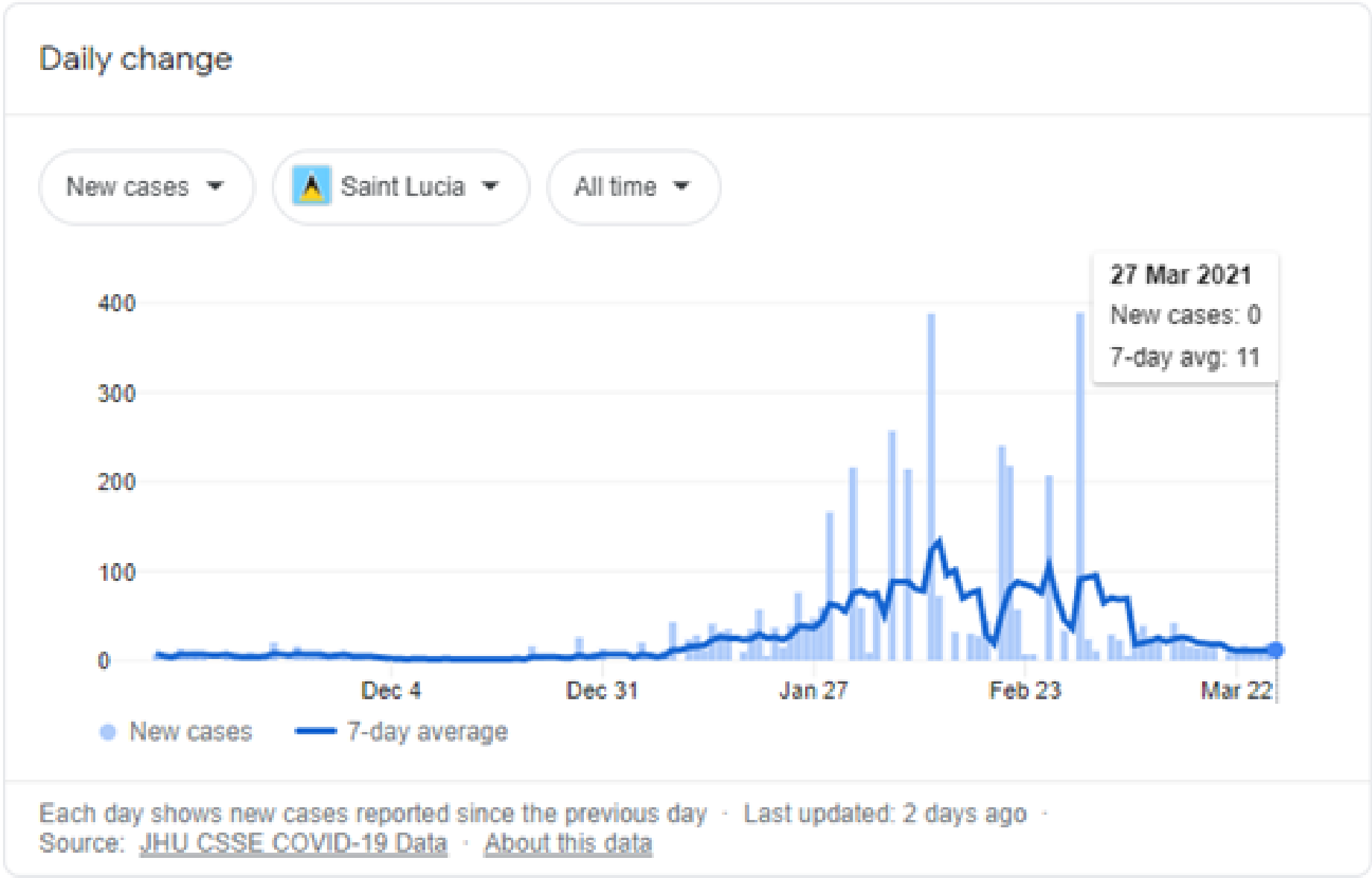
As noted in the response to (i), risks, the project has a central focus on building resiliency in the future charging network.

(iv) What technical and institutional capacity, and information, will be needed to address climate risks and resilience enhancement measures?

The technical design of the vehicle charging stations will need to be in accordance with the latest building codes, to ensure resilience to extreme weather events. Information on extreme weather events and wind speeds is currently available and will not need to be obtained through the project. Operators and institutions operating the solar panel and vehicle charging installations will need capacity to understand how to operate the grid interactive systems during and after extreme weather events, especially in the event of grid blackouts.

COVID risk and opportunity analysis

As of 28 March 2021, Saint Lucia has had 4,191 total cases, with 58 deaths, according to the Coronavirus Resource Centre of the Johns Hopkins University.[8] 20,247 vaccines were administered as of that date. The country has a COVID-19 dashboard https://www.covid19response.lc/, which provides statistics, information and education to inform and support citizens with addressing the pandemic's effects in the country.



The COVID-19 pandemic has the potential to affect the project in the following ways:

The University of Oxford has identified the pandemic's impact on Saint Lucia as following:

1. The high dependence of Saint Lucia on international tourism has made it particularly vulnerable to the COVID-19 crisis.

2. The ability of migrants to send remittances back to Saint Lucia has been severely impaired
3. The decline in remittance inflows and the collapse of tourism have disproportionately affected the poor in Saint Lucia
4. Disproportionate impacts of COVID-19 on the poor may accelerate the growth of income inequality in Saint Lucia

In this context, the pandemic may affect the project in the following ways:

- Reduced tourism, leading to negative economic impacts. The University of Oxford noted that, Saint Lucia's position as the 6th most tourism-dependent country in the world, as of 2019, has made it exceptionally vulnerable to external shocks. The remoteness of Saint Lucia may extend its recovery time as tourists (the majority from the U.S., and the U.K.) favoured domestic getaways, which were far cheaper, over long-haul flights. Due to the pandemic, in 2020 and up to March 2021 air travel to the country has been significantly reduced. Nationally, 28% of Saint Lucian's have lost their jobs, mostly due to business closures associated with the tourism industry. This impact may reduce the appetite of the private sector to commit to funds for supporting the project demonstrations (component 2).

- Movement restrictions. Saint Lucia currently does not have a lock-down, but if restriction movements were imposed, this could impact of on the project demonstrations and efforts to advance development of project activities. However, if government officials continue to work from home the use of government fleets would be reduced. Currently, the government does not permit mass crowd activities and open socialization.[9]

- Work arrangements. While not a national law or order, currently many offices are closed and staff are working from home. This may affect the undertaking of stakeholder consultations.

- Government priorities. With national focus on addressing the pandemic, the government may allocate less attention to promoting the uptake of electric mobility.

Mitigation measures:

- Reduced tourism, leading to negative economic impacts. The project pilot is proposed to be undertaken in the project's second year of operation, which is estimated to be in 2022 (provided the project begins in 2021). It is estimated that by 2022 airport operations will be returning to close to full operation, and that cruise ships also return, ensuring that tourism and thus the economy recuperates during that year. As the project's focus on incentives will take place in its second and third years, the project can draw on the experiences in 2021 and 2022 to ensure that designed incentives and business models take into account social needs and pressures.

- Movement restrictions. The pilot actions do not require the mobilization of large groups and can be undertaken while respecting social distancing. They are also scheduled (as per the workplan) to take place in the project's second and third years. However, if government officials continue to work from home the use of government fleets would be reduced. In this instance, effort would be made to reschedule the pilot activities for later in the project implementation period, to maximize vehicle usage. Furthermore, physical meetings will be replaced by virtual meetings. Online tools (such as clouds for document preparation) will be used to facilitate the development of draft policies and regulations. Travel to activities of the global programme will be held through means of 'virtual missions' if travel restrictions.

- Work arrangements. In the event that that work arrangements would affect participation in training workshops and meetings, these events will be rescheduled or held online.

- Government priorities. Project activities requiring governmental consideration of policies, strategies and incentives is planned primarily for the project's second and third years, when it is estimated that action on the pandemic will be in place and less of a requirement for legislative authorities. In the event that the pandemic continues to requiring the attention of decision-makers, such project activities will be rescheduled for the project's third year.

- Availability of vehicles. It is not projected that the supply and procurement of electric vehicles will be impacted due to the COVID-19 pandemic.

Opportunity analysis

- As executing agency and in committing direct co-financing to the project, the Government of Saint Lucia is fully committed to promoting the uptake of electric mobility. As the economy rebounds in 2021 and 2022, the Department of Finance will begin purchasing of vehicles for public fleets; this project will ensure that the first 10-12 vehicles purchased are electric vehicles, directly supporting Saint Lucia to instigate a green recovery to the pandemic. The Government has launched a website, https://www.covid19response.lc/ and a "Framework to Reopen Saint Lucia".[10] The key focus is on restimulating the tourist sector, including through a dedicated website https://www.stlucia.org/en/covid-19/. Furthermore, on the government website, the government has informed of economic measures to support economic recovery.[11] While the government has not introduced new measures directly related to electric vehicles, efforts to stimulate employment and economic activities are directly relevant. Thus, the project's focus on creating new market opportunities for public transport operators and electric mobility distributors is aligned with governmental priorities.

- Furthermore, with initial studies indicating that the effects of COVID-19 are intensified by poor air quality, the pandemic could lead to an increased focus on this situation in Saint Lucia. Efforts to improve the air quality could be embraced by civil society and health authorities, leading to increased interest and support by such actors for electric mobility initiatives. As the GEF project directly aims to improve air quality through a reduction in polluting internal combustion engine vehicles, there could be increased interest in scaling up the project's outcomes.

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[1] https://gain.nd.edu/our-work/country-index/rankings/

[2] https://climateknowledgeportal.worldbank.org/country/st-lucia/vulnerability

[3] Ibid.

[4] Ibid.

[5] Third national comunication to the UNFCCC (2017). https://unfccc.int/sites/default/files/resource/THIRD%20NATIONAL%20COMMUNICATION%20_%20SAINT%20LUCIA%202017.pdf

[6] Ibid.

[7] https://climateknowledgeportal.worldbank.org/country/st-lucia/vulnerability.

[8] https://coronavirus.jhu.edu/region/saint-lucia.

[9] http://www.govt.lc/news/non-approval-of-public-mass-crowd-activities.

[10] https://www.covid19response.lc/p/reopening-saint-lucia.

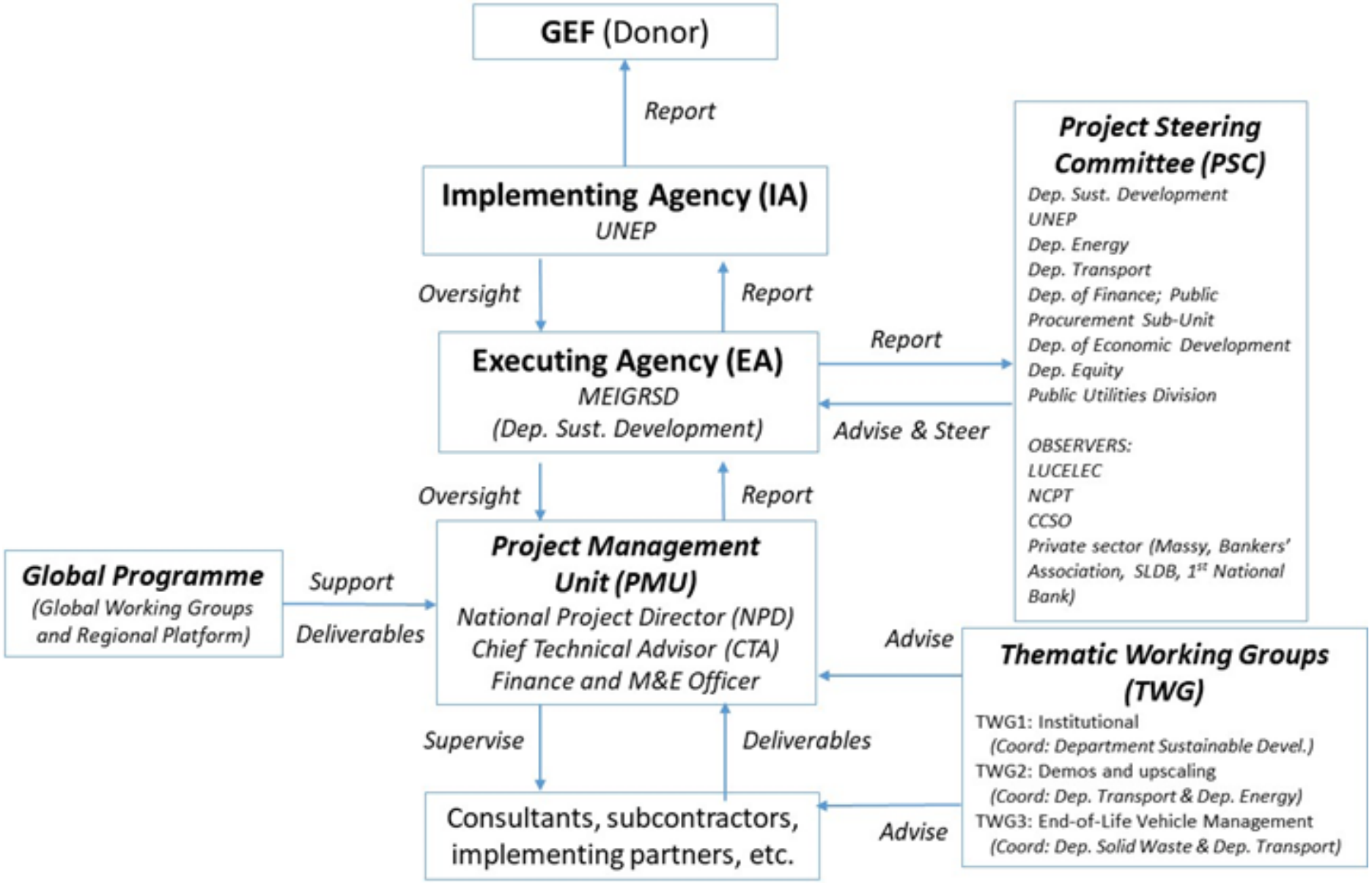
[11] http://www.govt.lc/page/income-support-programme.

6. Institutional Arrangement and Coordination

Describe the institutional arrangement for project implementation. Elaborate on the planned coordination with other relevant GEF-financed projects and other initiatives.

- Institutional arrangements:

The institutional arrangement for project implementation is presented in the figure below.


GEF (Donor)
Report
Implementing Agency (IA)
UNEP
Oversight
Report
Executing Agency (EA)
MEIGRSD
(Dep. Sust. Development)
Report
Advise & Steer
Project Steering Committee (PSC)
Dep. Sust. Development
UNEP
Dep. Energy
Dep. Transport
Dep. of Finance; Public Procurement Sub-Unit
Dep. of Economic Development
Dep. Equity
Public Utilities Division
OBSERVERS:
LUCELEC
NCPT
CCSO
Private sector (Massy, Bankers' Association, SLDB, 1st National Bank)
Oversight
Report
Global Programme
(Global Working Groups and Regional Platform)
Support
Deliverables
Project Management Unit (PMU)
National Project Director (NPD)
Chief Technical Advisor (CTA)
Finance and M&E Officer
Advise
Thematic Working Groups (TWG)
TWG1: Institutional
(Coord: Department Sustainable Devel.)
TWG2: Demos and upscaling
(Coord: Dep. Transport & Dep. Energy)
TWG3: End-of-Life Vehicle Management
(Coord: Dep. Solid Waste & Dep. Transport)
Supervise
Deliverables
Consultants, subcontractors, implementing partners, etc.
Advise

CCSO: Coalition of Civil Society Organizations of Saint Lucia

DSD: Department of Sustainable Development

LUCELEC: Saint Lucia Electricity Services Limited

MASSY: Massy Stores

MEIGRSD: Ministry of Education, Innovation, Gender Relations and Sustainable Development

NCPT: National Council of Public Transport

SLDB: Saint Lucia Development Bank

Figure 3: Institutional Arrangement Chart

UNEP will be the GEF Implementing Agency and the Ministry for Education, Innovation, Gender Relations and Sustainable Development (MEIGRSD) through its Department of Sustainable Development (DSD) will be the project's Executing Agency. Refer to Annex K for further details on the roles and responsibilities of the Implementing and Executing Agencies. The main project bodies are the following (refer to Annex K for more details):

A **Project Steering Committee (PSC)** will be established to provide overall guidance and oversee the progress and performance of the project as well as to enhance and optimize the coordination and contribution with various project partners. The PSC will be chaired by the National Project Director (NPD) and will convene at least once per year.

A **Project Management Unit (PMU)** will also be established within DSD to manage day-to-day operation of the project. The PMU will be headed by the National Project Director (NPD) and will include a full-time Chief Technical Advisor (CTA) and a part-time project Finance and Monitoring and Evaluation (M&E) Officer.

Ad-hoc **Technical Working Groups (TWG)** will be formed to facilitate the involvement of interested partners in the implementation of the project components. Participation will be opened to any interested stakeholder upon request addressed to the NPD. The TWGs are expected to provide technical advice and to liaise with the relevant working groups of the global program, as well as to facilitate networking at the national and international level. The TWGs will meet quarterly during project implementation, under the leadership of one governmental department and with secretarial support from the PMU, and will address the following topics:

- Technical Working Group on the institutional dimensions of e-mobility (TWG1). TWG1 will facilitate the engagement of stakeholders in the preparation of the e-mobility strategy and the sustainable passenger transport policy. It will support the coordination body to be established within this component, providing the necessary preparatory arrangements until its formal constitution and involving stakeholders and individual experts not formally included in the coordination body.
- Technical Working Group on demonstrations and upscaling of e-mobility (TWG2). TWG2 will provide technical, organizational and regulatory advice related to the design and implementation of the demonstration, and its subsequent upscaling to introduce EVs in other public and private fleets, public transport and taxis.

- Technical Working Group on ELV management (TWG3). TWG3 will provide support to the implementation of project component #4, facilitating the engagement of authorities and companies active in ELV management, as well as importers and dealers, in strengthening current practice and providing a satisfactory framework for future management of batteries and other EV components.

Executing partner. The Department of Finance (DF) will act as implementing partner for the procurement of the EVs to be included in the demonstration. The Department of Finance will be responsible for the purchase of the EVs to be included in the government's fleet and will co-finance these vehicles up to the cost of ICE vehicles with the same characteristics (the incremental cost will be financed by the project). As for the private companies participating in the demonstration, the Department of Finance will launch a Request for Proposals, offering to cover the additional cost of the electric vehicles to be purchased (compared to ICE vehicles of the same characteristics), in exchange of the beneficiaries' commitment to operate them a minimum of 20,000 km per year and to get them included in the project's monitoring scheme.

· Coordination with other initiatives:

The following GEF-financed projects and other initiatives are expected to be developed during the project lifespan. The project will liaise with them through the PMU and its TWGs:

- GEF- financed project for the preparation of the 2018 GHG Inventory and Fourth National Communication on Climate Change.
- IDB/GCF- Sustainable Energy Facility for the Eastern Caribbean: Financing commercial Geothermal Energy (GE) projects while strengthening legal and regulatory frameworks.
- UAE-Caribbean Renewable Energy Fund Solar carport PV Installation (included in this project as co-financing).
- World Bank-Renewable Energy Sector Development Project: Involves the execution of exploration (slim hole) drilling to seek to identify a commercially viable geothermal resource.
- Islands Energy Program- Rocky Mountain Institute (RMI). Saint Lucia Government Electric Vehicle Study. Study completed in 2019. This study provides an excellent basis for the design of the project demonstration.
- Implementation of transport and energy contributions in the Caribbean (ITECC) - transforming the energy and transport sectors towards a low-carbon and climate-resilient future. Financed by the German International Climate Initiative (IKI). This CARICOM/GIZ 6-year project will start in 2021, and includes a pilot in Saint Lucia.

The project will coordinate with the global programme by engaging in the LAC regional platform's activities. In particular, country representatives will participate in the regional platform-led community of practice. This will include participating in LAC platform task teams on LDVs, 2&3 wheelers, buses, batteries and charging infrastructure, participating in meetings of the LAC platform and participating in marketplace meetings on technology and finance. The country will coordinate with other child projects in the region, and in particular with the Caribbean sub-region, through the help desk and the community of practice, in particular the task teams and platform meetings. Engagement through the platform will ensure effective two-way coordination, with country representatives sharing project updates, raising challenges and sharing good practices with platform representatives. Platform representatives will share good global practices, identify solutions to challenges raised. and ensure regional coordination and alignment. Furthermore, the regional platform will gather countries, like Saint Lucia, Jamaica, and Antigua and Barbuda with common needs and manage them through customized activities. Where needed, trainings and workshops will be developed at sub-regional level for the Caribbean SIDS. Saint Lucia representatives who participate in the global programme will channel global and regional experiences, good practices and lessons-learned to the training activities at the national level, which will be provided to a larger and broader group of local stakeholders

7. Consistency with National Priorities

Describe the consistency of the project with national strategies and plans or reports and assesments under relevant conventions from below:

NAPAs, NAPs, ASGM NAPs, MIAs, NBSAPs, NCs, TNAs, NCSAs, NIPs, PRSPs, NPFE, BURs, INDCs, etc.

The project is consistent with the following national strategies and plans:

- National Communications (NC) under UNFCCC. Saint Lucia submitted its third NC (NC3) in August 2017 (providing 2012 emission data) and has currently started activities to prepare a 2018 GHG emission inventory. NC3 includes two mitigation measures to be prioritized in the transport sector: the introduction of a new levy to control importation of used vehicles, and exemptions of excise tax and duty for importers of fuel efficient vehicles. Building upon these measures, the project is expected to provide new regulations on vehicle approval and taxes in order to facilitate the transition towards EVs.
- Biennial Update Report (BUR) under UNFCCC. As a small island developing State, Saint Lucia may submit BURs at its own discretion. In fact, Saint Lucia has undertaken preparations to submit its first BUR.
- The 2012-2016 United Nations Development Assistance Framework (UNDAF) for Saint Lucia and other Caribbean countries has been succeeded by the 2017-2021 Multi Country Sustainable Development Framework in the Caribbean (MSDF). The multi-state approach of UN agencies in the Caribbean region aims at allowing for a sharper focus on common priorities, enhance regional initiatives and collaboration, and enable knowledge sharing and cross-collaboration within the region. MSDF provides a multi-sectoral, human-centered approach to development that focuses on the most vulnerable populations in an equitable manner. The project is aligned within priority area 4 of the MSDF (a sustainable and resilient Caribbean), as it fosters the development of green technologies (e-mobility) in association with the deployment of renewables, and promotes the economic development of women (MSDF priority area 1) through capacity building in these technologies.
- Sustainable Development Goals (SDGs). In 2015, along with the rest of the Global Community Saint Lucia made a commitment to the 2030 Agenda for Sustainable Development. In early 2017 the Government of Saint Lucia established its National Coordination Mechanism for the 2030 Agenda which comprises an SDG-Cabinet Sub-Committee of Ministers (CSC) who provide policy guidance to the Sustainable Development Goals National Coordinating Committee (SDGNCC) - the governing committee tasked to guide the implementation and monitoring of the SDGs in Saint Lucia. The SDGNCC is a multi-sectoral committee co-chaired by the Ministries responsible for Sustainable Development and Economic Development. In April 2018, the Government of Saint Lucia embarked on an inclusive and strategic process to develop the country's Medium-Term Development Strategy (MTDS) 2019-2022. In 2019, Saint Lucia completed its Voluntary National Review (VNR) highlighting the progress made and the challenges faced in implementing the goals under review at the 2019 High Level Political Forum on Sustainable Development. In relation with SDG13 (take urgent action to combat climate change and its impacts), the VNR states that "with respect to mitigation, for Saint Lucia, actions are focused on electricity generation, energy efficiency, renewable energy and transport", so that this project is fully aligned with the country's action. It is also worth mentioning actions related to SDG-7 (Ensure access to affordable, reliable, sustainable and modern energy for all) in the field of renewables, such as the adoption of NETS in 2017 and the subsequent update of Saint Lucia Electricity Supply Act as a starting action.
- Saint Lucia submitted its Nationally Determined Contributions (NDC) in 2015. The country's voluntary efforts foresee emissions reductions from the Energy, Electricity Generation and Transportation sectors, with two mitigation actions in transport: "efficient vehicles" and "improved and expanded public transit". The document states that "external support is a pre-requisite to achieving the emissions reduction targets set". It also points out the main policy and legal framework instruments supporting mitigation: "a new levy to control importation of used vehicles; reduction of excise tax and duty for importers of fuel efficient vehicles and alternative energy vehicles; escalating taxes on higher engine capacity vehicles"; and a "proposed Transport Policy and Strategy". The latter is expected to be addressed through the preparation of an *Integrated, Sustainable Road Transport Policy and Strategic Roadmap for Implementation (see below)*.

- Technical Assistance for the Development of Frameworks aimed at Enhancing Environmental Management - development of legislative frameworks towards improved environmental management specifically, an Environmental Management Act and Climate Change Acts.
- Technical assistance for the formulation of an *Integrated, Sustainable Road Transport Policy and Strategic Roadmap for Implementation.* The ToR for the consultancy services necessary to prepare this document have been prepared, but the request for proposals has not been launched yet. This document is focusing on the identification of the infrastructure needs to develop a multi-modal, integrated, sustainable transport policy, as well as a strategic roadmap, which makes provision for future road transport demands for Saint Lucia. It will focus on three main areas: establishment of a multi-modal transportation system that reduces reliance on any single mode of transport and encourages walking and cycling and promotes energy efficiency; movement of persons and goods efficiently and safely, and promotion of public/private partnerships. The ToR do not include the non-infrastructural actions and reforms necessary to make public transport (and eventually taxi) services more convenient for citizens, and better aligned with the GoSL's energy-efficiency and climate-mitigation objectives; these additional dimensions will be covered by the project.

8. Knowledge Management

Elaborate the "Knowledge Management Approach" for the project, including a budget, key deliverables and a timeline, and explain how it will contribute to the project's overall impact.

Knowledge management will address two key project activities: training and capacity-building materials and activities, and mobility and emission-related data collection for planning and MRV:

- Training and capacity-building materials. They are included in component 1 (D.1.4.2: Capacity-building materials targeting decision-makers, D.1.4.3: Training activities on sustainable transport and e-mobility policies, addressing civil servants and public and private decision-makers, and D.1.4.4: Knowledge management guidelines and training materials addressing electricity and transport specialists), component 2 (D.2.3.3: Training materials on EV and charging infrastructure technology and maintenance; D.2.3.4: Professional training activities on EV safety (emergency services), driving and maintenance), and component 4 (D.4.4.1: Design and delivery of a training program for policymakers, to be implemented by local academia, and available for wider dissemination).
- Data collection, analysis and recommendations. They are included in component 1 (D.1.2.1: Data collection and analysis of passenger mobility demand; D.1.2.2: Sustainable alternatives for the public transport system, D.1.2.4: Recommendations for the improvement of passenger transport statistics and GHG monitoring to support, inter alia, the implementation of the mobility policy, D.1.3.1: Gendered fleet electrification feasibility analysis: public and private fleets, public transport, and D.1.3.3: National charging network analysis: Impact analysis on the electricity sector and deployment of charging points), component 3 (D.3.3.3: E-mobility recommendations to fleet managers published and disseminated through the network), and component 4 (D.4.1.2: Forecast of ELVs components generation, considering internal combustion and electric vehicles; D.4.2.1: Report summarizing international and regional regulations on ELV management; D.4.2.2: Comprehensive review of existing and planned international regulations on second-life battery use and recommendations for the Saint Lucia context).

Knowledge management is undertaken by the PMU through two supporting actions:

· The project website, as established by D.1.4.1 (as a part of the project communication plan) and D.1.1.4 (as a knowledge management platform providing wide access to project deliverables through a variety of channels such as an information platform and website, quarterly workshops, or quarterly position papers).

· The knowledge management guidelines developed by D.1.4.4.

The knowledge management capacities of the Department of Sustainable Development will be mobilized for this project. In 2018 Saint Lucia launched the National Environmental Information System (NEIS) which is a game-changing platform to enhancing environmental monitoring to aid in compliance with Multilateral Environmental Agreements (MEA); these in turn contribute to national development and sustainable development. The NEIS includes a Common Data Storage Facility (CDSF), which serves seventeen (17) public and private agencies who have agreed, through the signing of a Memorandum of Understanding, to collaborate and co-ordinate institutional agreements for sharing environmental information and data in Saint Lucia. The CDSF serves as a supporting and foundational tool for reporting on MEAs and the translation of data into useful and actionable information. This information will then be available for use in policy and decision-making. The NEIS was specifically developed for Saint Lucia and is designed to provide MEA Focal Point Ministries and other users with data and information for reporting on the state of the environment under the United Nations Convention on Biological Diversity (UNCBD), United Nations Framework Convention on Climate Change (UNFCCC) and United Nations Convention to Combat Desertification (UNCCD). The achievement of the goals and objectives related to the MEAs' indicators is based upon data and information managed through the NEIS. This includes the monitoring of greenhouse gas emissions from the transport sector, thus the data gathered during this project will be placed on the CDSF and then can be accessed by the general public through the NEIS interface. Both public and private sector Data Collectors, Information Officers, Technical and Research officers have been trained during the project to utilize the NEIS.

The project is part of the global GEF-UNEP Programme on Electric Vehicles. It will actively participate in the global programme's global and regional activities through its component 1, for example by participating and contributing to the knowledge exchange in the regional knowledge and investment platforms and the relevant global working groups, as well as by providing insights and knowledge. A budget is reserved within component 1 for travel associated with the participation in these international activities.

9. Monitoring and Evaluation

Describe the budgeted M and E plan

Monitoring and Evaluation (M&E) activities and related costs are presented in the costed M&E Plan (Annex J) and are fully integrated in the overall project budget. The project will comply with UNEP standard monitoring, reporting and evaluation procedures. Reporting requirements and templates are an integral part of the legal instrument to be signed by the Executing Agency and the Implementing Agency

The project M&E plan is consistent with the GEF Monitoring and Evaluation policy. The Project Results Framework presented in Annex A includes SMART indicators for each expected outcome as well as end-of-project targets. These indicators along with the key deliverables and benchmarks included in Annex L will be the main tools for assessing project implementation progress and whether project results are being achieved. The means of verification to track the indicators are summarized in Annex A.

The M&E plan will be reviewed and revised as necessary throughout the project to ensure project stakeholders understand their roles and responsibilities vis-à-vis project monitoring and evaluation. Indicators and their means of verification may also be fine-tuned at the inception workshop. General project monitoring is the responsibility of the Project Management Unit (PMU) but other project partners could have responsibilities in collecting specific information to track the indicators. It is the responsibility of the Chief Technical Advisor to inform UNEP of any delays or difficulties faced during implementation so that the appropriate support or corrective measures can be adopted in a timely fashion.

The executing agency will receive periodic reports on progress and will make recommendations to UNEP concerning the need to revise any aspects of the Results Framework or the M&E Plan. Project oversight to ensure that the project meets UNEP and GEF policies and procedures is the responsibility of the project's UNEP Task Managers. The UNEP Task Managers will also review the quality of draft project outputs, provide feedback to the project partners, and establish peer review procedures to ensure adequate quality of scientific and technical outputs and publications.

Project supervision will take an adaptive management approach. The UN Environment Programme Task Manager will develop a project Supervision Plan at the inception of the project, which will be communicated to the Project Management Unit and the project partners during the Inception Workshop. The emphasis of the Task Manager's supervision will be on outcome monitoring but without neglecting project financial management and implementation monitoring.

Progress vis-à-vis delivering the agreed project global environmental benefits will be assessed with the executing agency at agreed intervals. Project risks and assumptions will be regularly monitored both by the PMU, the project partners and UNEP. Risk assessment and rating is an integral part of the PIR. The PIR will be completed by the Chief Technical Advisor and ratings will be provided by UNEP's Task Managers. The quality of project monitoring and evaluation will also be reviewed and rated as part of the PIR. UNEP's Task Managers will have the responsibility of verifying the PIR and submitting it to the GEF. Key financial parameters will be monitored quarterly to ensure cost-effective use of financial resources.

In-line with UNEP's Evaluation Policy and the GEF's Monitoring and Evaluation Policy, the project will be subject to a Terminal Evaluation (TE) commissioned by the UNEP Evaluation Office (EOU) at the end of project implementation. The EOU will be responsible for the Terminal Evaluation and will liaise with the Task Managers and Executing Agency's Project Management Unit throughout the process. The TE will provide an independent assessment of project performance (in terms of relevance, effectiveness and efficiency), and determine the likelihood of impact and sustainability. It will have two primary purposes: (i) to provide evidence of results to meet accountability requirements, and (ii) to promote learning, feedback, and knowledge sharing through results and lessons learned among UNEP, the GEF, executing partners and other stakeholders. The direct costs of the evaluation will be charged against the project evaluation budget (as have been allocated, see annex I-1). The terminal evaluation will typically be initiated after the project's operational completion. If a follow-on phase of the project is envisaged, the timing of the evaluation will be discussed with the Evaluation Office to feed into the submission of the follow-on proposal.

The draft terminal evaluation report will be sent by the Evaluation Office to project stakeholders for comment. Formal comments on the report will be shared by the Evaluation Office in an open and transparent manner. The final determination of project ratings will be made by the Evaluation Office when the report is finalized. The evaluation report will be publicly disclosed and will be followed by a recommendation compliance process. The evaluation recommendations will be entered into a Recommendations Implementation Plan template by the Evaluation Office. Formal submission of the completed Recommendations Implementation Plan by the Chief Technical Advisor is required within one month of its delivery to the project team. The Evaluation Office will monitor compliance with this plan every six months for a total period of 12 months from the finalization of the Recommendations Implementation Plan.

The GEF Core Indicator Worksheet is attached as Annex F. It will be updated at mid-term and at the end of the project and will be made available to the GEF Secretariat along with the project PIR report. As mentioned above, the terminal evaluation will verify the information of the tracking tool.

The direct costs of reviews and evaluations will be charged against the project evaluation budget. A summary of M&E activities envisaged is provided in Annex J. The GEF contribution for this project's M&E activities is US$ 39,400.

M&E Budget and Workplan

M&E Activity	Description	Responsible Parties	Timeframe	Indicative budget (USD)
Inception Workshop (IW)	Report prepared following the IW; which includes: - A detailed workplan and budget for the first year of project implementation, - An overview of the workplan for subsequent years, divided per component, output and activities. - A detailed description of the roles and responsibilities of all project partners - A detailed description of the PMU and P	Execution: CTA	1 report to be prepared following the IW, to be shared with participants 4 weeks after the IW (latest)	GEF: as part of CTA budget USD 2,000

	- A detailed description of the PMU and PSC, including an organization chart - Updated Procurement Plan and a M&E Plan, Gender Action Plan - Minutes of the Inception Workshop			
Steering Committee Meeting	Prepare minutes for every Steering Committee Meeting.	Execution: CTA Support: PMU	At least 1 per year Minutes to be submitted 1 week following each PSC meeting	GEF: as part of CTA budget USD 1,500
Half-yearly progress report	Part of UNEP requirements for project monitoring. - Narrative of the activities undertaken during the considered semester - Analyzes project implementation progress over the reporting period, and progress towards targets; - collect and store online deliverables as evidence of progress;- Describes constraints experienced in the progress towards results and the reasons.	Execution: CTA Support: PMU	Two (2) half-yearly progress reports for any given year, submitted by July 31 and January 31 (latest)	GEF: as part of CTA budget USD 1,200
Quarterly expenditure reports	Detailed expenditure reports (in excel) broken down per project component and budget line, with explanations and justification of any change	Execution: CTA Support: PMU	Four (4) quarterly expenditure reports for any given year, submitted by January 31, April 30, July 31 and October 31 (latest)	GEF: as part of CTA budget USD 1,200

Project Implementation Review (PIR)	Analyzes project performance over the reporting period. Describes constraints experienced in the progress towards results and the reasons. Draws lessons and makes clear recommendations for future orientation in addressing the key problems in the lack of progress. The PIRs shall be documented with the evidence of the achievement of end-of-project targets (as appendices).	Execution: CTA Support: PMU	1 report to be prepared on an annual basis, to be submitted by 15 July latest	GEF: as part of CTA budget USD 600
Annual Inventory of Non-expendable equipment	Report with the complete and accurate records of non-expendable equipment purchased with GEF project funds	Execution: CTA Support: PMU	1 report per year as at 31 December, to be submitted by 31 January latest	GEF: as part of CTA budget USD 300
Co-financing Report	Report on co-financing (cash and/or in-kind) fulfilled contributions from all project partners that provided co-finance letters.	Execution: CTA Support: co-finance partners	1 annual report from each co-finance partner, and 1 consolidated report, to be submitted by 31 July latest	GEF: as part of CTA budget USD 600
Final Report	The project team will draft and submit a Project Final Report, with other docs (such as the evidence to document the achievement of end-of-project targets). Comprehensive report summarizing all outputs, achievements, lessons learned, objectives met or not achieved structures and systems implemented, etc. Lays out recommendations for any further steps t	Execution: CTA Support: PMU	Final report to be submitted no later than three (3) months after the technical completion date	GEF: as part of CTA budget USD 2,000

	o be taken to ensure the sustainability an d replication of project outcomes.			
Terminal Evaluatio n (TE)	Further review the topics covered in the mid-term evaluation. Looks at the impacts and sustainability o f the results, including the contribution to capacity development and the achievem ent of global environmental goals.	Execution: Indepen dent Evaluator / T M Support: CTA, PMU	Can be initiated w ithin six (6) mont hs prior to the pro ject's technical co mpletion date	GEF: USD 30,000
TOTAL M&E COST				GEF: US$ 39,400

10. Benefits

Describe the socioeconomic benefits to be delivered by the project at the national and local levels, as appropriate. How do these benefits translate in supporting the achievement of global environment benefits (GEF Trust Fund) or adaptation benefits (LDCF/SCCF)?

The number of direct project beneficiaries is estimated at 663 women and 658 men. This includes the drivers and passengers of the cars involved in the demonstrations and the trainees and future trainers attending the capacity-building activities of the national project and the global programme. Indirect project beneficiaries are estimated at 3600 women and 2400 men, based on (1) the impact the project is expected to achieve in the improvement of public transport services (which could reach at least 5000 or 10% of current PT users, estimated at 50,000 users, to be consistent with the 30% share of public transport) and 1000 persons gaining knowledge on EV and sustainable mobility through the project's dissemination activities.

In terms of benefits for the local population, through the introduction and scale-up of electric vehicles over the medium- to long-term, the project will support EVs to replace ICE in the country, reducing air contamination due to transport related emissions and thus improving air quality for the country's citizens. This has the co-benefit of improving the health of the citizens and reducing associated health care costs and possibly mortality rates, which has become even more relevant with the COVID-19 pandemic. Although there is no regular information on air quality in Saint Lucia, WHO data[1] shows that the annual concentration of PM2.5 in Castries in 2016 was 21 $\mu g/m^3$; some studies[2] report growing mortality levels due to air pollutants: from 71 in 2010 to 80 in 2017; furthermore, participants at the validation workshops highlighted air quality as an issue, particularly in Castries. The project will provide an estimate of the pollutant emissions saved by the demonstration (see D.2.1.2). Furthermore, the introduction of electric vehicles will reduce noise pollution. Facilitating the introduction of EVs into the public transport system may improve the quality of the service in terms of comfort by reducing noise and vibrations. It may consequently promote a modal shift from the use of private transport to the public transport system, which would in turn result in an improvement of traffic conditions throughout the island.

In terms of economic benefits, Saint Lucia is heavily dependent on fuel imports, with a significant part of its GDP dedicated to such costs. Although the incorporation of low carbon electric mobility will also require the importation, thus capital expenditures, on renewable energy assets, electric vehicles and charging infrastructure, once enabled, the transition will make the country less dependent of global oil prices. This should reduce investment uncertainties, which should in turn result in a more favorable investment environment reducing interest rates and short term expected returns, making long term investments more attractive.

[1] https://www.who.int/gho/phe/outdoor_air_pollution/exposure/en/

[2] https://www.statista.com

11. Environmental and Social Safeguard (ESS) Risks

Provide information on the identified environmental and social risks and potential impacts associated with the project/program based on your organization's ESS systems and procedures

Overall Project/Program Risk Classification*

PIF	CEO Endorsement/Approval	MTR	TE
	Medium/Moderate		

Measures to address identified risks and impacts

Elaborate on the types and risk classifications/ratings of any identified environmental and social risks and impacts (considering the GEF ESS Minimum Standards) and any measures undertaken as well as planned management measures to address these risks during implementation.

An assessment of the environmental, social and economic impact of the project was undertaken by an independent team with the United Nations Environment Programme (UNEP). In its analysis, the team interviewed the project consultants and UNEP Task Manager on the project and reviewed the project against a series of environmental, social and economic indicators (contained in annex P of the CEO endorsement document). The assessment determined that this is a moderate risk project, based on UNEP's Environment, Social and Economic Sustainability (ESES) guidelines. In providing this rating, the UNEP Safeguard Advisor noted that:

· This project is likely to be in the moderate risk category around the risks associated with the resource efficiency, waste management and climate change.

· The energy source for the EV is mainly from diesel in Saint Lucia. Although EVs are likely to improve impact on environment from pollution and GHG, further efficiency--from types of cars, battery sizes, energy source and so on-- can be explored when drafting government's energy and transportation policies. Financing, subsidies and other incentives should be explored for the policy advice in order to avoid or minimize potential financial burden to local consumers, taxi drivers (as they are target groups of the project) and economically deprived groups. Policy should consider incorporating non-motorized vehicles and pedestrians' access and their safety associated with the noiseless EVs.

· GHG and cost efficiency of battery reuse, recycle should be fully explored for sound circular economy.

· Data collection should be on the potential suppliers, demands (market growth potential for the near future), their impacts to diverse socioeconomic groups as well as the GHG reduction, energy saving and air pollution.

· The project will encourage women's employment in the transport sector. We encourage some analysis to understand needs and ideas of local residents (men and women in different locations and livelihoods) and incorporate them for gender-responsive transportation policy, strategy and EV roll out.

In conclusion, the Advisor noted that this project can take the "good practice" approach" on safeguards (a separate Environmental and Social Assessment or Management Plan is not necessary). But requested to track the baseline data (mentioned above) and monitor safeguard issues closely during the project implementation.

Recommended further action from the Safeguard Advisor:

This project is likely to be in the moderate risk category around the risks associated with the resource efficiency, waste management and climate change.

The energy source for the EV is mainly from diesel in Saint Lucia. Although EVs are likely to improve impact on environment from pollution and GHG, further efficiency--from types of cars, battery sizes, energy source and so on-- can be explored when drafting government's energy and transportation policies. Financing, subsidies and other incentives should be explored for the policy advice in order to avoid or minimize potential financial burden to local consumers, taxi drivers (as they are target groups of the project) and economically deprived groups. Policy should consider incorporating non-motorized vehicles and pedestrians' access and their safety associated with the noiseless EVs.

GHG and cost efficiency of battery reuse, recycle should be fully explored for sound circular economy.

Data collection should be on the potential suppliers, demands (market growth potential for the near future), their impacts to diverse socioeconomic groups as well as the GHG reduction, energy saving and air pollution.

The project will encourage women's employment in the transport sector. We encourage some analysis to understand needs and ideas of local residents (men and women in different locations and livelihoods) and incorporate them for gender-responsive transportation policy, strategy and EV roll out.

Supporting Documents

Upload available ESS supporting documents.

Title	Module	Submitted
EM St Lucia_ESERN_20200714	CEO Endorsement ESS	

ANNEX A: PROJECT RESULTS FRAMEWORK (either copy and paste here the framework from the Agency document, or provide reference to the page in the project document where the framework could be found).

Project Objective	Objective level Indicators	Baseline	Mid-Point Target (if applicable)	End of project Target	Means of Verification	Assumptions & Risks	UN Environment MTS reference
Accelerate the introduction of electric mobility through capacity-building and electric vehicle demonstration, and prepare the country for scaling-up and replication through the development of electric mobility policies, business models and finance schemes	Indicator A: tonnes of GHG emissions avoided	0	48 tonnes CO2	194 tonnes CO2	Monitoring of mileage and energy consumption of project vehicles.	All EVs are operational in M-13.	UNEP MTS 2018-2021 Climate Change Objective: Countries increasingly transition to low-emission economic development and enhance their adaptation and resilience to climate change
	Indicator B: Number of direct project beneficiaries (women and men using or trained in EVs)	0	20 women and 20 men	183 women and 178 men	Attendance to training activities. Staff trained and engaged in EV operations and maintenance	Priority is given to women's enrollment in project training activities and EV operations and maintenance.	
	Indicator C: Number of indirect project beneficiaries (women and men living in the area served by improved public transport or accessing project dissemination materials)	0	100 women and 100 men	3600 women and 2400 men	Beneficiaries of improved public transport and users of project dissemination materials	Project's recommendations on public transport reform are implemented. Dissemination materials widely distributed through website.	

Project Outcome	Outcome level Indicators	Baseline	Mid-Point Target (if applicable)	End of project Target	Means of Verification	Assumptions & Risks	MTS Expected Accomplishment
Outcome 1	Indicator 1.1: An inter-sectorial coordination body is established within the government	No body exists	N/A	2 meetings in project year 3	Meeting reports.	Sustained political support to the subcommittee's activities.	Expected Accomplishment (b): Countries increasingly adopt and/or implement low gr

	Indicator 1.2: Draft Sustainable Passenger Mobility Policy and national low-carbon e-mobility strategy are delivered to the government for adoption	No policy and strategy exists	Study on sustainable alternatives for the public transport system and road safety; Study on the integration of renewable power and e-mobility in the energy system	Draft policy and strategy delivered to the government for adoption	Government records	Political support of government to advance work on in this area	eenhouse gas emission development strategies and invest in clean technologies
Outcome 2	Indicator 2: Government kilometers target for use of electric fleet is met	30,000 km per year	200,000 km	660,000 km	Vehicle mileage as reported by participating stakeholders	Electric vehicles are assigned to services with high annual mileage	
Outcome 3	Indicator 3.1: Regulatory and tax reforms for the uptake of electric vehicles in Saint Lucia delivered to the government for adoption	Existing regulations and taxes on vehicles, including electric vehicles	N/A	Draft regulatory and tax reforms delivered to the government for adoption	Government and private sector documents (meeting minutes, news articles, etc.)	Political support of government to advance work on in this area	
	Indicator 3.2: Number of business models and financial schemes for electrification of public and private fleets developed	0	1 financial scheme developed	1 financial scheme and 4 business models developed	Government documents (meeting minutes, news articles, etc.)	Political support and private sector interest to advance work in this area	
Outcome 4	Indicator 4: Draft policy framework for ensuring the long-term environmental sustainability of electric mobility delivered to the Ministry of Education, Innovation, Gender Relations and Sustainable Development f	0	Comprehensive review of existing and planned international regulations on second-life battery use and recommendations for the Saint Lucia	Draft policy framework delivered to the government for adoption	Government records	Political support of government to advance work on in this area	

	ainable Development f or adoption		the Saint Lucia context				

ANNEX B: RESPONSES TO PROJECT REVIEWS (from GEF Secretariat and GEF Agencies, and Responses to Comments from Council at work program inclusion and the Convention Secretariat and STAP at PIF).

Please refer to the separate pdf files uploaded to the GEF portal:

- Annex B.1 – Responses to GEF secretariat reviews on the PFD;
- Annex B.2 – Responses to GEF secretariat reviews on the PFD addendum;
- Annex B.3 – Responses to STAP comments;
- Annex B.4 – Responses to GEF Council comments.
-
- In addition, here are UNEP replies to STAP comments (and below, UNEP replies to GEF Council comments):
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Part I: Project Information	
GEF ID	10114
Project Title	Global Program to Assist Countries with Shift to Electric Mobility
Date of Screening	27-May-19
STAP member Screener	Saleem H. Ali
STAP secretariat screener	Sunday Leonard
STAP Overall Assessment	Concur

STAP comments	UNEP replies
The e-mobility program has been developed based on a set of 17 child projects, as well as synergies with the EC Solutions Plus program. Partnership with the International Energy Agency gives the proposal a high level of rigor in terms of metrics of energy costing and efficiency measurement criteria. The proposal is also supported by relevant studies from applicable development agencies. The public-private partnership aspect of the project is convincing and likely to deliver the overall desired impact - if well- implemented. Comment 1: Key barriers to the scaling of e-mobility have been recognized in the child projects. However, there are also some system factors around e	

in the child projects. However, there are also some system factors around e- mobility that deserve attention, and which should be highlighted as barriers to upscaling. The material needs of e-mobility infrastructure in terms of the availability of battery storage technology, and the link between the price of key metal components needs to be specified more clearly. The project has set up a “batteries working group” to assure a reliable supply of batteries through recycling and criticality assessments, but how such a working group would ensure supply is not clearly articulated. The proposal notes a connection with the Global Battery Alliance of the World Economic Forum which will help to avoid redundancies and build a wide private sector alliance. The project proponents should also monitor the Roland Berger “E-Mobility” Index in terms of key lessons from countries that have achieved high rankings in this index.
The Australian government has also set up a new Cooperative Research Centre on Batteries which could be an important resource.

Comment 2: Clearly the E-mobility program has positive interactions with the Sustainable Cities Impact Program because much of the high-density implementation and climate benefits of e-mobility would be realized in an urban context. There needs to be good coordination between the two programs.

Comment 3: A core challenge will be to ensure that the source of electricity for the e-mobility platform is low carbon to maximize the GHG reduction benefit. All calculations for GHG emissions (cars, buses versus trains etc.) need to be evaluated in terms of life-cycle analysis methodologies to ensure full systems- wide GHG benefits and ensure that impacts are internalized.

Reply 1: The project recognizes the issues around provision of raw materials for battery production. Nonetheless, it is not the focus of the project to ensure availability of these materials and subsequent battery supply. It seems to be understood that availability of resources such as lithium, cobalt, nickel and copper and their transformation into reserves (classification based on IEA Global Electric Vehicle Outlook [GEVO] 2019) is not constrained by the natural resource base but rather by the pace of investment to un-tap these resources (see IEA GEVO 2019). The project seeks for acceleration of EV demand, and therefore acceleration of demand for batteries. It is believed that such an accelerated demand will lead to the necessary investment in battery production capacity and hence the provision of raw materials.

Nonetheless, the project will put focus on the development of regulation and schemes for collection of used EV batteries for re-use, recycling and safe disposal, mainly through the International Energy Agency (IEA) led Global Thematic Working Group on “Charging infrastructure, grid integration, low-carbon power supply and batteries”. The project aims at facilitating re-use and recycling of used EV batteries through “design for recyclability” of EV batteries to ensure that a trajectory leading to some sort of circular economy can be taken in the future. Development of adequate policies will play a major role in the stipulation of high recycling rates to ease pressure on raw material demand and to increase sustainability of e-mobility as a whole. This also includes the development of guidelines and agreements with regards to the social and environmental standards for the sourcing of these materials. Private sector alliances such as the mentioned Global Battery Alliance of the World Economic Forum can help with the facilitation of such agreements and will be included in the design of the relevant operational parts of the Global Child Project. Similarly, literature and indices such as the mentioned Roland Berger “E-Mobility” Index will be included to the extent possible within the work of the relevant Working Groups. It needs to be noted that the Basel and Stockholm Convention Regional Centre for the Asia and Pacific Region in China (BCRC-SCRC China, hosted by the School of Environment of Tsinghua University) will be part of the GEF Global E-Mobility Programme. The Basel Convention regulates the international trade of waste, which might play a key role in the area of used EV battery recycling since large scale battery recycling is likely to depend on international shipping of used EV batteries and / or battery components.

	Reply 2: For countries that have both an e-mobility and a Sustainable Cities project (i.e. India, etc.), close coordination will be undertaken during project implementation to ensure synergies. Whenever the sustainable cities projects organize events/workshops on urban mobility, the e-mobility project team / proponents will be invited to participate. Reply 3: GHG emission saving potentials for all Country Child Projects are evaluated based on 1.) the current local carbon footprint of grid electricity; and 2.) prospects to reduce the average carbon footprint of grid electricity based on commitments and pledges to mitigate climate change. Many of the low and middle-income countries included in the Global E-Mobility Programme already have power mixes based on high shares of low carbon electricity such as hydro, wind, solar PV and nuclear power. This is true for many of the Country Child Projects in Latin America, Africa, Eastern Europe and West Asia. For Country Child Projects with relatively high grid emission factors such as India, most of the SIDS, Indonesia, South Africa, etc. projects have been designed in a way to ensure that sufficient amount of low carbon power will be integrated in the electricity mix used to power the demonstration vehicles to yield net climate benefits. As a general “rule of thumb” a carbon footprint threshold for grid electricity of around 800 to 900 gCO2/kWh is assumed to mark the line above which additional measures are necessary to reach net reductions of greenhouse gas emissions. Compared to alternative, technology based transport GHG mitigation measures such as the large scale use of biofuels as well as the use of potentially low carbon fuels such as hydrogen and synthetic fuels, it is believed that the direct use of electricity constitutes the most efficient means of decarbonizing transportation, alongside implementation of “avoid” (avoid transport demand) and “shift” measures (shift transport demand to more efficient means of mass transport as well as non-motorized transport). It is therefore necessary to introduce e-mobility now, in order to be prepared for upscaling once mitigation targets in the relatively low-abatement cost power sector have been achieved.

STAP comments	UNEP replies

Comment 4: The program will generate both climate mitigation and air pollution reduction benefits. If possible, the expected health benefits from air pollution reduction (for example, premature death prevention and Disability-Adjusted Life Years - DALYs) should be estimated during project development. This will provide a more detailed information on the environmental and socio-economic benefits from the GEF's investment.	Reply 4: The air pollution reduction and associated expected health benefits will not be measured/quantified by the projects through GEF funding. However, if the countries wish to undertake these estimates, they will be welcome to do it through co-finance contributions.
Comment 5: There is detailed evidence of multi-stakeholder engagement, particularly for training programs, and other activities which connect with the OECD's multi-stakeholder engagement processes. It would be helpful to acknowledge that e-mobility has implications for "energy justice", because growth of this sector has largely been in high-income markets, especially for electric cars.	Reply 5: E-mobility has the potential to increase energy justice and to support the development of local value chains. While petroleum-based fuels are imported in most of the Country Child Projects, electricity is generated locally, with the potential to include high shares of locally generated renewable power. Introduction and up-scaling of e-mobility has therefore the potential to increase energy security and to hedge against the price volatility of the global petroleum fuel market. In many of the Country Child Projects, consumer prices of petroleum fuels are regulated by government and price spikes in the global supply chain has immediate effects on countries budgets. Total cost of ownership of electric vehicles, in particular when used in fleets such as public transportation fleets (buses, taxis, 2&3 wheeler taxis) are already lower than for conventional vehicles today in many of the Child Country Projects. The large-scale introduction of EVs in such fleets can therefore lead to better economics of public transport services, which in turn can lead to better service and lower cost of transportation for the end consumer. In addition, the provision of e-mobility applications such as electric 2&3 wheelers in least developed countries can un-tap synergies with rural electrification based on renewable micro and mini-grids (e,g, based on solar PV & electricity storage). Last but not least, the relatively less complex nature of electric vehicles can lead to the creation of green jobs in the local assembly and manufacturing of EVs, notably electric 2&3wheelers.
Comment 6: STAP recommends that project proponents review the following study: Sovacool, B. K., Kester, J., Noel, L. & de Rubens, G. Z. Energy Injustice and Nordic Electric Mobility: Inequality, Elitism, and Externalities in the Electrification of Vehicle-to-Grid (V2G) Transport. Ecological Economics 157, 205–217 (2019).	Reply 6: We take note of this recommendation. This will be shared with project proponents and the global thematic working groups.
Comment 7: E-vehicle technology is rapidly evolving: it will be important therefore to keep track of and incorporate innovations in the field. University partners in academia would be recommended in this regard. A few key academic partners are noted such as University of California Davis and Technical University of Denmark. These institutions and others should be involved in the M&E program.	

Comment 8: A recent study which may be helpful in considering some of the pitfalls of e-mobility is also referenced below: Onat, N. C., Kucukvar, M., Abous haqrah, N. N. M. & Jabbar, R. How sustainable is electric mobility? A compreh ensive sustainability assessment approach for the case of Qatar. Applied Ener gy 250, 461–477 (2019).	Reply 7: The GEF Global E-Mobility Programme will be implemented in close col laboration with the European Commission funded Solutions Plus project. The S olutions Plus project, which started implementation in January 2020, and whic h has a total budget of about 18 million EUR, is targeting e-mobility demonstra tion projects in 9 low and middle-income cities world-wide, and includes replic ation activities of these demonstration projects in a number of additional citie s and countries. UNEP is responsible for the development of replication projec ts in 8 cities worldwide. It has been agreed that EC Solution Plus funds will be i ncluded in 5 GEF Country Child Projects (around 60k to 80k USD per replicatio n project) to procure charging equipment and to provide targeted support to lo cal innovators with the installation and operation of this equipment. Similar to UNEP, DTU is a consortium member of the EC Solution Plus project and is mai nly responsible for impact assessment and data collection and analysis of the project. UNEP will make sure that impact assessment and data collection and analysis will be closely coordinated between the GEF E-mobility Programme a nd the EC Solution Plus project and that all tools and materials as well as proje ct outcomes and lessons learnt will be shared between both projects. In fact, th e GEF and the EC Solutions Plus project target the joint and complementary dev elopment of tools, training materials, and events. Academic partners may also include the University of California, Davis, which i s a long-standing partner in UNEP's Global Fuel Economy Initiative (GFEI) throu gh the Sustainable Transportation Energy Pathways Program directed by Lew Fulton. Reply 8: We take note of this recommendation. This will be shared with project proponents and the global thematic working groups.

Part I: Project Information	What STAP looks for	Response	UNEP replies
B. Indicative Project Description Summary			
Project Objective	Is the objective clearly defined, and consistently related to the problem diagnosis?	Yes – the program has a very clearly defined objective of electric mobility.	-
Project components	A brief description of the planned activities. Do these support the project's objectives?	Yes, the outcomes support the objectives.	-
Outcomes	A description of the expected short-term and medium- term effects of an intervention.	These are defined in detail and referenced through a theory of change. Global environmental benefits of carbon mitigation are noted with key assumptions about the source of energy.	-
	Do the planned outcomes encompass important global environmental benefits/adaptation benefits?		
	Are the global environmental benefits/adaptation benefits likely to be generated?		
Outputs	A description of the products and services which are expected to result from the project. Is the sum of the outputs likely to contribute to the outcomes?	Yes, there is a clear linkage between outputs and outcomes made through the theory of change materials provided.	-
Part II: Project justification	A simple narrative explaining the project's logic, i.e. a theory of change.		
1. Project description. Briefly describe:			
1) the global environmental and/or adaptation problems, root causes an	Is the problem statement well-defined?	Yes – detailed review of the material from the perspective of development agencies provided. Howe	-

d barriers that need to b e addressed (systems description)		ver, academic literature review is not provided.	
	Are the barriers a nd threats well de scribed, and subst antiated by data a nd references?		
	For multiple focal area projects: does the problem statement an d analysis identify the drivers of environmental degradation whi ch need to be addressed throug h multiple focal areas; and is th e objective well-defined, and ca n it only be supported by integrating two, or more focal area s objectives or programs?		
2) the baseline scenari o or any associated ba seline projects	Is the baseline identified clearly?	Yes, baseline of current programs for co untries provided as well as the relationsh ip with EC Solutions plus program.	-
	Does it provide a feasible basis fo r quantifying the project's benefits?		
	Is the baseline sufficiently rob ust to support the incremental (additional cost) reasoning for the project?		
	For multiple focal area projects:		
	are the multiple baseline ana lyses presented (supported b y data and references), and t he multiple benefits specifie d, including the proposed ind icators;		
	are the lessons learned from similar or related past GEF an d non-GEF interventions descr		

	ibed; and how did these lesso ns inform the design of this project?		
3) the proposed alternat ive scenario with a brief description of expected outcomes and components of the project	What is the theory of change?	Good presentation of theory of change material i n Figure 6.	-
	What is the sequence of events (required or expected) that will le ad to the desired outcomes?		
	· What is the set o f linked activities, outp uts,and outcomes to a ddress the project's obj ectives?		
	· Are the mechanisms o f change plausible, and is the re a well-informed identificati on of theunderlying assumptions?		

Part I: Project Information	What STAP looks for	Response	UNEP replies
	· Is there a recognitio n of what adaptations may be required during project i mplementation to respond to changing conditions in p ursuit of the targeted outco mes?		
5) incremental/additional cost reasoning and expect ed contributions from the baseline, the GEF trust fun d, LDCF, SCCF, and co-fina ncing	GEF trust fund: will the propose d incremental activities lead to t he delivery of global environmen tal benefits?	Yes – very detailed cost reasoning and partnersh ips provided.	-
	LDCF/SCCF: will the propose d incremental activities lead to adaptation which reduces vulnerability, builds adaptive		

	capacity, and increases resilience to climate change?		
6) global environmental benefits (GEF trust fund) and/or adaptation benefits (LDCF/SCCF)	Are the benefits truly global environmental benefits, and are they measurable?	Yes – electric mobility if implemented with low carbon energy source has clear global environmental benefits.	-
	Is the scale of projected benefits both plausible and compelling in relation to the proposed investment?		
	Are the global environmental benefits explicitly defined?		
	Are indicators, or methodologies, provided to demonstrate how the global environmental benefits will be measured and monitored during project implementation?		
	What activities will be implemented to increase the project's resilience to climate change?		
7) innovative, sustainability and potential for scaling-up	Is the project innovative, for example, in its design, method of financing, technology, business model, policy, monitoring and evaluation, or learning?	The PFD has a short section on innovation (Section 7 on page 68) which largely focuses on the inherent innovation of e- mobility infrastructure as a new technology. Perhaps the most significant innovations in the GEF program itself would be the financing arrangements that are being proposed through a variety of public-private partnerships that are being proposed, building on the vast experience of the International Energy Agency. Regarding' STAP's guidelines on innovation in projects, the wide range of examples provided of innovative start-ups that emanate from the EC's Solutions Plus program are also appropriate. These should be further analysed to ascertain the level of actual success they are having (refer to section starting on page 36 and the table which starts on page 37).	-
	Is there a clearly-articulate		

	d vision of how the innovat ion will be scaled-up, for ex ample, over time, across g eographies, among institut ional actors?		
	Will incremental adaptation be req uired, or more fundamental transformational cha nge to achieve long term sustaina bility?		
1b. Project Map and Coordin ates. Please provide geo- ref erenced information and ma p where the project interventions will take place.			
2. Stakeholders. Select the stakeholders that have part icipated in consultations du ring the project identificatio n phase: Indigenous people and local communities; Civi l society organizations; Priv ate sector entities.If none o f the above, please explain why. In addition, provide ind icative information on how stakeholders, including civil society and indigenous peo ples, will be engaged in the project preparation, and the ir respective roles and means of engagement.	Have all the key relevant st akeholders been identified to cover the complexity of the problem, and project i mplementation barriers?	The energy justice aspect of this program sh ould be closely monitored as e- mobility upta ke continues to favor higher income househol ds	Please refer to our response to the energy ju stice comment in the 1st section above (repl y 5).
	What are the stakeholders' roles, and how will their co mbined roles contribute to robust project design, to ac hieving global environment al outcomes, and to lesson s		

Part I: Project Information	What STAP looks for	Response	UNEP replies
	learned and knowledge?		
3. Gender Equality and Women's Empowerment. Please briefly include below any gender dimensions relevant to the project, and any plans to address gender in project design (e.g. gender analysis). Does the project expect to include any gender-responsive measures to address gender gaps or promote gender equality and women empowerment? Yes/no/ tbd. If possible, indicate in which results area(s) the project is expected to contribute to gender equality: access to and control over resources; participation and decision-making; and/or economic benefits or services. Will the project's results framework or logical framework include gender- sensitive indicators? yes/no /tbd	Have gender differentiated risks and opportunities been identified, and were preliminary response measures described that would address these differences?	Gender sensitivity analysis and action plans built into program. The uptake of electric motorcycles disproportionately by men for cultural reasons is noted as a useful example.	All country child projects as well as the global child project include a gender analysis and a gender action plan (in PART II section 3. Gender Equality and Women's Empowerment of the CEO Endorsement Document) to mainstream gender during project implementation.
	Do gender considerations hinder full participation of an important stakeholder group (or groups)? If so, how will these obstacles be addressed?		
5. Risks. Indicate risks, including climate change, potential social and environmental risks that might prevent the project objectives from being achieved, and, if possible, propose measures that address thes	Are the identified risks valid and comprehensive? Are the risks specifically for things outside the project's control?	A wide variety of risks have been identified specially with reference to critical supply chains.	-

e risks to be further developed during the project design			
	Are there social and environmental risks which could affect the project?		
	For climate risk, and climate resilience measures:		
	· How will the project's objectives or outputs be affected by climate risks over the period 2020 to 2050, and have the impact of these risks been addressed adequately?		
	· Has the sensitivity to climate change, and its impacts, been assessed?		
	· Have resilience practices and measures to address projected climate risks and impacts been considered? How will these be dealt with?		
	· What technical and institutional capacity, and information, will be needed to address climate risks and resilience enhancement measures?		
6. Coordination. Outline the coordination with other relevant GEF-financed and other related initiatives	Are the project proponents tapping into relevant knowledge and learning generated by other projects, including GEF projects?	Figure 9 presents a good organizational framework for coordinating the project across multiple agencies and private partners.	-
	Is there adequate recognition of previous projects and the learning derived from the		

	m?		
	Have specific lessons learned from previous projects been cited?		
	How have these lessons informed the project's formulation?		
	Is there an adequate mechanism to feed the lessons learned from earlier projects into this project, and to share lessons learned from it into future projects?		
8. Knowledge management. Outline the "Knowledge Management Approach" for the project, and how it will contribute to the	What overall approach will be taken, and what knowledge management indicators and metrics will be used?	University partnerships could be better leveraged for knowledge management. Clearer role delineation of university and research partners would be a positive development.	Please refer to our response in relation to UCD and DTU in the 1st section above (reply 7).

Part I: Project Information	What STAP looks for	Response	UNEP replies
project's overall impact, including plans to learn from relevant projects, initiatives and evaluations.			
	What plans are proposed for sharing, disseminating and scaling-up results, lessons and experience?		
STAP advisory response	Brief explanation of advisory response and action proposed		
1. Concur	STAP acknowledges that on scientific or technical grounds the concept has merit. The proponent is invited to approac		

	h STAP for advice at any time during the development of th e project brief prior to submission f or CEO endorsement.		
	* In cases where the STAP ac knowledges the project has merit on scientific and techni cal grounds, the STAP will rec ognize this in the screen by st ating that “STAP is satisfied with the scientific and techni cal quality of the proposal an d encourages the proponent t o develop it with same rigor. At any time during the develo pment of the project, the prop onent is invited to approach S TAP to consult on the design.”		
2. Minor issues to b e considered during proj ect design	STAP has identified specific scientific /technical suggesti ons or opportunities that sho uld be discussed with the pr oject proponent as early as p ossible during development of the project brief. The proponent may wish to:		
	(i) Open a dialogue wit h STAP regarding the t echnical and/or scienti fic issues raised;		
	(ii) Set a review point at an e arly stage during project dev elopment, and possibly agre eing to terms of reference f or an independent expert to be appointed to conduct thi s		

	review.		
	The proponent should provid e a report of the action agree d and taken, at the time of su bmission of the full project br ief for CEO endorsement.		
3. Major issues to b e considered during proj ect design	STAP proposes significant im provements or has concerns on the grounds of specified m ajor scientific/technical meth odological issues, barriers, or omissions in the project conc ept. If STAP provides this advi sory response, a full explanati on would also be provided. Th e proponent is strongly encouraged to:		
	(i) Open a dialogue with STA P regarding the technical an d/or scientific issues raised; (ii) Set a review point at an ea rly stage during project devel opment including an indepen dent expert as required. The proponent should provide a r eport of the action agreed an d taken, at the time of submi ssion of the full project brief f or CEO endorsement.		

Annex B.4 – Responses to GEF Council comments.

UNEP responses to GEF Council comments on the

Global Programme to Support Countries with the Shift to Electric Mobility (GEFID 10114)

v Comment by Yoshiko Motoyama, GEF Alternate Council Member, Japan, Deputy Director Global Environment Division, International Cooperation Bureau, Ministry of Foreign Affairs of Japan, Council, Japan made on 6/1/2020

The below comments from Japan were provided prior to the Council meeting. An initial agency response was provided and can be found in the list of documents specific to the project in the GEF Portal.

On single-country projects, especially with large stated co-finance ratios, and cyclical-industry-related projects, such as Project 10564 (Environmentally Sustainable Development of the Iron and Steel Industry) and Project 10544 (electric mobility addendum):

· We anticipate that participants of these projects may be severely impacted by the COVID-19 crisis. How realistic are the published co-financing arrangements to be met, and for the industry to meet the higher operating costs - - without de facto subsidization from the GEF?

Response:

The current health crisis related to COVI-19 poses some difficult challenges for the automotive sector, but also, looking more specifically at the electric vehicles segment, it offers some opportunities.

Challenges include delays related to the finalization of the design of some of the national child projects, due for instance to international travel restrictions for the specialists involved in the design and the relative consultations. Broader challenges also include depression of demand for cars, at least in the short term, and potential shift in government priorities to focus limited national budget and workforce to more pressing health- crisis related issues. At this point it is difficult to make assumptions regarding the extent to which this will affect government priorities with regards to the allocation of budget and work force. What can be said is that there is a clear case to be made for mobility to as a key pillar for sustainable and clean transportation investments in the context of economic recovery plans.

Opportunities: According to today's knowledge, there seems to be a correlation between air quality and COVID- 19, whereby COVID-19 incidence and mortality are significantly higher in areas that have high levels of local air pollution. This includes particulate matters (e.g. PM2.5, PM10)[1] as well as N_2O from both mobile (e.g. trucks and cars) and stationary (e.g. coal power stations) emission sources[2]. Since electric mobility has the potential to significantly contribute to improved urban air quality, we assume that it will play an important role in countries' strategies to respond to the COVID-19 pandemic.

Similarly, a shift to electric mobility will significantly reduce the dependency of countries to import petroleum petrol fuels. It therefore increases resilience against restrictions or price spikes resulting from international crisis.

1 Harvard University: "COVID-19 PM2.5, A national study on long-term exposure to air pollution and COVID-19 mortality in the United States", available at: https://projects.iq.harvard.edu/covid-pm

2 Yaron Ogen, 2020, "Assessing nitrogen dioxide (NO2) levels as a contributing factor to coronavirus (COVID-19) fatality", Science of The Total Environment, available at: https://www.sciencedirect.com/science/article/pii/S0048969720321215

While during COVID-19 vehicles sales have plummeted by half or more, electric vehicles sales have been relatively less affected. Analysts from Bloomberg New Energy Finance have estimated that the electric segment of car sales will continue to outperform in terms of growth the traditional cars one as we move past the crisis, even though oil prices at a historic low will create some negative headwinds. However, orders of buses are likely to suffer delays if public perception of

mass transit as unsafe does persist.

Furthermore, in terms of green recovery, clean mobility is expected to play a key role in getting the global economy back on track. Continued social distancing measures will have an impact on how we use transportation services, and in particular public transportation, but certain modes of public transport are expected to grow, in particular in low and middle-income countries. These modes include 2&3 wheeler taxis, or usual taxis and ride- hailing providers using passenger cars, to reduce close contact with higher numbers of riders. For many of these modes good electric alternatives are available.

Based on current trends and signals it is expected that after COVID-19 the shift to electric mobility would continue, if not increase. Many city governments around the world are looking at opportunities to take advantage of the significant reduction in urban congestion linked to the COVID-19 mobility restrictions to introduce permanent limitations to the use of private vehicles, especially if internal combustion engines. Such measures will not only reduce local air pollutants (such as particulates PM2.5 and PM10, but also N2O) and carbon emissions but can also increase resilience of transport systems against the current - and any potential future - health crises. The contribution of low-carbon mobility, including electric mobility, to a more resilient economy will be further integrated in the Programme and highlighted throughout the training components to be delivered to participating countries.

· What happens to the funds/projects if some participants cease to become going concerns (=i.e. bankruptcy)?

Response:

The information presented in the project documentation (PIFs and PFDs) represents the best available information available at the time of the submission to Council, following the technical review from the GEFSEC. Some level of change in the project design and in the availability of the amount of co-financing estimated ex- ante is possible and sometimes even desirable, considering the additional in depth design analysis conducted during the project preparation phase, including through the PPG-funded activities, between the submission of PIFs/PFDs and the submission of the relative CEO ER. Co-financing arrangements and amounts specified in PIFs/PFDs are best-case estimations that GEF Implementing Agencies and National Executing entities or participating actors provide for the formulation of the project proposals. These up-front estimates are assessed as part of the GEFSEC review process in terms of their relevance and adequacy vis-à-vis the scope and objective of the proposed Project/Program activities.

Once the PIF/PFD is approved by Council, as part of the detailed design process, Agencies and actors listed as other providers of co-financing amounts are asked to reassess and formally confirm that the co-financing volumes which had been included in the PIF/PFD have been approved by the competent authority within each specific organization. This is formalized through the submission of co-financing confirmation letters. In case a specific entity is no longer able to provide the previously stated co-financing amount, either in full or in part, generally Implementing Agency and GEFSEC would work together to assess if the stated co-financing is essential to achieve the project/program's objective. If so, GEFSEC and Agency assess if the expected amount of co- financing that is no longer available can be replaced by existing or additional co-financing from other actors. In

case the co-financing is deemed essential, and there is no possibility to source such funds that are considered necessary to achieve the stated objectives, GEFSEC and Agency would consider whether to revise the approved project/program, and if not possible/advisable the project/program would not receive CEO Endorsement.

Given that the development phase will take around 12 months, and that the COVID crisis might trigger some government support to accelerate the further uptake of electric vehicles, as we have seen in France, for example (see quote below) , we hope that the co-finance might not be such an issue in a year from now, when the CEO endorsement documents will be due for submission. In any case, if planned investments and/or co-finance becomes an issue, agencies will work with the project developers to identify other sources of co-finance that can substitute the initial set of co-financiers, while keeping the project scope. If this is not possible, the developers will try to re-adjust the scope to respond to available co-finance that is still aligned with the project objectives. If this fails as well, then the developers might wish to either postpone the project or discuss with the country if the project should/can go ahead.

· We raised at the last council our interest in verifying the ability of GEF and its accredited agencies to conduct independent audits of such contributions, including verifying and assessing the abilities of the involved parties to meet the co-financing obligations of this project. We recognize that this process --- along with many other due diligence procedures --- could be increasingly impaired by the latest COVID- 19 crisis. Detailed explanations on how the Secretariat plans to

handle these types of issues would be appreciated (preferably in writing to be posted on the GEF website, as it is not clear from the existing material and guidelines on the website)

Response:

In addition to the explanation provided above on the dynamics of co-financing, co-financing is reported on a yearly basis, based on progresses related to the sourcing and use of co-financing amounts. In the case of the e- mobility Programme, the Lead Implementing Agency is UNEP. For each project implemented by UNEP, the Project Manager has responsibility to seek signed co-finance reports from each co-financier of that given project. While the co-financiers are not audited, their signed (by the authorized authority in each entity providing co- financing) co-finance reports are available for the mid-term and terminal evaluators, so that the evaluation process can assess if that given GEF project reached or not the co-finance amounts which had been estimated up-front.

· We would also like to stress the need for transparency and balanced involvement of private sector providers in any of these corporate projects (particularly highly cyclical sector projects such as the ones included in this work program in the steel and automobiles sectors), especially amid the COVID crisis, given that all such industry participants indiscriminately face severe business conditions. Projects should be carefully constructed and communicated, so that they are not deemed to infringe upon rules against subsidization of particular entities, thereby "reinforcing the market power of some targeted companies at the expense of other firms" (as per the rules). For example, "to de-risk investments in ...." in the project description/ objectives implies the potential of subsidization, highlighting the need for transparency in their construct and execution, so that they are visibly in line with GEF rules and regulations and the Private Sector Engagement Strategy to be adopted at this Council session. This type of crystal-clear communication/ governance insurance measure is essential for the GEF to credibly raise funding for private sector-driven projects in a tough financial environment.

Response:

We certainly acknowledge the importance of the point being raised here: all projects must be careful to run clear, fair and transparent procurement policies, which Agencies have in place for GEF projects. The recently adopted MINIMUM FIDUCIARY STANDARDS FOR GEF PARTNER AGENCIES Policy (GA/PL/02, of Dec 19, 2019),
which covers both the Agency's internal procurement policies and procurement by recipients of funds, provides that:

Specific GEF Partner Agency policies and guidelines promote economy, efficiency, transparency and fairness in procurement through written standards and procedures that specify procurement requirements, accountability, and authority to take procurement actions. As a minimum, these policies and guidelines provide for:

- *Open competition and define the situations in which other less competitive methods can be used; and*
- *Wide participation through publication of business opportunities; descriptive bid/ proposal documents that disclose the evaluation criteria to be used; neutral and broad specifications; non- discriminatory participation and selection principles; and sufficient time to submit bids or proposals.*

UNEP is the GEF agency leading the global e-mobility programme and will take on this guidance in the development of the global project and its own child projects and will also pass it along to all other Implementing Agencies (UNDP, UNIDO, DBSA and EBRD). Of course, the participation of private sector partners and entities is key for the e-mobility programme and UNEP and the other Implementation Agencies will continue to seek their support and participation in the program. The Program objective is to promote a shift towards electric mobility and away from Internal Combustion Engines, and as such all projects will be working with private sector partners that are actively working in this space.

In this context, it may also be useful to refer to the GEF-7 Programming Directions, para 121, as they refer to the Climate Change Focal Area:

121. To take advantage of the GEF's comparative advantage, programming under this objective does not prioritize direct support for large-scale deployment and diffusion of mitigation options with GEF financing only. Rather, GEF-7 resources should be utilized to reduce risks and enhance enabling environments in order to facilitate additional investments and support by other international financing institutions, the private sector, and/or domestic sources to replicate and scale up in a timely manner.

The global e-mobility program is responding to the GEF's grant role to support innovation and technology transfer at key early and middle stages of development, focusing on the demonstration and early deployment of innovative technologies to deliver sustainable energy solutions that control, reduce, or prevent GHG emissions.

v Comment by Kordula Mehlhart, GEF Council Member, Head of Division on Climate Finance, BMZ, Council, Germany made on 6/18/2020

Germany approves the following PIFs in the work program but asks that the following comments are taken into account:

Germany approves the addendum to the global programme that contributes to the adoption of e-mobility by strengthening the technical and financial capacities of countries and taking into account different local prerequisites and requirements.

Suggestions for improvements to be made during the drafting of the final project proposal:

· The introduction of e-busses to local public transportation fleets differs from other e-mobility forms,

e.g. from heavy duty long-distance trucks, when it comes to technical aspects, charging infrastructure and the role of public / private investments. Given the unique involvement of public stakeholders in the purchase and operation of e-busses as well as the significant effect e-busses can have in terms of GHG- emission reductions in urban centres, this subject deserves a great amount of attention. Germany therefore proposes, that the significance of the acceleration of ebus adoption be reflected in the program structure, by creating an additional working group focused on e-busses in public transportation.

Response:

Many countries have prioritized the introduction of electric busses in their country projects. Often as part of their efforts to introduce mass transit/ bus rapid transit systems. There will be a key interest in developing tools about the introduction of e-busses in developing country operating environments. There are also many lessons learned and examples (good and bad) in all regions that need sharing (for example the Chile and South Africa pilots). On the other hand, no country projects have prioritized electric trucks in their projects. Generally, this sector is seen as the last sector to switch, after busses, 2&3 wheelers and light duty vehicles (with the exception of the smaller delivery trucks like vans and so). Therefore, our thinking is to focus the HDV working group on busses. With possibly (probably) a smaller sub-group focusing on electric trucks. So rather than having a busses sub-group, we want to focus the HDV working group on busses and have a sub-group on trucks.

· Germany welcomes that information exchange and knowledge management are a substantial part of the programme. We suggest establishing a close working relationship to the new TUMI (Transformative Urban Mobility Initiative) E-Bus mission. The“TUMI E-Bus Mission” follows a similar logic and approach in supporting cities in the uptake of e-busses. As the e-bus implementation in public transport is largely dependent on an involvement of city level decisionmakers, the TUMI E-Bus Mission can contribute to the proposed programme by feeding in local perspectives and requirements.

Response:

UNEP already has existing working relations with the Transformative Urban Mobility Initiative. Coordination with and involvement of the TUMI initiative in the global e-mobility programme will be added to the project document (especially through the activities implemented as part of the Regional Support and Investment Platforms).

v Comment by Anar Mamdani, Director, Environment Division (MSS), Global Issues and Development Branch (MFM), Global Affairs Canada, Council, Canada made on 6/26/2020

· We recommend that there be some consideration to mitigating the environmental impacts of electric vehicles, particularly where facilities for managing batteries don't exist.

Response:

Component 1 of the global e-mobility project includes a Global Thematic Working Group on "Electric vehicle charging, grid integration, renewable power supply and battery re-use, recycling and safe disposal". This Working Group's main objective will be to develop and make available knowledge materials that support governments in their ambitions for advancing a sustainable roll out of electric mobility, including policy instruments to ensure the sustainability of the battery supply chain and the end-of-life treatment of batteries. It also aims at the facilitation of discussions between regulators, recyclers and battery / vehicle manufacturers to better understand and enhance battery design to improve recyclability of batteries, especially with regards to economic viability.

In addition, Component 4 of the country child projects is usually focused on the long-term environmental sustainability of low-carbon electric mobility, which include outputs/activities to ensure/promote the environmentally sound management of used batteries (i.e. collection, re-use, recycling and disposal).

v Comment by Elizabeth Nichols, U.S. Department of State | Bureau of Oceans, International Environmental and Scientific Affairs (OES), Office of Environmental Equality and Transboundary Issues (EQT), Council, United States made on 7/2/2020

· Within Bangladesh, we recommend additionally coordinating with the State Minister for Power, Energy, and Mineral Resources, and the Dhaka North City Corporation Mayor.

Response:
Comment taken and shared with UNDP project proponents in charge of the Bangladesh child project. This recommendation will be considered during the proposal development phase of the Bangladesh e-mobility project.

· Within Sri Lanka, there was very minimal reference to the project's stakeholders. We look forward to seeing much more clearly defined information on stakeholders and their engagement in the next stage of proposal development.

Response:
Comment taken and shared with UNEP project proponents in charge of the Sri Lanka child project. Engagement of project stakeholders will be further elaborated during the proposal development phase of the Sri Lanka e- mobility project.

v Comment by Dr Katharina Stepping, Deputy Head of Unit Climate Finance, Federal Ministry for Economic Cooperation and Development (BMZ), Council, Germany made on 6/28/2019

Germany welcomes the proposal aiming to support countries to design and implement electric mobility programs as part of an overall shift to sustainable, low carbon transport sector. Germany welcomes the proposal as the first global inter-agency electric mobility programme and appreciates that the project clearly aims at supporting the rapid introduction of electric mobility in GEF recipient countries, herby making a contribution to the low carbon transition in the transport sector. At the same time, Germany has the following comments that it suggests be addressed in the next phase of finalizing the project proposal:

Suggestions for improvements to be made during the drafting of the final project proposal:

· Germany welcomes that the project foresees a clear role for the private sector as a supplier for electro mobility technologies. However, given that private sector investments in electric mobility will be key, Germany would welcome the inclusion of activities that specifically directed at spurring private investments in electric mobility (from the demand side). For instance, some firms have switched parts of their operations to electric fleets. These types of opportunities could be considered within the PIF.

Response:

Almost all of the Country Child Projects are geared towards the introduction of electric 2&3 wheelers (and sometimes e-passenger cars) as well as e-buses into private or government owned public transportation fleets through: 1) Awareness raising, capacity building and institutionalization of e-mobility; 2) Short term barrier removal through demonstration of e-mobility; 3.) Scale-up and replication through development of e-mobility policies, business models and financial mechanisms; and 4.) Support of environmental sustainability through battery re-use / end-of-life considerations and integration of renewable power for vehicle charging. The Country Child Projects therefore target to spur e-mobility demand in the project countries.

The Regional Support and Investment Platforms under the Global Programme will create market-place events whereby the current as well as potential new projects meet with financiers (development banks, venture capital, green funds) and e-mobility manufacturers. The idea is to bundle demand for EVs and EV supply equipment and to raise interest from manufacturers in regions of the world, which are not yet in the focus of manufacturers, but have a great market potential.

The Global Working Groups and the Regional Supply and Investment Platforms are a means of private sector participation, and invites all major EV and EV supply equipment manufacturers to participate in events, tasks groups, etc. This also includes bringing together multinational EV and EVSE manufacturers with the vibrant mobility service provider start-up scene in low and middle-income countries.

Many Country Child Project also include work streams to incentivize the local assembly and manufacturing of e- vehicles, such as e-motorcycles and e-3wheelers.

· Germany welcomes the comprehensive and overall well-structured project design. To further facilitate an overview of the project´s intended activities, Germany welcomes the inclusion of quantitative indications in the description of component 3 on how many pilot projects, regulatory measures etc are planned.

Response:

Each country child project includes a project results framework with quantitative indicators and end-of-project targets to measure the number of pilot projects, regulatory measures, etc., achieved/developed within the framework of the GEF project. However, at the time of submission of the Global Child Project, not all Country Child Projects (and in particular those 10 Country Child Projects submitted as part of the second round) have been finalized, and thus the exact amount of policies planned, business models envisaged and financial mechanisms to be set-up cannot not be provided.

· While the proposal provides a comprehensive overview of highly relevant initiatives and programmes, Germany welcomes including existent initiatives such as the Transformative Urban Mobility Initiative

and the C40 Cities Finance Facility as well as upcoming initiatives such as TUMIVolt to enable exchange of experiences as well as potentials for future collaboration. This is especially relevant considering the planned future expansion of the proposed project to countries like Nigeria and Mexico which are partner countries to above mentioned initiatives.

Response:

UNEP has working relations with both TUMI as well as C40 (in particular through the “Zero Emission Bus Rapid- deployment Accelerator” (ZEBRA) initiative), and coordination with and involvement of both initiatives in the global e-mobility programme, especially through the activities implemented as part of the Regional Support and Investment Platforms, will be added to the project document.

· Germany welcomes the proposal´s reliance on IEA scenarios to lay out the project approach. To even further increase the proposal´s line of argument, Germany would welcome a very brief explanation on why the proposal focuses on the IEA´s B2DS and not on the 2DS scenario when describing the programme´s focus. This could for example be provided on page 26 in the first paragraph.

Response:

Work funded by the GEF working towards Climate Change Mitigation is related to the UNFCCC and the Climate Agreements achieved as part of the Conference of the Parties (COP). The Paris Agreement’s central aim is “to strengthen the global response to the threat of climate change by keeping a global temperature rise this century well below 2 degrees Celsius above pre-industrial levels and to pursue efforts to limit the temperature increase even further to 1.5 degrees Celsius”. The IEA Beyond 2 Degree Scenario (B2DS) reflects this. Language can be added as suggested.

v Comment by James Woodsome, International Economist, O ce of International Development Policy, International Affairs, U.S. Department of the Treasury, Council, United States made on 7/3/2019

Feasibility. The core of this proposal for Armenia deserves further scrutiny. The claim of 5,000 electric vehicles does not fit with other statistics, for example press reports citing the Minister of Nature Protection as saying that 30 electric vehicles were imported into Armenia in 2018. While there may have been a several-fold increase in electric vehicle imports in Armenia since 2016, those imports would have started from extremely low levels. That Armenia would manufacture electric vehicles does not track with the fact there is no real manufacturing industry even for traditional petroleum fuel vehicles at present. Due to the ratcheting duties caused by incremental adoption of the Eurasian Economic Union (EAEU) common external tariff, Armenia will face steadily increasing prices for imports of cars from outside the EAEU, complicating the adoption of such technology. We encourage more background investigation before its basic feasibility can be established.

Response:

Regarding the question on Armenia, unfortunately there is a mistake with the short description of the Armenia child project baseline in Table 2 of the PFD. This will be corrected during the Child Project development and a note will be attached to the PFD to that effect. The 5,000 EVs mentioned and the local manufacturing actually belong to Ukraine. The US Council comment is right and Armenia imported about 30 EVs in 2018 (h ttps://energyagency.am/en/page_pdf/tsragri-anvanoum). The project feasibility in Armenia will be further analyzed during development, but the government has prioritized the promotion of electric vehicles as one of the transport measures in their NDC. Armenia recently waived the VAT on EVs to stimulate the EV market

(https://energyagency.am/en/category/noroutyounner-ev-mijocaroumner/elektromobilneri-nermoutsoumy-

kazatvi-aah). In general, high import duties for vehicles can be an opportunity rather than a barrier for EV import. In case these duties are waived or reduced for EVs (to some extent that is already the case with the VAT exemption for EVs in Armenia), it provides a meaningful monetary incentive for customers to buy electric vehicles. EV market uptake in Norway is largely due to import and registration tax exemptions for EVs, while import of conventional cars is subject to high taxes. Yerevan has instituted an exemption of parking fees for EV's and has deployed some recharging infrastructure. Armenia already has a low emissions factor of about 0.4 tons of CO2/MWh and the introduction of EV's in Armenia would be able to reduce emissions with such a grid profile, and Armenia has introduced several policies to incentivize renewable power generation investments. For example, projects have been implemented or have been committed to improve energy transmission efficiency and reliability, and investment in renewables is taking off. This GEF project aims to demonstrate light duty vehicles in a government fleet in Yerevan, and in 2019, 23 charging stations will be installed through a GEF-6 funded Small Grant Programs implemented and led by UNDP. Promoting electric vehicles together with renewable energy will improve energy efficiency and further reduce CO2 emissions, air pollution and energy dependence in Armenia. This will be in full alignment with the countries' NDC and its strong commitment to the introduction of clean and sustainable energies.

v Comment by Lauren Céline Naville Gisnås, NORAD, Department for Climate, Energy and Environment, Council, Norway made on 6/29/2019

· We put great emphasis on cutting GHG emissions through electrification of the transport sector. We are of the opinion that if all take concerted action, it will drive down costs because of scale production.

· Every country has to choose their own path. However, an important lesson so far is that one needs to tax emissions. You need carrots and sticks. In line with general GEF principles of an enabling policy framework, one should pay attention to relevant tax policies when designing GEF programs, including policies for reducing fossil fuel subsidies.

Response:

The Child Country Projects all include work on the development of adequate policy frameworks to support the uptake of e-mobility – including regulatory, fiscal and other local measures. For example, some of the country projects include outputs on fiscal reforms in order to base registration and / or import taxation for vehicles on CO2 emissions or fuel consumption. In some of the countries (i.e. in some of the SIDS), work will be brought forward to liberalize the power market and to allow the supply of power by independent power producers, which facilitates the introduction of renewable power generation and breaks the monopoly of subsidized petroleum fuel powered electricity generation.

ANNEX C: Status of Utilization of Project Preparation Grant (PPG). (Provide detailed funding amount of the PPG activities financing status in the table below:

PPG Grant Approved at PIF: **US$**			
Project Preparation Activities Implemented	*GETF/LDCF/SCCF Amount (US$)*		
	Budgeted Amount	*Amount Spent to date*	*Amount Committed*
Project consultant (baseline analysis, project design, preparation of the document)	29,500	29,500	0
UNEP Air Quality and Mobility Unit (developing methodology for calculating GHG emission reductions, calculation of GHG emission reductions, technical review of document)	5,000	5,000	0
Centro Mario Molina (technical assistance)	3,000	3,000	0
Travel	2,500	0	0
Total	**40,000**	**37,500**	0

ANNEX D: Project Map(s) and Coordinates

Please attach the geographical location of the project area, if possible.

Project activities will be undertaken at the island level and through-out the island. The government's vehicle fleet participating in the demonstration will be based in Castries. The location of charging stations will be determined during project implementation, with some expected to be in Castries. Additional charging points will be provided within the UAE's project on solar energy at the airport. LUCELEC is expected to provide additional charging points in other parts of the island, and the companies participating in the demonstration with their own fleets have still to decide where the EVs will be deployed.


CARIBBEAN
CASTRIES
Soufrière
SAINT
LUCIA

Demonstration sites	*Latitude*	*Longitude*
Saint Lucia	*13.9*	*-61.0*

ANNEX E: Project Budget Table

Please attach a project budget table.

Expenditure category & detailed description	Output 1 (A)	Output 2 (B)	Output 3 (C)	Output 4 (D)	Sub-total (E) = (A)+(B)+(C)+(D)	M&E (F)	PMC (G)	Total (H)	Responsible entity (I)
02. Goods					-		**6,500**	**6,500**	
Furniture and computers					-		6,500	6,500	Department of Sustainable Development
04. Grants/ Subgrants		**200,000**			**200,000**			**200,000**	

Grants to EV beneficiaries transferred to Department of Finance		200,000			200,000			200,000	Department of Sustainable Development
07. Contractual services company	**20,000**				**20,000**		**10,776**	**30,776**	
Independent financial audits					-		10,776	10,776	Department of Sustainable Development
Technical assistance for design, implementation and operation of website	20,000				20,000			20,000	Department of Sustainable Development
08. International Consultants	**60,000**	**44,912**	**80,000**	**75,000**	**259,912**	**30,000**		**289,912**	
Business models and financial schemes for EV expansion			70,000		70,000			70,000	Department of Sustainable Development
Consultancy on future ELV Management regulations				65,000	65,000			65,000	Department of Sustainable Development
Consultancy on gender analysis and action plan	20,000				20,000			20,000	Department of Sustainable Development
Consultancy									

On passenger mobility policy and impacts of electrification	40,000				40,000			40,000	Department of Sustainable Development
Provision and installation of charging points		15,000			15,000			15,000	Department of Sustainable Development
Technical Support On Communication plans and activities (including website)				10,000	10,000			10,000	Department of Sustainable Development
Technical Support to demonstrations and EV potential market assessment		29,912	10,000		39,912			39,912	Department of Sustainable Development
Terminal Evaluation					-	30,000		30,000	UNEP Evaluation Office
09. Local Consultants	**10,000**	**10,000**			**20,000**			**20,000**	
Technical support on Communication plans and activities (including website)	10,000	10,000			20,000			20,000	Department of Sustainable Development
10. Salary and benefits/Staff Costs	**39,600**	**18,200**	**27,650**	**17,500**	**102,950**	**9,400**	**39,150**	**151,500**	

Chief Technical Advisor	39,600	18,200	27,650	17,500	102,950	9,400	3,150	115,500	Department of Sustainable Development
Project finance and M&E Officer					-		36,000	36,000	Department of Sustainable Development
11. Training, Workshops, Meetings	**26,000**	**24,000**		**4,000**	**54,000**			**54,000**	
Services to support meetings and events	26,000	24,000		4,000	54,000			54,000	Department of Sustainable Development
12. Travel	**18,000**				**18,000**			**18,000**	
Travel to attend working groups and workshops of the global e-mob programme	18,000				18,000			18,000	Department of Sustainable Development
13. Office supplies					**-**		**6,000**	**6,000**	
Office supplies					-		6,000	6,000	Department of Sustainable Development
14. Other operating costs					**-**		**9,000**	**9,000**	
Office operations					-		9,000	9,000	Department of Sustainable Development
Total general	**173,600**	**297,112**	**107,650**	**96,500**	**674,862**	**39,400**	**71,426**	**785,688**	

ANNEX F: (For NGI only) Termsheet

Instructions. Please submit an finalized termsheet in this section. The NGI Program Call for Proposals provided a template in Annex A of the Call for Proposals that can be used by the Agency. Agencies can use their own termsheets but must add sections on Currency Risk, Co-financing Ratio and Financial Additionality as defined in the template provided in Annex A of the Call for proposals. Termsheets submitted at CEO endorsement stage should include final terms and conditions of the financing.

N/A

ANNEX G: (For NGI only) Reflows

Instructions. Please submit a reflows table as provided in Annex B of the NGI Program Call for Proposals and the Trustee excel sheet for reflows (as provided by the Secretariat or the Trustee) in the Document Section of the CEO endorsement. The Agencys is required to quantify any expected financial return/gains/interests earned on non-grant instruments that will be transferred to the GEF Trust Fund as noted in the Guidelines on the Project and Program Cycle Policy. Partner Agencies will be required to comply with the reflows procedures established in their respective Financial Procedures Agreement with the GEF Trustee. Agencies are welcomed to provide assumptions that explain expected financial reflow schedules.

N/A

ANNEX H: (For NGI only) Agency Capacity to generate reflows

Instructions. The GEF Agency submitting the CEO endorsement request is required to respond to any questions raised as part of the PIF review process that required clarifications on the Agency Capacity to manage reflows. This Annex seeks to demonstrate Agencies' capacity and eligibility to administer NGI resources as established in the Guidelines on the Project and Program Cycle Policy, GEF/C.52/Inf.06/Rev.01, June 9, 2017 (Annex 5).

N/A