



Promoting Low-carbon Electric Public Bus Transport in Mauritius

Part I: Project Information

GEF ID

10372

Project Type

FSP

Type of Trust Fund

GET

CBIT/NGI

CBIT No

NGI No

Project Title

Promoting Low-carbon Electric Public Bus Transport in Mauritius

Countries

Mauritius

Agency(ies)

UNDP

Other Executing Partner(s)

Ministry of Public Infrastructure and Land Transport (MPILT), Ministry of Energy and Public Utilities, National Transport Authority (NTA), National Transport Corporation (NTC), Traffic Management and Road Safety Unit (TMRSU), Private Bus Companies

Executing Partner Type

Government

GEF Focal Area

Climate Change

Taxonomy

Focal Areas, Climate Change, Climate Change Mitigation, Renewable Energy, Energy Efficiency, Technology Transfer, United Nations Framework Convention on Climate Change, Paris Agreement, Nationally Determined Contribution, Capacity Building Initiative for Transparency, Strengthen institutional capacity and decision-making, Demonstrate innovative approach, Influencing models, Communications, Type of Engagement, Stakeholders, Beneficiaries, Capacity, Knowledge and Research, Enabling Activities, Capacity Development, Deploy innovative financial instruments, Transform policy and regulatory environments, Local Communities, Civil Society, Private Sector, Gender Equality, Gender Mainstreaming, Gender results areas

Rio Markers

Climate Change Mitigation

Climate Change Mitigation 2

Climate Change Adaptation

Climate Change Adaptation 0

Submission Date

10/8/2019

Expected Implementation Start

10/1/2021

Expected Completion Date

9/30/2027

Duration

72In Months

Agency Fee(\$)

532,057.00

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 ? electric drive technologies and electric mobility	GET	5,600,607.00	37,360,000.00
Total Project Cost(\$)			5,600,607.00	37,360,000.00

B. Project description summary

Project Objective

Project Objective: To promote capital investments into developing sustainable transport infrastructure to reduce transport-related GHG emissions in Mauritius to mitigate climate change; engage and build technical capacities of transport-related policymakers, regulatory and other government agencies, financial institutions and the private sector.

Project Component	Financing Type	Expected Outcomes	Expected Outputs	Trust Fund	GEF Project Financing(\$)	Confirmed Co-Financing(\$)
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Project Component	Financing Type	Expected Outcomes	Expected Outputs	Trust Fund	GEF Project Financing(\$)	Confirmed Co-Financing(\$)
1. Policy and regulatory framework for electric public (bus) transport in Mauritius	Technical Assistance	Favorable policy and regulatory framework and enabling environment is established for low-carbon, electric bus transport investments in Mauritius	<p>1.1: Designing and developing a long-term comprehensive ?Sustainable Low-carbon Transport Planning? document that provides with policy and regulatory framework for electric bus transport. (Key Stakeholders: MLTLR, NLTA)</p> <p>1.2: Developing a comprehensive policy, regulatory and guidelines framework to enable e-bus deployment in Mauritius for public transport.</p> <p>(Key Stakeholders: MLTLR, NLTA, CEB, MEPU, MESWM)</p> <p>1.3: Feasibility studies and analysis that could lead to the preparation of an Investment Program to scale up low-carbon transport in Mauritius</p> <p>(Key Stakeholders: MLTLR, NLTA, CEB, MEPU)</p>	GET	190,000.00	380,000.00

Project Component	Financing Type	Expected Outcomes	Expected Outputs	Trust Fund	GEF Project Financing(\$)	Confirmed Co-Financing(\$)
2. Financial Incentive Package for electric buses and charging infrastructure	Investment	Financial subsidies, tax and other incentives for deployment of electric buses and associated solar charging infrastructure are established	2.1: Capital Subsidy scheme for electric buses (60 buses with upto 40% estimated capital subsidies) for both regular long routes and/or short loop feeder buses to provide last mile connectivity to and from MetroExpress stations. (Key Stakeholders: MLTLR, NLTA, Bus Operators)	GET	4,350,000.00	30,000,000.00
2. Financial Incentive Package for electric buses and charging infrastructure	Technical Assistance	Financial subsidies, tax and other incentives for deployment of electric buses and associated solar charging infrastructure are established	2.2: Capital Subsidy scheme for solar powered charging stations (15 solar powered charging stations with upto 40% estimated capital subsidies) to be setup by bus operators or other private entities for charging their electric buses.(Key Stakeholders: MLTLR, NLTA, CEB, MEPU, Bus Operators)	GET	70,000.00	5,000,000.00

Project Component	Financing Type	Expected Outcomes	Expected Outputs	Trust Fund	GEF Project Financing(\$)	Confirmed Co-Financing(\$)
3. Technical Feasibility and Capacity Building	Technical Assistance	Establishment of technical and financial feasibility of deploying electric buses in Mauritius, and implementation of a comprehensive training and capacity building program on e-buses	<p>3.1: Technical, operational, financial, economic and regulatory analysis of several aspects of electric bus mobility opportunity in Mauritius are completed, including analysis for gender-specific and elderly/children/special needs commuter aspects, in order to increase knowledge and clarify market opportunity to various stakeholders, so that policy, regulatory and financial incentives offered are more targeted and create strong enabling environment. (Key Stakeholders: MLTLR, NLTA)</p> <p>Output 3.2: Identification of capacity gaps and training/capacity building activities that increase capacity of local institutions and stakeholders on electric mobility technology, business models and financing.(Key Stakeholders: MLTLR, NLTA)</p> <p>Output 3.3: Improved knowledge and capacity among local stakeholders</p>	GET	230,000.00	50,000.00

Project Component	Financing Type	Expected Outcomes	Expected Outputs	Trust Fund	GEF Project Financing(\$)	Confirmed Co-Financing(\$)
4. Awareness Raising to address barriers related to lack of awareness on benefits of low-carbon electric public transport.	Technical Assistance	Increased awareness of benefits of clean, low-carbon public transport options in Mauritius, and benefits of using public transport, walking, cycling etc	4.1: Increased awareness and sensitization among local population regarding the benefits of using public transport in general, and low-carbon electric mobility in particular. (Key Stakeholders: MLTLR, NLTA)	GET	200,000.00	150,000.00

Project Component	Financing Type	Expected Outcomes	Expected Outputs	Trust Fund	GEF Project Financing(\$)	Confirmed Co-Financing(\$)
5. Knowledge Management, Monitoring and Evaluation.	Technical Assistance	Knowledge acquired during the project, compiled and disseminated; M&E milestones implemented	<p>5.1: Project baseline established, Inception Workshop completed, lessons learned from other e-mobility projects (GEF-funded or otherwise) reviewed, quantitative and qualitative project data/outcomes captured, evaluated, and disseminated among all project stakeholders in the form of M&E and knowledge reports and knowledge dissemination workshops.(Key Stakeholders: MLTLR, NLTA)</p> <p>Output 5.2: Knowledge management, tools and M&E reports shared with (and received from) GEF-funded UN Environment's Global E-Mobility Program. (Key Stakeholders: MLTLR, NLTA)</p>	GET	300,000.00	50,000.00
Sub Total (\$)					5,340,000.00	35,630,000.00
Project Management Cost (PMC)						
GET		260,607.00		1,730,000.00		

Project Management Cost (PMC)

Sub Total(\$)	260,607.00	1,730,000.00
Total Project Cost(\$)	5,600,607.00	37,360,000.00

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	Metro Express Ltd (MEL)	Other	Investment mobilized	20,000,000.00
Recipient Country Government	National Transport Corporation (NTC)	Equity	Investment mobilized	1,000,000.00
Recipient Country Government	Ministry of Finance, Economic Planning and Development (MFEPD) (channeled through MLTLR and NLTA Bus Modernization Programme)	Grant	Investment mobilized	2,000,000.00
Donor Agency	Agence Fran?aise de D?veloppement (AFD)	Loans	Investment mobilized	8,000,000.00
GEF Agency	United Nations Development Programme (UNDP)	In-kind	Recurrent expenditures	60,000.00
Private Sector	Rose Hill Transport (RHT) Bus Services Limited (Privately-owned public transport bus operator)	Equity	Investment mobilized	6,100,000.00
Recipient Country Government	Ministry of Land Transport and Light Rail (MLTLR)	In-kind	Recurrent expenditures	200,000.00
Total Co-Financing(\$)				37,360,000.00

Describe how any "Investment Mobilized" was identified

* Co-financing from MetroExpress Limited will be in the form of direct investments for development of LRT MetroExpress line, given that investments made from GEF investment budget (Component 2) under this project will complement MetroExpress and increase overall utilization level of low-carbon public transport in Mauritius. MetroExpress Limited co-financing will also be deployed for TA activities such as development of "Comprehensive Long-term Sustainable Low-carbon Transport Masterplan" (Component 1), awareness raising activities to raise the profile of and increase utilization level of public transport options (Component 4), as well as investments into planning, development and implementation of multi-modal transit integration facilities that would enable seamless integration among MetroExpress, electric public bus transport and other modes of public transport (bicycling and pedestrian pathways, taxis and so

on). * Co-financing from National Transport Corporation (NTC), a government-owned public transport bus operator, has been mobilized as NTC's equity investments into acquiring electric buses and solar powered charging stations under this project, which will be the portion of capital expenditure investments required to be made by bus operators over and above subsidy from the government's Bus Modernization Programme, enhanced subsidy from this GEF project, and debt finance from the commercial banks (under AFD SUNREF green credit line program). * Co-financing from MFEPD will be channeled via MLTLR, this project's Implementing Partner (IP), and its subsidiary agency, NLTA's existing Bus Modernization Programme in the form of existing subsidies to public transport bus operators to acquire electric buses; enhanced capital subsidies to be provided from this GEF project will be over and above the MFEPD subsidy payments (channeled via MLTLR and NLTA). * Co-financing from MLTLR, this project's IP, will be mobilized as in-kind support for certain TA activities (Components 1, 3, 5) as well as for Project Management activities. * Co-financing from AFD, the French development agency, will be mobilized from its ongoing SUNREF programme as loans to eligible bus operators for financing non-subsidized portion of capital costs of electric buses and solar powered charging stations (Component 2). * Co-financing from Rose Hill Transport (RHT), a privately-owned public transport bus operator, has been mobilized as RHT's equity investments into acquiring electric buses and solar powered charging stations under this project, which will be the portion of capital expenditure investments required to be made by bus operators over and above subsidy from the government's Bus Modernization Programme, enhanced subsidy from this GEF project, and debt finance from the commercial banks (under AFD SUNREF green credit line program).

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(\$)
UNDP	GET	Mauritius	Climate Change	CC STAR Allocation	5,600,607	532,057
Total Grant Resources(\$)					5,600,607.00	532,057.00

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 **false**

PPG Amount (\$)

100,000

PPG Agency Fee (\$)

9,500

Agency	Trust Fund	Country	Focal Area	Programmin g of Funds	Amount(\$)	Fee(\$)
UNDP	GET	Mauritius	Climate Change	CC STAR Allocation	100,000	9,500
Total Project Costs(\$)					100,000.00	9,500.00

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 ₂ e (direct)	10950	153248	0	0
Expected metric tons of CO ₂ e (indirect)	18250	632182	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 ₂ e (direct)		76,624		
Expected metric tons of CO ₂ e (indirect)		316,091		
Anticipated start year of accounting		2022		
Duration of accounting		19		

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 ₂ e (direct)	10,950	76,624		
Expected metric tons of CO ₂ e (indirect)	18,250	316,091		
Anticipated start year of accounting		2022		
Duration of accounting		19		

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)		4,932,543,000		

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)
Solar Photovoltaic select	0.50	0.75		

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		10,500		
Male		10,500		
Total	0	21000	0	0

Provide additional explanation on targets, other methodologies used, and other focal area specifics (i.e., Aichi targets in BD) including justification where core indicator targets are not provided

Part II. Project Justification

1a. Project Description

1) The Global Environmental and/or Adaptation Problems, Root Causes and Barriers that need to be Addressed (Systems Description)

Barriers noted at the PIF stage remain unchanged, but the statement of the problem and the project's theory of change have been further elaborated and made more context-specific, with direct linkages of root causes and barriers to proposed activities, outputs, and outcomes.

Road transport is the most important form of transport in Mauritius. As of Oct 2020, 596,873 vehicles were registered with the National Land Transport Authority (NLTA) compared to 580,629 at the end of Dec 2019, a net increase of 2.8%. Of these total number of vehicles, 53% were cars, double cab pickup and dual-purpose vehicles, 37% motorized two-wheelers and the remaining 10% comprised of vans, lorries and trucks, buses and other vehicles. During the first three quarters of 2020, the national fleet increased by 16,244 more vehicles despite Covid19 pandemic . Vehicle registrations have grown at an average rate of 4% per annum over the last decade.

Lack of Modern, Comfortable, Low-emission Public Bus Transport: Buses are the principal form of public transport in Mauritius, and as of June 2020, there were 3,094 registered buses in Mauritius, out of which 1,962 or 63.4% were public transport buses operating with a road service license. Over 60% of the country's population uses buses at least once a week, with many passengers using them daily for commuting purposes. The public transport bus fleet carries an estimated 600,000-700,000 people every day (pre-Covid) and travels over 140 million km each year, making it a key lifeline for the Mauritian population and economy. Buses are operated by licensed bus operators, and there are 5 main organized bus companies (1 government-owned company National Transport Corporation (NTC), and 4 private bus operators), and a large number of individual bus operators. Bus operators operate under licenses and fares fixed by the government.

Public bus transport fleet in Mauritius has actually decreased from 2034 in December 2017 to 1962 in June 2020. Average vehicle journeys per day of public transport buses have also reduced from 8.8 in 2010 to less than 8 in 2019. Therefore, the overall service volume of bus services in Mauritius has declined significantly over the past few years. According to Statistics Mauritius, in 2019, 46.2% of public transport buses in Mauritius were aged between 10 and 20 years, and 32.3% were aged between 5 and 9 years, with only 21.5% of public transport buses being of age less than 5 years. Growing use of

private transport and increased accidents are indicative of an inadequate public transport system in Mauritius. While economic growth and increased private ownership of vehicles is a key contributor to reduced usage of public transport buses, less-than-adequate quality, comfort levels of public bus transport system and an ageing, polluting public bus transport fleet are also key reasons for lower usage of public transport buses than a decade ago, despite growing overall transport demand. Safety concerns, especially for women passengers, and limited accessibility features of these buses for elderly, children and disabled passengers also dissuade these passengers from using public transport buses.

Road Traffic Congestion: The lack of modern, comfortable and low-emission public bus transport system has resulted in a steady shift towards private vehicles, which is unsustainable both in terms of managing traffic congestion and air pollution, and increased economic burden due to a need to import more fossil fuels such as gasoline and diesel. As a result of rapid increase in vehicular fleet, Mauritius, with nearly 470 motor vehicles per 1000 population, now has one of the highest vehicular density in Africa, and higher than countries such as Singapore. Recurrent severe traffic congestions ? often even gridlocks ? occur along the main arterial roads of key urban areas of Mauritius such as Port Louis, Beau Bassin/Rose-Hill, Quatre Bornes, Vacoas, Curepipe, Ebene and Verdun, with average speeds being as low as 12 to 18 kmph during peak hours. It is estimated that Mauritius incurs a loss of MUR 4 billion (~US\$ 116 Million) per annum to its GDP due to traffic congestion.

Metro Express: In response to growing traffic congestion and pollution, the Government of Mauritius approved the Metro Express project in 2016 and construction began in March 2017. The Light Rail Transport (LRT) MetroExpress line, with a total proposed length of 28 km from Port Louis to Curepipe is the only railway line in the country, since the government railways unit was closed down in the 1960s. The Metro Express is being built with an aim to serve as an integrated mode of transport with the rest of the modes of transport, rather than competing with these. Phase 1 of Metro Express corridor (14 km length) was inaugurated in October 2019, and began full operations in January 2020. When fully operational, the Metro Express is estimated to operate 32 trains operating on the rail track (15 trains per hour, each with 304 passenger capacity) carrying up to 80,000 passengers per day. . Phase 2 of this project is scheduled to be completed by 2021-22.

Road Accidents and Casualties: Increased vehicular density and limited road safety awareness among drivers have also resulted in significant increases in road accidents and casualties in Mauritius. In 2019, the total number of vehicles involved in road accidents was 58,267 (+2.0%) against 57,104 in 2018. This means that nearly 10% of registered vehicular fleet in Mauritius were involved in road accidents of some kind in 2019. Fatality rate, at 11.8 per every 100,000 population in 2019 (compared to 11.7 in 2018), ranks among the highest in Africa. Out of the 144 persons killed in road accidents during year 2019, the most vulnerable category of road users were riders/pillion riders of auto/motorcycles (55), followed by pedestrians (35). The number of road accidents registered during the first half of 2020 was

23.8% lower than the first half of 2019, as a result of less traffic on the roads during the lockdown due to COVID-19 pandemic.

Greenhouse Gas (GHG) Emissions and Pollution from Road Transport: In 2019, GHG emissions from the transport sector was estimated to be 1,132 Gg CO₂-eq compared to 1,109 in 2018, up by 2.1% due to higher fuel consumption. GHG emissions from transport sector has steadily increased by 2-3.5% per annum over the last decade. Energy consumed by transport sector increased by 2.2% from 540 ktoe in 2018 to 552 ktoe in 2019. Regulations controlling vehicular emissions in Mauritius are still equivalent to EURO 1/I emissions standards while European countries and many developing countries such as India have already transitioned to Euro 6/VI or equivalent emission standards. Mauritius' bus fleet is considerably less fuel-efficient than it ought to be, consuming 13.4% of national fuel consumption per annum (43 ktoe), despite accounting for only ~6% of vehicles on the road. Outdoor/ambient air pollution has also started to become a matter of concern in Mauritius, particularly in urban areas. According to Government of Mauritius statistics, ambient air pollution in some urban areas was very high, with an annual mean PM₁₀ concentration of 137 micrograms per m³ and annual mean PM_{2.5} concentration of 67 micrograms per m³ which is very high by most standards. Despite air pollution regulations and other measures, localized pollution, and concentration of PM_{2.5} and PM₁₀ in the air, along with concentration of SO_x and NO_x has been growing. The WHO estimates that air pollution causes 100 premature deaths annually.

Bus Modernization Programme and Barriers to Deployment of Low-carbon Bus Transport: In response to the issues faced by Mauritius in its land transport sector, the Ministry of Land Transport and Light Rail (MLTLR, previously Ministry of Public Infrastructure and Land Transport), Government of Mauritius, in 2014, introduced the Bus Modernization Programme providing capital subsidies and exemption from VAT to public transport bus operators for modernizing their bus fleets. The aim of this programme was to replace existing buses with semi low-floor (diesel) buses for increased comfort and better accessibility to all users. The programme aimed to ensure that, by 2023, 75% of the country's bus fleet is less than 10 years old. Under this Programme, 363 old public transport buses have been replaced so far with Semi Low Floor buses. Nevertheless, the Programme recorded limited success, for two key reasons: (i) the capital subsidies offered have proven insufficient, and (2) several of the new semi low-floor buses have proven to have worse fuel efficiency than the old buses that were being replaced, resulting in higher diesel fuel consumption and higher GHG emissions than the old buses they replaced.

Globally, innovations and efficiency improvements in transport technology and business models for bus transport have been driving deployment of low-carbon, smart transport solutions, such as electric bus transport. Bringing such innovative, smart, low-carbon bus technologies and business models to Mauritius is critical, considering the economy's reliance on imported fossil fuels, growing transport emissions and pollution and the country's vulnerability to climate change. Hybrid and electric vehicles

for personal transport have already seen growing adoption among the general population in Mauritius, with registration of hybrid vehicles increasing from 588 in 2015 to 3770 in 2019, and registration of electric vehicles increasing from 11 in 2015 to 110 in 2019. The Government of Mauritius has recognized these technological and efficiency advances in the electric vehicle industry and has extended its capital subsidies and VAT exemption incentives under its Bus Modernization Programme to cover electric and hybrid buses as well. On purchase of an electric bus for provision of public transport, a subsidy of MUR 1 Million is granted if the value of the bus is less than MUR 9 Million, or a subsidy of MUR 1.3 Million is granted if the value is greater than MUR 9 Million. However, despite these incentives, introduction of electric buses for public transport has not gained traction, with just 2 electric buses (32-seater mini-buses) being imported and deployed on a pilot basis by Rose Hill Transport (RHT), one of the public bus operators.

Key barriers to large-scale procurement and deployment of electric buses for public transport in Mauritius are:

? **Lack of a Comprehensive Long-term Sustainable Low-carbon Transport Masterplan for Mauritius** and a lack of an Integrated Policy and Regulatory Framework for Electric Bus Mobility. Although introduction of e-buses is already in the government's transport energy strategy for 2025, their introduction isn't contextualized in an overall transport plan and the country doesn't have any deployment targets for electric mobility. Several different government entities have conducted extensive transport demand/traffic modelling exercises, in addition to small-scale transport/traffic planning activities. Several transport infrastructure development investments and schemes are in various stages of planning/implementation/construction as well. However, all these activities have been disparate so far and not comprehensive and integrated, even though there is a baseline of disparate data, modelling and planning resources. With MetroExpress becoming operational and multi-modal transport hubs under construction and planning at several locations, it is important for Mauritius to define its integrated, comprehensive long-term sustainable low-carbon transport masterplan, with both public transport electric buses and MetroExpress, together with park-and-ride schemes, bicycling and walking pathways and private vehicles seamlessly integrated with each other. In addition, a clearly defined and outlined policy and regulatory framework that integrates all existing policy incentives and regulations for electric buses, together with a publicly declared electric bus deployment targets would attract private and public sector investments. Besides, policy and regulatory framework including technical standards and specifications for EV charging for public electric vehicle/e-bus charging stations do not exist in Mauritius, and electric vehicle charging isn't offered lower electricity tariffs by the national electricity utility. And finally, policy and regulatory framework for scientific handling, management, recycling and disposal of end-of-life batteries (including hazardous materials used in them) need to be defined.

? **Relatively high capital costs of electric buses and high-risk perception of financing e-buses** among lenders are also key barriers to deployment of electric buses for public transport in Mauritius. The capital subsidies available under Bus Modernization Programme are not sufficient to ensure financial viability of procuring and deploying electric buses for bus operators, which is

particularly important in view of lower revenues/cash reserves with bus operators due to lower transport demand in 2020 (impact of Covid19). Bus leasing option doesn't exist, and its viability for introduction of e-buses has not been assessed or established. While tax incentives exist for individuals/businesses purchasing electric vehicle charging units for their own use, capital subsidies and tax incentives are not offered to larger-scale clean energy/solar powered public electric vehicle/e-bus charging stations. This is particularly important, since electricity grid emission factor of Mauritius is considered high at 1.02 tonnes CO₂ per MWh [1]¹. Coal (36%) and fuel oil (42%) are the two main sources of electricity generation in the country as of 2019[2]² with renewable energy sources contributing 21.7%. Solar PV is expected to contribute only about 10% of national electricity generation by 2025. If the transport sector were simply to transition to electric mobility without the electricity grid also becoming greener, then the overall aim of decarbonization would not be achieved and national GHG emissions due to energy/transport activities might actually increase if electric mobility is deployed at scale. Hence. It is important to couple the introduction of e-buses with solar powered charging stations.

? **Lack of local capacity**, as well as techno-commercial, operational and market knowledge on electric bus technology is a key barrier as well. Mauritius, as with many developing countries, lacks institutional as well as private sector capacity in various aspects of electric mobility deployment. There are concerns among bus operators regarding range anxiety of e-buses, high upfront cost of batteries, their durability, charging infrastructure, driver training/capacity and commuter experience. Thus, all stakeholders, including Ministry of Land Transport and Light Rail (MLTLR), NLTA, bus operators, drivers, commuters, commercial banks/lenders and other stakeholders lack the necessary capacity, skills and knowledge to deploy electric bus system at scale.

? **Lack of awareness on long-term benefits of electric mobility** is also a key barrier. There is a general lack of awareness among government stakeholders, bus operators, commuters and banks/investors on the long-term benefits of electric mobility in Mauritius. A general perception that electric mobility is expensive and unaffordable creates barriers for its commercial introduction into the transport sector in the country, without consideration of their long-term financial and environmental benefits. Limited awareness on women's safety and accessibility for elderly/disabled passengers also reduce inclusiveness of public transport bus system.

2. Baseline scenario or any associated baseline projects:

The PIF noted the existing baseline scenarios and projects that were relevant at the time of drafting the PIF. Statistics/ details were added and updated for the following baseline scenarios/ projects:

- ? Status of Light Rail Transit (LRT) Metro Express project and related infrastructure
- ? Status of Bus Modernization Programme
- ? Status of AFD's SUNREF Programme
- ? Participation of women in public transport sector
- ? Technical, operational, financial and training needs of the stakeholders
- ? Marketing campaigns used in public modes of transport

These are the new baseline scenarios / projects that were identified during PPG phase, and are discussed in the Project Document:

- ? In November 2020, Government of Mauritius' Cabinet approved '10-Year Electric Vehicle Integration Roadmap^[3] for Mauritius prepared by EV Consult of Netherlands' that includes 24 policy measures classified under 6 categories required to be enacted by the Government of Mauritius to enable electric mobility integration at scale in the country's road transport sector. The Cabinet also approved a setup of an 'Electric Vehicle Implementation and Monitoring Committee' to monitor the implementation of the Roadmap/Action Plan
 - ? Light Rail Transit (LRT) MetroExpress Phase 1 of 14 km line from Rose-Hill to Port Louis (Victoria) completed and operationalized in January 2020; part of Phase 2 (Rose Hill to Quatre Bornes) likely to be operationalized in 2021 and complete Phase 2 expected to be operationalized by 2022.
 - ? Government of Mauritius is developing Multimodal Transit Hubs at six terminals along the MetroExpress corridor to link commercial activities with public transport bus stations and Metro Express stations. These six Multimodal Transit Hubs include those at - Victoria Bus Terminal (construction has started), Immigration Square in Port Louis (contractors have been finalized), Vacoas (RfP launched), La Place Margot in Rose Hill, Quatre Bornes, and Curepipe
 - ? Last-mile connectivity of MetroExpress stations with public transport buses were launched together with the start of MetroExpress Phase 1 operation in January 2020 with limited commercial success (also impacted by Covid19)
 - ? Limited coherence among public transport bus service network map and operations and other modes of transport, and lack of coordinated multimodal transit/connectivity information system results in a lack of seamless multimodal transport connectivity.
 - ? Bicycle networks/bicycle racks, improved pedestrian pathways, park-and-ride schemes and dedicated shuttle services to and from MetroExpress stations are at planning/design phase.
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? From a Transport Masterplan development standpoint, several different government entities, including MetroExpress Ltd, MLTLR, NLTA, TMRSU and others have conducted extensive transport demand/traffic modelling exercises, in addition to small-scale transport/traffic planning activities. Several infrastructure development investments and schemes (such as multimodal transit hubs, park-and-ride schemes) are in various stages of planning/implementation/construction as well. However, all these activities have been disparate so far ? including the ?10-Year Electric Vehicle Integration Roadmap? document approved by the Cabinet in Nov 2020. Hence, there is a need to integrate all these disparate modelling/planning activities to develop a national, comprehensive transport masterplan for Mauritius, with sustainability and low-carbon transport options at its core.

? Bus Modernization Programme, introduced in 2014 with an aim to replace existing diesel buses with semi low-floor, lower emission diesel buses The Programme, funded by a Government budget, offers MUR 1 Million (~US\$ 25,000) in subsidies per bus and additional tax rebates (15% VAT exemption) to encourage bus operators to make the switch to semi-low-floor buses. This Programme has since been extended to include deployment of electric buses as well, wherein public transport electric buses that cost upto MUR 9 Million (US\$ 225,000) would receive MUR 1 Million (US\$ 25,000) in subsidies and those that cost over MUR 9 Million would receive MUR 1.3 Million (US\$ 32,500) in subsidies

? Road Traffic ?Construction and Use of Vehicles? Regulations specify the quality, technical specifications and make of electric buses to be used for public services.

? Customs/import duty exemptions, VAT and road tax registration rebates have also been extended to public transport electric buses, although not all of these incentives are exclusively offered to electric buses. Tax and duty incentives available for public transport buses in Mauritius are shown in the table below.

?

Description	Customs Duty/Excise Duty <i>(payable at the time of import)</i>	VAT	Registration Duty	Road Tax
	<i>(Payable at time of purchase on C.I.F. value)</i>			<i>(Yearly payment)</i>
Public Transport Buses:				
Conventional	0%	0%	From MUR 6,500 to MUR 32,500	MUR 3,000/MUR 4,500
Hybrid/Electric	0%	0%	From MUR 3,300 to MUR 16,300	50% of conventional rate

? Central Electricity Board (CEB), a parastatal utility, is the monopoly electricity distributor and there are no clear regulations to allow private or government entities (that are not CEB) to setup and offer EV/e-bus charging stations in Mauritius; EV/e-bus charging as a separate consumer category with a separate electricity tariff structure (ideally lower tariffs as incentive) does not exist in Mauritian electricity law. Hence, Electric Vehicle/Bus Charging infrastructure is very minimal. Incentives for solar/clean energy-based EV charging also do not exist.

? The Environment Protection (Standards and Hazardous Wastes) Regulations 2001 does include regulations and guidelines for chemical and electronic wastes generated from batteries. Mauritius is also a party to international waste management conventions such as Basel Convention (Hazardous and E-Waste), Stockholm Convention (Persistent Organic Pollutants) and Minamata Convention (Mercury Waste), although specific regulations on management of hazardous waste generated from electric vehicle batteries still doesn't have a necessary legal framework. A new UNDP-GEF project titled ?Indian Ocean Regional Project - Mauritius - Implementing Sustainable Low and non-Chemical Development in SIDS (ISLANDS)? (PIMS ID 6400) is expected to begin implementation in 2021.

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? Gaps in policies and regulatory framework as well as financing gap has not been studied so far, which is essential to scale up EV integration into the transport sector in Mauritius, particularly deployment of electric buses at scale in both public and private transport segments.

? Bus Modernization Programme, introduced in 2014 with an aim to replace existing diesel buses with semi low-floor, lower emission diesel buses The Programme, funded by a Government budget, offers MUR 1 Million (~US\$ 25,000) in subsidies per bus and additional tax rebates (15% VAT exemption) to encourage bus operators to make the switch to semi-low-floor buses. This Programme has since been extended to include deployment of electric buses as well, wherein public transport electric buses that cost upto MUR 9 Million (US\$ 225,000) would receive MUR 1 Million (US\$ 25,000) in subsidies and those that cost over MUR 9 Million would receive MUR 1.3 Million (US\$ 32,500) in subsidies

? Rose Hill Transport (RHT), a private bus operator in Mauritius that operates public transport buses on certain routes under license from the NLTA, has procured and deployed 2 electric buses - one 36-seater and another 32-seater (10 meter length) - and have 175 kWh battery capacity; these buses were procured and deployed by RHT on an experimental basis, without securing any subsidies under the Government under Bus Modernization Programme; RHT deployed these 2 electric buses on MetroExpress feeder routes but discontinued since feeder routes were found not to have a good financial case; the buses currently operate on long routes

? French government's development agency AFD's SUNREF Programme is a EUR 85 Million green credit line dedicated to providing concessional loans to private sector in Mauritius to finance assets/projects that have climate change mitigation and adaptation benefits. SUNREF Programme is being implemented in partnership with three commercial banks in Mauritius - SBM, MCB and AfrAsia Bank. Electric vehicles, including electric buses are eligible to receive financing under SUNREF Programme. AFD's SUNREF Programme has been implemented since 2008, with SUNREF Phase 1 (2008-13, EUR 40 Million) and SUNREF Phase 2 (2014-17, EUR 60 Million) offering concessional lines of credit via local partner banks to finance renewable energy, energy efficiency and other sustainable projects of the private sector. The current phase of SUNREF Programme, Phase 3, was initiated in 2019 and will be operational for 5 years, wherein EUR 85 Million of green credit line is being channelled through 3 partner banks for financing a number of low-carbon and green assets, including electric vehicles and renewable energy installations.

? Grid codes and grant financing schemes already exist for distributed solar PV based electricity generation by private entities (such as bus operators), under MSDG and SSDG schemes developed under a UNDP-GEF Programme in 2014 and provided with financing support under an ongoing UNDP-GCF program.

? Rose Hill Transport (RHT), a private bus operator in Mauritius that operates public transport buses on certain routes under license from the NLTA, has procured and deployed a 120 kW grid-connected net metering-based solar power plant in one of its depot premises under the CEB's Medium Scale Distributed Generation (MSDG) solar deployment scheme (grid codes of MSDG scheme were developed with support from a UNDP-GEF program in 2014, and financing support being provided under an ongoing UNDP-GCF program). While this is not a solar powered charging station per se, since the 2 RHT electric buses are currently being charged with grid electricity, feeding electricity generated from this 120-kW solar power plant to the national grid offsets some of the emissions generated from fossil fuel generated CEB grid electricity consumed by electricity used for charging of electric buses.

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? A detailed analysis of all public transport routes in Mauritius needs to be conducted, in terms of travel demand (particularly in a post-Covid19 scenario and in the context of MetroExpress corridor becoming operational), and in terms of technical, operational, financial viability of introducing electric buses along some or all of these routes (both long routes and last-mile feeder bus routes to MetroExpress stations)

? Grid codes and grant financing schemes already exist for distributed solar PV based electricity generation by private entities (such as bus operators), under MSDG and SSDG schemes developed under a UNDP-GEF Programme in 2014 and provided with financing support under an ongoing UNDP-GCF program (although it is unclear if this incentive program will continue beyond completion of UNDP-GCF program). However, standalone solar powered charging stations developed by private sector entities offering EV/electric bus charging services do not exist in Mauritius due to regulatory constraints (see 6.4 above); besides, technical, financial, operational viability of solar powered charging stations - including viability of various EV charging technology standards - has not been studied in the Mauritian context so far.

? Vehicle leasing business and financing models do exist in Mauritius but those are primarily for personal (luxury) vehicles or commercial fleets; Leasing equipment modernization scheme has also been initiated in Mauritius, under Enterprise modernization scheme. Financial feasibility analysis of electric bus leasing option in Mauritius (Annex 13) found that feasibility of this option would depend on several factors (cost of capital, electricity tariff for e-bus charging, pricing, duration of lease tenors, post-Covid transport demand and so on). However, bus leasing model for public transport buses hasn't been studied and implemented. Given the general lack of experience in e-bus leasing, limited understanding and technical performance and viability of e-buses for public transport and uncertain demand for public transport post-Covid, there aren't any interested entities in Mauritius that are willing to commit to offering e-buses on lease to public transport bus operators at this time. On their part, bus operators were not completely averse to the idea of leasing e-buses instead of outright purchase, but they would like to know the profile and experience of leasing entity, pricing and service quality commitments before they can commit to bus leasing. Given these challenges, bus operators mentioned outright purchase as their preferred option, atleast initially, and would explore leasing option during later years of project implementation if technical/operational/financial viability of leasing option is understood and established.

? The Ministry of Gender Equality, Child Development and Family Welfare of the Government of Mauritius launched a booklet entitled "Breaking the Silence on Sexual Harassment in Public Transport" (2017), which explains that women are most often victims of sexual harassment in public buses, and the booklet served to educate them on precautionary measures.

•Gaps in institutional as well as private sector/financial sector capacities and training needs haven't been analyzed so far, which are essential to scale up EV integration into the transport sector in Mauritius, particularly deployment of electric buses at scale in both public and private transport segments.

? Initial understanding of technical and financial aspects of procurement and deployment of electric buses exist within institutions (MLTLR, NLTA, TMRSU), private sector (bus operators) and financial institutions, as is evidenced by existing technical/performance specifications of electric buses eligible

for government financial incentives, and 2 electric buses procured and deployed by a bus operator (RHT). However, deeper understanding is required in terms of planning the deployment of electric buses within the broader context of multi-modal transport demand and supply options and techno-commercial, policy/regulatory, financial/economic and gender aspects of deploying a public transport electric bus system in Mauritius at scale. And no targeted training and capacity building programs have been conducted so far targeted at electric bus mobility sector.

? Government institutions such as MLTLR, NLTA do employ several women, and MetroExpress has ~30% of its employees as women working not just in office/desk jobs but also as operations staff, train captains, technicians, engineers; however, the public bus operators have very few women employed as drivers, conductors or workshop technicians (some bus operators employ no women drivers or technicians), even though these bus operators do employ women in office/desk jobs; Nonetheless, there is a need to increase the number of women employed in the public transport sector in Mauritius, as transport planners, policy/regulatory specialists, technical experts, bankers/financiers, drivers, conductors, workshop technicians working for various government institutions, bus operators, MetroExpress, commercial banks and other stakeholders

? In 2019, Metro Express Limited (MEL), the government-owned company that operates MetroExpress, launched a branding, communications, and multi-channel promotional campaign to coincide with the launch of Phase 1 operations of MetroExpress. The campaign, launched at a special televised media event, covered print, television, social media, smartphone advertisements, apart from targeted campaigns at MetroExpress stations, corporate offices and other strategic locations, informing people about the benefits of using MetroExpress as well as its salient features such as comfort, safety and reduced commute times.

? MLTLR and NLTA regularly conduct promotional campaigns mainly focused on road safety and security aspects, targeted mainly at drivers of both public buses and private vehicles; promotional campaigns to advertise the benefits of public transport buses vis-a-vis private transport are not conducted regularly.

? In 2020, MLTLR and NLTA rolled out the first phase of smart mobility and Passenger Information System (PIS) platform that integrates transit management and PIS and incorporates 3 bus operators operating 365 buses along routes servicing 34 routes.

? Targeted campaigns on measures being implemented for women's safety in public transport buses, as well as promotional/marketing campaigns to encourage corporate employees to use public transport instead of private vehicles haven't been conducted often in Mauritius so far, and such campaigns, which should include and communicate Covid-related safety/social distancing measures, are very important to bring back passengers to public transport in a post-Covid scenario.

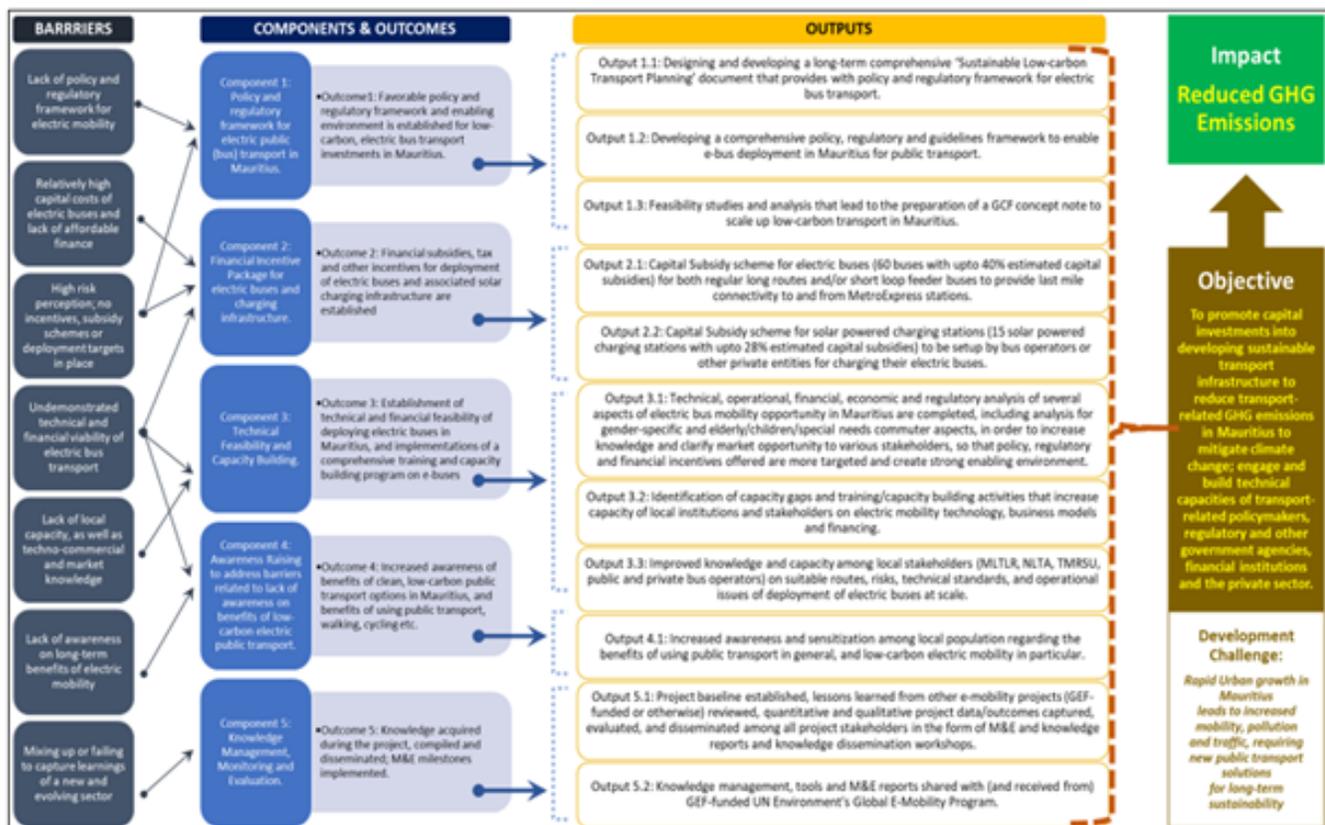


3. Proposed alternative scenario, GEF focal area strategies, outcomes and components:

There is no change from the PIF stage in terms of the core alignment with the GEF focal area strategy. This project still fits squarely within the GEF climate-change focal area strategy, seeking to achieve GHG emissions reductions through realization of well-proven and cost-effective technological opportunities in energy audit and energy management for commercial and industrial facilities.

All components, outcomes, and outputs are elaborated in Section V, Results and Partnerships, of the Project Document. The overall thematic emphasis of the project remains similar to that of the PIF stage. However, there have been a few revisions to certain outputs/activities for various reasons, including enhanced clarity; greater conduciveness to effective project management; feasibility and needs based on the latest context; and extensive research and stakeholder consultation during the preparatory period. These changes are summarized in the table below. A more elaborated theory of change is also presented below:

Theory of Change



Project Components, Outputs, Activities

Component 1: Policy and regulatory framework for electric public (bus) transport in Mauritius

Output 1.1: Designing and developing a long-term comprehensive Sustainable Low-carbon Transport Planning document that provides with policy and regulatory framework for electric bus transport.

Baseline:

In November 2020, Government of Mauritius' Cabinet approved '10-Year Electric Vehicle Integration Roadmap^[1] for Mauritius prepared by EV Consult of Netherlands' that includes 24 policy measures classified under 6 categories required to be enacted by the Government of Mauritius to enable electric mobility integration at scale in the country's road transport sector. The Cabinet also approved a setup of an 'Electric Vehicle Implementation and Monitoring Committee' to monitor the implementation of the Roadmap/Action Plan

Light Rail Transit (LRT) MetroExpress Phase 1 of 13 km line from Rose-Hill to Port Louis (Victoria) completed and operationalized in January 2020; part of Phase 2 (Rose Hill to Quatre Bornes) likely to be operationalized in 2021 and complete Phase 2 expected to be operationalized by 2022.

Government of Mauritius is developing Multimodal Transit Hubs at six terminals along the MetroExpress corridor to link commercial activities with public transport bus stations and Metro Express stations. These six Multimodal Transit Hubs include those at - Victoria Bus Terminal (construction has started), Immigration Square in Port Louis (contractors have been finalized), Vacoas (RfP launched), La Place Margot in Rose Hill, Quatre Bornes, and Curepipe

Last-mile connectivity of MetroExpress stations with public transport buses were launched together with the start of MetroExpress Phase 1 operation in January 2020 with limited commercial success (also impacted by Covid19)

Limited coherence among public transport bus service network map and operations and other modes of transport, and lack of coordinated multimodal transit/connectivity information system results in a lack of seamless multimodal transport connectivity.

Bicycle networks/bicycle racks, improved pedestrian pathways, park-and-ride schemes and dedicated shuttle services to and from MetroExpress stations are at planning/design phase.

From a Transport Masterplan development standpoint, several different government entities, including MetroExpress Ltd, MLTLR, NLTA, TMRSU and others have conducted extensive transport demand/traffic modelling exercises, in addition to small-scale transport/traffic planning activities. Several infrastructure development investments and schemes (such as multimodal transit hubs, park-and-ride schemes) are in various stages of planning/implementation/construction as well. However, all these activities have been disparate so far including the '10-Year Electric Vehicle Integration Roadmap' document approved by the Cabinet in Nov 2020. Hence, there is a need to integrate all these disparate modelling/planning activities to develop a national, comprehensive transport masterplan for Mauritius, with sustainability and low-carbon transport options at its core.

Activity 1.1.1: A long-term, integrated comprehensive, gender-sensitive and inclusive 'Sustainable Low-carbon Transport Masterplan' document prepared for Mauritius, that includes: (i) extensive data collection of transport demand and patterns (using and integrating data and traffic models already developed), (ii) transport demand growth projections at least until 2035 (using data and traffic/transport demand models already developed), (iii) comprehensive analysis of data collected, (iv) detailed review of existing transport infrastructure and various existing and planned programs and infrastructure, (v) data on impact of climate change on transport sector reviewed and climate change adaptation needs and investments included in the Masterplan (vi) based on this analysis and projections, a detailed long-term, multi-modal transport plan for Mauritius is developed, detailing the role of different modes of transport - MetroExpress, public transport buses, private buses, private passenger vehicles, commercial vehicles, bicycles, pedestrian pathways, park-and-ride schemes and others, and based on the principles of low-carbon, sustainable transport. The Masterplan document will take into consideration the post-Covid19 transport demand and supply in Mauritius, and plan for green recovery in the public transport sector. When completed and approved by the government, the Masterplan document would serve as the key guidance for all future transport sector programs, activities and investments in Mauritius, including the low-carbon electric public bus transport deployment activity proposed under this GEF project. Hence, it is important that this Masterplan is developed and approved during initial years (Year 1 mostly, but final approvals in early part of Year 2) of project implementation.

MLTLR and NLTA will be the lead entities of this activity, supported by TMRSU. Drafting of this planning document will be completed in Year 1 of this project's implementation duration and expected to be approved by the government in the early part of Year 2. An update to this document, if necessary, will be completed in Year 5.

Activity 1.1.2: Training modules developed and training programs that will build capacity of at least 20 trainees (30% of them being women) delivered on 'Long-term Sustainable Low-carbon Transport Planning' for government stakeholders (MLTLR, NLTA, TMRSU, NTC, MetroExpress) and private stakeholders (bus operators, others as necessary); the training modules need to include gender-specific, climate change adaptation and accessibility/inclusivity aspects as well. Some of these trainees would also be expected to become trainers themselves in future, and hence 'train the trainer' modules will also be part of these capacity building activities. Wherever possible, some of these training programs could be delivered remotely, either due to continued travel restrictions of Covid19 (if they are still in place) or simply to reduce travel costs and associated carbon footprint.

MLTLR and NLTA will be the lead entities of this activity, supported by TMRSU. Training programs under this activity will be completed in Years 2 and 3 of this project's implementation duration.

Activity 1.1.3: An Electric Vehicle Implementation and Monitoring Committee, as approved by the Cabinet decision in November 2020, is setup and made operational, to track the progress of planning, design and implementation of all policy/regulatory measures outlined in '10-Year Electric Vehicle Integration Roadmap for Mauritius' document. The Committee will consist of nominees of MLTLR, MEPU, MFEPD, NLTA, CEB, TMRSU and UNDP, and its key role will be to monitor the design, approval and implementation of the 24 policy measures classified under 6 categories required to be enacted by the Government of Mauritius to enable electric mobility integration at scale in the country's road transport sector, as recommended in the '10-Year Electric Vehicle Integration Roadmap for Mauritius' prepared by EV Consult of Netherlands and approved by the Cabinet of Government of Mauritius in November 2020. The Committee will be expected to meet at least once every quarter and the minutes of these meetings will be circulated to all stakeholders of this project. Detailed Terms of Reference of the Committee will be developed by the project in Year 1 just before it is setup and operationalized.

MLTLR, MEPU and NLTA will be the lead entities of this activity. Setting up and operationalization of this committee will be completed in Year 1 of this project's implementation duration.

Output 1.2: Developing a comprehensive policy, regulatory and guidelines framework to enable e-bus deployment in Mauritius for public transport.

Baseline:

? Bus Modernization Programme, introduced in 2014 with an aim to replace existing diesel buses with semi low-floor, lower emission diesel buses. The Programme, funded by a Government budget, offers MUR 1 Million (~US\$ 25,000) in subsidies per bus and additional tax rebates (15% VAT exemption) to encourage bus operators to make the switch to semi-low-floor buses. This Programme has since been extended to include deployment of electric buses as well, wherein public transport electric buses with length upto 9 meters would receive MUR 1 Million (US\$ 25,000) in subsidies and those with length over 9 meters would receive MUR 1.3 Million (US\$ 32,500) in subsidies

? Road Traffic ?Construction and Use of Vehicles? Regulations specify the quality, technical specifications and make of electric buses to be used for public services.

? Customs/import duty exemptions, VAT and road tax registration rebates have also been extended to public transport electric buses, although not all of these incentives are exclusively offered to electric buses. Tax and duty incentives available for public transport buses in Mauritius are shown in the table below.

Description	Customs Duty/Excise Duty <i>(payable at the time of import)</i>	VAT	Registration Duty	Road Tax
	<i>(Payable at time of purchase on C.I.F. value)</i>			<i>(Yearly payment)</i>
Public Transport Buses:				
Conventional	0%	0%	From MUR 6,500 to MUR 32,500	MUR 3,000/MUR 4,500
Hybrid/Electric	0%	0%	From MUR 3,300 to MUR 16,300	50% of conventional rate

? Central Electricity Board (CEB), a parastatal utility, is the monopoly electricity distributor and there are no clear regulations to allow private or government entities (that are not CEB) to setup and offer EV/e-bus charging stations in Mauritius; EV/e-bus charging as a separate consumer category with a separate electricity tariff structure (ideally lower tariffs as incentive) does not exist in Mauritian electricity law. Hence, Electric Vehicle/Bus Charging infrastructure is very minimal.

? The Environment Protection (Standards and Hazardous Wastes) Regulations 2001 does include regulations and guidelines for chemical and electronic wastes generated from batteries. Mauritius is also a party to international waste management conventions such as Basel Convention (Hazardous and E-Waste), Stockholm Convention (Persistent Organic Pollutants) and Minamata Convention (Mercury Waste), although specific regulations on management of hazardous waste generated from electric vehicle batteries still doesn't have a necessary legal framework. A new UNDP-GEF project titled

?Indian Ocean Regional Project - Mauritius - Implementing Sustainable Low and non-Chemical Development in SIDS (ISLANDS)? (PIMS ID 6400) is expected to begin implementation in 2021.

Activity 1.2.1: A comprehensive, gender-sensitive and inclusive 'Electric Bus Mobility Policy and Regulatory Framework' is developed together with MLTLR and NLTA and submitted for Government and Stakeholder feedback; Framework revised/updated based on feedback and final Framework approved and operationalized by the Government of Mauritius. The framework should integrate and include tax and tariff incentives, technical and performance standards/specifications, tax and tariff incentives, and capital grant incentives, all encompassed in a single policy and regulatory framework document; the framework should include a roadmap for replacing all public and private transport buses in Mauritius to electric buses and should be part of '10-Year Electric Vehicle Integration Roadmap' Action Plan described in Activity 1.1.3 above. The Policy will take into consideration the post-Covid19 transport demand and supply in Mauritius and must explicitly aim to increase demand for low-carbon public transport in the country to aid green recovery in the public transport sector, while accounting for risks and impact of climate change on Mauritian transport sector.

MLTLR and NLTA will be the lead entities of this activity. Drafting and approval of this policy and regulatory framework document will be completed in Years 1 and early part of Year 2 of this project's implementation duration and expected to be approved by the government in the early part of Year 2. An update to this framework document, if necessary, will be completed in Year 5.

Activity 1.2.2: URA and CEB, under the guidance of MEPU, to enact favorable policies and regulations (expected to be as an addendum/update to Electricity Act 2005 and CEB Amendment Act 2020) to allow EV/E-bus charging stations to be setup by private and govt entities (non-CEB) and also create a separate consumer category for EVs with electricity tariff incentives; these regulations would also include technical standards and quality benchmarks for EV charging infrastructure (to be selected among various EV charging technical standards available globally).

MEPU, URA and CEB will be the lead entities of this activity. Drafting and approval of this policy and regulatory framework document will be completed in Years 1 and early part of Year 2 of this project's implementation duration and expected to be approved by the government in the early part of Year 2. An update to this framework document, if necessary, will be completed in Year 5.

Activity 1.2.3: In cooperation with UNDP-GEF project titled ?Indian Ocean Regional Project - Mauritius - Implementing Sustainable Low and non-Chemical Development in SIDS (ISLANDS)? (PIMS ID 6400), draft guidelines will be developed for recycling and management/disposal of hazardous waste/chemicals of end-of-life batteries and EVs in Mauritius. An implementation plan for these regulations and guidelines developed will be developed by this project.

It is important to note that this proposed activity under this project (PIMS 6486) to design and develop policies and regulatory frameworks and guidelines for management of hazardous waste from electric bus batteries will closely work with developed via the other GEF-funded ?ISLANDS? project (PIMS 6400) to develop electric bus battery-specific waste management policies, guidelines and regulations in accordance to this electric bus project's (PIMS 6486) SES. Essentially, the necessary hazardous waste management policies, guidelines and regulations to mitigate this risk under this project (PIMS 6486) will be developed by the ?ISLANDS? project (PIMS 6400), but in accordance with UNDP SES and SES risk screening and management procedures of this project (PIMS 6486) set out in ESMF. Also, in order to ensure sufficient communication between the 2 projects and to ensure the policies and guidelines are developed in accordance with this project's Social and Environmental Safeguards measures (please refer SESP annex), this project's IP, MLTLR, will be part of project steering committee of ISLANDS project (PIMS 6400). A TA and coordination budget of US\$ 24,000 has been allocated under this electric bus project (please refer Annex 8) for consultants to work with the

ISLANDS project to ensure electric bus battery specific policies, guidelines and regulations are developed in accordance with this project's SES.

MLTLR and NLTA will be the lead entities of this activity and they will support MESWMCC in implementing these policy and regulatory measures.

The SESP screening has identified risks that are currently undefined (Risk 8: Project activities focused on Output 1.1 (Activities 1.1.1 and 1.1.2) and Output 1.2 (Activities 1.2.1 and 1.2.2)) may result in downstream interventions which may pose potentially some adverse social and environmental risks. Hence, the scope of these identified project activities also include application of a Strategic Environmental and Social Assessment (SESA) to manage these risks throughout project implementation period. These transport planning, and definition of electric bus mobility policies and regulations related activities will ensure a human rights approach to ensure inclusiveness and equitable access to the benefits electric bus mobility in Mauritius, both in the short-term and in the long-term. These activities will also ensure incorporation of gender-inclusive and sensitive elements (as already defined in these activities) to avoid any discriminatory effects. These plans, policies and regulations developed would also ensure that their implementation does not exacerbate climate change due to higher electricity demand from electric vehicles/electric buses without ensuring sufficient of low-carbon/renewable energy-based power generation capacities are installed in the country. UNDP and MLTLR will ensure that these risks and safeguards are monitored by applying a Strategic Social and Environmental Assessment (SESA).

The Project Management Unit (PMU) will be responsible for SESA of these upstream activities on behalf of the MLTLR, the project's Implementing Partner (IP). The SESA will be carried out by independent experts (engaged either as part of contractual services contracts issued for these activities or under separate local consultant contracts) in accordance with UNDP's SES policy and the [UNDP SES Guidance Note on Assessment and Management](#) to identify and assess social and environmental impacts associated with the proposed plans/policies/regulations in a participatory manner with stakeholders. The SESA would (i) Identify social and environmental risks and priorities to be included in planning and policy making activities, (ii) assess gaps in the institutional, policy, and legal frameworks to address these risks and priorities, (iii) identify potential adverse social and environmental impacts associated with planning/policy/regulatory measures developed, (iv) engage stakeholders to ensure a common understanding and broad support for implementation, and (v) formulate policy and institutional measures needed to close policy and legal gaps, address institutional weaknesses, and avoid adverse social and environmental impacts.

The SESA will be a concise report that summarizes the key findings and results of SESA activity, including (i) SESA stakeholder engagement process; (ii) key social and environmental priorities and issues associated with selected planning/policy/regulatory mechanisms, (iii) institutional arrangements for coordinating integration of social and environmental issues with selected planning/policy/regulatory mechanisms; (iv) legal, regulatory, policy, institutional and capacity recommendations to address any identified gaps for managing and implementing the social and environmental priorities, (v) results of assessment of social and environmental risks/impacts associated with the implementation of the selected planning/policy/regulatory mechanisms; (vi) identification of measures to address and manage anticipated adverse social and environmental risks and impacts. SESA activity will be funded under budgets allocated for each of these upstream activities.

Output 1.3: Feasibility studies and analysis that could lead to the preparation of an Investment Program to scale up low-carbon transport in Mauritius.

Baseline:

A study on Electricity Grid integration of renewables was conducted in 2014, named 'Removal of Barriers to Solar PV Generation' under a GEF project by UNDP. In 2018, AFD financed a study on grid absorption capacity which had the same conclusion as UNDP-GEF study - an 18 MW battery energy storage system (BESS) for frequency regulation, based on this recommendation, 18 MW BESS was agreed to be implemented with financing from GCF; of this, 14 MW is under implementation, 4

MW is already commissioned. However, impact on Mauritius' electricity grid due to EV integration has not been studied so far, and also exploration of potential of Vehicle-to-Grid (V2G) model and technologies has not been conducted.

? Gaps in policies and regulatory framework, as well as the financing gap/investment needs, has not been studied so far, which is essential to scale up EV integration into the transport sector in Mauritius, particularly deployment of electric buses at scale in both public and private transport segments.

Activity 1.3.1: An 'Electricity Grid Impact Study due to Electric Vehicle Integration' is completed and approved together with CEB and Utility Regulatory Authority (URA), under the guidance of Ministry of Energy and Public Utilities (MEPU).

MEPU, and CEB will be the lead entities of this activity. Drafting and approval of this grid impact study document will be initiated in Year 1 and completed in early part of Year 2 of this project implementation. An update to this document, if necessary, will be completed in Year 3.

Activity 1.3.2: Definition of possible investment approaches to scale-up low-carbon transport development, including electrification of public transport. This activity will catalyze the lessons learnt from activities 1.1.1, 1.1.2, 1.2.1, 1.2.2. and 1.3.1 as well as subsidy program under Outcome 2. This will enable Project team to define future investment needs, possible business models and public financial instruments for scaling up the Project results. To support this approach, an analytical report on gaps in policies and regulatory framework as well as financing gap/investment needs will be completed and approved, with a focus on bridging this gap to ensure scaling up of EV integration into the transport sector in Mauritius, particularly deployment of electric buses at scale in both public and private transport segments under the guidance of MLTLR and NLTA. MLTLR, and NLTA will be the lead entities of this activity. Drafting and approval of this policy/regulatory gap analysis document will be initiated in early part of Year 2 and completed of this project implementation. An update to this document, if necessary, will be completed in Year 3.

Component 2: Financial Incentive Package for electric buses and charging infrastructure.

Output 2.1: Capital Subsidy scheme for electric buses (60 buses with upto 40% estimated capital subsidies) for both regular long routes and/or short loop feeder buses to provide last mile connectivity to and from MetroExpress stations.

Baseline:

? Bus Modernization Programme, introduced in 2014 with an aim to replace existing diesel buses with semi low-floor, lower emission diesel buses The Programme, funded by a Government budget, offers MUR 1 Million (~US\$ 25,000) in subsidies per bus and additional tax rebates (15% VAT exemption) to encourage bus operators to make the switch to semi-low-floor buses. This Programme has since been extended to include deployment of electric buses as well, wherein public transport electric buses with length upto 9 meters would receive MUR 1 Million (US\$ 25,000) in subsidies and those with length over 9 meters would receive MUR 1.3 Million (US\$ 32,500) in subsidies

? Rose Hill Transport (RHT), a private bus operator in Mauritius that operates public transport buses on certain routes under license from the NLTA, has procured and deployed 2 electric buses - one 36-seater and another 32-seater (10 meter length) - and have 175 kWh battery capacity; these buses were procured and deployed by RHT on an experimental basis, without securing any subsidies under the Government under Bus Modernization Programme; RHT deployed these 2 electric buses on MetroExpress feeder routes but discontinued since feeder routes were found not to have a good financial case; the buses currently operate on long routes

? French government's development agency AFD's SUNREF Programme is a EUR 85 Million green credit line dedicated to providing concessional loans to private sector in Mauritius to finance assets/projects that have climate change mitigation and adaptation benefits. SUNREF Programme is being implemented in partnership with three commercial banks in Mauritius - SBM, MCB and AfrAsia Bank. Electric vehicles, including electric buses are eligible to receive financing under SUNREF Programme. AFD's SUNREF Programme has been implemented since 2008, with SUNREF Phase 1 (2008-13, EUR 40 Million) and SUNREF Phase 2 (2014-17, EUR 60 Million) offering concessional lines of credit via local partner banks to finance renewable energy, energy efficiency and other sustainable projects of the private sector. The current phase of SUNREF Programme, Phase 3, was initiated in 2019 and will be operational for 5 years, wherein EUR 85 Million of green credit line is being channeled through 3 partner banks for financing a number of low-carbon and green assets, including electric vehicles and renewable energy installations.

? During stakeholder consultations of this PPG phase, AFD and one of its partner banks ? State Bank of Mauritius (SBM)? were consulted and they expressed their interest in providing debt portion of the financing needed for procurement of electric buses and their associated solar charging stations for this project. AFD's support to this Programme is evidenced by its letter of co-finance provided in support of this project.

Activity 2.1.1: Enhanced capital subsidy scheme (including the procedure for application, evaluation, verification and disbursement of capital subsidies) instituted under the Government's (implemented by NLTA under MLTLR) existing Bus Modernization Programme, wherein existing capital subsidies (upto MUR 1.3 Million per bus) are enhanced to offer capital subsidy of up to an indicative level of 40% of capital costs of electric buses to be procured and deployed by bus operators. To clarify, total subsidies including existing govt subsidies and additional subsidies under this UNDP-GEF Programme will be upto 40% (determined by a feasibility study ? attached as a separate annex to this Prodoc) of capital costs of an electric bus based on current estimates of capital costs. However, this subsidy level may be re-evaluated and re-adjusted during project implementation based on capital costs of e-buses and other considerations at that time. However, any such re-adjustments must adhere to GEF minimal concessionality principle.

It is envisaged that these e-buses will be procured and deployed on an outright purchase basis by bus operators initially (Year 2 of project implementation). However, if technical, financial and operational viability of e-bus leasing option is established (as a result of viability assessment under Activity 3.1.3 of this project) and interested leasing entities are willing, then the capital subsidy scheme can be expanded to include e-bus leasing entities as those eligible to receive financial support.

MLTLR, and NLTA will be the lead entities of this activity. Enhanced capital subsidy scheme (including the procedure for application, evaluation, verification and disbursement of capital subsidies) for electric buses under Bus Modernization Programme needs to be approved and incorporated in Year 1 of this project implementation and disbursement of capital subsidies to bus operators procuring and

deploying electric buses for public transport will be on an ongoing basis as required from Year 2 to Year 6.

Activity 2.1.2: A mechanism is established by MLTLR, supported by UNDP-GEF, to facilitate concessional loans under AFD SUNREF Programme to bus operators (and possibly e-bus leasing entities) for financing non-subsidized portion of cost of electric buses. MLTLR will be the lead entity of this activity. Finance facilitation mechanism needs to be established in Year 1 of this project implementation and disbursement of low-cost loans from commercial banks under SUNREF Programme to bus operators procuring and deploying electric buses for public transport will be on an ongoing basis as required from Year 2 to Year 6.

Activity 2.1.3: 60 electric buses on public transport routes are procured and deployed with support from capital subsidy under existing Bus modernization Program; plus UNDP GEF finance as enhanced capital subsidy; plus AFD SUNREF concessional debt financing; it is expected that these 60 buses will be procured and deployed under outright purchase/direct ownership model of bus operators initially (Year 2 of project implementation). However, if viability of e-bus leasing model is established and willing leasing entities are found, some of these 60 e-buses may be deployed under leasing model as well during later years (possibly Years 3-6 of project implementation). Based on stakeholder consultations with bus operators, it takes approximately 3 months to purchase and import an electric bus to Mauritius from countries such as China. If global supply chain disruptions due to Covid19 continue, this could be stretched by an additional month.

During stakeholder consultations of this PPG phase, AFD and one of its partner banks ? State Bank of Mauritius (SBM)? were consulted and they expressed their interest in providing debt portion of the financing needed for procurement of electric buses and their associated solar charging stations for this project. AFD's support to this Programme is evidenced by its letter of co-finance provided in support of this project.

Bus operators (government owned NTC and privately owned UBS, RHT, TBS, MBT and also individual bus operators) will be eligible for support as described under Activity 2.1.1 and Activity 2.1.2 and will be responsible for procurement and deployment of electric buses as per technical standards and procurement guidelines set by MLTLR and NLTA, which would account for risks and impact of climate change on Mauritian transport sector, including bus designs that take flooding and storms into consideration, in addition to thermal performance of batteries in these e-buses.

The project's implementation locations of these activities will be existing public transport bus routes on which diesel buses owned and operated by licensed bus operators (public and private companies) ply, ferrying commuters between various destinations.

Capital subsidies to be offered to bus operators to provide upto an indicative level of 40% (including subsidies available under bus modernization program) of capital costs of electric buses; Budget for this line item is indicatively calculated (can be re-evaluated and re-adjusted during project implementation, applying GEF minimal concessionality principle) as follows:

Electric Bus Type ^[2]	Estimated Capital Costs per Bus	Number of Buses	Capital Subsidy under existing Bus Modernization Program	Enhanced Capital Subsidy proposed under this GEF project	Total Capital Subsidy % (Existing + GEF project)	Total Capital Subsidy Budget under GEF Program
Standard Full length 60-passenger capacity (12 meter)	USD 262,500 (MUR 10.5 Million)	50	USD 32,500 (MUR 1.3 Million)	USD 70,000 (MUR 2.8 Million)	~39%	USD 3.5 Million (MUR 140 Million)

Midi-bus 40- passenger capacity (9 meter)	USD 125,000 (MUR 5 Million)	10	USD 25,000 (MUR 1 Million)	USD 25,000 (MUR 1 Million)	40%	USD 250,000 (MUR 10 Million)
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The finance facilitation mechanism and disbursement of enhanced capital subsidy under Activities 2.1.1 and 2.1.2 described above will be aligned with the application, evaluation, verification, approval and disbursement process of NLTA's existing Bus Modernization Programme. The approval and disbursement of capital subsidies from GEF project resources (over and above the subsidies made available under Bus Modernization Programme) will adhere to minimal GEF concessionality principle, which will include conducting an assessment of financial cash flow projections for each application received for capital subsidy support.

A detailed plan on the overall design of the capital subsidy scheme, setting out its objective, scope, financial rationale and sustainability, as well as processes of application, evaluation, verification, approval and disbursement, to beneficiaries, will be finalized by the PMU during Year 1 of project implementation, in close coordination with key national stakeholders. Given the importance of this scheme, this plan will be shared with UNDP (CO and BPPS NCE), and then the Project Board, for approval.

An indicative process is described below, to be reviewed and finalized during Year 1 of project implementation. An expert committee of technical and financial experts (including independent experts) of public transport/electric mobility will likely be constituted by MLTLR and coordinated by the PMU for this evaluation and approval process.

? A licensed public transport bus operator in Mauritius determines technical, financial and operational viability of deploying an electric bus on a particular licensed bus route;

? The bus operator identifies an electric bus model (either a standard full-length bus or a midi bus) that meets the technical and performance specifications of electric buses mandated by NLTA's Road Traffic ?Construction and Use of Vehicles? Regulations, negotiates a price for its import and estimates the total cost of purchase, import (including freight) and deployment of the electric bus;

? The bus operator submits an application together with all necessary technical specifications, operational performance metrics, capacity utilization and financial/cashflow projections, and other necessary documentation about the electric bus to NLTA for subsidy and debt funding support (if necessary)

? The PMU and NLTA aggregate several such funding applications and coordinates evaluation of each of these applications by the expert committee. The expert committee evaluates the documentations and determines eligibility and final subsidy amount (from both its own Bus Modernization Programme resources and GEF project resources) based on GEF minimal concessionality principle; once eligibility and final subsidy amount is established, NLTA negotiates and provides an in-principle approval to the bus operator and submits this documentation to its Chief Vehicle Examiner to ascertain compliance with technical and performance specifications mandated by NLTA's Road Traffic ?Construction and Use of Vehicles? Regulations.

? Upon determination of compliance, and approval from the Road Transport Commissioner, NTLA will submit the documentation for UNDP's consideration for evaluation and approval.

? The Project Manager, with advice by the CTA and UNDP CO, ensures eligibility checklist (as defined by MLTLR and NLTA) and issues a letter of authorization of its portion of enhanced capital subsidy to NLTA.

? NLTA will issue its own subsidy authorization letter (under Bus Modernization Programme budget) and both NLTA subsidy and GEF enhanced capital subsidy letters are issued to the bus operator.

? If debt funding support is also requested by the bus operator, the Project Manager, with advice and support from the CTA, will also submit the debt documentation to a Commercial Bank and support the bus operator in negotiating and obtaining a letter of authorization from the Bank.

? Based on these subsidy and debt authorization letters, the bus operator places the order for the electric bus and after it is imported, makes the bus available for verification by NLTA

? Based on satisfactory verification report, NLTA, UNDP and commercial bank would disburse the funds to the bus operator

? Enhanced capital subsidy from the UNDP-GEF project will be directly disbursed by UNDP to the approved bus operator, upon receiving written instructions from MLTLR/NLTA for disbursement

? Bus operators may submit a single application for multiple electric buses for subsidy support and debt facilitation, to optimize the process.

Activity 2.1.4: Lessons-learned reports are prepared to guide future investment program ideas. The project will prepare 2 lessons-learned reports one at the second year and another at the end of the capital subsidy program implementation. These reports will summarise the experiences from the implementation of the program and define suggestions for future implementation. This will also contribute to the Investment Program preparations under Output 1.3.

Output 2.2: Capital Subsidy scheme for solar powered charging stations (15 solar powered charging stations with upto 28% estimated capital subsidies) to be setup by bus operators or other private entities for charging their electric buses.

Baseline:

? Grid codes and grant financing schemes already exist for distributed solar PV based electricity generation by private entities (such as bus operators), under MSDG and SSDG schemes developed under a UNDP-GEF Programme in 2014 and provided with financing support under an ongoing UNDP-GCF program.

? Rose Hill Transport (RHT), a private bus operator in Mauritius that operates public transport buses on certain routes under license from the NLTA, has procured and deployed a 120 kW grid-connected net metering-based solar power plant in one of its depot premises under the CEB's Medium Scale Distributed Generation (MSDG) solar deployment scheme (grid codes of MSDG scheme were developed with support from a UNDP-GEF program in 2014, and financing support being provided under an ongoing UNDP-GCF program). While this is not a solar powered charging station per se, since the 2 RHT electric buses are currently being charged with grid electricity, feeding electricity

generated from this 120-kW solar power plant to the national grid offsets some of the emissions generated from fossil fuel generated CEB grid electricity consumed by electricity used for charging of electric buses.

? French government's development agency AFD's SUNREF Programme is a EUR 85 Million green credit line dedicated to providing concessional loans to private sector in Mauritius to finance assets/projects that have climate change mitigation and adaptation benefits. SUNREF Programme is being implemented in partnership with three commercial banks in Mauritius - SBM, MCB and AfrAsia Bank. Distributed solar powered systems (including solar powered EV/electric bus charging stations if they are allowed under CEB regulations in future) are eligible to receive financing under SUNREF Programme.

Activity 2.2.1: Enhanced capital subsidy scheme (including the procedure for application, evaluation, verification and disbursement of capital subsidies) instituted under the Government's (implemented by MEPU and CEB) existing SSDG and MSDG distributed solar power generation program, wherein existing capital subsidies (upto 27% of SSDG/MSDG grid-connected distributed solar power systems capital costs) are enhanced to offer upto an indicative level of 28% of capital costs of solar powered charging stations to be procured and deployed by bus operators or other private entities. To clarify, total subsidies including existing govt subsidies (under SSDG/MSDG program with UNDP-GCF support) and additional subsidies under this UNDP-GEF Programme will be upto 28% of capital costs of solar powered charging station. If solar powered charging stations are not eligible to receive capital subsidies under MSDG/SSDG Programme (due to Programme completion etc.) then the entire 28% capital subsidies will be provided under this project's budget. For the purpose of budgeting of this subsidy amount under this project, it is assumed that capital subsidies under SSDG/MSDG incentive program are not available for these solar powered charging stations, due to completion of this incentive program. The indicative 28% capital subsidy level are based on current estimates of capital costs of rooftop solar installations and charging stations. However, this subsidy level may be re-evaluated and re-adjusted during project implementation based on capital costs of Solar PV and other considerations at that time. However, any such re-adjustments must adhere to GEF minimal concessionality principle.

MLTLR, and NLTA will be the lead entities of this activity, supported by MEPU, MARENA and CEB. Enhanced capital subsidy scheme (including the procedure for application, evaluation, verification and disbursement of capital subsidies) for solar powered charging stations in support of MSDG/SSDG scheme (if still continued) needs to be approved and incorporated in Year 1 of this project implementation and disbursement of capital subsidies to bus operators or other private entities procuring and deploying solar powered charging stations for electric buses for public transport will be on an ongoing basis as required from Year 2 to Year 6.

Activity 2.2.2: A mechanism is established by MLTLR, supported by UNDP-GEF to facilitate concessional loans under SUNREF Programme to bus operators or other private entities for financing non-subsidized portion of cost of solar powered charging stations.

MLTLR will be the lead entity of this activity supported by AFD, Ministry of Finance, Economic Planning and Development (MFEPD) and the Mauritius Bankers Association. Finance facilitation mechanism needs to be established in Year 1 of this project implementation and disbursement of low-cost loans from commercial banks under SUNREF Programme to bus operators or other private entities procuring and deploying solar powered charging stations for electric buses for public transport will be on an ongoing basis as required from Year 2 to Year 6.

Activity 2.2.3: 15 solar powered EV/electric bus charging stations are procured and deployed by bus operators or other private entities with support from enhanced capital subsidy scheme of MEPU/CEB SSDG/MSDG distributed solar power Programme and concessional financing under AFD SUNREF Programme. If solar powered charging stations are not eligible to receive capital subsidies under MSDG/SSDG Programme (due to Programme completion etc.) then the entire 28% capital subsidies will be provided under this project's budget. Budgeted amount under this project activity can support 28% capital subsidies for 15 solar powered charging stations, each of capacity 50-kW. However, if capital subsidies under MSDG/SSDG are made available, either more than 15 charging stations will be supported or 15 charging stations each with capacity greater than 50-kW will be supported.

Based on stakeholder consultations with bus operators, it takes approximately 3 months to purchase and import an electric bus charging stations to Mauritius from countries such as China. If global supply chain disruptions due to Covid19 continue, this could be stretched by an additional month. Typically, charging stations are sold together with an electric bus by the Original Equipment Manufacturer (OEM). However, the bus operator would have to procure and deploy rooftop solar power system separately.

Bus operators (government owned NTC and privately owned UBS, RHT, TBS, MBT and also individual bus operators) and other private/public entities will be eligible for support as described under Activity 2.2.1 and Activity 2.2.2 and will be responsible for procurement and deployment of solar powered charging stations as per technical standards and procurement guidelines set by MLTLR and NLTA, which would account for risks and impact of climate change on Mauritian transport and energy sector, including designs of charging stations and Solar PV installations that take flooding and storms into consideration, in addition to thermal performance of Solar PV modules and charging stations. Nevertheless, the project will ensure strong linkage between activities under Output 2.1 and Output 2.2 by ensuring financial support provided for solar powered charging stations under Output 2.2 will be proportional to support provided to each of the interested bus operators under Output 2.1 for procurement of e-buses. Other private/public entities interested in setting up and managing these solar powered charging stations for/on behalf of bus operators are also eligible for support under Output 2.2, as long as they demonstrate strong linkages to bus operators procuring e-buses with support under Output 2.1 (via partnership agreements etc.).

Capital subsidies to be offered to bus operators to provide upto an indicative level of 28% (including subsidies available under bus modernization program) of capital costs of solar powered charging stations; Budget for this line item is calculated (can be re-evaluated and re-adjusted during project implementation, applying GEF minimal concessionality principle) as follows:

Solar power capacity	Estimated Capital Costs per Charging Station	Number of Charging Stations	Capital Subsidy under existing MSDG/SSDG program	Enhanced Capital Subsidy proposed under this GEF project	Total Capital Subsidy % (Existing + GEF project)	Total Capital Subsidy Budget under GEF Program
50 kWp	USD 100,000 (MUR 4 Million)	15	Not considered (UNDP-GCF project ends in 2021)	USD 28,000 (MUR 1.12 Million)	28%	USD 420,000 (MUR 16.8 Million)

The process for application of enhanced capital subsidy and debt funding facilitation for solar powered charging stations will be developed and finalized during Year 1 of project implementation but it is likely to be similar to the process for obtaining funding support for electric buses described in Output 2.1 above. However, in case of solar PV installations, the bus operator would have to obtain net metering approval from CEB under SSDG/MSDG scheme, before applying for funding support under this project. The process would still be conducted through NLTA, although no subsidy from NLTA would be applicable for solar powered charging stations (enhanced capital subsidy under this GEF

project will be the only subsidy). Similar to the conditions set for the purchase of buses, a detailed plan on design of the capital subsidy scheme will be prepared by the PMU and will be shared with UNDP CO and NCE and then with the Project Board for approval.

Component 3: Technical Feasibility and Capacity Building.

Output 3.1: Technical, operational, financial, economic and regulatory analysis of several aspects of electric bus mobility opportunity in Mauritius are completed, including analysis for gender-specific and elderly/children/special needs commuter aspects, in order to increase knowledge and clarify market opportunity to various stakeholders, so that policy, regulatory and financial incentives offered are more targeted and create strong enabling environment.

Baseline:

? A detailed analysis of all public transport routes in Mauritius needs to be conducted, in terms of travel demand (particularly in a post-Covid19 scenario and in the context of MetroExpress corridor becoming operational), and in terms of technical, operational, financial viability of introducing electric buses along some or all of these routes (both long routes and last-mile feeder bus routes to MetroExpress stations)

? Grid codes and grant financing schemes already exist for distributed solar PV based electricity generation by private entities (such as bus operators), under MSDG and SSDG schemes developed under a UNDP-GEF Programme in 2014 and provided with financing support under an ongoing UNDP-GCF program (although it is unclear if this incentive program will continue beyond completion of UNDP-GCF program). However, standalone solar powered charging stations developed by private sector entities offering EV/electric bus charging services do not exist in Mauritius due to regulatory constraints (see 6.4 above); besides, technical, financial, operational viability of solar powered charging stations - including viability of various EV charging technology standards - has not been studied in the Mauritian context so far.

? Vehicle leasing business and financing models do exist in Mauritius such as leasing of personal (luxury) vehicles or commercial fleets; Leasing equipment modernization scheme has also been initiated in Mauritius, under Enterprise modernization scheme. Financial feasibility analysis of electric bus leasing option in Mauritius (Annex 13) found that feasibility of this option would depend on several factors (cost of capital, electricity tariff for e-bus charging, pricing, duration of lease tenors, post-Covid transport demand and so on). However, leasing models specifically for electric public transport systems have not been studied and implemented. Given the general lack of experience in e-bus leasing, limited understanding and technical performance and viability of e-buses for public transport and uncertain demand for public transport post-Covid, there aren't any interested entities in Mauritius that are willing to commit to offering e-buses on lease to public transport bus operators at this time. On their part, bus operators were not completely averse to the idea of leasing e-buses instead of outright purchase, but they would like to know the profile and experience of leasing entity, pricing and service quality commitments before they can commit to bus leasing. Given these challenges, bus operators mentioned outright purchase as their preferred option, atleast initially, and would explore leasing option during later years of project implementation if technical/operational/financial viability of leasing option is understood and established.

? The Ministry of Gender Equality, Child Development and Family Welfare of the Government of Mauritius launched a booklet entitled "Breaking the Silence on Sexual Harassment in Public Transport" (2017), which explains that women are most often victims of sexual harassment in public buses, and the booklet served to educate them on precautionary measures.

Activity 3.1.1: Viability assessment - technical, operational, financial - is completed to identify suitable public transport routes (long routes and/or MetroExpress feeder routes) of public transport buses that are viable for deployment of electric buses, which would account for risks and impact of climate change on Mauritian transport sector, including bus designs that take flooding and storms into consideration, in addition to thermal performance of batteries in these e-buses.

Activity 3.1.2: Viability assessment - technical, operational, financial - is completed to identify locations, EV charging technology standards (SAE Combined Charging System (CCS), CHAdeMO, Type 2 charging, Tesla Superchargers etc.) and suitable entities to own and operate these charging stations, together with necessary regulatory feasibility (see Activity 1.2.2 above) is completed and approved, which would account for risks and impact of climate change on Mauritian transport and energy sector, including designs of charging stations and Solar PV installations that take flooding and storms into consideration, in addition to thermal performance of Solar PV modules and charging stations.[3]

Activity 3.1.3: A viability assessment report on the potential for bus leasing model of procurement and deployment of electric buses for public transport is completed.

Activity 3.1.4: Analytical report on safety, security, accessibility aspects of public transport buses in Mauritius, particularly from the perspective of women's safety and ease of accessibility of public transport buses for elderly/children/special needs commuters

MLTLR, and NLTA will be the lead entities of all these activities, supported by MEPU and CEB. These activities need to be completed and approved in Year 1 and early part of year 2 (with some ongoing assessments in Year 3) of this project implementation duration and updated/revised (if necessary) in Year 5.

The SESP screening has identified risks that are currently undefined (Risk 8: Project activities focused on Output 3.1 (Activities 3.1.1, 3.1.2, 3.1.3 and 3.1.4)) may result in 'downstream' interventions which may pose potentially some adverse social and environmental risks. Hence, the scope of these identified project activities also include application of a Strategic Environmental and Social Assessment (SESA) to manage these risks throughout project implementation period. SESA will be applied to all viability assessment and analytical reports developed under these project activities and the scope, procedure, content, responsibility of SESA will be the same as SESA defined under Component 1 (for activities under Output 1.1 and 1.2). SESA activity will be funded under budgets allocated for each of these upstream activities.

Output 3.2: Identification of capacity gaps and training/capacity building activities that increase capacity of local institutions and stakeholders on electric mobility technology, business models and financing.

Baseline:

? Gaps in institutional as well as private sector/financial sector capacities and training needs haven't been analyzed so far, which are essential to scale up EV integration into the transport sector in Mauritius, particularly deployment of electric buses at scale in both public and private transport segments.

Activity 3.2.1: An analytical report on gaps in institutional as well as private sector/financial sector capacity/training needs is completed and approved, with a focus on bridging this gap to ensure scaling up of EV integration into the transport sector in Mauritius, particularly deployment of electric buses at scale in both public and private transport segments under the guidance of MLTLR and NLTA.

The UNDP-GEF project will coordinate with and benefit from capacity development related activities of Global E-mobility Programme led by UN Environment.

MLTLR, and NLTA will be the lead entities of all this activity. This activity needs to be completed and approved in Year 1 of this project implementation duration and updated/revise (if necessary) in Year 5.

Output 3.3: Improved knowledge and capacity among local stakeholders (MLTLR, NLTA, TMRSU, public and private bus operators) on suitable routes, risks, technical standards, and operational issues of deployment of electric buses at scale.

Baseline:

? Initial understanding of technical and financial aspects of procurement and deployment of electric buses exist within institutions (MLTLR, NLTA, TMRSU), private sector (bus operators) and financial institutions, as is evidenced by existing technical/performance specifications of electric buses eligible for government financial incentives, and 2 electric buses procured and deployed by a bus operator (RHT). However, deeper understanding is required in terms of planning the deployment of electric buses within the broader context of multi-modal transport demand and supply options and techno-commercial, policy/regulatory, financial/economic and gender aspects of deploying a public transport electric bus system in Mauritius at scale. And no targeted training and capacity building programs have been conducted so far targeted at electric bus mobility sector.

? Government institutions such as MLTLR, NLTA do employ several women, and MetroExpress has ~30% of its employees as women working not just in office/desk jobs but also as operations staff, train captains, technicians, engineers; however, the public bus operators have very few women employed as drivers, conductors or workshop technicians (some bus operators employ no women

drivers or technicians), even though these bus operators do employ women in office/desk jobs; Nonetheless, there is a need to increase the number of women employed in the public transport sector in Mauritius, as transport planners, policy/regulatory specialists, technical experts, bankers/financiers, drivers, conductors, workshop technicians working for various government institutions, bus operators, MetroExpress, commercial banks and other stakeholders

Activity 3.3.1: Training programs, training at least 30 trainees (30% being women), designed and delivered for government institutional stakeholders (MLTLR, NLTA, TMRSU, CEB, MEPU) on techno-commercial (such as procurement, planning, performance evaluation, scheduling and charging infrastructure of electric bus systems), financial/economic and policy/regulatory (best practices etc.) frameworks for enabling electric bus deployment for public transport and associated bus charging stations in Mauritius; the training program needs to include gender-specific and accessibility/inclusivity aspects as well.

Activity 3.3.2: Training programs, training at least 30 trainees (30% being women), designed and delivered for private sector stakeholders (bus operators, MetroExpress staff, other private sector entities interested in setting up EV charging stations) on techno-commercial, financial/economic and policy/regulatory frameworks for enabling electric bus deployment for public transport and associated bus charging stations in Mauritius; the training program needs to include gender-specific and accessibility/inclusivity aspects as well.

Activity 3.3.3: Training programs, training at least 30 trainees (50% being women), designed and delivered for commercial banks/financial institutions (loan officers and senior executives of banks involved in or interested in lending to electric bus mobility sector) on techno-commercial, financial/economic and policy/regulatory frameworks for enabling electric bus deployment for public transport and associated bus charging stations in Mauritius; the training program needs to include gender-specific and accessibility/inclusivity aspects as well.

Activity 3.3.4: Training programs, training at least 60 trainees (10% being women), designed and delivered to bus drivers and workshop technicians (of bus operators) on electric bus driving techniques, safety (including women's safety) and security aspects and maintenance, management of EV batteries/their scientific disposal.

MLTLR, and NLTA will be the lead entities of all these activities. These activities need to be completed in Year 2, 3 and 4, 5 of this project implementation duration. All training and capacity building activities would account for risks and impact of climate change and Covid 19 on Mauritian transport and energy sectors.

The overarching goal of these training and capacity building programs will be to develop institutional capacity in Mauritius to successfully design, develop and implement low-carbon electric public transport system at scale, above and beyond the scope of this project, thereby building local institutional capacity for post-covid green recovery and achieve a 100% low-carbon electric public bus transport system in the country by 2030.

Wherever possible, some of these training programs could be delivered remotely, either due to continued travel restrictions of Covid19 (if they are still in place) or simply to reduce travel costs and associated carbon footprint.

The UNDP-GEF project will coordinate with and benefit from capacity development related activities of Global E-mobility Programme led by UN Environment.

Component 4: Awareness Raising to address barriers related to lack of awareness on benefits of low-carbon electric public transport.

Output 4.1: Increased awareness and sensitization among local population regarding the benefits of using public transport in general, and low-carbon electric mobility in particular.

Baseline:

? In 2019, Metro Express Limited (MEL), the government-owned company that operates MetroExpress, launched a branding, communications, and multi-channel promotional campaign to coincide with the launch of Phase 1 operations of MetroExpress. The campaign, launched at a special televised media event, covered print, television, social media, smartphone advertisements, apart from targeted campaigns at MetroExpress stations, corporate offices and other strategic locations, informing people about the benefits of using MetroExpress as well as its salient features such as comfort, safety and reduced commute times.

? MLTLR and NLTA regularly conduct promotional campaigns mainly focused on road safety and security aspects, targeted mainly at drivers of both public buses and private vehicles; promotional campaigns to advertise the benefits of public transport buses vis-a-vis private transport are not conducted regularly.

? In 2020, MLTLR and NLTA rolled out the first phase of smart mobility and Passenger Information System (PIS) platform that integrates transit management and PIS and incorporates 3 bus operators operating 365 buses along routes servicing 34 routes.

? Targeted campaigns on measures being implemented for women's safety in public transport buses, as well as promotional/marketing campaigns to encourage corporate employees to use public transport instead of private vehicles haven't been conducted often in Mauritius so far, and such campaigns, which should include and communicate Covid-related safety/social distancing measures, are very important to bring back passengers to public transport in a post-Covid scenario.

Activity 4.1.1: At least 5 multi-channel mass media, social media and PIS promotional/advertising campaign designed and executed about the benefits of public transport, particularly low-carbon options such as electric buses, MetroExpress, park-and-ride schemes, bicycling, walking etc. This should include ongoing television/radio advertisements, print/newspaper campaigns running for about a month.

Activity 4.1.2: At least 10 targeted promotional events (town-level or community-level such as residential complexes or at major events/fairs) designed, planned and executed on the benefits of using public transport, particularly low-carbon public transport options.

Activity 4.1.3: At least 10 targeted promotional events held at MetroExpress stations or bus stations, or schools or corporate offices designed, planned and executed on the benefits of low-carbon public transport.

Activity 4.1.4: At least 10 targeted campaigns planned and executed on safety and comfort features on public transport buses and MetroExpress, such as women's safety due to installation of CCTV cameras and road/driver safety features.

Activity 4.1.5: A project website is developed for this GEF-funded project and promoted to improve online visibility.

MLTLR, and NLTA will be the lead entities of all these activities, supported by TMRSU and MetroExpress Limited and bus operators. These activities need to be completed in Year 2, 3 and 4, 5, 6 of this project implementation duration. At implementation stage, the project will liaise with Government Information Service to determine whether they could host the website, to ensure the website remains active post-project completion.

Component 5: Knowledge Management, Monitoring and Evaluation.

Output 5.1: Project baseline established, Inception Workshop completed, lessons learned from other e-mobility projects (GEF-funded or otherwise) reviewed, quantitative and qualitative project data/outcomes captured, evaluated, and disseminated among all project stakeholders in the form of M&E and knowledge reports and knowledge dissemination workshops.

Activity 5.1.1: Inception Workshop, Data collection and baseline report developed and completed for establishing project baseline. (to be completed in Year 1)

Activity 5.1.2: Mid-term Evaluation report published on progress (Year 3) and final M&E report (Terminal Evaluation) published (post project completion) including project outcomes achieved, lessons learned on policy/regulatory, technical, financial and gender aspects of introducing electric public bus transport system in Mauritius. Details are provided in M&E Plan section of this Project Document.

Activity 5.1.4: Findings from Terminal Evaluation and other knowledge reports (Activity 5.2.2) disseminated in atleast 2 local stakeholder workshop in Mauritius (to be completed in Year 6 of this project's implementation duration). MLTLR, and NLTA will be the lead entities of all these activities.

Output 5.2: Knowledge management, tools and M&E reports shared with (and received from) GEF-funded UN Environment's Global E-Mobility Program.

Activity 5.2.1: Participation in atleast 2 UN Environment workshop of GEF-funded Global E-Mobility Program to exchange knowledge and information.

Activity 5.2.2: Atleast 2 knowledge reports published based on the project experience - one report on challenges, experience and best practices on developing policy/regulatory framework for electric public bus transport systems and another report on challenges, experience and best practices on technical, financial, operational and gender aspects of electric public bus transport system (to be completed in Year 6 of this project's implementation duration).

MLTLR, and NLTA will be the lead entities of this activity.

Summary of Changes Between the PIF and the Request for CEO Endorsement

A major change in the project activities between PIF stage and request for CEO-ER stage is the increase in overall GEF budget from \$3,229,998 at PIF stage to \$ 5,600,607 at CEO-ER stage and increase in the project's implementation duration from 60 months (5 years) at PIF stage to 72 months (6 years) at CEO-ER stage. Justification for these changes have been described in Sub-section II below.

I. Project Title, Objective, and Outcomes

Title at PIF	Title at CEO ER	Change	Justification
Promoting Low-carbon Electric Public Bus Transport in Mauritius	Promoting Low-carbon Electric Public Bus Transport in Mauritius	No Change	NA

Project Objective at PIF	Project Objective at CEO ER	Change	Justification
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<p>Promote capital investments into developing sustainable transport infrastructure to reduce transport-related GHG emissions in Mauritius to mitigate climate change; engage and build technical capacities of transport-related policymakers, regulatory and other government agencies, financial institutions and the private sector</p>	<p>Promote capital investments into developing sustainable transport infrastructure to reduce transport-related GHG emissions in Mauritius to mitigate climate change; engage and build technical capacities of transport-related policymakers, regulatory and other government agencies, financial institutions and the private sector</p>	<p>No Change</p>	<p>NA</p>
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<p>Targeted Outcomes at PIF</p>	<p>Targeted Outcomes at CEO ER</p>	<p>Change</p>	<p>Justification</p>
<p>Favourable policy and regulatory framework and enabling environment is established for low-carbon, electric bus transport investments in Mauritius.</p>	<p>Favourable policy and regulatory framework and enabling environment is established for low-carbon, electric bus transport investments in Mauritius.</p>	<p>No Change</p>	<p>NA</p>

Financial subsidies, tax and other incentives for deployment of electric buses and associated solar charging infrastructure are established.	Financial subsidies, tax and other incentives for deployment of electric buses and associated solar charging infrastructure are established	No Change	NA
Increased awareness of benefits of clean, low-carbon public transport options in Mauritius, and benefits of using public transport, walking, cycling etc.	Increased awareness of benefits of clean, low-carbon public transport options in Mauritius, and benefits of using public transport, walking, cycling etc.	No Change	NA
Knowledge acquired during the project, compiled and disseminated; M&E milestones implemented.	Knowledge acquired during the project, compiled and disseminated; M&E milestones implemented	No Change	NA

II. Outputs

Outputs with budget at PIF	Outputs with budget at CEO ER	Change	Justification

Outputs with budget at PIF		Outputs with budget at CEO ER		Change	Justification
(i) 1.1: Designing and developing a long-term comprehensive ?Sustainable Low-carbon Transport Planning? document that provides with policy and regulatory framework for electric bus transport.	\$ 106,189	1.1: Designing and developing a long-term comprehensive ?Sustainable Low-carbon Transport Planning? document that provides with policy and regulatory framework for electric bus transport.	\$ 190,000	Budget increment	The budget for Output 1 has been revised from \$ 106,189 to \$ 190,000. This happened as a result of stakeholder discussion during PPG phase which brought more clarity to the scope of activities. Also, the project activities have been now extended to be implemented over 72 months (6 years) when compared to 60 months (5 years) during PIF stage. Hence, the scope of activities expanded, and more clarity emerged about the specifics of interventions. Output 1 now includes significant and targeted activities on policy and regulatory framework design activities, in addition to activities related to Social and Environmental Risks, Gender Action Plan and other related activities. Key activities proposed at CEO-ER stage (not envisaged at PIF stage) that have contributed to this increased
(ii) 1.2: Developing a comprehensive policy, regulatory and guidelines framework to enable e-bus deployment in Mauritius for public transport		1.2: Developing a comprehensive policy, regulatory and guidelines framework to enable e-bus deployment in Mauritius for public transport.		Budget increment	

Outputs with budget at PIF		Outputs with budget at CEO ER		Change	Justification
1.3: Feasibility studies and analysis that could potentially lead to access GCF funds for scaling up low-carbon transport in Mauritius		1.3: Feasibility studies and analysis that lead to the preparation of an Investment Program note to scale up low-carbon transport in Mauritius.		Budget increment and language has been moderately changed to bring clarity, and to avoid any confusion in interpreting the outcome. Also ?GCF Concept? has been changed to ?Investment Program? since discussions on follow-on investment program are still ongoing.	budget are: <ol style="list-style-type: none"> 1. Training modules and training programs associated with 'Sustainable Low-carbon Transport Planning' activity 2. Constitution and coordination of Electric Vehicle Implementation and Monitoring Committee (as provided by the govt's Cabinet approved '10-Year Electric Vehicle Integration Roadmap' in Nov 2020), which will strategize, plan and track implementation of this Roadmap and promulgation of necessary policy and regulatory framework. 3. Cooperation with UNDP-GEF project titled ?Indian Ocean Regional Project - Mauritius - Implementing Sustainable Low and non-Chemical Development in SIDS (ISLANDS)? (PIMS ID 6400 ? this is in response to SES risks identified during PPG activities

Outputs with budget at PIF		Outputs with budget at CEO ER		Change	Justification
2.1: Capital Subsidy scheme for electric buses for both regular long routes and/or short loop feeder buses to provide last mile connectivity to and from MetroExpress stations.		2.1: Capital Subsidy scheme for electric buses (60 buses with upto an indicative level of 40% estimated capital subsidies) for both regular long routes and/or short loop feeder buses to provide last mile connectivity to and from MetroExpress stations.		Budget increment Outcome description updated to bring more clarity about the extent of intervention.	The number of Electric buses to be deployed have been proposed to be increased to 60 (50 full-length 12-meter e-buses and 10 midi 9-meter buses) as compared to 30 buses at PIF stage. Hence, budget has been increased accordingly. Similarly, the number of solar powered charging stations to be deployed have been proposed to be increased to 15 as compared
	\$ 2,330,000		\$ 4,420,000		

Outputs with budget at PIF		Outputs with budget at CEO ER		Change	Justification
(iii)	2.2 Capital subsidy scheme for solar charging stations for electric buses	2.2: Capital Subsidy scheme for solar powered charging stations (15 solar powered charging stations with upto an indicative level of 40% estimated capital subsidies) to be setup by bus operators or other private entities for charging their electric buses.		Outcome description updated to bring more clarity about the extent of intervention, and the type of beneficiaries for this subsidy scheme.	<p>to 10 solar powered charging stations in PIF stage. Hence, budget has been increased accordingly.</p> <p>The justification for this increased number of bus and solar powered charging stations deployment is that Mauritius has 1962 public transport buses nearly all of them are diesel buses), and over 950 of these are 10 to 20 years old and need to be replaced urgently due to reasons such as safety, high pollution/CO2 emissions and high diesel consumption. National Transport Corporation (NTC), the government-owned public transport bus operator, aims to replace 200 of their buses in the next 3 years.</p> <p>While this project was indeed proposed to be a pilot project of 30 buses at PIF stage, experience of other cities in Asia and Africa (cities in China, India, South Africa, Vietnam, Singapore etc.) have already proven the technical and financial viability of electric buses. Even the limited 2-bus electric bus pilot conducted by a private bus operator (Rose Hill Transport) in Mauritius has proven to be technically successful.</p> <p>In the absence of enough funding from the GEF project, NTC and other bus operators will replace their older diesel buses (aged 10 to 20 years) with newer diesel buses in the next 3 years. Hence, it is justified</p>

Outputs with budget at PIF	Outputs with budget at CEO ER	Change	Justification

<p>(i) 3.1: Economic and financial analysis and design of financial incentive schemes for electric buses for both regular long routes and/or short loop feeder buses to provide last mile connectivity to and from Metro Express stations; economic and financial analysis and design of direct/indirect financial incentive scheme for solar charging stations</p>	\$ 230,000	<p>3.1: Technical, operational, financial, economic and regulatory analysis of several aspects of electric bus mobility opportunity in Mauritius are completed, including analysis for gender-specific and elderly/children/special needs commuter aspects, in order to increase knowledge and clarify market opportunity to various stakeholders, so that policy, regulatory and financial incentives offered are more targeted and create strong enabling environment.</p>	\$ 230,000	<p>The outcome description has been paraphrased to better communicate the scope of this activity.</p>	<p>Discussions during PPG phase helped bring clarity about the nature of activities under output 3.1. While the scope of activities was suitably identified in PIF, the specifics of these activities became clearer during PPG phase. Hence, though substance of activities remains the same; both the outcome and the activities are explained in more elaborate detail in the Project Document.</p>
<p>3.2: Identification of capacity gaps and training/capacity building activities that increase capacity of local institutions and stakeholders on electric mobility technology, business models and financing.</p>		<p>3.2: Identification of capacity gaps and training/capacity building activities that increase capacity of local institutions and stakeholders on electric mobility technology, business models and financing.</p>		<p>No Change</p>	<p>NA</p>

Outputs with budget at PIF		Outputs with budget at CEO ER		Change	Justification
3.3: Improved knowledge among local stakeholders (MPILT, NTA, TMRSU, public and private bus operators) on suitable routes, risks, technical standards and operational issues of deployment of electric buses at scale.		3.3: Improved knowledge and capacity among local stakeholders (MLTLR, NLTA, TMRSU, public and private bus operators) on suitable routes, risks, technical standards, and operational issues of deployment of electric buses at scale.		Abbreviations updated to reflect changes in the names.	Ministry of Public Infrastructure and Land Transport (MPILT) was renamed as Ministry of Land Transport and Light Rail (MLTLR) National Transport Authority (NTA) was renamed as National Land and Transport Authority (NLTA)

4.1: Increased awareness and sensitization among local population regarding the benefits of using public transport in general, and low-carbon electric mobility in particular.	\$ 160,000	4.1: Increased awareness and sensitization among local population regarding the benefits of using public transport in general, and low-carbon electric mobility in particular.	\$ 200,000	Budget increment	Budget increased to fund increased number, scope and population coverage of awareness raising events/activities to reflect increased number of electric bus (30 to 60), solar powered charging stations (10 to 15) and increased project implementation duration (60 months to 72 months).
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5.1: Review of lessons learnt from other projects.		5.1: Project baseline established, Inception Workshop completed, lessons learned from other e-mobility projects (GEF-funded or otherwise) reviewed,		Outputs - 5.1, 5.2, 5.3 and 5.4 in PIF are combined as single Output 5.1 in CEO ER for coherence, and to avoid repetition.	There is no change in the substance of the Outputs - 5.1, 5.2, 5.3 and 5.4 collectively in PIF and single Output 5.1 in CEO ER. More specific details have now been added to the corresponding activities. The merging of the outputs of the PIF was to bring coherence to the flow of activities, as they collectively inform M&E and knowledge management.
5.2: Compilation of experience gathered in this project.		quantitative and qualitative project data/outcomes captured, evaluated, and disseminated among all project stakeholders in the form of M&E and knowledge reports and knowledge dissemination workshops.		Budget increment	
5.3: Strategic Communications plan.					
5.4: Evaluations and project reports	\$ 250,000		\$ 300,000		Budget increased to fund increased Knowledge Management and M&E activities to reflect increased number of electric bus (30 to 60), solar powered charging stations (10 to 15) and increased project implementation duration (60 months to 72 months).

<p>5.5: Cooperation with UN Environment's GEF-funded Global E-Mobility program.</p>		<p>5.2: Knowledge management, tools and M&E reports shared with (and received from) GEF-funded UN Environment's Global E-Mobility Program.</p>		<p>Outcome has been paraphrased to better reflect the extent of interaction with GEF-funded UN Environment's Global E-Mobility Program.</p>	<p>The change in description is to clearly highlight the nature and scope of interaction between the current proposed GEF-UNDP project and the GEF-funded UN Environment's Global E-Mobility Program.</p>
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4. Incremental/additional cost reasoning and expected contributions from the baseline, the GEFTF, and co-financing: The PIF contained a general overview of incremental cost reasoning. This reasoning remains broadly applicable. Further analysis has been added to the Project Document.

During PPG phase, a financial feasibility analysis was conducted to analyze financial viability of replacing diesel buses with electric buses (attached separately with the Prodoc as part of Annex 13 - financial feasibility study report and financial model) for public transport in Mauritius. E-buses upfront CAPEX costs are 2-2.5 times more than a comparable diesel bus in Mauritius (estimated, since current experience of importing and deploying electric buses in Mauritius is limited), but their operational cost efficiencies make e-buses cheaper to operate. Several financial instruments, including concessional loans, credit guarantees and capital subsidies were considered during financial feasibility analysis conducted as part of PPG phase and based on findings from feasibility analysis and stakeholder consultations, upfront capital subsidies and concessional loans, in addition to favourable electricity tariffs/costs for charging are required for public transport e-buses to be competitive against comparable diesel buses on a Total Cost of Ownership (TCO) basis over a 10 year period. In this regard, existing government subsidy under its Bus Modernization Programme for electric buses is able to cover only ~10-15% (depending on bus capacity and CAPEX), which was found to be inadequate as per financial feasibility analysis conducted during PPG phase. Upto 40% capital subsidy is necessary for e-buses (based on current capital costs of electric buses) to be competitive against diesel buses ? proposed to be provided as enhanced capital subsidy under this GEF project over and above existing government subsidy (total capital subsidy of upto an indicative level of 40% per e-bus ? this subsidy level can be re-evaluated and re-adjusted during project implementation to reflect capital costs and other considerations at that time) ? in addition to concessional loans that this GEF project proposes to arrange from domestic commercial banks under the ongoing AFD SUNREF green credit line program. Other financial instruments such as credit guarantees weren't found to significantly improve financial viability of deploying electric buses given the early stage and limited scale of electric mobility in Mauritius.

The total cost of the project is **USD 42,960,607**. This is financed through a GEF grant of **USD 5,600,607**, **UNDP cash and in-kind contribution of USD 60,000**, in addition to **USD 37,300,000** in cash and in-kind parallel co-financing.

Confirmed Parallel Co-financing: The actual realization of project co-financing will be monitored during the mid-term review and terminal evaluation process and will be reported to the GEF. Note that all project activities included in the project results framework that will be delivered by co-financing partners (even if the funds do not pass-through UNDP accounts) must comply with UNDP's social and environmental standards. Co-financing will be used for the following project activities/outputs:

Co-financing source	Co-financing type	Co-financing amount	Planned Activities/Outputs	Risks	Risk Mitigation Measures
Metro Express Ltd (MEL)	Public Investment	USD 20,000,000	Investments into construction and operationalization of MetroExpress line (Phase 1 and 2) which complement the activities planned under Outputs 1.1, 1.2, 2.1, 3.1, 3.2, 3.2, and 4.1	Low risks, since the investments from MEL/govt have been committed and construction underway (Phase 1 operational, Phase 2 to be operationalized by 2022)	Coordination and joint planning / involvement in project activities
National Transport Corporation (NTC) ? Govt-owned Public Transport Bus Operator	Investments	USD 1,000,000	Investments (non-subsidized portion) into procurement and deployment of electric buses which complement the activities planned under Output 2.1	Low risks, since committed co-finance is inline with NTC?s (and govt?s) concrete plans to deploy electric buses for public transport	Coordination and joint planning / involvement in project activities
Ministry of Finance, Economic Planning and Development (MFEPD) (channeled through MLTLR and NLTA Bus Modernization Programme)	Grants	USD 2,000,000	Investments as existing capital subsidies of upto MUR 1.3 million per public transport bus which complement the activities planned under Output 2.1	Low risks, since committed co-finance is part of an existing govt program (Bus Modernization Programme)	Coordination and joint planning / involvement in project activities
MLTLR	In-kind	USD 200,000	Project Management and other Recurrent Project Expenses	Minimal risks, as commitment reflects program commitment from the govt/agency	Regular communication and coordination of joint activity

UNDP	Cash and In-kind	USD 60,000	Project support and audit activities	Minimal risks, as commitment reflects program commitment from the govt/agency	
Agence Française de Développement (AFD)	Loans	USD 8,000,000	Co-finance via SUNREF programme via 3 commercial banks to finance debt portion of non-subsidized capital costs of electric buses for activities under Outputs 2.1 and 2.2	Minimal risks, as commitment reflects program commitment from the agency (SUNREF program Phase 3 is operational)	Regular communication and coordination of joint activity
Rose Hill Transport (RHT) Bus Services Limited (Privately-owned public transport bus operator)	Investments and in-kind	USD 6,100,000	Investments (non-subsidized portion) into procurement and deployment of electric buses which complement the activities planned under Output 2.1	Low risks, since committed co-finance is in line with RHT's concrete plans to deploy electric buses; RHT is also the only public transport bus operator in Mauritius to have already procured and deployed 2 electric buses on a pilot basis	Coordination and consultation on project activities

1. **Global environmental benefits:**

CO2 emission reduction estimates have changed from PIF stage to CEO-ER stage.

Expected metric tons of CO2eq by 2030
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	PIF stage	CEO-ER stage
Expected CO2e (direct)	10,950	76,624
Expected CO2e (consequential)	18,250	316,091

This proposed GEF project proposes to facilitate the switch of 60 long route or feeder/last-mile diesel buses into electric buses. Assuming a combination of solar powered and grid electricity powered charging is used for charging the 60 feeder or long-route e-buses to be used in Mauritius, which, when deployed, are estimated to operate for about 150 km per day, each e-bus is estimated to reduce 90.57 tons of CO2e per annum when combined with 15 solar powered charging stations of capacity 50 kWp each. So, 60 buses would achieve direct GHG benefits of 76,624 tCO2e by 2040. Consequential GHG benefits are calculated based on a conservative assumption that after the completion of this project's implementation, it would be scaled-up to 500 additional e-buses for public transport in Mauritius over 5 years between 2026 and 2030. Applying a causality factor of 50% due to the project's intervention (due to policy/regulatory framework, financial incentive package, capacity building and awareness raising), emissions due to 250 of these additional e-buses are considered for estimating indirect CO2 emission reduction from this project. At the same conservative assumptions of 1 kg of CO2e per km of e-bus operation and average of 150 km per day of e-bus operation for the additional 250 buses between 2026 and 2030 (combined with 25 solar powered charging stations), consequential GHG emission reductions from this project are estimated to be 316,091 tCO2e by 2044. Hence, overall GHG benefits from this project (direct and indirect) is estimated to be 392,716 tCO2e until 2044. Given the GEF grant sum of US \$5,600,607, the GEF cost per tonne of avoided CO2eq emissions is about \$14.26.

Detailed CO2 emission reduction computations are provided in Annex 13 of Prodoc.

6. Innovativeness, sustainability, and potential for scaling up. The PIF contains general discussion of innovativeness, sustainability, and potential for scaling up. The Project Document has further elaboration of specific ways in which the project is innovative and sustainable with projected impacts on a nationwide and sector-wide scale.

Innovativeness: The project focuses on electric public bus transport for last-mile connectivity from MetroExpress stations, which is essentially a deployment of a modern, smart, low-carbon technology innovation with an innovative business model for Mauritius; innovative business models such bus leasing will also be explored as part of this project, with an assessment exercise conducted (Activity 3.1.3) to establish viability of e-bus leasing model. If found viable, e-buses to be procured with support from this project may be deployed under an innovative e-bus leasing business model during later years (possibly Years 3-6 of project implementation). Moreover, the project is innovative in that it adopts a

blended approach towards further supporting the deployment of electric mobility technology, through both support for technical assistance and access to viability gap financing via capital subsidies. The financial incentive package component (component 2) will provide viability gap funding for deployment of 60 electric mobility technology-based buses for bus operators (both public and private sector bus operators). The project is further innovative in its use of public-private partnership model introduction and commercialization of electric mobility technology in Mauritius, wherein public investments in policy and financial de-risking for electric mobility would enable public and private sector bus operators to switch to electric mobility in their fleets. Innovative nature of this proposed project's deliverables are summarized below:

- ? e-mobility solutions (vehicles and charging)
- ? business models and financing schemes (capital subsidies)
- ? renewable integration (solar charging stations)
- ? battery re-use, recycling and safe disposal
- ? financial mechanisms (capital subsidies as viability gap funding, potential for lease finance for commercialization and scale-up)

Sustainability: The project blends market-based principles with subsidies and incentives to create a sustainable business and operational model for the project's activities to sustain over a medium-to-long-term on their own without the need for further policy/regulatory/financial interventions. The project not only provides demonstration of electric vehicle technology but a range of policy de-risking measures to create a sustainable market for e-mobility in Mauritius. Policy/regulatory interventions and instruments, building up of adequate local knowledge and capacity, viability gap finance and possibly business models such as e-bus leasing (if found viable) will stimulate increased participation of bus operators/investors in electric mobility in Mauritius. Demand for electric mobility will be created through an improved sense of ownership among commuters through provision of comfortable, affordable, safe and zero emission e-mobility transport solutions, and through awareness raising campaigns. The market oriented approach of this proposed project, which aims to blend technical assistance with viability- and minimum concessionality based financial support would ensure an increase in private sector participation in electric mobility in Mauritius. Based on results achieved under this project, a similar, larger follow-on project is proposed to be initiated, with Green Climate Fund (GCF) being one of the potential sources of funding. Discussions are ongoing between the Government of Mauritius, the GCF and the GEF regarding potential avenues for the scale-up project, including a possible submission to the GCF Project Preparatory Facility (PPF) activity, to explore the potential for GCF financing to scale up the GEF project activities. A potential, larger GCF project can serve as a source of developmental capital (possibly de-risking flow of commercial capital) and technical assistance to scale-up deployment of low-carbon electric public bus transport infrastructure in Mauritius and ensure sustainability of activities and investments seeded and initiated under this GEF project. A potential follow-on GCF project could possibly invest even in other complementary low-

carbon/e-mobility options (as may be identified and planned under the 'Sustainable Low-carbon Transport Masterplan' to be developed under Activity 1.1.1 of this GEF project).

In terms of environmental sustainability, one of the proposed project's core objectives is to ensure environmental sustainability through the introduction and commercialization of low-carbon electric mobility in Mauritius, which would contribute towards climate change mitigation. The project also aims to ensure environmental sustainability of charging stations for electric buses, through incentives to solar charging stations.

Apart from the reduction in the emission of greenhouse gases, a leading cause of air pollution globally is emissions from vehicles. One of the fastest and most effective ways to reduce air pollution and thereby improve the health of the population, reduce their healthcare costs, and improve their lives is to reduce the number of emissions-producing vehicles. As the introduction of such electric buses will have significant benefits in terms of local air quality and reduction of particulate matter pollutants

The project also aims to reduce the risk of hazardous waste from used batteries by supporting the government setup policy and regulatory framework for safe recycling and disposal of battery components in the country.

Replicability: At the end of the project, the proposed activities of this project would have eliminated some of the key barriers to introduction and commercialization of electric mobility in Mauritius, through policy and financial de-risking activities, which in turn would have triggered a market-based approach and hence, strong interest from private sector bus operators and investors, which would support scaling up of electric mobility deployment on its own, potentially with further investments from other development banks and private investors.

If proven successful, the project's model will be replicated across the larger public and private bus transport industry in Mauritius, and the same principles, frameworks and models could be used to incentivize other forms of bus transport sectors including corporate employee transport, tourism industry's transport needs and so on. Besides, the success of this model will demonstrate the viability of electric bus transport in other SIDS countries such as Maldives, Pacific Island countries, Caribbean islands as well as in large, congested cities of Africa and Asia.

[1] Government of Mauritius, "Cabinet Decisions" 27 November 2020:
https://pmo.govmu.org/CabinetDecision/2020/Cabinet_Decisions_taken_on__27_NOVEMBER_2020.pdf

[2] Typically, a Standard full-length bus (12 meter long) will have a capacity of 60 passengers (including 35 seating capacity and 25 standing capacity). A smaller Midi bus (9 meter long) will have a capacity of 40 passengers (including 25 seating capacity and 15 standing capacity). Even smaller mini-buses of 7-meter length (max 25 passenger capacity) are also available in the electric bus market. However, these 7-meter Mini-buses are not always suitable for public transport as travel demand peaks in certain hours and larger capacities may be needed to carry as many people as possible during those hours. Hence, only 12-meter full-length standard buses and 9-meter midi-buses are included in this project at this stage, based on expert advice and stakeholder consultation. Nevertheless, based on feasibility studies during the project implementation, if 7-meter mini-buses are found to be suitable, then the project could consider them for support as well.

[3] Typically, bus charging units are sold together with the electric buses by Original Equipment Manufacturers (OEMs). However, since solar powered charging stations are planned, a separate procurement and installation activity is necessary to ensure these chargers partially consume solar power to charge electric buses.

1b. Project Map and Coordinates

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

Please refer to Annex E

1c. Child Project?

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

2. Stakeholders

Select the stakeholders that have participated in consultations during the project identification phase:

Civil Society Organizations No

Indigenous Peoples and Local Communities

Private Sector Entities No

If none of the above, please explain why:

Please provide the Stakeholder Engagement Plan or equivalent assessment.

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

Select what role civil society will play in the project:

Consulted only; Yes

Member of Advisory Body; Contractor;

Co-financier;

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

Executor or co-executor;

Other (Please explain)

The following table outlines the stakeholders, target groups and ultimate beneficiaries of this project.

Stakeholders	End-users	? Passengers/commuters that use public transport in Mauritius, including women, elderly, children and disabled passengers
	Primary	? Public transport bus operators (both government owned NTC, privately owned RHT, UBS, MBT, TBS) and individual bus operators ? Drivers, technicians of public transport buses ? MetroExpress Limited
	Secondary	? Commercial banks lending to bus operators to finance procurement of electric buses. ? Mauritius Bankers Association ? Importers/dealers/distributors of electric buses and solar powered charging stations ? Industry associations ? Civil society and NGOs involved in transport and road safety issues ? Market research institutions ? Technology research institutions

	Macro-level	<ul style="list-style-type: none"> ? Government of Mauritius institutions, particularly key executing entity MLTLR and NLTA ? Other government agencies such as TMRSU, MEPU, CEB, URA, MESWMCC ? Development partners, including AFD
Target Groups		<ul style="list-style-type: none"> ? Public transport bus operators (both government owned NTC, privately owned RHT, UBS, MBT, TBS) and individual bus operators ? Drivers, technicians of public transport buses ? MetroExpress Limited
Ultimate Beneficiaries		<ul style="list-style-type: none"> ? Passengers/commuters that use public transport in Mauritius, including women, elderly, children and disabled passengers

As described in the Table, passengers/commuters that use public transport in Mauritius on a regular basis, including women, elderly, children and disabled passengers are the ultimate beneficiaries and a key stakeholder in the implementation of this project. Provision of modern, comfortable, safe, accessible, low-carbon, low-pollution and seamlessly integrated multimodal public transport to all these types of passengers is the ultimate objective of this project. The project promotes society-wide benefits of reduced GHG emissions and pollution, and climate change mitigation benefits.

More directly, the primary stakeholders of the project are public transport bus operators (both government owned NTC, privately owned RHT, UBS, MBT, TBS) and individual bus operators, drivers, technicians of public transport buses and MetroExpress Limited. These stakeholders will benefit financially from reduced capital costs for procurement of electric buses, which in turn would reduce their operating expenses and also attract more passengers/commuters due to modern, comfortable, multimodal public transport options. Staff, drivers, and technicians of these bus operators will also benefit from increased skills and capacity due to training programs planned under this project.

Secondary stakeholders of this project include commercial banks/lenders (including Mauritius Bankers Association) that would finance procurement of electric buses, importers/dealers/distributors of electric buses and solar powered charging stations, in addition to solar/bus industry associations, who would benefit from increased demand for their products and services.

The project will also increase the overall technical, financial, operational, policy, regulatory and institutional capacity of all stakeholders on electric bus transport in particular, and electric mobility in general, thereby expanding number of electric transport technical and financial experts, low-carbon transport planners, policy and regulatory experts and so on. The project will be proactive in seeking to engage women in such training and skill development activities. NGOs and civil society agencies involved in road safety and environmental issues in Mauritius would also be a key stakeholder.

At a macro-level, government institutions, such as MLTLR, NLTA, TMRSU, MEPU, CEB, would benefit from increased technical, financial and most importantly low-carbon transport planning and

policy and regulatory definition and promulgation skills and capacity, which would help them expand their ability to introduce favourable policy and regulatory frameworks for broader electric mobility industry (not just electric buses) in Mauritius. And at the macro-economic level, the economy and the government would benefit from lower fossil fuel import requirements, lower GHG emissions and vehicular pollution, and passenger satisfaction due to introduction of modern, comfortable and safe public transport options in the country.

Given the each of these stakeholders have distinct roles to play in different project activities, the project proposes to organize them into 3 working groups as shown below:

- Working Group 1: Masterplan, policies and regulations (Component 1) chaired by MLTLR
- Working Group 2: Enhanced subsidy scheme and concessional finance (Component 2) chaired by MFEPD
- Working Group 3: On technical and financial feasibility studies (Component 3) chaired by NLTA

During PPG phase, the project has engaged with all of these stakeholders and will continue to engage them during project implementation. While primary and most secondary stakeholders described in this section would be more directly involved in feasibility assessments, stakeholder consultation for Masterplan and policy and regulatory frameworks, training and capacity building activities, as well as investment activities for procurement and deployment of electric buses and solar powered charging stations, ultimate beneficiaries ? passengers ? will be involved in awareness raising and passenger feedback/survey activities. All stakeholders described in this section are also key partners in the project, as well as beneficiaries, since proposed interventions and investment support under GEF funding will directly expand the scope and increase the effectiveness of their work.

UNDP does not anticipate that any stakeholders will be adversely affected by the project. Nevertheless, risks associated with this project have been identified, their impact and probability have been assessed and mitigation measures have been devised to minimize their probability of occurrence and impact in accordance with UNDP's Atlas Risk Log and its Social and Environmental Screening Procedure (SESP) report and Environmental and Social Management Framework (ESMF) annex provided with this document. Project communication and grievance redressal mechanisms have been described in ESMF and will be operationalized during project implementation.

Mauritius does not have any indigenous population. During PPG stakeholder consultations, meetings and consultations were carried out with CSOs to ensure that no minority groups are left behind.

The most important project beneficiary and stakeholder is the Government of Mauritius, particularly MLTLR. As National Implementing Partner, MLTLR is directly engaged in all aspects of project design and implementation. NLTA, MEPU, CEB are also involved in project planning and activity and will be involved during implementation as well.

For full details of stakeholders and their interests, as well as detailed plans for stakeholder engagement during the project period, please see Annex H of this CEO-ER document.

3. Gender Equality and Women's Empowerment

Provide the gender analysis or equivalent socio-economic assesment.

The PIF's overview of gender issues remains valid. The Project Document provides further elaboration, including a full gender assessment and gender action plan, with description of baseline conditions, challenges for gender mainstreaming, and specific ways in which the project will integrate gender mainstreaming into its strategy and activities.

The Government of Mauritius has promulgated and implemented Sex Discrimination Act, which came into force in 2003. Its aim is "to provide for the elimination of all forms of gender discrimination and sexual harassment in certain areas of public activity". A Sex Discrimination Division was set up within the NHRC in 2003 to enquire into complaints of sex discrimination and sexual harassment. The Act lists out the fields where sex discrimination is likely to arise, such as employment, or in relation to professions, trades or occupations, education, in the provision of goods, services or facilities, in accommodation, with respect to the disposal of property, in companies, partnerships or associations and clubs. In addition, the government has also implemented an Equal Opportunity Act, which mandates equal opportunities for males and females in job applications and hiring by both private and public institutions.

Women's demand for transport and mobility in Mauritius is significant, since women's participation in labor force is over 45% in 2020. Vehicle ownership is also high among women, although their usage of public transport is not quite comparable with men. Some of the key reasons for lower usage of public transport by women is lack of last-mile connectivity and at times, safety issues, especially in buses. In 2010, the then Minister of Gender Equality, Child Development and Family Welfare launched a booklet entitled "Breaking the Silence on Sexual Harassment in Public Transport" (AGDI, 2017). Women are the ones most often victims of sexual harassment in public buses and the booklet served to educate them on precautionary measures.

Women also do not form a significant portion of drivers, conductors and technicians employed by bus operators in Mauritius. While the bus operators seem keen to hire them, they say there aren't enough applications received from qualified women. However, this seems to be changing with the introduction of Metro Express, wherein 25% to 30% of its employees are women. Metro Express employs women in all functions, as operational staff, train captains, technicians, engineers etc. Job applications from women to Metro Express are more common since it is being seen as a new industry in Mauritius. Metro Express has also taken several steps to ensure safety of women passengers, such as CCTVs in its trains and stations, and police officers as well as its own security staff who ensure safety of commuters. All security staff, train captains and other staff are trained in safety procedures, and safety management protocols are well established and followed. Hence, women likely feel safer to commute on Metro Express than other modes of public transport in Mauritius.

This GEF-funded UNDP-supported project will address issues of sexual harassment and women's safety in public transportation by ensuring that the electric buses proposed to be introduced under this project will incorporate modern safety technologies such as CCTV cameras (in line with a government directive under its Bus Modernization Programme) and smart/intelligent transport systems that would allow authorities in Mauritius to monitor safety issues on public transport buses, thereby deterring potential harassment of women passengers. This project will ensure that gender inequalities are not exacerbated. As much as possible, capacity building activities will ensure inclusion of both women and men, as well as persons from disadvantaged backgrounds and minority groups. Specific targets for inclusion of women trainees have been included in training and capacity building activities as described in the Project Results Framework section.

In addition, opportunities for women empowerment will be identified, especially in form of increased participation of women in the provision of the currently male-dominated transportation services. Bus operators interviewed during stakeholder consultation process of this project informed that they would aim to incorporate women drivers and workshop maintenance staff for their electric bus fleets as a gender equality and mainstreaming measure. A modern and safe outlook of electric vehicles is likely to attract more women job applicants, and hence, bus operators are likely to employ more women as drivers, conductors and technicians for electric buses than they did for diesel buses. This project has included targets for increasing women's participation in public transport system in Mauritius. Experience of recently completed MetroExpress project in Mauritius, another public transport mode, in increasing women's safety and women's employment in its operations will be understood and implemented in public bus transport system as well. Electric bus models to be deployed under this project will also consider passenger comfort and safety aspects, especially those of women, pregnant women, women traveling with infants and children, elderly and disabled commuters.

Detailed Gender Analysis commissioned during PPG phase, as well as the Gender Action Plan are included as Annex I of this CEO-ER document, whose targets are also reflected in the Project Results Framework.

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

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

Yes

4. Private sector engagement

Elaborate on the private sector's engagement in the project, if any.

Private sector engagement is a key feature of this proposed project and it is built into every component and activity proposed. The private sector is a crucial actor in the deployment of low-carbon public transport in Mauritius as it plays important roles as public transport bus operators, as well as enablers and promoters of awareness raising and more extensive adoption of low-carbon public transport among their employees. Public transport buses in Mauritius are operated by 1 government-owned bus operator (NTC), 4 organized private bus operators and hundreds of private, individual bus operators. This project proposes to work with both govt-owned and private bus operators for providing financial incentives (component 2) for procurement and deployment of e-buses and solar charging stations. The bus operators, including government owned NTC and privately owned operators (RHT, MBT, UBS, TBS) will invest their equity into acquiring electric buses and solar powered charging stations under this project, in addition to subsidy from the government's Bus Modernization Programme, enhanced subsidy from this GEF project, and debt finance from the commercial banks (under AFD SUNREF green credit line program). Hence, private sector bus operators will provide co-finance for this project implementation. One such co-finance ? from RHT ? has been included as parallel co-finance in this Prodoc and a letter confirming this co-finance from RHT is included as part of this Prodoc package. The project will also work with the private sector to provide technical capacity and awareness raising activities (components 3 and 4) for all bus operators including private bus operators. Besides, the focus and strategy of this proposed project is for the government agencies (MLTLR, NLTA, others) to formulate suitable, consultation-based policy and regulatory mechanism, technical standards and specifications and other necessary frameworks/guidelines and then allow the market ? mainly private sector bus operators -take over and scale up deployment of e-mobility based public transport in Mauritius. Essentially, the program is structured to create an enabling environment for the private sector to deploy and scale-up e-mobility in the country.

Business Mauritius (BM) is the coordinating body for local businesses in Mauritius. Its national council has 9 associations/ institutions, and more than 1000 private sector companies as its members. BM is a Technical Assistance (TA) partner for AFD's SUNREF green credit line program and was also involved in two Electric Mobility-focused market studies ? one with GIZ on market potential and strategies for adoption of electric mobility by the private sector in Mauritius, and another study to develop a Ten-Year Roadmap on Electric Vehicles for MLTLR. In addition, BM has also conducted a survey on preferred modes of transport for 975 private sector employees of 104 companies, which revealed several key insights on travel patterns, preferences and key bottlenecks to more extensive adoption of low-carbon public transport in Mauritius by employees of private sector companies. Experience of BM and its private sector members on electric mobility, as well as insights, issues and challenges from BM's market studies and surveys have been incorporated into this project's design. BM will be an important private sector stakeholder during project implementation in terms of

mobilizing private sector support, providing key insights to national transport planning and policymaking activities, and generating awareness on the benefits of low-carbon transport.

The list of bus operators and private sector associations that will be key collaborators in this project implementation is as follows:

- ? National Transport Corporation (NTC ? government-owned)
- ? Rose Hill Transport (RHT)
- ? United Bus Service (UBS)
- ? Triolet Bus Service (TBS)
- ? Mauritian Bus Transport (MBT)
- ? Business Mauritius

The project will work closely with domestic commercial banks in a consultative approach to develop financial measures and incentive mechanisms attractive for domestic banks. French government's development agency AFD's SUNREF Programme is a EUR 85 Million green credit line dedicated to providing concessional loans to private sector in Mauritius to finance assets/projects that have climate change mitigation and adaptation benefits. SUNREF Programme is being implemented in partnership with three commercial banks in Mauritius ? State Bank of Mauritius (SBM), Mauritius Commercial Bank (MCB) and AfrAsia Bank. Electric vehicles, including electric buses are eligible to receive financing under SUNREF Programme. AFD's SUNREF Programme has been implemented since 2008, with SUNREF Phase 1 (2008-13, EUR 40 Million) and SUNREF Phase 2 (2014-17, EUR 60 Million) offering concessional lines of credit via local partner banks to finance renewable energy, energy efficiency and other sustainable projects of the private sector. The current phase of SUNREF Programme, Phase 3, was initiated in 2019 and will be operational for 5 years, wherein EUR 85 Million of green credit line is being channeled through 3 partner banks for financing a number of low-carbon and green assets, including electric vehicles and renewable energy installations. During stakeholder consultations of this PPG phase, AFD and its partner banks were consulted and they expressed their interest in providing debt portion of the financing needed for procurement of electric buses and their associated solar charging stations for this project. Hence, domestic financial institutions (commercial banks) will provide co-finance for this project implementation. A letter confirming this co-finance from AFD is included as part of this Prodoc package.

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):

The PIF presents a table with several identified risks and proposed mitigation approaches. The Project Document indicates a fuller array of identified risks, including climate-related, social, environmental, occupational, and safety risks, as well as responsible parties and planned mitigation measures, as presented in the table below.

Risk analysis and planned management countermeasures considered, among other risks, response to Covid19 crisis in Mauritius as well as worldwide, as per STAP guidance on assessing Covid19-related risks to the project's outcomes. Covid19 crisis represents both opportunities and risks for this project, wherein the key opportunity is to build significant modern, low-carbon and seamlessly integrated public transport capacity so that post-pandemic demand for transport is mainly for public transport, and hence enabling post-Covid green recovery. However, it also presents risks in the form of not just uncertain demand for public transport, but also disruptions to implementation of project activities such as procurement/import of electric buses and continued or intermittent restrictions in the country which may slow down project implementation, thereby causing project delays and unable to meet its goals and targets in a timely manner. Covid19 has been a major disruptive event in the Mauritian public transport sector ? similar to other countries ? wherein demand for public transport has reduced significantly since the onset of the pandemic, due to fearing of infection on public transport. In the absence of a well-planned, seamlessly multimodally integrated, modern and low-carbon public transport, it will be difficult to bring back this demand for public transport in Mauritius to pre-pandemic levels and increase this demand further. Together with the MetroExpress project (partially operationally and rest under-construction), the strategies and activities of this project are critical to ensure that post-pandemic transport demand in Mauritius will be for public transport and not for unsustainable private transport among the population in Mauritius.

The proposed project activities described in the following sections have taken both these opportunities and risks into consideration during this project design stage. For example, activities under Component 1 and Component 3 that are aimed at developing transport masterplan, EV policies and regulations, techno-commercial feasibility analysis and so on are required to include post-Covid19 considerations. Similarly, increased number of e-buses to be deployed under the project from 30 e-buses during PIF stage to 60 e-buses during CEO-ER stage was partly due to postible post-Covid social distancing requirements on public transport buses. Besides, the increased duration of project implementation from 60 months (5 years) at PIF stage to 72 months (6 years) at CEO-ER stage is also partly to account for any post-Covid procurement delays in the e-bus and charging station supply chains. Hence, Covid-related fiscal risks, risks to public transport demand, financial viability/affordability risks and potential Covid-related project delays have been considered and suitable risk management countermeasures have been evaluated as per STAP guidelines and suitable measures have been included in all project activities. These risks and their mitigation measures have also presented in the Project Risks (Risk 1 and Risk 2) table below.

As a SIDS country, Mauritius is vulnerable to the impact of climate change, such as tropical cyclones, floods and coastal erosion. Potential outcomes of the Project could be sensitive or vulnerable to potential impacts of climate change. Analysis of potential risks to the project's proposed outcomes due to climate change have been analyzed as per STAP guidance. According to the 3rd National Communication from the Government of Mauritius to UNFCCC[1], the following risks and impact on infrastructure, including transport infrastructure were identified.

Effects of climate change

Observed impacts on transport infrastructure

Temperature rise at a rate of approximately 0.20°C per decade

This may lead to accelerated softening and deterioration of bituminous pavement, formation of surface and thermal cracks in concrete, increased corrosion of steel, soil shrinkage

Increase in rainfall intensities coupled with a decline in total annual rainfall volume

This element often leads to soil erosion, landslides and flood. Soil erosion in turn leads to scouring of foundations and collapse of embankments, and landslides cause the destruction of buildings and road infrastructure. Floods inundate properties, buildings and water treatment plants, causing damage to infrastructure and fixtures, and the degradation of water quality, leading to serious health hazards.

Storms or intense cyclones

Such storms cause damage to roads, buildings and power transmission masts.

Sea level rise coupled with storm surges

These parameters often cause flooding of coastal roads and their temporary closure, erosion and washing away of coastal structures and salt water intrusion into the coastal water supply aquifer

According to the same 3rd National Communication of Government of Mauritius, the following transport infrastructure related structural and non-structural adaptation and mitigation policies and strategies have been developed and recommended by the government that are relevant to this project:

Structural and Non-structural measures	Adaptation Measures and Strategies
Coastal infrastructure	The adaptation measures include wave breakers at sea and flood wall on the coastline to protect vulnerable on-land infrastructure, raising existing wharfs to lessen inundation by sea surges and building elevated roads or relocating coastal roads more inland
Transport infrastructure	The set of structural measures include increasing the carrying capacity of existing road-side drains to cope with more intense floods, re-dimensioning new drains, raising existing bridges and culverts to cope with higher flood level, increasing the drainage base layer under roadways to counter increased pore pressure due to rise in water table, reinforcing the wearing surface of roadways by the use of fabric reinforcement to cope with increased stress due to temperature rise, and re-designing of road furniture items such as direction and safety signage and roadmarking
Procedures with hands-on advice on planning methods and management techniques for Government officials	Increase public awareness on the need to maintain drains free of dumped waste and waterways free of unauthorised construction Efficient operation and maintenance of energy systems
Reviewing of design standards	Include higher factors of safety to account for climate change impacts such as wind loading, flood return periods and probable maximum floods

Research and development of innovative, eco-friendly and technically and economically sound building materials	Make better use of renewable energy, and promote energy efficiency
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In addition, the project team has assessed the risks of high ambient temperature and heavy rainfall or storms to electric vehicles, charging stations and solar installations proposed under this project. Electric vehicles, including electric buses, include batteries whose thermal performance at high temperatures need to be a key design consideration, together with their charging mechanism and connectors.

While direct investment or construction of roads and other transport infrastructure are beyond the scope of this project's mandate and proposed activities, a few structural and non-structural measures that the project will incorporate to mitigate and adapt to impact of climate change are as follows:

- Ensure the policy and regulatory frameworks ? especially technical standards and specifications of electric vehicles ? developed for E-Mobility, especially for public transport (proposed under Component 1) include climate change impact as one of their key considerations, and design these frameworks accordingly. Same considerations will be incorporated into the technical standards and specifications of electric buses and solar powered charging stations proposed to be implemented under Component 2 of this project. Technical standards such as IEC 61851 which specify temperature/weather safety of EV charging and performance will be incorporated into both Component 1 and Component 2 activities of this proposed project.

- Techno-commercial feasibility studies, institutional capacity building measures and awareness raising programs implemented under this project will incorporate considerations of climate change impact on transport sector in Mauritius.

Hence, climate change related risks and their impact on the project's outcomes and impact have been considered and suitable risk management countermeasures have been presented in the table (Risk 12 of Project Risks, Risk 10 of SESP Risks) below.

Project Risks and Planned Countermeasures

#	Description	Risk Category	Impact & Probability	Risk Treatment / Management Measures	Risk Owner
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1	<p>High fiscal deficit and current account deficit widen, resulting in risks to import of electric buses due to balance of payment issues; as an impact of Covid19, Mauritius? fiscal deficit and debt-to-GDP ratio has become high, and given its relatively small economic base (SIDS economy), probability of this risk has increased.</p> <p>This risk is part of screening conducted to assess Covid-19 risks and opportunities, and include risk mitigation measures related to Covid19 impact as per STAP guidance.</p>	<p>Financial (Risk Sub-category: Fluctuation in credit rate, market currency)</p>	<p>Currency depreciation could make import of e-buses and charging stations expensive and unviable; co-financing from govt entities may not be available.</p> <p>Likelihood (L) = 3</p> <p>Impact (I) = 3</p> <p>(Moderate Risk)</p>	<p>Continue policy dialogue with government to maintain prudent macroeconomic policies</p>	MLTLR
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2	<p>If Covid-19 cases and its impact on global economy and supply chains persist beyond 2021.</p> <p>This risk is part of screening conducted to assess Covid-19 risks and opportunities, and include risk mitigation measures related to Covid19 impact as per STAP guidance.</p>	<p>Safety and Security (Risk Sub-category: Natural Hazards)</p>	<p>It could increase the project's risks of meeting its outcomes due to import delays/restrictions, slower than expected recovery of public transport demand in Mauritius, and general delays in capital grant approval or disbursement or loan approval.</p> <p>L = 3 I = 4 (Substantial Risk)</p>	<p>Monitor Covid-19's impact on supply chains specific to import of electric buses and solar powered charging stations to Mauritius, and develop a contingency plan with MLTLR, NLTA and bus operators to ensure risks of delays are mitigated; monitor progress of importation of equipment, approval of subsidies/loans and their disbursement to eliminate any possible delays.</p> <p>Project's duration has been increased to 6 years (from the proposed 5 years in PIF) to take into account possible delays due to Covid19</p>	MLTLR
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3	Inability or delay in introduction of policy and regulatory mechanism for electric mobility and/or fiscal/tax measures	Regulatory (Risk Sub-category: Changes in the regulatory framework within the country of operation)	It could increase the project's risks of meeting its outcomes, and delays in capital grant approval or disbursement or loan approval. L = 3 I = 3 (Moderate Risk)	Continue dialogue with the Government to implement enabling conditions; In November 2020, Cabinet of the Government of Mauritius has approved the Report on the 10-Year Electric Vehicle Integration Roadmap for Mauritius prepared by EV Consult of Netherlands. In order to stimulate the transition towards electric mobility, the Ministry of Energy and Public Utilities (MEPU) commissioned a study for a 10-year roadmap which prepares the market conditions for a sustainable integration of electric cars at a pace that strikes the right balance between cost and benefits. An Electric Vehicle Implementation and Monitoring Committee would be set up to monitor the implementation of the Roadmap/Action Plan, which would essentially monitor the promulgation and implementation status of all electric mobility related policy and regulatory measures	MLTLR
4	Weak coordination between various government and private sector stakeholders	Organizational (Risk Sub-category: Institutional Arrangements)	It could increase the project's risks of meeting its outcomes. L = 2 I = 3 (Moderate Risk)	UNDP and PMU will work to ensure sufficient coordination is achieved among all stakeholders	UNDP CO PMU MLTLR

5	Affordability problem due to high upfront costs and e-buses and high interest rates on bank loans to bus operators for procuring e-buses	Financial (Risk Sub-category: Cost Recovery)	Financial incentives offered by the project may not be sufficient and hence limited interest from bus operators to procure and deploy electric buses for public transport. L = 3 I = 4 (Substantive Risk)	Electric bus technology is largely unproven and comes with high upfront capital costs; even though this project's Component 2 activities (under Output 2.1) have designed to offer significant capital subsidies to bus operators (upto 40%, which has been determined based on a financial feasibility study completed during PPG stage), cost of electric buses and batteries might still prove to be high, especially considering the low travel demand/revenue situation post-Covid19, which may take some time to return to pre-Covid levels	MLTLR, PMU, UNDP CO
6	Lack of knowledge, capacity and awareness on e-buses	Strategic (Risk Sub-category: Capacities of partners)	Inability to assess, plan, procure and implement as per the project's activities, which could increase the project's risks of meeting its outcomes. L = 3 I = 4 (Substantive Risk)	Training, capacity building, market clarification via several feasibility/viability studies and awareness raising activities have been planned as part of Outputs 1.1, 1.3, 3.1, 3.2, 3.3, 4.1 of this project.	MLTLR, PMU, UNDP CO

7	More efficient electric or plug-in hybrid bus technology becomes available after procurement of e-buses under this program	Financial (Risk Sub-category: Value for Money)	Limited interest from bus operators to procure and deploy electric buses for public transport. L = 3 I = 4 (Substantive Risk)	Continuously monitor technology and market developments in e-bus industry, and ensure latest technology is procured; Electric bus technology has been proven in several countries -both developed and developing countries; besides, this project's activities include market and technology assessments that would provide more insights-based confidence in e-bus technology	MLTLR, PMU
8	Other low-carbon mobility technologies such as hydrogen fuel cell-based technology become technically and financially viable	Financial (Risk Sub-category: Value for Money)	Limited interest from bus operators to procure and deploy electric buses for public transport. L = 3 I = 4 (Substantive Risk)	Continuously monitor technology and industry developments, and also ensure e-bus procurement is done in phases so that large-scale upfront commitment to e-bus technology is not made; Electric bus technology has been proven in several countries -both developed and developing countries; besides, this project's activities include market and technology assessments that would provide more insights-based confidence in e-bus technology	MLTLR, PMU

9	Potential limited participation of women in public transportation sector (both as commuters and as electric bus drivers, conductors, workshop technicians).	Social and Environmental (Risk Sub-category: Gender)	<p>The target of the proposed project is the public transportation sector which is predominantly male dominated. There is a risk that this trend might continue even after the project is implemented. Sexual harassment and women's safety is also a key consideration for woman using/working in public transportation in Mauritius</p> <p>L =3</p> <p>I = 3</p> <p>(Moderate Risk)</p>	<p>The project will make deliberate effort to involve both women and men in the various activities, without discrimination. A Gender analysis and action plan includes activities to mainstream gender perspective in the public transport sector and to address sexual harassment. Additionally, the Stakeholder engagement plan will identify key entry points for articulating gender considerations in all project components from its design to implementation. Safety aspects of women drivers, conductors and technicians working until late in the evening will be incorporated by bus operators deploying electric buses under this project; safety features such as CCTV cameras and trained security staff, protocols (similar to Metro Express) will be incorporated by bus operators to increase safety of women passengers. Electric bus models to be deployed under this project will also consider passenger comfort and safety aspects, especially those of women, pregnant women, women traveling with infants and children, elderly and disabled commuters</p>	MLTLR, PMU UNDP CO
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10	Potential environmental hazards associated with waste generated during manufacture of electric vehicle batteries as well as handling batteries that have reached their end-of-life.	Social and Environmental (Risk Sub-category: Pollution and resource efficiency)	<p>Electric vehicle batteries are produced from rare earth metals some of which are not environmentally friendly. Therefore, the disposal of unrecyclable material from battery manufacturers must be handled properly. In addition, when batteries have reached their end-of-life, they also need proper disposal to minimize environmental impact and exposure to the society.</p> <p>L= 3</p> <p>I = 4</p> <p>(Substantial Risk)</p>	<p>The project design incorporates activities (under Component 1) to reduce the risk of hazardous waste from used batteries entering local ecosystems by supporting the government to setup policy and regulatory framework for safe recycling and disposal of battery components in the country.</p> <p>The project will work closely with another UNDP-GEF project titled "Indian Ocean Regional Project - Mauritius - Implementing Sustainable Low and non-Chemical Development in SIDS (ISLANDS)" (PIMS ID 6400, Ministry of Environment, Solid Waste Management and Climate Change as this project's key implementing partner) to design and implement policies, regulations and enforcement mechanisms for scientific recycling and disposal of solid waste and chemicals generated from batteries used in electric vehicles in general and electric buses in particular. Both UNDP-GEF projects will train key government counterparts to deal correctly with the disposal of electric vehicles batteries. This mitigation measure is on the core of project activities and is intended to generate and enforce the framework and procedures to track possible hazardous waste generated in the medium and long term by the project. These and other management measures will be further described in Environmental and</p>	MLTLR, PMU UNDP CO
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11	Potential occupational health and safety risks associated with electric vehicle repair and decommissioning of battery banks and/or vehicle.	Social and Environmental (Risk Sub-category: Health and Safety)	<p>Battery Electric Vehicles (BEVs) operate at 3-phase high voltage. Consequently, they must be maintained by properly trained technicians. As expected, most of the existing crop of vehicle repair technicians were trained at a time when electric vehicles were unheard of. Therefore, retraining will be required for the technicians involved in electric vehicle repair or decommissioning.</p> <p>L = 2 I = 3 (Moderate Risk)</p>	<p>The project design includes building the capacity of bus drivers and technicians to handle the repair and decommissioning of electric vehicles (under Component 3). In addition, there will be a component for public awareness and campaigns which will be useful to impress on the general public who will own electric vehicles, the need for taking them to repair shops that have the appropriate equipment and training to handle such vehicles. It is expected that electric vehicle manufacturers and dealers will also provide thorough end-user training to avoid accidental injury due to electric shock. These and other management measures will be further described in Environmental and Social Management Framework (ESMF) of this project that accompanies this SESP document.</p>	MLTLR, PMU UNDP CO
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12	<p>Potential outcomes of the Project could be sensitive or vulnerable to potential impacts of climate change.</p> <p>This risk is part of screening conducted to assess climate change related risks, and include risk mitigation measures related to climate change impact as per STAP guidance.</p>	<p>Social and Environmental (Risk Sub-category: Climate change and disaster)</p>	<p>As a SIDS country, Mauritius is vulnerable to the impact of climate change, such as tropical cyclones, floods and coastal erosion.</p> <p>L = 3</p> <p>I = 4</p> <p>(Substantial Risk)</p>	<p>Climate resilient designs, such as electric buses that can withstand flooding, would be included in the project design specifications; work with the government to reduce the impact of flooding through climate change adaptation of public transport and coastal areas</p>	<p>MLTLR, NLTA PMU UNDP CO</p>
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Social and Environmental Risks (as described in detail in SESP and their management has been described in ESMF)

<i>Risk Description (broken down by event, cause, impact)</i>	<i>Impact and Likelihood (1-5)</i>	<i>Significance (Low, Moderate Substantial, High)</i>	<i>Comments (optional)</i>	<i>Description of assessment and management measures for risks rated as Moderate, Substantial or High</i>
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<p>Risk 1: Potential limited participation of women in public transportation sector (both as commuters and as electric bus drivers, conductors, workshop technicians).</p>	<p>I = 3 L =3</p>	<p>Moderate</p>	<p>The target of the proposed project is the public transportation sector which is predominantly male dominated. There is a risk that this trend might continue even after the project is implemented. Sexual harassment and women's safety is also a key consideration for women using/working in public transportation in Mauritius</p>	<p>As the project is Substantial risk, an ESMF has been prepared with this SESP. During project implementation, further screening, assessment and management plans will be prepared for the downstream activities in accordance with the UNDP SES, as well as scoped SESA(s) for the upstream activities.</p>
<p>UNDP SES Programming Principle 2 (Gender Equality and Women's Empowerment): Would the Project potentially reproduce discriminations against women based on gender, especially regarding participation in design and implementation or access to opportunities and benefits?</p>				<p>The project will make deliberate effort to involve both women and men in the various activities, without discrimination. A Gender analysis and action plan includes activities to mainstream gender perspective in the public transport sector and to address sexual harassment. Additionally, the Stakeholder engagement plan will identify key entry points for articulating gender considerations in all project components from its design to implementation. Safety aspects of women drivers, conductors and technicians working until late in the evening will be incorporated by bus operators deploying electric buses under this project; safety features such as CCTV cameras and trained security staff, protocols (similar to Metro Express) will be incorporated by bus operators to increase safety of</p>

<p>Risk 2: Potential environmental hazards associated with waste generated during manufacture of electric vehicle batteries as well as handling batteries that have reached their end-of-life ; potential risk of release of pollutants to the environment due to routine or non-routine circumstances with the potential for adverse local impacts.</p>	<p>I= 4 L= 3</p>	<p>Substantial</p>	<p>Electric vehicle batteries are produced from rare earth metals some of which are not environmentally friendly. Therefore, the disposal of unrecyclable material from battery manufacturers must be handled properly. In addition, when batteries have reached their end-of-life, they also need proper disposal to minimize environmental impact and exposure to the society</p>	<p>The project design incorporates activities (under Component 1) to reduce the risk of hazardous waste from used batteries entering local ecosystems by supporting the government to setup policy and regulatory framework for safe recycling and disposal of battery components in the country.</p>
<p>UNDP SES Project-level Standard 3 (Community Health, Safety and Security): Would the Project pose potential risks to community health and safety due to the transport, storage, and use and/or disposal of hazardous or dangerous materials (ex. explosives, fuel and other chemicals during construction and operation)?</p>				<p>The project will work closely with another UNDP-GEF project titled ?Indian Ocean Regional Project - Mauritius - Implementing Sustainable Low and non-Chemical Development in SIDS (ISLANDS)? (PIMS ID 6400, Ministry of Environment, Solid Waste Management and Climate Change as this project?s key implementing partner) to design and implement policies, regulations and enforcement mechanisms for scientific recycling and disposal of solid waste and chemicals generated from batteries used in electric vehicles in general and electric buses in particular. Both UNDP-GEF projects will train key government counterparts to deal correctly with the disposal of electric vehicles batteries. This mitigation measure is at the core of project activities and is intended to generate and enforce the framework and procedures to track possible hazardous waste generated in the medium and long</p>

<p>Risk 3: Potential occupational health and safety risks associated with electric vehicle repair and decommissioning of battery banks and/or vehicle.</p> <p>UNDP SES Project-level Standard 3 (Community Health, Safety and Security): Does the Project pose potential risks and vulnerabilities related to occupational health and safety due to physical, chemical, biological, and radiological hazards during Project construction, operation, or decommissioning?</p>	<p>I = 3</p> <p>L = 2</p>	<p>Moderate</p>	<p>Battery Electric Vehicles (BEVs) operate at 3-phase high voltage. Consequently, they must be maintained by properly trained technicians. As expected, most of the existing crop of vehicle repair technicians were trained at a time when electric vehicles were unheard of. Therefore, retraining will be required for the technicians involved in electric vehicle repair or decommissioning.</p>	<p>The project design includes building the capacity of bus drivers and technicians to handle the repair and decommissioning of electric vehicles (under Component 3). In addition, there will be a component for public awareness and campaigns which will be useful to impress on the general public who will own electric vehicles, the need for taking them to repair shops that have the appropriate equipment and training to handle such vehicles. It is expected that electric vehicle manufacturers and dealers will also provide thorough end-user training to avoid accidental injury due to electric shock. These and other management measures are further described in Environmental and Social Management Framework (ESMF) of this project that accompanies this SESP document.</p>
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<p>Risk 4: Potential outcomes of the Project could be sensitive or vulnerable to potential impacts of climate change, due to climate change-induced events such as flooding which may have an impact on the ability to drive electric buses in certain flood-prone areas of Mauritius.</p> <p>UNDP SES Project-level Standard 2 (Climate Change and Disaster Risks): Climate Change Mitigation and Adaptation</p>	<p>I = 4 L = 3</p>	<p>Substantial</p>	<p>As a SIDS country, Mauritius is vulnerable to the impact of climate change, such as tropical cyclones, floods and coastal erosion</p>	<p>Climate resilient designs, such as electric buses that can withstand flooding, would be included in the project design specifications; work with the government to reduce the impact of flooding through climate change adaptation of public transport and coastal areas.</p> <p>These and other management measures are further described in Environmental and Social Management Framework (ESMF) of this project that accompanies this SESP document.</p>
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<p>Risk 5: Potential risk of Gender Based Violence (GBV) against women on public transport buses deployed under this project in Mauritius.</p>	<p>I = 5 L = 2</p>	<p>Substantial</p>	<p>The target of the proposed project is the public transportation sector which is predominantly male dominated. There is a risk that this trend might continue even after the project is implemented. Risk of Gender Based Violence is a key consideration for woman using/working in public transportation in Mauritius. However, likelihood of GBV on public transport in Mauritius is low since there have been no incidents of GBV reported on public transport buses or MetroExpress in Mauritius over the last 15 years.</p>	<p>The project will make deliberate effort to involve both women and men in the various activities, without discrimination. A Gender analysis and action plan includes activities to mainstream gender perspective in the public transport sector and to address sexual harassment and minimize the threat of Gender Based Violence on public transport buses. Safety aspects of women drivers, conductors and technicians working until late in the evening will be incorporated by bus operators deploying electric buses under this project; safety features such as CCTV cameras and trained security staff, protocols (similar to Metro Express) will be incorporated by bus operators to increase safety of women passengers. Electric bus models to be deployed under this project will also consider passenger comfort and safety aspects, especially those of women, pregnant women, women traveling with infants and children, elderly and disabled commuters.</p>
<p>UNDP SES Programming Principle 2 (Gender Equality and Women's Empowerment): Would the Project potentially reproduce discriminations against women based on gender, especially regarding participation in design and implementation or access to opportunities and benefits?</p>				<p>There is evidence that such safety measures (CCTV cameras, trained security staff) have reduced sexual harassment of women on public transport from recent experience of deployment of such</p>

<p>Risk 6: Potential risk of grievances or objections from affected stakeholders</p> <p>UNDP SES Programming Principle 5 (Accountability)</p>	<p>L = 3</p> <p>I = 3</p>	<p>Moderate</p>	<p>Some risk of grievances or objections can be anticipated from some public transport passengers, since some passengers may find that the low-carbon, modern electric buses with better accessibility features (to be deployed under this project) may not be deployed immediately across all bus routes in Mauritius, since only 60 buses will be deployed (Mauritius has over 1900 public transport buses and replacing all of them will take time). A key goal of this project (as described in the Prodoc) is to improve the quality of public transport especially for poorer, marginalized and elderly/disabled passengers. Public transport passenger tariffs will be maintained at affordable levels by the govt (as is evidenced by the affordable tariffs on recently completed MetroExpress project). Hence, the project is designed to be inclusive and not exclusive of marginalized groups or elderly passengers or those with disabilities. The design of electric buses (as described in the Prodoc) will consider accessibility and comfort of elderly, disabled and pregnant women/women with children.</p> <p>However, this project is meant to be a pilot project with only 60 modern, low-carbon electric buses with better accessibility features will be deployed (replacing 60 diesel buses). Mauritius public transport fleet includes over 1900 diesel buses and replacing all of them under this project is not possible. Modern electric buses will be deployed on high impact routes (with high passenger traffic and high potential for CO2 emission reduction) under this project, which may raise some grievances or objections from some passengers who may not commute on these routes and may demand deployment of</p>	<p>As described in the Prodoc (stakeholder engagement), the project will actively engage with all stakeholders including passengers, to (i) enable active passenger community engagement; (ii) ensure transparency of route selection for electric bus deployment through provision of timely, accessible and functional information; (iii) ensure stakeholders can communicate their concerns and have access to rights-compatible complaints redress processes and mechanisms (GRM).</p> <p>A follow-on project with funding support from other development agencies may also be in the pipeline with this will be actively communicated to passengers to let them know that more electric buses will soon be deployed on other routes as well.</p>
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<p>Risk 7: Potential occupational health and safety risks to drivers and passengers of electric buses due to physical, chemical, biological and psychosocial hazards throughout the project lifecycle.</p> <p>UNDP SES Project-level Standard 3 (Community Health, Safety and Security): Does the Project pose potential risks and vulnerabilities related to occupational health and safety due to physical, chemical, biological, and radiological hazards during Project construction, operation, or decommissioning?</p>	<p>I = 3 L = 2</p>	<p>Moderate</p>	<p>Battery Electric Vehicles (BEVs) operate at 3-phase high voltage. Consequently, they must be maintained by properly trained technicians. As expected, most of the existing crop of vehicle repair technicians were trained at a time when electric vehicles were unheard of. Therefore, retraining will be required for the technicians involved in electric vehicle repair or decommissioning.</p>	<p>The project design includes building the capacity of bus drivers and technicians to handle the repair and decommissioning of electric vehicles (under Component 3). In addition, there will be a component for public awareness and campaigns which will be useful to impress on the general public who will own electric vehicles, the need for taking them to repair shops that have the appropriate equipment and training to handle such vehicles. It is expected that electric vehicle manufacturers and dealers will also provide thorough end-user training to avoid accidental injury due to electric shock. These and other management measures are further described in Environmental and Social Management Framework (ESMF) of this project that accompanies this SESP document.</p>
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<p>Risk 8: Project upstream activities focused on ?Sustainable Low Carbon Transport Planning? (Component 1, Output 1.1) and ?Policy and Regulatory Framework for E-bus deployment? (Component 1, Output 1.2) and Component 3 may result in ?downstream? interventions which may pose potentially some adverse social and environmental risks.</p> <p>UNDP SES Programming Principle 2 (Gender Equality and Women?s Empowerment) or UNDP SES Project-level Standard 3 (Community Health, Safety and Security) or UNDP SES Programming Principle 5 (Accountability)</p>	<p>I= 3 L= 3</p>	<p>Moderate</p>	<p>Proposed activities under Output 1.1 and 1.2, which are focused on transport planning and promulgation of electric bus policy and regulatory mechanism, may fail to consider certain SES risks, such as risks that could reduce equal access to public transport to women or those that may pose health and safety risks to transport sector workers or passengers or certain accountability risks for equitable access to all passengers including marginalized/elderly/disabled passengers</p>	<p>The relevant project activities, including transport planning and policy/regulatory framework development and feasibility assessment activities under Output 1.1 Output 1.2 and Output 3.1 have been designed to consider, evaluate and plan mitigating measures for social and environmental risks through the application of scoped SESA (as required of Substantial risk projects with upstream activities). Budget for evaluation and mitigation of SES risks has been allocated under the consultancy services and contractual services contracts for these activities.</p> <p>Nonetheless, screening procedures for such currently undefined risks have been established in the ESMF to ensure consistency and compliance with UNDP SES.</p>
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<p>Risk 9: Locations of solar powered electric bus charging stations have been broadly identified (buildings within the premises of bus depots owned and operated by public transport bus operators) but their precise locations have not been identified yet and could therefore have negative impacts on habitats if not selected appropriately.</p>	<p>I = 4 L = 2</p>	<p>Moderate</p>	<p>Proposed activities under Outputs 2.1 and 2.2 (especially 2.2) involve providing financial incentive package to public transport bus operators to install electric bus charging stations and grid-tied rooftop solar units to partially offset grid electricity consumed to charge electric buses with clean solar power generated electricity. While the locations of these charging stations and rooftop solar units have been identified as within the premises of bus depots (owned and operated by public transport bus operators), their precise locations have not been finalized at this stage, and hence some risk of negative impact on land use or habitats exist</p>	<p>During stakeholder consultations held at PPG phase, this risk and related issues have been considered and discussed. One of the bus operators, Rose Hill Transport, has already installed such a rooftop solar system and electric bus charging station within its bus depot in Mauritius (as described in the Prodoc baseline for Output 2.2) without any negative impact on land use and habitats or cultural heritage. Hence, the likelihood of this risk materializing during project implementation is low, although these will be reconfirmed during project implementation. Nevertheless, review of current national laws on human rights, environment, land use and habitats in Mauritius has found that they provide adequate framework to avert such risks due to installation of charging stations and/or any other project sites/activities identified during project implementation.</p>
<p>UNDP SES Project-level Standard 1 (Biodiversity Conservation and Sustainable Natural Resource Management), UNDP SES Project-level Standard 3 (Community Health, Safety and Security) or UNDP SES Project-level Standard 4 (Cultural Heritage) and UNDP SES Project-level Standard 5 (Displacement and Resettlement)</p>				<p>Accordingly, the project will apply a targeted assessments or Environmental and Social Impact Assessment (ESIA) approach during project implementation; as e-mobility is a new issue and the location of charging infrastructure is flexible to some extent, the selection of each of their precise locations will</p>

<p>Risk 10: The Project may directly or indirectly increase national social, environmental and economic vulnerability to climate change due to increased electricity consumption of grid electricity in Mauritius if ongoing/planned investments in renewable electricity generation may slow down or not materialize.</p>	<p>I = 4 L = 1</p>	<p>Low</p>	<p>Electric vehicles including electric buses are far more energy efficient when compared to fossil fuel powered vehicles/buses. This is because electricity is a far more efficient transport fuel than diesel and gasoline. Detailed analysis electricity consumption (from grid electricity and solar powered charging stations) and compared it with diesel fuel consumption by existing diesel buses under Annex 13 of Prodoc. From these calculations, it is clear that electric buses will actually reduce overall energy consumption from the transport sector (and hence, also bring about reduced CO2 emissions) in Mauritius.</p>	<p>Though this risk is considered low, the following measures are necessary because the project is overall categorized as Substantial.</p>
<p>UNDP SES Project-level Standard 2 (Climate Change and Disaster Risk); Standard 8 (Standard 8: Pollution Prevention and Resource Efficiency)</p>			<p>Nevertheless, these electric buses would still consume electricity from the national grid in Mauritius which is generated from all sources of energy including fossil fuels. Even though substantial investments have been made and planned to increase deployment of renewable energy sources such as Wind, Solar and grid-connected energy storage, if some of these planned investments in renewable energy do not materialize, introduction of electric buses under this project may result in increase in grid electricity consumption</p>	<p>Current energy sector policies, planning and investments in Mauritius are clearly geared towards increasing the share of RE sources. Substantial investments have already been made in deployment of Wind, Solar and grid-connected energy storage capacity in recent years, and additional investments have also been planned. Nevertheless, energy sector planning and policies and regulations have not anticipated a significant increase in electricity demand due to electric mobility. While larger interventions in energy policy is beyond direct control of this GEF Project, activities planned under this project (activities 1.2.2, 1.3.1, 3.1.2) will contribute to increased understanding and recognition of electricity demand from e-mobility and hence, may result in energy sector planning to take e-mobility into account.</p>
<p>This risk is part of screening conducted to assess climate change related risks, and include risk mitigation measures related to climate change impact as per STAP guidance.</p>				<p>The project has also considered this in its design, reflected in the project's financial and technical support for setting up rooftop solar units by bus operators to offset some portion of grid electricity consumed</p>

[1] Republic of Mauritius, 'Third National Communication to United Nations Framework Convention on Climate Change' by Ministry of Environment, Sustainable Development, and Disaster and Beach Management, October 2016

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.

The project will be implemented following UNDP's **National Implementation Modality**, according to the Standard Basic Assistance Agreement between UNDP and the Government of Mauritius, and the Country Programme.

Executing Agency: The Executing Agency (EI) for this project is **Ministry of Land Transport and Light Rail (MLTLR)**. The Implementing Partner is the entity to which the UNDP Administrator has entrusted the implementation of UNDP assistance specified in this signed project document along with the assumption of full responsibility and accountability for the effective use of UNDP resources and the delivery of outputs, as set forth in this document.

A Harmonized Approach to Cash Transfers (HACT) micro-assessment was carried out on the IP, MLTLR, and the assessment report, submitted in March 2021, rated the IP to be 'moderate' risk overall. A Programmatic Assessment of MLTLR, using UNDP's Partner Capacity Assessment Tool (PCAT - please refer Annex 17 of Prodoc), conducted in 2021, assessed it to be 'Low' risk overall.

The highest authority of the **Executing Agency** will serve as the National Project Director (NPD) for project implementation. The NPD will chair the Project Board meetings and will be responsible to provide Government oversight and guidance to the project implementation. The NPD's salary will not be paid from the project funds but will represent a Government in-kind contribution to the Project. The NPD will be technically supported by an International Chief Technical Advisor (CTA). The CTA will be recruited using standard UNDP recruitment procedures and will report directly to the UNDP and NPD.

- The Executing Agency is responsible for executing this project. Specific tasks include:
 - Project planning, coordination, management, monitoring, evaluation and reporting. This includes providing all required information and data necessary for timely, comprehensive and evidence-based project reporting, including results and financial data, as necessary. The Executing Agency will strive to ensure project-level M&E is undertaken by national institutes and is aligned with national systems so that the data used and generated by the project supports national systems.
 - Risk management as outlined in this Project Document.
 - Procurement of goods and services, including human resources.
 - Financial management, including overseeing financial expenditures against project budgets.
 - Approving and signing the multiyear workplan.
 - Approving and signing the combined delivery report at the end of the year; and,
 - Signing the financial report or the funding authorization and certificate of expenditures.

Project stakeholders and target groups:

The following Table 5 outlines the stakeholders, target groups and ultimate beneficiaries of this project.

	End-users	? Passengers/commuters that use public transport in Mauritius, including women, elderly, children and disabled passengers
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Stakeholders	Primary	<ul style="list-style-type: none"> ? Public transport bus operators (both government owned NTC, privately owned RHT, UBS, MBT, TBS) and individual bus operators ? Drivers, technicians of public transport buses ? MetroExpress Limited
	Secondary	<ul style="list-style-type: none"> ? Commercial banks lending to bus operators to finance procurement of electric buses. ? Mauritius Bankers Association ? Importers/dealers/distributors of electric buses and solar powered charging stations ? Industry associations ? Civil society and NGOs involved in transport and road safety issues ? Market research institutions ? Technology research institutions
	Macro-level	<ul style="list-style-type: none"> ? Government of Mauritius institutions, particularly key executing entity MLTLR and NLTA ? Other government agencies such as TMRSU, MEPU, CEB, URA, MESWMCC ? Development partners, including AFD
Target Groups		<ul style="list-style-type: none"> ? Public transport bus operators (both government owned NTC, privately owned RHT, UBS, MBT, TBS) and individual bus operators ? Drivers, technicians of public transport buses ? MetroExpress Limited
Ultimate Beneficiaries		<ul style="list-style-type: none"> ? Passengers/commuters that use public transport in Mauritius, including women, elderly, children and disabled passengers

Macro-level stakeholders, which include the project's implementation partner, MLTLR, and other government/institutional stakeholders, will be part of the Project Board (as described later in this section) together with UNDP. The Project Board will be the key decision-making body during the implementation of this project. In addition, primary and secondary stakeholders, as well as end-users/ultimate beneficiaries of this project will be included and/or play a key role in stakeholder consultation on transport master plan and policy and regulatory framework development (Component 1), financial incentive package (Component 2), feasibility studies/training and capacity building activities (Component 3) and awareness raising activities (Component 4). Further details on stakeholder engagement are included in Stakeholder Engagement Plan in Annex 9.

Given the each of these stakeholders have distinct roles to play in different project activities, the project proposes to organize them into 3 working groups as shown below:

? Working Group 1: Masterplan, policies and regulations (Component 1) chaired by MLTLR

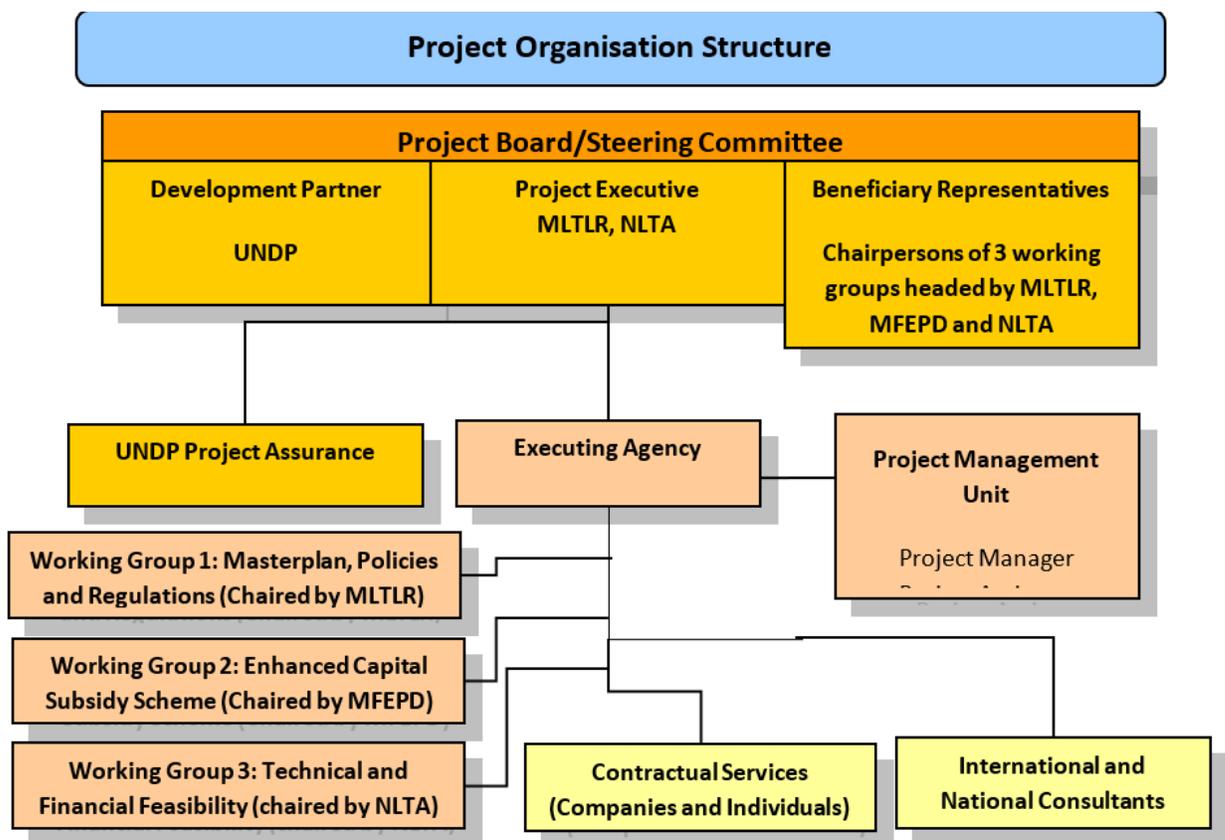
? Working Group 2: Enhanced subsidy scheme and concessional finance (Component 2) chaired by MFEPD

? Working Group 3: On technical and financial feasibility studies (Component 3) chaired by NLTA

More details on roles and responsibilities of these working groups are included in Stakeholder Engagement Plan in Annex 9.

UNDP: UNDP is accountable to the GEF for the implementation of this project. This includes oversight of project execution to ensure that the project is being carried out in accordance with agreed standards and provisions. UNDP is responsible for delivering GEF project cycle management services comprising project approval and start-up, project supervision and oversight, and project completion and evaluation. UNDP is also responsible for the Project Assurance role of the Project Board.

Project organisation structure:



The Project Board (also called Project Steering Committee) is responsible for taking corrective action as needed to ensure the project achieves the desired results. In order to ensure UNDP's ultimate accountability, Project Board decisions should be made in accordance with standards that shall ensure management for development results, best value money, fairness, integrity, transparency and effective international competition.

In case consensus cannot be reached within the Board, the UNDP Resident Representative (or their designate) will mediate to find consensus and, if this cannot be found, will take the final decision to ensure project implementation is not unduly delayed.

Specific responsibilities of the Project Board include:

- ? Provide overall guidance and direction to the project, ensuring it remains within any specified constraints.
- ? Address project issues as raised by the project manager.
- ? Provide guidance on new project risks and agree on possible mitigation and management actions to address specific risks.
- ? Agree on project manager's tolerances as required, within the parameters set by UNDP-GEF, and provide direction and advice for exceptional situations when the project manager's tolerances are exceeded.
- ? Advise on major and minor amendments to the project within the parameters set by UNDP-GEF.
 - ? Ensure coordination between various donor and government-funded projects and programmes.
 - ? Ensure coordination with various government agencies and their participation in project activities.
 - ? Track and monitor co-financing for this project.
 - ? Review the project progress, assess performance, and appraise the Annual Work Plan for the following year.
 - ? Appraise the annual project implementation report, including the quality assessment rating report.
 - ? Ensure commitment of human resources to support project implementation, arbitrating any issues within the project.
- ? Review combined delivery reports prior to certification by the implementing partner.
- ? Provide direction and recommendations to ensure that the agreed deliverables are produced satisfactorily according to plans.
- ? Address project-level grievances.
- ? Approve the project Inception Report, Mid-term Review and Terminal Evaluation reports and corresponding management responses.
- Review the final project report package during an end-of-project review meeting to discuss lesson learned and opportunities for scaling up.
- Ensure highest levels of transparency and take all measures to avoid any real or perceived conflicts of interest.

The Project Board will comprise the following organizations/institutions:

- Ministry of Land Transport and Light Rail (MLTLR) ? Board Chair
- National Land Transport Authority (NLTA)
- Ministry of Finance, Economic Planning and Development (MFEPD)
- United Nations Development Programme (UNDP)
- Traffic Management and Road Safety Unit (TMRSU)
- Ministry of Energy and Public Utilities (MEPU)
- Central Electricity Board (CEB)
- Ministry of Environment, Solid Waste Management, and Climate Change (MESWMCC)
- MetroExpress Limited (MEL)
- Representatives of Public Transport Bus Operators
- Agence Française de Développement (AFD)
- Mauritius Bankers' Association
- Business Mauritius
- Representative of Bus Owner Cooperatives
- Representatives of public transport passengers, road/women's safety NGOs

The composition of the Project Board must include the following roles:

a. Project Executive: Is an individual who represents ownership of the project and chairs the Project Board. The Executive is normally the national counterpart for nationally implemented projects. The Project Executive is:

Officer of the Ministry of Land Transport and Light Rail (MLTLR) not below the grade of Permanent Secretary

b. Beneficiary Representative(s): Individuals or groups representing the interests of those who will ultimately benefit from the project. Their primary function within the board is to ensure the realization of project results from the perspective of project beneficiaries. Often civil society representative(s) can fulfil this role. The Beneficiary representative (s) is/are:

Chairperson of Working Group 1 (appointed by MLTLR): Masterplan, policies and regulations (Component 1)

Chairperson of Working Group 2 (appointed by MFEPD): Enhanced subsidy scheme and concessional finance (Component 2)

Chairperson of Working Group 3 (appointed by NLTA): On technical and financial feasibility studies (Component 3)

c. Development Partner(s): Individuals or groups representing the interests of the parties concerned that provide funding and/or technical expertise to the project. The Development Partner(s) is/are:

United Nations Development Programme (UNDP) Resident Representative

d. Project Assurance: UNDP performs the quality assurance and supports the Project Board and Project Management Unit by carrying out objective and independent project oversight and monitoring functions.

This role ensures appropriate project management milestones are managed and completed, and conflict of interest issues are monitored and addressed. The Project Board cannot delegate any of its quality assurance responsibilities to the Project Manager. UNDP provides a three ? tier oversight services involving the UNDP Country Offices and UNDP at regional and headquarters levels. Project assurance is totally independent of project execution.

Project extensions: The UNDP Resident Representative and the UNDP-GEF Executive Coordinator must approve all project extension requests. Note that all extensions incur costs and the GEF project budget cannot be increased. A single extension may be granted on an exceptional basis and only if the following conditions are met: one extension only for a project for a maximum of six months; the project management costs during the extension period must remain within the originally approved amount, and any increase in PMC costs will be covered by non-GEF resources; the UNDP Country Office oversight costs in excess of the CO's Agency fee specified in the DOA during the extension period must be covered by non-GEF resources.

7. Consistency with National Priorities

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

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

- ? - National Action Plan for Adaptation (NAPA) under LDCF/UNFCCC
- ? - National Action Program (NAP) under UNCCD
- ? - ASGM NAP (Artisanal and Small-scale Gold Mining) under Mercury
- ? - Minamata Initial Assessment (MIA) under Minamata Convention
- ? - National Biodiversity Strategies and Action Plan (NBSAP) under UNCBD
- ? - National Communications (NC) under UNFCCC
- ? - Technology Needs Assessment (TNA) under UNFCCC
- ? - National Capacity Self-Assessment (NCSA) under UNCBD, UNFCCC, UNCCD
- ? - National Implementation Plan (NIP) under POPs
- ? - Poverty Reduction Strategy Paper (PRSP)
- ? - National Portfolio Formulation Exercise (NPFE) under GEFSEC
- ? - Biennial Update Report (BUR) under UNFCCC

Others

The project is in accordance with the Nationally Determined Contributions document which makes specific provision for the development of sustainable transport in Mauritius and the need for more energy efficient mass transportation systems based on cleaner energy sources. Furthermore, The Third National Communication also mentions the transport sector as being one of the main emitters of greenhouse gases and uses electric mobility as one of the potential alternative scenarios.

Contributing Outcome (UNDAF/CPD, RPD, GPD):

UN SPF 2019 ? 2023

Related Outcome: Outcome 6. By 2023, integrated policy frameworks and enhanced community action to promote climate and disaster resilience and biodiversity protection and create incentives for the transition.

Output 15. Electric buses introduced on Mauritian roads, powered by solar charging stations renewable energy.

This project will contribute to the following country outcome included in the Country Programme Document (2017-2023):

National Priority Goal: Implementing low-carbon, climate-resilient strategies while ensuring employment and livelihoods opportunities for the poor and excluded.

Outcome: Design and implementation of a portfolio of activities and solutions developed at national and subnational levels for sustainable management of natural resources, integration of ecosystem services approaches, sound management of chemicals and waste, while ensuring that climate change challenges in terms of adaptation and mitigation are fully addressed

Strategic plan outcome 1: Growth and development are inclusive and sustainable, incorporating productive capacities that create employment and livelihoods for the poor and excluded.

Output 1. Scaled-up action on climate change mitigation across sectors, funded and implemented.

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.

Component 5: Knowledge Management, Monitoring and Evaluation.

Output 5.1: Project baseline established, Inception Workshop completed, lessons learned from other e-mobility projects (GEF-funded or otherwise) reviewed, quantitative and qualitative project data/outcomes captured, evaluated, and disseminated among all project stakeholders in the form of M&E and knowledge reports and knowledge dissemination workshops.

Activity 5.1.1: Inception Workshop, Data collection and baseline report developed and completed for establishing project baseline. (to be completed in Year 1)

Activity 5.1.2: Mid-term Evaluation report published on progress (Year 3) and final M&E report (Terminal Evaluation) published (post project completion) including project outcomes achieved, lessons learned on policy/regulatory, technical, financial and gender aspects of introducing electric public bus transport system in Mauritius. Details are provided in M&E Plan section of this Project Document.

Activity 5.1.4: Findings from Terminal Evaluation and other knowledge reports (Activity 5.2.2) disseminated in at least 2 local stakeholder workshop in Mauritius (to be completed in Year 5 of this project's implementation duration).

MLTLR, and NLTA will be the lead entities of all these activities.

Output 5.2: Knowledge management, tools and M&E reports shared with (and received from) GEF-funded UN Environment's Global E-Mobility Program.

Activity 5.2.1: Participation in at least 2 UN Environment workshop of GEF-funded Global E-Mobility Program to exchange knowledge and information.

Activity 5.2.2: At least 2 knowledge reports published based on the project experience - one report on challenges, experience and best practices on developing policy/regulatory framework for electric public bus transport systems and another report on challenges, experience and best practices on technical, financial, operational and gender aspects of electric public bus transport system (to be completed in Year 5 of this project's implementation duration).

MLTLR, and NLTA will be the lead entities of this activity.

9. Monitoring and Evaluation

Describe the budgeted M and E plan

Project-level monitoring and evaluation will be undertaken in compliance with UNDP requirements as outlined in the [UNDP POPP](#) and [UNDP Evaluation Policy](#). The UNDP Country Office is responsible for ensuring full compliance with all UNDP project monitoring, quality assurance, risk management, and evaluation requirements.

Additional mandatory GEF-specific M&E requirements will be undertaken in accordance with the [GEF Monitoring Policy](#) and the [GEF Evaluation Policy](#) and other [relevant GEF policies](#)[1]. The costed M&E plan included below, and the Monitoring plan in Annex 5, will guide the GEF-specific M&E activities to be undertaken by this project.

In addition to these mandatory UNDP and GEF M&E requirements, other M&E activities deemed necessary to support project-level adaptive management will be agreed during the Project Inception Workshop and will be detailed in the Inception Report.

Key Project-specific M&E and Responsibilities

The Project Manager, together with MLTLR and NLTA, will play a key role in regularly monitoring the outcomes and activities of this project. In particular, MLTLR will support day-to-day monitoring of the project's activities. The Project Manager is responsible for day-to-day project management and regular monitoring of project results and risks, including social and environmental risks (outlined in SESP and ESMF) as well as gender action plan outcomes (outlined in Gender Assessment and Action Plan). The Project Manager will ensure that all project staff maintain a high level of transparency, responsibility and accountability in M&E and reporting of project results. The Project Manager will inform the Project Board, the UNDP Country Office and the UNDP-GEF RTA of any delays or difficulties as they arise during implementation so that appropriate support and corrective measures can be adopted.

Further, the Project Manager is responsible to initiate and manage primary data collection for indicators in the Project Results Framework. The following key M&E activities and reports are proposed to be produced during the implementation of this project, and required to be collected, monitored and evaluated under the oversight of the Project Manager:

? M&E for Project Objective, Outcomes and GEF Core Indicators:

- o M&E (data to be collected from bus operators and/or NLTA) for passenger usage survey supported by project (Frequency: Annually) ? to estimate the number of passenger beneficiaries of this project.
- o M&E (data to be collected from bus operators and/or NLTA) for number of trips/kilometers travelled by electric buses daily/annually supported by project (Frequency: Annually) ? to estimate the number of kilometers travelled and CO2 emission reduction estimates.
- o M&E (data to be collected from bus operators/other private entities setting up charging stations or from CEB) for number of solar powered charging stations for electric buses daily/annually supported by project (Frequency: Annually) ? to estimate the number and power generation capacity (in kW or MW) of e-bus charging stations setup.

? M&E for Project Component-level Outcome Indicators

- o M&E/Reporting by MLTLR (supported by NLTA), and the UNDP-supported project (Frequency: Annually) to track progress on activities under Component 1, Component 2 (support from MEPU and CEB for Indicator 8 on charging stations), Component 3, Component 4 and Component 5.

The Project Manager will develop annual work plans based on the multi-year work plan included in Annex 4, including annual output targets to support the efficient implementation of the project. The Project

Manager will ensure that the standard UNDP and GEF M&E requirements are fulfilled to the highest quality. This includes, but is not limited to, ensuring the results framework indicators are monitored annually in time for evidence-based reporting in the GEF PIR, and that the monitoring of risks and the various plans/strategies developed to support project implementation occur on a regular basis.

Project Board (PB): The Project Board will take corrective action as needed to ensure the project achieves the desired outcomes and results. The PB will hold project reviews to assess the performance of the project and appraise the Annual Work Plan for the following year. In the project's final year, the PB will hold an end-of-project review to capture lessons learned and discuss opportunities for scaling up and to disseminate results and lessons learned with relevant project stakeholders. This final review meeting will also discuss the findings outlined in the project terminal evaluation report and the management response.

Project Implementing Partner: With support from the project, MLTLR will develop and deploy a monitoring, evaluation, reporting, and verification system to track the implementation of master planning, policy and regulatory frameworks, feasibility studies, training, and associated investment (enhanced capital subsidies for electric buses and solar powered charging stations) and avoided emissions. MLTLR will use this system to supply all required information and data necessary for timely, comprehensive and evidence-based project reporting, including results and financial data. MLTLR will strive to ensure that project-level M&E is undertaken by project stakeholders in both the public and private sector, and that results of M&E are aligned with national systems (such as Statistics Mauritius) so that the data used by and generated by the project supports national systems.

UNDP Country Office: The UNDP Country Office will support the Project Manager as needed, and available to support MLTLR as needed. Project progress meetings will take place according to the schedule outlined in the annual work plan. Notes of the Project Progress meetings will be taken by the project team and circulated to the PB. The UNDP Country Office will support key GEF M&E activities including the annual GEF PIR, the independent mid-term review and the independent terminal evaluation. The UNDP Country Office will also ensure that the standard UNDP and GEF M&E requirements are fulfilled to the highest quality.

The UNDP Country Office is responsible for complying with all UNDP project-level M&E requirements as outlined in the [UNDP POPP](#). This includes ensuring the UNDP Quality Assurance Assessment during implementation is undertaken annually; that annual targets at the output level are developed and monitored and reported using UNDP corporate systems; the regular updating of the ATLAS risk log; and updating of UNDP gender marker on an annual basis based on gender mainstreaming progress reported in the GEF PIR and UNDP ROAR. Any quality concerns flagged during these M&E activities (such as annual GEF PIR quality assessment ratings) must be addressed by the UNDP Country Office and the Project Manager.

The UNDP Country Office will retain all M&E records for this project for up to seven years after project financial closure in order to support ex-post evaluations undertaken by the UNDP Independent Evaluation Office (IEO) and/or the GEF Independent Evaluation Office (IEO).

UNDP-GEF Unit: Additional M&E and implementation quality assurance and troubleshooting support will be provided by the UNDP-GEF Regional Technical Advisor and the UNDP-GEF Directorate as needed.

Additional GEF monitoring and reporting requirements:

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Inception Workshop and Report: A project inception workshop will be held within 60 days of project CEO endorsement, with the aim to:

- a. Familiarize key stakeholders with the detailed project strategy and discuss any changes that may have taken place in the overall context since the project idea was initially conceptualized that may influence its strategy and implementation.
- b. Discuss the roles and responsibilities of the project team, including reporting lines, stakeholder engagement strategies and conflict resolution mechanisms.
- c. Review the results framework and monitoring plan.
- d. Discuss reporting, monitoring and evaluation roles and responsibilities and finalize the M&E budget; identify national/regional institutes to be involved in project-level M&E; discuss the role of the GEF OFP and other stakeholders in project-level M&E.
- e. Update and review responsibilities for monitoring project strategies, including the risk log; SESP report, Social and Environmental Management Framework and other safeguard requirements; project grievance mechanisms; gender strategy; knowledge management strategy, and other relevant management strategies.
- f. Review financial reporting procedures and budget monitoring and other mandatory requirements and agree on the arrangements for the annual audit.
- g. Plan and schedule Project Board meetings and finalize the first-year annual work plan.
- h. Formally launch the Project.

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GEF Project Implementation Report (PIR):

The annual GEF PIR covering the reporting period July (previous year) to June (current year) will be completed for each year of project implementation. Any environmental and social risks and related management plans will be monitored regularly, and progress will be reported in the PIR. The PIR submitted to the GEF will be shared with the Project Board. The quality rating of the previous year's PIR will be used to inform the preparation of the subsequent PIR.

Lessons learned and knowledge sharing: Results from the project will be disseminated to all key project stakeholders via M&E and Knowledge Dissemination workshops. The project will also closely coordinate and participate in UN Environment's Global E-Mobility Program (GEF-funded) activities and workshops, to share lessons learned and potentially use tools and systems developed by the Global Program.

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GEF Core Indicators:

The GEF and/or LDCF/SCCF Core indicators included as Annex 15 will be used to monitor global environmental benefits and will be updated for reporting to the GEF prior to MTR and TE. Note that the project team is responsible for updating the indicator status. The updated monitoring data should be shared

with MTR/TE consultants prior to required evaluation missions, so these can be used for subsequent ground-truthing. The methodologies to be used in data collection have been defined by the GEF and are available on the GEF [website](#).

Independent Mid-term Review (MTR):

The terms of reference, the review process and the final MTR report will follow the standard templates and guidance for GEF-financed projects available on the [UNDP Evaluation Resource Center \(ERC\)](#). The evaluation will be "independent, impartial and rigorous". The evaluators that will be hired to undertake the assignment will be independent from organizations that were involved in designing, executing or advising on the project to be evaluated. Equally, the evaluators should not be in a position where there may be the possibility of future contracts regarding the project under review. The GEF Operational Focal Point and other stakeholders will be actively involved and consulted during the evaluation process. Additional quality assurance support is available from the BPPS/GEF Directorate. The final MTR report and MTR TOR will be publicly available in English. The MTR process will begin after the second PIR has been submitted to the GEF, and the MTR report will be submitted to the GEF in the same year as the 3rd PIR. A management response to MTR recommendations will be posted in the ERC within six weeks of the MTR report's completion. The MTR findings and responses outlined in the management response will be incorporated as recommendations for enhanced implementation during the final half of the project's duration.

Terminal Evaluation (TE):

An independent terminal evaluation (TE) will take place upon completion of all major project outputs and activities. The terms of reference, the evaluation process and the final TE report will follow the standard templates and guidance for GEF-financed projects available on the [UNDP Evaluation Resource Center](#). The evaluation will be "independent, impartial and rigorous". The evaluators that will be hired to undertake the assignment will be independent from organizations that were involved in designing, executing or advising on the project to be evaluated. Equally, the evaluators should not be in a position where there may be the possibility of future contracts regarding the project being evaluated. The GEF Operational Focal Point and other stakeholders will be actively involved and consulted during the terminal evaluation process. Additional quality assurance support is available from the BPPS/GEF Directorate. The final TE report and TE TOR will be publicly available in English. The terminal evaluation process will begin three months before operational closure of the project allowing the evaluation mission to proceed while the project team is still in place, yet ensuring the project is close enough to completion for the evaluation team to reach conclusions on key aspects such as project sustainability. The Project Manager will remain on contract until the TE report and management response have been finalized. A management response to the TE recommendations will be posted to the ERC within six weeks of the TE report's completion. The final TE report will be cleared by the UNDP Country Office and the UNDP-GEF Regional Technical Advisor and will be approved by the Project Board.

The UNDP Country Office will include the planned project terminal evaluation in the UNDP Country Office evaluation plan and will upload the final terminal evaluation report in English and the corresponding management response to the UNDP Evaluation Resource Centre (ERC). Once uploaded to the ERC, the UNDP IEO will undertake a quality assessment and validate the findings and ratings in the TE report and rate the quality of the TE report. The UNDP IEO assessment report will be sent to the GEF IEO along with the project terminal evaluation report.

Final Report:

The project's terminal GEF PIR along with the terminal evaluation (TE) report and corresponding management response will serve as the final project report package. The final project report package shall be discussed with the Project Board during an end-of-project review meeting to discuss lesson learned and opportunities for scaling up.

Agreement on intellectual property rights and use of logo on the project's deliverables and disclosure of information: To accord proper acknowledgement to the GEF for providing grant funding, the GEF logo will appear together with the UNDP logo on all promotional materials, other written materials like publications developed by the project, and project hardware. Any citation on publications regarding projects funded by the GEF will also accord proper acknowledgement to the GEF. Information will be disclosed in accordance with relevant policies notably the UNDP Disclosure Policy[2] and the GEF policy on public involvement[3].

Mandatory GEF M&E Requirements and M&E Budget

Monitoring and Evaluation Plan and Budget:		
This M&E plan and budget provides a breakdown of costs for M&E activities to be led by the Project Management Unit during project implementation. These costs are included in Component 5 of the Results Framework and TBWP. For ease of reporting M&E costs, please include all costs reported in the M&E plan under the one technical component. The oversight and participation of the UNDP Country Office/Regional technical advisors/HQ Units are not included as these are covered by the GEF Fee.		
GEF M&E requirements	Indicative costs (US\$)	Time frame
Inception Workshop	10,000	Within 60 days of CEO endorsement of this project.
Inception Report	None	Within 90 days of CEO endorsement of this project.
M&E of GEF core indicators and project results framework	25,000	Annually and at mid-point and closure
GEF Project Implementation Report (PIR)	None	Annually
Monitoring of environmental and social risks, and corresponding management plans as relevant	None (covered under Project Management and other monitoring of indicators)	On-going.
Supervision missions	None	Annually
Independent Mid-term Review (MTR)	38,000	Between 2 nd and 3 rd PIR.
Independent Terminal Evaluation (TE)	45,000	At least three months before operational closure
TOTAL indicative COST Excluding project team staff time, and UNDP staff and travel expenses	118,000 (2.1% of GEF grant)	

[1] See https://www.thegef.org/gef/policies_guidelines

[2] See http://www.undp.org/content/undp/en/home/operations/transparency/information_disclosurepolicy/

[3] See https://www.thegef.org/gef/policies_guidelines

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 (LDCE/SCCF)?

This project will support the introduction of electric buses for public bus transport in Mauritius, supporting the government's transport energy strategy goal of increasing deployment of electric buses by 2025, reducing fossil fuel consumption, GHG emissions and pollution from transport sector. The project will also support the government in designing and promulgating conducive policy and regulatory framework for electric bus deployment, associated electric vehicle charging infrastructure and scientific disposal/recycling. The overarching goal is to support the government in transitioning the country towards a modern, low-carbon, gender-sensitive, inclusive and sustainable public bus transport system to complement other modes of low-carbon transport such as MetroExpress.

In terms of number of passenger-trips impacted, based on conservative estimates of 35 passengers carried by each full-length e-bus (typical full capacity of 50 passengers) or midi e-bus (typical full capacity of 40 passengers) per long route or last-mile trip from Metro Express stations to neighbourhoods, and assuming each trip to cover 15 km distance; and based on an estimation of 150 km covered by each bus per day, each e-bus is estimated to offer ~350 passenger-trips every day. So 60 full-length and midi e-buses are conservatively estimated to offer ~21,000 passenger trips per day (which is 12.5% of the estimated 80,000 passenger trips per day likely to be offered by MetroExpress once it is fully operational). This works out to ~6.93 Million passenger-trips per annum (assuming 330 days of operations of buses per annum) to be provided by electric bus services that will be deployed with support from this GEF project, when all 60 buses are fully deployed and operational.

Other co-benefits that the project will generate, in terms of passenger comfort, safety and satisfaction, as well as increased usage of public transport, are difficult to quantify in advance of the project, but it is clear that they too magnify the value of the project. These benefits will be captured and reported during capture of best practices, project outcomes and lessons learned (Output 5.1) and in the project's M&E.

The project's outputs and activities are designed not only to address key barriers, but also to complement with each other, such that the comprehensive transport planning, promulgation of conducive policy and

regulatory framework and setting of electric bus deployment targets would support and lead to investments from the private sector (bus operators) which would be supported by capital subsidies and facilitation of low-cost debt finance under Component 2. The training and capacity building activities under Component 3 would lead to better skills and capacities among local stakeholders to design, develop, implement, procure and deploy activities under Components 1 and 2, and Component 4 is designed to increase awareness among the general population and create demand for modern, low-carbon public bus transport capacity that will be created by activities under Components 1, 2 and 3. All of these will create a basis for replication, long-term sustainable market transformation, and MRV.

The project builds upon a government intent to modernize its public transport system and transition into a low-carbon public transport system, and a commitment to integrating electric mobility in its overall transport system over the next 10 years. Baseline of national policies, regulations and existing project activity ? most notably, Bus Modernization Programme, technical specifications for import of electric buses, green credit lines under AFD's SUNREF program that cover electric mobility investments, and incentives and grid codes for distributed solar power generation under MSDG and SSDG programs. However, the project also provides clear incrementality beyond baseline in both scale and content, by not only defining specific policies and regulations for all aspects of electric bus mobility, but also encouraging multi-modal transport integration among low-carbon transport options being deployed, actual investments into electric buses and solar powered charging station capacity, which are innovative and incremental to Mauritius.

Finally, the deployment of electric buses will contribute to climate change adaptation efforts. Electric bus models and their design/technical specifications under this project will be required to take into consideration the impacts of climate change such as flooding and coastal erosion that are commonly seen in Mauritius, thereby contributing to climate change adaptation of public transport. In addition, climate-resilient electric buses and their solar powered charging stations are likely to inspire climate resilience efforts along their pathways through increased green areas and effective designs that can mitigate the effects of possible floods. Moreover, modern e-buses with their zero tailpipe emissions contributed to lower heating and air pollution due to public transport, thereby reducing urban heat island effects in Mauritius, thus contributing to climate change mitigation and adaptation efforts. In addition, climate resilient designs and technical specifications of electric buses deployed under this project will ensure access to climate resilient public transport to passengers in Mauritius.

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/Approva l	MTR	TE
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High or Substantial

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.

Supporting Documents

Upload available ESS supporting documents.

Title	Module	Submitted
PIMS_6486_Annex10_ESMF_Low_Carbon_Transport_Mauritius_June 17 2021	CEO Endorsement ESS	
PIMS_6486 Annex6_SESP_Low_Carbon_Transport_Mauritius_June 17 2021	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).

This project will contribute to the following Sustainable Development Goal (s):

- SDG 3 ?Good Health and Well-being? protecting local, regional and global populations from air pollution and GHG emissions.
- SDG 5 ?Gender Equality? promoting gender equality in public transport sector.
- SDG 9 ?Industry, Innovation and Infrastructure? supporting the development of electric vehicle and clean energy industries.
- SDG 11 ?Sustainable Cities and Communities? making cities and human settlements clean, green and sustainable via reduced air pollution and GHG emissions.
- SDG13 "Climate Action" climate change mitigation by promoting electric low-carbon public transport

This project will contribute to the following country outcome included in the UNDAF/Country Programme Document (2017-2020):

National Priority Goal: Implementing low-carbon, climate-resilient strategies while ensuring employment and livelihoods opportunities for the poor and excluded.

Outcome: Design and implementation of a portfolio of activities and solutions developed at national and subnational levels for sustainable management of natural resources, integration of ecosystem services approaches, sound management of chemicals and waste, while ensuring that climate change challenges in terms of adaptation and mitigation are fully addressed

Strategic plan outcome 1: Growth and development are inclusive and sustainable, incorporating productive capacities that create employment and livelihoods for the poor and excluded.

Output 1. Scaled-up action on climate change mitigation across sectors, funded and implemented

	Objective and Outcome Indicators	Baseline	Mid-term Target	End of Project Target

<p>Project Objective:</p> <p>To promote capital investments into developing sustainable transport infrastructure to reduce transport-related GHG emissions in Mauritius to mitigate climate change; engage and build technical capacities of transport-related policymakers, regulatory and other government agencies, financial institutions and the private sector.</p>	<p><u>Project Objective Indicator 1 (GEF Core Indicator 11):</u> # direct project beneficiaries disaggregated by gender (individual people)</p> <p>Number of public transport passengers impacted in terms of number of public transport passengers that are able to travel on electric public transport buses on a regular basis[1]</p> <p><i>[Source: M&E system for passenger usage survey supported by project, Frequency: Annually]</i></p>	<p>0 direct project beneficiaries.</p>	<p>5,000 direct project beneficiaries, each taking atleast 1 passenger-trip per day (2,500 women + 2,500 men).</p> <p>(~1.65 Million passenger-trips taken on electric public transport buses on an annualized basis, with atleast 50% of these trips being taken by women)</p>	<p>21,000 direct project beneficiaries, each taking atleast 1 passenger-trip per day (10,500 women + 10,500 men).</p> <p>(~6.93 Million passenger-trips taken on electric public transport buses on an annualized basis, with atleast 50% of these trips being taken by women)</p>
	<p><u>Project Objective Indicator 2 (GEF Core Indicator 6):</u> Greenhouse gas emission mitigated (Metric tons of CO2-eq)[2]</p> <p><i>[Source: M&E system for number of trips/kilometers travelled by electric buses daily/annually supported by project, Frequency: Annually]</i></p>	<p>Transport-related GHG emissions in Mauritius were estimated to be 1.132 Million tCO2-eq in 2019, which is 19.6% of overall GHG emissions in the country (Source: Statistics Mauritius)</p>	<p>2,005 tCO2-eq of direct transport-related GHG emissions mitigated (reduced) due to deployment of public transport electric buses and limited number of solar powered charging stations</p>	<p>End of Project: 15,567 tCO2-eq of direct transport-related GHG emissions mitigated (reduced) due to deployment of public transport electric buses and limited number of solar powered charging stations.</p> <p>By 2040: 76,624 tCO2-eq of direct transport-related GHG emissions and 316,091 tCO2-eq of consequential transport-related GHG emissions mitigated (reduced) due to deployment of public transport electric buses and limited number of solar powered charging stations</p>

	<p><u>Project Objective Indicator 3 (GEF Core Indicator 6.2):</u> Greenhouse gas emission mitigated (Metric tons of CO₂-eq) - Emissions avoided Outside AFOLU[3]</p> <p><i>[Source: M&E system for number of trips/kilometers travelled by electric buses daily/annually supported by project, Frequency: Annually]</i></p>	<p>Transport-related GHG emissions in Mauritius were estimated to be 1.132 Million tCO₂-eq in 2019, which is 19.6% of overall GHG emissions in the country (Source: Statistics Mauritius)</p>	<p>2,005 tCO₂-eq of direct transport-related GHG emissions mitigated (reduced) due to deployment of public transport electric buses and limited number of solar powered charging stations</p>	<p>End of Project: 15,567 tCO₂-eq of direct transport-related GHG emissions mitigated (reduced) due to deployment of public transport electric buses and limited number of solar powered charging stations.</p> <p>By 2040: 76,624 tCO₂-eq of direct transport-related GHG emissions and 316,091 tCO₂-eq of consequential transport-related GHG emissions mitigated (reduced) due to deployment of public transport electric buses and limited number of solar powered charging stations</p>
	<p><u>Project Objective Indicator 4 (GEF Core Indicator 6.4):</u> Increase in installed renewable energy capacity per technology - Increase in installed renewable energy capacity per technology⁴[4]</p> <p><i>[Source: M&E system for number of solar powered charging stations for electric buses daily/annually supported by project, Frequency: Annually]</i></p>	<p>Total installed Solar PV capacity in Mauritius in 2019 was 89 MW (public and private sector owned), which is 10.5% of total installed power generation capacity in Mauritius in 2019 (Source: Statistics Mauritius)</p>	<p>0.3 MW of grid-connected Solar PV capacity installed for net metering-based electric bus charging stations</p>	<p>0.75 MW of grid-connected Solar PV capacity installed for net metering-based electric bus charging stations</p>
<p>Project Component 1</p>	<p>Policy and regulatory framework for electric public (bus) transport in Mauritius</p>			

<p>Project Outcome 1</p> <p>Favorable policy and regulatory framework and enabling environment is established for low-carbon, electric bus transport investments in Mauritius.</p>	<p>Indicator 5 Masterplan and policymaking / implementation mechanisms in place for low-carbon and electric transport in Mauritius</p> <p><i>[Source: M&E/Reporting by MLTLR and NLTA, and the UNDP-supported project, Frequency: Annually]</i></p>	<p>?Sustainable Low-carbon Transport Masterplan? document developed? No</p> <p>'Electric Vehicle Implementation and Monitoring Committee? setup? No</p>	<p>Draft ?Sustainable Low-carbon Transport Masterplan? document developed? Yes</p> <p>'Electric Vehicle Implementation and Monitoring Committee? operationalized? Yes</p>	<p>Sustainable Low-carbon Transport Masterplan? document developed, revised and submitted for approval by the government? Yes</p> <p>'Electric Vehicle Implementation and Monitoring Committee? operational? Yes</p>
	<p>Indicator 6: Progress in developing policies and regulations to create an enabling environment for electric bus mobility in Mauritius.</p> <p><i>[Source: M&E/Reporting by MLTLR and NLTA, and the UNDP-supported project, Frequency: Annually]</i></p>	<p>'Gender-responsive Electric Bus Mobility Policy and Regulatory Framework' developed? No</p> <p>'Regulations and Policy Incentives for Electric Vehicle Charging Stations and Electricity Tariffs' developed? No</p> <p>'Regulations and Policy Incentives for Management of Hazardous Waste/Chemicals in Batteries used in Electric Vehicles' developed? No</p>	<p>Draft 'Gender-Responsive Electric Bus Mobility Policy and Regulatory Framework' developed and opened for stakeholder consultation? Yes</p> <p>Draft 'Regulations and Policy Incentives for Electric Vehicle Charging Stations and Electricity Tariffs' developed and opened for stakeholder consultation? Yes</p> <p>Draft 'Regulations and Policy Incentives for Management of Hazardous Waste/Chemicals in Batteries used in Electric Vehicles' developed and opened for stakeholder consultation? Yes</p>	<p>Final 'Electric Bus Mobility Policy and Regulatory Framework' developed, revised and approved by the government? Yes</p> <p>Final 'Regulations and Policy Incentives for Electric Vehicle Charging Stations and Electricity Tariffs' developed, revised and approved by the government? Yes</p> <p>Final 'Regulations and Policy Incentives for Management of Hazardous Waste/Chemicals in Batteries used in Electric Vehicles' developed, revised and approved by the government? Yes</p>

<p>Outputs to achieve Outcome 1</p>	<p>Output 1.1: Designing and developing a long-term comprehensive 'Sustainable Low-carbon Transport Planning' document that provides with policy and regulatory framework for electric bus transport.</p> <p>Output 1.2: Developing a comprehensive policy, regulatory and guidelines framework to enable e-bus deployment in Mauritius for public transport.</p> <p>Output 1.3: Feasibility studies and analysis that lead to the preparation of an Investment Program to scale up low-carbon transport in Mauritius.</p>			
<p>Project component 2</p>	<p>Financial Incentive Package for electric buses and charging infrastructure.</p>			
<p>Project Outcome 2</p> <p>Financial subsidies, tax and other incentives for deployment of electric buses and associated solar charging infrastructure are established</p>	<p>Indicator 7: Number of public transport electric buses procured and deployed with support from enhanced capital subsidy scheme and concessional finance.</p> <p><i>[Source: M&E/Reporting by MLTLR and NLTA, and the UNDP-supported project, Frequency: Annually]</i></p>	<p>Enhanced capital subsidy scheme instituted under existing Bus Modernization Programme wherein existing capital subsidies (upto MUR 1.3 Million per bus) are enhanced to offer upto an indicative level of 40% of capital costs of electric buses to public transport bus operators? No</p> <p>A mechanism is established to facilitate concessional finance under AFD SUNREF program to bus operators? No</p> <p>Number of public transport electric buses procured and deployed with support from enhanced capital subsidy scheme and concessional finance: 0</p>	<p>Enhanced capital subsidy scheme instituted under existing Bus Modernization Programme wherein existing capital subsidies (upto MUR 1.3 Million per bus) are enhanced to offer upto an indicative level of 40% of capital costs of electric buses to public transport bus operators? Yes</p> <p>A mechanism is established to facilitate concessional finance under AFD SUNREF program to bus operators? Yes</p> <p>Number of public transport electric buses procured and deployed with support from enhanced capital subsidy scheme and concessional finance: atleast 10</p>	<p>Number of public transport electric buses procured and deployed with support from enhanced capital subsidy scheme and concessional finance: atleast 60</p>

	<p>Indicator 8: Number of solar powered electric bus charging stations procured and deployed with support from capital subsidy scheme and concessional finance.</p> <p><i>[Source: M&E/Reporting by MEPU and CEB, and the UNDP-supported project, Frequency: Annually]</i></p> <p>█</p>	<p>Capital subsidy scheme (with or without subsidy support from existing government/UNDP-GCF MSDG/SSDG program for solar) instituted wherein capital subsidies of upto an indicative level of 28% of capital costs of solar powered charging stations to public transport bus operators or other private entities? No</p> <p>A mechanism is established to facilitate concessional finance under AFD SUNREF program to bus operators? No</p> <p>Number of solar powered electric bus charging stations procured and deployed with support from capital subsidy scheme and concessional finance: 0</p>	<p>Capital subsidy scheme (with or without subsidy support from existing government/UNDP-GCF MSDG/SSDG program for solar) instituted wherein capital subsidies of upto an indicative level of 28% of capital costs of solar powered charging stations to public transport bus operators or other private entities? No</p> <p>A mechanism is established to facilitate concessional finance under AFD SUNREF program to bus operators? No</p> <p>Number of solar powered electric bus charging stations procured and deployed with support from capital subsidy scheme and concessional finance: atleast 3</p>	<p>Number of solar powered electric bus charging stations procured and deployed with support from capital subsidy scheme and concessional finance: atleast 15</p>
<p>Outputs to achieve Outcome 2</p>	<p>Output 2.1: Capital Subsidy scheme for electric buses (60 buses with upto an indicative level of 40% estimated capital subsidies) for both regular long routes and/or short loop feeder buses to provide last mile connectivity to and from MetroExpress stations.</p> <p>Output 2.2: Capital Subsidy scheme for solar powered charging stations (15 solar powered charging stations with upto an indicative level of 28% estimated capital subsidies) to be setup by bus operators or other private entities for charging their electric buses.</p>			
<p>Project component 4</p>	<p>Awareness Raising to address barriers related to lack of awareness on benefits of low-carbon electric public transport.</p>			

<p>Project Outcome 4</p> <p>Increased awareness of benefits of clean, low-carbon public transport options in Mauritius, and benefits of using public transport, walking, cycling etc.</p>	<p>Indicator 9: Number of Awareness raising, promotional campaigns, sensitization activities, road shows, focus groups and community-level on the benefits of public transport, particularly low-carbon options such as electric buses, MetroExpress, park-and-ride schemes, bicycling, walking etc.</p> <p><i>[Source: M&E/Reporting by MLTLR and NLTA, and the UNDP-supported project, Frequency: Annually]</i></p>	<p>Number of multi-channel mass media, social media and PIS promotional/advertising campaigns designed and executed on benefits of electric/low-carbon public transport: 0</p> <p>Number of targeted promotional events (town-level or community-level such as apartment complexes or at major events/fairs) executed: 0</p> <p>Number of targeted promotional events held at MetroExpress stations or bus stations, or schools or corporate offices designed executed: 0</p> <p>Number of targeted campaigns on women's safety and comfort features on public transport buses and MetroExpress executed: 0</p> <p>Project website is developed for this GEF-funded project and promoted to improve online visibility? No</p>	<p>Number of multi-channel mass media, social media and PIS promotional/advertising campaigns designed and executed on benefits of electric/low-carbon public transport: 2</p> <p>Number of targeted promotional events (town-level or community-level such as apartment complexes or at major events/fairs) executed: 4</p> <p>Number of targeted promotional events held at MetroExpress stations or bus stations, or schools or corporate offices designed executed: 4</p> <p>Number of targeted campaigns on women's safety and comfort features on public transport buses and MetroExpress executed: 4</p> <p>Project website is developed for this GEF-funded project and promoted to improve online visibility? Yes</p>	<p>Number of multi-channel mass media, social media and PIS promotional/advertising campaigns designed and executed on benefits of electric/low-carbon public transport: 5</p> <p>Number of targeted promotional events (town-level or community-level such as apartment complexes or at major events/fairs) executed: 10</p> <p>Number of targeted promotional events held at MetroExpress stations or bus stations, or schools or corporate offices designed executed: 10</p> <p>Number of targeted campaigns on women's safety and comfort features on public transport buses and MetroExpress executed: 10</p> <p>Project website is regularly updated to showcase achievements of the project</p>
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Outputs to achieve Outcome 4	Output 4.1: Increased awareness and sensitization among local population regarding the benefits of using public transport in general, and low-carbon electric mobility in particular.			
Project component 5	Knowledge Management, Monitoring and Evaluation.			
Project Outcome 5 Knowledge acquired during the project, compiled and disseminated; M&E milestones implemented	Indicator 10: Number of local and international workshops attended/participated including those of UN Environment's GEF-funded Global E-Mobility Program <i>[Source: M&E/Reporting by MLTLR and NLTA, and the UNDP-supported project, Frequency: Annually]</i>	Number of local stakeholder workshops conducted to disseminate knowledge and M&E report findings: 0 Number of UN Environment workshops of GEF-funded Global E-Mobility Program participated: 0	Number of local stakeholder workshops conducted to disseminate knowledge and M&E report findings: 0 Number of UN Environment workshops of GEF-funded Global E-Mobility Program participated: 1	Number of local stakeholder workshops conducted to disseminate knowledge and M&E report findings: 2 Number of UN Environment workshops of GEF-funded Global E-Mobility Program participated: 2
Outputs to achieve Outcome 5	Output 5.1: Project baseline established, lessons learned from other e-mobility projects (GEF-funded or otherwise) reviewed, quantitative and qualitative project data/outcomes captured, evaluated, and disseminated among all project stakeholders in the form of M&E and knowledge reports and knowledge dissemination workshops. Output 5.2: Knowledge management, tools and M&E reports shared with (and received from) GEF-funded UN Environment's Global E-Mobility Program.			

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).

Response to Comments from the GEF Council		
Comments from France		
Reference number	Comment	Response

1

France wishes to underline the value of this project provided the following elements are duly taken in to account:

- A contextualization of this project is necessary, to be carried out with the Mauritius authorities and technical and financial partners

The project proposal has been developed in close collaboration with the following government ministries and institutions:

- Ministry of Land Transport and Light Rail (MLTLR)

- National Land Transport Authority (NLTA)

- Traffic Management and Road Safety Unit (TMRSU)

- Ministry of Energy and Public Utilities (MEPU)

- Central Electricity Board (CEB)

- Public Transport Bus Operators (both gov-owned National Transport Corporation (NTC) and private bus operators)

AFD, the French Development

Agency, has also been consulted during stakeholder consultation activities of this project preparation phase and they are interested in close cooperation and has issued a co-financing letter for US\$ 8 Million from their SUNREF program that has structured green credit lines with 3 commercial banks in Mauritius. These commercial banks have also been consulted and they are interested in providing debt capital for electric bus purchases by bus operators that receive subsidy from this GEF project.

2

Inclusion of this project in a national mobility master plan for the island, considering the other types of public transport and the other modes of soft and low-carbon mobility. Such a master plan should constitute a prerequisite.

Output 1.1 of this proposed project under Component 1 is 'Designing and developing a long-term comprehensive Sustainable Low-carbon Transport Planning' document that provides with policy and regulatory framework for electric bus transport?.

Activity 1.1.1: A long-term, integrated comprehensive, gender-sensitive and inclusive 'Sustainable Low-carbon Transport Masterplan'

document prepared for Mauritius, that includes: (i) extensive data collection of transport demand and patterns (using and integrating data and traffic models already developed), (ii) transport demand growth projections at least until 2035 (using data and traffic/transport

demand models already developed),

(iii) comprehensive analysis of data collected, (iv) detailed review of

existing transport infrastructure and various existing and planned programs and infrastructure,

(vi) based on this analysis and projections, a detailed long-term,

multi-modal transport plan for Mauritius is developed, detailing the role of different modes of transport -

MetroExpress, public transport buses, private buses, private passenger vehicles, commercial vehicles, bicycles, pedestrian

Comments from the United States

1

We support this project and offer three suggestions. First, battery disposal is addressed only as a goal and not a stated objective: "The project also aims to reduce the risk of hazardous waste from used batteries by supporting the government setup policy and regulatory framework for safe recycling and disposal of battery components in the country." We recommend adding battery disposal as a component of both policy and regulatory framework, and financial incentives package, to ensure proper handling of batteries. This includes addressing and managing environmental risks due to road accidents involving battery-operated vehicles.

Recycling of EV batteries will be regulated and implemented under Component 1, Output 1.2, Activity 1.2.3: In cooperation with UNDP-GEF project titled "Indian Ocean Regional Project - Mauritius -

Implementing Sustainable Low and non-Chemical

Development in SIDS (ISLANDS)? (PIMS ID 6400),

draft guidelines will be developed for recycling and management/disposal

of hazardous waste/chemicals of end-of-life batteries

and EVs in Mauritius.

Post-development of these battery recycling and disposal policy,

regulations and guidelines, the GEF project will make it

mandatory for all bus operators to strictly implement these

policies, regulations and guidelines to scientifically handle,

manage, recycle and dispose these batteries.

Implementation of these policies, regulations and

guidelines will be a mandatory part of subsidies/financial

incentive package provided to bus operators.

2

Second, the project will require solar energy-based electric bus fast-charging infrastructure, but leaves the maintenance as the responsibility of bus-leasing companies. This may increase the risk that these charging stations would fall into disrepair or remain underused. Government-operated and maintained charging infrastructure, or at least a greater focus built into the project on the risk of mismanagement of the charging stations, may be optimal until electric vehicles become more accepted.

Thank you for your comment.

Solar powered charging stations are proposed to be installed at Bus Depots owned and operated by bus operators, and these charging stations will primarily draw electricity from the national grid operated by government-owned utility Central Electricity Board. However, given that Mauritius' national grid draws most of its electricity from fossil fuels such as coal, in order to partially offset the fossil-fuel generated electricity used to charge the electric buses, bus operators are proposed to be provided with subsidies (under Output 2.2) to install rooftop solar systems under ?Net Metering? arrangement with these same Bus Depot premises under the Government of Mauritius' existing Small Scale Distributed Generation (SSDG) and Medium Scale Distributed Generation (MSDG) distributed solar power generation program.

Given that solar power electricity generation and feeding to the grid is an attractive financial proposition to these bus operators under ?Net Metering? scheme of SSDG/MSDG program, they will

3	<p>Third, one output of Component 3: Technical Feasibility and Capacity Building, should be the identification of capacity gaps and training activities. Implementing agencies should coordinate with technical schools and universities to offer and promote such training. We also recommend stronger and more open public messaging and advertising of the environmental benefits of electric bus use, to strengthen public acceptance.</p>	<p>Thank you for this comment.</p> <p>Component 3, Output 3.2 will focus on identification of capacity gaps and training/capacity building activities that increase capacity of local institutions and stakeholders on electric mobility technology, business models and financing.</p> <p>Component 4, Output 4.1 will focus on increased awareness and sensitization among local population regarding the benefits of using public transport in general, and low-carbon electric mobility in particular.</p>
<p>Comments from Germany</p>		
1	<p>Germany welcomes the project and highlights the holistic approach taken. The theory of change rightly assesses the different barriers to deployment of electric busses in Mauritius and addresses them with suitable interventions that are designed to last. Electric buses have the potential to limit GHG emissions if powered with renewable energies. Germany specifically welcomes the objective of GEF-GCF linkages.</p>	<p>Thank You!</p>

2

To speed up the transition and in view of a likely expansion of e-bus use in the future, Germany recommends clarifying what type of solar charging station will be deployed (capacity, solar percentage of the consumed electricity, etc.) In general, Germany encourages the Agency to opt for stations with as many solar panels as feasible.

Charging stations will essentially be installed at Bus Depots owned and operated by bus operators, and these charging stations will primarily draw electricity from the national grid operated by government-owned utility Central Electricity Board. However, given that Mauritius' national grid draws most of its electricity from fossil fuels such as coal, in order to partially offset the fossil-fuel generated electricity used to charge the electric buses, bus operators are proposed to be provided with subsidies (under Output 2.2) to install rooftop solar systems under Net Metering arrangement with these same Bus Depot premises under the Government of Mauritius' existing Small Scale Distributed Generation (SSDG) and Medium Scale Distributed Generation (MSDG) distributed solar power generation program. Since these rooftop solar systems do not include battery energy storage capacity, they generate green electricity during the day but the electric buses are most likely to be charged at night. Hence, direct charging of electric buses from these rooftop solar installations is likely to be limited and hence this offset

3

In the medium-term, e-vehicles should be integrated effectively and efficiently into the energy system to avoid rebound effects. Germany would recommend to further elaborate this issue, especially in the risk section

Thank you for this comment.

This is planned to be a key part of the following project activities:

Component 1, Output 1.1, Activity 1.1.1: A long-term, integrated comprehensive, gender-sensitive and inclusive 'Sustainable Low-carbon Transport Planning'

Component 1, Output 1.2, Activity 1.2.1: A comprehensive, gender-sensitive and inclusive 'Electric Bus Mobility Policy and Regulatory Framework' is developed

Component 1, Output 1.2, Activity 1.2.2: URA and CEB, under the guidance of MEPU, to enact favorable policies and regulations (expected to be as an addendum/update to Electricity Act 2005 and CEB Amendment Act 2020) to allow EV/E-bus charging stations to be setup by private and govt entities (non-CEB) and also create a separate consumer category for EVs with electricity tariff incentives

Risks to these activities being completed with sufficient comprehensiveness of energy + transport policies and regulations and also technology risks have been included in the risk registry.

4

Germany recommends reviewing whether the use of fast charging stations is both cost-efficient and necessary. The buses are estimated to operate for about 100 km per day. According to the Project Proposal, slow-charging electric buses that run this daily distance are already cost-competitive compared to diesel busses. Fast charging stations are considerably more expensive. Also, fast charging generally reduces the lifetime of the buses? lithium-ion batteries. If the buses can run their daily distance on one battery charge, it might be more economic to opt for slow charging stations.

Thank you for this recommendation and it is duly noted.

Actual selection of charging technology will be based on a feasibility study proposed to be completed during first year of this project:

Component 3, Output 3.1, Activity 3.1.2: Viability assessment - technical, operational, financial - is completed to identify locations, EV charging technology standards (SAE Combined Charging System (CCS), CHAdeMO, Type 2 charging, Tesla Superchargers etc.) and suitable entities to own and operate these charging stations, together with necessary regulatory feasibility (see Activity 1.2.2 above) is completed and approved.

This comment from Germany on fast charging considered during this viability assessment exercise and charging decisions will be made based on cost-effectiveness as well as technology suitability and durability perspective.

Germany would recommend discussing the project's alignment with the National Integrated Transport Network Project in the Baseline Scenario in more detail, to clarify how electric vehicle infrastructure is currently planned and what the added value of the project is.

Output 1.1 of this proposed project under Component 1 is 'Designing and developing a long-term comprehensive Sustainable Low-carbon Transport Masterplan' document that provides with policy and regulatory framework for electric bus transport. This comprehensive transport planning document will feed into the National Integrated Transport Network Project that consists of MetroExpress, Road Decongestion Program and other transport infrastructure projects planned by the Government. MLTLR, this GEF project's IP, is also responsible for National Integrated Transport Network Project and hence there is strong alignment and integration of this GEF project.

Activity 1.1.1: A long-term, integrated comprehensive, gender-sensitive and inclusive 'Sustainable Low-carbon Transport Masterplan' document prepared for Mauritius, that includes:

(i) extensive data collection of transport demand and patterns (using and integrating data and traffic models already developed),
 (ii) transport demand growth projections at least until 2035 (using data and traffic/transport demand models

6

On the technical side of e-mobility, Germany highly recommends reviewing the document to assess whether the following activities could be integrated:

- Conducting an integrated lifecycle analysis for the use of e-vehicles
- Considering usage competition (e.g. charging infrastructure), resource scarcities (e.g. graphite) and recycling (e.g. batteries)
- Incentivizing EV-usage by supporting the development of charging infrastructure
- Making public transport more attractive, affordable and accessible for all, for example with mobility apps.

Thank you for this comment. All these aspects have been included and addressed under various project activities:

- Lifecycle analysis of e-vehicles and usage competition /resource scarcity analysis will be conducted as part of Component 3, Output 3.1, Activity 3.1.2: Viability assessment - technical, operational, financial - is completed to identify locations, EV charging technology standards (SAE Combined Charging System (CCS), CHAdeMO, Type 2 charging, Tesla Superchargers etc.) and suitable entities to own and operate these charging stations, together with necessary regulatory feasibility (see Activity 1.2.2 above) is completed and approved.

- Recycling of EV batteries will be regulated and implemented under Component 1, Output 1.2, Activity 1.2.3: In cooperation with UNDP-GEF project titled ?Indian Ocean Regional Project - Mauritius -

Implementing Sustainable Low and non-Chemical Development in SIDS (ISLANDS)? (PIMS ID 6400), draft guidelines will be developed for recycling and management/disposal of hazardous waste/chemicals of end-of-life batteries

Comments from Canada		
1	Canada is pleased to see that this project supports SIDS, incorporates engagement with the private sector and that it plans to carry out a gender action plan.	Thank you!
Comments from GEFSec		
1	With regards to the section on Coordination, as the agency knows, the implementation and execution roles on GEF projects are meant to be separate per policy and guideline. The GEFSEC will analyze any requests for dual role playing by an agency at the time of CEO endorsement and only approve those cases that it deems warranted on an "exceptional" basis. We strongly encourage the agency to look at third party options as a preferred way forward. We also strongly encourage the agency to discuss any and all options for execution that do not include the government with the GEFSEC early in the PPG phase. The technical clearance of this PIF in no way endorses any alternative execution arrangement.	Project is being implemented under full NIM modality, where there is no execution role for UNDP. Separation of implementation and execution roles have been described in the GEF checklist submitted.
Responses to Comments from the GEF Scientific and Technical Advisory Panel		
Reference number	Comment	Response

i

STAP recommends that Output (i) of Component 1: designing and developing a long-term comprehensive sustainable low-carbon transport planning document that provides policy and regulatory framework for electric bus transport, should not only focus on transport planning but should seek to integrate urban planning and transportation in order to achieve a sustainable outcome. Relevant literature on this topic should be considered as the project is further developed. Examples include: Integration of public transport and urban planning (<https://www.researchgate.net/publication/228716874>); Integration of public transport and urban planning); Urban planning and transport policy integration (<https://www.tandfonline.com/doi/full/10.1080/07352166.2016.1271663>); Transforming Cities with Transit (<https://openknowledge.worldbank.org/handle/10986/12233>).

Thank you for your comment and for providing the references to relevant literature. During PPG stage, these literature have been reviewed and the transport planning activity has been contextualized within the broader urban planning framework for Mauritius.

Output 1.1 of this proposed project under Component 1 is 'Designing and developing a long-term comprehensive Sustainable Low-carbon Transport Masterplan?' document that provides with policy and regulatory framework for electric bus transport?. This comprehensive transport planning document will feed into the National Integrated Transport Network Project that consists of MetroExpress, Road Decongestion Program and other transport infrastructure projects planned by the Government. This National Integrated Transport Network Project is being developed under the broader focus on urban infrastructure planning in Mauritius. MLTLR, this GEF project's IP, is also responsible for National Integrated Transport Network Project and integrates this project within the broader urban planning activity of the Government of Mauritius and hence

2	<p>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 these risks to be further developed during the project design. Are the identified risks valid and comprehensive? Are the risks specifically for things outside the project's control? Identified and addressed. More detailed climate risk assessment should be conducted</p>	<p>Climate Risk Screening based on STAP guidance has already been completed. Risk 12 in UNDP Risk Register and Risk 10 in SESP focus on climate change related risks to the project outcomes and suitable risk mitigation measures have been identified and described. This has now been explicitly described in the Risk Register and SESP in CEO-ER document.</p>
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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: \$100,000			
<i>Project Preparation Activities Implemented</i>	<i>GETF/LDCF/SCCF Amount (\$)</i>		
	<i>Budgeted Amount</i>	<i>Amount Spent To date</i>	<i>Amount Committed</i>
Technical assistance (design technical elements as well as all the required financial and administrative components of the project)	100,000	49,0556	50,944
Total	100,000	49,056	50,944

ANNEX D: Project Map(s) and Coordinates

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

N/A

ANNEX E: Project Budget Table

Please attach a project budget table.

Expenditure Category	Detailed Description	Component (USDeq.)								Total (USD eq.)	Responsible Entity (Executing Entity receiving)
		<i>Component 1</i>	<i>Component 2</i>	<i>Component 3</i>	<i>Component 4</i>	<i>Component 5</i>	<i>Sub-total</i>	<i>M & E</i>	<i>PM C</i>		

											funds from the GEF Agency) [1]
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<p>Equipm ent</p>	<p>Capital subsidies to be offered to bus operators to provide upto an indicative level of 40% (including subsidies available under bus modernization program) of capital costs of electric buses and capital subsidies of upto an indicative level of 28% of capital costs of solar powered charging stations; Budget for this line item (can be re-evaluated and re-adjusted during project implementation , applying GEF minimal concessionality principle) is calculated as follows:</p> <p>For Electric Buses:</p> <p>Electric Bus Type: Standard Full length 60-passenger capacity (12 meter) Estimated Capital Costs per Bus: USD 262,500 (MUR 10.5 Million) Number of Buses: 50 Capital Subsidy under existing Bus Modernization Program: USD 32,500 (MUR 1.3 Million) Enhanced Capital Subsidy:</p>	<p>4,170,000</p>				<p>4,170,000</p>		<p>4,170,000</p>	<p>Ministr y of Land Transpo rt and Light Rail (MLTL R)</p>
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Equipm ent	Cost of IT equipment for PMU (Project Manager and Project Assistant) in Year 1 budgeted at USD 5000 and replacement budgeted at USD 5,500 in Year 4							-	10,5 00	10,50 0	Ministr y of Land Transpo rt and Light Rail Rail (MLTL R)
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<p>Contractual services - Individual</p>	<p>Service Contracts (Individuals) account for the salaries of the Project Manager, Project Assistant and Project Finance Assistant. The budget estimates USD 750 per week for Project Manager (budgeted for 20 weeks in Year 1 (PMU setup will likely happen after 6 months), 30 weeks each in Year 2, 3, 4, 5 and 25 weeks in Year 6 ? additional weeks of budget for Project Manager?s effort budgeted under Components 1, 2, 3, and 4 above); USD 350 per week for Project Assistant (budgeted for 20 weeks in Year 1, 40 weeks each in Year 2, 3, 4, 5 and 40 weeks in Year 6); USD 350 per week for Project Finance Assistant (budgeted for 6 weeks in Year 1, 12 weeks each in Year 2, 3, 4, 10 weeks in Year 5 and 6 weeks in Year 6); the budget also makes provisions for a USD 10 annual increase in the</p>								<p>224,720</p>	<p>224,720</p>	<p>Ministry of Land Transport and Light Rail (MLTLR)</p>
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Contractual services - Company	Contractual Services (Years 1,2,5) to be issued to specialized companies (international or local) for developing 'Sustainable Low-carbon Transport Masterplan' document (Activity 1.1.1), Policy and Regulatory Framework for public EV/E-Bus Charging Stations (Activity 1.2.2), 'Electricity Grid Impact Study due to Electric Vehicle Integration' (Activity 1.3.1) and study on gaps in E-Bus policy and regulatory framework (Activity 1.3.2); budgeted costs include costs of social and environmental safeguards experts for Activities 1.1.1, 1.2.2 and 1.3.1	103,750					103,750			103,750	Ministry of Land Transport and Light Rail (MLTLR)
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Contractual services-Company	Contractual Services (Years 1,2,5) to be issued to specialized companies (international or local) for developing viability assessment reports as described under Activities 3.1.1, 3.1.2 and 3.1.3, as well as design and delivery of some training and capacity building activities under Activities 3.3.1, 3.3.2, 3.3.3, 3.3.4 (includes travel budget for these contractual services); budgeted costs include costs of social and environmental safeguards experts for Activities 3.1.1, 3.1.2 and 3.1.3	110,000	110,000	110,000	Ministry of Land Transport and Light Rail (MLTLR)
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Contractual services - Company	Contractual Services (Years 3,4,5) to be issued to specialized companies (local) for developing and delivering suitable awareness raising activities as described under Activities 4.1.1, 4.1.2, 4.1.3 and 4.1.4; budgeted costs include costs of production, AV, print and media channel costs of delivering these awareness raising activities; budgeted cost also includes costs of design and maintenance of project website as described under Activity 4.1.5 (Years 2-6)			180,000		180,000		180,000	Ministry of Land Transport and Light Rail (MLTLR)
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Contractual services-Company	Contractual Services (Years 3,4,5) to be issued to specialized companies (local and international) for developing and delivering M&E (mid-term and final) and knowledge reports described under Activities 5.1.2 and 5.1.3; budgeted costs include costs of AV and print of these reports; budgeted costs include costs of social and environmental safeguards experts for Activities 5.1.2 and 5.1.3				124,000	124,000		124,000	Ministry of Land Transport and Light Rail (MLTLR)
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<p>International Consultants</p>	<p>International consultant costs including costs of consultancy contracts issued to draft policy and regulatory framework for ?Electric Bus Mobility Policy Framework? to be defined as described under Output 1.2 (Activity 1.2.1); this cost line item also includes budget for a part-time Chief Technical Advisor (CTA) for years 1 ? 3 based on an effort of 30 weeks per annum each for year 1 and year 2 and 24 weeks per annum for year 3 on a weekly rate of USD 3,000 (excluding travel). The CTA will direct/advise MLTLR/NLTA, MEPU/CEB and international/national consultants engaged in planning and preparation of policy and regulatory frameworks as well as sustainable low-carbon masterplan, and also grid impact study/policy gaps study for GCF scale-up. CTA costs will be split across Component 1</p>	<p>41,750</p>					<p>41,750</p>		<p>41,750</p>	<p>Ministry of Land Transport and Light Rail (MLTLR)</p>
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<p>International Consultants</p>	<p>This cost line item includes budget for a part-time Chief Technical Advisor (CTA) for years 1 ? 3 based on an effort of 30 weeks per annum each for year 2 and 24 weeks per annum for year 3 on a weekly rate of USD 3,000 (excluding travel). The CTA will direct/advise MLTLR/NLTA, MEPU/CEB and international/national consultants engaged in activities under both Output 2.1 and Output 2.2. CTA costs will be split across Component 1, Component 2, Component 3 and Component 5 (all budgeted under ?International Consultants? costs. Under this component, CTA will work to enhance existing capital subsidies and other financial/tax incentives under ?Bus Modernization Program? of MLTLR/NLTA and MSDG/SSDG distributed solar program of MEPU/CEB to include additional</p>	<p>198,000</p>	<p>198,000</p>	<p>198,000</p>	<p>Ministry of Land Transport and Light Rail (MLTLR)</p>
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<p>International Consultants</p>	<p>International consultant costs including costs of consultancy contracts issued to draft viability assessment reports under Activity 3.2.1, as well as design and delivery of some training and capacity building activities under Activities 3.3.1, 3.3.2, 3.3.3; this cost line item also includes budget for a part-time Chief Technical Advisor (CTA) for years 1 ? 3 based on an effort of 30 weeks per annum each for year 1 and year 2 and 24 weeks per annum for year 3 on a weekly rate of USD 3,000 (excluding travel). The CTA will direct/advise MLTLR/NLTA, MEPU/CEB and international/national consultants engaged in developing these assessment reports and training programs. CTA costs will be split across Component 1, Component 2, Component 3 and Component 5 (all budgeted</p>		<p>56,000</p>			<p>56,000</p>		<p>56,000</p>	<p>Ministry of Land Transport and Light Rail (MLTLR)</p>
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<p>International Consultants</p>	<p>International consultant costs including costs of consultancy contracts issued to define project baseline as well as data collection/reporting mechanism under Activity 5.1.1 in Years 1-2; this cost line item also includes budget for a part-time Chief Technical Advisor (CTA) for years 1 ? 3 based on an effort of 30 weeks per annum each for year 1 and year 2 and 24 weeks per annum for year 3 on a weekly rate of USD 3,000 (excluding travel). The CTA will direct/advise MLTLR/NLTA, MEPU/CEB and international/national consultants engaged in developing project baseline, data collection and GEF and other reporting mechanisms. CTA costs will be split across Component 1, Component 2, Component 3 and Component 5 (all budgeted under ?International Consultants? costs.</p>					<p>28,000</p>	<p>28,000</p>		<p>28,000</p>	<p>Ministry of Land Transport and Light Rail (MLTLR)</p>
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<p>Local Consultants</p>	<p>Local consultant costs including costs of consultancy contracts issued to draft/cooperate policy and regulatory framework for ?End-of-life battery recycling and hazardous waste disposal? to be defined as described under Output 1.2 (Activity 1.2.3) at a local consultant cost of USD 1,500 per week for an effort of about 5 weeks in Year 1; this cost line item also includes costs of a local gender expert to work with all international and local consultants as well as ?Contractual Services - Companies? hired under Component 1, with an effort of 3 weeks in Year 1 at a cost of USD 800 per week, and about 1 week of effort in Years 2-6; this budget line item also includes budget for some of the effort of Project Manager, such as coordinating setting up of ?Electric Vehicle Implementation and Monitoring</p>	<p>21,500</p>					<p>21,500</p>		<p>21,500</p>	<p>Ministry of Land Transport and Light Rail (MLTLR)</p>
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<p>Local Consultants</p>	<p>Local consultant costs including costs of consultancy contracts issued to help enhance existing capital subsidies and other financial/tax incentives ?Bus Modernization Program? of MLTLR/NLTA and MSDG/SSDG distributed solar program of MEPU/CEB to include additional subsidies under this GEF project as described under Output 2.1 (Activity 2.1.1) and Output 2.2 (Activity 2.2.1); Costs also include costs of engaging a local financial expert for setting up financial facilitation mechanism with AFD SUNREF program (Activities 2.1.2 and 2.2.2) in Year 1 at a cost of USD 1,500 per week for 4 weeks; this budget line item also includes budget for some of the effort of Project Manager for financial facilitation mechanism with AFD SUNREF</p>	<p>43,000</p>				<p>43,000</p>		<p>43,000</p>	<p>Ministry of Land Transport and Light Rail (MLTLR)</p>
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<p>Local Consultants</p>	<p>Local consultant costs including costs of consultancy contracts issued to draft viability assessment reports under Activity 3.1.4 (Years 1,2,5) and local gender consultant engaged for delivery of some training and capacity building activities under Activities 3.3.1, 3.3.2, 3.3.3 with an effort of 3 weeks in Year 1 at a cost of USD 800 per week, and about 1 week of effort in Years 2-6</p>			<p>13,750</p>			<p>13,750</p>		<p>13,750</p>	<p>Ministry of Land Transport and Light Rail (MLTLR)</p>
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<p>Local Consultants</p>	<p>Local consultant costs including costs of a local gender expert to work with ?Contractual Services - Companies? hired under Component 4 on gender-specific awareness raising programs, with an effort of 2 weeks each in Years 3-6 at a cost of USD 800 per week and social/environmental safeguards expert with an effort of 2 weeks in Year 3 only at a cost of USD 800 per week; also includes budget for some of the effort of Project Manager for awareness raising programs in Year 1 -6.</p>			<p>15,000</p>		<p>15,000</p>		<p>15,000</p>		<p>Ministry of Land Transport and Light Rail (MLTLR)</p>
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Local Consultants	Local consultant costs including costs of a local gender expert to work with international consultants/CTA and Contractual Services - Companies? hired under Component 5 on gender-specific M&E activities, with an effort of 2 weeks each in Years 1-6 at a cost of USD 800 per week; also includes budget for some of the effort of Project Manager for M&E activities in Year 1 -6.					54,000	54,000		54,000	Ministry of Land Transport and Light Rail (MLTLR)
Training, Workshops, Meetings	Costs of organizing training and capacity building workshops on Low-carbon transport planning (Activity 1.1.2)	5,000					5,000		5,000	Ministry of Land Transport and Light Rail (MLTLR)

<p>Training, Workshops, Meetings</p>	<p>This cost line item also includes costs of a local gender expert to work with all international and local consultants as well as Contractual Services - Companies? hired under Component 3, with an effort of 3 weeks in Year 1 at a cost of USD 800 per week (report drafting activities), and about 2 weeks of effort in Years 2-6 (training and capacity building activities); this budget line item also includes budget for some of the effort of Project Manager, such as coordinating training and capacity building activities (Activities 3.3.1, 3.3.2, 3.3.3, 3.3.4), in addition to budget line item for costs of organizing these training and capacity building activities in Year 1 -6.</p>			<p>28,000</p>			<p>28,000</p>		<p>28,000</p>	<p>Ministry of Land Transport and Light Rail (MLTLR)</p>
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Training, Workshops, Meetings	No additional AV and print costs budgeted since these costs are covered under Budget Note 21 above											Ministry of Land Transport and Light Rail (MLTLR)
Training, Workshops, Meetings	Costs of conducting local stakeholder workshops on knowledge management/M&E report dissemination; as well as costs for project staff and MLTLR staff to travel and participate in international workshops of UNEP GEF Global E-Mobility Program (Years 3-5)					80,000	80,000				80,000	Ministry of Land Transport and Light Rail (MLTLR)
Travel	Travel costs budgeted for CTA, international consultants (and some minimal travel costs for local consultants) for consultancy contracts to be issued and in-country travel costs for Project Manager as defined under Budget Notes 1 and 2 above	12,000					12,000				12,000	Ministry of Land Transport and Light Rail (MLTLR)

Travel	Travel costs budgeted for CTA, international consultants (and some minimal travel costs for local consultants) for consultancy contracts to be issued and in-country travel costs for Project Manager as defined under Budget Notes 7 and 8 above		3,000			3,000			3,000	Ministry of Land Transport and Light Rail (MLTLR)
Travel	Travel costs budgeted for CTA, international consultants (and some minimal travel costs for local consultants) for consultancy contracts to be issued and in-country travel costs for Project Manager as defined under Budget Notes 12 and 13 above		16,250			16,250			16,250	Ministry of Land Transport and Light Rail (MLTLR)
Travel	Travel costs budgeted for local consultants for consultancy contracts to be issued and in-country travel costs for Project Manager as defined under Budget Notes 18 and 19 above			5,000		5,000			5,000	Ministry of Land Transport and Light Rail (MLTLR)

Travel	Travel costs budgeted for CTA and local consultants for consultancy contracts to be issued and in-country travel costs for Project Manager as defined under Budget Notes 23 and 24 above					14,000	14,000			14,000	Ministry of Land Transport and Light Rail (MLTLR)
Other Operating Costs	AV and print costs for organizing training and capacity building workshops (Activity 1.1.2), as well as print costs for all consultancy contracts and ?Contractual Services? to be issued as defined under Budget Notes 1, 2 and 4 above	6,000					6,000			6,000	Ministry of Land Transport and Light Rail (MLTLR)
Other Operating Costs	Print costs for all consultancy contracts and ?Contractual Services? to be issued as defined under Budget Notes 7 and 8 above		6,000				6,000			6,000	Ministry of Land Transport and Light Rail (MLTLR)

Other Operating Costs	AV and print costs for organizing training and capacity building workshops (Activities 3.3.1, 3.3.2, 3.3.3, 3.3.4), as well as print costs for all consultancy contracts and ?Contractual Services? to be issued as defined under Budget Notes 12, 13 and 15 above			6,000			6,000		6,000	Ministry of Land Transport and Light Rail (MLTLR)
Other Operating Costs	This line item includes costs for carrying out the NIM financial audits each year budgeted at a total of USD 25,387 over 6 years of project implementation						-	25,387	25,387	Ministry of Land Transport and Light Rail (MLTLR)
Grand Total		190,000	4,420,000	230,000	200,000	300,000	5,340,000	-	260,607	5,600,607

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.

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 Agency 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.

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).