



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

Integrated, Sustainable and Low Emissions Transport in Côte d'Ivoire

Part I: Project Information

Name of Parent Program

[Global Programme to Support Countries with the Shift to Electric Mobility.](#)

GEF ID

10302

Project Type

MSP

Type of Trust Fund

GET

CBIT/NGI

CBIT

NGI

Project Title

Integrated, Sustainable and Low Emissions Transport in Côte d'Ivoire

Countries

Cote d'Ivoire

Agency(ies)

UNEP

Other Executing Partner(s)

Ministry of Environment and Sustainable Development (MINEEDD) with the support of the Ministry of Transport (MoT)

Executing Partner Type

Government

GEF Focal Area

Climate Change

Taxonomy

Focal Areas, Climate Change, Climate Change Mitigation, Sustainable Urban Systems and Transport, Financing, Technology Transfer, Renewable Energy, Influencing models, Demonstrate innovative approach, Transform policy and regulatory environments, Strengthen institutional capacity and decision-making, Convene multi-stakeholder alliances, Stakeholders, Private Sector, SMEs, Individuals/Entrepreneurs, Capital providers, Financial intermediaries and market facilitators, Large corporations, Communications, Behavior change, Education, Awareness Raising, Type of Engagement, Consultation, Information Dissemination, Participation, Partnership, Civil Society, Non-Governmental Organization, Gender Equality, Gender results areas, Capacity Development, Access to benefits and services, Participation and leadership, Gender Mainstreaming, Beneficiaries, Sex-disaggregated indicators, Gender-sensitive indicators, Capacity, Knowledge and Research, Innovation, Learning, Knowledge Generation, Knowledge Exchange

Rio Markers**Climate Change Mitigation**

Climate Change Mitigation 2

Climate Change Adaptation

Climate Change Adaptation 0

Submission Date

4/28/2021

Expected Implementation Start

10/1/2021

Expected Completion Date

3/31/2025

Duration

42In Months

Agency Fee(\$)

36,784.00

A. FOCAL/NON-FOCAL AREA ELEMENTS

Objectives/Programs	Focal Area Outcomes	Trust Fund	GEF Amount(\$)	Co-Fin Amount(\$)
CCM-1-2	Promote innovation and technology transfer for sustainable energy breakthroughs for electric drive technology and electric mobility	GET	408,716.00	5,687,000.00
Total Project Cost(\$)			408,716.00	5,687,000.00

B. Project description summary**Project Objective**

To mitigate GHG emissions in Cote d'Ivoire by accelerating the introduction of electric mobility through revision of the policy and institutional framework; training and capacity building; demonstration of electric vehicles; development of finance schemes and business models; private sector engagement; and upscaling and replication.

Project Component	Financing Type	Expected Outcomes	Expected Outputs	Trust Fund	GEF Project Financing(\$)	Confirmed Co-Financing(\$)
Component 1: Institutionalization of and strategy-setting for low-carbon electric mobility	Technical Assistance	1. Government of Côte d'Ivoire establishes an institutional framework and endorses a gender sensitive national strategy for the promotion of electric mobility in public transport to implement the Draft Road Map for sustainable mobility	1.1. A national inter-sectoral e-mobility coordination body is established. 1.2. A joint national strategy to promote low-carbon e-mobility in urban public transport is submitted for adoption. 1.3. Governmental and private sector actors are trained on the benefits of e-mobility through the Global E-mobility Programme, outreach activities to inform decision makers throughout CI on project results.	GET	105,956.00	40,000.00
Component 2. Short term barrier removal through feasibility analyses, the demonstration of electric	Investment	2. Demonstrations provide evidence of technical, financial and environmental	2.1. A feasibility study on technical/economic opportunities for the	GET	104,720.00	5,235,000.00

vehicles and know-how development for a wider introduction of electric mobility in Côte d'Ivoire

sustainability of EVs and enable public and private sector stakeholders to plan for the scale-up of low-carbon electric mobility in Côte d'Ivoire

electrification of public transport modes serving feeder lines along the Yopougon-Bingerville BRT corridor is conducted. [co-financed by AUMP]

2.2 A pilot fleet of electric taxis and minibuses is introduced as part of a World Bank funded fleet renewal mechanism, including an EV bonus and a Risk Sharing Facility (RSF) to support EV investments by public transport enterprises. [co-financed by AUMP]

2.3. Drivers and mechanics that will operate electric vehicles and electric vehicle supply equipment (EVSE) are trained on specifics of electric mobility. [co-financed by AUMP]

2.4. A system to monitor the operation of the electric pilot

fleet is established, data is collected and analyzed and findings and lessons learned are disseminated to support the broader introduction of e-mobility.

2.5. An electrification investment plan for SOTRA feeder-line buses is developed and submitted for adoption.

2.6. A charging infrastructure installation plan for large-scale introduction of EVs in Abidjan's public transport is developed.

Component 3. Preparing for scale-up and replication of low-carbon electric mobility	Technical Assistance	3. Government of Côte d'Ivoire adopts financial incentives and technical standards to promote investments in low-carbon electric mobility in public transport.	3.1. Fiscal policies and regulation are developed and submitted for adoption.	GET	47,120.00	45,000.00
			3.2. Technical regulations and standards for EVs and charging infrastructure are developed and submitted for adoption.			

Component 4. Long-term environmental sustainability of low-carbon electric mobility	Technical Assistance	4. Government of Côte d'Ivoire endorses recommendations on renewable energy integration and an amendment on e-waste regulations to support long-term environmental sustainability of low-carbon electric mobility	4.1. The interlinkage between power generation and vehicle charging is investigated to align national RE capacity targets with e-mobility projections. 4.2. Recommendations on a direct offtake tariffication scheme for the integration of RE generation and EV charging are prepared. 4.3. An amendment to existing e-waste regulation for EV batteries is prepared and submitted for adoption; business models for the re-use of batteries are promoted.	GET	83,770.00	67,000.00
Monitoring and Evaluation	Technical Assistance			GET	30,000.00	
Sub Total (\$)					371,566.00	5,387,000.00
Project Management Cost (PMC)						

GET	37,150.00	300,000.00
Sub Total(\$)	37,150.00	300,000.00
Total Project Cost(\$)	408,716.00	5,687,000.00

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	Ministry of Environment and Sustainable Development (MINEDD)	In-kind	Recurrent expenditures	302,000.00
Recipient Country Government	Ministry of Transport (MOT)	Public Investment	Investment mobilized	5,190,000.00
Recipient Country Government	Ministry of Transport (MOT)	In-kind	Recurrent expenditures	100,000.00
Recipient Country Government	Ministry of Petroleum, Energy and Renewable Energies (MPEER)	In-kind	Recurrent expenditures	50,000.00
GEF Agency	UNEP	In-kind	Recurrent expenditures	45,000.00
			Total Co-Financing(\$)	5,687,000.00

Describe how any "Investment Mobilized" was identified

The Investment Mobilized through government was identified through consultations with the Ministry of Transport (MOT) and the World Bank (WB), which are implementing the Abidjan Urban Mobility Project (AUMP). In the AUMP, the MOT will offer co-financing to the proposed GEF project by supporting the investment into an electric pilot fleet. This investment support under the AUMP will be in the form of a scrapping and electrification premium which will be provided to public transport enterprises through Côte d'Ivoire's fleet renewal mechanism Fond de Développement du Transport Routier, or FDTR. Both these premiums will be further enhanced through the AUMP by the establishment of a first loss guarantee to cover a risk-sharing facility (RSF, amounting to USD 17,800,000, which is not accounted for as co-finance) that will be set up by the International Finance Corporation (IFC) with commercial bank partners. The RSF will reduce the risk of banks to provide financing to fleet operators who wish to modernize their fleet and invest in electric vehicles. Ultimately, the package of the premiums and availability of attractive financing will reduce total cost of ownership of electric taxis and minibuses below that of conventional vehicles in order to incentivize fleet operators to invest in electric vehicles.

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

Agency	Trust Fund	Country	Focal Area	Programming of Funds	Amount(\$)	Fee(\$)
UNEP	GET	Cote d'Ivoire	Climate Change	CC STAR Allocation	408,716	36,784
Total Grant Resources(\$)					408,716.00	36,784.00

E. Non Grant Instrument

NON-GRANT INSTRUMENT at CEO Endorsement

Includes Non grant instruments? **No**

Includes reflow to GEF? **No**

F. Project Preparation Grant (PPG)

PPG Required

PPG Amount (\$)

50,000

PPG Agency Fee (\$)

4,500

Agency	Trust Fund	Country	Focal Area	Programming of Funds	Amount(\$)	Fee(\$)
UNEP	GET	Cote d'Ivoire	Climate Change	CC STAR Allocation	50,000	4,500
Total Project Costs(\$)					50,000.00	4,500.00

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)	0	82574	0	0
Expected metric tons of CO ₂ e (indirect)	0	148944	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)				
Expected metric tons of CO ₂ e (indirect)				
Anticipated start year of accounting				
Duration of accounting				

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

Total Target Benefit	(At PIF)	(At CEO Endorsement)	(Achieved at MTR)	(Achieved at TE)
Expected metric tons of CO ₂ e (direct)		82,574		
Expected metric tons of CO ₂ e (indirect)		148,944		
Anticipated start year of accounting		2021		
Duration of accounting		15		

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

Total Target Benefit	Energy (MJ) (At PIF)	Energy (MJ) (At CEO Endorsement)	Energy (MJ) (Achieved at MTR)	Energy (MJ) (Achieved at TE)
Target Energy Saved (MJ)		866,109,256		

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)
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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		75,040		
Male		112,590		
Total	0	187630	0	0

Part II. Project Justification

1a. Project Description

1a. Changes in project design

Describe any changes in alignment with the project design with the original child project concept note (i.e. changes in component, outcome or output wording, changes in GEF funds allocation per component/outcome, changes in co-finance commitments and allocation per component/outcome, etc.).

During project development and as part of intensive stakeholder consultations, interagency and inter-ministerial coordination, the opportunity of linking this project with the ongoing Abidjan Urban Mobility Project (AUMP) [1] financed by the World Bank (WB) and implemented by the Ministry of Transport (MOT), has been identified. The AUMP's focus is the improvement and revamping of the urban transport system in Abidjan. It will introduce an all-electric bus fleet on the Bus Rapid Transit (BRT) system that will be financed by this project (AUMP Component A). Furthermore, it will support public transport fleet renewal by offering a scrapping premium for old vehicles as well as an electrification bonus for a pilot fleet of taxis and minibuses that will serve the BRT system (AUMP Sub-component C2). During the consultations, the Ministry of Environment and Sustainable Development (MINEDD) and MOT agreed to cooperate closely and to coordinate both initiatives. While the AUMP will incentivize the investment by urban public transport enterprises in an electric pilot fleet, the GEF UNEP project will enhance this effort by the introduction of favorable policies and regulation, building capacity of transport sector stakeholders, electric fleet monitoring, promoting e-mobility to transport sector stakeholders, and working on long-term environmental sustainability of e-mobility beyond the mere introduction of EVs (e.g. battery re-use and the promotion of renewable energy to fuel EVs). Both will shape the architecture for a transformative shift to electric mobility. This synergy with the AUMP project and the MOT resulted in the GEF project's ability to mobilize significantly more co-finance (US\$ 5,687,000) than what had been originally planned in the concept note and PFD (US\$ 1,452,000).

It is also noteworthy to mention that the originally intended support to introduce electric 2&3 wheelers was dropped since the Government of Côte d'Ivoire (GoCI) intends to reduce the role of 2&3 wheelers in public transport for safety reasons.

The concept note initially outlined three components, but the final project now has four components. The changes are outlined in the table below:

Changes in the Components' structure and wording:

Component No.	Concept note wording	CEO Endorsement Document wording	Explanation / justification for changes
Component 1	Revision of laws and set up of institutional framework to support accelerated in production of electric mobility.	Institutionalization of and strategy-setting for low-carbon electric mobility	The component statements have been adjusted to align with the global e-mobility programme generic intervention logic wording.
Component 2	Piloting and demonstration of electric 2 & 3 wheelers, and cars and establishment of MRV framework for transport which aims to demonstrate the benefits and feasibility of low-emissions transport system, and the adoption of electric vehicles policies.	Short term barrier removal through feasibility analyses, the demonstration of electric vehicles and know-how development for a wider introduction of electric mobility in Côte d'Ivoire	
Component 3	Preparation of scale-up and replication of electric mobility. Based on the demonstration, fiscal policies and regulatory schemes, procurement guidelines including technical and business models are developed to incentivize uptake of electric mobility.	Preparing for scale-up and replication of low-carbon electric mobility	
Component 4	<i>No component 4 in the concept note</i>	Long-term environmental sustainability of low-carbon electric mobility	

1b. Project Description

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

Global environmental problem:

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

Côte d'Ivoire (CI), as a lower-middle income country, is no exception. Strong economic growth, increasing population and urbanization have led and will lead to an expanding vehicle fleet and, if unmanaged, growing CO₂ emissions and air pollution. An outdated and poorly maintained vehicle fleet is aggravating the environmental problem through highly inefficient fuel use and the emission of large amounts of health threatening air pollutants.

Today, Côte d'Ivoire is the third-largest economy in West Africa with a GDP of US\$ 43 billion in 2018. After the post-electoral crisis of 2011, the economy achieved annual growth rates of 10.7% in 2012 and around 8.8% between 2013 and 2015. Although economic expansion slowed down slightly since then, it still stood at an estimated 7% in 2019. Similar rates are expected in the years to come.

In 2018, Côte d'Ivoire passed the mark of 25 million inhabitants and population is likely to double within the next 30 years. About 50% of Ivorians live in urban areas, making it the most urbanized country in Sub-Saharan Africa (average urbanization rate: 40%).^[2] The Greater Abidjan Agglomeration (GAA) is concentrating about 80% of CI's formal enterprises and is home to approximately 5.4 million people, representing 42% of the country's urban population. It is estimated that the population will increase to more than 7 million by 2030 and approximately 10 million by 2040.^[3]

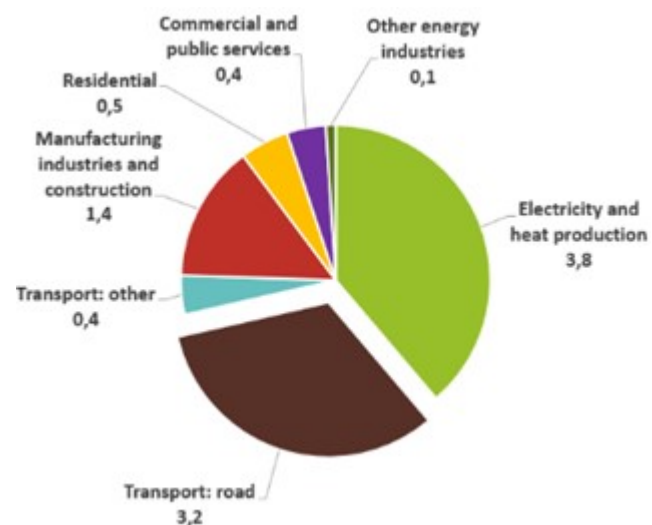


Figure 1: CO₂ emissions by sector, Côte d'Ivoire 2017, in Mt^[4]

The high rates of economic and population growth as well as increasing urbanization have led to rapid motorization. The total fleet of registered vehicles has more than doubled from 2005 (351,000) to 2015 (800,000) in Côte d'Ivoire, of which 80% can be found in Abidjan.^[5] Growth has led to an increase of the transport sector's final energy consumption from 402 ktoe in 2005 to 1,188 ktoe in 2017 (of a total final energy consumption of 7,230 ktoe).^[6] In the same year, 3.2 Mt of CO₂ emissions (of a total of 10.2 Mt) originated from road transport. This sector is thus the second largest CO₂ emitter in Côte d'Ivoire (cf. Figure 1).^[7]

The GoCI has undertaken notable efforts to address the growing demand for transportation as well as the issue of energy use and emissions. A "Draft Road Map for Sustainable Transport in Côte d'Ivoire"^[8] has been prepared by the Ministry of Transport (MOT). The Draft Road Map addresses the transport sector in CI as a whole (except for air travel) and proposes measures for ten general intervention axes^[9]. One axis is to shift towards low carbon energy sources and the objective is formulated to achieve at least 30% renewable electricity as transportation fuel by

2050. While the Road Map states this objective and aims at improving public transport, it does not present a concrete plan on how both can be integrated. It is here where this project will support the GoCI with concrete measures to support implementation of the Draft Road Map. It should be noted that this draft version is not yet a binding government document but serves as a basis for further development.

In 2019, MOT started the implementation of the World Bank funded Abidjan Urban Mobility Project (AUMP). This project receives a total funding of US\$ 540 million (US\$ 400 million International Financing Institution – IFI – Debt, US\$ 90 million commercial debt, US\$ 10 million government contribution and US\$ 40 million private sector equity). Its overall objective is to “improve accessibility to economic and social opportunities and to increase efficiency of the public transport system along the Yopougon-Bingerville corridor and its feeder lines in Abidjan”. The following four project (sub-)components AUMP are highly complementary to this GEF funded e-mobility project: 1.) Introduction of an electric bus fleet on a Bus Rapid Transit (BRT) system along the Yopougon-Bingerville corridor through Abidjan; 2.) Establishment of a financing scheme that comprises a scrapping and electrification premium for an electric pilot fleet as well as the establishment of a first loss guarantee to cover a risk-sharing facility (RSF) that will be set up by the International Finance Corporation (IFC) with commercial bank partners; 3.) Support of the government-owned public transportation company *Société des Transports Abidjanais* (SOTRA) in its efforts to restructure its bus network, improve operational performance and by constructing two bus depots and two terminal stations, all in view of integrating SOTRA’s services into the mass transport system (Metro and BRT); and 4.) Development of skills required for future needs of the urban transport sector.^[10]

This GEF funded e-mobility project in CI will thus closely collaborate with the AUMP executed by MOT and will support the broader introduction of electric vehicles in the public transportation in Abidjan. Other cities in CI will benefit as well by newly introduced nationally valid policies and regulation and communication of lessons learned during project implementation in Abidjan.

Root causes and barriers:

The growth in transport demand, particularly in the Greater Abidjan Area (GAA), is a root cause for increasing GHG and air pollutant emission from the road transport sector. Contributing more than 60% to CI’s GDP, the GAA is and will remain the country’s engine of growth, attracting more and more people to work there. Being closely linked to growth in disposable income and the need to commute to work, mobility demand will grow accordingly.

Increased energy use and emissions from increased transport activity is amplified by the influx of many old and polluting vehicles, an underdeveloped public transport sector and inadequate road infrastructure, hampering efficient and environmentally friendly movement of people. Especially the very high average age of Côte d’Ivoire’s rolling stock is considered another root cause for increased GHG and air pollutant emissions. Over 90% of the country’s vehicle fleet is imported used, which has led to a situation where average vehicle age of the fleet is as high as 19 years. Added poor maintenance of many vehicles and use of low quality, high sulphur fuels (only as of January 2021 50 ppm sulphur fuels are obligatory in CI), the combination of an old fleet and congested traffic leads to high fuel consumption, GHG and air pollutant emissions.

A multitude of barriers exist in CI preventing the uptake of electric mobility:Lack of awareness, knowledge and capacity: E-mobility is a novel technology in CI, and knowledge about this technology, its costs and benefits and how to operate and maintain electric vehicles is still uncommon among decision makers in government and public transport operators. On top of that, it can be expected that fleet operators will stick to better-known and tested combustion engines out of habit and remain sceptical about the new technology. This lack of awareness, knowledge and capacity in government and private sector is a key barrier preventing policymakers, public transport fleet operators and other stakeholders to consider e-mobility as an alternative option to conventional vehicles with internal combustion engines (ICE). Since so far, only

very few privately owned electric cars are in use in CI, there is no presence of electric vehicles in daily life, which amplifies the perception of EVs being a technology option for industrialized countries. Complete absence of publicly accessible charging infrastructure is completing the picture of EVs not being useful for commercial and / or private use.

Lack of strategic e-mobility planning: Improving mobility has been identified a priority by GoCI and development of a Draft Road Map for Sustainable Mobility in Côte d'Ivoire is underway. Although the document already points out the importance of using electricity as a clean fuel in the transport sector, no overarching analysis linking scenarios for introduction and upscaling of e-mobility with power supply scenarios has been undertaken. The recently started Abidjan Urban Mobility Project (AUMP), which receives financing of USD 300 million by the World Bank, and which targets the introduction of an electric bus rapid transit system (BRT) in Abidjan and significant renewal of the taxi and mini-taxi fleet, including electric vehicles, is set to be a game changer for e-mobility in CI, but still lacks embedding in a coherent national e-mobility strategy. In addition, CI has considerable own resources of natural gas and efforts are underway to use this energy carrier in the transport sector. For example, SOTRA acquired 50 compressed natural gas (CNG) buses (of a total of 450 new buses), which were officially handed over to SOTRA in December 2018^[11]. While the use of this energy carrier is understandable from an economic point of view, the decision to introduce CNG vehicles might lead to a lock-in, which will cause suboptimal results both from the perspective of the global environment as well as economic development. Ultimately, zero-emission transportation will rely on electric vehicles. It is therefore highly likely that a CNG bus fleet alongside the required refueling infrastructure will only serve as a bridge technology on the way to zero-carbon mobility. Direct investment in electric public transportation can avoid such an intermediate state while it does not prevent the use of natural gas in transportation – for instance, if natural gas is part of CI's fuel mix to generate electricity as it is the case today. Thus, this project will actively promote the increase in renewable power capacity to reduce carbon intensity of CI's electricity generation.

Lack of coordination and policy framework: Many stakeholders are involved in national e-mobility policy making in CI, including: the Ministry of Transport (Ministère des Transports – MOT) and its Directorate of Road Transport and Mobility (Direction Générale des Transports Terrestres et de la Circulation -DGTTC); the Ministry of Petroleum, Energy and Renewable Energies (Ministère du Pétrole, de l'Énergie et des Énergies Renouvelables – MPEER); the National Authority for the Regulation of the Electricity Sector in Côte d'Ivoire (Autorité Nationale de Régulation du secteur de l'Électricité de Côte d'Ivoire – ANARE-CI); the Ministry of Environment and Sustainable Development (Ministère de l'Environnement et du Développement Durable – MINEED) and the associated Government Agency Ivorian Antipollution Centre (Centre Ivoirien Antipollution – CIAPOL); the Ministry of Construction, Housing, Sanitation and Urban Planning (Ministère de la Construction, du Logement, de l'Assainissement et de l'Urbanisme – MCLAU); the Ministry of Road Equipment and Maintenance (Ministère de l'Équipement et de l'Entretien Routier – MEER); the Ministry of the Economy and Finance (Ministère de l'Économie et des Finances – MEF); and the Ministry attached to the Prime Minister, in charge of the Budget and the State Portfolio (Ministère auprès du Premier Ministre, chargé du Budget et du Portefeuille de l'Etat – MPMBPE). The different actors often have varying objectives, and coordination is essential to develop a policy framework, which coherently incentivizes e-mobility while satisfying overarching objectives of the different players. This is particularly true when it comes to the internalization of costs and benefits of e-mobility across sectors. While for example the use of CNG might be beneficial from a cost perspective when only focusing on public transportation, greater benefits can be achieved when considering the use of natural gas for power generation, which can also be used for e-mobility in the transport sector, and which facilitates the integration of higher shares of variable renewable power generation and its direct spill-over into the transport sector, thus preparing the transition to low carbon energy and transport sectors.

Lack of targeted financial products to accelerate fleet renewal and the uptake of e-mobility in public transportation: The public transport sector is scattered and dominated by artisanal public transport operators operating large numbers of outdated, cheap, polluting and often unsafe vehicles in the taxi and minibus sector, often without formal business structures. Their low purchasing power is a barrier to market uptake of cleaner and more efficient vehicles since these businesses operate on very tight budgets and have little access to affordable finance. So far, no financing mechanisms for investment in clean and efficient vehicles exist and no subsidies for the purchase of EVs are in place. This in combination with the high upfront costs of electric vehicles makes it very difficult for potential clients to purchase EVs and to benefit from the lower total cost of

ownership (including purchase costs as well as life-time fuel and maintenance costs) of such vehicles. The AUMP implemented by World Bank aims at the introduction of targeted finance for fleet renewal with a bonus for electric vehicles. This project supports the implementation of e-mobility incentives by linking the AUMP with the expertise outreach of the GEF 7 Electric Mobility Programme.

Lack of EV offer and charging infrastructure: To date new electric cars and minibuses cannot be purchased in CI. This is largely due to low EV demand and due the lack of capacity for local EV maintenance. Car manufactures apply readiness indicators to decide which technology will be offered in which markets. So far, car manufacturers with EVs in their vehicle portfolio offer them in only a very few Sub-Sahara African countries, among which are South Africa and Mauritius. Nonetheless, the market is moving quickly, and Nissan is soon to be expected to offer a range of EVs in East Africa. This project, through the outreach of the Global Programme, will support the process to make new EVs available in the Ivoirian market. The complete absence of publicly accessible charging infrastructure is another barrier which renders EV operation as part of fleet vehicles cumbersome. The planning and provision of a basic EV charging infrastructure at strategic points within the urban area of Abidjan, mainly targeting the charging of EV taxis and EV minibuses as drivers wait for clients, will significantly enhance the viability of e-mobility as part of public transport fleets in Abidjan.

Lack of sustainable e-mobility planning and battery end-of-life regulation: Electric vehicles will bring along their own set of environmental challenges, specifically in the form of electronic waste and increased power demand. Since there is no e-mobility market yet, there is no elaborated framework that would ensure that EVs are operated and recycled as environmentally friendly as possible. For example, managing e-waste as a result of used EV batteries is not yet included in the existing e-waste management regulation. Furthermore, e-mobility is not yet explicitly considered in renewable energy capacity planning. The lack of planning for sustainable e-mobility is closely linked with the development of an overarching e-mobility strategy.

The Theory of Change (ToC, see Figure 2) for this project foresees that based on the outputs funded by the project, and targeting the different root-causes and barriers, project outcomes will be achieved which trigger the required behavioural change to sustainably introduce e-mobility in Cote d'Ivoire, with the ultimate goal to significantly reduce energy use and GHG and air pollutant emissions. Based on project activities the ToC foresees:

- The establishment of an institutional framework and the endorsement of a gender sensitive national strategy for the promotion of electric mobility in public transport ;
- The provision of evidence for technical, operational and financial viability of EVs enabling private sector stakeholders to plan for scaling up of e-mobility ;
- The provision of an adequate policy framework including technical standards and financial incentives to promote the investment in e-mobility, and ;
- The endorsement of recommendations on renewable energy integration and an amendment on e-waste regulations to support long-term environmental sustainability of low-carbon electric mobility,

The outcomes of the project will result in the needed gain in local experience which, in combination with the policy framework and the institutional support, is expected to lead to increased investment in e-mobility and renewable power generation, ultimately reducing GHG and air pollutant emissions from the transport sector.

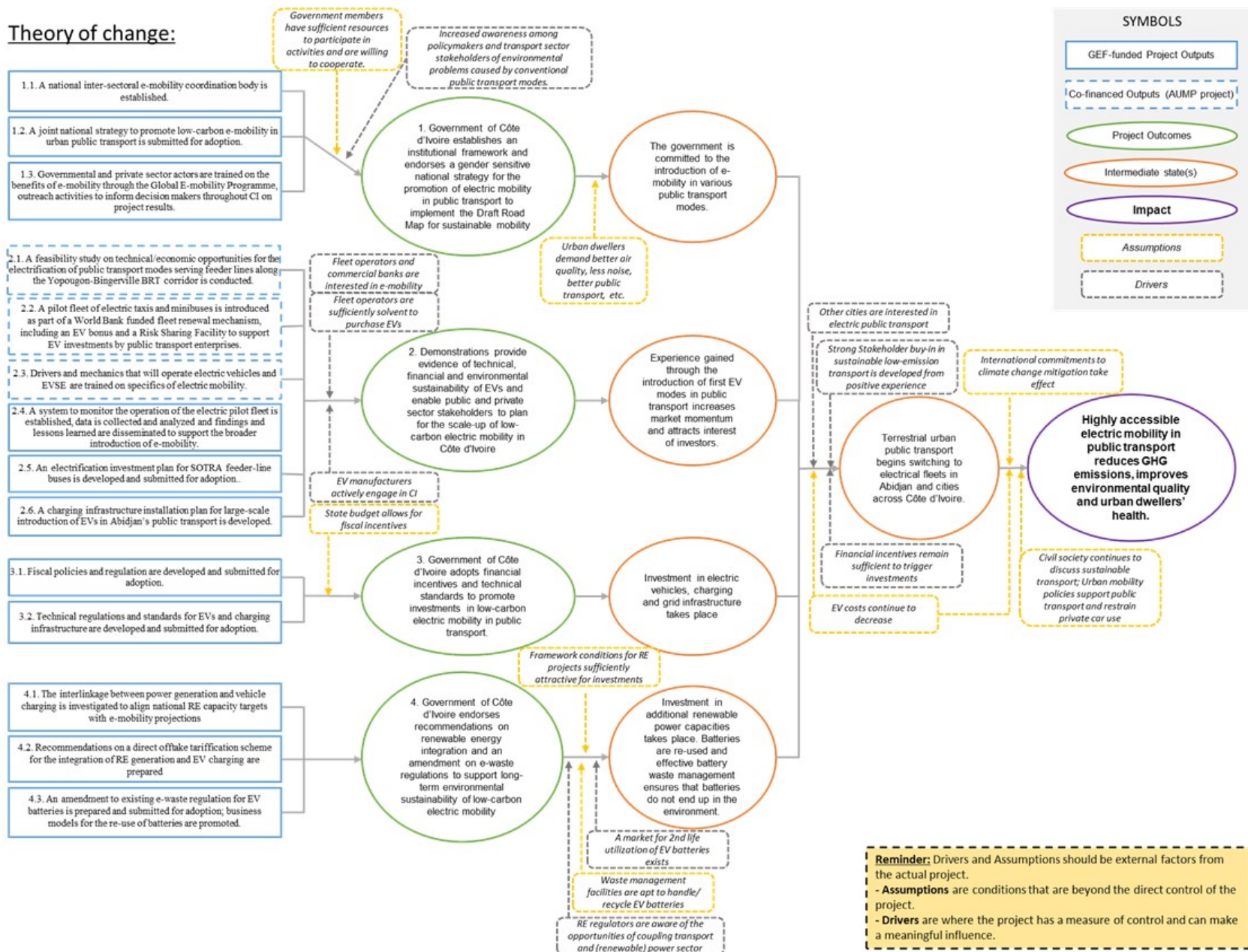


Figure 2 Theory of change

2) Baseline scenario and any associated baseline projects

Baseline projection of the vehicle fleet growth

Based on historic growth rates, the vehicle fleet in Côte d'Ivoire is estimated to grow from about 800,000 vehicles in 2015 to more than 1,300,000 vehicles in 2030 and to more than 2.6 million vehicles in 2050. This means that the vehicle fleet would triple while the population doubles until 2050. With no intervention to shift to cleaner and more efficient vehicles, this growth of the vehicle fleet will result in similar increases of transport energy use, CO₂ and air pollutant emissions, and will cause significant costs for the society stemming from fuel expenditures as well as health related costs.

Baseline projection of stock, sales, energy use and CO₂ emissions of the public transport sector

The public transport sector in Abidjan is served by SOTRA buses, minibuses (gbakas), communal taxis (wôrô-wôrôs), metered taxis and – to a small extent – transport of personnel which is organized by enterprises or other institutions and organizations themselves. It can be observed that the market share shifted considerably from SOTRA services (incl. buses and SOTRA operated boats on Abidjan's lagoon) especially to communal taxis but also minibuses (see Figure 3).

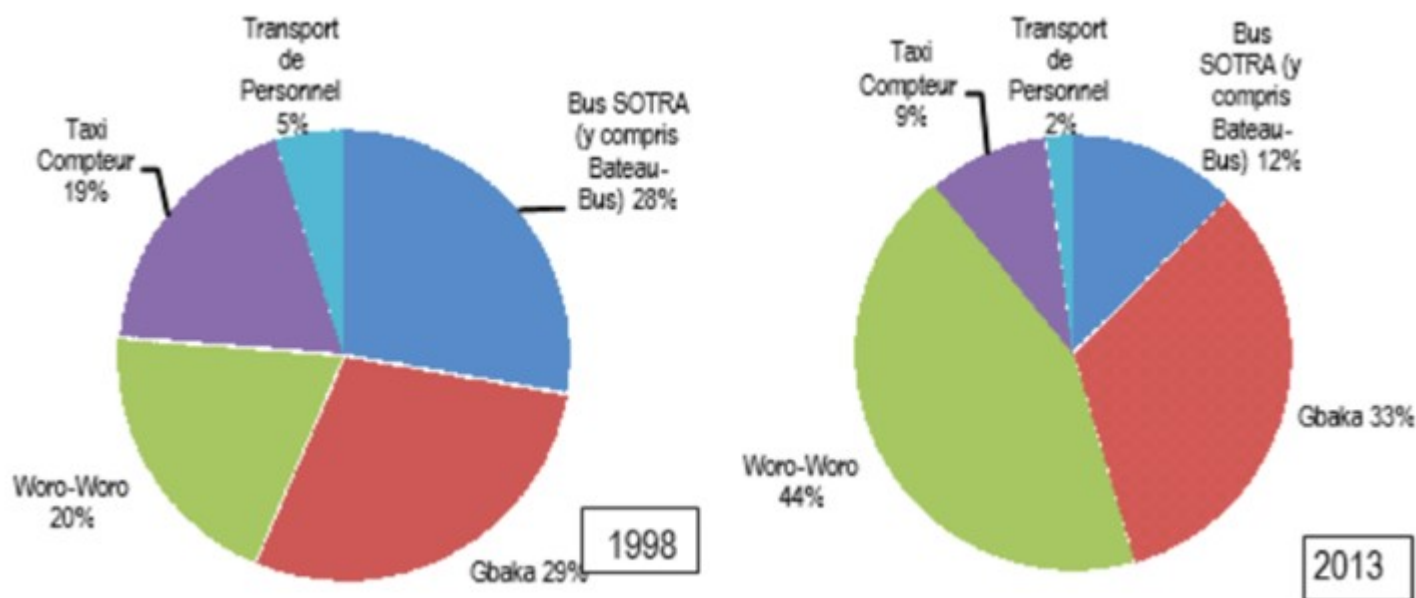


Figure 3: Change in public transport modes from 1998 to 2013[12]

The earlier shift away from SOTRA to informal transport modes can be explained through a lack of proper infrastructure and resulting low transportation speeds caused by congestions, missing investments in new SOTRA buses due to inadequate funding, greater flexibility of the informal transport modes as well as an increase in car ownership.[13]

This resulted in a situation whereby the taxi fleet almost quadrupled, the minibus fleet grew by about 80% while the SOTRA bus fleet stood at about 500 vehicles with a tendency to even decrease.

Based on the extrapolation of historical data from between 2000 and 2015 up to the year 2019, it can be estimated that about 39,000 taxis and 5,000 minibuses populated the streets of Abidjan. Given the recent efforts of the GoCI to increase SOTRA's transport capacities, about 1,200 SOTRA buses are now serving more than 100 lines in Abidjan, including the already mentioned 450 new CNG and diesel buses by manufacturer IVECO.[14] The original planning foresaw that a total of 2,000 buses was to be reached by 2020, but implementation is slightly delayed. At the end of 2019, an agreement to deliver another 450 CNG fueled buses has been signed with manufacturer Scania[15], but these vehicles have not been delivered yet. Note that SOTRA's current short-term procurement plan does not include electric buses.

In the baseline scenario, it is projected that by 2050 the taxi fleet will almost triple to about 110,000 vehicles, the minibus fleet will triple to nearly 15,000 vehicles and the SOTRA bus fleet will nearly triple to almost 3,000 vehicles.

The baseline scenario considers that some of the new vehicles would be battery electric vehicles (BEV) in the short and long term. In this scenario, it was assumed that the sales share of electric taxis, minibuses and SOTRA buses would be 10% in 2030 and 30% in 2050. This can be considered as a slow EV development path that would remain well behind the targets of the draft Road Map for Sustainable Mobility in Côte d'Ivoire (*Feuille de route pour une mobilité durable en Côte d'Ivoire: Emergence – bas carbone dans les transports*) published by MOT in December 2019, proposing an electric energy share in CI's complete national transport sector (incl. private transport modes, freight, etc.) of 10% [16] in 2030 and 30% in 2050.

The baseline scenario for the evolution of vehicle sales and stock as well as energy use and carbon dioxide emissions for the taxi, minibus and SOTRA bus sub-sectors are shown in the following figures:

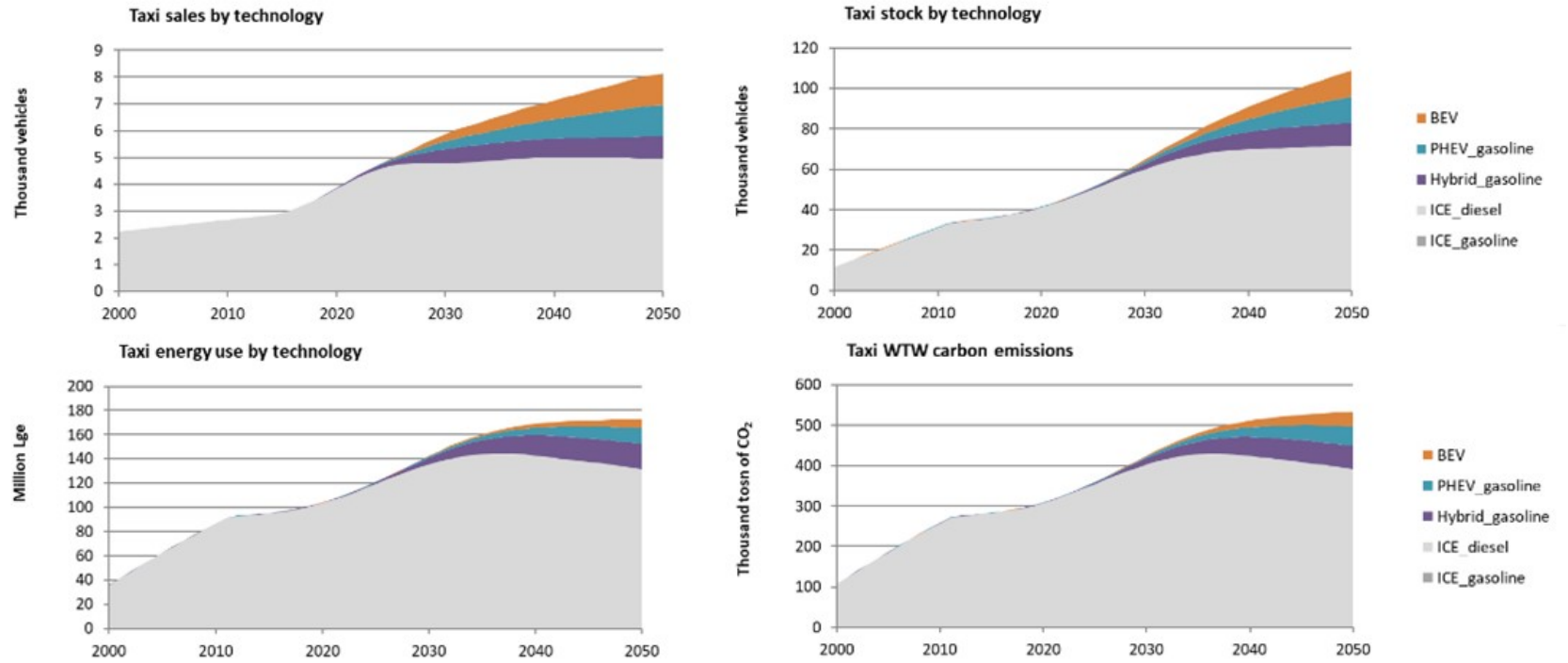


Figure 4: baseline scenario for taxis

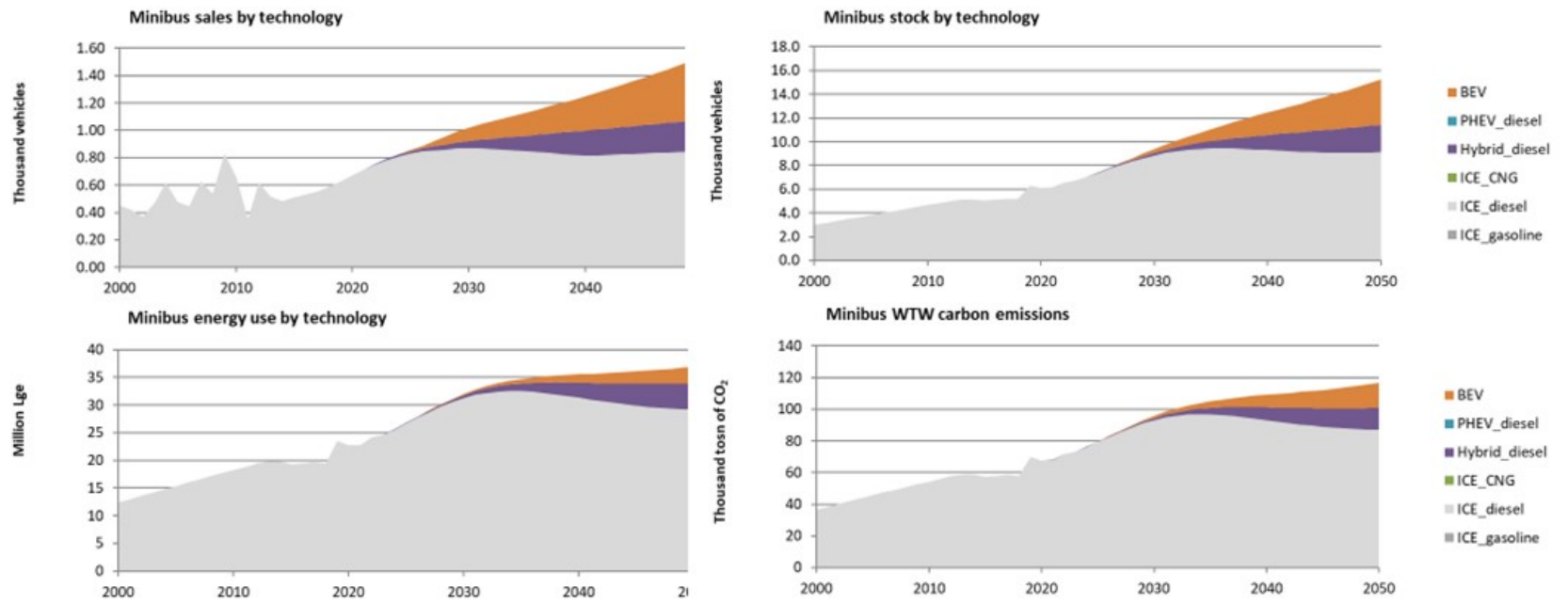


Figure 5: baseline scenario for minibuses (Gbakas)

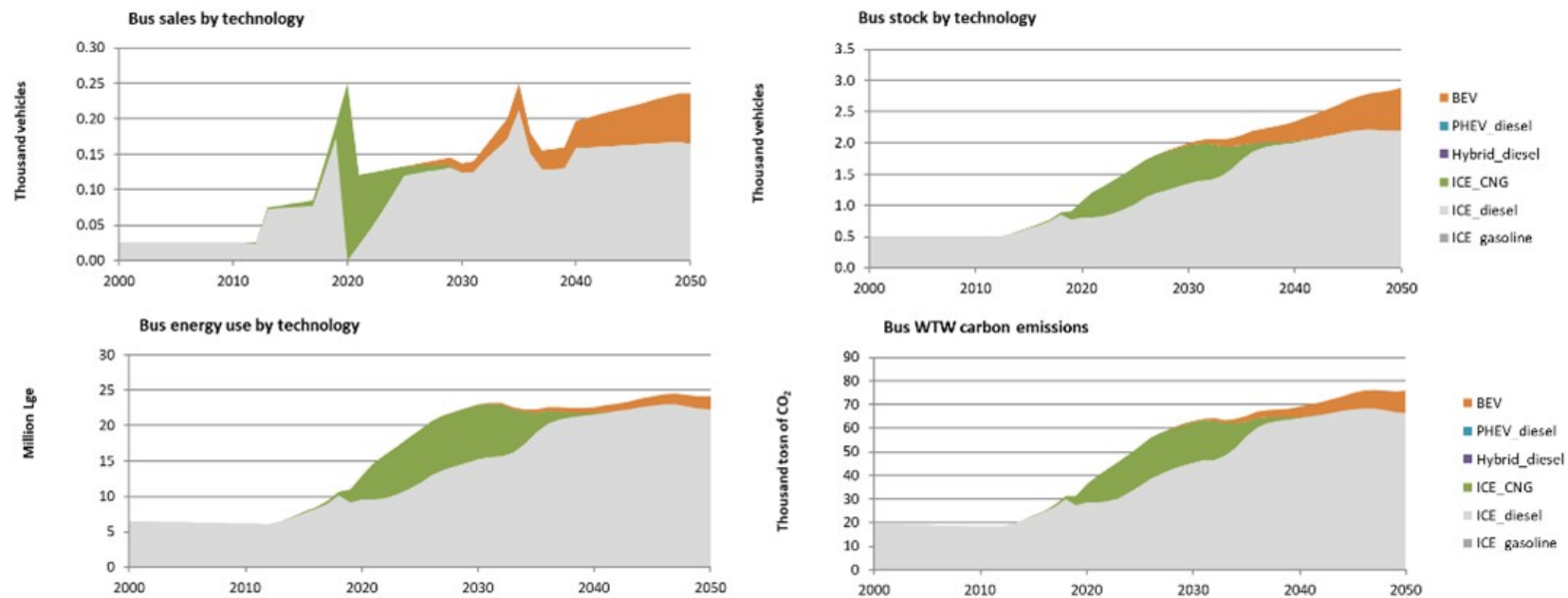


Figure 6: baseline scenario for SOTRA buses

Under the baseline scenario, the annual Tank-to-Wheel (TTW) energy use of all three public transport sub-sectors would increase from 136 million Lge in 2019 to 234 million Lge in 2050 and annual Well-to-Wheel (WTW) carbon dioxide emissions would increase from 404 in 2019 to 726 thousand tons in 2050 (cf. Table 1). Note that carbon intensity of electricity used by EVs under the baseline scenario decreases from 0.554 kg to 0.250 kg CO₂ per kWh in 2050 under the assumption that Côte d'Ivoire reaches its official target of 42% renewable energies in the power mix by 2030^[17] (when an equivalent of approximately 0.342 kg CO₂ per kWh is estimated) and that carbon intensity would further decrease until 2050 (to reach 0.250 kg CO₂ per kWh).

Table 1: Evolution of TTW energy use and CO₂ emissions until 2050^[18]

	TTW Energy use [million Lge]			WTW carbon dioxide emissions [thousand tons]		
	2019	2030	2050	2019	2030	2050
Taxis	102	143	173	303	425	533
Minibuses	23	32	37	70	96	117
SOTRA buses	11	23	24	31	63	76
Total	136	198	234	404	584	726

Current national transport sector strategies

In urban transport planning, the key guiding document for the development of the public transport sector in Abidjan is the Urban Transport Master Plan for Greater Abidjan (*Schéma Directeur d'Urbanisme du Grand Abidjan - SDUGA*). The Master Plan was developed under the responsibility of the Ministry of Construction, Housing, Sanitation and Urban Planning (*Ministère de la Construction, du Logement, de l'Assainissement et de l'Urbanisme – MCLAU*). Adopted in 2016 with a planning horizon until 2030, the SDUGA pursues the following four main objectives:[19]

- 1) Enhancement of road network capacity that supports economic activities
- 2) Promotion of public transport use
- 3) Intermodal development/Transit-oriented development
- 4) Realization of an environmentally sound transportation system

Through the SDUGA, several mobility projects in Abidjan have received support from private and public stakeholders. These are, for instance, the Abidjan Urban Mobility Project (AUMP) funded by World Bank, the Metro Line 1 North-South project funded by the French Treasury, the Urban Transport Project (PTUA, by its French acronym) funded by the African Development Bank (AfDB), just to mention a few. The SDUGA is focusing on introducing more and improving public transport, electrification of public transport was not yet considered as an option. The proposed GEF E-Mobility project will be closely linked to the AUMP (see the Baseline Investment description below for more details).

Another, yet very recent, strategic initiative by the GoCI is the Draft Road Map for Sustainable Mobility in Côte d'Ivoire (*Feuille de route pour une mobilité durable en Côte d'Ivoire: Emergence – bas carbone dans les transports*) which has been published by MOT in December 2019. The Draft Road Map was developed under the impression that initiatives for sustainable transport sector development were still scattered between different both national and local institutions. It aims at “allowing all stakeholders to elaborate a shared vision for 2050, which will serve as a basis for mobility development strategies in Côte d'Ivoire.” The Road Map is explicitly proposing to attribute a main role to renewable electricity to fuel the transport sector in the future (see Figure 7). [20] This project will build on the Road Map for Sustainable Mobility in Côte d'Ivoire and aims at the creation of an “E-Mobility Coordination Body” under the MOT and based on the Project Steering Committee of the GEF E-Mobility Project.

Horizon	2019	2030	2050
Electrique	0%	10%	30%
Hydrogène	0%	0%	5%
Bio	0%	5%	15%
Fossile	100%	85%	50%

Figure 7: Fuel use targets for the Ivorian transport sector[21]

Current regulatory and fiscal framework for the public transport sector

As discussed above, the high age of vehicles in the public transport fleet – the average age of communal taxis (wôro-wôro) and minibuses (gbakas) is 22 and 17 years, respectively [22] - is causing high levels of air pollution and inefficient use of fuel. Several initiatives by the GoCI are aiming at tackling these problems. First, there is the Road Transport Development Fund (*Fond de Développement du Transport Routier - FDTR*). Established in 2014 through *Décret n° 2014-96*, the Fund aims at systematically renewing 50,000 vehicles by 2020. It offers loans to road transport enterprises, for instance taxi or freight companies. The FDTR is organized as a state-owned public company with industrial and commercial functions (*Etablissement public à caractère industriel et commercial*), managed technically by the MOT and financially by the Ministry of Economy and Finances as well as the Ministry for Budget.

The second instrument to renew Côte d'Ivoire's vehicle fleet is *Décret n° 2017-792* curbing the maximum import age of vehicles to 5 years for taxis, 7 years for mini-buses and lorries up to 5 tons and 10 years for heavy duty vehicles such as buses and trucks. This decree is complemented by *Décret n° 2017-793* limiting the operational life of these vehicles (taxis: 7 years; mini-buses up to 34 seats and lorries up to 5 tons: 10 years; minibuses above 34 seats: 15 years; heavy duty vehicles such as buses and trucks: 20 years). These vehicle regulations are in part attributable to a Global Fuel Economy Initiative (GFEI) project funded with GEF 5 resources that supported vehicle fuel economy activities.

Furthermore, *Décret n° 2017-125* stipulates limits for air pollutant emissions for light and heavy-duty vehicles and motorcycles. A carbon tax on vehicle fuels is currently being investigated.

The National Environmental Fund promotes clean mobility and other environmental targets. The fund caters for motor vehicle air pollution standards as well as air quality monitoring. In addition to this, a tax exemption has been established for all imported used vehicles that are less than five years in age. Importers of older vehicles have to pay a tax of 50.000 CFAF[23] (West African CFA franc).[24]

The Project for Supporting the Modernization of Transport Sectors (*Projet d'Appui à la Modernisation du Secteur des Transports - PAMOSET*) is another, earlier initiative by the World Bank and the GoCI. Initiated in 2016, its primary objective is to improve the efficiency and security of transport services on the Ivorian section of the Abidjan – Ouagadougou corridor. Very often, outdated trucks are serving this route. Therefore, the project offers a scrapping premium for eligible vehicles to renew about 300 trucks, co-financed with funds from the WB International Development Association (IDA) and the GoCI. PAMOSET funds are managed by the FDTR (see above). The funding mechanism that has been developed under the PAMOSET and that has been integrated into the FDTR will also be applied within the AUMP.

Although small, it should be mentioned that Bolloré, an international industrial group, is operating a fleet of three electric buses (6 m length) at the University Félix Houphouët-Boigny d'Abidjan since October 2013.

Current national renewable energy strategy

In 2016, the GoCI has published its National Action Plan for Renewable Energies (PANER). It defines the official target to generate 42% of its electricity from renewables by 2030 (26% coming from medium to large-scale hydropower and 16% from other renewable energy sources, especially biomass and solar).^[25]

Related baseline investments

Several investments aim at improving the transportation sector and to increase renewable energy generation in CI. In the area of renewable energies, implementation progress is more advanced in the hydropower and biomass sectors, a couple of projects are currently being implemented. Utility-scale solar projects on the other hand have received financial commitments by development banks but implementation is pending. This e-mobility project aims at giving additional momentum to renewable power projects in general by explicitly linking electric mobility to renewable energy generation. The main baseline investments are presented in the following table.

Project title	Thematic Focus	Financier / Implementing Agency	Volume	Time frame	Sources
<i>Transport sector</i>					
Project for Supporting the Modernization of Transport Sectors (PAMOSET)	Fleet renewal scheme (enhancing efficiency and security); freight	IDA World Bank / MOT – Directorate General of Road Transport and Mobility (DGTTC under the MOT)	US\$ 30 m (concessional loan)	2016-2021	^[26]
Greater Abidjan Port-City Integration Project	Improvement of urban management, logistics efficiency, port accessibility, and urban mobility; project included the preparation of the feasibility study for the BRT system now implemented by the AUMP	World Bank – IDA / Côte d'Ivoire Infrastructure Renewal Project (PRICI – Project Coordination Unit under the Ministry of Economic Infrastructure)	US\$ 315 m (concessional loan)	2018-2025	^[27]
Métro d'Abidjan – Ligne 1	Public transport infrastructure; urban railway	French Development Agency (AFD) – French Treasury / MOT	Project cost: US\$ 1.5 bn; full funding through concessional loans via AFD	Project start: 2017, effective construction start: 2019, expected beginning of passenger service: 2023-2024	^[28]
Abidjan Urban Transport Project (PTUA)	Investment in urban transport infrastructure; the AUMP is linked to this project as it finances the preparation of a bridge	AfDB, GEF, JICA, GoCI	€ 567 m AfDB loan, € 6.45 m GEF grant, € 63.49 m JICA loan € 132.9	2016-2021	^[29]

	for the preparation of a bridge for use by BRT buses		by the GoCI.		
Global Fuel Economy Initiative (GFEI)	Fuel efficiency	GEF	US\$ 2.26 m (grant for 20 countries, incl. CI)	2013-ongoing	[30]
Country child project of the GEF-6 Sustainable Cities Integrated Approach Pilot (IAP) Program (Abidjan Integrated Sustainable Urban Planning and Management)	Project Objective: To enhance local capacity to assess and respond to environmental degradation through the application of integrated sustainable urban planning and management methods while encouraging the uptake of innovative lower carbon technologies to reduce GHG emissions and improve air quality in the city of Abidjan	GEF/AfDB and UNIDO	US\$ 5.25 (grant)	2015-ongoing	[31]
Energy sector					
Solar project "KfW Boundiali"	Grid-connected utility-scale photovoltaic power plants; (project is part of the official project pipeline comprising 13 projects at different sites with a total capacity of 466 MWp to be achieved by 2030 which are to be tendered by the GoCI)	Kreditanstalt für Wiederaufbau (Reconstruction Credit Institute – KfW) has shortlisted a project (37.5 MWp) in Boundiali in December 2019; tender pending	KfW, European Union Boundiali: € 27 m (KfW concessional loan; EU: € 9.75 m grant)	KfW, Boundiali 2018-2020 (2020: planned commissioning, but project has not been tendered yet)	[32], [33], [34]
Scaling Solar	Supporting the implementation of grid-connected solar projects; planned: 60 MW PV system in CI; (is also one of the projects from the official project pipeline mentioned above)	International Finance Cooperation's (IFC)	Information not available	Announced 2019, planned commissioning: 2021; project has not been tendered yet	[35], [36]
Biomass plant Biokala	Utility-scale power generation; use of agricultural residues; planned capacity: 46 MW. (Note: other biomass projects have been envisaged by the GoCI, so far, priority has been given to implementing the Biokala project).	Co-financing by Proparco (French development finance institution), the Dutch development Bank (FMO) and Société Générale, a French bank	€ 90 m credit line	Announced: end 2019; planned commissioning: 2023	[37],[38]
Singrobo-Ahouaty hydropower plant	Hydropower; capacity: 44 MW	Main financier: African Finance Corporation (AFC)	AFC: Equity and bridge loan facility (totaling € 174	First disbursement of the bridge loan	[39]

			m)	an facility: D ecember 20 18; completi on planned: 2023	
Gribo Popoli hydro electric project	Hydropower; capacity: 112 M W	Main financier: Exi m Bank China	Exim Bank China: Loan, € 258.2 m	Constructio n start: 201 7; completio n planned: 2 021	[40]
Energos 2 progra mme	Renewable energies; energy e fficiency; support to the tende r offer process for the selectio n of IPPs in renewable energy, including pre-feasibility and fe asibility studies, coordination/ support of the tender offer pro cess, and legal and financial s upport for developing power p urchase agreements.	European Develop ment Fund / AFD	€ 68.265 m (guar antee funds, TA g rants)	2017-2021	[41]
Cross-cutting					
Transforming Fina ncial Systems for Climate	Scale up climate finance and strengthen the capacities of l ocal partners in climate-relate d sectors in 17 developing co untries	GCF / AFD	€ 653 m (€ 615 m credit line + € 38 m technical a ssistance)	2019-2026	[42]

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

The objective of this project is to facilitate a transformative shift to electric mobility, whereby electric vehicles become an accepted and actively supported pillar of urban public transportation in Côte d'Ivoire. To achieve this, relevant stakeholders of the transport and the energy sector will be brought together within an e-mobility coordination body and will be empowered to assess the technology and to design concrete measures to facilitate market introduction and scale-up. An ambitious and coherent policy framework will be put in place and financing mechanisms will be developed to encourage various commercial public transport fleet operators to introduce electric vehicles into their existing fleets. Incentivizing a sustained shift towards e-mobility beyond the end of the project will be achieved through the development of concrete e-mobility deployment targets and necessary actions to reach them, which shall be agreed by all relevant stakeholders.

The project will build on the following pillars:

- Technical Assistance to establish a national coordinating body on electric mobility to bundle expertise and information specific to the electrification of urban public transport at a central point within a relevant government institution, such as the Greater Abidjan Urban Mobility Authority (*Autorité de la Mobilité Urbaine dans le Grand Abidjan – AMUGA*) which would also inform work at the national level.
- Technical Assistance to provide international expertise and build know-how to develop a suitable policy framework, which incentivizes the introduction of e-mobility and minimizes environmental negative impacts of the technology;
- Technical assistance in developing a joint national strategy for the introduction of electric urban public transport modes, which is coordinated between all relevant institutions and stakeholders from the transport, power and environmental sectors;
- Incentivizing private sector investment to introduce about 200 electric taxis and 50 electric minibuses on a pilot basis using an electrification bonus funded by the World Bank under the fleet renewal mechanism FDTR.

The project consists of four components:

- 1) Institutionalization of and strategy-setting for low-carbon electric mobility
- 2) Short term barrier removal through feasibility analyses, the demonstration of electric vehicles and know-how development for a wider introduction of electric mobility in Côte d'Ivoire
- 3) Preparing the enabling environment for scale-up and replication of low-carbon electric mobility
- 4) Long-term environmental sustainability of low-carbon electric mobility

Below is a table with the project's logframe:

Project Component	Component Type	Project Outcomes	Project Outputs	Trust Fund	GEF Project Financing (US\$)	Confirmed co-financing (US\$)
Component 1: Institutionalization of and strategy-setting for low-carbon electric mobility	Technical Assistance	Outcome 1: Government of Côte d'Ivoire establishes an institutional framework and endorses a gender sensitive national strategy for the promotion of electric mobility in public transport to implement the Draft Road Map for sustainable mobility	Output 1.1: A national inter-sectoral e-mobility coordination body is established.	GEFTF	105,956	85,000
			Output 1.2: A joint national strategy to promote low-carbon e-mobility in urban public transport is submitted for adoption.			
			Output 1.3: Governmental and private sector actors are trained on the benefits of e-mobility through the Global E-mobility Programme, outreach activities to inform decision makers throughout CI on project results.			
Component 2: Short term barrier removal through feasibility analyses, the demonstration of electric vehicles and know-how development for a wider introduction of electric mobility in Côte d'Ivoire	Technical Assistance	Outcome 2: Demonstrations provide evidence of technical, financial and environmental sustainability of EVs and enable public and private sector stakeholders to plan for the scale-up of low-carbon electric mobility in Côte d'Ivoire	Output 2.1: A feasibility study on technical/economic opportunities for the electrification of public transport modes serving feeder lines along the Yopougon-Bingerville BRT corridor is conducted.	GEFTF	104,720	5,270,000
			Output 2.2: A pilot fleet of electric taxis and minibuses is introduced as part of a World Bank funded fleet renewal mechanism, including an EV bonus and a Risk Sharing Facility (RSF) to support EV investments by public transport enterprises.			
			Output 2.3: Drivers and mechanics that will operate electric vehicles and electric vehicle supply equipment (EVSE) are trained on specifics of electric mobility.			
			Output 2.4: A system to monitor the operation of the electric pilot fleet is established, data is collected and analyzed and findings and lessons learned are disseminated to support the broader introduction of e-mobility.			
			Output 2.5: An electrification investment plan for SOTRA feeder-line buses is developed and submitted for adoption.			
			Output 2.6: A charging infrastructure installation plan for large-scale introduction of EVs in Abidjan's public transport is developed.			
Component 3: Preparing for scale-up and replication of low-carbon electric mobility	Technical Assistance	Outcome 3: Government of Côte d'Ivoire adopts financial incentives and technical standards to promote investments in low-carbon electric mobility in public transport.	Output 3.1: Fiscal policies and regulation are developed and submitted for adoption.	GEFTF	47,120	80,000
			Output 3.2: Technical regulations and standards for EVs and charging infrastructure are developed and submitted for adoption.			
Component 4: Long-term environmental sustainability of low-carbon electric mobility	Technical Assistance	Outcome 4: Government of Côte d'Ivoire endorses recommendations on renewable energy integration and an amendment on e-waste regulations to support long-term environmental sustainability of low-carbon electric mobility	Output 4.1: The interlinkage between power generation and vehicle charging is investigated to align national RE capacity targets with e-mobility projections.	GEFTF	83,770	102,000
			Output 4.2: Recommendations on a direct offtake tariffication scheme for the integration of RE generation and EV charging are prepared.			
			Output 4.3: An amendment to existing e-waste regulation for EV batteries is prepared and submitted for adoption; business models for the re-use of batteries are promoted.			
Monitoring and Evaluation (M&E)					30,000	-
Subtotal					371,566	5,537,000
Project Management Costs (PMC)					37,150	150,000
Total project costs					408,716	5,687,000

The proposed GEF project will be complementary and closely linked to the Abidjan Urban Mobility Project (AUMP). The AUMP is implemented by the MOT, began in 2019 and will end in 2025 (i.e. one year after this project is planned to end). The objective of the AUMP is “to improve accessibility to economic and social opportunities and to increase efficiency of the public transport system along the Yopougon-Bingerville corridor and its feeder lines in Abidjan.”^[43] To achieve this, the AUMP will implement the following main activities: ^[44]

1) Implementation and operationalization of an electric Bus Rapid Transit (BRT) service on the Yopougon-Bingerville corridor through financing “the construction of the infrastructure and BRT associated facilities” and “BRT rolling stock” (with finance contributions by private sector partners). This will be complemented by financing the modification of a bridge on the corridor to meet BRT requirements.

- 2) Technical Assistance (TA) for the integration of the BRT system into Abidjan's public transport network and financing of the required infrastructure e.g. on transit stations, feeder roads or bus stops. This also includes, among other things, the strengthening of SOTRA through TA to restructure the public company's city bus network and its integration in the BRT system.
- 3) Support the integration of the informal public transport sector into and improvement of non-motorized access to the BRT system and financing the renewal of 2,000 taxis (wôro-wôro) and 1,000 minibuses (Gbaka)[45].

To enhance environmental sustainability and innovativeness, the AUMP is aiming at the introduction of electric public transport modes in two ways: First, the project will feature a 100% electric bus fleet of about 300 units on the BRT system. Second, the taxi and minibus renewal component will offer a premium for scrapping obsolete vehicles when new ones are bought. This scrapping premium will be managed through the mechanisms of the PAMOSSET, whereby the FDTR will oversee the channeling of PAMOSSET funds for fleet renewal to clients. Scrapping premiums paid for a minibus and a taxi are CFAF 3m and CFAF 1m[46], respectively, and typically this premium is only used for vehicles with conventional engines. On top of this, AUMP will grant a bonus for electric vehicles and components on a pilot basis. These subsidies for electric vehicles will be enhanced by the establishment of a first loss guarantee to cover a risk-sharing facility (RSF, based on the principles already introduced under the PAMOSSET), which will be set up by the International Finance Corporation (IFC) in cooperation with commercial bank partners. The RSF will reduce the risk of banks to provide financing to fleet operators who wish to deploy electric vehicles, which in turn will result in preferential loan conditions.

Seeking to create synergies with the above, the GEF funded project's Component 2 on "Short term barrier removal through feasibility analyses, the demonstration of electric vehicles and know-how development for a wider introduction of electric mobility in Côte d'Ivoire" will be co-executed by the MINEDD and the MOT. The piloting of electric taxis and minibuses will be jointly implemented by MINEDD and MOT, based on the scrappage scheme / EV bonus and risk-sharing facility funded through the AUMP. While the AUMP is focusing on clean and efficient mobility in Abidjan, the GEF project will prepare for the broader e-mobility framework at the national level. The GEF project will lay the institutional and policy-framework while the AUMP will conduct a feasibility study on technical/economic opportunities for the electrification of public transport modes serving feeder lines along the Yopougon-Bingerville BRT corridor, provide the financing mechanism to introduce and scale-up e-mobility Côte d'Ivoire, and train drivers and mechanics that will operate electric vehicles and associated equipment. The joint implementation will be ensured through project focal points within the GEF Project Management Unit (PMU) under the MINEDD and the AUMP Project Coordination Unit (PCU) under AMUGA / MOT. Therefore, a Joint Implementation Unit (JIU) will be established, which will be co-chaired by the national project directors of both projects. Table 2 provides an overview of the execution arrangements for each output, which are further detailed in Section 6 on Institutional Arrangement and Coordination and in the Annex K.

Table 2 OVERVIEW OF THE EXECUTION ARRANGEMENTS BETWEEN MINEDD AND MOT
AND THE BREAKDOWN OF FUNDING BETWEEN THE GEF AND THE AUMP

Component	Output	Funding	Execution arrangement
	1.1. A national inter-sectoral e-mobility coordination body is established.	GEF funded	MINEDD will lead the work under this output. MINEDD will co-chair the PSC with MOT, which is executing the AUMP through AMUGA. MINEDD and MOT will jointly set-up the national e-mobility coordination body.
	1.2. A joint national strategy to promote low-carbon e-mobility in urban areas.	GEF funded	MINEDD will lead the overall strategy development in close coordination with MOT.

1	ban public transport is submitted for adoption.		<p>MINEDD will hire the expert working on this Output and support the coordination of the strategy development.</p> <p>MOT will ensure that the e-mobility strategy becomes an integral part of the Road Map for Sustainable Transport in Côte d'Ivoire.</p>
	1.3. Governmental and private sector actors are trained on the benefits of e-mobility through the Global E-mobility Programme, outreach activities to inform decision makers throughout CI on project results.	GEF funded	<p>MINEDD will lead the process of selecting relevant stakeholders to participate in the Global Programme Events, in coordination with MOT.</p> <p>MOT will appoint relevant staff, proposed for participation in the trainings offered by the Global E-Mobility Programme.</p>
2	2.1 A feasibility study on technical/economic opportunities for the electrification of public transport modes serving feeder lines along the Yopougon-Bingerville BRT corridor is conducted.	Fully co-financed by the AUMP, through the MOT	<p>MOT will lead the work under this output, which is co-financed by the AUMP.</p> <p>The GEF project will support the MOT in the development of the feasibility study by connecting the AUMP with relevant international experts and by providing links to relevant knowledge products produced by the Thematic Working Groups of the Global E-Mobility Programme.</p>
	2.2 A pilot fleet of electric taxis and minibuses is introduced as part of a World Bank funded fleet renewal mechanism, including an EV bonus and a Risk Sharing Facility (RSF) to support EV investments by public transport enterprises.	Fully co-financed by the AUMP, through the MOT	<p>MOT will lead the work under this output, which is co-financed by the AUMP.</p> <p>The GEF project will support the MOT in delivering this output, particularly through the Global E-Mobility Programme and the Africa Support and Investment Platform. The latter will reach out to its network of industry partners to support the introduction of EV models to the Ivorian vehicle market, which is a precondition to piloting electric taxis and minibuses.</p>
	2.3. Drivers and mechanics that will operate electric vehicles and electric vehicle supply equipment (EVSE) are trained on specifics of electric mobility.	Fully co-financed by the AUMP, through the MOT	<p>MOT will lead the work under this output, which is co-financed by the AUMP.</p> <p>The GEF project will assist the MOT in delivering this output, particularly with the support of the Global E-Mobility Programme, by connecting the MOT with relevant international experts which could provide the required trainings.</p>
	2.4: A system to monitor the operation of the electric pilot fleet is established, data is collected and analyzed and findings and lessons learned are disseminated to support the broader introduction of	GEF funded	<p>MOT will lead the technical and substantive work under this output.</p> <p>MINEDD will provide advisory, administrative and financial support to MOT.</p>

	pport the broader introduction of e-mobility.		
	2.5: An electrification investment plan for SOTRA feeder-line buses is developed and submitted for a doption.	GEF funded	MOT will lead the technical and substantive work under this output, MINEDD will provide advisory, administrative and financial support to MOT.
	2.6: A charging infrastructure installation plan for large-scale introduction of EVs in Abidjan's public transport is developed.	GEF funded	MOT will lead the technical and substantive work under this output. MINEDD will provide advisory, administrative and financial support to MOT.
3	3.1. Fiscal policies and regulation are developed and submitted for adoption.	GEF funded	MOT, will lead the development of fiscal policies and regulations. MINEDD will provide advisory, administrative and financial support to MOT.
	3.2. Technical regulations and standards for EVs and charging infrastructure are developed and submitted for adoption.		MOT will lead the development of technical standards and regulation. MINEDD will provide advisory, administrative and financial support to MOT.
4	4.1. The interlinkage between power generation and vehicle charging is investigated to align national RE capacity targets with e-mobility projections.	GEF funded	MINEDD (with support of MPEER) will lead the study on interlinkages between power generation and vehicle charging.
	4.2. Recommendations on a direct offtake tariffication scheme for the integration of RE generation and EV charging are prepared.	GEF funded	MINEDD (with support of MPEER) will lead the development of the recommendations on direct offtake tariffication scheme for the integration of RE generation and EV charging.
	4.3. An amendment to existing e-waste regulation for EV batteries is prepared and submitted for adoption; business models for the reuse of batteries are promoted.	GEF funded	MINEDD will lead the preparation of the amendment of current e-waste regulation to include EV batteries.

Component 1: Institutionalization of and strategy-setting for low-carbon electric mobility in urban public transport.

This component addresses the lack of awareness, knowledge and capacity and works towards establishing a strategic e-mobility planning document. It furthermore addresses the coordination and policy framework barrier through establishment of an inter-sectorial e-mobility coordination body which will guide the development of the strategy and align e-mobility related policy making processes.

All outputs under this component will be funded through the GEF grant and will be fully executed by the MINEDD, with support from the MOT/DGTTC.

This component will gather key institutions and stakeholders from the transport and energy sector as well as urban planners in an interdisciplinary national public transport e-mobility coordination body. The e-mobility coordination body will be based on the GEF Project Steering Committee, headed by MINEDD. It will offer a platform where cross-cutting issues related to the nexus of e-mobility and transport, energy, environment, finance and urban planning can be discussed and where all needed activities to develop the framework for low-carbon e-mobility will be coordinated. This work will directly support the implementation of objectives of the Draft Roadmap for Sustainable Transport in CI with regards to electric urban public transport. The coordination body will provide overall guidance for the development of a national strategy for electrified public transportation and will be responsible for approval and subsequent submission for adoption by parliament. It will build upon existing institutional networks which have been established, for example, during the preparation of the Draft Roadmap for Sustainable Mobility in CI or under the AUMP. The coordination body's purpose is to discuss and present a strategy and concrete actions needed to electrify urban public transport and will integrate itself in existing networks and ongoing activities to modernize urban public transport.

Outcome 1: Government of Côte d'Ivoire establishes an institutional framework and endorses a gender sensitive national strategy for the promotion of electric mobility in public transport to implement the Draft Road Map for sustainable mobility.

Outputs:

- **Output 1.1: A national inter-sectoral e-mobility coordination body is established.**

Electrification of urban public transport requires that initiatives by Ministries and other key stakeholders responsible for transport, urban and power system planning are well coordinated. Thus, a national inter-sectoral e-mobility coordination body to coordinate activities promoting e-mobility in urban public transport will be established. It will be based on but not limited to the Project Steering Committee and should include representatives from the Ministry of Environment and Sustainable Development (MINEDD), the Ministry of Transport (MOT), the Ministry of Petroleum, Energy and Renewable Energies (MPEER), the Ministry of Construction, Housing, Sanitation and Urban Planning (MCLAU), the Ministry of the Economy and Finance (MEF), the Ministry attached to the Prime Minister, in charge of the Budget and the State Portfolio (MPMBPE), the Abidjan Autonomous District (DAA), and the Employers federation of road transport companies (*Haut Conseil du Patronnat des Entreprises de Transports Routiers de Cote d'Ivoire* – HCPETR-CI). Since many of these bodies are already cooperating actively under the AUMP, the GEF project will benefit strongly from already established structures and work relationships.

The coordination body's role is to review and discuss policy proposals from a strategic perspective and to ensure that positions and recommendations of all stakeholders are heard and considered. It will provide overall guidance for the development of the national e-mobility strategy for urban public transport to add concrete targets and action items to the Draft Roadmap for Sustainable Transport in CI. It will ensure that deliverables developed under the GEF E-Mobility project will be considered by relevant stakeholders. To increase gender parity, the PMU will ask the Ministries and other invited agencies to nominate male and female representatives. The objective is to reach at least 30% female members in the coordination body.

Expected deliverables:

D 1.1.1 Inter-ministerial workshop to kick-off the project and to outline the policy coordination process and work plan

D 1.1.2 Preparation of a statement of cooperation (incl. shared goal, definition of processes, roles and responsibilities), submission to coordination body for adoption.

D 1.1.3 Quarterly coordination body meetings

D 1.1.4 Preparation of final report incl. post project action plan to implement the national e-mobility strategy for urban public transport (supporting the implementation of the Draft Roadmap for Sustainable Transport in CI) and submission for adoption

D 1.1.5. Report on best practices and lessons learned from the GEF project on accelerating the introduction of low-carbon electric mobility in Côte d'Ivoire (*to be shared with the Global E-mobility Project*)

- **Output 1.2: A joint national strategy to promote low-carbon e-mobility in urban public transport is submitted for adoption.**

Activities leading to this output will leverage on the Government's ambition to finalize the Road Map for Sustainable Mobility in Côte d'Ivoire (of which there currently is the draft version already mentioned above published in 2019). A detailed strategy and concrete short- to long-term scenarios and targets for the electrification of public transport will be developed to substantiate the Draft Road Map and amend existing urban transport development plans such as the Urban Transport Master Plan for Greater Abidjan (SDUGA). The strategy will be drafted by a team of national and international experts in close coordination with the Ministries and/or authorities. The draft strategy will be promoted and discussed in the meetings of the coordination body. The strategy will be interlinked with possible amendments to the National Renewable Energy Action Plan (PANER) and related Output 4.1. The strategy will consider and include action items to reduce gender-based inequalities with regards to equal access to and safe utilization of public transportation, women's participation in decision-making processes, and investing in women's skills and capacities in the new e-mobility industry.

Since the strategy will to a great extent be informed by results of various other project activities, the Project Management Unit (PMU) will ensure that results will be disseminated accordingly and integrated in the definition of the strategy. Furthermore, the PMU together with the team of experts will ensure that draft resolutions for the e-mobility strategy are readily available in meetings of the e-mobility coordination body.

Expected deliverables:

D 1.2.1 Set-up of a national strategy development team (comprising national policymakers, relevant stakeholders and an international e-mobility policy expert).

D 1.2.2 Workshop on national e-mobility strategy.

D 1.2.3 Collection and consolidation of transport and energy sector data including vehicle fleet and current policy frameworks.

D 1.2.4 Draft a gender sensitive national e-mobility strategy, including action plan.

D 1.2.5 Final gender sensitive national e-mobility strategy submitted for adoption.

- **Output 1.3: Governmental and private sector actors are trained on the benefits of e-mobility through the Global E-mobility Programme, outreach activities to inform decision makers throughout CI on project results.**

With very few exceptions, e-mobility is a novel technology in Côte d'Ivoire. Thus, comprehensive knowledge about the technology, its requirements and benefits are still limited among decision-makers. This project will build knowledge and know-how among key stakeholders (e.g. government representatives, public transport operators, banks and other private sector stakeholders, transport sector experts) by inviting them to participate in events of the Africa Support & Investment Platform and the Subregional Working Group as well as the E-Mobility Global Programme. The objective is to enable stakeholders to support the various project activities and take informed decisions on the introduction of electric public transportation. Other objectives are to facilitate South-South cooperation and to create links and facilitate professional exchange between country representatives, manufacturers and financiers.

To inform local decision-makers in other cities and communes/suburbs of Abidjan (which do not benefit from the electric pilot fleet) about the results of and lessons learned from the project, outreach events such as presentation meetings or small workshops will be carried out.

The PMU will be responsible for nominating participants for trainings, meeting and events offered by the Global Programme in close coordination with MINEDD, MOT, MPEER and UNEP. PMU will also ensure that at least 30% of participants in the offered events are female.

Expected deliverables:

- D 1.3.1 Participation in launch of the Africa Support and Investment Platform.
- D 1.3.2 Participation in first regional e-mobility training.
- D 1.3.3 Participation in first regional training on e-buses.
- D 1.3.4 Participation in first meeting on e-mobility financing/marketplace.
- D 1.3.5 Participation in second meeting of the Africa Support and Investment Platform.
- D 1.3.6 Participation in second regional training on e-buses.
- D 1.3.7 Participation in second meeting on e-mobility financing/marketplace.
- D 1.3.8 Participation in third meeting of the Africa Support and Investment Platform.
- D 1.3.9 Participation in replication event.
- D 1.3.10 Implementation of outreach events for decision-makers in other cities and communes/suburbs of Abidjan.
- D 1.3.11 Review of all capacity building events, based on evaluation forms.

Component 2: Short term barrier removal through feasibility analyses, demonstration of electric vehicles and know-how development for a wider introduction of electric mobility in Côte d'Ivoire

This component addresses the awareness, knowledge and capacity barrier through enabling the roll-out of up to 250 electric vehicles (comprising passenger cars and minibuses) as part of taxi fleets in Abidjan. Purchase of EVs by taxi fleet operators will be enabled by the provision of targeted financing, which is leveraged as part of a mechanism through the AUMP (executed by MOT/DGTTC and AMUGA). This component is furthermore directly addressing the root cause of the aging and inefficient vehicle fleet by incentivizing fleet renewal and introduction of clean and efficient electric vehicles. It furthermore addresses the increasing demand for mobility services by development strategic planning documents for the further improvement of public transportation alongside the introduction of the electric BRT financed by the World Bank. Finally, this component addresses the necessity to plan and provide for a basic charging infrastructure primarily for use by e-taxis and e-minibuses.

The outputs 2.1, 2.2 and 2.3 of this component will be fully co-finance through the AUMP and executed by the MOT/DGTTC/AMUGA, while outputs 2.4, 2.5 and 2.6 will be funded by the GEF and co-executed by the MOT/DGTTC and MINEDD, under the technical leadership of the MOT/DGTTC.

This component will first identify technically and economically feasible opportunities for electrifying urban public transport modes in Abidjan. Based on these analyses, the investment of public transport enterprises in a pilot EV fleet will be supported. Drivers and mechanics will be trained to ensure the smooth, efficient and safe operation of the new fleet.

To prepare for the introduction of EVs in Abidjan, a charging infrastructure installation plan (incl. the assessment of potentially required grid reinforcement investment needs) for the pilot fleet and for an e-mobility development scenario until 2030 will be set up. Furthermore, a performance monitoring scheme will be implemented to collect EV operation data and use it as a basis for optimizing EV operations and showcasing the viability of the technology. The development of an electrification investment strategy for SOTRA buses complements this component.

Outcome 2: Demonstrations provide evidence of technical, financial and environmental sustainability of EVs and enable public and private sector stakeholders to plan for the scale-up of low-carbon electric mobility in Côte d'Ivoire.

Outputs:

- **Output 2.1: A feasibility study on technical/economic opportunities for the electrification of public transport modes serving feeder lines along the Yopougon-Bingerville BRT corridor is conducted. [co-financed by AUMP]**

This output will be implemented by AMUGA / MOT and funded through the AUMP. The objective of this output is to conduct a feasibility study to 1.) identify electric vehicles that are viable alternatives to existing taxis and minibuses; and 2.) to develop economically viable business cases for these alternatives. The analysis includes electric vehicle supply equipment (EVSE).

The technical analysis will assess the availability of adequate electric vehicles for use as taxis and minibuses. It will also present specifications of the necessary charging infrastructure for the identified EV types. The economic analysis will apply investment appraisal techniques to identify business cases for electric taxis and minibuses that are economically more attractive to private fleet operators. The economic analysis will include the scrapping premiums available through CI's fleet renewal fund FDTR and determine an appropriate level for the electrification bonus, which will be made available to the FDTR through the AUMP. In addition, other monetary incentives such as indirect subsidies through tax breaks or customs duty exemptions/reductions will be assessed. (Note that VAT reductions and customs duty exemptions are already available to transport enterprises, but so far only for conventional vehicles.) Operational costs incentives (e.g. through differentiated electricity tariffs for EV charging) will be part of the analysis. The economic analysis will also include the assessment of charging infrastructure investment needs. Assessment of subsidy levels and financing will be modeled in close cooperation with the fleet renewal fund FDTR, the ministries in charge (i.e. MEF, MPMBPE, MOT), and local commercial banks.

The feasibility study will be the basis for the support to the investment into the pilot fleet of e-taxis and e-minibuses under Output 2.2. Results will also inform activities under Outputs 3.1 (Fiscal/financial incentive framework definition) and 4.2 (Electricity tariff setting).

This Output will also benefit from the Global Thematic Working Groups on light-duty and heavy-duty vehicles: These Working Groups can be consulted through the Africa Support and Investment Platforms to i) identify available technical options for EVs and charging infrastructure, ii) obtain input on best practice methodologies for feasibility analyses, iii) retrieve information about capital expenses, EV and charging infrastructure operation costs, and iv) integrate best practices in electric public transport business modeling and financial incentive design.

Specific deliverables will be defined in the AUMP.

- **Output 2.2: A pilot fleet of electric taxis and minibuses is introduced as part of a World Bank funded fleet renewal mechanism including an EV bonus and a Risk Sharing Facility to support EV investments by public transport enterprises. [co-financed by AUMP]**

This output will be implemented by AMUGA / MOT and funded through the AUMP. CI's fleet renewal fund FDTR already offers commercial fleet operators a scrapping premium for obsolete vehicles. This premium was fixed at a rate that allows for purchasing new vehicles with a combustion engine. This incentive is insufficient to purchase EVs, thus there is no example where an obsolete vehicle was replaced by an electric vehicle when using this premium. The objective of this output is to leverage private sector investment in electric taxis and minibuses through an adequate financing mechanism including an EV bonus and a Risk Sharing Facility to support EV investments. Based on the results of the feasibility study for electric taxis and minibuses (Output 2.1), the scrapping premium will be complemented by an electrification bonus offered through the AUMP, which will be integrated into the FDTR. Both financial incentives will be further enhanced through the AUMP by the establishment of a first loss guarantee to cover a risk-sharing facility (RSF) that will be set up by the IFC in cooperation with commercial bank partners. The objective of the RSF is to motivate commercial banks to offer affordable loans to private public transport operators to modernize their fleet and to introduce EVs.

The procedures for the renewal of obsolete vehicles through the FDTR are defined in the 'Manual on the renewal procedures of obsolete vehicles (*Manuel de renouvellement des véhicules vétustes*)' published in March 2019 by the MOT. It defines inter alia eligibility criteria for transport enterprises, the role of the FDTR and the renewal process itself. This manual so far only covers conventional vehicles. Therefore, the manual will be reviewed to consider specifics of e-mobility, and to integrate electrification bonus. It will also include some minimum technical standards such as the existence of an onboard diagnosis system to facilitate the monitoring of the vehicles of the pilot fleet (see Output 2.4). Furthermore, FDTR staff will be trained on specifics of e-mobility in the context of the FDTR so that it can successfully sensitize fleet operators for the subject, support the credit request preparation process for EVs (incl. EVSE) appropriately, or to verify the capability of fleet operators to introduce EVs. Once the scrapping and electrification premium are in place and the FDTR Manual is reviewed, the investment opportunity will be promoted by the FDTR to fleet operators and commercial banks. This output aims at the introduction of 200 electric taxis and 50 electric minibuses. These private sector investments will be incentivized through electrification bonuses using a budget of up to US\$ 5 million, co-financed by the MOT through the AUMP. Note that the FDTR is not limited to Abidjan but accessible nationwide, including the electrification premium. This will allow other cities to also embark electric public transport. To raise awareness of this opportunity, the GEF project will include decision-makers from other cities in its activities as well and link up with them if investment in electric public transport modes materializes to exchange on lessons learned and results.

Specific deliverables will be defined in the AUMP.

- **Output 2.3: Drivers and mechanics that will operate electric vehicles and electric vehicle supply equipment (EVSE) are trained on specifics of electric mobility. [co-financed by AUMP]**

This output will be implemented by AMUGA / MOT and funded through the AUMP. This output will support the professionalization of drivers and mechanics with regards to the specifics of electric mobility. First, e-mobility specific training modules (incl. training material) will be developed. These training modules will become part of the skills development package of the AUMP that will support the professionalization of drivers, mechanics and entrepreneurs in the informal transport sector. To anchor the know-how in the country, training-of-trainer courses will be carried out to establish a pool of local trainers who are qualified to carry out the EV/EVSE operation and maintenance/repair training units.

The Employers Federation of Road Transport Companies (HCPETR-CI) as well as the Ivorian Society for the Technical Control of Automobiles (SICTA) are suggested to be key partners in the context of the driver and mechanics trainings.

Only very few women in CI are currently occupying driver or mechanics jobs. The gender-sensitization of the training programs under the AUMP will help reduce gender stereotypes that affect women's self-efficacy and interest in engaging in professional roles in the public transport sector. To open new employment opportunities, training opportunities will be actively promoted to women to motivate them to participate in these trainings.

This output will be implemented by the AUMP.

Specific deliverables will be defined in the AUMP.

- **Output 2.4: A system to monitor the operation of the electric pilot fleet is established, data is collected and analyzed; findings and lessons learned are disseminated to support the broader introduction of e-mobility.**

This output will be implemented under the overall responsibility of MINEDD and funded by the GEF. The objective of this output is twofold: First, to use EV operation monitoring to help optimizing EV operation and solve potential problems. Second, to use the gathered data to demonstrate the technical and economic viability of the technology.

Modern vehicles are typically equipped with onboard diagnosis systems for monitoring a vehicle's systems (e.g. battery charging state, charging rates, battery temperature, malfunctions etc.). Additional fleet monitoring systems allow for vehicle tracking, monitoring of driver behavior, accident detection, etc. These systems deliver valuable data that can be used for optimizing operation (e.g. charging schemes, fuel consumption reduction, reduction of maintenance cost through early warning) but also for evaluating the effects of this project, for instance, on actual GHG reductions. The project will seek to ensure that electric taxis and minibuses that are purchased through the FDTR (Output 2.2) are readily equipped with onboard diagnosis systems and that they allow for data extraction. Operations monitoring would not be complete without monitoring other aspects such as maintenance and economic performance. For maintenance and repair, a logbook will be prepared in which the respective activities but also encountered problems can be logged. To assess economic performance, fleet operators will be asked to regularly provide statistics on costs and revenues associated with the operation of EVs to the extent possible.

During the monitoring phase, all collected data will be analyzed in pre-defined intervals and identified problems will be extracted. Findings and recommendations will be communicated to fleet operators, in writing and through personal communication supporting the implementation of corrective actions. Finally, the data will be used to cross-check assumptions made in the technical and economic feasibility studies and to communicate successes and good practice as well as lessons learned to stakeholders in Côte d'Ivoire and the E-Mobility Global Programme.

The E-Mobility Global Programme will support these activities by providing relevant technical expertise on monitoring systems and offering advice if systematic problems during EV exploitation are observed.

Expected deliverables:

D 2.4.1 Set-up of a technical e-mobility team, comprising national stakeholders (especially representatives from fleet operators, technically oriented government agencies) and an international expert (also for other technical outputs).

D 2.4.2 Development of a concept to monitor technical and economic performance data.

D 2.4.3 Quarterly collection of EV monitoring data.

D 2.4.4 Analysis of monitoring data, reporting of findings and recommendations to fleet operators and PMU.

D 2.4.5 Preparation of two monitoring summary reports, incl. publishable section for dissemination.

- **Output 2.5: An electrification investment plan for SOTRA feeder-line buses is developed and submitted for adoption.**

This output will be implemented under the overall responsibility of MINEDD and funded by the GEF. After years of stagnation, Abidjan's public bus operator SOTRA has recently entered a path of substantial growth and fleet modernization to increase access to affordable public transportation. 450 new buses, of which 50 are fueled with Compressed Natural Gas (CNG), have been put into operation in 2019^[47], 400 more diesel and 50 CNG buses were ordered at the end of 2019^[48]. SOTRA's objective is to systematically renew its rolling stock and increase its fleet to 2,000 vehicles by 2030. SOTRA has no electric buses yet but is in principal open to test the technology. Thus, there is a window of opportunity to introduce electric buses as low-carbon alternative. Based on a technical and economic pre-feasibility study, the objective of this output is to develop an investment strategy for e-buses and EVSE within the SOTRA fleet, which is ready for adoption.

Expected deliverables:

D 2.5.1 Preparation of a pre-feasibility study for the electrification of SOTRA buses, incl. drafting of electrification scenarios.

D 2.5.2 Consultation meeting(s) with SOTRA representatives and experts to discuss and promote SOTRA electrification scenarios.

D 2.5.3 Drafting of an electrification investment strategy for SOTRA buses is developed and submission for adoption.

- **Output 2.6: A charging infrastructure installation plan for large-scale introduction of EVs in Abidjan's public transport is developed.**

This output will be implemented under the overall responsibility of MINEDD and funded by the GEF. Depending on the timing of the charging process and the associated power load caused by EVs as well as the chosen charging technologies, changes in required peak generation^[49] and distribution capacity patterns might emerge. Based on the target to cover about 10% of transport energy with electricity in 2030 (as proposed in the draft Road Map for Sustainable Transport) or any other target proposed by the e-mobility coordination body, a charging infrastructure development plan for electric mobility in Abidjan will be developed and the effects on the distribution grid and generation capacity will be studied. If grid constraints are identified, measures to optimize charging to minimize peak loads on the distribution grid are proposed alongside potentially remaining grid reinforcement needs. Investment requirements for both the charging infrastructure itself and potential distribution grid and generation capacity reinforcement will be presented in an e-mobility charging infrastructure investment plan for Abidjan.

Important partners for charging installation planning are the MPEER and, grid developer CI-ENERGIEs and grid operator CIE. As some charging infrastructure will be installed in public space, the Ministry of Construction, Housing, Sanitation and Urban Planning (MCLAU) as well as the Autonomous District of Abidjan (DAA) and affected Communal Governments will be consulted accordingly.

Expected deliverables:

D 2.6.1 Set-up of a renewables and grid integration team, comprising national energy sector stakeholders (incl. government agencies, public utilities, potentially independent power producers) and an international expert (also for other outputs).

D 2.6.2 Study on charging and distribution grid infrastructure investment needs for the large-scale introduction of EVs.

D 2.6.3 Workshop to present and discuss the results of the charging infrastructure and distribution grid development study.

D 2.6.4 Finalization of an infrastructure development investment plan for Abidjan until 2030 and submission to national coordination body for adoption.

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

This component addresses the policy framework barrier by developing adequate proposals to incentivize the uptake of e-mobility through fiscal and regulatory measures addressing both the transport and the power sector. It furthermore addresses the lack of charging infrastructure by developing technical regulations and standards, which is a prerequisite for charging infrastructure development.

All outputs under this component will be funded by the GEF and will be co-executed by the MOT/DGTTC and the MINEDD, under the technical leadership of MOT/DGTTC.

This project component seeks to implement the enabling conditions for the broad and long-term deployment of EVs in urban public transport. It will build upon the institutional framework provided by Component 1 as well as the feasibility analyses and the lessons learned during the introduction of the electric demonstration fleet under Component 2. It is expected to establish the financial, regulatory and operational conditions for EV to be introduced in public urban transport nationwide. Although the demonstration of e-mobility focuses on public transportation fleets in Abidjan, all regulation or policies will be developed on the national level, contributing to mainstreaming of electric mobility throughout CI.

Outcome 3: Government of Côte d'Ivoire adopts financial incentives and technical standards to promote investments in low-carbon electric mobility in public transport.

Outputs:

- **Output 3.1: Fiscal policies and regulation are developed and submitted for adoption.**

This Output builds upon the results of Outputs 2.1 and 2.2, where an economically viable financial support scheme for EVs in public transport is proposed and elements of this support scheme (i.e. scrapping premium and electrification bonus) are implemented through the FDTR. The objective of this output is to prepare and propose regulations (or their reform) required to render the purchase and use of electric taxis, minibuses

and buses more competitive than conventional vehicles. The proposals will include financial incentives (e.g. potentially required adjustment of vehicle import taxation, import taxation for EVSE and preferential electricity pricing) but also the leveraging of other fiscal budgets to refinance the financial incentives (e.g. earmarked taxes that disincentivize the use of GHG intensive/polluting technology).

The respective regulations will be drafted and promoted via face-to-face meetings with the ministries in charge (i.e. the MEF, the MPMBPE and the MOT), reviewed by the e-mobility coordination body and submitted for adoption to relevant ministries. Options for preferential electricity pricing will be explored in cooperation with the MPEER, ANARE-CI (i.e. the national authority in charge of proposing electricity tariffs) and the MEF under consideration of the results of Output 4.2 (under this Output, a tariff scheme is explored that links renewable power production with off-takers from the transport sector).

Expected deliverables:

D 3.1.1 Set-up of a policy team, comprising national stakeholders (especially from government agencies responsible for fiscal policies and electricity tariff setting) and the international e-mobility policy expert.

D 3.1.2 Consultation meetings/workshops with government agencies and experts to develop favorable fiscal policies/regulation.

D 3.1.3 Preparation of a tax reform proposal and submission for adoption.

D 3.1.4 Preparation of proposal on preferential electricity tariffs for e-mobility and submission for adoption.

- **Output 3.2: Technical regulations and standards for EVs and charging infrastructure are developed and submitted for adoption.**

The definition of technical e-mobility standards is an important prerequisite to avoid the existence of different and potential technically incompatible or even unsafe vehicle and charging station combinations. Based on the technical feasibility study (Output 2.1), requirements for the identified possible EV types and proven EV and EVSE technical standards will first be compiled and a detailed regulation gap analysis will be carried out. Technical regulations include, inter alia, grid connection and operation rules, payment standards for charging stations, charging interface (socket) standards, or electrical safety standards for both EVs and charging stations. With regards to charging infrastructure specifications, this Output will build upon specifications defined under the AUMP for the pilot fleet, complement them, if needed, and ensure that the new rules are officially published.

For public transport modes, especially buses and minibuses, the physical design of the vehicles' passenger compartment plays an important role when it comes to accessibility for physically impaired persons or safe traveling of children, women or vulnerable persons. The project will thus also propose standards for minibuses and buses that adhere to international best practice standards for barrier-free access and passenger safety.

Based on this, technical regulations and related standards will be drafted. The new technical regulations will apply to all relevant electric vehicles such as private cars and other commercial vehicles, which are similar to the vehicles being investigated under the above mentioned outputs in order to mainstream e-mobility already at the early stages of market introduction.

With regards to general vehicle regulations on vehicle safety, environmental protection, energy efficiency etc. the project will adhere to internationally agreed standards as defined, for instance, by the UNECE World Forum for Harmonization of Vehicle Regulations (WP.29).

Vehicle-related regulations will be elaborated in close coordination with the MOT and the Ivorian Society for the Technical Control of Automobiles SICTA. EVSE-related regulation will be elaborated in cooperation with the MPEER, the National Authority for the Regulation of the Electricity Sector in Côte d'Ivoire (ANARE-CI) and grid operator CI-ENERGIES.

The Global Electric Mobility Programme will provide substantial input to these activities by providing information and exchange opportunities on tested international regulation and standards and supporting their adoption to the local situation.

Expected deliverables:

D 3.2.1 Consultation meetings/workshops with government agencies and experts to develop technical regulations/standards.

D 3.2.2 Preparation of draft technical regulations/standards package and submission for adoption.

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

This component addresses the lack of sustainable e-mobility planning and battery end-of-life regulation.

All outputs under this components will be funded by the GEF and executed by the MINEDD.

This component seeks to ensure long-term environmental sustainability by promoting the development of renewable energies as power source for e-mobility and developing an initial regulatory framework for the collection and management of used EV batteries. Furthermore, the project aims to develop regulation for collection of used EV batteries for re-use, recycling and safe disposal in close collaboration with the Economic Community of West African States (ECOWAS). As a supranational entity, ECOWAS, through the Council of Ministers, enacts regulations and directives which are binding to all member states. It will therefore be evaluated whether draft regulation for the collection of used EV batteries for re-use, recycling and safe disposal can be developed at the sub-regional ECOWAS level. Therefore, the GEF 7 E-Mobility Project in Cote d'Ivoire will closely collaborate with the two other GEF funded e-mobility projects in the region, which are Sierra Leone and Togo. All three national e-mobility projects in the ECOWAS region have similar outputs on battery end-of-life regulation, and it will be evaluated whether resources can be pooled to trigger policy development at the sub-regional level.

Outcome 4: Government of Côte d'Ivoire endorses recommendations on renewable energy integration and an amendment on e-waste regulations to support long-term environmental sustainability of low-carbon electric mobility .

Outputs:

- **Output 4.1: The interlinkage between power generation and vehicle charging is investigated to align national RE capacity targets with e-mobility projections.**

CI aims at generating 42% of its electric energy based on renewable sources of energy and the Draft Roadmap for Sustainable Mobility in CI proposes a quota of at least 30% renewable electricity as energy source for transportation by 2050. Substantial e-mobility growth requires the addition of new power generating capacities, incl. renewable energies. Activities under this output will promote the parallel development of e-mobility and renewable power capacities. First, additional power generation needs will be estimated, based on the e-mobility deployment targets defined under Output 1.2. Then, feasible options to use renewable energy sources to cover the required additional capacities will be identified and quantified. Results will inform the preparation of a proposal for amending the National Renewable Action Plan (PANER). The MPEER and MINEDD – which share the mandate to develop renewable policies in CI – will be important partners to provide information about planned RE projects and guidance on the RE potential in the country.

Once drafted, the proposed amendments will be presented to the national e-Mobility coordination body and, if needed, revised and submitted for adoption to the MPEER and MINEDD.

Expected deliverables:

D 4.1.1 Preparation of a study to estimate additional renewable power generation needs for low-carbon e-mobility.

D 4.1.2 Workshop on the results of the renewable power development study.

D 4.1.3 Preparation of a proposal for amendments to the National Renewable Action Plan and submission for adoption.

- **Output 4.2: Recommendations on a direct offtake tariffication scheme for the integration of RE generation and EV charging are prepared.**

E-mobility holds the opportunity to create immediate demand for renewable electricity and thus a potential income source for RE projects. In CI, electricity tariffs are proposed by the regulator ANARE-CI and fixed by the MPEER together with the MEF. The state-owned utility CI-ENERGIES monitors and manages the purchase, transport and movement of electrical energy and develops RE projects. CI-ENERGIES also acts as the central off-taker for renewable electricity at fixed tariffs. Together with these agencies, options for a tariff scheme that allows for the direct offtake of renewable energy by the public transport sector will be explored. The objective is to propose a tariffication scheme that supports the alignment of supply and demand and that is tailored to the needs of renewable power producers and EV fleet operators. This activity will be closely coordinated with the economic feasibility analyses carried out under Output 2.1. and informs tariffication regulations development under Output 3.1. To set attractive tariffs for renewable power generation (especially using solar, small hydropower and biomass), developers of such projects will be consulted accordingly. The activities will be guided by the e-mobility coordination body.

Expected deliverables:

D 4.2.1 Preparation of a study to estimate supply patterns and levelized costs of electricity from renewable sources (e.g. from solar, small hydropower and biomass) and demand patterns by EV fleet operators. The study identifies viable electricity price thresholds in order to develop a proposal for renewable electricity tariffs specifically for the transport sector, results will be used within the power tariff-setting process under Output 3.1.

D 4.2.2 Workshop with power and transport sector representatives (incl. government agencies and private sector) to discuss the results of the short study on renewable electricity pricing for the transport sector.

- **Output 4.3: An amendment to existing e-waste regulation for EV batteries is prepared and submitted for adoption; business models for the re-use of batteries are promoted.**

Under this Output, a proposal for an amendment to the existing e-waste regulation for EV battery waste management will be elaborated, based on global best practices for their re-use, recycling and/or safe disposal, including a review of take back obligations as a matter of extended producer responsibility. This activity will be carried out in close coordination with the MINEDD as well as SGS Renovo, an international firm which is appointed by the GoCI to implement CI's e-waste management system together with its partner African Recycling Society (SAR).

After reaching the end of their useful lifetime, EV batteries often still can be reused in other less-demanding applications, for instance as stationary energy storage devices. As second-life usage significantly reduces the ecological footprint of batteries as opposed to recycling or disposal, options for their re-use within CI will be explored in a study. Based on existing global experience, the study will make recommendations on how re-using old EV batteries can be realized in CI through local refurbishing. Possible business models and an action plan for implementation will be proposed. The results of this study will be presented to the e-mobility coordination body and in particular MPEER, CI-ENERGIES and power sector stakeholders as well as start-up hubs in a workshop to narrow down results to concrete actions. These activities will be supported by the Global Thematic Working Group on battery life cycle issues.

It will be evaluated whether more comprehensive battery end-of-life regulation can be developed at the sub-regional level within the ECOWAS framework. For this purpose, close collaboration with the other two national e-mobility projects funded by the GEF in the region, which are Sierra Leone and Togo, is envisaged.

Expected deliverables:

D 4.3.1 Set-up of battery re-use and recycling team, comprising national stakeholders (incl. MINEDD and subordinate agencies responsible for waste treatment, waste management/battery refurbishment companies, power sector) and an international battery/recycling expert, and evaluation of possible policy development at sub-regional level within the ECOWAS framework

D 4.3.2 Consultation meetings with government agencies and responsible e-waste agencies to develop amendment to e-waste regulation

D 4.3.3 Preparation of draft amendment to e-waste regulation for collection, recycling and disposal of used EV batteries and submission for adoption.

D 4.3.4 Preparation of a study on second-life use of EV batteries incl. draft action plan to implement battery refurbishment/ re-use

D 4.3.5 Workshop on business opportunities for the re-use of EV batteries.

D 4.3.6 Finalization of the action plan to implement battery refurbishment and re-use and submission for adoption.

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

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

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

Côte d'Ivoire has already taken some first initiatives towards electrifying public transport. Proof of this are the plan to introduce an electrified mass transit system (i.e. the new BRT line on the Yopougon-Bingerville corridor and Metro Line 1) as well as the proposal in the draft Road Map for Sustainable Transport to cover 30% of transport energy demand with electricity by 2050. However, without this project it is unlikely for Côte d'Ivoire to formulate and introduce a comprehensive policy framework that would facilitate a large-scale introduction of low-carbon and environmentally friendly electric transportation in various public transport sub-sectors. This is due to a lacking framework for the coordination of government agencies and authorities, limited awareness of and access to knowledge and know-how about the new technology among public and private public transport and power sector stakeholders and missing access to financing sources. Without the interventions of the project, the build-up of knowledge and institutional capacities is anticipated to take much longer and effective introduction of e-mobility would be delayed.

The combination of the financial vigor embedded in the AUMP and the political power of the GEF project, implemented by UNEP and co-executed by MINEDD and MOT, leverages the competitive advantages of all project stakeholders. Together with the expert support provided by the Global E-Mobility Programme, Abidjan will be one of the first Sub-Sahara African cities to integrate e-mobility at scale in public transportation and to bring new electric vehicles to the local car dealerships.

The activities of the proposed project will be built on the baseline activities and support knowledge and know-how transfer, awareness and acceptance raising among transport and power sector stakeholders and the development of an integrated policy environment in which e-mobility can thrive. Then, the project will identify EVs that are viable alternatives to existing taxis and minibuses, develop economically viable business cases incl. a financial incentive scheme (e.g. electrification bonuses, tax breaks) for these alternatives and facilitate access to financing opportunities for investments in electric public transportation modes. Activities will furthermore push for accelerating the development of renewable energy sources by and thus leverage additional environmental benefits. Environmental sustainability will be strengthened further by promoting the re-use of EV batteries in other applications and amending existing electronic waste regulation for the management of used EV batteries.

The GoCI will provide co-financing for the implementation of all project components, especially by contributing to the development of the e-mobility strategy and the policy framework for electric public transport (incl. the transport and power sector as well as environmental policies). Co-financing by the MOT through the World Bank finance AUMP to electrify minibuses and taxis serving feeder lines to the BRT system will facilitate the actual implementation of electric public transport modes in the artisanal transport sector on a pilot basis, thus closing a considerable funding gap. UNEP will offer support through coordination with Global Programme activities and exchange with other country projects where best practices are produced.

Furthermore, incremental costs are minimized because knowledge products are not prepared for CI only, but for various countries through the Global Programme. Stakeholders will benefit from participating in Africa Support & Investment Platform, Sub-Regional Working Group and Global Programme events.

6) Global environmental benefits (GEFTF)

The project will result in total direct emission savings of 82,574 tCO₂ of which 18,741 tCO₂ are realized through the investment in 200 electric taxis and 50 electric minibuses, calculated over the lifetime of these EVs, and 63,833 tCO₂ are expected to stem from replication. Indirect CO₂ emission savings stemming from the introduction of policies and regulations are estimated to account for 148,944 tCO₂ and are based on a top-

down approach applied to the public transport sector in Abidjan, applying a causality factor of 60%.

Results of the top-down modelling approach for the alternative scenario including vehicle sales and vehicle stocks as well as energy use and well-to-wheel emissions by technology are presented in Figure 8 to Figure 10.

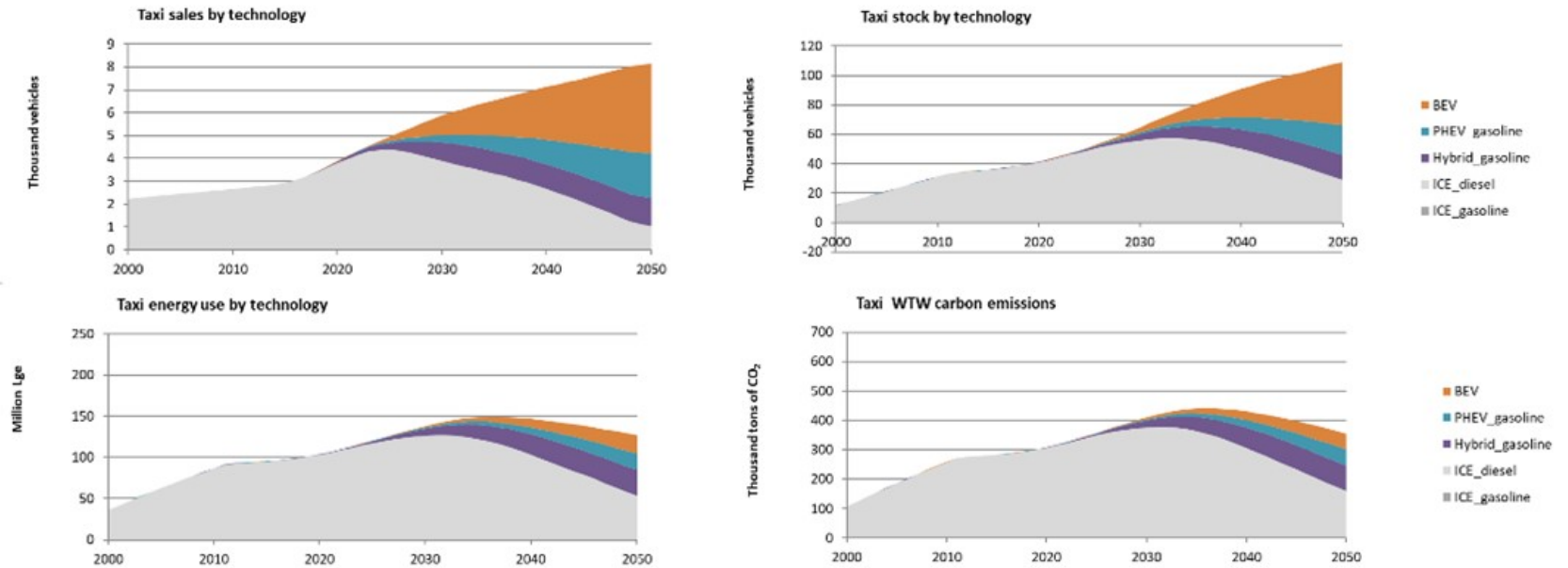


Figure 8 Alternative top-down scenarios for taxis (woroworos)

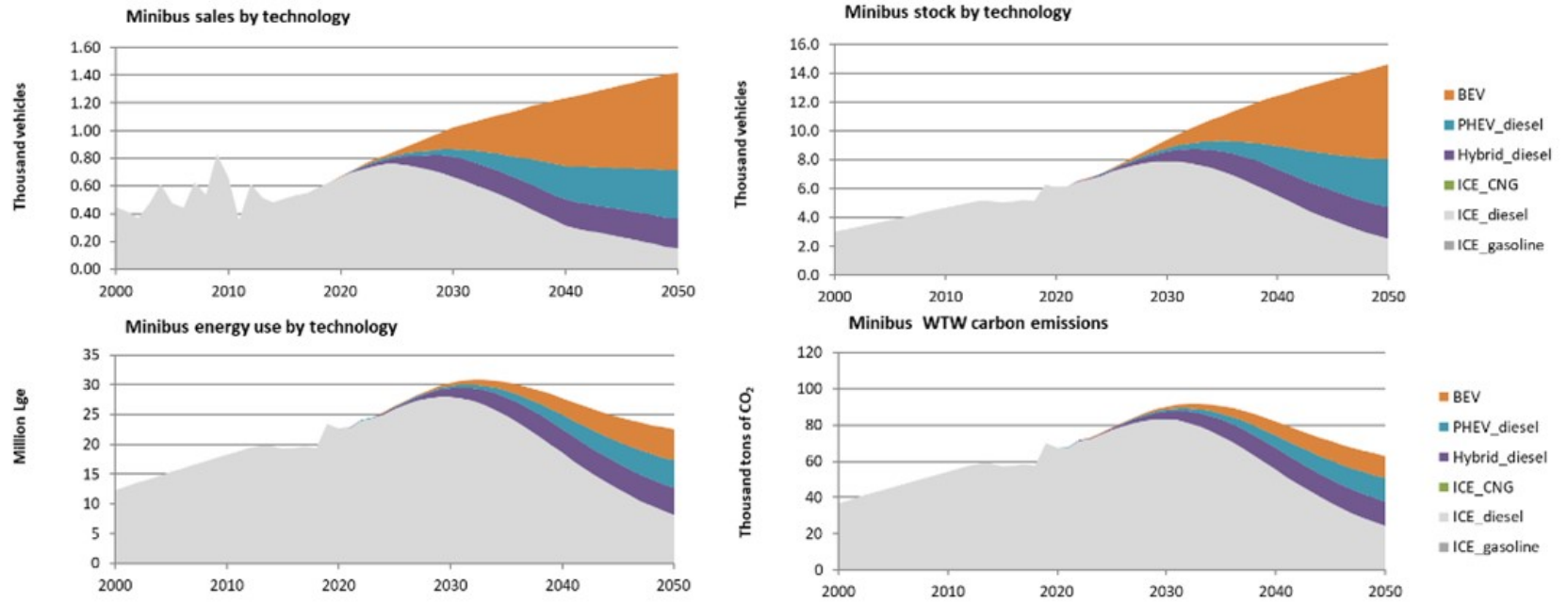


Figure 9 alternative top-down scenario for minibuses (gbakas)

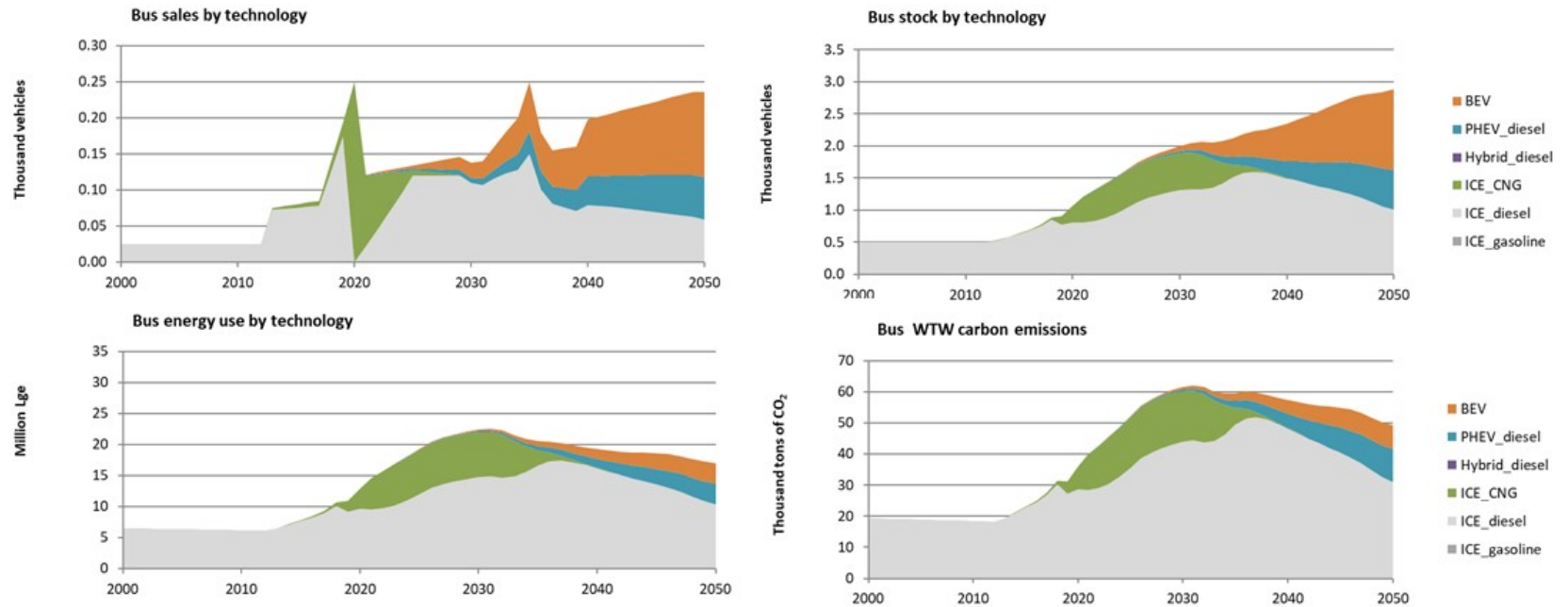


Figure 10 Alternative top-down scenarios for sotra bus fleet

Under the alternative scenario, an aggressive roll-out of electric vehicles is assumed, reaching sales of 5% EVs by 2025, 20% by 2030 and 75% by 2050 for taxis, minibuses and buses. Compared to the baseline scenario, energy use and well-to-wheel emissions are substantially reduced, see Table 3.

Table 3 Energy use and emission under the alternative scenario

	TTW Energy use [million Lge]			WTW carbon dioxide emissions [thousand tons]		
	2019	2030	2050	2019	2030	2050
Taxis	102	138	129	302	410	355
Minibuses	23	30	23	70	90	63
SOTRA buses	11	22	17	31	62	49
Total	136	191	169	404	562	467

Under the alternative scenario, the three public transport modes are expected to mitigate a cumulative amount of 336 thousand tons of CO₂ by 2036[50]. Of this top-down value taking into consideration the entire public transportation fleet in Abidjan, total direct emissions reductions are estimated to amount to about 83 thousand tons of CO₂. Of this 83 thousand tons of CO₂ 18.7 thousand tons are stemming from the demonstrated 200 taxis and 50 minibuses, while the remainder of the emission reductions (63.8 thousand tons of CO₂) are assumed to derive from replication throughout CI.

Indirect emission reductions are estimated to account for 148.9 thousand tons of CO₂ and are based on the top-down approach taking into account level III causality factors (60%) for taxis and buses and a level V (100%) causality factor from the SOTRA bus fleet. Details of these impact estimations are described in Annex M – Estimates of Direct and Consequential Greenhouse Gas Emission Reductions. The GoCI has proposed to partly electrify the transport sector in its draft Road Map for Sustainable Transport in CI. But since there is no concrete electrification strategy and policies yet, the project contribution can be considered substantial as it will work towards the implementation-oriented development of electrification policies in the public transport sector.

Total top down emission mitigation potential, tCO2	335,636
Thereof	
Total direct emissions mitigation 2021 - 2036, tCO2	82,574
Direct emission mitigation from demonstration assets 2021 - 2036, tCO2	18,741
Secondary direct emission mitigation from replication 2021 - 2036, tCO2	63,833
Indirect emission mitigation from policy 2021 -2036, tCO2	148,944
Total project related emissions reductions, tCO2	231,519

7) Innovativeness, sustainability and potential for scaling up

Innovativeness:

The introduction of electric vehicles will be a new form of transportation that will bring about systematic innovation in technology, transport sector related businesses, policymaking, environment and society.

While some Sub-Saharan African countries (e.g. Rwanda, Tanzania, Kenya or Uganda) are already promoting electric mobility, the introduction of electric public transport modes per se will be an innovation for Côte d'Ivoire as only a negligible number of vehicles are fueled by electricity in the country today.

E-mobility will call for a variety of new business types. Since operating own energy supply infrastructure is not the core business of fleet operators, it is very likely that specialized businesses will take care of this. This will lead to the creation of new companies that will act as intermediaries between the energy and transport sector or open new business opportunities for utilities. The establishment of assembly lines for EVs holds another possibility for new businesses and jobs. In East Africa, for instance, Kiira Motors (Uganda) and Volkswagen (Rwanda) started assembling electric cars in 2019.^[51] It is noteworthy that Côte d'Ivoire has already recognized the opportunity to create new automotive jobs and – although not always in e-mobility – has initiated vehicle assembly projects. For instance, SOTRA Industries, a subsidiary of the public transport operator SOTRA, is already assembling minibuses in partnership with IVECO in Abidjan.

E-mobility crosses sectoral boundaries, especially those of the transport and power sectors. The planned integration of renewable energies in the charging of electric vehicles can be expected to lead to further innovation. While energy from large hydroelectric power stations is already quite established in Côte d'Ivoire (15% of the country's power mix in 2017^[52]), especially utility-scale on-grid solar and bioenergy-based power plants are either under development or under construction (for more details, refer to section ii.2)). It is the explicit approach of this project to develop e-mobility and the renewable power sectors in a mutually beneficial way by ideally creating direct demand for renewable electricity through e-mobility and increasing national RE deployment targets.

Innovation is not only limited to power generation. Charging infrastructure will have to be integrated into the distribution grid without destabilizing power supply. By studying the effects of e-mobility on the distribution grid, new knowledge will be built up. Furthermore, innovative regulation for EVSE connection to and operation on the distribution grid will be introduced. In the longer term, e-mobility even offers the possibility to stabilize power supply by using vehicle batteries as a fully functioning component of smart grids (vehicle-to-grid technology).

Innovation also comes with higher safety standards and the physical design of the new vehicles with regards to accessibility for all. The project will ensure that newly introduced EVs adhere to international best practice safety standards and facilitate barrier-free access to public transport for elderly, physically impaired persons, persons traveling with children etc.

The need for the re-use, recycling and disposal of batteries will also lead to further innovation in waste management. So far, there are very few activities of formal recycling or safe disposal of electronic waste in Côte d'Ivoire. In 2015, an estimated 1.500 tons of e-waste were produced in Abidjan, with its major share ending up in landfills and informal recovery points due to the lack of formal collecting and recycling facilities.^[53] E-waste management regulation has been put into force in 2018. The *Décret no. 2017-217* regulates the management of waste from electrical and electronic devices but does not yet cover used EV batteries. Amendments to the regulatory framework and capacity building activities for the management of used EV batteries that will be proposed and carried out by the e-mobility project will improve the current status quo. As second-life usage significantly reduces the ecological footprint of batteries as opposed to recycling or disposal, the project will also make recommendations on how re-using old EV batteries can be realized in CI through local refurbishing, potentially opening up new business opportunities.

Innovative schemes to finance electric mobility will be developed within the programme, combining, for example, commercial and concessional ways of funding. Innovative contracts in the context of the operation of an electrical fleet like lease-back agreements, lease-purchase agreements, vehicle rental to operators, battery lease contracts and options for Public Private Partnerships will be investigated in the project to find the most viable and feasible arrangements to reliably operate electric public transport modes.

The new vehicle technology will also lead to the acquisition and application of new knowledge in CI's transport-related businesses: garages and their car mechanics will adopt new knowledge and skills in the repair and maintenance of EVs, utilities will learn to plan and operate charging stations, banks will learn about the new technology to design suitable new finance products, etc.

Sustainability of market development after the project:

The sustainability of the project will be ensured through the activities of the Support and Investment Platform for Africa that will be hosted by UNEP. Activities will include participation of financiers (such as development banks), EV and EVSE manufacturers and project support agencies and aim at the development of follow-up projects to scale-up the e-mobility market in CI beyond the duration of the GEF programme. The lead of the platform for Africa, UNEP, has committed to continue leading and supporting this platform after the finalization of the GEF programme. The GEF programme will be closely linked to existing e-mobility initiatives of UNEP and the IEA, which will continue after completion of the GEF programme.

The GEF project is designed to offer a coherent set of activities to create a framework in CI in which e-mobility can thrive after the project has ended. The following measures will ensure the sustainability of the project:

- The new links that will have been established through the national e-mobility coordination body will remain functional because its work and specifically the preparation of a joint national strategy to promote e-mobility will be closely linked to the development of the ongoing Road Map for Sustainable Mobility in Côte d'Ivoire.
- By actively involving all relevant stakeholders at all stages of the process of the development of new policies, business models, finance schemes, etc. will create a strong sense of ownership and build up capacities that will motivate and empower them to continue working on the subject of e-mobility.
- Various capacity building and training measures for policymakers and other decision-makers in the public transport sector ensures that knowledge about e-mobility will be anchored in the country.
- The training-of-trainer measures in preparation of the training measures for drivers and car mechanics ensures that the required know-how is transferred into the country so that respective trainings can be continued independently of the project.
- The pilot investment in electric taxis and/or minibuses will be proof for the technical and economic viability of the new technology. This will create trust in and acceptance of the technology.
- Development banks have been included in the Global Programme, the World Bank and commercial banks will be actively involved in the project in CI. Finance schemes will be developed in close cooperation with them and tested in the Pilot Investment. The successful demonstration of the bankable e-mobility pilot investment will create trust in the finance sector and attract funding for future investments.
- The scrapping and electrification premium for the pilot investment in taxis and/or minibuses will be integrated into the existing scrapping premium scheme handled by the fleet renewal fund FDTR. This will lay the foundation for the continuation of the payment of such premiums after the end of the project.
- Knowledge management will actively seek opportunities to transfer knowledge into the country and ensure that lessons learned, and experience made in CI are also fed back to the Support and Investment Platform for Africa to ensure South-South knowledge exchange. (See also section 8. Knowledge Management).

Potential for scaling-up:

This project focuses on the electrification of public transport modes serving lines feeding Abidjan's BRT system. This encompasses the artisanal public transport segment and the segment served by SOTRA. It is estimated that there are currently about 5,500 minibuses (Gbakas), 12,000 municipal taxis (Wôro-wôros) and 11,300 other taxis operated in the artisanal transport sector. In 2019, SOTRA operated about 1,200 buses and aims to increase its fleet to 2,000 buses by 2030. Given the economic evolution in the country and the expected population growth in Abidjan, demand for public transport will grow accordingly. Thus, the technical potential to electrify only the public transport segment is considerable. This project will lay the foundation to electrify taxis, minibuses and buses. It will support private sector investment in 200 electric taxis and 50 electric minibuses and propose measures to enable investment in new electric buses for SOTRA. Through this project, a policy and financial framework will be in place that is likely to trigger additional investment in the electrification of these public transport sub-sectors. By demonstrating the feasibility of low-carbon e-mobility through the pilot investment, by raising awareness and acceptance among key stakeholders and by identifying financing sources and establishing a sound framework, it is likely that some fleet operators will at least partly switch to e-mobility, incl. SOTRA. In particular, the studies undertaken as part of the GEF project to electrify the SOTRA bus fleet will feed into the AUMP and will enable decision takers to consider the purchase of electric buses to achieve the fleet target of 2,000 units. Although this project focuses on Abidjan with its pilot

investment, project results such as regulation and incentives (e.g. the electrification bonus available through the FTDR or fiscal incentives) will apply to CI in general. Thus, this project together with the AUMP will automatically create investment opportunities in other cities of CI. To raise awareness of these opportunities, the project will also carry out outreach events for decision-makers in other cities.

[1] Source: World Bank. 2019. Project Appraisal Document for the Abidjan Urban Mobility Project.

[2] Source: <https://data.worldbank.org>

[3] Source: World Bank. 2019. Que la route soit bonne : Améliorer la mobilité urbaine à Abidjan.

[4] Source: IEA. 2019. CO₂ emissions from fuel combustion – Highlights

[5] Source: Ministère des Transports. 2019. Elaboration de la Feuille de Route Mobilité Durable en Côte d'Ivoire – Rapport Diagnostique.

[6] Source: <https://www.iea.org/data-and-statistics>

[7] Source: International Energy Agency. 2019. CO₂ emissions from fuel combustion – Highlights.

[8] Source: Ministère des Transports. 2019. Projet feuille de route pour une mobilité durable en Côte d'Ivoire: « Emergence – bas carbone dans les transports ». Version provisoire.

[9] Urban planning, low-carbon energy provision, improving the efficiency of transport modes and transport systems, reduction of unnecessary trips, solutions adapted for rural areas and secondary cities, construction and adaptation of infrastructure, effectivity and efficiency of regulatory and financial instruments, road safety, optimization of logistics, and education.

[10] Source: World Bank. 2019. Project Appraisal Document for the Abidjan Urban Mobility Project.

[11] Source: <https://ci.ambafrance.org/Remise-des-cles-de-450-bus-Iveco-a>

[12] Source: Ministry of Construction, Housing, Sanitation and Urban Development. 2015. Urban Transport Master Plan for Greater Abidjan.

[13] Source: Ministry of Construction, Housing, Sanitation and Urban Development. 2015. Urban Transport Master Plan for Greater Abidjan.

[14] Source: <http://www.transports.gouv.ci/actualites/transport-urbain-450-nouveaux-autobus-acquis-la-sotra-se-met-au-gaz-1155-bus-fin-2018>

[15] Source: https://www.volkswagen.com/en/news/2019/12/scania_abidjan.html

[16] A share of electricity use of 10% implies an EV share of between 20% to 30% of the total running fleet, given the much higher efficiency of EVs.

[17] Source: Ministère du Pétrole et de l'Énergie (MPE). 2016. Plan d'Actions National des Énergies Renouvelables. Period 2016-2020/2030.

[18] Source: Own calculation based on the methodology for the estimation of GHG reductions and energy saving benefits as described in Annex M.

[19] Source: Ministry of Construction, Housing, Sanitation and Urban Development. 2015. Urban Transport Master Plan for Greater Abidjan.

[20] Source: Ministère des Transports. 2019. Projet Feuille de Route pour une Mobilité Durable en Côte d'Ivoire – Version provisoire.

[21] Source: Ministère des Transports. 2019. Projet Feuille de Route pour une Mobilité Durable en Côte d'Ivoire – Version provisoire.

[22] Source: World Bank. 2019. Project Appraisal Document for the Abidjan Urban Mobility Project.

[23] Ca. US\$ 86 as per 12 June 2020.

- [24] *Taxe de salubrité et de protection de l'environnement - Art. 1137 du Code général des Impôts* (Health and environmental protection tax – Article 1137 of the General Tax Code)
- [25] Source: Ministère du Pétrole et de l'Énergie (MPE). 2016. Plan d'Actions National des Énergies Renouvelables. Period 2016-2020/2030.
- [26] Source: World Bank. 2016. Project Appraisal Document for the Transport Sector Modernization and Corridor Trade Facilitation Project.
- [27] Source: <https://projects.worldbank.org/en/projects-operations/project-detail/P159697>
- [28] Source: <http://www.lemetrodabidjan.ci/> and <https://www.railway-technology.com/projects/abidjan-metro-ivory-coast/>
- [29] Source: <https://www.afdb.org>
- [30] Source: <https://www.thegef.org/project/stabilizing-ghg-emissions-road-transport-through-doubling-global-vehicle-fuel-economy>
- [31] Source: https://open.unido.org/api/documents/4957166/download/SC-IAP_Cote%20dIvoire_AfDB_UNIDO%20CEO%20Endorsement_13.09.2016.pdf
- [32] Source: https://www.cinergies.ci/wp-content/themes/mxp_base_theme/mxp_theme/assets/solaire-tableau.jpg
- [33] Source: <https://www.ccilci.org/revue-de-presse/financial-afrik/7313-la-kfw-octroie-un-pret-pour-la-centrale-solaire-de-boundiali>
- [34] Source: <https://cotedivoirenews.info/cote-divoire-bientot-une-centrale-solaire-construite-a-boundiali/>
- [35] Source: <https://www.scalingsolar.org/>
- [36] Source: https://www.cinergies.ci/wp-content/themes/mxp_base_theme/mxp_theme/assets/solaire-tableau.jpg
- [37] Source: http://www.energie.gouv.ci/actualites/details_actualite/energies-renouvelables-la-cte-d-ivoire-va-abriter-la-plus-grande-centrale-biomasse-d-afrique-de-l-ouest297
- [38] Source: <https://iclg.com/alb/8678-franco-dutch-funding-for-west-african-agro-industrial-project>
- [39] Source: <http://www.iheci-spv.com/en/financial-close-of-singrobo-ahouaty-hydropower-project/>
- [40] Source: <https://www.hydroreview.com/2017/11/03/112-mw-gribo-popoli-hydropower-project-in-western-africa-moving-forward/#gref>
- [41] Source: https://ec.europa.eu/europeaid/sites/devco/files/ad-3-1-aap-part-2-ivory-coast-2016_fr.pdf
- [42] Source: <https://www.greenclimate.fund/sites/default/files/document/funding-proposal-fp095-afd-multiple-countries.pdf>
- [43] Source: World Bank. 2019. Project Appraisal Document for the Abidjan Urban Mobility Project.
- [44] Source: World Bank. 2019. Project Appraisal Document for the Abidjan Urban Mobility Project.
- [45] This fleet renewal is focused on more efficient conventional vehicles, but the AUMP also intends to use funds for bonuses for electric vehicles.
- [46] Ca. US\$ 1,723 and US\$ 5,169, respectively (exchange rate as per 12 June 2020).
- [47] Source: <http://www.transports.gouv.ci>
- [48] Source: Information obtained from SOTRA during the scoping mission and Scania website: www.scania.com.
- [49] Effects on power generation are dealt with in Output 4.1. in the context of RE deployment planning.
- [50] The time-frame of post project emissions is determined by the technical lifetime of the assets purchased as part of the project (15 years for EVs) and the time of procurement (2021).

[51] Source: The EastAfrican (2019). Uganda and Rwanda lead East Africa in switch to electric cars. <https://www.theeastafrican.co.ke/business/Uganda-and-Rwanda-lead-East-Africa-in-switch-to-electric-cars-/2560-5368192-4lx2rz/index.html>

[52] Source: <https://www.iea.org/data-and-statistics?country=COTEIVOIRE&fuel=Energy%20supply&indicator=Electricity%20generation%20by%20source>

[53] Source: University of Leeds (2020). E-Waste Implementation Toolkit – Abidjan District. <https://ewit.site/city/abidjan/>

1b. Project Map and Coordinates

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

The project intervention primarily aims at enabling pilot investments in electric public transport modes in Abidjan (5° 20' 43" N; 4° 1' 27" W, cf. Figure 10). At the same time, newly created national regulation or best practices created in Abidjan are likely to stimulate the uptake of e-mobility in other cities of Côte d'Ivoire as well. To raise awareness of new investment opportunities, the project will also carry out outreach events for decision-makers in other cities. In addition, the goal to accelerate renewable power deployment may trigger investments throughout the country.



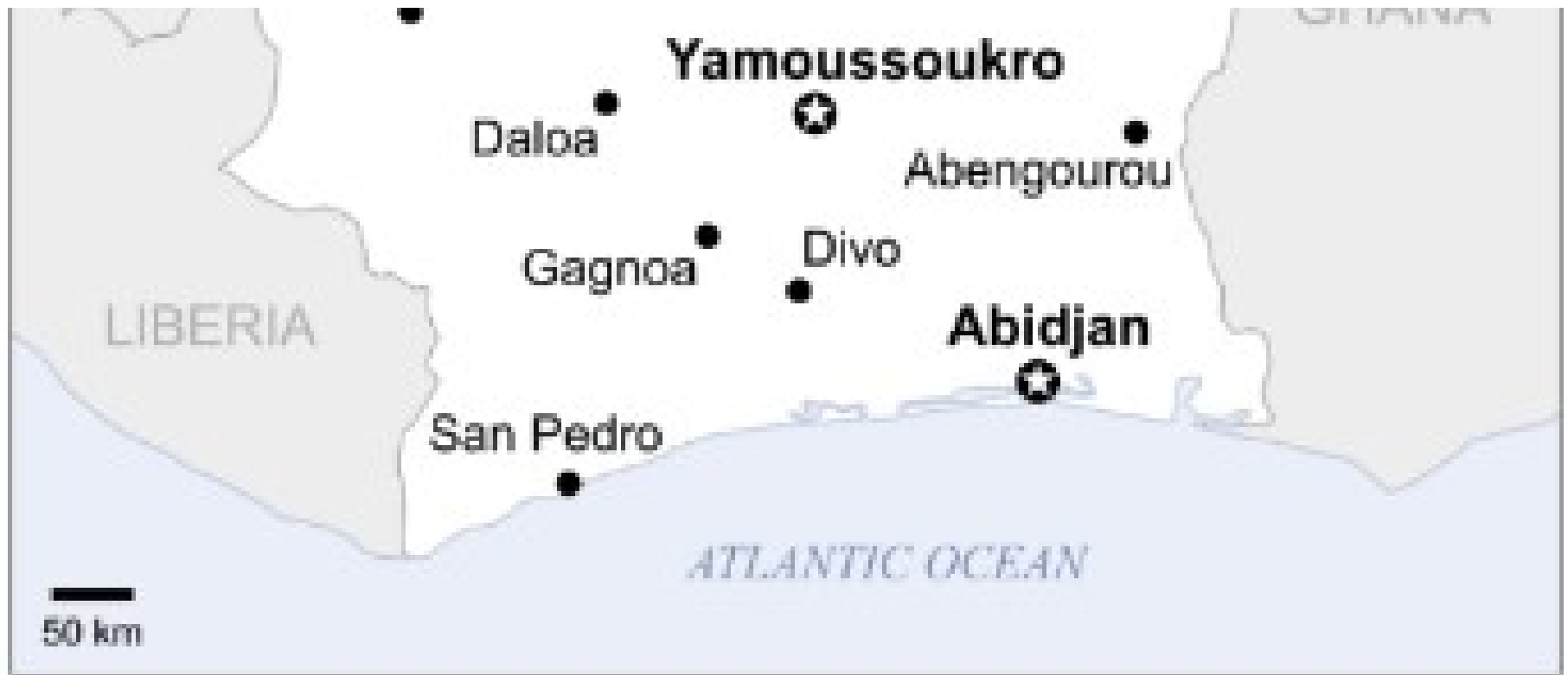


Figure 10: Map of Côte d'Ivoire^[1]

^[1] Source: Wikimedia, © BY OCHA, CC BY 3.0

1c. Child Project?

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

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

The Global Programme is based on the following four components:

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

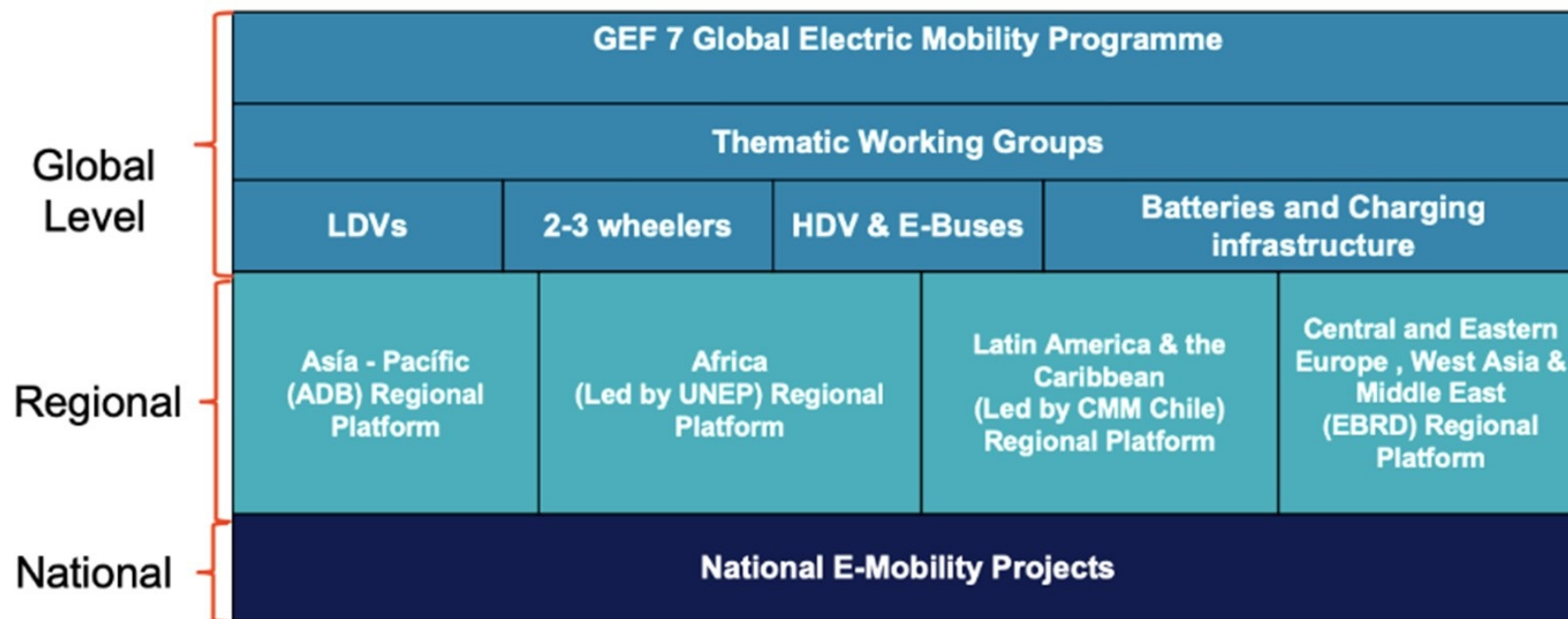
The Global Programme has put in place the monitoring framework below to track progress both globally and at the level of the country child projects. 12 indicators have been designed for this purpose: 6 relying on global level information (highlighted in blue) and 6 relying on country level information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

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

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

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

At the global level, a steering committee integrated by the International Energy Agency (IEA) and the United Nations Environment Programme will coordinate and monitor the implementation and the outputs of the GEF 7 Electric Mobility Programme. On technical gaps, four thematic working groups at the global level will support the rapid introduction of electric mobility in GEF recipient countries. These working groups will generate universal knowledge products that contain best practices, factsheets, interactive tools and guidance, as well as experiences from countries that have advanced their e-mobility market. The working groups will be integrated by representatives from the global programme regional platforms, GEF-7 countries, IEA, vehicle manufacturers, utilities, researchers and the civil society. The governance structure is presented in the figure below. For Africa, the regional platform will be led by UNEP.



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

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

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

- The creation of a community of practice for the GEF 7 regional countries;
- Facilitation of knowledge transfer between countries, and regions, especially those with common characteristics like SIDS;
- The creation of thematic groups in light-duty vehicles (LDVs), 2-3 wheelers, and buses at regional level;
- A marketplace between countries, technology providers and financial institutions;
- Help desk for technical assistance to GEF 7 African countries;
- Personalized assistance from international experts in electric mobility;
- Generation of training sessions and workshops.

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

2. Stakeholders

Please provide the Stakeholder Engagement Plan or equivalent assessment.

Stakeholder main group	Stakeholder name	Existing activities with potential to be leveraged	Content engagement, contributions to the project (identified by Component)
Government	<p>Ministry of Environment and Sustainable Development (<i>Ministère de l'Environnement et du Développement Durable – MINEDD</i>) and the associated Government Agency Ivorian Antipollution Centre (<i>Centre Ivoirien Antipollution – CIAPOL</i>)</p>	<p>MINEDD is responsible for the development and enforcement of climate change and air pollution policies, the promotion of green technologies, renewable energy policies (in cooperation with the MPEER, see below) and the oversight and monitoring of electronic/electrical waste management. MINEDD has been the Executing Agency of the Global Fuel Economy Initiative (GFEI) project that supported vehicle fuel economy activities and contributed to the development of the regulation to limit the maximum age of imported vehicles.</p> <p>CIAPOL is an independent public administrative body under MINEDD and responsible for combatting environmental pollution.</p>	<p>General project contribution:</p> <p>MINEDD will be the Executing Agency of the project and host the Project Management Unit which will be responsible for the overall management of the project (incl. day-to-day implementation, financial management, project monitoring, liaising of project partners, communication and dissemination of results, coordination with GEF Agency UNEP. MINEDD will also chair the Project Steering Committee. MINEDD will, as Thematic Focal Point, lead the implementation of all deliverables of Components (Comp.) 1 and 4.</p> <p>Specific project contribution</p> <p><u>Comp. 1:</u> As Executing Agency, MINEDD will play a crucial role gathering all relevant stakeholders and moderating the process of the various complementary project activities of agencies and other key stakeholders. MINEDD will be member of and co-chair the national Coordination Body. It will support the development of a national e-mobility strategy and moderate the respective negotiations.</p> <p><u>Comp. 4:</u> MINEDD supports renewable power target adjustment together with MPEER, supports the GHG and air pollutant emission reduction study and feeds its re</p>

			<p>emissions reduction study and results results into the e-mobility strategy development process, uses them to inform UNFC CC processes, makes proposals for setting up a national system for implementing Certificates of Origin for renewable electricity and supports the preparation of the certification of EV battery waste management.</p>
Government	<p>Ministry of Transport (<i>Ministère des Transports – MOT</i>) and its Directorate of Road Transport and Mobility (<i>Direction Générale des Transports Terrestres et de la Circulation -DGTTTC</i>).</p>	<p>The MOT is the responsible authority in CI for transport-related matters. The MOT supervises the main transport sector agencies (e.g. SICTA, FDTR) and public transport sector operators (e.g. SOTRA). As lead agency, it implements various (public) transport sector projects (e.g. the East-West BRT corridor through AUMP, the Metro Line 1 project, or the fleet renewal through PAMOSET).</p> <p>Activities related to terrestrial transport are typically carried out through the DGTTTC.</p> <p>MOT technically manages the Road Transport Development Fund (FDTR) which is organized as a state-owned public company (see below).</p>	<p>General project contribution</p> <p>MOT is the main co-financing partner. It will execute Outputs 2.1-2.3 of this project (Feasibility study, supporting investment by public transport fleet operators in fleet electrification, training of drivers and mechanics on e-mobility). Furthermore, MOT/DGTTTC will, as Thematic Focal Point (i.e. Component Leader), support and oversee the implementation of all deliverables of Comp. 2 and 3. As Implementing Agency of the AUMP, it is the key partner coordinating the project's activities with those of the AUMP. MOT/DGTTTC is also an important link to other transport sector baseline investments and main transport sector agencies like SICTA, FDTR or SOTRA. MOT will be member of and co-chair the national Coordination Body.</p> <p>Specific project contribution</p> <p><u>Comp. 1:</u> MOT will be member of and co-chair the national Coordination Body. It will support the development of a national e-mobility strategy.</p> <p><u>Comp. 2 and 3:</u> MOT will contribute to the</p>

			se components by co-financing/executing Outputs 2.1-2.3 (see above) and overseeing the implementation of all remaining Outputs of these two components.
Government	Road Transport Development Fund (<i>Fond de Développement du Transport Routier – FDTR</i>)	The FDTR is organized as a state-owned public company with industrial and commercial functions and aims at renewing 50,000 public transit vehicles by 2020. It offers credits to road transport enterprises, for instance taxi or freight companies. It is managed technically by the MOT and financially by the Ministry for the Economy and Finances as well as the Ministry for Budget (MPMBPE, see below).	The FDTR is the agency through which the scrapping premium and electrification bonus will be channeled to public transport fleet enterprises. (Comp. 2)
Government	Greater Abidjan Urban Mobility Authority (<i>Autorité de la Mobilité Urbaine dans le Grand Abidjan – AMUGA</i>)	AMUGA is the administrative body which oversees improving urban transportation in the GAA. This institution, which was officially operationalized only recently (on 29 January 2020), is the authority that will be in charge of implementing the transport component of the SDUGA. The WB AUMP intends to transfer project management responsibility from DGTTC (see above) to AMUGA. At the time of the preparation of this proposal, this process was not yet finalized. AMUGA was officially operationalized on 29 January, 2020.	Once project management responsibility in the WB AUMP is transferred from DGTTC to AMUGA, AMUGA will play a key role in supporting the coordination of the proposed project's activities with those of the AUMP.
Government	Ministry of Petroleum, Energy and Renewable Energies (<i>Ministère du Pétrole, de l'Énergie et des Énergies Renouvelables – MPEER</i>)	MPEER defines and implements national policies for CI's energy sector, including hydrocarbons, electricity and renewable energies. Policies with regards to renewable energies are developed in coordination with MINEDD (see above). Through its Directorate of Planning and Statistics (<i>Direction de la Planification et de</i>	MPEER will play an important role in all aspects of the project dealing with the coupling of the transport with the power sector. Specifically, these are: i.) Contributing to the definition of the national inter-sectoral e-mobility strategy from the perspective of the power sector (Comp. 1); ii.) Support the review and potentially revision of po

		<p><i>e la Statistique</i>), it is in charge of designing and implementing sector studies, contributing to national development and investment planning, ensuring and monitoring sector investment planning, participating in the implementation of dedicated sector projects, defining sector development targets and strategies (such as the National Renewable Energy Action Plan 2016-2020/30), among other tasks. It is also launching calls for proposals for renewable energy projects to be implemented by independent power producers. Furthermore, it supervises the independent power utility and grid developer CI-ENERGIES (see below) as well as the ANARE-CI, the national authority regulating the electricity sector (see below).</p> <p>The development of the renewable power sector is carried out in cooperation with MINEDD.</p> <p>The MPEER, together with the Ministry of the Economy and Finance (see below), are also the Government agencies responsible for electricity tariff setting.</p>	<p>wer sector strategies, targets and policies because of e-mobility deployment (Comp. 2, 3 and 4); iii.) In its function to issue tenders for renewable energy projects and to set electricity tariffs, it would play a crucial role in the realization of renewable power projects and/or linking them to the transport sector through dedicated Power Purchase Agreements (which would also influence the definition of a Finance Scheme for electrified public transportation) (Comp. 2 and 4).</p> <p>MPEER will be member of the national coordination body. It will also link project activities to and ensure access to electricity regulator ANARE-CI and grid operator/power utility CI-ENERGIES (see below).</p>
<p>Government</p>	<p>National Authority for the Regulation of the Electricity Sector in Côte d'Ivoire (Autorité Nationale de Régulation du secteur de l'Electricité de Côte d'Ivoire – ANARE-CI)</p>	<p>ANARE-CI is monitoring the compliance with laws and regulations in the electricity sector. Its Directorate of Economic and Financial Studies controls the financial obligations between independent power producers and private concessionaires to the State. It proposes electricity tariffs to the Government. Furthermore, it controls and monitors technical regulations in the electricity sector and supports the resolution of disputes</p>	<p>ANARE-CI will support several activities: (i) The development of technical standards for grid connection and operation of charging stations (Comp. 2); (ii) The development of electricity sector-related policies and regulation linking the power to the transport sector (Component 3); (iii) Tariff-setting in potential Green Power Purchase Agreements for public transport operators, incl. advisory on the design of related financial flows (Component 4).</p>

		between electricity consumers, power producers and the state.	
Government	Ministry of Construction, Housing, Sanitation and Urban Planning (<i>Ministère de la Construction, du Logement, de l'Assainissement et de l'Urbanisme – MCLAU</i>)	The MCLAU defines and implements national policies on urban planning, land use planning, housing and the maintenance of public facilities and buildings. It was at the initiative of the MCLAU that the Urban Planning Master Plan SDUGA, which includes an important transport component, was developed and adopted. The proposed project will directly leverage the objective to realize an environmentally sound transportation system and indirectly the objectives to promote public transport use and an inter-modal, transit-oriented development. Besides SDUGA, Urban Master Plans in 30 secondary towns in Côte d'Ivoire were also developed through the MCLAU's initiative.	MCLAU will be member of the coordination body and will be consulted on all questions related to urban infrastructure planning (e.g. the setup of charging stations or public transport routing in the city) as well as the development of the national strategy to promote e-mobility in urban public transport. Furthermore, MCLAU will be an important channel through which project results can be disseminated to and introduced in other cities in CI.
Government	Ministry of Road Equipment and Maintenance (<i>Ministère de l'Équipement et de l'Entretien Routier – MEER</i>)	The MEER is responsible for implementing government policies in the area of road infrastructure.	MEER will be one of the key contact partners in charging infrastructure planning (Comp. 2).
Government	Ministry of the Economy and Finance (<i>Ministère de l'Économie et des Finances – MEF</i>)	MEF is the ministry responsible for implementing the Government's economic, financial and monetary policies. State-owned companies, e.g. in the energy and transport sectors, are funded through this ministry. The MEF, together with the MPEER (see above), are also the Government agencies responsible for electricity tariff setting.	MEF will play a crucial role in the analysis of existing finance and subsidy schemes in Abidjan's public transport sector (Comp. 2) and supporting the development of an adequate Financing Scheme for electrified public transport modes (Comp. 3). As the MEF also acts as intermediary to international and other financing sources, it will act as an important link to potential financing institutions (Comp. 3).

Government	Ministry attached to the Prime Minister, in charge of the Budget and the State Portfolio (<i>Ministère auprès du Premier Ministre, chargé du Budget et du Portefeuille de l'Etat – MPMBPE</i>)	The MPMBPE is responsible for taxation and customs through the Directorate-General for Taxation (<i>Direction Générale des Impôts – DGI</i>) and the Directorate-General of Customs (<i>Direction Générale des Douanes – DGD</i>), respectively. The Ministry is regulating the importation of vehicles (registration, taxes, duty, etc.).	Like the MEF (see above), the MPMBPE will play an important role in the analysis of existing finance and subsidy schemes in Abidjan's public transport sector (Comp. 2) and supporting the development of an adequate Financing Scheme for electrified public transport modes (Comp. 3). It is also the agency to authorize fiscal incentives through the DGI and exemptions from customs duties through the DGD for EVs and associated charging infrastructure.
Government	<i>Cellules genre</i> (Gender Units) within the Ministries	Gender Units (<i>cellules genre</i>) have been established in all sector Ministries to increase consideration of gender aspects in ministerial decision-making processes.	The project will liaise with these Gender Units and actively seek their participation and contributions during project implementation.
Financial institutions	World Bank	The WB is financing several closely interlinked urban transport sector initiatives: The Abidjan Urban Mobility Project (AUMP) which finances the implementation and operationalization of an all-electric BRT system, TA for integrating the BRT system into Abidjan's public transport network and fleet renewal in the informal public transport sector, among other things. (For more details, please refer to section 1b.) The WB, together with the GoCI, is co-financing the PAMOSSET project through which trucks will be renewed. The PAMOSSET is relevant to the proposed projects because the scrapping premium for obsolete taxis and minibuses will be managed through mechanisms that were initially defined by this project.	WB is the main financier of the AUMP implemented by the MOT. Through the AUMP, it will also be ensured that the electric taxis and minibuses are integrated appropriately into the feeder lines serving the new BRT system.
Financial institutions	Banks : There are	Banks and non-life insurance companies	Banks will contribute to the implementation

stitutions	<p>e about 27 banks in CI, the five biggest are : <i>Société Générale de Banques en CI (SGBCI), Ecobank CI, NSIA Banque CI, Banque Atlantique CI (BACI) and Société Ivoirienne de Banque (SIB).</i>[1]</p> <p>Non-life insurance companies: There are about 21 insurance companies in CI, the five biggest are:</p> <p>SAHAM Assurance, Allianz, SUNU Assurances IARD, Axa, NSIA and Atlantique.[2]</p>	<p>es are providing credits and insurance products to stakeholders (persons and/or companies).</p>	<p>on of Comp. 1 (Institutionalization of /Strategy-setting for low-carbon e-mobility) by providing data and contributing to the definition of the national inter-sectoral e-mobility strategy.</p> <p>Banks will also contribute in the implementation of Comp. 2 by participating in i) the economic feasibility study for the introduction of EVs in public transit and business model development, ii) the design of financing models for the introduction of electric taxis and minibuses under the WB AUMP and iii) the financing of EVs and EVSE.</p> <p>Banks will also play a key role as beneficiaries of a Risk Sharing Facility that will be introduced by the AUMP and thus financiers of EVs to public transport enterprises.</p> <p>Insurance companies will insure the operation of electric buses, minibuses and taxis. (Comp. 2)</p>
Municipalities	<p>Abidjan Autonomous District (<i>District Autonome d'Abidjan – DAA</i>) with its Directorate for Transport and Urban Mobility (<i>Direction des Transports et de la Mobilité Urbaine – DTMU</i>)</p>	<p>The DAA is one of 14 districts in CI and encompasses 10 municipalities. The DAA is headed by a District Governor who is appointed by the Head of State, the post of Mayor of Abidjan was replaced by that of the Governor in 2011.</p> <p>Transport Matters are dealt with under the DTMU. It regulates and authorizes of transport activities in Abidjan and is responsible for the organization and management of Abidjan's traffic.</p>	<p>The DTMU will represent the interests of the DAA as member of the Coordination body (Comp. 1). It is an important partner who can provide information about the organization of the public transport market on the context of the feasibility analyses and relevant regulation (Comp. 2). It will be consulted to ensure that public transport services introducing EVs in the project are authorized in line with existing city regulation.</p>
NGO/CSO	<p>Employers federation of road tra</p>	<p>The HCPETR-CI represents the interests of road transport enterprises in CI. In</p>	<p>The HCPETR-CI will represent the interests of road transport enterprises (Comp.</p>

	<p>transport companies</p> <p>(<i>Haut Conseil du Patronnat des Entreprises de Transports Routiers de Côte d'Ivoire – HCPETR-CI</i>)</p>	<p>partnership with authorities, it supports the development of regulation and the economic and technical further development of the sector. It offers trainings and consultancy (e.g. online guides) to road transport companies on regulatory, technical and business management aspects and keeps track of developments in the sector by keeping statistics on key indicators such as fuel and operation costs, tariffication of passenger transport, financing etc.</p>	<p>1). It also contributes to the project by i) providing information and data about the Ivorian transport sector and market to support the feasibility analyses and business modeling, ii) supporting the review of the policy framework, and iii) disseminating results to transport sector companies. (Comp. 2 and 3)</p>
Private sector	<p>Chamber of Commerce and Industry of Côte d'Ivoire</p> <p>(<i>Chambre de Commerce et d'Industrie de Côte d'Ivoire – CCI-CI</i>)</p>	<p>CCI-CI has been working on the development of e-mobility projects with a focus on manufacturing of EVs.</p>	<p>CCI-CI will contribute to the project in general by linking the project with private sector enterprises in Côte d'Ivoire.</p>
Private sector	<p>Companies operating in public transport:</p> <p>Abidjan Transport Company (<i>Société des Transports Abidjanais – SOTRA</i>), and minibuses (Gbaka) and Taxi operators</p>	<p>SOTRA is the public transport provider for Abidjan and its suburbs. The semi-public company operates buses as well as a water bus fleet on the lagoon of Abidjan. After some years of stagnation, SOTRA has now entered a path of considerable reform, renewal and growth. SOTRA plays a key role in the WB AUMP as bus operator that will serve feeder lines to mass transit lines (BRT and metro). To modernize Abidjan's bus fleet and increase access to public transport, the State of CI has in 2018 acquired a total of 450 new buses for SOTRA. To reduce emissions and air pollution, 50 of these new buses are using natural gas. Another agreement to deliver another</p>	<p>Public transport operators will play a central role in identifying technically and economically feasible opportunities to introduce EVs in its fleet and the definition of a respective financing scheme and investment plans. (Comp. 2 and 3). Operators will be a key addressee for capacity building measures. SOTRA and representatives of the taxi and minibus subsectors will be invited to be member in the coordination body and participate in the definition of the national strategy to promote e-mobility in public transport which would ideally include a strategy and targets for the electrification of Abidjan's public transport fleet (Comp. 1).</p>

		<p>r 400 diesel and 50 gas fueled buses has been signed at the end of 2019. SO TRA has no electric buses yet but is in principal open and interested in testing the technology and integrating them into its fleet. It is also noteworthy that SO TRA Industries, a subsidiary of the transport operator, is assembling small buses in Abidjan in partnership with IVECO.</p> <p>In the artisanal public transport sector, all minibuses and taxis are operated with fossil fuels so far. Especially the taxi sector is using funds of the FDTR to renew its fleet, no EVs have been introduced, though.</p>	
Private sector	Ivorian Electricity Company (<i>Compagnie Ivoirienne d'Electricité – CIE</i>)	CIE operates power generation facilities (large hydropower and thermal power plants) and the power transport and distribution grid owned by the State of CI, and sells, imports and exports electricity. It plays this role as concessionary of the State of CI. CIE is a private enterprise and part of the pan-African Erano Group. It was the first independent power producer in Côte d'Ivoire.	As grid operator, CIE will play a key role in EV charging infrastructure and associated potentially necessary distribution grid reinforcement planning (Comp. 2) as well as advisor in the review of renewable power capacity targets (Comp. 4). As operator of hydropower plants and electricity supplier, it is a candidate for the direct sales of renewable electricity to fleet operators (Comp. 4).
Private sector	Côte d'Ivoire Energies (CI-ENERGIES)	Côte d'Ivoire's state company CI-ENERGIES is responsible for managing the supply and demand of electrical energy, developing power generation capacity, incl. renewable energies, developing the transmission and distribution networks and managing financial flows in the electricity sector.	As state company which is responsible for developing renewable power capacities as well as the distribution grid, CI-ENERGIES will be a key partner in charging infrastructure charging planning (Comp. 2) and RE capacity development planning (Comp. 4).
Private sector	Independent Producers of Renewable Energy (IPRE)	CI is currently making progress in developing independent producers of renewable energy.	Independent producers of renewable energy will be a key partner in charging infrastructure charging planning (Comp. 2) and RE capacity development planning (Comp. 4).

	ducers of Renewable Energies	<p>Developing a policy framework which to incentivize investment in renewable energies, especially solar, small hydropower and biomass. With the support of international institutions, it is possible that first projects will be developed and implemented soon. Projects for larger-scale grid-tied renewable energy projects will be identified through tenders by the State of CI through the MPEER (see above). This project might present the opportunity to give renewable power projects some additional push as the transport sector could act as a direct off-taker of renewable electricity.</p>	<p>Companies are candidates for the direct sales of renewable electricity to fleet operators (Comp. 4). The project will observe market developments in the renewable power sector closely in cooperation with the MPEER and ANARE-CI.</p>
Private sector	<p>Car and bus manufacturers/ importers; Automobile industry association <i>Groupement Interprofessionnel Automobiles Matériels et Equipementiers – GIPAME</i></p>	<p>There are numerous companies importing and selling used and new fossil-fueled cars. Diesel and some gas fueled buses are imported directly for SOTRA by the GoCI from international suppliers like IVECO, Scania, Tata, Iran Khodro, Volvo etc.</p> <p>GIPAME represents the automobile industry, automobile equipment manufacturers and industries related to the transport sector, incl. finance institutions, in CI.</p>	<p>Automobile manufacturers that have EVs in their portfolio will contribute to the implementation of Comp. 2 and 3 by i) providing the vehicles for the electrical taxi and/or minibus fleet, ii) participating in trainings, workshops and/or meetings, iii) contributing to the technical/ economic feasibility analyses and the definition of possible business models, iv) supporting the review and update of the policy framework and v) help with potentially required trouble shooting during EV operation and maintenance. Wherever needed, manufacturers will also be consulted about required charging stations.</p> <p>GIPAME will contribute to the implementation of Comp. 1 by i) participating in the Coordination Body meetings and ii) supporting the development of the national e-mobility strategy. GIPAME will furthermore contribute to Comp. 2 and 3 by i) participating in the trainings/ workshops/ meeti</p>

			<p>participating in the trainings, workshops, meetings organized, ii) contributing market intelligence to the technical/ economic feasibility analyses and iii) supporting the review and update of the policy framework.</p> <p>GIPAME will generally contribute to the project by promoting the introduction of EVs and charging equipment to its members and actively liaising members with the project.</p>
Private sector	<p>Société générale de Surveillance – SGS Renovo and Société Africaine de Recyclage – SAR</p>	<p>SGS Renovo, an international control and certification company, is authorized by the State of CI for the control, handling and disposal of electronic waste and used tires. First, electronic and electrical devices which are imported into CI are registered through SGS Renovo, and second, the company also levies an environmental tax through which the Ivorian e-waste management system is financed. Finally, SGS is also in charge of the e-waste management system, incl. the establishment of e-waste collection centers and subsequent waste treatment. The latter is implemented by SGS Renovo's partner SAR. Used EV batteries is not yet defined as e-waste under this scheme.</p>	<p>SGS Renovo and SAR will be consulted during the development of e-waste management regulation and associated certification with respect to vehicle batteries. This activity and thus SGS/SAR will benefit from support from the Global Thematic Working Group on battery lifecycle issues. (Comp. 4)</p>
Private sector	<p>Ivorian Society for the Technical Control of Automobiles (<i>Société Ivoirienne de Contrôles Techniques Automobiles</i> – SICTA)</p>	<p>SICTA is the largest company in CI that inspects and certifies vehicles and has vast experience in the automobile industry. In its function, it ensures that vehicles meet safety and emission standards. SICTA is overseen by the MOT and a subsidiary of the SGS Group, seated in Geneva.</p>	<p>On the one hand, SICTA has an excellent insight into the country's overall vehicle fleet and its condition. Thus, SICTA is a crucial partner to support the project by providing information about the current rolling stock in the public transport sector and supporting the definition of technical standards for EVs (Comp. 2). On the other hand, it will – in its original function – be charged with the inspection and certificati</p>

			on of new EVs and thus be trained on the operation and maintenance of EVs. Furthermore, SICTA is a candidate to nominate staff for training of trainer activities under Comp. 2 aiming at the establishment of capacities for EV driver and mechanics trainings.
International organization	United Nations Entity for Gender Equality and the Empowerment of Women, (UN Women)	UN Women is the organization dedicated to gender equality and the empowerment of women. UN Women has offices in Abidjan.	During the scoping mission, UN Women representatives have signaled their willingness to support the project in gender related questions and will be consulted accordingly.
GEF Agency	United Nations Environment Programme (UNEP) - Sustainable Mobility Unit (SMU)	The UNEP SMU is the lead Executing Agency of the Global E-mobility project and is also leading the Africa Support and Investment Platform of the programme.	The project will benefit from the services and trainings offered by the Africa Support and Investment Platform. In addition, the SMU will be providing execution support to the project, as outlined in the OFP's letter in annex N-2.

[1] As of end 2018. Source: <https://www.kapitalafrik.com/2018/11/24/ranking-of-ivorian-banks/>

[2] As of 2018. Source: <https://www.atlas-mag.net/en/article/the-ivorian-insurance-market-in-2018-ranking-of-companies-and-turnover-per-class-of-business>

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.

Consultations of stakeholders in project execution

The main stakeholders will be represented in the project steering committee (PSC) which will have: i) to define the methodology approach to adopt for a successful project implementation; ii) to endorse TORs of project consultants, studies reports prepared by consultants and documents to be presented to workshops or endorsement meetings. The PSC will form the basis of the e-mobility coordination body and will ensure that policy proposals and regulatory schemes will be considered for adoption by the relevant institutions.

Thematic working groups will be established depending on the component of the project to deal with specific tasks in the project. On a specific thematic the groups will be technical adviser for the Project Management Unit, project consultants and project steering committee. Resource persons will be identified as member of the thematic working groups depending on the topics to be discussed.

The project will hold technical meetings for large discussion on a specific thematic when needed in the objective of consulting a large number of stakeholders.

Finally, national workshops will be held and so offer to stakeholders to endorse studies, reports and draft policies prepared by consultants or/and thematic working groups.

Furthermore, during the project inception phase, all relevant stakeholders will be consulted to refine details of the project design. During this process, special attention will be given to those stakeholder groups which could not yet be consulted or informed about the project during project preparation, also because the second preparatory mission to CI had to be cancelled due to the COVID-19 pandemic. These are, for instance, representatives from other cities, informal taxi and minibus operators, private sector enterprises (e.g. vehicle importers), independent renewable power producers, or educational institutes working on transport sector topics.

Dissemination of information among stakeholders

To keep all stakeholders informed, the project will use different means to communicate and disseminate results, experiences and lessons learned. It will be one of the main duties of the PMU to build up and maintain networks and strategic partnerships between stakeholders by facilitating and moderating a target-oriented exchange on the subject matter. Platforms for exchange are face-to-face meetings, workshops, online meetings, phone calls, depending on the tasks at hand (e.g. development tasks, decision-making, coordination, etc.).

Resource requirements throughout the project/program cycle to ensure proper and meaningful stakeholder engagement.

To ensure proper and meaningful stakeholder engagement the project will have to provide (to steering committee members, thematic working groups members, participants in meetings and workshops, etc.) travel fees and daily subsistence allocation (DSA).

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)

3. Gender Equality and Women's Empowerment

Provide the gender analysis or equivalent socio-economic assesment.

Gender Analysis:

The GoCI has ratified a number of international conventions related to the promotion of gender equality, including the

Convention on the Elimination of All Forms of Discrimination against Women (CEDAW) (ratified on 18 December 1995); the Convention on the Political Rights of Women (ratified on 6 September 1995); the ILO Convention No. 100 concerning Equal Remuneration for Men and Women Workers for Work of Equal Value (ratified on 5 May 1961). The country also has been involved and upholds key international and regional instruments related to the advancement of women, including the Beijing Declaration and Platform for Action; the Solemn Declaration on Gender Equality of the African Union (2004); the Copenhagen Declaration; the Millennium Development Goals (2000); the Resolutions of the 23rd Special Session of the UN General Assembly; and the African Charter on Human and Peoples' Rights (ratified on 6 January 1992).

The Constitution of 2016 affirms equality for all and prohibits all forms of discrimination based on sex in access to or exercise of employment, political, religious or philosophical opinions.

Although measures have been taken to reduce gender-based inequalities in Côte d'Ivoire, they persist in various spheres of life. According to the Global Gender Gap Index (GGGI)[1], the country in 2019 still ranked low at place 142 out of 153 measured countries. However, slight improvement from a value of 0.57 in 2010 to 0.61 in 2019[2] could be observed. The Index measures four areas of life: 1) Economic participation and opportunity; 2) Educational attainment; 3) Health and survival; and 4) Political empowerment.[3] Figure 12 shows how CI scored in 2019 in these four areas (the outer circle represents a score of 1, the inner circle 0. The blue line indicates the average of all measured 153 countries).

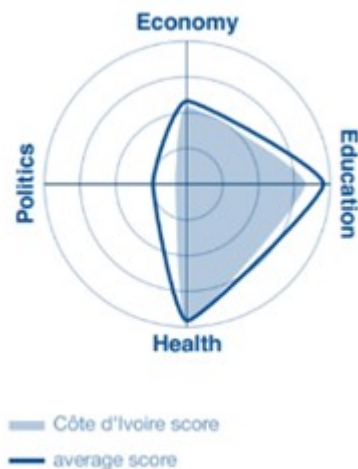


Figure 12: Global Gender Gap Index Côte d'Ivoire^[4]

The gender gap is most striking in Political Empowerment (score: 0.082). Specifically, only 11% of parliamentarians are female, women in ministerial positions make up 15% of all ministers. Furthermore, only about 16.7% of legislators, senior officials and managers in Côte d'Ivoire are female. To tackle the problem of female representation, the GoCI has passed the 'Law 2019-870 promoting the representation of women in elected assemblies'. It stipulates that ballot lists for the election of Deputies to the National Assembly, Senators, and Regional, District and Municipal Councillors must include at least 30% women. This project will use this quota as minimum target to be achieved when it comes to the composition of committees, participation in capacity building measures, etc. Furthermore, by Ministerial Order, Gender Units (*cellules genre*) have been established in all sector Ministries to increase consideration of gender aspects in ministerial decision-making processes. The project will liaise with these Gender Units and actively seek their participation during project implementation.

According to the GGGI, the labor force participation rate of women was 49.3% and 66.9% for men, but only 22.5% women occupied positions of professional and technical workers. In CI's transport sector, women are particularly under-represented. According to the World Bank, only 8% of SOTRA's workforce (total: 4,000 employees) are women in clerical jobs, only about 10 women occupy technical jobs as drivers or in maintenance and only less than 20 women are estimated to work as taxi or minibus drivers.^[5] It should be noted here, that the GoCI has, in an effort to increase employability of young Ivorians between 21 and 40 years, launched a third edition of a driving license programme in October 2019. The objective of this project is to issue 4,000 of driving licenses within a year. Of these, 30% are officially reserved for young women. In the preceding years 2017 and 2018, the actual rate of women who received who obtained a license was 19% and 24% respectively.^[6]

Wage equality for similar work scores at 0.683, here it ranks at place 57 of 153.^[7] In terms of educational attainment, it can be observed that the gender gap is widening from enrolment in primary education (score: 0.92) to tertiary education (score: 0.69). To create higher parity in these areas, the project will ensure that equal wages are paid for similar work when hiring staff and that women will explicitly be addressed to participate in training or similar measures.

But also, public transport services themselves play an important role with regards to gender equality. As they facilitate access to economic and social benefits, they should be designed that they meet the needs of women and men in an equitable, affordable and responsive manner. The Transport Gender Toolkit by the Asian Development Bank^[8] identifies several typical differences between women's and men's mobility that frequently create disadvantages for women.

Unfortunately, there is hardly any hard data available regarding gender differences and inequalities in the use of public transport services in Abidjan or Côte d'Ivoire. Still, discussions and observations during the scoping mission as well as some documents indicate that the following differences are prevailing in Abidjan:

- Use of transport modes: Access to different transport modes varies between women and men because of different access to cash income, gender roles or cultural norms. Typically, women often must rely on simpler and slower transport modes like walking or public transport. The diagnostic report that prepared the Draft Road Map for Sustainable Mobility in Côte d'Ivoire confirms that women are more likely to be pedestrians than men.^[9]
- Differences in travel patterns: Women typically have more complex travel patterns as they combine several tasks (e.g. care giving, income-earning activities) in one day. Inequalities then arise when, for instance, ticket prices are not reflecting these travel patterns leading to higher mobility costs for women than for men. In Côte d'Ivoire, ticket prices for transportation increased constantly since 2008 and are extraordinarily high leaving women in a more financially insecure situation than men.
- Mobility and Safety: Women frequently encounter violence and harassment which then often reduces the movement radius of women and girls limiting their ability to, for instance, attend school or work.

These three key differences all lead to a lower accessibility to (motorized) public transport for women. Although the project cannot address the root causes of these inequalities directly, it still has several entry points to help tackling these problems, as described in the gender action plan below.

Gender Action Plan:

The project will pursue the following gender equality objectives:

- Decision-making and leadership in the transport sector: Enhance women's participation and role in transport sector design and decision-making processes, with women as agents of change
- Increase the access to and control over mobility resources of women: Support women's improved access, use, and control of mobility resources
- Access to socioeconomic benefits and services through improved mobility: Target women as specific beneficiaries, and invest in women's skills and capacity

The concrete activities, targets and means of verification as well as responsible parties are shown in the following table:

Project Components / Outputs	Objectives	Activities	Targets / Means of Verification	Responsible
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Outputs	Objectives	Activities	Indicator	Responsibility
Overall Project Management	Promote women representation in participatory and decision-making processes and empowerment of women	Prepare a "Gender Representation Guidelines" document (2 or 3 pages max.) for all participatory and decision-making bodies and capacity building measures of the project. The guidelines lay out through which measures a balanced representation of women in these bodies can be ensured. The guidelines are prepared in collaboration with the gender units (<i>cellules genre</i>) of the MINEDD and the MOT, in consultation with gender experts in the country (e.g. from UN Women).	Gender Representation Guidelines document drafted and issued by the end of Month 3	PMU
	Ability to monitor women participation in project meetings, trainings and workshops	Develop an attendance sheet template which allows to identify participants by gender, to be used in all in project meetings, training and workshops.	Attendance sheet template prepared and ready to be used by the end of Month 3	CTA
	Mainstream gender into progress reporting	Report on the project's gender mainstreaming activities in each progress and Project Implementation (PIR) report.	2 reports per year (1 progress report and 1 PIR)	PMU
Component 1 Output 1.1	Ensure women representation in project bodies	Based on the Gender Representation Guidelines, encourage member entities of the national coordination body to appoint women as their representatives.	The national coordination body has at least 30% female members (gender disaggregated attendance sheets)	PMU
Component 1 Output 1.2	Ensure that the national e-mobility strategy considers gender aspects in an equitable manner	The joint national strategy to promote low-carbon e-mobility in urban public transport in CI will include a gender analysis and action plan to mainstream gender equality right from the beginning of the development process. Gender-related action items will be included in the draft joint national e-mobility strategy	1 st draft of gender sensitive national strategy prepared by the end of Year 2. Final gender sensitive national strategy prepared by end of Year 3.	PMU together with the e-mobility policy and strategy expert

		Gender Representation Guidelines		
Component 1 Output 1.3	Empowerment of women through participation in regional / international events	Based on the Gender Representation Guidelines, participation of women in regional / international events, meetings and trainings will be promoted actively. The agencies or institutions that will be invited to participate will be encouraged to nominate women to participate in the events.	At least 30% of participants attending / participating in the events are women. (gender disaggregated attendance sheets)	PMU
Component 2 Output 2.3	Build capacities of women through trainings	Based on the Gender Representation Guidelines, participation of women in driver trainings will be promoted actively. Acknowledging that women representation is very low within the drivers population, the project will assess through which channels women can be reached.	100 e-taxis drivers and 50 e-minibuses drivers have passed the trainings, out of which at least 5 are female ^[10] . (gender disaggregated attendance sheets)	PMU
Component 3 Output 3.2	Enhancing safety and vehicle ergonomics for all passengers, incl. women, children, elderly and physically impaired persons	During the preparation of technical standards and regulations for EVs and charging infrastructure, the experts will need to consider that passenger compartments meet international standards for or physically impaired persons and safe traveling of children, women or vulnerable persons.	The technical standards' definitions for e-taxis, e-minibuses and e-buses will include features to enhance women's and vulnerable passengers' (e.g. elderly) safety and comfort following global best practices.	PMU together with e-mobility technology and business expert
All Components	Promote women participation in project consultation meetings / workshops.	Based on the Gender Representation Guidelines, the participation of women / appointment of women representatives will be encouraged in all project consultation meetings and workshops outlined in the Workplan (refer Annex L for more details)	At least 30% of participants attending the project consultation meetings / workshops are women. (gender disaggregated attendance sheets)	PMU

- [1] The Global Gender Gap Index (GGGI) is a gender parity score ranging from 0: full imparity between women and men to 1: full parity between women and men.
- [2] Sources: Value for 2010: <https://tcdata360.worldbank.org/> and value for 2019: World Economic Forum. 2019. Global Gender Gap Report.
- [3] Source: <http://hdr.undp.org/en/content/gender-inequality-index-gii>
- [4] Source: World Economic Forum. 2019. Global Gender Gap Report.
- [5] Source: World Bank. 2019. Project Appraisal Document for the Abidjan Urban Mobility Project.
- [6] Source: http://www.gouv.ci/_actualite-article.php?recordID=10450&d=1
- [7] Source: World Economic Forum 2019. Global Gender Gap Report.
- [8] Source: Asian Development Bank. 2013. Gender Tool Kit: Transport - Maximizing the Benefits of Improved Mobility for All.
- [9] Source: Ministère des Transports. 2019. Elaboration de la Feuille de Route Mobilité Durable en Côte d'Ivoire – Rapport Diagnostique.
- [10] Since female taxis and minibuses drivers in Abidjan are extremely rare, it would not be realistic at all to set a target of 30% women participation for that very specific category of training beneficiaries. Given these exceptional reasons, the project will therefore actively work to ensure that at least 5 female (but hopefully even more) taxis or minibuses drivers will receive this training.

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 Yes

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

Yes

4. Private sector engagement

Elaborate on private sector engagement in the project, if any

The private sector will be closely involved in the GEF E-Mobility Project in Cote d'Ivoire. This involvement can be distinguished in two main groups: 1.) Private companies operating taxi and minibus fleets, which decide to participate in the fleet renewal scheme, including the incentives to buy electric vehicles implemented and funded as part of the AUMP, and including additional bonus payments / subsidies for the purchase of electric vehicles (in addition to the first loss guarantee, which enables the participation of private sector companies, which would otherwise not be deemed eligible to take a loan for fleet renewal); and 2.) EV and EV supply equipment manufacturers.

The former group will be involved through the fleet renewable scheme implemented as part of the AUMP. World Bank has already experience with the implementation of fleet renewal schemes in Cote d'Ivoire based on the Transport Sector

Modernization and Corridor Trade Facilitation project (PAMOSSET^[1]), which includes a fleet renewal financing facility for long-haul heavy cargo trucks. Component 2 of the project targets the development of a heavy cargo truck fleet renewal scheme implemented through the Fonds de Développement des Transports Routiers (FDTR), whose capacity is set to be strengthened as part of the project. Commercial banks have already been selected "to host the line of credit and the selection of operators qualified for truck renewal, including clear flow of funds". The fleet renewal scheme including the demonstration of electric vehicles (through substantial EV subsidies) implemented as part of the AUMP and targeting a fleet of up to 250 e-taxis and e-minibuses, will be based on the structures and experiences with private sector fleets gained under the PAMOSSET project.

In addition, the project will reach out to local private sector operating taxi and minibus fleets through workshops and trainings organized as part of the project in Cote d'Ivoire: For example, output 2.3 foresees the training of drivers and mechanics that will operate electric vehicles and electric vehicle supply equipment. Many more trainings and other events targeting the private sector and in particular the urban formal and informal transport sector will be organized and implemented as part of Component D of the AUMP "Human capital development and operational support (US\$25 million equivalent, of which US\$25 million IDA)".

Through the Global Programme, the GEF project will reach out to EV manufacturers to support the introduction of new EVs through local dealerships in Cote d'Ivoire. The availability of new EVs on the local market alongside the capacity to maintain and service these vehicles is a prerequisite for the successful introduction of EVs at scale in taxi and minibus fleets. Many car manufacturers having EVs in their vehicle portfolio have dealerships in Cote d'Ivoire, for example Renault, Peugeot, Citroen, Mitsubishi, Nissan, Kia, Hyundai, Volkswagen, Ford, Fiat, to name a few. Yet, none of them is offering EVs. The Cote d'Ivoire E-Mobility Project with the support of the Global Programme and its implementing partners such as the IEA and the SOLUTIONSplus consortium, will make use of its network and outreach to partner with at least one manufacturer to introduce new EVs in the Ivorian vehicle market.

In addition, the project will establish links between e-bus charging solution providers part of the EC SOLUTIONSplus consortium and the e-mobility project in Cote d'Ivoire to evaluate possible involvement in the electric bus rapid transit system, which is part of the AUMP. EC SOLUTIONplus EV charging industry partners will also be involved in the development of studies and plans concerning the introduction of public EV chargers in Abidjan. The involvement of EV supply equipment manufacturers is not limited to the partners of the Global Programme and the EC SOLUTIONSplus project but all interested e-mobility solution providers will be invited to participate in the Cote d'Ivoire e-mobility project.

Main elements to reach out to global EV and EV supply equipment manufacturers include:

- Through the Global Programme Thematic Working Groups jointly implemented by IEA and UNEP : Both organizations have substantial outreach to the private sector, for example through IEA's Mobility Model Partnership[2] or through the Climate and Clean Air Coalitions (CCAC) Global Industry Partnership on Soot-Free Clean Bus Fleets[3], which is implemented in partnership with UNEP and other leading clean transport organizations such as the International Council on Clean Transportation (ICCT), and which includes leading bus manufacturers such as BYD, Cummins, Scania and Volvo Buses.
- Through the events organized by the Africa Regional Support and Investment Platforms hosted by UNEP : The platform will organize market-place and replication events, which bring together EV and EV supply equipment manufacturers with e-mobility projects and potential financiers (including development banks, the Green Climate Fund, private investors). The e-mobility project in Cote d'Ivoire will be showcased during these events to raise the attention of manufacturers in the provision of EVs.
- Through global events organised as part of the Global Programme to raise awareness about the GEF Global E-Mobility Programme. This includes for example activities planned for the Conference of the Parties (COP) of the UNFCCC taking place during November 2021 in Glasgow, United Kingdom. Sustainable transportation has been identified a key topic of this year's COP and the GEF Global Programme as well as the participating country projects will be adequately showcased. In addition, COP 27 is planned to take place in Africa, which provides a great opportunity to further bring to the attention the importance of electric mobility in African countries to reach the climate targets set under the Paris Agreement.

[1] TRANSPORT SECTOR MODERNIZATION AND CORRIDOR TRADE FACILITATION PROJECT, PAD 1854,World Bank June 2016

[2] <https://www.iea.org/areas-of-work/programmes-and-partnerships/the-iea-mobility-model>

[3] <https://www.unep.org/news-and-stories/press-release/bus-manufacturers-commit-bring-cleaner-soot-free-buses-20-megacities>

5. Risks to Achieving Project Objectives

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

Risk description	Main categories	Risk level rating	Risk Mitigation Strategy and Safeguards	By Whom / When?
Negative perceptions about e-mobility technology and the impacts this will bring to society and industry hamper acceptance.	Political	Medium	<ul style="list-style-type: none"> i) Knowledge and know-how development through capacity building and training measures and targeted support by the Africa Support & Investment Platform and the Subregional Working Group as well as the E-Mobility Global Programme ii) Focus on market segment (public transport) with professional operators and significant international experience as well as mature technological solutions 	<ul style="list-style-type: none"> i) By MINEDD and PMU; ii) by MOT / i) through activities in Comp. 1 and the general project approach to offer expertise through the Global Programme activities; ii) through activities in Comp. 2
Specifically, negative perceptions about e-mobility technology are generated by a technical failure of the electric taxi and/or minibus fleet (incl. charging infrastructure), failure or low performance through insufficient maintenance or accidents	Technical / Political	Medium	<ul style="list-style-type: none"> i) Apply international best practice in setting up procurement guidelines and introducing technical standards ii) Select mature technology solutions and only fleet operators for the introduction of EVs which are committed to the new technology, are big enough and have enough capacities and adequate infrastructure to operate and maintain an electric fleet successfully iii) Upskilling for drivers and mechanics iv) Safety and technical training for drivers and mechanics v) Careful choice of counterpart for pilot investments vi) Select state-of-the-art vehicles meeting high safety standards (e.g. similar to standard 	<ul style="list-style-type: none"> By PMU and MOT in close coordination with the WB AUMP / Through activities in Comp. 2

			<p>ds in Europe)</p> <p>vii) Insurance cover</p> <p>viii) Contractual arrangements (e.g. performance-based contracts or insurance schemes) should ensure that cars are maintained well and operated as much as possible</p>	
Rapid staff change in the government might limit the gains from capacity building measures and inter-ministerial coordination	Political / technical	Medium	<p>i) Inter-ministerial structure (National E-mobility Coordination Body and PSC) with a wide range of stakeholders involved will keep many people informed so that continuity can be ensured</p> <p>ii) Co-implementation with WB AUMP will prevent stagnation</p>	<p>PMU /</p> <p>Through activities of Component 1 and overall project design (co-implementation)</p>
Materials (e.g. studies, policy proposals, business models, finance schemes, procurement guidelines etc.) developed are not relevant for country context	Technical	Low	<p>i) Active participation in the Global Project and Africa Investment Support Platform</p> <p>ii) Informed advice from the inter-sectoral Coordination Body to the PMU</p> <p>iii) Active involvement of local stakeholders from government, private sectors, civil society in the technical and economic feasibility analysis, business modeling and finance scheme design, the setup of procurement guidelines for the pilot fleet, and policy proposal development in the energy, transport and waste management sectors</p> <p>iv) Ensure that stakeholders endorse materials developed component by component (through workshops or face-to-face meetings held or individual consultation)</p> <p>v) Liaise international consultants with relevant stakeholders from the beginning of an activity and frequent exchange between PMU, the consultant and stakeholders on proposed concepts; support to the consultant by pro-ac</p>	<p>i-ii) By the PMU in close coordination with inter-sectoral Coordination Body; iii-v) by the PMU with support of the MOT, MINEDD and MPEER where relevant /</p> <p>i-ii) Through activities of Comp.1; iii-v) through activities of Comp. 2, 3 and 4</p>

			concepts, support to the consultant by pro actively providing relevant local market information	
Change in leadership and priorities in the government (i.e. elections)	Political / Institutional	Substantial	<p>i) Inter-ministerial mechanism (i.e. Coordination Body and PSC) should generate consensus on benefits of low-carbon electric mobility</p> <p>ii) Observation of political developments and active networking with new leaders</p>	By the PMU with support of the MOT and MINEDD/ Through activities of Component 1
Higher upfront cost of electric vehicles may pose a barrier to implementation and scale up of activities	Economic	Medium	<p>i) Financial mechanism shall be attractive</p> <p>ii) Encourage Banks to promote "credits for EVs" and particularly vehicles for public transport (buses and minibuses, taxis)</p>	<p>By the MEF, the Ministry attached to the Prime Minister, in charge of the Budget and the State Portfolio, World Bank (which funds the scrapping and electrification premium through the AUMP) and the PMU /</p> <p>Through activities of Comp. 2 and 3</p>
Objection or low commitment from industry to technology changes leading to lack of interest or participation	Political / Economic	Substantial	<p>i) Electric vehicle bonus and awareness raising measures will be designed in such a way as to defray these objections.</p> <p>ii) Active and early involvement especially of public transport fleet operators in the technical and economic feasibility analysis, business modeling and finance scheme design.</p>	<p>By the PMU with MOT /</p> <p>Through activities of Comp. 2 and 3</p>
Insufficient and incomparable systems for tracking results	Capacity / Technical	Medium	Performance monitoring component will provide data and allow for identification of the need for corrective action	<p>By the PMU with MOT /</p> <p>Through activities of Comp. 2</p>
Delays in implementation of cofin	Financial / technical	Low	WB AUMP is already under implementation and funding is ready to flow	By the MOT with support of the WB /

Initiation of Com financing	Critical		and funding is ready to flow.	Support of the WB / Through activities of Comp. 2
Inadequacy of the exit strategy and lack of ownership of the program after the end of the GEF funded activities and inability to source resources to continue the program's activities in the medium/long term (including the thematic working groups and support and investment platforms).	Political / Financial	Medium	<ul style="list-style-type: none"> i) Develop exit strategy early on ii) Active involvement of local stakeholders from government, private sectors, civil society in the technical and economic feasibility analysis, business modeling and finance scheme design, the setup of procurement guidelines for the pilot fleet, and policy proposal development in the energy, transport and waste management sectors iii) Ensure that stakeholders endorse materials developed component by component (through workshops or face-to-face meetings held or individual consultation) 	PMU / i) At the latest after half time of the project; ii-iii) Through activities in all components
Countries are not interested in second life and disposal of batteries so early on in market transformation to electric vehicles	Political / Environmental	Low	Explore various options for second life, including central (with utility) and decentral solutions	By the PMU with MINEDD and support of MPEER / Through activities of Comp. 4
Materials from EVs (e.g. from batteries) might generate environmental pollution	Environmental	Medium	Second life and tracking of these materials will be integrated into the approach	By the PMU with MINEDD / Through activities of Component 4
Extreme weather events due to climate change temporarily affect	Climate	Low	This GEF funded project is essentially a Technical Assistance (TA) project and should not be directly impacted by climate risks.	PMU

<p>temporarily affect operations of (parts of) the pilot fleet or temporarily impact project implementation.</p>			<p>The outputs related to the investment in infrastructure / vehicles (outputs 2.1, 2.2 and 2.3) are part of the AUMP project, executed by the Ministry of Transport (which contributes to the GEF project objective in the form of co-finance).</p> <p>Please refer to the detailed climate risk assessment in the section below.</p>	
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From the risk matrix it becomes clear that the project design is already paying heed to a number of risks associated with typical market barriers, and that implementation details of individual components will add relevant and important contributions to mitigating the risk to impact of this project. The risk mitigation strategies rely to a significant degree on the convening power of the PMU and EA as well as the MOT, and their ability to motivate different stakeholder groups including the transport but also the power sector to collaborate on this endeavour.

Climate risk assessment

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

Vulnerability and exposure

Cote d'Ivoire is vulnerable to multiple climate risks resulting from global warming. The Climate Change Knowledge Portal of the World Bank summarizes key climate vulnerabilities as following^[1]:

- Floods repeatedly hit Cote d'Ivoire, especially in the southern part of the country where the highest amount of rainfall occurs. The city of Abidjan is very prone to flooding and poor sanitation systems within urban areas, such as clogged drains and sewers, lead to flooding during the rainy season.
- Droughts are expected to increasingly impact the semi-arid northern savannah region of the country in the coming century.
- Cote d'Ivoire is exposed to many different diseases that are influenced by climate parameters (e.g. malaria), which is also the leading cause of morbidity and mortality. As temperatures increase, malaria could expand into previously unaffected areas as temperatures become more conducive to the survival of the vector. Additionally, re-emergence of potentially epidemic outbreaks of diseases such as cholera and meningitis has occurred recently. The northern part of the country is most threatened by meningitis while urban areas are mostly affected by cholera. Poor sanitation and water resources infrastructure also enhance the risk of some of these diseases.

- The potable water supply in the country has increased in recent years but there are frequent service disruptions and a large share of the population still remains without access to clean water. Poor infrastructure and capacity in this sector contribute to flooding and disease outbreaks in urban areas as well as lack of access to potable water for parts of the population. The Abidjan water table has already seen a reduction in its levels, and pollution is present in many waterways throughout the country.
- In addition to the points summarized above, the risk of landslides is increasing with increased extreme weather events such as heavy rainfall. In 2009, an estimated 10,000 people have been affected by landslides.

Within the context of this project, the risk of project assets being affected by floods is most important and needs to be anticipated. This is due to the fact that the demonstration project will take place in Abidjan, which has been identified to be very prone to flooding during the rainy season.

The risk of flooding will need to be addressed during project implementation especially when selecting the locations for EV charging infrastructure. Flooding of EV chargers can lead to malfunction or destruction. Equally, locations prone to flooding can be subject to extended power cuts. In all cases, damage, loss or under utilisation of the EV charging equipment can occur as a result of local flooding and need to be prevented through proper selection of the charging station location. Therefore, the feasibility studies will need to anticipate flooding occurring from rivers bursting their banks but also from overflowing sewage systems, resulting in local flooding.

Furthermore, the handling of EVs during rainy season and when passing flooded roads will need to be included in the driver trainings.

The project aims to develop a national development plan for low-carbon and climate-resilient electric mobility. It aims at the development and adoption of technical regulations and standards for EVs and charging infrastructure (Output 3.2). It will be ensured that developed regulations for the installation of electric vehicle charging infrastructure will be adapted to local climate and heavy rainfall. Standards and the policy framework for regulating the disposal of vehicles' batteries (output 4.3) will be designed to ensure that extreme weather events and flooding do not lead to increased contamination.

Under the precondition of proper planning, the project is expected to have moderate risk with regards to impact from climate change.

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

The sensitivity to climate change and its impacts has been assessed and the adverse effects of flooding have been identified the key risk which needs to be addressed when planning for EV charging installation and EV demonstration.

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

Resilience to climate risk will be ensured through proper planning and selection of the demonstration assets. The Global Project, through the Africa Support and Investment Platform, will facilitate the exchange of experiences and best practices, also including resilience practices with regards to the nexus of e-mobility and extreme weather events. The Thematic Working Groups, and in particular the working group on EV charging infrastructure, grid integration, renewable power and batteries will enable the global spill-over of best practices with regards to the planning and use of EV charging systems, including issues of resilience against climate risks such as heavy rainfalls.

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

The technical design of the charging equipment used to charge EVs for operation in taxi and minibus fleets will need to be adapted to local climate condition and in particular extended rainy seasons with occasionally heavy rainfalls. It will need to be in accordance with the latest building codes, to ensure resilience to extreme weather events. Regulations for charging stations (output 3.2) will also need to be in accordance with such codes. Capacity for proper operation and maintenance of EVs under all weather conditions will need to be built with drivers and fleet operators, and will be included in training curricula developed under output 2.3. In addition, the building of such capacity will need to be anticipated when designing plans to electrify the bus fleet of SOTRA in Abidjan.

[1] <https://climateknowledgeportal.worldbank.org/country/cote-divoire/vulnerability>

COVID-19 Risk and Opportunity analysis

Risks:

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

Reduced taxi and minibus operations. Whether due to mobility restrictions imposed by health authorities, the increased possibility of teleworking, the need for social distancing, or a significant economic contraction, the COVID-19 pandemic has the potential to reduce the levels of public transport travel in Abidjan. In such a situation, taxi and minibus drivers could suffer losses in income and become less open to adopting new technologies, such as electric vehicles. This result would negatively impact on the effective execution of the project's outputs, potentially leading to a slower adoption of electric taxis and minibuses in Abidjan.

Lockdown and movement restrictions. Mobility restrictions and the need for social distancing could also lead to reduced possibility for activities that have traditionally required in-person participation, such as workshops, meetings, trainings and consultations.

Government priorities. In the event of an extreme economic contraction, the pandemic could lead to a reduced focus by legislative powers on the adopting of policies, laws and standards related to electric mobility. It could also lead to a situation where financial incentives such as import tax reductions or exemptions promoting electric mobility would not materialize as planned.

Mitigation measures:

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Reduced taxi and minibus operations. The project pilots are planned to take place in 2021 and 2022, by which stage it is projected that the COVID pandemic will no longer impact the daily lives of citizens to the extent experienced today (2020). In the event that lockdowns and travel restrictions continue to impact the country, the PMU will re-evaluate – together with the AUMP Project Coordination Unit - the project workplan to postpone field activities until the second or – depending on the actual situation - third year of project execution (2022-2023).

Lockdown and movement restrictions. In the event of mobility restrictions and the need for social distancing, alternative and innovate forms of meeting organization and communication will be implemented (i.e. using online platforms). The impacts of the pandemic in 2020 have meant that such technologies are already becoming commonplace and acceptable for usage by a broad range of stakeholders.

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

Opportunities:

With initial studies indicating that the effects of COVID-19 are intensified by poor air quality, the pandemic has led to an increased focus on this situation globally. Abidjan have levels of air quality which are very poor, and thus efforts to improve the situation are embraced by civil society and health authorities. As the GEF project directly aims to improve air quality through a reduction in polluting internal combustion engine vehicles, there will be significant opportunities to tackle this problem and there is the clear opportunity that awareness in the public and among decision-makers will be higher than could be expected under normal circumstances.

In addition, the COVID-19 pandemic can lead to an increased uptake of green jobs in the e-mobility value chain. Within the framework of this project this is for example related to skilled work necessary to service and maintain EVs in Cote d'Ivoire. It is furthermore related to additional business opportunities in the sector of waste management, and in particular e-waste and used EV batteries. Opportunities seem to emerge with the preparation of used EV batteries, for example for re-use as energy storage in the power sector. Furthermore, the repurposing of used EV batteries, for example through demounting of battery packs and testing of cells for re-use in battery packs based on used cells, can be a way of creating new value chains in Cote d'Ivoire.

Budget savings and reallocation to web-conferencing: if travel and in-person meetings were to be suspended for several months (or even years) due to COVID-19 restrictions, it is likely most of the project's meetings, trainings and workshops would have to be conducted virtually. While setting up the modalities and building stakeholders' capacity for virtual meetings has a cost, savings made from the unused traveling and venue costs budgeted as part of the GEF grant could compensate for this. Whenever relevant and after consultation with the project's steering committee, part of travel and meeting costs could be re-directed by the PMU to develop/enhance web-conference capabilities that are best fit to the country's COVID-19 restrictions.

Furthermore, reducing traveling to a minimum can also lead to considerable reduction of travel-related CO₂ emissions. Since the world has already learned during the first months of the pandemic to make more use of virtual meeting and exchange opportunities, the PMU will assess if viable alternatives are available to traveling and try to reduce traveling to the necessary minimum. Potentially saved costs will be used to develop/enhance web-conference capabilities and/or enhance selected project activities where this makes sense.

Another potential benefit of switching to on-line meetings, webinars and workshops is that it can allow for a higher and broader participation than physical in-person meetings, which are very often limited to a maximum amount of participants because of budgetary constraints (i.e. travel, venue and catering costs) and room capacity.

6. Institutional Arrangement and Coordination

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

Institutional arrangements:

Describe the institutional arrangement for project implementation.

This project is funded by the GEF and co-financed by the Ministry of Environment and Sustainable Development (MINEDD), the Ministry of Transport (MOT) and the Ministry of Petroleum, Energy and Renewable Energies (MPEER). UNEP will be acting as the GEF Implementing Agency. The MINEDD will be the project's Executing Agency.

Given the double focus of the project in transport and environment as well as the joint implementation with the AUMP, the MINEDD and MOT have agreed on a collaborative implementation arrangement. This collaboration is based on four main pillars:

- 1) The embedding of the support to the establishment of a pilot fleet of electric taxis and minibuses (i.e. Outputs 2.1-2.3) executed by MOT under the AUMP into the logical framework of this GEF-funded project,
- 2) the distribution of responsibilities for each component between both Ministries on the level of the implementation of activities (i.e. the MINEDD will lead all activities under Components 1 and 4 and the MOT all activities under Components 2 and 3),
- 3) the co-chairing of the Project Steering Committee (PSC), and,
- 4) the establishment of a Joint Implementation Unit (JIU) to ensure close coordination between the two initiatives.

While the Implementing Agency (as meant by WB terminology) and the Project Coordination Unit of the AUMP are entirely governed under the World Bank-funded AUMP, they become key collaboration partners of this GEF-funded project and assume different roles and responsibilities. These will be coordinated in the JIU. Further details on the functioning of the JIU may be found in **Annex K**.

The overall implementation structure is illustrated in the organogram below.

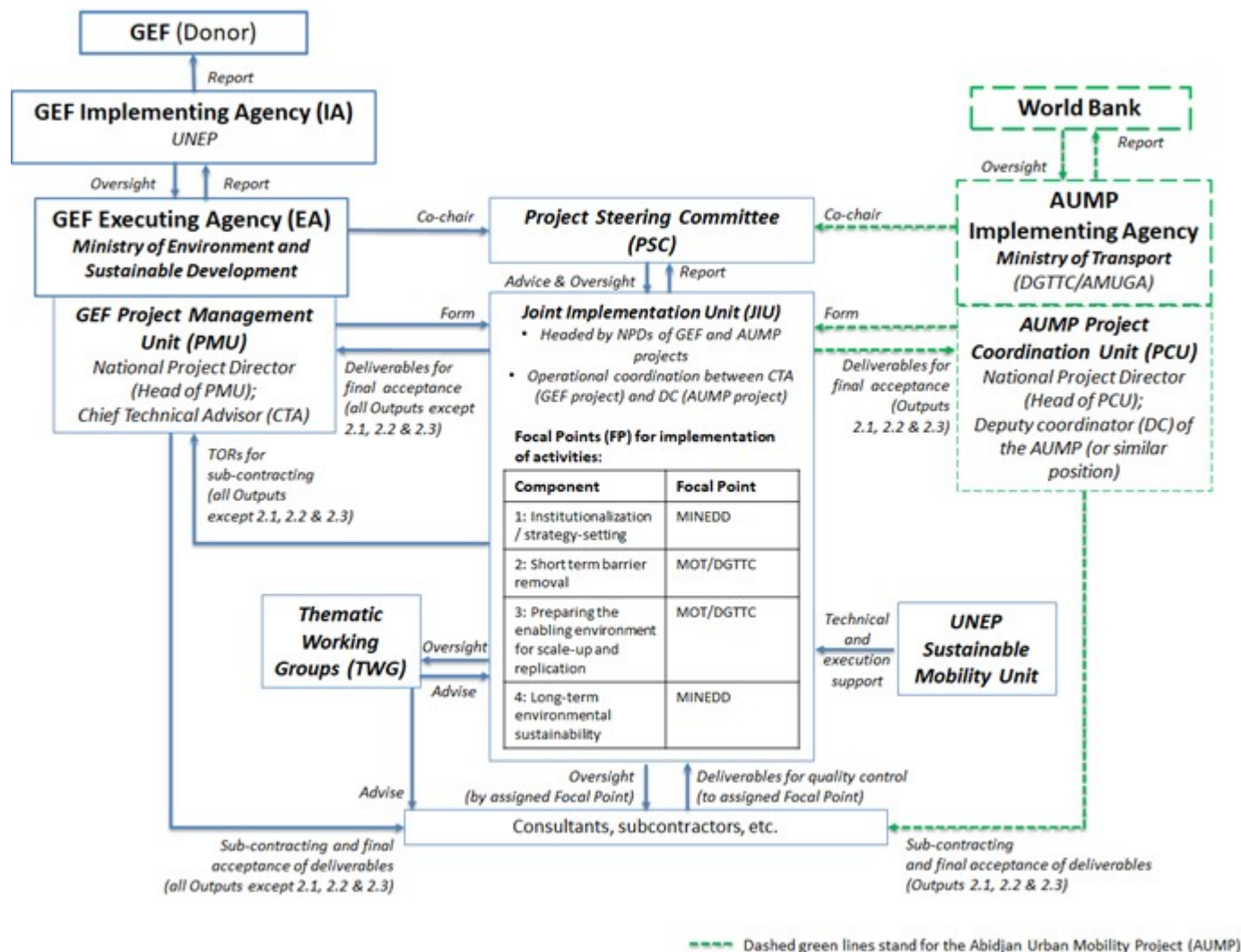


Figure 13: PROJECT ORGANIZATION CHART

The main project bodies of this GEF-funded initiative are the following (refer to Annex K for more details):

A **Project Steering Committee (PSC)** will be established to provide overall guidance and oversee the progress and performance of the project as well as to enhance and optimize the coordination and contribution with various project partners. The PSC will be co-chaired by the National Project Director (NPD) of this project (MINEDD) and the National Project Director of the AUMP (MOT/DGTTC). It will convene at least once per year. It will include representatives from the following Ministries and organizations: the Ministry of Environment and Sustainable Development, the Ministry of Transport, the Ministry of Petroleum, Energy

and Renewable Energies, the Ministry of Economy and Finance, the Secretary of State to the Prime Minister in charge of Budget and State Portfolio, the Autonomous District of Abidjan (DAA), the Employers Federation of Road Transport Companies (*Haut Conseil du Patronnat des Entreprises de Transports Routiers de Côte d'Ivoire*), ANARE-CI, CI-ENERGIE, CIE, ECOWAS and the Africa Support and Investment Platform Coordinator of the Global e-mobility project. Since the AUMP already has established a similar PSC, this project can build upon this existing project body which will strongly increase implementation efficiency. Please note that members of the PSC will also be members of the National E-mobility Coordination Body to be established under Component 1 of the project. The Coordination Body however will involve a wider range of stakeholders from the public and private sector.

A **Project Management Unit (PMU)** will be established within the MINEDD to manage day-to-day operation of the GEF project. The PMU will be headed by the National Project Director (NPD) and will include the Chief Technical Advisor (CTA).

Since this project will be implemented in parallel to and in close coordination with the AUMP, the MINEDD and the MOT will establish a **Joint Implementation Unit (JIU)**. The JIU will be headed by the National Project Directors of both projects. On the operational level, the MOT will nominate a person (e.g. a deputy coordinator of the AUMP, or similar position) who will act as direct counterpart to MINEDD's CTA in the JIU. The JIU's main purpose is to ensure regular communication and coordination between the two projects on the level of the implementation of activities.

The implementation of activities under each project component will be shared between the two Ministries as follows: The implementation of Components 1 and 4 will be led by the MINEDD and Components 2 and 3 by the MOT. In this context, the MINEDD will be referred to as **Focal Point for Components 1 and 4 and the MOT as Focal Point for Components 2 and 3** (The term Focal Point, or Point Focal in French, was agreed upon by both Ministries and stands for the entity that leads a Component. It shall not be confused with the GEF Focal Point.). Note that MINEDD as Executing Agency for the GEF will remain accountable to GEF/UNEP for all project results, except for Outputs 2.1, 2.2 and 2.3 which will be implemented by MOT under the AUMP. (Refer to Annex K for a detailed description of the responsibilities of both Ministries in this collaborative setup.)

Ad-hoc **Thematic Working Groups (TWG)** will be formed as needed to interact with stakeholders at institutional level and support the implementation of the project components. The TWGs will meet regularly during project implementation to work inter alia on the following topics:

- TWG 'Feasibility assessment, business modeling and financing': The objective of this TWG is to identify technically and economically feasible opportunities for electrifying taxis, minibuses and/or SOTRA buses. It will support the development of viable business models and finance schemes, propose financing opportunities and quantify potentially required financial subsidies.
- TWG 'Technical regulations and standards for EVs and EVSE': This TWG will take care of the definition of technical regulation and standards for EVs and charging infrastructure.
- TWG 'Charging infrastructure installation planning and grid integration analysis': This TWG will develop a plan for the setup of charging infrastructure in the city of Abidjan and support the work to identify possible distribution grid constraints.
- TWG 'Renewable Energies': This TWG will elaborate a proposal to amend the National Renewable Action Plan in view of the uptake of e-mobility in the public transport sector. It will also support the investigation of options for the direct purchase of renewable power for charging EVs and help identifying RE projects where RE Power Purchase Agreements could be applied.

- TWG 'E-waste management': This TWG will work on the integration of used EV batteries into the existing e-waste management scheme but also help identifying options for the re-use and/or recycling of batteries.

Finally, the Ministry of Environment and Sustainable Development (MINEDD) and Cote d'Ivoire's GEF OFP have requested the UNEP Sustainable Mobility Unit (SMU) to provide execution support, which is described in the letter attached in **Annex N-2**.

Coordination with other initiatives:

Elaborate on the planned coordination with other relevant GEF-financed projects and other initiatives. Please identify other relevant ongoing (GEF) projects and present the possibilities of coordinating with the project. This should include global or regional GEF projects.

This GEF project will collaborate very closely with the AUMP, the institutional collaboration arrangements have been discussed in detail above.

The AUMP consist of four main components as shown in the following table. Expected synergies through the cooperation are shown in this table as well.

Component	Sub-Component	Outputs under the LogFrame of the GEF project executed by the AUMP	Comments / Synergies
A: Implementation of the East-West Bus Rapid Transit (BRT) corridor between Yopougon and Bingerville	A1: Implementation and operationalization of the BRT system along the corridor between Yopougon and Bingerville	N/A	Buses operating the BRT system will be electric. Together with the electric pilot fleet on the feeder lines (Sub-Component C2, Output 2.2), it is very likely that this integrated approach will trigger very high attention by public transport sector stakeholders, policy-makers and the general public beyond Abidjan and even beyond Côte d'Ivoire.
	A2: Integration of the BRT with the existing public transport network and in the urban environment	N/A	
	A3: Modifying Abidjan's 4 th bridge built as part of the PTUA	N/A	
B: Strengthening of SOTRA and the restructuring of the feeder system to mass transit	B1. Restructuring the public bus network and strengthening SOTRA	N/A	The AUMP ensures that feeder lines serving the BRT lines (SOTRA and artisanal transport operators) are well organized and required investments

ystem to mass transit lines	B2: Improvement of feeder roads and street furniture and investments for public transport	N/A	When organized and required investment is carried out so that vehicles (incl. the new electric taxis and minibuses) can be operated efficiently. These improvements in combination with modern e-mobility are likely to be perceived as a major step towards a low-carbon, environmentally friendly <u>and</u> more efficient public transport. The GEF project itself will add value to the AUMP by promoting e-mobility to SOTRA.
C. Organizing the artisanal transport sector and last-mile accessibility	C1: Support for the organization of artisanal public transport service and last-mile accessibility	N/A	
	C2: Renewal of the taxi and minibuses fleet	<p>O 2.1: Feasibility study: Technically and economically feasible opportunities for the electrification of taxis and minibuses serving feeder lines along the Yopougon-Bingerville BRT corridor in Abidjan are identified, incl. the assessment of charging infrastructure investment needs.</p> <p>O 2.2: Support to the establishment of a pilot fleet of electric taxis and minibuses serving the Yopougon-Bingerville BRT corridor in Abidjan and charging infrastructure through CI's fleet renewal mechanism FDTR.</p>	<p>First of all, the significant contribution by the AUMP in terms of incentives to invest in electric public transport modes will facilitate the piloting of a very sizeable pilot fleet, creating significant visibility and opportunity to test the fleet under real-life conditions. As incentives (i.e. electrification bonus / scrapping premium) will be provided through the already existing FDTR, no new mechanism must be developed or established. This will significantly reduce the risk of failure and offers great efficiency gains.</p>
D. Human capital development and operational support	D1: Skills development in the urban transport sector	O 2.3: Staff that will operate electric vehicles and associated charging infrastructure (i.e. drivers and mechanics) will be trained on specifics of electric mobility.	While the AUMP will train EV operators on specifics of electric mobility, it will also support the professionalization of drivers and entrepreneurs in general. Structures to organize trainings can be used leading to additional efficiency gains.

	D2: Implementation of a social protection scheme for workers of the artisanal public transport sector	N/A	N/A
	D3: Project management	N/A	N/A

An MDB-implemented project is the country child project of the GEF6 Sustainable Cities Integrated Approach Pilot (IAP) Program (Abidjan Integrated Sustainable Urban Planning and Management) which is implemented by the African Development Bank (AfDB). This project is already progressed in the implementation and associated with a larger AfDB loan that is used for infrastructure improvements in Abidjan. While the direct potential for synergistic implementation is low, AfDB's headquarters are in Abidjan so that coordination and collaboration with AfDB can be ensured in a highly efficient manner. The GEF 7 child project might contribute to the air quality objectives of the GEF 6 project and might benefit from any improvements in the infrastructure that is in place.

Intricately linked to the AUMP is the Abidjan Urban Transport Project (AUTP) which is also funded by the African Development Bank (AfDB). Here, AfDB invests in urban transport infrastructure, mainly urban expressways, intersections, a bridge, etc. The BRT line that will be implemented in the AUMP will be integrated into the Abidjan 4th bridge and expressway in Youpogon which is built by AfDB. Since the AUTP is working on infrastructure, there is no direct link to this GEF project. However, the existing links between the GEF, WB and AfDB projects ensure that the initiatives can coordinate their activities well. The PMU will monitor the AfDB funded projects very closely and ensure that there is a regular exchange on the projects' progress.

Section 2 of this paper already discusses many ongoing initiatives, including Road Maps and Master Plans on Urban Mobility for Abidjan and Sustainable Mobility in Côte d'Ivoire. The purpose of the National E-Mobility Coordination Body established in Component 1 is to provide a platform where the progress on each of these will be shared across the stakeholder groups to keep the information flow going. This will allow to harmonize and coordinate the activities. The responsibility for facilitating this harmonization of activities will lie with the Chair of that Board, supported by the PMU of this project, as well as the PMUs of the other projects.

UNEP is supporting Côte d'Ivoire, one of 40 partner countries, in introducing policies and incentives for the introduction of privately-owned light duty vehicles through the Global Fuel Economy Initiative (GFEI). The MINEDD is the Executing Agency of the GEF-funded Global Fuel Economy Initiative (GFEI) in CI. The GEI supports vehicle fuel economy activities and contributed to the development of the regulation to limit the maximum age of imported vehicles in CI. Through GFEI, cooperation between government agencies of the transport and environment sector has been established and experience in regulating the transport sector was gained. The GFEI is thus an excellent starting point to expand and deepen cooperation and to integrate e-mobility in transport sector regulation.

It is important to highlight that synergies with initiatives supporting renewable energy deployment are also of relevance. The GoCI has established a project pipeline for solar PV, biomass and hydropower projects (see the list of the most advanced renewable energy projects in section ii.2)). Financing of these projects is typically supported by development banks. One example is the International Finance Cooperation's (IFC) 'Scaling Solar' programme. This initiative aims at making "privately funded grid-connected solar projects operational within two years and at competitive tariffs." Using a "one stop shop" approach, the programme helps in project assessment, tendering, and provides fully developed templates for bankable project documents and financing at preferred costs. In October 2019, IFC was engaged by the GoCI as lead transaction advisor for a 60MW solar project.^[1] The project will reach out to this and other renewable energy initiatives to identify opportunities for linking renewable energy generation with the transport sector. Through this GEF project's approach to promote renewable electricity to fuel EVs, additional demand may be created in the renewable energy market, and therefore potentially create new funding opportunities for banks and investors.

The European Union is providing financial support to the Governments Energos 2 programme which intends to build the renewable energy sector. A call for proposals for a feasibility study has been published last year which will identify renewable energy expansion options between now and 2021. This will be closely monitored by the PMU in close coordination with the Ministry of Petroleum, Energy and Renewable Energies under Component 4 to identify opportunities for the securing of renewable power supply for the electric transport sector.

Another relevant cross-cutting project is the GCF funded 'Transforming Financial Systems for Climate'. The project, which is executed by the *Agence Française de Développement* (AFD), began in October 2018 and provides loans and technical assistance in 17 developing countries, incl. Côte d'Ivoire. The project's objective is to scale up climate finance and strengthen the capacities of local partners in climate-related sectors, incl. renewable energies, energy efficiency and climate resilience. Although the project is not explicitly targeting e-mobility as investment opportunity, it has included measures in urban transport as climate change mitigation option in an indicative list that may evolve depending on local needs. The proposed project will investigate opportunities for scaling up the financing of e-mobility and renewable energies that could be offered through this GCF initiative. Furthermore, it will be verified if TA activities could complement the TA of the GEF project. Exchange can be established easily since the Bureau of Climate Change (BCC) within the Ministry of Environment and Sustainable Development is the GCF's National Designated Authority in CI.

In the scoping mission, all relevant ministries and donors were contacted and debriefed on the proposed initiative. This will be ongoing throughout implementation of the project.

[1] Source: <https://www.scalingsolar.org/>

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 Development Planning

The planned GEF project will reinforce national development priorities defined in the National Development Plan (PND by its French acronym) 2016-2020. Concretely, the project will contribute to the following main development pillars as defined in the PND as follows:

- The quality of the institutions and governance will be enhanced by creating new cross-sectoral institutional networks and capacity building.
- The capacities of women and men to build a wealthy emerging country will be enhanced in the public transport sector.
- Changes in modes of production and consumption to build the emergence of the country will be sustained through the switch to e-mobility which also offers opportunities to build up new industries, for instance in EV assembly, the renewables sector, etc.
- The development of strategic infrastructures as a lever of emergence and in line with the principles of environmental sustainability will be directly supported by introducing modern and clean electric public transport modes.
- The advantageous insertion in networks of regional and global exchanges will be directly leveraged by the integration of this project into the E-Mobility Global Programme and regional activities (e.g. the Africa Investment and Support Platform and working groups).

The PND translates into several national strategies related to the transport sector and energy. These comprise the Urban Transport Master Plan for Greater Abidjan (SDUGA), the Draft Road Map for Sustainable Mobility in Côte d'Ivoire and the National Renewable Energy Action Plan (PANER). How the project enhances these strategies has been discussed above.

Nationally Determined Contributions (NDC):

This project strengthens CI's ambitious goals defined in the Nationally Determined Contributions (NDCs) of 2015. According to the NDCs (and its underlying National Strategy for Combating Climate Change 2015-2020), Côte d'Ivoire aims at emitting about 28% (ca. 10 Gt, of which 2 Gt are coming from the transport sector) less greenhouse gases compared to a business-as-usual scenario of about 35Gt. This project directly supports the planned measures for the transport sector as proposed in the NDCs. These are i) the development of low-carbon transport offers, ii) the facilitation of the purchase of environmentally friendly vehicles and iii) scrapping schemes for the most polluting vehicles. In the field of renewable energies, the GoCI has set a target to generate 42% of electricity from renewable energy sources (i.e. 27% hydropower + 17% biomass and solar) by 2030 through its National Renewable Energy Action Plan 2016-2020/2030 which is cited in the NDCs. By its approach to promote the development of renewable energies as main power source for e-mobility, the project will directly support this objective.

Sustainable Development Goals:

The proposed project will contribute to achieving several Sustainability Development Goals (SDG) as shown in the following table.

Goal	Goals and targets	Indicators
SDG 3 – Ensure healthy lives and promote well-being for all at all ages	3.9 By 2030, substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination	3.9.1 Mortality rate attributed to household and ambient air pollution
SDG 11 – Make cities and human settlements inclusive, safe, resilient and sustainable	11.2 By 2030, provide access to safe, affordable, accessible and sustainable transport systems for all, improving road safety, notably by expanding public transport, with special attention to the needs of those in vulnerable situations, women, children, persons with disabilities and older persons	11.2.1 Proportion of population that has convenient access to public transport, by sex, age and persons with disabilities
	11.6 By 2030, reduce the adverse per capita environmental impact of cities, including by paying special attention to air quality and municipal and other waste management	11.6.1 Proportion of municipal solid waste collected and managed in controlled facilities out of total municipal waste generated, by cities 11.6.2 Annual mean levels of fine particulate matter (e.g. PM2.5 and PM10) in cities (population weighted)
SDG 13 – Take urgent action to combat climate change and its impacts	13.2 Integrate climate change measures into national policies, strategies and planning	13.2.1 Number of countries with nationally determined contributions, long-term strategies, national adaptation plans, strategies as reported in adaptation communications and national communications 13.2.2 Total greenhouse gas emissions per year

UNDAF:

The project is also aligned with the “Sustainable development” component of Cote d’Ivoire’s UNDAF 2017-2020, which states that “By 2020, governments implement policies that ensure sustainable production and consumption, income generation and resilience to climate change for the most vulnerable populations.”

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.

Building up knowledge and skills is at the core of the proposed project. The knowledge management approach encompasses the following main elements:

- Capacity building of government and private sector stakeholders through participation in events and trainings of the E-Mobility Global Programme
- Building up of knowledge among transport sector stakeholders through their active participation in the conceptual work of the project
- Using findings and lessons learned obtained through the data collection, reporting and analysis of EV operation in Abidjan to i) build know-how among fleet operators, drivers and maintenance staff and ii) disseminate information to demonstrate the technical and economic viability of the technology
- Skilling up drivers and mechanics in trainings to ensure safe, efficient and effective operation of electric taxis and/or minibuses
- Know-how and knowledge transfer to other Ivorian cities and other countries

The following table provides further details about the chosen knowledge management approach, incl. key deliverables, a timeline and budget.

Component s	Objectives	Key deliverables	When?	Budget
Component 1	Capacity building of government and private sector stakeholders through participation in events and trainings of the E-Mobility Global Programme	Participation of stakeholders in: <ul style="list-style-type: none"> i) Africa Support and Investment Platform events ii) Africa platform meeting on financing/marketplace iii) Africa electric mobility training iv) Africa training on e-buses v) Africa platform replication event 	Years 1-3	US\$ 45,400
Component s 2-4	Building up of knowledge among transport sector stakeholders through their active participation in the conceptual work of the project. Active participation will be achieved by involving thematic working groups (TWG) and r	Knowledge will be gained from the development of the following products: <ul style="list-style-type: none"> i) Technical and economic feasibility study for e-mobility in Abidjan's public transport modes serving BRT feeder lines ii) Business model and finance scheme design 	Throughout the project	Since knowledge will be gained through participation in the several activities, there is no specific budget for K

	<p>relevant stakeholders early and throughout the conceptual works. This will require that TWG members are briefed and consulted regularly in face-to-face meetings, online conferences, bilateral calls etc. International consultants will be linked up with TWG members early to ensure adequate information flow.</p>	<p>Preparation and implementation of the Pilot Investment in about 200-300 EV along the BR T corridor, incl. design of the scrapping and electrification premium and its integration in the fleet renewal fund FDTR; Preparation of an investment plan for electrifying SOTRA buses</p> <p>iii) Development of technical regulation and standards for EVs and EVSE</p> <p>iv) Charging infrastructure installation plan development and distribution grid analysis</p> <p>v) Alignment of renewable power capacity targets with e-mobility projections and development of Green Power Purchase Agreements for public transport</p> <p>vi) Investigation of options for 2nd life use of used EV batteries and review of e-waste management regulation</p>		M
Component 2	<p>Use findings and lessons learned obtained through the data collection, reporting and analysis of EV operation in Abidjan to i) build know-how among fleet operators, drivers and maintenance staff and ii) disseminate information to demonstrate the technical and economic viability of the technology. Information obtained will be used not only locally but also with the Africa Working Group and the E-Mobility Global Programme.</p>	<p>New knowledge and know-how will be gained through:</p> <p>i) EV monitoring system that will be integrated and operated together with fleet operators</p> <p>ii) At least bi-monthly analysis of the gathered data in a technical report to be shared with operators, PMU.</p> <p>iii) In case of encountered problems: immediate reporting to fleet operators and provision of support to solve the problem; all activities in this context will be logged, incl. information about if problems were solved or not</p> <p>iv) Feeding of all information into driver/mechanics training activities (see below)</p> <p>One intermediate and one final report on findings and lessons learned during EV monitoring</p>	Years 2-3 (independence of the actual purchase date of electric taxis/ minibuses)	Since knowledge will be gained through participation in the several activities, there is no specific budget for KM

		<p>ng to inform stakeholders about the technical/economic viability of the used equipment</p> <p>v) Promoting the results on the project website and through press and media work</p>		
	<p>Skilling up drivers and mechanics in trainings to ensure safe, efficient and effective operation of electric taxis and/or minibuses</p>	<p>i) Development of training material (incl. training plans, interactive hands-on exercises, presentations, etc.) for both driver and mechanics trainings</p> <p>ii) Training of trainers for local trainers who will train drivers and mechanics</p> <p>iii) Implementation of drivers and mechanics trainings</p> <p>iv) Evaluation of all trainings by participants and communication of findings to trainers for training revision, if required</p>	<p>Years 2-3 (independence of the actual purchase date of electric taxis/minibuses)</p>	<p>US\$ 100,000 (executed through AUMF, co-financing by MO T)</p>
Overall project	<p>Know-how and knowledge transfer to other Ivorian cities and other countries</p>	<p>i) Transfer of all project results to UNEP and the Global Programme and the Support and Investment Platform</p> <p>ii) Collaboration and regular exchange with other (donor-funded) transport and energy sector initiatives in CI</p> <p>iii) Communicating results to the E-Mobility Global Programme and the Africa Support and Investment Platform (incl. participation in the Africa platform replication event)</p>	<p>i-ii) Throughout the project</p> <p>iii) Year 4</p>	<p>Included in project management</p>

These knowledge management activities will enhance the impact of the project because they empower stakeholders to take informed decisions, create a strong sense of ownership by active participation in the conceptual work, anchor knowledge and skills in the country and ensure that best practices are shared regionally and internationally.

9. Monitoring and Evaluation

Describe the budgeted M and E plan

Monitoring and Evaluation (M&E) activities and related costs are presented in the costed M&E Plan (Annex J) and are fully integrated in the overall project budget.

The project will comply with UNEP standard monitoring, reporting and evaluation procedures. Reporting requirements and templates are an integral part of the legal instrument to be signed by the Executing Agency and the Implementing Agency.

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

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

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

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

Progress vis-à-vis delivering the agreed project global environmental benefits will be assessed with the Steering Committee at agreed intervals. Project risks and assumptions will be regularly monitored both by the Project Management Unit, the project partners and UNEP. Risk assessment and rating is an integral part of the Project Implementation Review (PIR). The PIR will be completed by the Chief Technical Advisor and ratings will be provided by UNEP's Task Manager. The

quality of project monitoring and evaluation will also be reviewed and rated as part of the PIR. UNEP's Task Manager will have the responsibility of verifying the PIR and submitting it to the GEF. Key financial parameters will be monitored quarterly to ensure cost-effective use of financial resources.

Since this is a Medium-Size Project (MSP) of less than 4 years of duration, no Mid-Term Evaluation (MTE) will be undertaken. However, if the project is rated as being at risk or if deemed needed by the Task Manager, he/she may decide to conduct an optional Mid-Term Review (MTR). This review will include all parameters recommended by the GEF Evaluation Office for Terminal Evaluations (TE) and will verify information gathered through the GEF tracking tools, as relevant. The review will be carried out using a participatory approach whereby parties that may benefit or be affected by the project will be consulted. Such parties were identified during the stakeholder analysis (see section 2 above). Members of the project Steering Committee could be interviewed as part of the MTR process and the National Project Director and Chief Technical Advisor will develop a management response to the review recommendations along with an implementation plan. Results of the MTR will be presented to the Project Steering Committee. It is the responsibility of the UNEP Task Manager to monitor whether the agreed recommendations are being implemented.

In-line with the with UNEP Evaluation Policy and the GEF Evaluation requirements, the project will be subject to an independent Terminal Evaluation. The Evaluation Office will be responsible for the Terminal Evaluation (TE) and will liaise with the project manager throughout the process.

The TE will provide an independent assessment of project performance (in terms of relevance, effectiveness and efficiency), and determine the likelihood of impact and sustainability. The project performance will be assessed against standard evaluation criteria using a six-point rating scheme. It will have two primary purposes: (i) to provide evidence of results to meet accountability requirements, and (ii) to promote learning, feedback, and knowledge sharing through results and lessons learned among UNEP staff and implementing partners. The direct costs of the evaluation will be charged against the project evaluation budget. The TE will typically be initiated after the project's operational completion. If a follow-on phase of the project is envisaged, the timing of the evaluation will be discussed with the Evaluation Office to feed into the submission of the follow-on proposal.

The draft TE report will be sent by the Evaluation Office to project stakeholders for comment. Formal comments on the report will be shared by the Evaluation Office in an open and transparent manner. The final determination of project ratings will be made by the Evaluation Office when the report is finalized.

The evaluation report will be publicly disclosed and will be followed by a recommendation compliance process. The evaluation recommendations will be entered into a Recommendations Implementation Plan template by the Evaluation Office. Formal submission of the completed Recommendations Implementation Plan by the project manager is required within one month of its delivery to the project team. The Evaluation Office will monitor compliance with this plan every six months for a total period of 12 months from the finalization of the Recommendations Implementation Plan.

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

The direct costs of reviews and evaluations will be charged against the project evaluation budget. A summary of M&E activities envisaged is provided in Annex J and in the table below. The GEF contribution for this project's M&E activities is US\$ 30,000.

M&E Activity	Description	Responsible Parties	Timeframe	Indicative budget (US\$)
Inception Workshop (IW)	<p>Report prepared following the IW; which includes:</p> <ul style="list-style-type: none"> - A detailed workplan and budget for the first year of project implementation, - An overview of the workplan for subsequent years, divided per component, output and activities. - A detailed description of the roles and responsibilities of all project partners - A detailed description of the PMU and PSC, including an organization chart - Updated Procurement Plan and a M&E Plan, Gender Action Plan - Minutes of the Inception Workshop 	<p>Execution: CTA</p> <p>Support: PMU</p>	1 report to be prepared following the IW, to be shared with participants 4 weeks after the IW (latest)	GEF: as part of CTA budget
Steering Committee Meeting	Prepare minutes for every Steering Committee Meeting.	<p>Execution: CTA</p> <p>Support: -</p>	At least 1 per year, minutes to be submitted 1 week following each PSC meeting	GEF: as part of CTA budget
Half-yearly progress report	Part of UNEP requirements for project monitoring.	Execution: CTA	Two (2) half-yearly progress reports for any given year	GEF: as part of CTA budget

	<ul style="list-style-type: none"> - Narrative of the activities undertaken during the considered semester - Analyzes project implementation progress over the reporting period; - Describes constraints experienced in the progress towards results and the reasons. 	Support: PMU	ar, submitted by July 31 and January 31 (latest)	
Quarterly expenditure reports	Detailed expenditure reports (in Excel) broken down per project component and budget line, with explanations and justification of any change	Execution: CTA Support: PMU	Four (4) quarterly expenditure reports for any given year, submitted by January 31, April 30, July 31 and October 31 (latest)	GEF: as part of CTA budget
Project Implementation Review (PIR)	<p>Analyzes project performance over the reporting period. Describes constraints experienced in the progress towards results and the reasons. Draws lessons and makes clear recommendations for future orientation in addressing the key problems in the lack of progress.</p> <p>The PIRs shall be documented with the evidence of the achievement of end-of-project targets (as appendices).</p>	Execution: CTA and Task Manager Support: PMU	1 report to be prepared on an annual basis, to be submitted by 15 July latest	GEF: as part of CTA budget
Annual Inventory of Non-expendable equipment	Report with the complete and accurate records of non-expendable equipment purchased with GEF project funds	Execution: CTA Support: PMU	1 report per year as of 31 December, to be submitted by 31 January latest	GEF: as part of CTA budget
Co-financing Report	Report on co-financing (cash and/or in-kind) fulfilled contributions from all project partners that provided co-finance letters.	Execution: CTA	1 annual report from each co-finance partner, and 1	GEF: as part of CTA budget

		Support: co-finance partners	consolidated report, to be submitted by 31 July latest	
Medium-Term Review (MTR) (optional)	The purpose of the MTR is to provide an independent assessment of project performance at mid-term, to analyze whether the project is on track, what problems and challenges the project is encountering, and which corrective actions are required so that the project can achieve its intended outcomes by project completion in the most efficient and sustainable way. It will verify information gathered through the GEF tracking tools.	Execution: Independent Evaluator / TM Support: CTA, PMU	At mid-point of project implementation if deemed needed by the Task Manager	GEF: US\$ 10,000 If this budget is not used, it will be rolled over to the Terminal Evaluation budget.
Final Report	The project team will draft and submit a Project Final Report, with other docs (such as the evidence to document the achievement of end-of-project targets). Comprehensive report summarizing all outputs, achievements, lessons learned, objectives met or not achieved structures and systems implemented, etc. Lays out recommendations for any further steps to be taken to ensure the sustainability and replication of project outcomes.	Execution: CTA Support: PMU	Final report to be submitted no later than three (3) months after the technical completion date	GEF: as part of CTA budget
Terminal Evaluation (TE)	Further review the topics covered in the mid-term evaluation. Looks at the impacts and sustainability of the results, including the contribution to capacity development and the achievement of global environmental goals.	Execution: Independent Evaluator / TM Support: CTA, PMU	Can be initiated within six (6) months prior to the project's technical completion date	GEF: US\$ 20,000

TOTAL M&E COST	GEF: US\$ 30,000
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10. Benefits

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

The electrification of the transport sector will lead to several employment opportunities, ranging from the maintenance and repair of EVs, over the operation of charging infrastructure, to the recycling of used vehicle batteries. It will also spur the development of new areas of business, mainly related to the import of electric vehicles, batteries and other related technological equipment. Another chance lies in the possibility for setting up assembly lines for EVs in the country.

The promotion of a coordinated development of EVs and renewable power generation capacities is likely to accelerate the development of this sector, also creating new businesses and associated jobs.

Furthermore, by modernizing the public transport system in Abidjan will benefit the country's economy in general. The GEF e-mobility project together with the AUMP will enhance urban mobility services, making public transport faster, more efficient and reliable. This is important in a city like the Greater Abidjan Area which is the powerhouse of the Ivorian economy where 60% of the country's GDP is generated. A modern public transport system makes jobs and social services more accessible and reduces transportation costs. The activities of the GEF e-mobility project and the AUMP will thus contribute to Abidjan's economic and social welfare and increase its competitiveness.

While air quality monitoring measures as well as studies on the health effects of air pollution in sub-Saharan Africa are lacking, the combustion of fuels and ambient air pollution are a cause for several health risks in the region. A summary of study outcomes suggests, that apart from respiratory outcomes (asthma, wheeze), health risks like stroke, physiological (depression) and adverse birth outcomes (low birth weight, preterm births) and higher mortality can be attributed to poor air quality in sub-Saharan Africa.[1] Old cars, poor vehicle maintenance and poor infrastructure resulting in increased traffic congestion make the main roadways hotspots of increased air pollution, harming public health and, as a consequence, economic development.[2] The introduction of electric transport modes will thus help alleviating these problems and make Abidjan a healthier and economically stronger city.

The preferred use of renewable energies to fuel new EVs rather than thermal electricity will also contribute to preserving CI's own oil and natural gas resources.

Last, but not least, the project will increase parity between women and men. Women will have a stronger say in public transport matters, more women will benefit from capacity building and training measures and new employment opportunities and they will travel safer.

[1] Source: Coker, E., Kizito, S (2018). A Narrative Review of the Human Health Effects of Ambient Air Pollution in Sub-Saharan Africa: An Urgent need for Health Effects Studies. *Int. J. Environ. Res. Public Health* 2018, 15(3), 427. <https://www.mdpi.com/1660-4601/15/3/427>

[2] Source: Sylla et al. (2017). Air Pollution Related to Traffic and Chronic Respiratory Diseases (Asthma and COPD) in Africa. Health, 9, 1378-1389. https://www.scrip.org/pdf/Health_2017092214183018.pdf

11. Environmental and Social Safeguard (ESS) Risks

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

Overall Project/Program Risk Classification*

PIF	CEO Endorsement/Approval	MTR	TE
Medium/Moderate			

Measures to address identified risks and impacts

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

The project is in the Moderate risk category. "Good practice" (which requires no additional assessment or separate safeguard management plan. However, due diligence on potential safeguard issues is recommended throughout the project) is recommended. UNEP ESSF guiding principles-- resilience and sustainability; human rights, gender equality and women empowerment, accountability and leave no one behind--are still applicable for all UNEP projects. Project level grievance mechanism (if the government does not have such venue) should be established for any complaints to be handled swiftly at the project level.

Supporting Documents

Upload available ESS supporting documents.

Title	Module	Submitted
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EM CotedIvoire_ESERN_2020.11.26	CEO Endorsement ESS	
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ANNEX A: PROJECT RESULTS FRAMEWORK (either copy and paste here the framework from the Agency document, or provide reference to the page in the project document where the framework could be found).

Project Objective	Objective level Indicators	Baseline	Mid-Point Target (if applicable)	End of project Target	Means of Verification	Assumptions & Risks	UNEP MTS reference
To mitigate GHG emissions in Côte d'Ivoire by accelerating the introduction of electric mobility through revision of the policy and institutional framework, training and capacity building; demonstration of electric vehicles; development of finance schemes and business models; private sector engagement; and upscaling and replication.	Indicator A: Greenhouse Gas Emissions Mitigated (metric tons of CO ₂ e)	Baseline A: 0	Mid-point target A: n.a.	End-of-project target A: Direct emissions mitigated: 82,5574 tCO ₂ (Period 2021-2036). Indirect emissions mitigated: 148,944 tCO ₂ (Period 2021-2036)	- Calculation of GHG emissions based on actual power consumption of the electrical fleet and applicable emission factor.	- Existence of a complete and sufficiently attractive framework that enables the uptake of e-mobility in the public transport sector	UNEP MTS 2018-2021 Climate Change Objective: Countries increasingly transition to low-emission economic development and enhance their adaptation and resilience to climate change
	Indicator B: Energy saved (MJ)	Baseline B: 0	Mid-point target B: n.a.	End-of-project target A: Direct energy saved: 866,109,256 MJ (Period 2021-2036). Indirect energy saved: 1,526,900,347 MJ (Period 2021-2036)	- Calculation of saved energy based on the actual power consumption of the electrical fleet and input of primary energy for electricity generation.	- Existence of a complete and sufficiently attractive framework that enables the uptake of e-mobility in the public transport sector	
Project Outcomes	Outcome level Indicators	Baseline	Mid-Point Target (if applicable)	End of project Target	Means of Verification	Assumptions & Risks	MTS Expected Accomplishment
Outcome 1: Government of Côte d'Ivoire establishes an institutional framework and endorses a gender sensitive national strategy for the promotion of electric mobility in public transport to implement the Draft Road Map for sustainable mobility	Indicator 1.1: A national coordination body to support and promote the uptake of low-carbon electric mobility is established, formalized by GoCI and operational.	Baseline 1.1: No	Mid-point target 1.1: Yes. - The coordination body is established and includes all key institutions. It has formulated shared goals and defined roles and responsibilities of all members.	End-of-project target 1.1: Yes - The coordination body remains operational and has agreed on post-project continuation of efforts to promote e-mobility. - The national coordination body has at least 30% female members.	- Review of the body's activities (meeting summary reports) - Reports of the coordination body's quarterly meetings - Gender-disaggregated member and meeting participation lists - Written agreement of cooperation - Written post-project action plan	- There is a mandate to expand ongoing national initiatives for the increase of energy efficiency in transport to e-mobility. - Members are provided with sufficient resources to participate in activities. - Willingness to cooperate.	Expected Accomplishment (b): Countries increasingly adopt and/or implement low greenhouse gas emission development strategies and invest in clean technologies
	Indicator 1.2: # of Ministries endorsing the gender sensitive national strategy to promote low-carbon electric mobility in urban public transport	Baseline 1.2: 0	Mid-point target 1.2: The respective Ministries are discussing the draft strategy. The Gender Units (Cellules Genre) of each Ministry are actively involved in the discussions.	End-of-project target 1.2: 4, out of which: Ministry of Transport, Ministry of Environment, Ministry of Energy and Ministry of Finance.	- Public announcements by the respective Ministries - Public availability of the strategy - Government gazette and other publications	- Conflicting interests making it impossible to find consensus or required compromises that render the strategy and action plan too vague. - Lack of interest by the Ministries although benefits are clear. - Lack of knowledge of the subject matter.	
	Indicator 1.3: # of reports on best practices and lessons learned on low carbon electric mobility shared with the global programme by the national coordination body	Baseline 1.3: 0	Mid-point target 1.3: n.a.	End-of-project target 1.3: 1	- Lessons learned and best practices report produced by the national coordination body (deliverable 1.1.5)	- Best practices and lessons learned are generated early enough so that they can be fed into/included in the support activities by the global programme.	
Outcome 2: Demonstrations provide evidence of technical, financial and environmental sustainability of EVs and enable public and private sector stakeholders to plan for the scale-up of low-carbon electric mobility in Côte d'Ivoire	Indicator 2.1: # of new electric taxis and/or mini-buses meeting the technical regulations recommended by the project	Baseline 2.1: No electric vehicles in the public transport sector of Abidjan, except for a small fleet of 3 minibuses at the University Félix Houphouët-Boigny d'Abidjan	Mid-point target 2.1: n.a.	End-of-project target 2.1: At least 200 electric taxis and/or minibuses	- Project monitoring on the country level - Technical specifications of the purchased vehicles	- Fleet operators can be convinced and are sufficiently solvent to purchase EVs - All permissions to operate EVs granted - The scrapping and electrification premium and a soft loan for the purchase of EV has been put in place through WB AUMP project. Financial incentives are high enough to trigger investments - Charging infrastructure is available - EV costs continue to decrease - EV manufacturers actively engage in CI	Expected Accomplishment (b): Countries increasingly adopt and/or implement low greenhouse gas emission development strategies and invest in clean technologies
	Indicator 2.2: # of up-scaling plans endorsed that incorporate lessons learned from the demonstrations	Baseline 2.2: 0	Mid-point target 2.2: n.a.	End-of-project target 2.2: 2, out of which: - The electrification investment plan for SOTRA feeder-line buses (to be endorsed by Ministry of Transport & SOTRA) - The charging infrastructure installation plan for large-scale introduction of EVs in Abidjan's public transport (to be endorsed by Ministry of Energy, CI-ENERGIE and CIE)	- Government gazette and other publications - Electrification investment plan document - Charging infrastructure installation plan document	- Commitment of the respective Ministries and agencies (SOTRA, CI-ENERGIE and CIE) to support the electrification of public transport modes	

Project Outcomes	Outcome level Indicators	Baseline	Mid-Point Target (if applicable)	End of project Target	Means of Verification	Assumptions & Risks	MTS Expected Accomplishment
Outcome 3: Government of Côte d'Ivoire adopts financial incentives and technical standards to promote investments in low-carbon electric mobility in public transport.	Indicator 3.1: A set of fiscal policies, financial subsidies and/or favorable electricity tariffs is adopted by the government facilitating the economically viable operation of EVs and charging infrastructure in at least two public transport sub-sectors (taxis, minibuses or buses).	Baseline 3.1: No.	Mid-point target 3.1: Draft fiscal policy/regulation and/or draft tax reform proposal are prepared.	End-of-project target 3.1: Yes. (to be adopted by the Ministry of Energy, the Ministry of Finance and ANARE-CI)	- Fiscal policy review, review of financial incentives, review of electricity tariffs for EV charging - Economic feasibility studies as reference point - Records of cases where the purchase of electric vehicles and charging infrastructure has received fiscal and/or financial incentives - Records of the disbursement of the scrapping and electrification premiums through the FDTR	- Viable business models for electric public transport modes could be identified and a corresponding finance scheme could be developed - National budget allows for financial incentives (incl. reduced national incomes through tax breaks)	Expected Accomplishment (b): Countries increasingly adopt and/or implement low greenhouse gas emission development strategies and invest in clean technologies
	Indicator 3.2: The technical regulations and standards for EVs and EVSE (that are at least applicable to electric taxis, minibuses and buses) to facilitate the uptake of low carbon electric mobility are adopted	Baseline 3.2: No.	Mid-point target 3.2: Draft technical regulations and standards are prepared.	End-of-project target 3.2: Yes. (to be adopted by the by the Ministry of Transport and the Ministry of Energy)	- Government gazette and other publications - Technical regulations and standard documents	- Commitment of the respective Ministries to support the introduction of electric public transport modes	
Outcome 4: Government of Côte d'Ivoire endorses recommendations on renewable energy integration and an amendment on e-waste regulations to support long-term environmental sustainability of low-carbon electric mobility	Indicator 4.1: The recommendations on a direct offtake tariffication scheme for the integration of RE generation and EV charging are endorsed	Baseline 4.1: No	Mid-point target 4.1: No	End-of-project target 4.1: Yes (to be endorsed by the Ministry of Energy, the Ministry of Finance and ANARE-CI)	- Government gazette and other publications - Recommendations document / report	- Framework conditions for RE projects sufficiently attractive for investments	Expected Accomplishment (b): Countries increasingly adopt and/or implement low greenhouse gas emission development strategies and invest in clean technologies
	Indicator 4.2: The amended/improved e-waste management regulations for the collection, re-use and/or environmentally sound disposal of used electric vehicle batteries is endorsed	Baseline 4.2: No	Mid-point target 4.2: No	End-of-project target 4.2: Yes (to be endorsed by the Ministry of Environment)	- Government gazette and other publications - Amended e-waste regulations document	- Insufficient interest by e-waste collection companies to collect and treat of used EV batteries remains low in the upcoming years. - Insufficient market for the re-use of used batteries.	

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).

Because of the large amount of information (over 100 pages of reviews), we have uploaded these on the Portal as separate pdf files which include all responses to the GEF's reviews:

Annex B.1 – Responses to GEF Sec reviews (on the PFD)

Annex B.2 – Responses to GEF Sec reviews (on the PFD addendum)

Annex B.3 – Responses to STAP comments

Annex B.4 – Responses to Council comments

The Responses to STAP comments may be found below:

Part I: Project Information	
GEF ID	10114
Project Title	Global Program to Assist Countries with Shift to Electric Mobility
Date of Screening	27-May-19
STAP member Screener	Saleem H. Ali
STAP secretariat screener	Sunday Leonard
STAP Overall Assessment	Concur

STAP comments	UNEP replies
<p>The e-mobility program has been developed based on a set of 17 child projects, as well as synergies with the EC Solutions Plus program. Partnership with the International Energy Agency gives the proposal a high level of rigor in terms of metrics of energy costing and efficiency measurement criteria. The proposal is also supported by relevant studies from applicable development agencies.</p> <p>The public-private partnership aspect of the project is convincing and likely to deliver the overall desired impact - if well- implemented.</p> <p><u>Comment 1:</u> Key barriers to the scaling of e-mobility have been recognized in the child projects. However, there are also some system factors around e-mobility that deserve attention, and which should be highlighted as barriers to upscaling. The material needs of e-mobility infrastructure</p>	<p><u>Reply 1:</u> The project recognizes the issues around provision of raw materials for battery production. Nonetheless, it is not the focus of the project to ensure availability of these materials and subsequent battery supply. It seems to be understood that availability of resources such as lithium, cobalt, nickel and copper and their transformation into reserves (classification based on IEA Global Electric Vehicle Outlook [GEVO] 2019) is not constrained by the natural resource base but rather by the pace of investment to un-tap these resources (see IEA GEVO 2019). The project seeks for acceleration of EV demand, and therefore acceleration of demand for batteries. It is believed that such an accelerated demand will lead to the necessary investment in battery production capacity and hence the provision of raw materials.</p>

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

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

Comment 3: A core challenge will be to ensure that the source of electricity for the e-mobility platform is low carbon to maximize the GHG reduction benefit. All calculations for GHG emission

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

Reply 2: For countries that have both an e-mobility and a Sustainable Cities project (i.e. India, etc.), close coordination will be undertaken during project implementation to ensure synergies. Whenever the sustainable cities projects organize events/workshops on urban mobility, the e-mobility project team / proponents will be invited to participate.

Reply 3: GHG emission saving potentials for all Country Child Projects are evaluated based on 1.) the current local carbon footprint of grid electricity; and 2.) prospects to reduce the average carbon footprint of grid electricity based on commitments and pledges to mitigate climate change. Many of the low and middle-income countries included in the Global E-Mobility Programme already have power mixes based on high shares of low carbon electricity such as hydro, wind, solar PV and nuclear power. This is true for many of the Country Child Projects in Latin America, Africa, Eastern Europe and West Asia. For Country Child Projects with relatively high grid emission factors such as India, most of the SIDS, Indonesia, South Africa, etc. projects have been designed in a way to ensure that sufficient amount of low carbon power will be integrated i

<p>s (cars, buses versus trains etc.) need to be evaluated in terms of life-cycle analysis methodologies to ensure full systems-wide GHG benefits and ensure that impacts are internalized.</p>	<p>n the electricity mix used to power the demonstration vehicles to yield net climate benefits. As a general “rule of thumb” a carbon footprint threshold for grid electricity of around 800 to 900 gCO₂/kWh is assumed to mark the line above which additional measures are necessary to reach net reductions of greenhouse gas emissions. Compared to alternative, technology based transport GHG mitigation measures such as the large scale use of biofuels as well as the use of potentially low carbon fuels such as hydrogen and synthetic fuels, it is believed that the direct use of electricity constitutes the most efficient means of decarbonizing transportation, alongside implementation of “avoid” (avoid transport demand) and “shift” measures (shift transport demand to more efficient means of mass transport as well as non-motorized transport). It is therefore necessary to introduce e-mobility now, in order to be prepared for upscaling once mitigation targets in the relatively low-abatement cost power sector have been achieved.</p>
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STAP comments	UNEP replies
<p><u>Comment 4:</u> The program will generate both climate mitigation and air pollution reduction benefits. If possible, the expected health benefits from air pollution reduction (for example, premature death prevention and Disability-Adjusted Life Years - DALYs) should be estimated during project development. This will provide a more detailed information on the environmental and socio-economic benefits from the GEF’s investment.</p> <p><u>Comment 5:</u> There is detailed evidence of multi-stakeholder engagement, particularly for training programs, and other activities which connect with the OECD’s multi-stakeholder engagement processes. It would be helpful to acknowledge that e-mobility has implications for “energy justice”, because growth of this sector has largely been in high-income markets, especially for electric cars.</p>	<p><u>Reply 4:</u> The air pollution reduction and associated expected health benefits will not be measured/quantified by the projects through GEF funding. However, if the countries wish to undertake these estimates, they will be welcome to do it through co-finance contributions.</p> <p><u>Reply 5:</u> E-mobility has the potential to increase energy justice and to support the development of local value chains. While petroleum-based fuels are imported in most of the Country Child Projects, electricity is generated locally, with the potential to include high shares of locally generated renewable power. Introduction and up-scaling of e-mobility has therefore the potential to increase energy security and to hedge against the price volatility of the global petroleum fuel market. In many of the Country Child Projects, consumer prices of petroleum fuels are regulated by government and price spikes in the global supply chain has immediate effects on countries budgets. Total cost of ownership of electric vehicles, in particular when used in fleets such as public transportation fleets (buses, taxis, 2&3 wheeler taxis) are already lower than for conventional vehicles today in many of the Child Country Projects. The large-scale introduction of EVs in such fleets can therefore lead to better economics of public transport services, which in turn can lead to better service and lower cost of transportation for the end consumer. In addition, the provision of e-mobility</p>

ty applications such as electric 2&3 wheelers in least developed countries can un-tap synergies with rural electrification based on renewable micro and mini-grids (e.g, based on solar PV & electricity storage). Last but not least, the relatively less complex nature of electric vehicles can lead to the creation of green jobs in the local assembly and manufacturing of EVs, notably electric 2&3wheelers.

Comment 6: STAP recommends that project proponents review the following study: Sovacool, B. K., Kester, J., Noel, L. & de Rubens, G. Z. Energy Injustice and Nordic Electric Mobility: Inequality, Elitism, and Externalities in the Electrification of Vehicle-to-Grid (V2G) Transport. *Ecological Economics* 157, 205–217 (2019).

Reply6: We take note of this recommendation. This will be shared with project proponents and the global thematic working groups.

Comment 7: E-vehicle technology is rapidly evolving; it will be important therefore to keep track of and incorporate innovations in the field. University partners in academia would be recommended in this regard. A few key academic partners are noted such as University of California Davis and Technical University of Denmark. These institutions and others should be involved in the M&E program.

Reply 7: The GEF Global E-Mobility Programme will be implemented in close collaboration with the European Commission funded Solutions Plus project. The Solutions Plus project, which started implementation in January 2020, and which has a total budget of about 18 million EUR, is targeting e-mobility demonstration projects in 9 low and middle-income cities world-wide, and includes replication activities of these demonstration projects in a number of additional cities and countries. UNEP is responsible for the development of replication projects in 8 cities worldwide. It has been agreed that EC Solution Plus funds will be included in 5 GEF Country Child Projects (around 60k to 80k USD per replication project) to procure charging equipment and to provide targeted support to local innovators with the installation and operation of this equipment. Similar to UNEP, DTU is a consortium member of the EC Solution Plus project and is mainly responsible for impact assessment and data collection and analysis of the project. UNEP will make sure that impact assessment and data collection and analysis will be closely coordinated between the GEF E-mobility Programme and the EC Solution Plus project and that all tools and materials as well as project outcomes and lessons learnt will be shared between both projects. In fact, the GEF and the EC Solutions Plus project target the joint and complementary development of tools, training materials, and events.

Academic partners may also include the University of California, Davis, which is a long-standing partner in UNEP's Global Fuel Economy Initiative (GFEI) through the Sustainable Transportation Energy Pathways Program directed by Lew Fulton.

Comment 8: A recent study which may be helpful in considering some of the pitfalls of e-mobility is also referenced below: Onat, N. C., Kucukvar, M., Aboushaqrah, N. N. M. & Jabbar, R. How sustainable is electric mobility? A comprehensive sustainability assessment approach for the case of Qatar. Applied Energy 250, 461–477 (2019).

Reply 8: We take note of this recommendation. This will be shared with project proponents and the global thematic working groups.

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

Part II: Project justification	A simple narrative explaining the project's logic, i.e. a theory of change.		
1. Project description. Briefly describe:			
1) the global environmental and/or adaptation problems, root causes and barriers that need to be addressed (systems description)	Is the problem statement well-defined?	Yes – detailed review of the material from the perspective of development agencies provided. However, academic literature review is not provided.	-
	Are the barriers and threats well described, and substantiated by data and references?		
	For multiple focal area projects: does the problem statement and analysis identify the drivers of environmental degradation which need to be addressed through multiple focal areas; and is the objective well-defined, and can it only be supported by integrating two, or more focal areas objectives or programs?		
2) the baseline scenario or any associated baseline projects	Is the baseline identified clearly?	Yes, baseline of current programs for countries provided as well as the relationship with EC Solutions plus program.	-
	Does it provide a feasible basis for quantifying the project's benefits?		
	Is the baseline sufficiently robust to support the incremental (additional cost) reasoning for the project?		
	For multiple focal area projects:		
	are the multiple baseline analyses presented (supported by data and references), and the multiple benefits specified, including the proposed		

	s specified, including the proposed indicators;		
	are the lessons learned from similar or related past GEF and non-GEF interventions described; and how did these lessons inform the design of this project?		
3) the proposed alternative scenario with a brief description of expected outcomes and components of the project	What is the theory of change?	Good presentation of theory of change material in Figure 6.	
	What is the sequence of events (required or expected) that will lead to the desired outcomes?		
	· What is the set of linked activities, outputs, and outcomes to address the project's objectives?		
	· Are the mechanisms of change plausible, and is there a well-informed identification of the underlying assumptions?		
	· Is there a recognition of what adaptations may be required during project implementation to respond to changing conditions in pursuit of the targeted outcomes?		
5) incremental/additional cost reasoning and expected contributions from the baseline, the GEF trust fund, LDCF, SCCF, and co-financing	GEF trust fund: will the proposed incremental activities lead to the delivery of global environmental benefits?	Yes – very detailed cost reasoning and partnerships provided.	
	LDCF/SCCF: will the proposed incremental activities lead to adaptation which reduces vulnerability, builds adaptive capacity, and increases resili-		

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

	Is there a clearly-articulated vision of how the innovation will be scaled-up, for example, over time, across geographies, among institutional actors?		
	Will incremental adaptation be required, or more fundamental transformational change to achieve long term sustainability?		
1b. Project Map and Coordinates. Please provide geo-referenced information and map where the project interventions will take place.			
2. Stakeholders. Select the stakeholders that have participated in consultations during the project identification phase: Indigenous people and local communities; Civil society organizations; Private sector entities. If none of the above, please explain why. In addition, provide indicative information on how stakeholders, including civil society and indigenous peoples, will be engaged in the project preparation, and their respective roles and means of engagement.	Have all the key relevant stakeholders been identified to cover the complexity of the problem, and project implementation barriers?	The energy justice aspect of this program should be closely monitored as e-mobility uptake continues to favor higher income households	Please refer to our response to the energy justice comment in the 1 st section above (reply 5).
	What are the stakeholders' roles, and how will their combined roles contribute to robust project design, to achieving global environmental outcomes, and to lessons learned and knowledge?		

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

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

	How have these lessons informed the project's formulation?		
	Is there an adequate mechanism to feed the lessons learned from earlier projects into this project, and to share lessons learned from it into future projects?		
8. Knowledge management. Outline the "Knowledge Management Approach" for the project, and how it will contribute to the project's overall impact, including plans to learn from relevant projects, initiatives and evaluations.	What overall approach will be taken, and what knowledge management indicators and metrics will be used?	University partnerships could be better leveraged for knowledge management. Clearer role delineation of university and research partners would be a positive development.	Please refer to our response in relation to UCD and DTU in the 1 st section above (reply 7).
	What plans are proposed for sharing, disseminating and scaling-up results, lessons and experience?		
STAP advisory response	Brief explanation of advisory response and action proposed		
1. Concur	STAP acknowledges that on scientific or technical grounds the concept has merit. The proponent is invited to approach STAP for advice at any time during the development of the project brief prior to submission for CEO endorsement.		
	* In cases where the STAP acknowledges the project has merit on scientific and technical grounds, the STAP will recognize this in the screen by stating that "STAP is satisfie		

	d with the scientific and technical quality of the proposal and encourages the proponent to develop it with same rigor. At any time during the development of the project, the proponent is invited to approach STAP to consult on the design.”		
2. Minor issues to be considered during project design	STAP has identified specific scientific /technical suggestions or opportunities that should be discussed with the project proponent as early as possible during development of the project brief. The proponent may wish to:		
	(i) Open a dialogue with STAP regarding the technical and/or scientific issues raised;		
	(ii) Set a review point at an early stage during project development, and possibly agreeing to terms of reference for an independent expert to be appointed to conduct this review.		
	The proponent should provide a report of the action agreed and taken, at the time of submission of the full project brief for CEO endorsement.		
3. Major issues to be considered during project design	STAP proposes significant improvements or has concerns on the grounds of specified major scientific/technical methodological issues, barriers, or omissions in the project concept. If STAP provides this advisory response, a full explanation would also be provided. The propon		

	ent is strongly encouraged to:		
	(i) Open a dialogue with STAP regarding the technical and/or scientific issues raised; (ii) Set a review point at an early stage during project development including an independent expert as required. The proponent should provide a report of the action agreed and taken, at the time of submission of the full project brief for CEO endorsement.		

The Responses to Council comments may be found below:

UNEP responses to GEF Council comments on the Global Programme to Support Countries with the Shift to Electric Mobility (GEFID 10114)

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

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

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

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

Response:

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

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

Opportunities: According to today's knowledge, there seems to be a correlation between air quality and COVID-19, whereby COVID-19 incidence and mortality are significantly higher in areas that have high levels of local air pollution. This includes particulate matters (e.g. PM2.5, PM10)[1] as well as N₂O from both mobile (e.g. trucks and cars) and stationary (e.g. coal power stations) emission sources[2]. Since electric mobility has the potential to significantly contribute to improved urban air quality, we assume that it will play an important role in countries' strategies to respond to the COVID-19 pandemic.

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

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

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

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

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

Response:

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

Once the PIF/PFD is approved by Council, as part of the detailed design process, Agencies and actors listed as other providers of co-financing amounts are asked to reassess and formally confirm that the co-financing volumes which had been included in the PIF/PFD have been approved by the competent authority within each specific organization. This is formalized through the submission of co-financing confirmation letters. In case a specific entity is no longer able to provide the previously stated co-financing amount, either in full or in part, generally Implementing Agency and GEFSEC would work together to assess if the stated co-financing is essential to achieve the project/program's objective. If so, GEFSEC and Agency assess if the expected amount of co-financing that is no longer available can be replaced by existing or additional co-financing from other actors. In case the co-financing is deemed essential, and there is no possibility to source such funds that are considered necessary to achieve the stated objectives, GEFSEC and Agency would consider whether to revise the approved project/program, and if not possible/advisable the project/program would not receive CEO Endorsement.

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

· We raised at the last council our interest in verifying the ability of GEF and its accredited agencies to conduct independent audits of such contributions, including verifying and assessing the abilities of the involved parties to meet the co-financing obligations of this project. We recognize that this process --- along with many other due diligence procedures --- could be increasingly impaired by the latest COVID-19 crisis. Detailed explanations on how the Secretariat plans to handle these types of issues would be appreciated (preferably in writing to be posted on the GEF website, as it is not clear from the existing material and guidelines on the website)

Response:

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

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

Response:

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

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

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

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

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

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

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

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

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

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

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

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

Response:

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

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

Response:

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

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

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

Response:

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

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

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

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

Response:

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

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

Response:

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

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

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

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

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

Response:

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

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

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

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

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

-
Response:

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

· While the proposal provides a comprehensive overview of highly relevant initiatives and programmes, Germany welcomes including existent initiatives such as the Transformative Urban Mobility Initiative and the C40 Cities Finance Facility as well as upcoming initiatives such as TUMIVolt to enable exchange of experiences as well as potentials for future collaboration. This is especially relevant considering the planned future expansion of the proposed project to countries like Nigeria and Mexico which are partner countries to above mentioned initiatives.

Response:

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

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

Response:

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

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

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

Response:

Regarding the question on Armenia, unfortunately there is a mistake with the short description of the Armenia child project baseline in Table 2 of the PFD. This will be corrected during the Child Project development and a note will be attached to the PFD to that effect. The 5,000 EVs mentioned and the local manufacturing actually belong to Ukraine. The US Council comment is right and Armenia imported about 30 EVs in 2018 (https://energyagency.am/en/page_pdf/tsragri-anvanoum). The project feasibility in Armenia will be further analyzed during development, but the government has prioritized the promotion of electric vehicles as one of the transport measures in their NDC. Armenia recently waived the VAT on EVs to stimulate the EV market (<https://energyagency.am/en/category/noroutyouanner-ev-mijocaroumner/elektromobilneri-nermoutsoumy-kazatvi-aah>). In general, high import duties for vehicles can be an opportunity rather than a barrier for EV import. In case these duties are waived or reduced for EVs (to some extent that is already the case with the VAT exemption for EVs in Armenia), it provides a meaningful monetary incentive for customers to buy electric vehicles. EV market uptake in Norway is largely due to import and registration tax exemptions for EVs, while import of conventional cars is subject to high taxes. Yerevan has instituted an exemption of parking fees for EV's and has deployed some recharging infrastructure. Armenia already has a low emissions factor of about 0.4 tons of CO2/MWh and the introduction of EV's in Armenia would be able to reduce emissions with such a grid profile, and Armenia has introduced several policies to incentivize renewable power generation investments. For example, projects have been implemented or have been committed to improve energy transmission efficiency and reliability, and investment in renewables is taking off. This GEF project aims to demonstrate light duty vehicles in a government fleet in Yerevan, and in 2019, 23 charging stations will be installed through a GEF-6 funded Small Grant Programs implemented and led by UNDP. Promoting electric vehicles together with renewable energy will improve energy efficiency and further reduce CO2 emissions, air pollution and energy dependence in Armenia. This will be in full alignment with the countries' NDC and its strong commitment to the introduction of clean and sustainable energies.

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

- We put great emphasis on cutting GHG emissions through electrification of the transport sector. We are of the opinion that if all take concerted action, it will drive down costs because of scale production.
- Every country has to choose their own path. However, an important lesson so far is that one needs to tax emissions. You need carrots and sticks. In line with general GEF principles of an enabling policy framework, one should pay attention to relevant tax policies when designing GEF programs, including policies for reducing fossil fuel subsidies.

Response:

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

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

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

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

PPG Grant Approved at PIF: US\$ 50,000			
<i>Project Preparation Activities Implemented</i>	<i>GETF/LDCF/SCCF Amount (US\$)</i>		
	<i>Budgeted Amount</i>	<i>Amount Spent</i>	<i>Amount Committed</i>
	<i>t</i>	<i>to date</i>	
<u>Project Development Consultant</u>	23,176	23,176.00	
<u>UNEP Air Quality and Mobility Unit expert</u>	14,960	13,758.16	1,201.84
<u>Project Development Consultant travel</u>	6,824	1,015.87	
<u>UNEP Air Quality and Mobility Unit expert travel</u>	5,040	1,752.74	3,287.26
Total	50,000	39,702.77	4,489.10

The balance of unspent and uncommitted funds (US\$ 5,808.13) will be used to undertake exclusively preparation activities up to one year of CEO Endorsement/approval date. No later than one year from CEO endorsement/approval date, UNEP will report closing of PPG to Trustee in its Quarterly Report.

ANNEX D: Project Map(s) and Coordinates

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

The project intervention primarily aims at enabling pilot investments in electric public transport modes in Abidjan (5° 20' 43" N; 4° 1' 27" W, cf. map below). At the same time, newly created national regulation or best practices created in Abidjan are likely to stimulate the uptake of e-mobility in other cities of Côte d'Ivoire as well. In addition, the goal to accelerate renewable power deployment may trigger investments throughout the country.



Map of Côte d'Ivoire (Source: Wikimedia, © BY OCHA, CC BY 3.0)

ANNEX E: Project Budget Table

Please attach a project budget table.

The detailed project budget may be found in the table below:

Expenditure category & detailed description	Component 1	Component 2	Component 3	Component 4	Sub-total	M&E	PMC	Total	Responsible entity
Goods	0	5,600	0	0	5,600	0	0	5,600	
Equipment to extract, collect and store EV operational data	0	5,600	0	0	5,600	0	0	5,600	MINEDD
Contractual Services – Company	14,500	0	3,500	5,250	23,250	30,000	6,000	59,250	
Venue and catering services for workshops and events	14,500	0	3,500	5,250	23,250	0	0	23,250	MINEDD
Mid-Term Review (optional)	0	0	0	0	0	10,000	0	10,000	UNEP Evaluation Office
Terminal Evaluation	0	0	0	0	0	20,000	0	20,000	UNEP Evaluation Office
Independent financial audits	0	0	0	0	0	0	6,000	6,000	MINEDD
International Consultants	22,750	74,500	37,500	63,750	198,500	0	0	198,500	
International Policy and Strategy expert	13,750	0	16,500	0	30,250	0	0	30,250	MINEDD
International E-mobility Technical Support (UNEP SM Unit)	9,000	3,000	4,500	6,000	22,500	0	0	22,500	UNEP SMU
International E-Mobility Technology and Business expert	0	52,250	11,000	0	63,250	0	0	63,250	MINEDD
International Grid Integration and Renewable Energy expert	0	19,250	5,500	27,500	52,250	0	0	52,250	MINEDD
International Battery/Electronic Waste Management expert	0	0	0	30,250	30,250	0	0	30,250	MINEDD
Local Consultants	0	10,500	0	5,250	15,750	0	0	15,750	
Local technical consultant (Support to experts: Local data research, meeting preparation, etc.)	0	10,500	0	5,250	15,750	0	0	15,750	MINEDD
Salary and benefits / Staff costs	14,000	8,500	4,000	6,000	32,500	0	31,150	63,650	
Chief Technical Advisor	14,000	8,500	4,000	6,000	32,500	0	31,150	63,650	MINEDD
Travel	52,600	5,620	2,120	3,520	63,860	0	0	63,860	
Travel for the International E-mobility Technical Support (UNEP SM Unit)	4,600	0	0	0	4,600	0	0	4,600	UNEP SMU
Travel to attend Africa Support & Investment Platform events and trainings	43,200	0	0	0	43,200	0	0	43,200	MINEDD
DSA to attend E-Mobility Global Programme launch and closing events	2,200	0	0	0	2,200	0	0	2,200	MINEDD
Travel to project result presentation events in 5 other cities in Cote d'Ivoire	1,000	0	0	0	1,000	0	0	1,000	MINEDD
Travel for International E-Mobility Technology and Business expert	0	3,720	520	0	4,240	0	0	4,240	MINEDD
Travel for the International Grid Integration and Renewable Energy expert	0	1,900	0	1,920	3,820	0	0	3,820	MINEDD
Travel for the International Policy and Strategy expert	1,600	0	1,600	0	3,200	0	0	3,200	MINEDD
Travel for the Int. Battery/Electronic Waste Management expert	0	0	0	1,600	1,600	0	0	1,600	MINEDD
Other operating costs	2,106	0	0	0	2,106	0	0	2,106	
DeepL Advanced Licence (Automated Translation of up to 20 documents/month) and other translation-related cost	2,106	0	0	0	2,106	0	0	2,106	MINEDD
Grand Total	105,956	104,720	47,120	83,770	341,566	30,000	37,150	408,716	

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.

Not applicable.

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 Agencies 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.

Not applicable.

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).

Not applicable.