Program Framework Document (PFD) entry – GEF - 7

Global Programme to Support Countries with the Shift to Electric Mobility.

Part I: Program Information

GEF ID
10114

Program Type
PFD

Type of Trust Fund
GET

Program Title
Global Programme to Support Countries with the Shift to Electric Mobility.

Countries
Global, Antigua and Barbuda, Armenia, Burundi, Chile, Costa Rica, Cote d'Ivoire, India, Jamaica, Madagascar, Maldives, Peru, Seychelles, Sierra Leone, St. Lucia, Togo, Ukraine, Uzbekistan

Agency(ies)
UNEP, ADB, UNDP, EBRD

Other Executing Partner(s)	Executing Partner Type
International Energy Agency (IEA)	Others
United Nations Environment Programme (UNEP)	GEF Agency

Center Mario Molina	Others
Asian Development Bank (ADB)	GEF Agency

GEF Focal Area
Climate Change

Taxonomy
Deploy innovative financial instruments, Influencing models, Convene multi-stakeholder alliances, Partnership, Type of Engagement, Strategic Communications, Communications, Stakeholders, Focal Areas, Climate Change, Climate Change Mitigation, Strengthen institutional capacity and decision-making, Demonstrate innovative approache, Transform policy and regulatory environments, Participation, Consultation, Information Dissemination, Private Sector, Large corporations, SMEs, Capital providers, Financial intermediaries and market facilitators, Individuals/Entrepreneurs, Awareness Raising, Education, Public Campaigns, Behavior change, Civil Society, Non-Governmental Organization, Academia, Gender Equality, Gender Mainstreaming, Beneficiaries, Women groups, Gender results areas, Capacity, Knowledge and Research, Innovation, Capacity Development, Knowledge Generation, Peer-to-Peer, Knowledge Exchange, Training, Course, Seminar, Workshop, South-South, Field Visit, North-South, Conference, Sustainable Urban Systems and Transport

Rio Markers
Climate Change Mitigation
Climate Change Mitigation 2

Climate Change Adaptation
Climate Change Adaptation 0

Duration
48 In Months

Agency Fee($)
2,701,738

Program Commitment Deadline	Submission Date
12/14/2020	10/5/2018

Impact Program
IP-Food-Land-Restoration **No**

IP-Sustainable Cities **No**

IP-Sustainable Forest Management Amazon **No**

IP-Sustainable Forest Management Congo **No**

IP-Sustainable Forest Management Drylands **No**

Other Program **Yes**

A. Indicative Focal/Non-Focal Area Elements

Programming Directions	Expected Outcomes	Trust Fund	GEF Amount($)	Co-Fin Amount($)
CCM-1-2	Promote innovation and technology transfer for sustainable energy breakthroughs for electric drive technologies and electric mobility	GET	30,019,317	433,088,591
		Total Program Cost ($)	**30,019,317**	**433,088,591**

B. Indicative Project description summary

Program Objective

Support countries to design and implement electric mobility programs as part of an overall shift to sustainable, low carbon transport sector.

Program Component	Financing Type	Program Outcomes	Trust Fund	GEF Amount($)	Co-Fin Amount($)
1. Global thematic working groups and knowledge materials	Technical Assistance	1.1 Knowledge products are generated to support policy making and investment decision-making through four global thematic working groups *Outputs:* *1.1.1 Four thematic working groups on key electric mobility topics including light and heavy-duty electric vehicles, charging infrastructure and grid integration, and battery life cycle aspects are operational* *1.1.2 Information exchange and network opportunities are created between countries and global and regional experts* *1.1.3 Best practices and experiences in electric mobility are collected and synthesized from first movers and GEF 5&6 projects* *1.1.4 A toolbox including guidance materials, analytic tools, strategies, factsheets, cost benefit analyses, roadmaps, policy packages, business models and financing schemes for promoting and supporting electric mobility is developed* *1.1.5 Training materials are prepared for use in the support and investment platforms*	GET	1,173,910	4,690,000

2. Support and Investment Platforms	Technical Assistance	2.1 Conditions are created for market expansion and investment in electric mobility through support and investment platforms *Outputs:* *2.1.1 Three support and investment platforms are established and operational to disseminate knowledge from the global thematic working groups to countries, form regional communities of practice and create an e-mobility market place* *2.1.2 Training courses are delivered to country and city stakeholders* *2.1.3 Communities of practice are established to share good practices, through South-South cooperation and peer-to-peer support* *2.1.4 Technical support is provided to countries and cities, including through help desk support and through knowledge developed in the global working groups* *2.1.5 Replication of GEF and EC Solutions Plus country project experiences to other countries and cities in the regions interested in promoting electric mobility is supported* *2.1.6 Electric mobility market places are established to promote and support investment in electric mobility*	GET	2,243,462	7,200,000
3. Country project implementation	Investment	3.1 Conditions are created at country and city level for the introduction of electric mobility demonstration projects, and wider up take of electric mobility	GET	23,542,961	409,534,130

4. Tracking progress, monitoring and dissemination	Technical Assistance	4.1 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. *Outputs:* *4.1.1 Global EV Outlook and other related publications are expanded to additional countries, data, assessments, and case studies* *4.1.2. Knowledge management, and communications, website established* *4.1.3 Monitoring framework is established and indicators and targets are tracked* *4.1.4 One global project launch meeting and one global end of project electric mobility meeting are co-organised with other events*	GET	871,731	3,855,000
			Sub Total ($)	27,832,064	425,279,130

Program Management Cost (PMC)

	GET	2,187,253	7,809,461
	Sub Total($)	**2,187,253**	**7,809,461**
	Total Program Cost($)	**30,019,317**	**433,088,591**

Please provide justification

The PMC line in the portal does an automatic calculation for the PMC of 5% for an FSP, however the child projects in the programme are a mix of MSPs and FSPs. We have followed the GEF rule for PMC costs, up to 5% for FSPs and up to 10% for MSPs and therefore this will not be 5% across the whole programme, hence the difference in the total amount and the need to have a line that is not the PMC line in the portal to cater for this.

C. Co-Financing for the Program by Source, by Name and by Type

Sources of Co-financing	Name of Co-financier	Type of Co-financing	Investment Mobilized	Amount($)
Others				
Others	IEA-Clean Energy Transition Programme	Grant	Investment mobilized	500,000
Private Sector	Hewlett Foundation	In-kind	Recurrent expenditures	800,000
Others	IEA-Mobility Model Partnership	In-kind	Recurrent expenditures	665,000
Others	Electric Vehicles Initiative Stakeholders (countries)	In-kind	Recurrent expenditures	940,000
Others	IEA- Electric Vehicles Initiative	In-kind	Recurrent expenditures	1,120,000
Others	IEA-Renewable Energy Division	In-kind	Recurrent expenditures	390,000
GEF Agency	UN Environment	In-kind	Recurrent expenditures	150,000
GEF Agency	UN Environment	Grant	Investment mobilized	3,050,000

GEF Agency	Asian Development Bank (ADB)	Grant	Investment mobilized	2,000,000
Donor Agency	European Commission Solutions Plus Programme	Grant	Investment mobilized	20,430,000
Donor Agency	Ministry of Environment, Government of Italy for Antigua and Barbuda	Grant	Investment mobilized	625,000
Donor Agency	NREL for Antigua and Barbuda	In-kind	Recurrent expenditures	25,000
Government	Government of Antigua and Barbuda	Public Investment	Investment mobilized	2,885,000
Government	Municipalities/City Council Administrations for Antigua and Barbuda	In-kind	Recurrent expenditures	150,000
Private Sector	Utilities such as the Antigua Power Company, financial institutions and technology suppliers for Antigua and Barbuda	Unknown at this stage	Investment mobilized	6,000,000
GEF Agency	UN Environment for Antigua and Barbuda	In-kind	Recurrent expenditures	50,000
Government	Ministry of Nature Protection for Armenia	In-kind	Recurrent expenditures	275,000
Government	State Revenue Committee for Armenia	Public Investment	Investment mobilized	5,000,000
Private Sector	World Bank P155662 Utility-Scale Solar Power Project Republic of Armenia	Loans	Investment mobilized	600,000

Government	Office of the Presidency, Ministry of Environment (Burundian Office for Environmental Protection), Ministry of Energy (Directorate General of Energy and Water, and Energy Regulatory Authority), Ministry of Finance (Burundian Revenue Agency), Office of Public Transport (OTRACO) for Burundi	In-kind	Recurrent expenditures	319,000
Government	Ministry of Environment (Burundian Office for Environmental Protection) for Burundi	In-kind	Recurrent expenditures	275,000
Government	Mpanda Hydro-Electric Plant for Burundi	Public Investment	Investment mobilized	60,000
Government	Kabu 16Hydro-Electric Plant for Burundi	Public Investment	Investment mobilized	362,500
Government	Jiji and Murembwe Hydro-Electric Plant for Burundi	Public Investment	Investment mobilized	1,175,000
Government	Rusumo falls Hydro-Electric Plant for Burundi	Public Investment	Investment mobilized	300,000
Government	Kagu Project for Burundi	Public Investment	Investment mobilized	350,000
Government	Ruvyironza Hydro-Electric Plant rehabilitation for Burundi	Public Investment	Investment mobilized	283,600
Private Sector	Energy Companies (Enel, Engie, Saesa, etc.) for Chile	In-kind	Recurrent expenditures	1,250,000
Private Sector	Energy Companies (Enel, Engie, Saesa, etc.) for Chile	Grant	Investment mobilized	9,000,000

Government	Ministry of Energy for Chile	In-kind	Recurrent expenditures	1,853,539
Government	Ministry of Transport and Telecommunications for Chile	In-kind	Recurrent expenditures	200,000
Government	Ministry of Environment for Chile	In-kind	Recurrent expenditures	100,000
Donor Agency	Federal Ministry for the Environment, Nature Conservation, Buildings and Nuclear Safety (BMUB for Costa Rica	Grant	Investment mobilized	6,750,000
CSO	Fundación Costa Rica Estados Unidos para la Cooperación (CRUSA) Inter-American Development Bank for Costa Rica	Grant	Investment mobilized	750,000
Donor Agency	Inter-American Development Bank for Costa Rica	In-kind	Recurrent expenditures	820,000
Private Sector	Toyota Mobility Foundation for Costa Rica	In-kind	Recurrent expenditures	750,000
Government	Costa Rican Ministry of Transport (MINAE) for Costa Rica	In-kind	Recurrent expenditures	50,000
Government	Costa Rican Ministry of Energy and Environment (MOPT) for Costa Rica	In-kind	Recurrent expenditures	50,000
GEF Agency	Asian Development Bank for India	Loans	Investment mobilized	250,000,000
GEF Agency	UN Environment for India	In-kind	Recurrent expenditures	200,000

Beneficiaries	Energy Efficiency Services Ltd (EESL) for India	In-kind	Recurrent expenditures	3,000,000
Government	Various Line Ministries for India	In-kind	Recurrent expenditures	2,100,000
Government	Ministry of Environment and Sustainable Development for Madagascar	In-kind	Recurrent expenditures	528,000
Government	Ministry of Energy and General Electricity Company of Volobe for Madagascar	Public Investment	Investment mobilized	3,000,000
Private Sector	Save And Sustain (SAS) company for Madagascar	Equity	Investment mobilized	150,000
Government	Ministry of Environment and Energy; Transport Authority of Maldives; Environment Protection Authority; Ministry of Housing and Infrastructure for Maldives	In-kind	Recurrent expenditures	4,487,952
Government	Ministry of Environment and Energy; Transport Authority of Maldives; Environment Protection Authority; Ministry of Housing and Infrastructure for Maldives	Grant	Investment mobilized	300,000
Others	Maldives National University for Maldives	In-kind	Recurrent expenditures	50,000
GEF Agency	UN Environment for Maldives	In-kind	Recurrent expenditures	50,000
Government	Ministry of Environment– (MINAM) for Peru	In-kind	Recurrent expenditures	44,000

Government	OSINERGMIN for Peru	In-kind	Recurrent expenditures	8,000
Government	Ministry of Production– (PRODUCE) for Peru	In-kind	Recurrent expenditures	8,000
Government	Ministry of Production– (PRODUCE) for Peru	Public Investment	Recurrent expenditures	240,000
Government	Ministry of Transport and Communications– (MTC) for Peru	In-kind	Recurrent expenditures	12,000
Government	Ministry of Transport and Communications– (MTC) for Peru	Equity	Recurrent expenditures	20,000
Government	Ministry of Energy and Mining– (MEM) for Peru	Public Investment	Recurrent expenditures	250,000
Government	Ministry of Energy and Mining– (MEM) for Peru	In-kind	Recurrent expenditures	18,000
Government	Ministry of Housing, Construction and Sanitation– (MVCS) for Peru	In-kind	Recurrent expenditures	18,000
Government	Local Government 1 for Peru	In-kind	Recurrent expenditures	16,000
Government	Local Government 2 for Peru	In-kind	Recurrent expenditures	8,000

Government	COFIDE for Peru	Loans	Investment mobilized	1,000,000
CSO	SENATI for Peru	In-kind	Recurrent expenditures	50,000
Private Sector	BYD for Peru	In-kind	Recurrent expenditures	20,000
Private Sector	SINOMAQ-Yutong for Peru	In-kind	Recurrent expenditures	20,000
Private Sector	Engie for Peru	Equity	Investment mobilized	6,100,000
Private Sector	ABB for Peru	In-kind	Recurrent expenditures	24,000
Private Sector	Waira Energía for Peru	Equity	Recurrent expenditures	35,000
Private Sector	Senatinos for Peru	Equity	Recurrent expenditures	30,000
Private Sector	ENEL X for Peru	Equity	Investment mobilized	6,100,000
Others	CALAC+ for Peru	In-kind	Recurrent expenditures	50,000
Private Sector	QEV-TECH LATAM for Peru	Equity	Recurrent expenditures	600,000

CSO	AEDIVE Peru for Peru	In-kind	Recurrent expenditures	80,000
Others	PUCP for Peru	In-kind	Recurrent expenditures	20,000
Private Sector	Bus operation companies (MODASA, others) for Peru	In-kind	Recurrent expenditures	88,000
GEF Agency	Other International cooperation agencies for Peru	Grant	Recurrent expenditures	50,000
Government	Environmental Protection Agency – Sierra Leone	In-kind	Recurrent expenditures	220,000
Donor Agency	Solar Park Freetown Project The International Renewable Energy Agency (IRENA), the Abu Dhabi Fund for Development (ADFD) for Sierra Leone	Unknown at this stage	Investment mobilized	1,980,000
Private Sector	Investment made for purchasing the pilot vehicle (equivalent to the costs of purchasing conventional vehicles) for Sierra Leone	Equity	Investment mobilized	66,000
Government	Ministry of Environment and Forest Resources for Togo	In-kind	Recurrent expenditures	374,000
Government	Ministry of Mines and Energy for Togo	Public Investment	Investment mobilized	1,122,000
Government	Ministry of Nature Protection for Ukraine	In-kind	Recurrent expenditures	275,000

Government	State Fiscal Service of Ukraine	Public Investment	Investment mobilized	10,000,000
Private Sector	Arab Investment and Development Authority (AIDA) and the Ukrainian company STC “Energy” - Solar power 170 MW for Ukraine	Grant	Investment mobilized	200,000
Private Sector	Government of Ukraine, NBT (Norway), Total Eren (France), EBRD - Wind power 250 MW for Ukraine	Grant	Investment mobilized	150,000
Private Sector	Akua Energy (france, Belgium), Dnipro Bugska Wind power plant 110 MW for Ukraine	Loans	Investment mobilized	190,000
Government	Ministry of Infrastructure, Ports, Energy and Labor for Saint Lucia	In-kind	Recurrent expenditures	275,000
Private Sector	United Arab Emirates Caribbean Renewable Energy Fund 500kW solar carport/charging facility at the airport for Saint Lucia	Equity	Investment mobilized	2,420,000
Government	Ministry of Environment, Urban Safety and Sustainable Development (MINESUDD) for Ivory Coast	In-kind	Recurrent expenditures	302,000
Government	Ministry of Petroleum, Energy and Renewable Energy Development for Ivory Coast	Public Investment	Investment mobilized	1,100,000
GEF Agency	UN Environment for Ivory Coast	In-kind	Recurrent expenditures	50,000
Donor Agency	Development Bank of Jamaica	Loans	Investment mobilized	8,300,000
Government	Petroleum Corporation of Jamaica	Equity	Investment mobilized	1,300,000

Government	Ministry of Economic Growth and Job Creation for Jamaica	In-kind	Recurrent expenditures	500,000
GEF Agency	UNDP Country Office (TRAC/CS fund, part of Project Management cost) and LECB for Jamaica	Grant	Investment mobilized	40,000
Government	Ministry of Environment, Energy and Climate Change, Public Utilities Company for Seychelles	In-kind	Recurrent expenditures	374,000
Government	Ministry of Environment, Energy and Climate Change, Public Utilities Company for Seychelles	Public Investment	Investment mobilized	1,122,000
GEF Agency	EBRD for Ukraine	Loans	Investment mobilized	3,000,000
GEF Agency	EBRD for Ukraine	In-kind	Recurrent expenditures	100,000
Government	State Committee for Ecology and Environmental Protection of Uzbekistan	In-kind	Recurrent expenditures	3,650,000
Government	Tashkent City Municipality for Uzbekistan	In-kind	Recurrent expenditures	2,100,000
Government	Tashkent City Municipality for Uzbekistan	Public Investment	Investment mobilized	28,500,000
CSO	Turin Polytechnic University for Uzbekistan	In-kind	Recurrent expenditures	700,000

CSO	Public Council of Tashkent City for Uzbekistan	In-kind	Recurrent expenditures	200,000
Private Sector	Uzautosanoat for Uzbekistan	In-kind	Recurrent expenditures	250,000
Private Sector	Local truck and bus manufacturers for Uzbekistan	Equity	Investment mobilized	12,000,000
Private Sector	Multi-national technology companies for Uzbekistan	Equity	Investment mobilized	2,000,000
Private Sector	To be determined during PPG for Uzbekistan	Equity	Investment mobilized	1,000,000
GEF Agency	UNDP for Uzbekistan	Grant	Investment mobilized	100,000
			Total Program Cost($)	**433,088,591**

Describe how any "Investment Mobilized" was identified

Global Project The IEA's Clean Energy Transitions Programme is a new multi-year plan financed by IEA member countries to support clean energy transitions around the world. This new Programme will leverage the IEA's unique energy expertise across all fuels and technologies to help accelerate global clean-energy transitions, particularly in major emerging economies. In case of approval of this "Global Programme to Support Countries with the Shift to Electric Mobility", the IEA's Clean Energy Transitions Programme will support the related IEA work with a grant of $500,000. UN Environment is implementing a programme to support countries around the world with introducing projects to improve the efficiency of their vehicle fleet – mostly through the introduction of standards, fiscal reforms and awareness campaigns. More than half of these country projects include specific components on the promotion for the introduction of electric vehicles. UN Environment also runs a programs to support cities with the introduction of electric motorcycles and electric busses. The funding for these programs is largely coming from extra budgetary resources and includes funding from the FIA Foundation, Norway, Germany, European Union, Hewlett Foundation and the Green Climate Partnership Fund. Part of the funding is also coming from UN Environment core funds, the Environment Fund. ADB will provide TA through the ADB Sustainable Transport for All initiative. The ADB Sustainable Transport Initiative (STI) guides its support to the transport sector throughout Asia and the Pacific, and identifies four opportunities to enhance it lending operations: i) Urban transport, ii) Addressing climate change in transport, iii) Cross-border transport and logistics, and iv) Road safety and social sustainability. Within this framework, ADB currently supports $ 2- 3 billion of investments in transit-oriented development, non-motorized transport, integrated urban transport and land use planning, demand management, policies, regulations and standards, among others. ADB's Energy Policy provides complementary support through its focus on energy security, and facilitating the transition to a low carbon economy for its development member countries (DMCs). Under ADB's STI there are several ongoing programs and projects, principal among which is the "Sustainable Transport for All"

technical assistance. As electric mobility is a relatively new area for ADB as well as its DMCs, this TA helps support countries at the policy and the strategy formulation level. It recognizes that cities are the main drivers of e-mobility. One of the objectives of the TA is to assist cities in the development of roadmap which allows them to shift gradually from fossil fuels to electric vehicles in the most cost- effective way possible. Much of the work under the TA provides countries and cities with a range of technically and financially feasible options. There are three main thrusts to the work: i) concentration on high distance vehicles, on cities and on large fleets, ii) optimize charging infrastructure, battery usage and greening of the grid, and iii) develop appropriate incentive structures, include financial and nonfinancial incentives as well as a creative packaging of incentives. The European Commission Horizon 2020 programme is the biggest EU Research and Innovation programme ever with nearly €80 billion of funding available over 7 years (2014 to 2020). The Solutions Plus programme is part of this and focuses on Integrated Urban Electric Mobility Solutions in the Context of the Paris Agreement, the Sustainable Development Goals and the New Urban Agenda. The European Commission has opened a call for proposals, LC-GV-05-2019, on “Urban mobility and sustainable electrification in large urban areas in developing and emerging economies”. The EC has invited the Wuppertal Institute to put together a consortium to develop a project proposal. UN Environment is part of the consortium. The submission date is 25 April 2019. Antigua & Barbuda Government of Italy will contribute with grid-interactive solar PV systems for schools and clinics. NREL will provide technical assistance to Antigua and Barbuda on procurement of grid-interactive solar photovoltaics and deployment of electric buses. Furthermore, the Government of Antigua and Barbuda will allocate USD $2,885,000 as a combination of grants and in-kind support for this project. This will be derived from relevant initiatives such as the establishment of the Sustainable Island Resource Framework (SIRF) Fund. Municipalities and city councils will complement this. The private sector, including utilities such as the Antigua Power Company, financial institutions and technology suppliers of electric vehicles, will provide co-financing for the development of the grid-interactive energy and electric mobility demonstrations. Armenia The mobilized investment has been identified through consultations with local stakeholders. Armenia has waived the VAT on electric vehicles. Burundi The Government of Burundi has been consulted to identify sources of co-finance. The Government of Burundi has initiated an "Urban Transport Development Project" with an annual budget of $ 28,000. In the context of renewable energy, the Ministry of Energy has initiated an "Energy Efficiency Project". Only a small fraction of the planned investment for renewable energy projects, which will provide the electricity and some of the infrastructure for charging the electric vehicles, has been considered for co-funding. Chile Energy companies such as Enel, Engie and Saesa will provide grants (US $9,000,000) to cover 50% of the incremental cost difference between electric vehicles and conventional internal combustion engine vehicles for the demonstrations of 60 medium-size and 130 fixed-route taxis. They will also provide in-kind co-financing (US $1,250,000) to support the demonstrations. Furthermore, the Ministry of Energy will provide in-kind support (US $1,853,539) for the development of the demonstrations and the implementation of the other activities. The Ministry of Transport and Telecommunications (US $200,000) and the Ministry of Environment (US $100,000) will also provide in-kind support for these activities. Costa Rica Co-financing was identified through the Costa Rican Initiative for Electrification of Public Transport (IETP-Bus), an inter-institutional task force aligned with the National Decarbonization Plan to coordinate and support technical assistance projects on electric public transport in Costa Rica. India Through Country Business Operations Plan of ADB for India, which has been endorsed by Government of India through Country Partnership Strategy and linked to energy sector priorities for the country. Ivory Coast The Government of Ivory Coast has been consulted to identify sources of co-finance. In-kind investment of staff time in the Government has been identified through internal discussions by the Ministry of Environment, Urban Safety and Sustainable Development, and the Ministry of Petroleum, Energy and Renewable Energy Development based on the number of officers and amount of their time to be allocated to the execution of the project. In-kind contribution of UNEP staff time has been estimated at US $50,000. Jamaica Local stakeholders have been consulted to identify sources of co-funding. Further resources are to be identified and mobilized at the Project Preparation stage. Madagascar The Energy Department will be investing in renewable energy production in partnership with the private sector to support the project. At the same time, one of the pioneer electric mobility companies in Madagascar is expected to invest in expanding their 2 and 3-wheeler electric market beyond Toamasina to Antananarivo. Maldives The Government of Maldives has been consulted to identify sources of co-finance. Both in-kind investment of staff

time in the Ministry as well as cash investment of US $300,000 have been included. A conservative fraction of the planned investment for a renewable energy project, which will provide the electricity and some of the infrastructure for charging the electric vehicles, has been included for co-funding. Peru Investment mobilized has been calculated based on stakeholders' information provided in the socialization workshops of the project proposal. It also considers estimations based on previous regional investment on electric transport made by same companies in other countries in LAC region. Saint Lucia The Government of Saint Lucia has been consulted to identify sources of co-finance. Discussions took place within the government of Saint Lucia to identify sources of co-funding, including their staff time and an estimated portion of a renewable renewable power project ongoing in the country. Saint Lucia has introduced tax cuts to incentivize electric vehicles. Seychelles In-kind investment of staff time in the Government of Seychelles has been identified through internal discussions, based on the number of officers and amount of their time to be allocated to the execution of the project. Further resources are to be identified and mobilized at the Project Preparation stage. Sierra Leone Co-financing from an ongoing solar power project in the demonstration site was estimated at conservative 10% of the project value of US $18 million. In addition, in-kind investment of staff time in the Environment Protection Agency of Sierra Leone has been identified through consultations between the Implementing Agency and the Executing Agency. Togo In-kind investment of staff time in the Government of Togo has been identified through internal discussions by the Ministry of Environment and the Ministry of Transport, two executing agencies, based on the number of officers and amount of their time to be allocated to the execution of the project. Further resources are to be identified and mobilized at the Project Preparation stage. Ukraine Local stakeholders have been consulted to identify sources of co-funding for renewable power projects, which will directly contribute to reduced GHG emissions from e-mobility in Ukraine. Furthermore, the government has waived VAT on electric vehicles for the period until the year 2022. A conservative estimate of the future lost revenues for the years 2020 to 2021 are considered co-founding. Uzbekistan Investment mobilized will be used for the Tashkent City Municipality's participation and inputs into the pilot GUTC (from the feasibility study and business plans to the engineering design, tendering phase and construction supervision), capital financing of the pilot GUTC, capital financing for the purchase of 10 electric buses and fast-charging stations, and the training of the City's JSC "TashShakharTransKhizmat" personnel for the electric bus operations and maintenance. Investment will be mobilized from the private sector for electric buses, fast charging stations, and for electric vehicles, as well as other investments needed to finish and complete the GUTC. Co-financing also includes one of the local companies (selected by project tender) expected to invest in a local assembly line for electric busesthat can be piloted and operated in Tashkent. This company will supply the first 10 electric buses, and possibly more, to the Tashkent Municipality with GEF support going for incremental costs and the rest coming from the Tashkent municipality. Another company, selected by tender, will supply the fast recharging stations along the GUTC.

D. Indicative 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($)	Fee($)	Total($)
UNEP	GET	Global	Climate Change	CC Global/Regional Set-Aside	2,802,500	252,225	3,054,725
ADB	GET	Global	Climate Change	CC Global/Regional Set-Aside	400,000	36,000	436,000
UNEP	GET	Antigua and Barbuda	Climate Change	CC STAR Allocation	3,245,000	292,050	3,537,050
UNEP	GET	Armenia	Climate Change	CC STAR Allocation	592,202	53,298	645,500
UNEP	GET	Burundi	Climate Change	CC STAR Allocation	775,688	69,812	845,500
UNEP	GET	Chile	Climate Change	CC STAR Allocation	1,784,862	160,638	1,945,500
UNEP	GET	Costa Rica	Climate Change	CC STAR Allocation	876,712	78,904	955,616
UNEP	GET	India	Climate Change	CC STAR Allocation	2,146,791	193,211	2,340,002
ADB	GET	India	Climate Change	CC STAR Allocation	3,220,185	289,817	3,510,002
UNEP	GET	Cote d'Ivoire	Climate Change	CC STAR Allocation	408,716	36,784	445,500
UNDP	GET	Jamaica	Climate Change	CC STAR Allocation	1,784,862	160,638	1,945,500
UNEP	GET	Madagascar	Climate Change	CC STAR Allocation	1,142,661	102,839	1,245,500
UNEP	GET	Maldives	Climate Change	CC STAR Allocation	1,826,339	164,371	1,990,710
UNDP	GET	Peru	Climate Change	CC STAR Allocation	1,784,862	160,638	1,945,500
UNEP	GET	Seychelles	Climate Change	CC STAR Allocation	423,716	38,134	461,850

UNEP	GET	Sierra Leone	Climate Change	CC STAR Allocation	423,716	38,134	461,850
UNEP	GET	St. Lucia	Climate Change	CC STAR Allocation	785,688	70,712	856,400
UNEP	GET	Togo	Climate Change	CC STAR Allocation	423,716	38,134	461,850
UNEP	GET	Ukraine	Climate Change	CC STAR Allocation	901,376	81,124	982,500
EBRD	GET	Ukraine	Climate Change	CC STAR Allocation	700,000	63,000	763,000
UNDP	GET	Uzbekistan	Climate Change	CC STAR Allocation	3,569,725	321,275	3,891,000
				Total GEF Resources($)	**30,019,317**	**2,701,738**	**32,721,055**

Core Indicators

Indicator 6 Greenhouse Gas Emissions Mitigated

Total Target Benefit	(At PIF)	(At CEO Endorsement)	(Achieved at MTR)	(Achieved at TE)
Expected metric tons of CO_2e (direct)	33861585.00	0.00	0.00	0.00
Expected metric tons of CO_2e (indirect)	33718209.00	0.00	0.00	0.00

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

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

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

Total Target Benefit	(At PIF)	(At CEO Endorsement)	(Achieved at MTR)	(Achieved at TE)
Expected metric tons of CO_2e (direct)	33,861,585.00			
Expected metric tons of CO_2e (indirect)	33,718,209.00			
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)	973,808,243,870.00			

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

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

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

	Number (Expected at PIF)	Number (Expected at CEO Endorsement)	Number (Achieved at MTR)	Number (Achieved at TE)
Female	158,288			
Male	159,942			
Total	318230	0	0	0

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

The GHG emissions under indicator 6 have been calculated using the GEF methodology. Under indicator 11, the estimate of direct beneficiaries is calculated with estimates of (i) the number of people who receive training, including those trained by the support and investment platforms and the global platform; (ii) and the number of people who ride EV new electric public transport infrastructure resulting from the programme. This comes to a total of 318,232. Indirect beneficiaries are people who will benefit from cleaner air and quieter transport resulting from electric mobility and have been calculated as 5% of inhabitants of identified GEF child project cities. This estimate is not included as part of the indicator, but comes to a total of 2,941,155 (of which women: 1,462,881; men: 1,478,274) Gender spilt has been calculated using the national gender percentages from the World Bank website.

Part II. Programmatic Justification

1a. Program Description

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

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

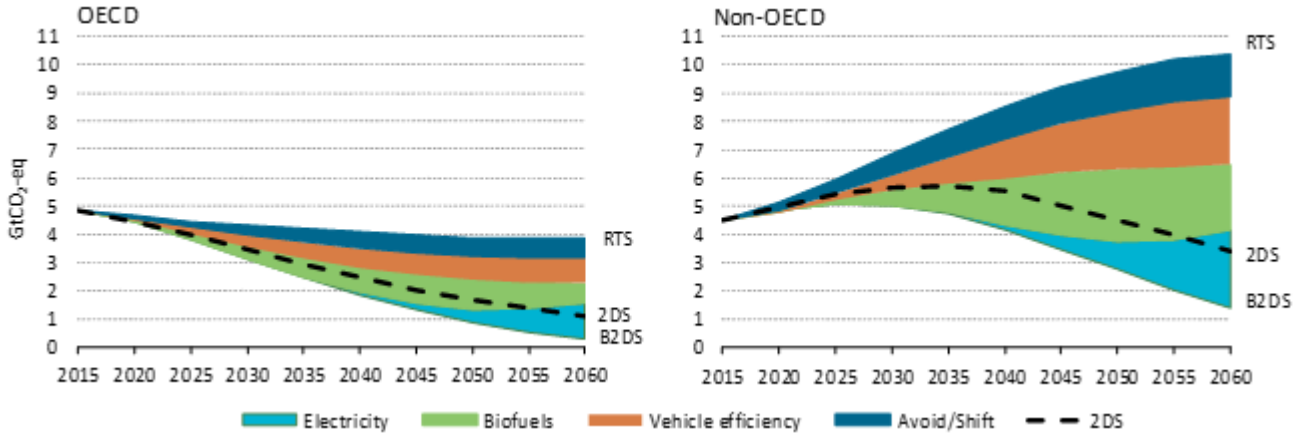
The Intergovernmental Panel on Climate Change (IPCC), in its October 2018 report, stated that to achieve a target of 1.5C all vehicles added to the global fleet need to be electric from 2035 onwards, resulting in a complete switch to electric fleets by 2050. And the United Nations Environment Assembly, at its fourth session in March 2019, adopted the first ever UN sustainable mobility resolution that calls on all countries to switch to sustainable mobility, including electric mobility.

A shift to a zero-emissions transport sector requires the combination of three key actions: (i) reducing travel demand; (ii) shifting to energy-efficient transport modes, such as public transport; and (iii) introducing zero-emission vehicles. Such a shift has major benefits for society, in addition to those related to climate change, including improved air quality, reduced noise pollution, reduced fossil fuel dependency, and reduced transportation costs.

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. The good news is that technological progress and reducing costs of electric vehicle technologies, as well as increased awareness of their benefits, are resulting in a growing desire from countries to be part of the global effort to shift to electric mobility. The world has now started this shift to zero-emission electric mobility.

At UNFCCC COP21, a group of countries adopted the *Paris Declaration on Electro-mobility and Climate Change* which calls for 100 million electric cars and 400 million electric two and three wheelers by 2030. The IEA has developed several scenarios for the contribution of the introduction of electric mobility to achieving global climate targets. A 2°C scenario (2DS) calls for one third more EVs than targeted in the Paris Declaration, while a Beyond 2°C Scenario (B2DS) requires at least a doubling of these targets (coupled with significant decarbonisation of the power sector). The B2DS requires an overall transport well-to-wheel GHG emissions reduction of 83% by 2060 (baseline of 2015, see Figure 1).

FIGURE 1: WELL-TO-WHEEL GHG EMISSIONS REDUCTIONS FROM TRANSPORT IN OECD AND NON-OECD COUNTRIES IN THE BEYOND 2°C SCENARIO (B2DS) COMPARED WITH THE REFERENCE TECHNOLOGY SCENARIO (RTS)



Source: IEA Energy Technology Perspectives 2017

As the figure shows, the introduction of electric vehicles, coupled with low carbon electricity, contribute the largest share to transport decarbonisation, alongside other measures such as avoiding unnecessary transport, shifting individual transport to more efficient ways of mass transport, as well as the use of other low carbon fuels for example for aviation and shipping.

Barriers that need to be addressed
several challenges hinder the rapid uptake of electric mobility. These include:

1. **High upfront investments and market challenges.** High purchase prices of electric vehicles are a significant hurdle for the broad uptake of electric mobility. However, these higher costs can be partly or completely recovered from the reduced operating costs of electric vehicles. Another challenge is the lack of investment in the development of charging infrastructure. Innovative financing models can help and the creation of (sub)regional platforms bringing together countries/ cities, technology providers and financial institutions are needed to promote investment. The role of the private sector is important in this. This includes the set-up of new business models which involves cross border actions between all stakeholders to spread the needed investment as well as the economic risk.

2. **Lack of information/awareness.** Consumers, policy makers and vehicle manufacturers are not fully aware of the environmental and economic benefits related to electric mobility. In many low- and middle-income countries, electric vehicles are still perceived as expensive and high-tech vehicles which are not adapted to local conditions. In addition, there are major opportunities for low- and middle-income countries to leapfrog to electric mobility, including through the development of manufacturing and assembly capacity, or through the import of used electric vehicles. Electric vehicles are sometimes also perceived as providing limited greenhouse gas savings in countries with carbon-intensive grids (a perception which, in general, is not always correct).

3. **Policy and planning challenges.** Limited or counterproductive policy measures prevent the rapid uptake of electric mobility. Many low- and middle-income countries have no dedicated fiscal or regulatory policies in place to incentivize the uptake of electric vehicles. In addition, many countries around the world still subsidize fossil fuels which reduce the operational costs of internal combustion engine. Some have disadvantageous fiscal policies in place, which, for example, complicate the importing of new and used electric vehicles.

4. **Limited institutional capacity.** Some decision-makers require more capacity to develop national electric mobility projects and policies. The development of policies to foster the uptake of electric mobility most often includes stakeholders from various ministries and requires a thorough analysis and understanding of the national transport sector. For example, many countries are struggling to develop national standards for electric vehicles. Additionally,

they also struggle to navigate the whole suite of options to incentivise electric mobility and develop a tailored set of interventions based on national preconditions. Decision-makers need technical support during all stages of electric mobility policy development.

5. **Charging infrastructure and range anxiety** – Electric vehicles still have a lower range compared to petrol vehicles (although this difference is reducing quickly). Range, combined with a lack of recharging infrastructure, are thus sometimes conceived as challenges. However, range and recharging infrastructure issues are strongly related to local circumstances and use. For example, for electric bus fleets, captive fleets, and motorcycles, these may not be the biggest challenges. Urban use versus rural is also a major factor, with data showing that more than 80% of daily trip lengths can easily be met with current electric vehicle ranges.

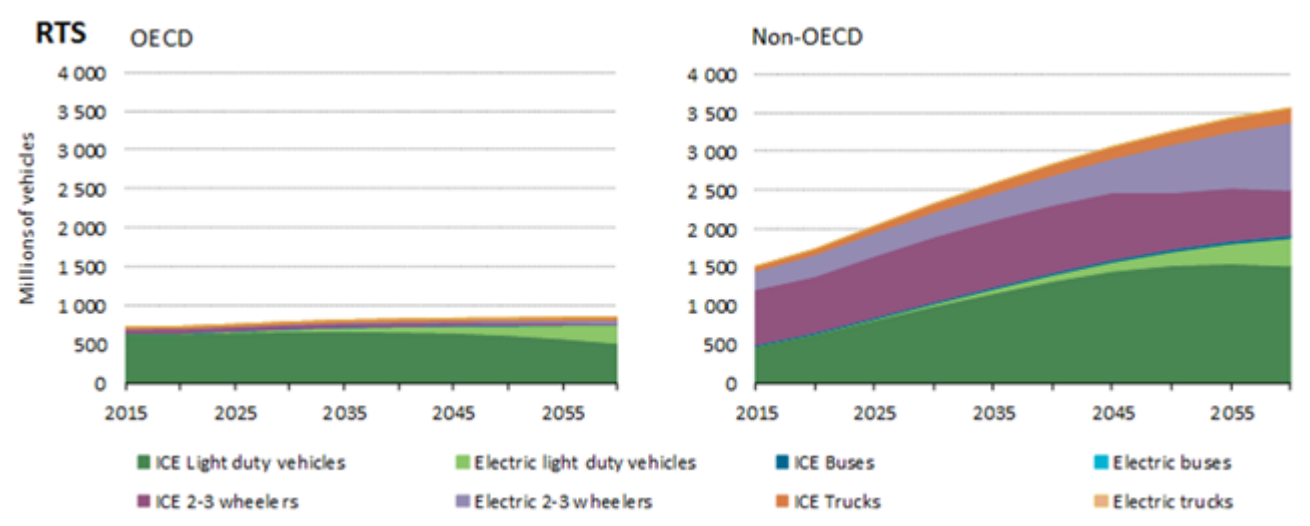
2. Baseline scenario or any associated baseline programme/ projects

In 2015, the number of vehicles on the road reached 1.2 billion globally, the majority of those being light duty vehicles (LDVs) and two- and three-wheelers (Figure 2). Almost all rely exclusively on conventional internal combustion engine (ICE) powertrains. The number of electric cars on the road surpassed 4 million units in mid-2018, with the majority in China, the US, Japan and European countries. Electric car sales grew vastly in 2017 (by 54% more than 2016) surpassing the 1 million mark and continuing to experience sustained growth in 2018. A rapid development of technology and falling battery prices have seen the global fleet of electric vehicles double in size every 18 months. However, the relative share of electric cars in the global car stock is still very low, at around 0.2%. Besides electric cars, other types of vehicles are also experiencing a shift to the electric powertrain. The number of electric two-wheelers was estimated at around 250 million units in 2017 (mostly in China, with annual sales of around 30 million). The number of electric vehicles in other road transport modes, such as trucks, buses and light commercial vehicles (LCVs), is lower. However, promising developments are occurring in the bus sector and ambitious announcements have been made on the development of electric trucks. In 2017, the fleet of battery electric vehicle (BEV) and plug-in hybrid electric vehicle (PHEV) buses in China reached nearly 370 000 units, with some cities, including Shenzen, switching completely to electric buses.

In the IEA baseline scenario, the number of vehicles on the road doubles to more than 3.5 billion vehicles by 2060. Within the next 35 years, over 2 billion new vehicles are expected to be introduced primarily in non-OECD countries. Despite a significant shift to electric 2-3 wheelers, which even in the baseline scenario constitute 60% of the global 2-3 wheelers stock by 2060, 80% of the other modes (LDVs, trucks and buses) will still be conventional ICE vehicles in the baseline scenario.

Under the baseline scenario, road transport energy use as well as related CO_2 emissions are projected to grow by 50% between 2015 and 2060 (Figure 2). Most of this growth is coming from emerging economies, where transport related CO_2 emissions more than double between now and 2060. Apart from higher CO_2 and air pollutant emissions and their related climate change impacts, a doubling of energy use in non-OECD regions will lead to increased oil bills and decreased energy security in the respective countries. There is therefore an urgent need to put programs and policies in place that will ensure that the vehicle growth in non-OECD countries will use low- and zero-emissions vehicles (combined with a shift away from individual car use in favour of active and public transport).

FIGURE 2: PROJECTIONS OF THE LIGHT DUTY VEHICLE FLEET BY TECHNOLOGY IN THE OECD AND THE NON-OECD UNTIL 2050 UNDER THE RTS.



Source: IEA Mobility Model

The GEF7 Global Electric Mobility Programme can benefit from experience and progress achieved in activities and/or projects working on e-mobility that are already existing, collaborating with them. These activities include:

Electric Mobility Programme of the United Nations Environment Programme: UN Environment is supporting a large group of low- and middle-income countries with the introduction of electric mobility policies and pilots. This has four workstreams:

· ***Electric two and three wheelers*** – UN Environment is supporting eight countries with the introduction of electric two- and three-wheelers. These are Kenya, Uganda, Rwanda, Ethiopia, Morocco, Philippines, Vietnam and Thailand. The emphasis is on introducing policies and incentives for the introduction, removing administrative hurdles, and piloting of electric motorcycles. It is working with local operators, companies and governments, and includes financing and local production and assembly for a wider uptake of electric motorcycles.

· ***Electric buses*** – UN Environment is supporting six countries/cities with the introduction of clean and soot free buses, including the introduction of electric buses. UN Environment is implementing these activities with the International Council for Clean Transportation (ICCT), and the Climate and Clean Air Coalition. Activities include providing technical advice, sharing best practices and developing "marketplaces" where the interested cities can discuss with technology providers and financial institutions. In 2019, the number of city electric buses project will be increased significantly.

· ***National policies for light duty electric vehicles*** - UN Environment is supporting more than 40 countries in introducing policies and incentives for the introduction of privately-owned light duty vehicles. This builds on the work UN Environment is doing in the Global Fuel Economy Initiative (GFEI), which is a global programme in which the International Energy Agency is also participating, that is supporting more efficient vehicle fleets. Most countries UN Environment is supporting are looking at introducing fiscal incentive for the import of electric vehicles, for example through reducing or even completely waiving import duties for electric vehicles.

· ***Normative activities*** – as the principal environment agency of the United Nations, UN Environment is supporting members states with developing roadmaps for the introduction of electric mobility. UN Member States are engaged in the development and implementation of global resolutions on issues such as climate change, clean energy and air quality, and the introduction of electric mobility plays a major role in this. UN Environment will promote, for example at intergovernmental fora, the role and importance of a shift to electric mobility in achieving global and regional targets set by UN Member States.

· ***MOVE Electric Mobility in Latin America***: In 2016, UN Environment and Mario Molina Centre Chile launched a regional platform to accelerate deployment of electric mobility in Latin America. Since then, MOVE has provided (1) capacity building to public technical officers from almost 20 countries in the region through online webinars and face-to-face meetings, (2) knowledge creation on the uptake of electric mobility in Latin America and the Caribbean, (3) technical

assistance, through the elaboration of National Electric Mobility Strategies in Colombia, Argentina and Panama and (4) resource mobilization to enable countries to transition to electric mobility – with a special focus on electric road mass transit.

· **IEA Electric Vehicles Initiative (EVI).** The (EVI) is a government-to-government policy forum established in 2009 under the Clean Energy Ministerial. It is dedicated to accelerating the deployment of electric vehicles worldwide. The EVI facilitates exchanges between policy makers working in governments that are committed to supporting EV development and a variety of partners, bringing them together twice a year. The EVI serves as a platform for knowledge-sharing on policies and programmes. Governments currently active in the EVI include Canada, Chile, China, Finland, France, Germany, India, Japan, Mexico, Netherlands, New Zealand, Norway, Sweden, United Kingdom and United States. The International Energy Agency serves as the EVI co-ordinator.

· The **EV30@30 Campaign** of the EVI promotes a target at least 30 percent new electric vehicle sales by 2030. It involves countries and private sector stakeholders.

· **Global EV Pilot City Programme**. The Global EV Pilot City programme was launched by the EVI in May 2018 as part of the EV30@30 Campaign. The programme aims to build a network of more than 100 cities in five years, and work together with these cities to further the uptake of electric mobility. To date, the programme has more than 30 city members, with a broad geographical representation.

· **IEA electric mobility and system integration workstream:** The IEA has successfully established itself as a global reference for analysis of the global electric mobility market and system integration of renewables. The electric mobility workstream is strongly linked to the EVI, and responsible for several high-profile analytical publications, including the Global EV Outlook series, guiding policymakers and industry worldwide.

· **IEA Technology Collaboration Programmes** on Advanced Fuel Cells (AFC) and Hybrid and Electric Vehicle Technologies and Programmes (HEV). Technology Collaboration Programmes are special activities of the IEA and are groups comprised of international experts from government and industry that lead programmes and projects on a wide range of energy technologies and related issues.

· **Urban Electric Mobility Initiative (UEMI)**: The UEMI is a joint initiative of the SOLUTIONS partners, building on international activities in the areas of sustainable urban development, energy, mobility, and focusing on the equal access provision of urban basic services in Latin America, Asia and Africa. The UEMI aims to help phase out conventionally fuelled vehicles and increase the share of electric vehicles (2-,3- and 4-wheelers) in the total volume of individual motorized transport in cities to at least 30% by 2030.

· **Global Fuel Economy Initiative (GFEI)**: six leading agencies are supporting a global programme to improve the fuel efficiency of the global vehicle fleet, these are: the FIA Foundation, the United Nations Environment Programme, the International Energy Agency, the International Council for Clean Transportation, the International Transport Forum, and the University of California Davis. The objective of the GFEI is the double the efficiency of the global fleet from 2005 to

2050 (going from about 8l/100km to 4l/100km). The GFEI implements activities at all levels – at global it keeps stock of the efficiency of the global fleet. At national level it is supporting more than 50 country projects to develop baselines on the efficiency of their fleets and to develop action plans to improve the efficiency of their fleets. Most of these action plans include components to promote electric vehicles, for example through fiscal incentives. As such the GFEI is currently one of the leading global programs to support the introduction of electric vehicles. GEF is one of a group of supporters of the GFEI.

· POLIS - Cities and Regions for Better Transport: Polis is a network of European cities and regions working together to develop innovative technologies and policies for local transport. Since 1989, European local and regional authorities have been working together within Polis to promote sustainable mobility through the deployment of innovative transport solutions.

· C40: C40 is a network of the world's megacities committed to addressing climate change. C40 Cities connects 94 of the world's largest cities to take transformative climate action, leading the way towards a healthier and more sustainable future. Represents 700+ million citizens and one quarter of the global economy.

· ICLEI: Local Governments for Sustainability is a global network of more than 1,750 local and regional governments committed to sustainable urban development. Active in 100+ countries, it influences sustainability policy and drives local action for low emission, nature-based, equitable, resilient and circular development.

· Cooperation for urban mobility in the developing world (CODATU): a not-for-profit association with an international vocation to promote sustainable mobility policies through training activities, events and scientific exchanges, covering technical, economic and social aspects of urban and peri-urban transport.

· ADB: has supported several relevant projects in its Transport Sector portfolio. Two are of note: i) Low-Carbon Buses in the People's Republic of China (co-financed by GEF), and ii) E-Mobility Options for Developing-Member Countries of ADB. The Low Carbon Buses report was published in November 2018 and is available on the ADB website The ADB Sustainable Transport Initiative (STI) guides its support to the transport sector throughout Asia and the Pacific and identifies four opportunities to enhance its lending operations. Within this framework, ADB currently supports USD 2-3 billion of investments in transit-oriented development, non-motorized transport, integrated urban transport and land use planning, demand management, policies, regulations and standards, among others.

· EBRD is active in promoting e-mobility investment projects in its countries of operation, including implementing projects with public transport operators for electric buses and associated charging infrastructure. In addition, the EBRD has explored electric captive fleet projects with commercial transport operators and distribution grid re-enforcement and charging infrastructure. The EBRD is also looking at investing in the e-mobility supply chain with a

proposed project to build a substantial lithium-ion battery manufacturing facility for automotive applications. The EBRD has ongoing electric mobility projects in a number of its countries of operation (4 countries at present), with current business volumes in the order of €50 million a year on electric vehicle related projects.

· **UNDP** is involved in several GEF-supported electric vehicles projects. These include: the recently approved GEF 6 Bhutan EV project which aims to facilitate low-carbon transition in Bhutan's urban transport sector by promoting wider uptake of low emission vehicles and electric. Also includes a GEF 5 project in Malaysia, "Green Technology Application for the Development of the Low Carbon Cities". And includes a project in the Philippines, "Promotion of Low Carbon Urban Transport Systems in the Philippines" that aims to create an enabling environment for the commercialization of low carbon urban transport systems (incl. electric and hybrid vehicles). Fourthly it includes the MOVES project supporting a sustainable and efficient urban mobility system in Uruguay.

Other GEF funded projects which include electric mobility:

· **Kathmandu Sustainable Urban Transport (SUT) Project.** The project objective is: Bus fleet improvement through fleet renewal, including assessment and promotion of low-carbon vehicle technologies employing electricity and alternative fuels;

· **ASTUD: Mongolia Urban Transport Development Investment Program:** The baseline Bus Rapid Transit (BRT) project will restore, update and expand trolley-bus infrastructure (electric wires, feeder cables, and substations); and integrate the existing trolley-bus system into the BRT;

· **Green Cities**: Integrated Sustainable Transport in the City of Batumi and the Achara Region: This project aims to increase investment in cable car systems in the Ajara region;

· **Vientiane Sustainable Urban Transport Project.** The project will increase investment in low carbon pedicab technology with the aim of replacing existing tuk-tuks;

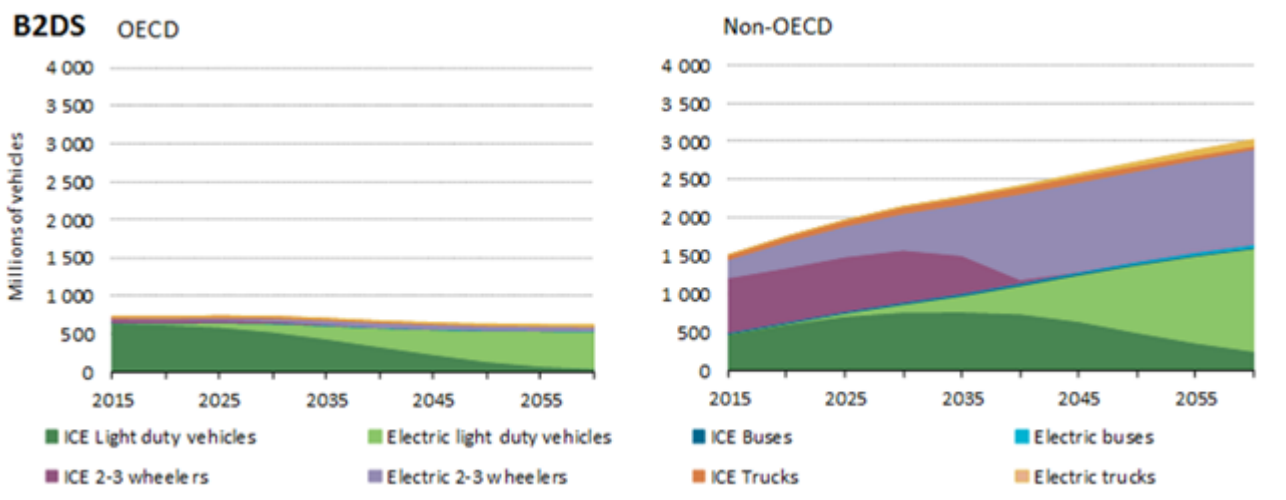
· **Integrated Adoption of New Energy Vehicles in China.** The project will facilitate and scale up the integrated development of New Energy Vehicles (NEVs) and Renewable Energy (RE) in China;

· **Development of Transport Sector NAMA in Peru.** The project implemented by UNDP has led to concrete electric mobility targets in Peru.

3) Proposed alternative scenario, GEF focal area[1] strategies, with a brief description of expected outcomes and components of the programme

In the low-emission scenario (B2DS), the number of vehicles projected to be on the road by 2060 is 3.6 billion. This is about 800 million vehicles less than in the baseline scenario (RTS), representing efforts to reduce unnecessary trips and shift towards more efficient means of public and shared transport. By the same year, high rates of vehicle electrification will have occurred, from 68% in trucks to 100% in 2-3 wheelers. By 2030, already close to 15% of all LDVs are projected to be electric - growing to almost 90% in 2060 (Figure 3). 3 billion out of the 3.6 billion vehicles on the road by 2060 will be circulating in non-OECD countries (Figure 3).

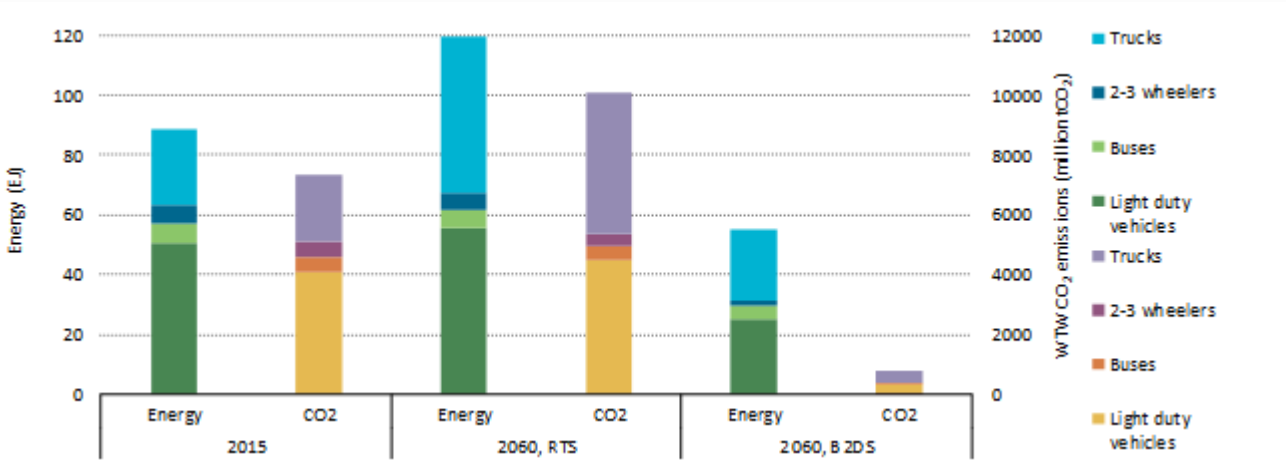
FIGURE 3: PROJECTIONS OF THE LIGHT DUTY VEHICLE FLEET BY TECHNOLOGY IN THE OECD AND THE NON-OECD UNTIL 2050 UNDER THE B2DS.



Source: IEA Mobility Model

The B2DS rapid technology shift allows for the reduction of road transport energy use from 90 EJ in 2015 to 55 EJ in 2060 (Figure 4). Based on the use of low carbon power (together with high shares of biofuels to cover the remaining liquid fuel demand e.g. for use in long-haul trucks), CO_2 emissions from road transport would be cut by 10 times between 2015 (7.3 $GtCO_2eq$) and 2060 (0.8 $GtCO_2eq$). At the same time, the use of electric vehicles would lead to substantial reductions in particulate emissions and other air pollutants resulting in important health benefits.

FIGURE 4: GLOBAL ENERGY CONSUMPTION AND CO_2 EMISSIONS FROM ROAD TRANSPORT UNDER THE RTS AND THE B2DS, 2015 AND 2060



Source: IEA Mobility Model

To achieve this alternative scenario, all road transport modes must be targeted in the shift to electric mobility:

· **Light Duty Vehicles (LDVs)** account for the largest part of transport energy use and emissions today. Despite efforts to avoid and shift individual motorized transport, they will see the largest growth rates in the future. Electrification offers huge greenhouse gas and air pollution emission reduction potential.

· **Two and three wheelers** electrification not only has a large potential for CO_2 emissions reductions but is also necessary to effectively tackle urban pollution issues, especially in non-OECD countries. Because of the smaller battery capacities needed, already today 2&3 wheelers have lower total cost ownership compared with petrol two and three wheelers because of the smaller battery capacities needed. This includes light duty electric two and three wheelers such as electric scooters and bicycles. Electrification not only has a large potential for CO_2 emissions reductions but is also necessary to effectively tackle urban pollution issues, especially in non-OECD countries.

· **Buses** play an important role in mitigating CO_2 and air pollutant emissions in the urban context. Because of their high usage (which results in faster paybacks) and the absence of a need for public charging infrastructure, buses can be used to generate early experiences with electric mobility and initiate the market transformation to a zero-emission transport system.

· **Trucks** accounted for more than one third of global road transport CO_2 emissions in 2015. Hence, electrification of heavy-duty vehicles and especially medium-sized freight trucks for urban delivery has a large CO_2 mitigation potential and would also significantly improve air quality along major urban corridors. Manageable daily driving distances and the absence of a need for extensive public charging infrastructure create a favourable economic environment for electric medium-sized freight trucks.

An analysis of the International Resource Panel of UN Environment underlines that the decarbonisation of the power grid is crucial to ensure that vehicle electrification will lead to maximum GHG reductions and other environmental co-benefits. Current trends are encouraging: in 2016, growth in solar photovoltaic (PV) capacity was larger than any other form of generation. Since 2010, costs of new solar PV have declined by 70%, wind by 25% and battery costs by 40%. Together, wind and solar are expected to account for more than 80% of global renewable capacity additions in the next five years. The regional and temporal variability of power supply from these variable energy sources suggests that power systems will need enhanced flexibility to match power demand and supply profiles. The Global EV Outlook 2018 and the Nordic EV Outlook 2018 report that electric vehicles are well placed to increase the flexibility of the power system and could allow a greater integration of variable renewables in the power generation mix. Evidence from early adopting countries like Norway shows that electric vehicles largely rely on slow charging (often at night) and have battery capacities that far exceed the needs for daily usage. This potential distributed energy storage capacity can play an important role for the integration of high shares of renewable power into the national grid.

Despite the benefits of electric vehicles and the decarbonization of the power grid for GHG and local pollution reductions, the International Resource Panel of UN Environment warns that increased vehicle electrification could result in overall increases in metal demand with social and environmental consequences. Even if the relative magnitude of additional metal demand by low-carbon supply- and demand-side technologies is likely to be small compared to the background consumption of metals by the rest of the economy, increasing sustainability of the economic system requires proper handling and minimization of these adverse effects.

Description of the programme

The above sections have highlighted the need for a rapid scale-up of the promising but still nascent electric vehicle market. It is essential to stimulate demonstration projects and growing sales of electric vehicles, which will in turn accelerate the scale-up of battery and electric vehicle manufacturing. This will allow for cheaper batteries, longer ranges, increased used vehicles markets, and electric vehicles models at more competitive prices. Increased sales numbers are crucial for car manufacturers to develop profitable business models, which form the basis for a sustainable electric vehicles market. Cooperation between government and private sector to overcome the above challenges is crucial.

Development of policies, standards, and incentives schemes together with the implementation of demonstration projects is critical for the uptake of electric mobility. Research shows that issues around range, the need of charging infrastructure, and the long-term costs and benefits of electric vehicles keep many from buying electric vehicles. Thus, demonstration projects are important for highlighting the social and economic viability of electric vehicles.

With large numbers of electric vehicles hitting the ground in the next twenty years, strategies to ensure the sustainable material extraction, use, re-use, recycling and disposable of resources related to such vehicles will need to be developed on a global scale. This includes the adoption of responsible practices by stakeholders involved in the battery supply chain, the diffusion of design solutions helping to minimize battery needs (without compromising benefits), and the use of batteries in second-life applications (e.g. for electricity storage) which can be of interest for GEF recipient countries with less developed power grid infrastructure.

The GEF 7 Global Programme to Support Countries with the Shift to Electric Mobility

This new GEF7 *Global Programme to Support Countries with the Shift to Electric Mobility* (hereafter the Global Programme) will support the rapid introduction of electric mobility in GEF recipient countries. It will undertake activities at the global, regional and country levels. It will also build on a solid basis of knowledge and outreach capacity developed by the leading electric mobility programmes of the International Energy Agency and the United Nations Environment Programme (with partners). It will be the first-ever global inter-agency electric mobility programme.

The *overall objective of the programme* is to contribute to the implementation of the Paris Climate Agreement through contributing to reaching the levels of electric mobility necessary to achieve emission reductions from the transport sector outlined in the alternative, low-carbon scenario (B2DS) in low and middle-income countries, while minimizing adverse effects for the sustainability of transport and energy systems.

This is to be achieved by providing an *integrated approach to support countries with the development of electric mobility policy frameworks and the support of electric mobility projects*. Deployment barriers such as high vehicle price and low range, restricted availability of models, and the lack of relevant infrastructure will be targeted at the same time. The programmatic approach reduces overall costs since it reduces duplication of work and facilitates economy of scale (e.g. development of tools, policies, training programs), allowing for more comprehensive learning experiences and the development of best practices. It will also ensure a smooth replication of lessons learnt and best practices between different countries and regions.

This global programme is designed to *focus on all road transport modes* - including two and three wheelers, cars, buses and trucks. It uses a programmatic approach with a “parent” project at global and regional level and related in-country “child” projects. The in-country child projects will support the development and implementation of enabling environments for electric mobility, the demonstration of electric mobility interventions, and frameworks for scaling-up electric mobility. The global parent project will support the child projects through Three regional support and investment platforms. These platforms will provide technical and investment support to the in-country child projects and develop communities of practice. At the global level, four thematic working groups will be established to generate knowledge and policy tools on selected electric mobility topics.

The *GEF7 Global Electric Mobility Programme* aims to:

a. *Raise awareness* of the multiple benefits of electric mobility for all relevant stakeholders in the child project countries. For example, with respect to greenhouse gas and air pollutant emissions, energy use and costs;

b. *De-risk investment* in electric vehicles and electric vehicle supply equipment. Actions to achieve this will include providing guidance on the development of studies and analyses, and developing and implementing demonstration projects that strengthen developing country experience with electric mobility and facilitate accelerated learning;

c. *Provide policy packages and support* through supporting the development of adequate and context-specific policies, such as regulations, standards, fiscal measures and other local and national incentives; that are flexible and can be adapted to the needs of different countries, depending on the desired pathway to electric mobility, local context, and different priorities and needs;

d. *Ensure that the integration of renewable energy sources* and the de-carbonization of the power grid is part of the transition to electric mobility. This ensures that electric mobility will deliver significant net savings of GHG emissions compared to projected baselines;

e. *Promote sustainable use of batteries and battery materials recycling*; and

f. *Integrate gender issues into (electric) mobility* and work with policy makers in designing gender-responsive policies and solutions

g. *Promote private sector engagement and facilitate the creation of markets* for the introduction of electric mobility through inviting and supporting suppliers of electric mobility (and affiliated companies such as those offering recharge facilities) to supply electric mobility solutions to non-OECD countries. The programme will work with financiers to create regional market places, bringing together suppliers, financiers and the countries and cities keen to introduce electric mobility.

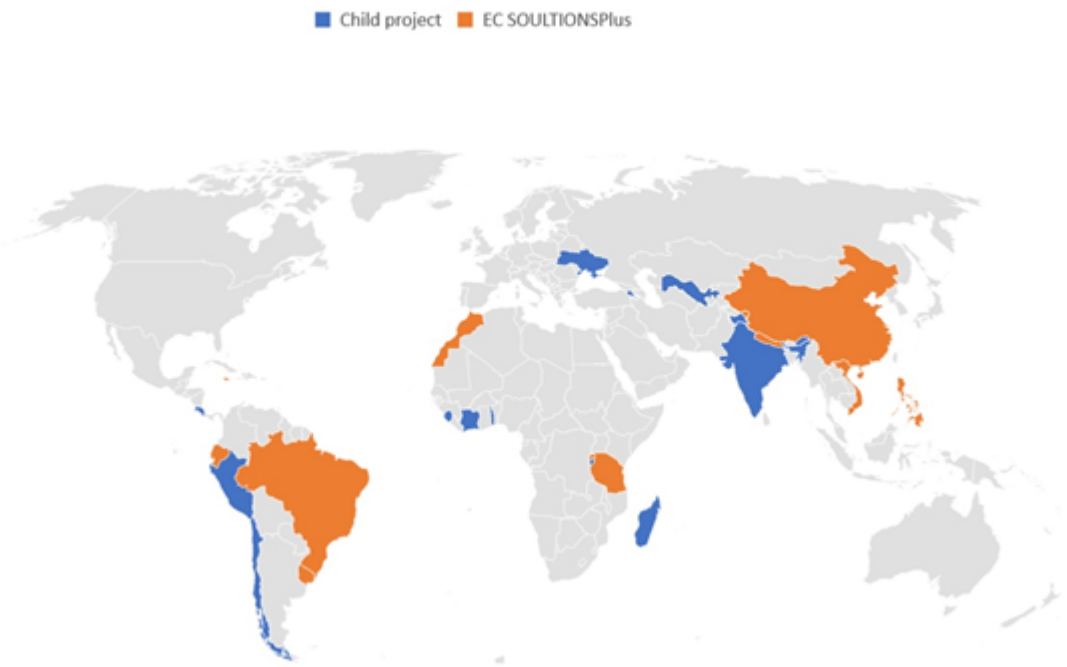
The programme is submitted initially with the following 17 child projects (*Antigua & Barbuda, Armenia, Burundi, Chile, Costa Rica, India, Ivory Coast, Jamaica, Madagascar, Maldives, Peru, Seychelles, Sierra Leone, St. Lucia, Togo, Ukraine, and Uzbekistan*). The programme may be expanded at a later stage to include a second group of countries. New countries expressing interest to join include: *China, Vietnam, Zimbabwe, Malaysia, Mexico, Ecuador, Jordan, Indonesia, Ghana Nigeria, Georgia, St Vincent and Sri Lanka*. The programme will closely link to the GEF Sustainable Cities Impact Programme in cases where country projects have included electric mobility in their project design.

Linkage with the European Commission Solutions Plus Programme

The GEF7 *Global Programme* will closely link with the *European Commission Solutions Plus Programme* (hereafter EC Solutions Plus), which aims at developing integrated urban electric mobility solutions in the context of the Paris Agreement, the sustainable development goals and the New Urban Agenda. The two programmes will be linked together through cross-participation in each other's Steering Committees and working groups, increasing the impact and country coverage, reduce overlap and duplication, and mutually reinforce both projects to achieve enhanced impact.

The EC Solutions Plus programme will have a budget of 18 million Euros (~ USD 20,430,000) and will work in 15 cities. Demonstration projects will be implemented in 8 of the 15 cities. These 8 cities are Quito (Ecuador), Montevideo (Uruguay), Dar Es Salaam (Tanzania), Kigali (Rwanda), Kathmandu (Nepal), Pasig City (Philippines), Nanjing (China) and Madrid (Spain).

Together, the two programmes will bring together a network of around 30 countries (Figure 5) working on electric mobility policies, business models, financial schemes and demonstration projects to prepare for accelerated introduction and scaling up of electric mobility. Involvement of development banks and other financial partners in the global components of the programmes and the country projects will be aimed to secure direct investments for scaling-up and mainstreaming of electric mobility.



Child Project list: Antigua and Barbuda, Armenia, Burundi, Chile, Costa Rica, India, Ivory Coast, Jamaica, Madagascar, Maldives, Peru, Saint Lucia, Seychelles, Sierra Leone, Lomé, Togo, Ukraine and, Uzbekistan
EC Solutions Plus: Belo Horizonte, Brazil, Casablanca, Morocco, Dar es Salaam, Tanzania, Hanoi, Vietnam, Kathmandu, Nepal, Kigali, Rwanda, Kingston, Jamaica, Kochi, India, Montevideo, Uruguay, Nanjing, China, Pasig, the Philippines, Quito, Ecuador, Santiago, Chile,

FIGURE 5: COUNTRY COVERAGE OF THE GEF GLOBAL ELECTRIC MOBILITY PROGRAMME AND THE EC SOLUTIONS PLUS PROGRAMME

Working with the private sector

The private sector provides limited electric mobility solutions in non-OECD countries up to now. However, the market on non-OECD countries is changing rapidly because of several reasons: growing vehicle fleets in non-OECD countries; increasing concerns about air quality and climate problems; increasing availability of locally produced renewable electricity (versus expensive imported foreign oil); and local initiatives for manufacturing and/or assembling electric vehicles (especially 2& 3 wheelers).

This programme aims to create markets – where demand from countries and cities to introduce, or upscale, electric mobility is met with supply from manufacturers and financing.

At global level, the private sector will be involved in the global working groups to develop solutions for the introduction and upscaling of electric mobility in non-OECD countries. At regional level the support and investment platforms will involve the private sector and will provide them with a market place bringing together cities and countries in a (sub)region. The project will facilitate the connection between child projects and suppliers. Finally, the project will

specifically also support local manufacture and assembly of electric vehicles, to create green jobs within the project countries and regions. Details of private sector involvement in these programme components are included in the components descriptions below.

The following are examples of the involvement of the private sector in this programme.

Africa	**Ampersand:** This is a startup company in Rwanda that is developing electric motorcycles for use as taxi motorcycles in East Africa. They are now testing prototypes in Kigali. They will be invited to join the global thematic working group on 2&3 wheelers (as part of the LDV working group), support African country projects and supply technology to the African projects with a focus on 2&3 wheelers (Madagascar, Togo, Burundi, Sierra Leone, Ivory Coast). · **EkoRent/Nopia**: EkoRent is a Finnish startup with presence in Kenya that is providing electric vehicle rental and ride sharing services. Electric taxis are charged off of solar power. They are planning wide roll out of electric taxi fleets in different African countries. They will be invited to share their electric taxi pilots with projects in the programme that will focus on electrifying taxi fleets (including Ivory Coast and possibly Burundi, and possibly more countries through the EC Solutions plus projects and further additions of GEF child projects in a possible later phase). · **Solar E-Cycles Kenya Limited**: a start-up based in Kenya, with also operations in Madagascar and Morocco, and working closely with the Strathmore University Business School Energy Research Center to produce solar cargo tricycles. They will be asked to support the African projects with electric 2&3 wheelers components (Madagascar, Togo, Burundi, Sierra leone, Ivory Coast).
Asia & Pacific	· **Honda** – is supporting an electric two-wheeler project in Vietnam and has donated a fleet of electric scooters. They are interested to support further demonstration projects in South East Asia. They will be invited to participate in the global electric 2&3 wheelers thematic working group (under the LDV working group) and support projects with a focus on electric 2&3 wheelers in Asia (including Maldives, several EC Solutions plus projects, and several SE Asian interested countries that may join in a possible expansion of the programme). · **Build your Dreams (BYD)** – signed a Memorandum of Understanding with UNEP and are in contact with several countries and cities for the introduction of electric busses. They will join the global Heavy Duty Vehicles thematic working groups and provide technical support and supply technology to child projects focusing on introducing electric busses (including Chile, Peru, Costa Rica, Uzbekistan, Jamaica, Antigua & Barbuda and several more electric bus projects from EC Solutions Plus and future electric bus child projects from a possible future extension of the programme). · **TailG** – is one of the largest electric motorcycles producers (Chinese). They are offering to donate e-motorcycles to various projects in Asia and Africa, are keen to join the programme, and recently signed an Memorandum of Understanding with UNEP. They will join the global working group on electric 2&3 wheelers and will support and provide technology to child projects focusing on the introduction of electric 2&3 wheelers (including Togo, Maldives, Madagascar, Ivory Coast, Burundi, Sierra Leone).

Latin America & Caribbean	· **Chile** – has the largest electric bus fleet outside of China. BYD, Yutong and Hyundai delivered elelctric busses to Chile and are part of a programme to fully electrify public transport by 2040. The experiences of Chile working with different suppliers offering different solutions will be used for other projects in the region focusing on electric busses (including Costa Rica, Jamaica and Peru, several EC Solutions Plus projects and possible future GEF chid projects in the region focusing on electric busses). · **EnelX and Engie** are electricity providers that are keen to be part of the GEF7 electric mobility programme in Peru. They will be invited to participate in the global thematic working group on grid integration and can support Peru, Antigua and Barbuda, Jamaica, St Lucia and Costa Rica. · **GrupoICE** in Costa Rica have committed to install 17 charging stations (USD 850, 000) as part of the "Leapfrogging to E-busses in Costa Rica" project.

The IEA is working closely with a large group of private sector partners in the Electric Vehicles Initiative (EVI). UNEP works with many local and global manufacturers in the electric mobility projects it is already involved in. And the EC Solutions plus programme will include a large set of European companies. The private sector partners in all three these initiatives will be involved in, and integrated in, the activities of the GEF7 programme. Already many of them have expressed a keen interest to join the programme in some or all of its components.

Involvement of non-GEF7 and non EC Solutions plus in-country projects

This GEF7 Global Programme will also invite countries and cities not participating in the GEF and EC Solution plus projects to join selected programme activities, including the communities of practice and training. These will have a loose affiliation with the programme and would have access to the materials and, where they are able to finance their own costs, access to training, the community of practice and replication activities. As such, the support and investment platforms will become the leading regional initiatives to promote and support the introduction and shift to electric mobility in their regions.

Description of the programme's components and its expected outcomes
Four complementary programme components are proposed to achieve the programme's overall objective:
a. Global thematic working groups and knowledge materials,
b. Support and Investment Platforms
c. Country project implementation (Child Projects)
d. Tracking progress and facilitating replication

The four components will be closely linked to, and co-funded by the EC Solutions Plus Project. The activities of the four programme components include the following:

A. Component 1 – Global thematic working groups and knowledge materials:

Outcome 1: Knowledge products are generated by four global thematic working groups to support policy making and investment decision-making.

The programme will create *thematic working groups on key electric mobility topics*. These working groups will gather information from major stakeholders engaged in the programme to develop knowledge products and policy materials to provide support to countries, cities and other stakeholders.

The working groups will review current policy instruments, identify good practices to support policy development, compare technologies, review and develop financing models and instruments, set-up business models, develop analytical tools and models, and establish methodologies (e.g. for cost-benefit analyses, feasibility studies, data collection and analysis, etc.). The development of generic materials ensures that fragmented information on electric mobility technologies and policy experiences are effectively assembled and packaged to support policymakers.

The working groups will allow countries interested in promoting a transition to electric mobility to gain access to continuously updated knowledge on policy packages and tools, building on the expertise of front-running governments that have developed and implemented electric mobility policies, such as those that are already working with the IEA ad UN Environment programs. They will also build on the lessons learned and experienced gained from GEF projects that focus on electric mobility, such as on China, Peru, and Bhutan. These tools will be open source information, and thus available not only for GEF and EC Solutions Plus project countries but for all countries interested in electric mobility.

The working groups will benefit from the participation of private sector actors that have significant expertise on different aspects of electric mobility, including vehicle manufacturing, charging, and electricity vehicle battery design (including the sourcing of raw materials as well as the re-use, recycling and sound disposal of used batteries). At the same time the working groups will provide the private sector an opportunity to get acquainted with the specific challenges and requirements that non-OECD countries have with the introduction of electric mobility. Electric vehicles suppliers from all over the world have already expressed interest in being part of the groups.

Part of the outputs of the global thematic working groups will be methodologies and tools that can be adapted to local situations and prioritize the policies and programmes according to country/city specific operating environments and conditions. The products developed by the global working groups will thus be used by the Support and Investment Platforms (see Component 2) and adapted to local circumstances to support individual country and city projects and provide training and capacity building at regional and sub-regional level.

The thematic working groups will meet twice per year. Members will include representatives from international organisations, academia, independent experts, the private sector, civil society, and governments. While country and city projects of the GEF and EC Solution Plus will also be invited to participate in the thematic working groups (where relevant), the actual dissemination of the products of the working groups to the country and city projects will take place through technical support, capacity building and training activities that will be organised by the Support and Investment Platforms (see Component 2 below).

The working groups will incorporate gender considerations in its work, supporting policy makers in designing gender-responsive policies and solutions.

List of expected outputs:

- Four thematic working groups on key electric mobility topics including electric vehicles, charging infrastructure and grid integration as well as battery life cycle aspects are operational
- Information exchange and network opportunities are created between countries and global and regional experts
- Best practices and experiences in electric mobility are collected and synthesized from first movers and GEF/EC Solutions Plus country projects

- A toolbox including guidance materials, analytic tools, strategies, factsheets, roadmaps, policy packages, business models and financing schemes for promoting and supporting electric mobility is developed
- Training materials are prepared for use in regional Support and Investment Platforms

The four thematic working groups are described in the following sections:

- Light-duty vehicles (two and three wheelers and cars)
- Heavy-duty vehicles (buses and trucks)
- Charging infrastructure, grid, system and power market integration
- Batteries

Light Duty Vehicles Working Group

The thematic working group on light duty vehicles (LDVs) will have two sub-groups. One sub-group will focus on cars, while the second will focus on the introduction of electric two and three wheelers.

Working group activities will include the analysis of national regulatory instruments (e.g. fuel economy standards and zero-emission vehicle mandates) and fiscal policies (e.g. differentiated taxation on vehicle registration). Pros and cons of different options and good practices will be summarized in policy factsheets. The groups will assess these instruments considering the different technology options (e.g. using battery swapping for electric motorcycle taxis) and looking at different consumer profiles (e.g. home owners and renters, people living in houses and apartments). The two sub-groups will also consider the effectiveness of local planning measures (e.g. by looking at parking policies, preferential access to city centres of electric cars and motorcycles, rebates on toll roads, etc.) and will analyse cases having different usage profiles (e.g. private cars and scooters as well as captive fleets, such as electric taxis). Part of the working group tasks will be to development of finance schemes and business models for purchasing and operating electric two and three wheelers as part of taxi and other fleets. Experts will develop inputs for technical specifications.

Heavy Duty Vehicles Working Group

The thematic working group on heavy-duty vehicles will have a primary focus on the deployment of electric buses and minibuses, but it will also develop policy guidance and other support materials on the introduction of electric trucks (upon demand from the country projects).

For buses, the working group will review possible electric bus pilot options by comparing the pros and cons of different technologies (e.g. opportunity charging versus depot charging, including the implication that this has for usage, range, battery capacity, charging infrastructure and power demand). In addition, it will prepare an overview of the technologies and suppliers that are available, looking at each of the regions covered by the support and investment platforms. To address the challenge of higher investment costs for electric buses and the associated charging infrastructure, the working group will review financial mechanisms that capitalize on the fuel efficiency and high utilization rate of electric buses. It will also identify good practices and foster their visibility through the regional platforms. The working group will also consider business models allowing investors to defer upfront costs for vehicle acquisition and infrastructure installation thanks to the savings occurring during the usage phase. Experience gained in electric bus fleets projects of UN Environment and its partners, especially in developing countries, will serve as crucial inputs to the working group.

The working group will also look at promoting the introduction of electric medium- and heavy-duty trucks, especially for those whose operations have regular routes and schedules and are centrally managed, thus excluding risks for potential range limitations.

As in the case of LDVs, increased electric vehicle uptake will require continuous adaptation of policy incentives for electric HDVs, not least because of the changes in taxation revenues fuel sales, possibly requiring an even earlier shift of taxation of HDVs towards road charges than in the case of LDVs. The knowledge developed in the working group will be crucial to ensure that countries are prepared for this sort of developments and dispose of adequate policy tools to handle them.

Charging Infrastructure and Grid Integration Working Group

This working group will focus on vehicle charging infrastructure, grid, system and power market integration. Its intention is to focus on the need for EVs to deliver net reductions of GHG emissions (compared to the baseline) and ensure that a transition to electric mobility goes together with a reduction in the carbon intensity of the power grid. To do so, the working group will cover aspects related with the roll-out of charging infrastructure. The working group will review existing charging practices (e.g. looking at home, workplace charging, or charging occurring on publicly accessible outlets), standards (e.g. looking at slow, fast and ultra-fast chargers and interoperability issues), and policies used to increase the availability of charging points. This would help countries define measures supporting the roll-out of private and publicly accessible outlets.

The working group will also focus on policy instruments capable of fostering synergies between increased transport electrification and the increased uptake of variable renewables in power generation. This builds on growing consensus that deploying electric vehicles offers opportunities to increase the renewable share in road transport by providing renewable electricity to the transport sector, with positive synergies possible from maximizing workplace charging to meet solar power supply peaks during the day.

The working group will also review key concepts related to the power grid and its future development (e.g. micro grids, energy storage, smart grids, load shifting, frequency regulation, grid balancing, etc.). This will include consideration of technologies and policy tools that can support the minimization of greenhouse gas and pollutant emissions resulting from the delivery of electricity to transport vehicles. This will include considerations on barriers hampering the roll-out of such technologies and strategies to overcome them. It will also assess technologies that enable reverse flows of electricity to the grid, as in the case of vehicle-to-home and vehicle-to-grid applications. The working group will also consider co-benefits stemming from demand-side management solutions that can significantly reduce (and potentially even fully offset) requirements for grid upgrades and additional generation capacity. Experience shows that countries and cities often have many questions about grid and charging issues when developing their electric mobility projects. UN Environment-supported electric mobility projects in developing countries have had similar findings. Thus, the working group will provide necessary technical and policy information on these issues to allow countries to make informed decisions in the child projects.

By bringing together transport experts, energy policy makers, regulators, utilities and grid operators, the working group is well placed to guide investment decisions on future grid infrastructure and power equipment, minimizing costs and maximizing benefits.

Batteries Working Group

The working group on batteries will focus on policy instruments aiming to ensure the sustainability of the battery supply chain and the end-of-life treatment of batteries. It will also provide generic information about batteries issues as experienced in electric mobility projects, such as those related to different types of batteries, life expectancy, toxicity and quality issues.

Striving to enhance the environmental sustainability of battery production and use, the working group will consider instruments which maximise the economic value of batteries at the end of their useful life. It will do so by reviewing instruments and practices capable to maximize the opportunities for second-life applications of EV batteries and policies managing their end-of-life treatment. This will include the evaluation of policies that designate stakeholders with retaining responsibility for batteries along their lifetime or at the various stages of their life cycle. This exercise will draw useful lessons from flaws in international regulations on used consumer electronics trade and recycling, which, in some cases, have resulted in large-scale transportation of disposed goods from developed regions to emerging countries where they found their way into informal material extraction and recycling, and illegal landfills. In addition, the working group will analyse technologies which may reduce battery end-of-life treatment costs and regulatory frameworks by maximizing effective recycling practices.

The working group will also consider issues which derive from increased demand for metals and critical materials for battery manufacturing. Such issues include those related to human rights, labour conditions, gender considerations and, given the potential increases in toxic emissions, environmental and human health impacts. The working group will leverage multilateral engagement from public policy makers, international institutions, non-governmental organisations and the private sector to support policymakers to improve their understanding of risks and issues, aiming to helping countries and the private sector to minimize the negative impacts of mineral sourcing practices. To do so, it will build on the activities and the deliverables of an OECD-led collaborative government-backed multi-stakeholder initiative on responsible supply-chain management of minerals from conflict-affected areas and it intends to cooperate with other initiatives working on this topic, for example the Global Battery Alliance of the World Economic Forum. The working group will review existing government policies aiming to cultivate transparent mineral supply-chains and sustainable corporate engagement in the mineral sector. This will have the aim of identifying best practices and developing materials and initiatives capable of helping policymakers to design and adopt policies that strengthen or mandate the adoption of these practices.

Jointly with the Solutions Plus project, the four Working Groups will create an extensive toolkit that will include the products of the four working groups:

- Knowledge and policy materials such as factsheets, best practices and policy packages;
- Analytical and modelling tools (i.e. cost benefit tool, e-bus route selection models, comparisons of different technology options, location of charging infrastructure, impacts of large-scale EV use on power generation, transport and distribution and integration of variable renewable energies)
- Methodologies for demonstration project design and implementation (e.g. data collection, analysis and dissemination)
- Training modules for use in regional, sub-regional and country events
- Roadmaps and national strategies
- Methodologies for development of technical specifications and procurement guidelines
- Best practices from successful electric mobility projects
- Innovative business models for use of EVs in public and private fleets as well as for charging infrastructure
- Financing schemes including the use of grant and non-grant instruments to upscale electric mobility

A selection of interested child project countries will be asked to join the thematic working groups to contribute their experiences and help shape the guidance materials to ensure they are relevant for recipient countries. They will also be able to benefit from peer to peer exchange with other countries in a similar or more advanced state of e mobility transformation than themselves. For this the program will ask them to finance their travel and DSA from their own child project. We estimate the costs of this will amount to a little more than USD 120,000.

B. Component 2 - Support and Investment Platforms

Outcome 2: Conditions are created for market expansion and investment in electric mobility through Support and Investment Platforms

Three Support and Investment Platforms will be established: for Africa; Asia & the Pacific; and for Latin America & Caribbean. The Asian Development Bank will lead the Asia & Pacific platform, the platform for Latin America and the Caribbean will be led by the Mario Molina Center in Chile, and the Africa platform will be led by UN Environment.

The Platforms will provide the support to approximately 30 in-country projects between GEF (STAR) and projects supported by the EC Solutions Plus project. In addition, the platforms will be open for the participation of any other countries and cities with an interest in introducing and scaling-up electric mobility. Such countries and cities would participate in training, networking and replication activities of the platforms using their own resources. The Platforms would also invite projects under the GEF Sustainable Cities Impact Programme, which incorporate components on electric mobility, to join in the work of the Platforms, including training, capacity building and communities of practice.

In general, the platforms have the following main functions:

- Technical support – support the development and implementation of the GEF & EC Solutions Plus country and city projects;
- Networks and communities of practice – build networks and communities of practice to promote electric mobility and share experiences;
- Investment marketplace – bring together demand from countries and cities with supply from the private sector/ suppliers and financiers, at regional and sub-regional levels;
- Training and capacity buiding, including helpdesk – organise training sessions around specific electric mobility modes and technologies at regional and sub-regional levels;
- Information dissemination from global working groups – disseminate the knowledge and tools developed by the four thematic global working groups to the city and country projects in the region;
- Replication – promote replication of lessons learned in the GEF and EC Solutions Plus projects to other countries and cities in the regions to promote wider impacts of the GEF and EC programs

Technical Support

The Platforms will support the GEF and EC Solutions Plus country and city projects and other countries in the respective regional networks with developing and implementing electric mobility projects through technical support, policy development support, and financing support. Where relevant this will involve the networks of partners involved in the GEF and Solutions Plus programs and expertise in the global working groups. Direct technical support will be provided to individual GEF and EC Solutions Plus in-country projects. This will include visiting the projects and providing or hiring specific technical and policy expertise where needed.

Networks and Communities of Practice

The Platforms will be centers of knowledge on electric mobility in the region, and encourage knowledge sharing. The Platforms will create a community of practice, bringing together the GEF and EC Solutions Plus projects but also other countries and cities in the region interested in introducing/ upscaling electric mobility. The communities of practice will become the leading fora on electric mobility in each of the regions. They will promote the issue, facilitate sharing of practices among countries and cities, connect projects with experts, provide information through publishing documentation (presentations, research, market insights and case studies of electric mobility projects) and provide a virtual forum where countries and cities can share project progress and best practices, and therefore provide opportunities to showcase these as part of the fourth component of the programme, aiming to track progress and facilitate replication. The Platforms can also set up and support sub-regional and thematic teams where requested – for example if several countries in a certain sub-region want to introduce electric bus fleets, the Platforms can create a subgroup to specifically focus on a coordinated and harmonized approach, working in close cooperation with the thematic group working on the subject, and contributing to the maximization of the utility of the tools developed in the thematic working groups. The communities of practice will involve regional experts and the private sector to develop and provide solutions to these subgroups.

Investment Marketplace

The Platforms will create a “marketplace” where the country and city projects looking to procure electric mobility technologies and services - for example electric buses, electric motorcycles and electric light duty vehicles – can meet technology suppliers and financiers. The Platforms thus aim to bring the private sector/ technology providers to the (sub)regions. This will have multiple benefits. First, by combining demand the project can attract suppliers that may initially not have been interested in entering a market (because of size). Secondly, prices can be reduced by joint procurement. Thirdly, it will allow IEA, UNEP and other project partners to support country and city projects looking to procure appropriate electric vehicles (it has happened that developing countries procured electric vehicles that were not optimally suited for their operating environment). Fourthly, such an investment marketplace will also be attractive for financiers, including the development banks (those already involved in the project and also others) to provide loans to the country and city projects for electric mobility. Finally, some suppliers may be interested in donating or providing discounts on vehicles to showcase their technology (some suppliers have already offered to donate pilot fleets for demonstration purposes).

Training and Capacity Building

The Platforms will organise training programmes based on the needs of the in-country proejcts. The training will be aimed at the GEF and EC Solutions Plus country projects but will also invite other interested parties within the region (the latter self-funded). Training sessions will be tailor-made based on demand and key issues within the specific regions. As such, trainings may be general or focused on specific modes and technologies. Trainings can also be for the complete region or for a specific sub-region. Using the partners involved in the GEF and the EC Solutions Plus projects, there will be a wide set of experts available for assisting with the trainings. The trainings will use the materials developed by the global thematic working groups. The Platforms will also provide a helpdesk service provide direct support to queries and issues raised by countries and cities. Where necessary the help desk can link with external experts, including those involved in the global thematic working groups

Information Dissemination from the Global Thematic Working Groups

The Platforms will also act to disseminate the tools and knowledge developed by the global working groups to the GEF/ EC Solutions Plus in-country projects and other countries in the regions. These materials will be used both for the in-country projects and for the activities of the Platforms, including the training, community of practice, and finance marketplace activities of the Platforms. The Platforms will participate in the four global thematic working groups to ensure that the key challenges and lessons learned from the in-country projects are considered in the working groups.

As an initial estimate, the regional platforms will host two events annually and invite three participants from each child project country. Each country will be asked to cover their travel and living costs for all events from their own child project. These costs are estimated at around USD 740,000. Other countries will also be welcome to join the events from EC solutions plus, and countries engaged with the regional platform hosts on electric mobility through their regular business.

Replication

The Platforms will support the replication of country and city projects results. To do so the Platforms will: share and promote the successes and lessons learned; promote the wider use of the tools and policy products developed; encourage the development of similar projects outside of the GEF framework; and seek to develop e-mobility networks (including between technology suppliers, financiers and interested cities/ countries). This aims to achieve maximum impact beyond the GEF/ Solutions Plus in-country projects, and support interest in countries not included in the GEF/ EC Solutions Plus programs. For example, the ADB aims to establish a number of demonstration pilot projects, for example on charging infrastructure, battery technology, fleet management, introduction of commercial EVs, and will create an EV Fund, to co-finance EV projects of cities which have transformational impact potential.

The Platforms will also invite projects under the GEF Sustainable Cities Impact Programme, which incorporate components on electric mobility, to join in the work of the Platforms, including training, capacity building and communities of practice.

List of expected outputs:

· *Three support and investment platforms* are established and operational to disseminate knowledge from the global working thematic working groups to countries, form regional communities of practice and create an e-mobility market place

· *Training and capacity building courses* are delivered to country and city stakeholders, including information disseminated from the global thematic working groups to in-country projects

· *Networks and communities of practice* are established to share good practices, through South-South cooperation and peer-to-peer support

· *Technical support* is provided to countries and cities, including through help desk support and through knowledge developed in the global working groups

· *Replication* of GEF and EC Solutions Plus country project experiences to other countries and cities in the regions interested in promoting electric mobility is supported

· Generation of interest by the private sector to supply tailor-made electric mobility solutions to the (sub)regions

· *Electric mobility market places* are established to promote and support investment in electric mobility

ADB as a regional electric mobility partner: Under ADB's STI there are several ongoing programs and projects, principal among which is the "Sustainable Transport for All" technical assistance. As electric mobility is a relatively new area for ADB as well as its DMCs, this TA helps support countries at the policy and the strategy formulation level. It recognizes that cities are the main drivers of e-mobility. One of the objectives of the TA is to assist cities in the development of roadmap which allows them to shift gradually from fossil fuels to electric vehicles in the most cost- effective way possible. Much of the work

under the TA provides countries and cities with a range of technically and financially feasible options. There are three main thrusts to the work: i) concentration on high distance vehicles, on cities and on large fleets, ii) optimize charging infrastructure, battery usage and greening of the grid, and iii) develop appropriate incentive structures, include financial and nonfinancial incentives as well as a creative packaging of incentives.

ADB's proposed regional support investment platform also aims to:

- gather and curate technical and financial data by country / city / mode of transport (e.g. For rickshaws - grid factor, diesel usage, electricity usage, electricity tariff, CAPEX diesel, CAPEX Li-ion, Maintenance cost per annum diesel, Maintenance cost per annum electric, annual mileage, battery charger cost, battery life, CAPEX battery, Government subsidy, number of rickshaws, lifetime of rickshaw;
- provide additional capacity development and technical assistance and guidance for countries to address barriers to widespread adoption of EVs, including policies, regulatory and investment barriers;
- establish a number of demonstration pilot projects, for example on charging infrastructure, battery technology, fleet management, introduction of commercial EVs. Some projects are currently being considered;
- and create an EV Fund, which would co-finance EV projects of cities which have transformational impact potential.

UN Environment as a regional electric mobility partner: UN Environment is the leading organisation supporting African countries with the introduction of clean and low carbon mobility. UN Environment has supported close to 30 African countries with developing national programs and policies for the introduction of cleaner vehicles. Currently UN Environment is supporting 10 countries develop national programs and policies to promote electric light duty vehicles (Ghana, Kenya, Uganda, Rwanda, Mozambique, Ethiopia, Mauritius, Cote d'Ivoire, Nigeria). Most of these projects are focusing on developing standards and fiscal reforms to reduce taxation for electric cars. UN Environment is also supporting five countries with the introduction of electric motor cycles (Rwanda, Kenya, Uganda, Ethiopia, Morocco). And UN Environment is supporting eight African cities with the introduction of electric busses (Accra, Abidjan, Dakar, Lagos, Abuja, Dar es Salaam, Nairobi, Johannesburg). For all these programs UN Environment has signed agreements with the national governments. UN Environment has a long-standing cooperation with leading sustainable mobility organisations in Africa, both NGOs and knowledge organisations such as universities. Through is work over the past decade UN Environment has an excellent network in Africa with government representatives of all African countries and also experts, private sector and civil society organisations. UN Environment has therefore the technical expertise and regional presence to run the African support and investment platform and is already in discussions to bring the African Development Bank to join and bring the financial power and expertise to the platform.

The Molina Center as a regional electric mobility partner: The Molina Center Chile is the leading non-governmental clean mobility organisation in South America. They are a research and policy development center. The Center has worked, at national level, with 12 national Governments in the region to support cleaner and more efficient fuels and/or vehicles programs. The Center has also developed harmonized vehicles emissions standards for the region. The Center is part of a public-private consortium to introduce electric mobility in Chile. They played a key role in the introduction of electric busses in Santiago, which by the end of 2019 will be the second largest urban electric bus fleet in the world. They are supporting similar programs in Montevideo and San Jose. The Center has had a strategic partnership with UN Environment for more a decade and is partnering in clean mobility activities with leading agencies including the United nations, World Bank, the International Council for Clean Transportation (ICCT) and others. Centro Mario Molina in Chile has therefore the technical expertise and regional presence to run the Latin America support and investment platform and will seek to cooperate with the Interamerican Development Bank and the World Bank to bring the financial power and expertise to the platform.

C. Component 3 - Country project implementation

Outcome 3: Conditions are created at the country and city level for the introduction of electric mobility pilot projects, demonstration projects, and the wider up take of electric mobility.

The national child projects together with the EC Solutions Plus city projects will create the conditions to accelerate market transformation of electric mobility at the country and city level. This includes:

- The preparation and execution of electric mobility demonstration and pilot projects;
- The development and implementation of electric mobility policies including regulatory, fiscal as well as other local measures
- The development of business models and finance schemes, and;
- The set-up of an institutional framework including national electric mobility programmes and strategies.

Child projects will prioritize one, or more, areas they want to focus on with the introduction of electric mobility, including:

- Developing a policy environment that will allow and promote the uptake of electric mobility. For example, to support countries with the development of regulatory, policy, and financial frameworks to promote the introduction of electric vehicles by consumers and companies;
- Supporting the development of pilot demonstration projects. For example, to help with introducing a fleet of electric motorcycles to be used by a specific operator, as a pilot aimed at generating knowledge and experience for subsequent further introduction at operator/ city/ national level, and;
- Supporting the further upscaling of electric mobility. For example, through supporting cities and operators with changing over to electric buses.

A significant part of the work of the global and regional components of the programme will be dedicated to supporting countries and cities to implement child projects. Support will be provided through direct technical support, as part of the child projects, and through the support and investment platforms and the thematic working groups to both the GEF as well as the EC Solutions Plus countries. The programme will also link the child projects with experts and the private sector to support the development and introduction of their electric mobility projects.

Direct country support for child projects is included in the budgets of the support and investment platforms. General support from the thematic working groups, for example for regional trainings, is also included in their budget. Countries will be expected to cover their costs to participate in regional and global events from their own country projects. For countries who wish to receive additional in-country and tailored-made support, they will need to cover these costs from their own national project.

The global child project will assemble experiences and best practices from around the world, organise these materials into training and template materials. The materials will be used by the regional support and investment platforms for in-country dialogues on policy application and investment and to provide training to country investment, policy making stakeholders. Progress will be monitored, tracked, documented and used to strengthen existing best practice materials and to promote interest from additional countries in electric mobility.

The National Child Projects will set aside USD 50,000 to USD 70,0000 each for the following areas to take full advantage of the programme:

- Travel and DSA to the thematic working groups and regional events; and

· Monitoring and tracking progress of their projects and reporting against programme targets and collecting country assessment data on their electric mobility targets.

TABLE 2 – LIST OF CHILD PROJECTS WITH OBJECTIVES AND PROJECT SUMMARY

Country	Project title	Objective	Rationale for the project	Project Summary
Global	Global Child Project	Support countries to design and implement electric mobility programs as part of an overall shift to sustainable, low carbon transport sector.	To achieve a target of 1.5C all vehicles added to the global fleet need to be electric from 2035 onwards, resulting in a complete switch to electric fleets by 2050. Over 2 billion new vehicles are expected to be introduced primarily in non-OECD countries in the next 35 years. A number of challenges hinder the rapid introduction of electric mobility into the market over that period.	To remove barriers to rapid introduction of electric mobility the Global Child project will: Raise awareness of the multiple benefits of electric mobility for all relevant stakeholders in the child project countries. For example, with respect to greenhouse gas and air pollutant emissions, energy use and costs; De-risk investment in electric vehicles and electric vehicle supply equipment. Actions to achieve this will include providing guidance on the development of studies and analyses, and developing and implementing demonstration projects that strengthen developing country experience with electric mobility and facilitate accelerated learning; Provide policy packages and support through supporting the development of adequate and context-specific policies, such as regulations, standards, fiscal measures and other local and national incentives; that are flexible and can be adapted to the needs of different countries, depending on the desired pathway to electric mobility, local context, and different priorities and needs; Ensure that the integration of renewable energy sources and the decarbonisation of the power grid is part of the transition to electric mobility. This ensures that electric mobility will deliver significant

				net savings of GHG emissions compared to projected baselines; Promote sustainable use of batteries and battery materials recycling; and Integrate gender issues into (electric) mobility and work with policy makers in designing gender-responsive policies and solutions.
Antigua & Barbuda	Antigua and Barbuda Sustainable Low- Emissions Island Mobility Project	Promotion of low emission public and private transportation systems in Antigua and Barbuda that are resilient to the projected impacts of climate change	• The transport sector accounted for around 30% (USD $49 million) of these total fuel imports, and power generation is highly dependent on diesel generators resulting consumer costs of USD 0.40/ kWh. • Antigua and Barbuda's Renewable Energy Act setting a renewable energy target of 50MW by 2030. This target is re-enforced by an NDC commitment, to help reduce these costs and their dependence on imported fossil fuels. This would make for over 30% of the grid capacity (currently 108MW), nearly 30% renewable. • Antigua and Barbuda is suffering from high fuel costs and will hence benefit from linking transport and renewable power, which is part of the project. • The proposed project aims to demonstrate electric mobility and renewable power integration to reduce energy use and emissions and to increase extreme weather resilience.	The project will raise awareness, build capacity and establish the institutional framework for electric mobility in Antigua and Barbuda. It will support the development of policies, incentives and strategies to strengthen the enabling environment for low-emission transport solutions. It will demonstrate electric buses for public transport in combination with the generation of renewable power for recharging. It will prepare for the large-scale introduction of electric mobility and low-carbon power charging through the development of context-specific finance schemes and business models. The project will support private sector suppliers in offering affordable and tailor-made electric bus solutions for Antigua & Barbuda (possibly through a (sub)regional market approach). Finally, long term sustainability will be promoted through investigating the integration of renewable power and life-cycle issues for used electric vehicle batteries.
Armenia	Transition Towards Electric Mobility in Armenia	Accelerating the introduction of electric mobility through capacity building and the demonstration of electric vehicles, and preparation of up	• The country wants to capitalize on its renewable energy potential (solar and hydropower) and increase energy security. 40% of its power is generated from renewable sources. • Armenia is already offering tax exemptions for electric vehicles and the country has arou	The objective of this project is hence to mitigate GHG emissions, promote energy security, and improve air quality through the promotion of electric mobility in Armenia. The project will consist of technical assistance and demonstration of electric passenger cars in a captured fleet in Yerevan. A large

		scaling and repl ication through development of adequate electr ic mobility polic ies, and develop ment of busine ss models and finance scheme s.	nd 5,000 registered electric vehi cles. • Imports of electric cars to Armenia have increased 5-fold s ince 2016 and the government i s considering customs and fisc al incentives for EVs for 2019-2 030. In addition, Armenia plans to manufacture and assemble E V's locally. • Armenia now needs to pl an and execute charging and gri d infrastructure to meet expecte d growth in demand for power fr om electric vehicles.	-scale introduction of electric mo bility through the development of context-specific finance scheme s and business models is also ad dressed. The project partners will link private sector suppliers to th e country as to create interest in a captured light duty fleet. In addi tion, measures will be developed to ensure the long-term sustaina bility of electric mobility through i nvestigating the integration of re newable power and life-cycle iss ues for used electric vehicle batt eries.
Burundi	Support the S hift to Electric Mobility in Bur undi	Accelerating th e introduction o f electric mobili ty through capa city building an d demonstratio n of electric veh icles, and prepa ration of upscal ing and replicati on through dev elopment of ap propriate electri c mobility polici es, and develop ment of busine ss models and financing sche mes	• Burundi has a very clean electricity mix. About 80% of the power is generated based on re newable resources. • Over 60% of emissions in the country currently comes fro m vehicles. • Car ownership is growing fast as the population recovers from war. In 2007, the number o f vehicles per 1,000 people was one of the lowest in the world – at 6 vehicles per 1,000 people. Between 2005 and 2016 the veh icle fleet doubled, and these gro wth rates are continuing. • All fuel requirements are i mported into Burundi, and the G overnment recognizes that this i mport dependence places their economy at risk to oil prices sh ocks.	The project aims to build awaren ess and capacity of key stakehol dersstakholdersstakeholders and to establish the institutional framew ork for electric mobility in Burund i, by catalyzing the uptake of elec tric 2 & 3 wheelers, light duty vehi cles, while also developing strate gies for the uptake of electric urb an buses. As a proof of concept, a small demonstration project in Bujumbura with 2-wheelers, 3-wh eelers, private cars and slow char ging stations will be implemente d. The project will support local a nd international electric 2&3 whe elers producers to start supplyin g electric 2&3 wheelers in Burund i. The project will also help identif y potential donations of electric 2 &3 wheelers for demonstration p urposes. Studies to integrate ren ewable power for electric vehicle recharging will be also carried ou t. As a child project under the Glo bal Programme, there will be opp ortunities to address bankability of electric mobility through regio nal support and investment platf orms.
Chile	Accelerating t	Promote innova	• Chile is the leading count	The project will play a catalytic ro

	he adoption of electric mobility in Chile	tion and technology transfer for sustainable energy breakthroughs in electric drive technologies and electric mobility	ry with respect to electric mobility in the region, the city of Santiago de Chile piloted electric buses and will introduce 200 electric buses to the Transantiago BRT early next year. • Chile has a clean electricity mix averaging at about 0.45kgCO2/kWh, which results in immediate emission reductions from EV use. • Centro Mario Molina is the leading non-for-profit organization when it comes to transport in the region and they will play a crucial role in the programme (i.e. managing and hosting the Latin America Regional hub, sending experts to the thematic platforms, providing expertise among country request worldwide)	le in promoting investment in electric mobility in regions outside of Santiago. To date these regions have received little private investment in these technologies in Chile. The demonstration component of this project will involve approximately 60 medium-sized electric city buses and 130 electric fixed-route taxis. This pilot will serve as a proof of concept for business models for electric mobility in public transport, contextualized to the conditions outside Santiago de Chile. Building on the demonstration, the project will facilitate the building of enabling conditions for the uptake and broad diffusion of public electric mobility throughout Chile - including integration of renewable power and life-cycle issues for used electric vehicle batteries. Local utilities, like Engie and Enel, will support the project through investment in electric mobility infrastructure. Further, the project will support the development of policies, regulations, and incentives for electric mobility.
Costa Rica	Accelerating the move to electric buses in Costa Rica	Scale-up and large-scale deployment of electric buses in the Metropolitan Area of San Jose.	• 54% of greenhouse gas (GHG) emissions by the energy sector are due to the national vehicle fleet. • The country has a public health crisis, attributed to particulate matter in the air, and road transport is the largest contributor of air pollutants. • An ageing public transport mobilizes more than three-quarters of passengers in the Great Metropolitan Area of San Jose, and this creates an opportunity for modernisation with electric buses. • Costa Rica has a clean po	The project will build experience with existing initiatives for the scale-up and large-scale deployment of electric buses in the Metropolitan Area of San Jose. The project will assess the viability of different financial instruments through integrated work with the financial sector and private investors. A key outcome of the project will be appropriate financial instruments developed for the local market. By the end of the proposed project, the financial mechanism will be operational and will attract sufficient funds from financial institutions and private investors to ac

			wer grid, so switching to electric mobility will contribute significa ntly to the country's emissions r eduction targets.	hieve a large-scale adoption of el ectric mobility in Costa Rica.
Ivory Coas t	Integrated, Su stainable and Low Emission s Transport in Cote D'Ivoire	Accelerating th e introduction o f electric mobili ty through revisi on of policy and institutional fra mework; trainin g and capacity building; demon stration of elect ric vehicles; and development of finance scheme s and business models private sector engage ment, upscaling and replication i n Cote d'Ivoire	• The country is an importa nt supplier of energy to the regi on due to the oil and gas reserv es and the excess electricity it g enerates. It values highly the for eign revenue it generates from t hese exports. • 31% of Ivory Coast's gene rating capacity comes from ren ewable sources, and to minimiz e consumption of its own fossil fuel resources, the government has set a target to increase this to 42% by 2030. • Côte d'Ivoire is experienci ng rapid motorization spurred b y high rates of urbanization and economic growth (GDP growth r ate of 8.2% in 2016). • Like many African countri es, Côte d'Ivoire faces serious ai r pollution problems linked to po or vehicle standards and use of high sulphur fuels. • The government has alre ady begun to reduce the age of vehicle imports and is promotin g energy efficient vehicles. They now wish to extend their policie s to benefit from the advantage s of electric mobility.	Acceleration of a shift towards el ectric motorcycles will have a dra matic impact on reducing urban vehicle emissions and toxic air p ollutant in Abidjan, the capital of I vory Coast, which is experiencing rapid motorization. This project, with the support of the Global Pr ogramme, will develop supportiv e policies, incentives and awaren ess raising activities such as a d emonstration of electric motorcy cles to foster the electric mobility market and will engage with priva te sector to increase the market share of electric vehicles in Côte d'Ivoire, thus creating an enabling environment to drastically reduce air pollution and GHG emissions. To provide a basis for replication, a demonstration project involving a small number of light-duty vehi cles will be implemented in Abidj an. It will prepare for the large-sc ale introduction of electric mobili ty and low-carbon power chargin g the development of context-sp ecific finance schemes and busin ess models. The project will help identify private sector partners to supply vehicles for the demonstr ation. Finally, long term sustaina bility will be ensured through the i ntegration of renewable power a nd life-cycle issues for used elect ric vehicle batteries.
Jamaica	Supporting Su stainable Tran sportation thr ough the Shift to Electric Mo bility in Jamai ca	Development of resilient and lo w emission pub lic and private tr ansportation sy stems in Jamai ca	• Jamaica's Nationally Dete rmined Contribution (NDC) com mits to emission reductions of 10% of BAU by 2030. • Power generation in Jam aica is dependent on the operati on of diesel generators (11% re	Coordinating ongoing national i nitiatives on electric mobility in Jamaica, this project will undert ake 1) technical and regulatory assessments for the developme nt and update of National EV pol icies and legislation; demonstra

				newables in its energy mix) • Jamaica's National Energy Policy 2009-2030 lays out aggressive targets for a 30 percent renewable energy share and a 50 percent reduction in energy intensity by 2030. • The transport sector is the second major source of GHG emissions and is expected to increase as motorization continues to rise, indicated by the doubling of the vehicle fleet between 2014 and 2017. • Jamaica's high dependence on fossil fuels in the transport sector has a significant impact on the levels of emissions, air pollution and hence public health. • Jamaica is embarking on a National Electric Mobility Programme with the support of the private and public sector, including integrated renewable energy with financing through the Inter-American Development Bank.	tion of e-busses; and national awareness raising campaign on the transition to low-emission electric mobility A demonstration project will focus on electric buses with integrated renewable power recharging for public transport in Kingston. It will prepare context specific finance schemes and business models to promote the active involvement of the private sector and public-private partnerships. The project will be implemented in close coordination with the Inter-American Development Bank and Ministry of Energy's- Jamaica Electric Vehicle Climate Action & Resilience Program to duly facilitate a transformative, large-scale introduction of electric mobility in the country.
India	Electrifying Mobility in Cities: Investing in the Transformation to Electric Mobility in India	Promote low carbon, low-emission transportation systems.	• India's renewable energy generation capacity is about 20% of total installed capacity in the country. The government has set a renewables energy expansion target of 175 GW by 2022. This would take the country from the country's grid emission factor from 0.825 tCO2/MWh in 2016 to 0.684 tCO2/MWh by 2030 (assuming 40% of the country's generating capacity is from renewables). • India is the fourth biggest vehicle producer worldwide. • Numerous local car manufacturers have announced the production of electric vehicles. • India has a very strong growth in the vehicle fleet which is degrading air quality especially in cities. • India is discussing electri-	The project aims to build experience for a large-scale adoption of electric mobility in India, in coordination with ongoing initiatives in the country. As a key outcome, the viability of different financial instruments will be assessed through close engagement with the financial sector and private investors. The enabling policy environment created as a result of the project will strengthen institutional capacity and increase public awareness and participation, elements that are instrumental in encouraging the shift towards sustainable low-emission public transport systems as a preferred choice for mobility. The project loan will support the design and supply of locally produced or assembled electric vehicles and chargers. Sustai- nability of the project outcomes

			• India is discussing electri c mobility targets of about 15% EVs in the next five years and 3 0% by 2030 (sales share), as a s olution to deteriorating air qualit y. • This creates conducive c onditions for market transforma tion to electric vehicles in the co untry.	nability of the project outcomes will be ensured through the inves tigation and capacity developme nt of life-cycle issues of EVS and EV batteries and the developmen t of a gender sensitive capacity p lan.
Madagasc ar	Support the S hift to Electric Mobility in Ma dagascar	Promotion of a n integrated, su stainable and lo w-emissions tra nsport system and reduce fos sil fuel consum ption, GHG emi ssions and air p ollution from th e transport sect or in Madagasc ar	• the country aims to reduc e its GHG emissions by 14% by 2030 compared to a Business a s Usual (BAU) scenario, in its N DC. • Madagascar has clean el ectricity power mix with more th an 50% of the power coming fro m renewable sources and hydro (0.464 kgCO2/kWh), and it is pr omoting renewable energy. Man y new sites are under prefeasibil ity assessment, while a solar pa rk of 20 megawatts electric out put was commissioned in 2018. • the share of transport rel ated emissions on energy emis sions was 33.10% in 2011 and i s the fastest growing source of emissions • Madagascar wants to rep licate the experience of Mauritiu s in attracting cleaner and more fuel economy vehicles through policy and taxation, including el ectric vehicles.	The objective of the project is ac celerating the introduction of ele ctric mobility in Madagascar thro ugh capacity building and demon stration of electric vehicles, and preparation of upscaling and repl ication through development of a dequate electric mobility policies, and development of business mo dels and finance schemes. This will lead to significant mitigation of GHG and air pollutant emissio ns as the transport sector in Mad agascar, is the single largest cont ributor to energy related emissio n. The project will be piloted in tw o cities in Madagascar, namely th e capital Antananarivo and Taom asina, which is the largest harbor and the biggest town in the easte rn part of Madagascar. The proje ct will build on the already ongoin g activities to introduce electric 2 &3 wheelers in Toamasina and wi ll expand efforts to the introducti on of electric light duty vehicles i n captured fleets, and address up scaling and replication for the lar ge-scale introduction of electric v ehicles in the rest of the country. Local and regional producers of e lectric 2&3 wheelers will be intro duced to the Madagascar project to supply electric 2&3 wheelers f or the local market.
Maldives	Integrated, Su stainable and Low Emission s Transport in	To mitigate GH G emissions, pr omote energy s ecurity, and imp	• Male and Hulhumale, the target islands for this project in the Maldives have combined ge nerating capacity of 90MW, of w	The proposed project, with the su pport of the global programme, ai ms to develop supportive policie s, incentives and strategies to fo

	the Maldives	rove air quality t hrough sustain able and low-e missions transp ort in the Maldi ves	hich only 1.5 MW is solar PV; th e rest coming from diesel gener ation. The country has a planne d investment with the World Ba nk for new generating capacity of 20-40 MW of solar power. Thi s would bring these 2 islands re newable energy ratio to 45% at t he up estimate. • The transport sector alon e accounts for 31% of overall en ergy consumption in the Maldiv es, and it is expected to reach 9 00,000 of tCO2 by 2020 accordi ng to the ADB. • In the Malé region, air poll ution is becoming a serious con cern. According to statistics pu blished by the Health Protection Agency the incidence of respirat ory diseases has aggravated ov er the years and is one of the le ading causes of death in Maldiv es. • The Government of Maldi ves sees the transport sector as a significant source of pollution and would like to have a more c omprehensive transport strateg y, including electric mobility to t ackle the problem.	ster the electric mobility market a nd engage with private sector to i ncrease the market share of elec tric vehicles in Maldives, thus dra stically reducing air pollution and GHG emissions. The project will be piloted with a focus on electric busses and inte gration of renewables to EV char ging in Male, along the bridge co nnecting Male, the airport and Hu lhumale, and in Hulhumale. Malé-Hulhulé bridge opened in Sep 20 18 and is leading to increased tra ffic volume. Maldives will be part of a group if Small Island Develo ping States to ensure that adequ ate electric mobility solutions will be provided to the market by the private sector. By introducing an integrated low-emissions transpo rt system, this project will addres s high reliance on fuel imports, G HG emissions and air pollution.
Peru	Enhancing su stainability in e-mobility for l ow carbon urb an transport a nd an Extende d Producer Re sponsibility (E PR) approach in batteries an d vehicle com ponents	Create the cond itions and early experience for accelerated ma rket transforma tion of electric mobility in Peru	• The transport sector is th e highest energy consumer, acc ounting for 45,2% of national en ergy consumption, and the vehi cle fleet is growing 9.5% annuall y. • The transport sector has been addressed in Peru's NDC a nd includes one measure on ele ctric transport, which aims to ha ve 5% of the national vehicle fle et (heavy and light duty) electric by 2030. • Peru is very much interes ted in electrifying public transpo rt (buses and 3wheeler taxis) an d Lima is one of the signatories of the C40 Clean Bus Declaratio	The objective of the project is to create the conditions and early e xperience for accelerated market transformation of electric mobilit y in Peru. The project will raise a wareness, build capacity and est ablish the institutional framewor k for electric mobility in Peru. It w ill support the development of po licies, incentives and strategies t o strengthen the enabling environ ment for electric buses and three -wheeler fleets and will include th e preparation of a strategy for Ext ended Producer Responsibility (E PR) for batteries and other EV co mponents. The project will demo nstrate electric buses and three-

			n Act and Peru has developed a n Electric Land Transport NAMA (funded by the GEF). • Peru has a low carbon po wer mix, more than 50% of the e lectricity is generated using ren ewable sources.	wheelers in two cities, in combin ation with renewable power rech arging. It will prepare for the larg e-scale introduction of electric m obility and low-carbon power cha rging through a comprehensive market analysis and the develop ment of context-specific finance schemes and business models. A broad consortium of companie s will be involved in all steps in th is project. Finally, long term susta inability will be promoted through the integration of renewable pow er and life-cycle issues for used e lectric vehicle batteries.
Seychelles	Support the S hift to Electric Mobility in th e Seychelles	Reduction of G HG and air pollu tant emissions as well as reduc tion of costs for fuel import and the related forei gn exchange ris ks through the accelerated intr oduction of ele ctric mobility in the Seychelles.	• The total power generatio n capacity in Seychelles is 93M W. 2.5% of this comes from ren ewable energy sources. • The country's 2010 Energ y Policy sets renewable energy consumption targets at 5% by 2 020 and 15% by 2030, and alrea dy the government has begun in vestment of USD 45 M in 11MW of wind and solar energy genera tion. • The Government of Seych elles also recognizes that reduci ng dependence on fossil fuels f or the transport sector through l ow carbon transport strategies i s not only desirable to reduce ai r pollution and GHG emissions, but also sustainable. • La Digue Island has been selected for the demonstration project as it provides the possib ility to make a completely transf ormation to electric mobility dur ing the project, together with a s hift to renewable energy generat ion.	The Government of Seychelles re cognizes that reducing dependen ce on fossil fuels for the transpor t sector through low carbon trans port strategies is not only desirab le to reduce air pollution and GH G emissions, but also sustainabl e. This project will thus help Seyc helles towards a low carbon tran sport pathway, with the demonstr ation project providing the much-needed experience with electric mobility and renewable energy in tegration. With the support of the global programme, the proposed project will review the existing tra nsport and fiscal policies; develo p supportive legal, regulatory and institutional framework to promo te the introduction and uptake of electric mobility in Seychelles; an d incentivize private sector enga gement in investing in electric ve hicles in Seychelles, thus drastic ally helping to reduce air pollutio n and GHG emissions. The project will be piloted in La D igue island, focusing on a selecte d types of electric vehicles and th e integration of solar charging.Th e project will be piloted in La Dig ue island, focusing on a selected

				types of electric vehicles and the integration of solar charging. The tourism sector will play a key role in the switch to electric mobility.
Sierra Leone	Supporting Sierra Leone with the Shift to Electric Mobility	Mitigation of GHG emissions, promote energy security, and improve air quality through promotion of electric mobility in Sierra Leone	• The Government of Sierra Leone recognizes that the high level of dependence of imported fossil fuel poses a challenge to their economy and emissions reduction targets. • The country currently has 100MW of installed generating capacity, 50% of which is renewable. The government has plans to expand their hydro capacity by 143 MW by 2022. • Power generation and transport are the biggest source of GHG emissions in the country. Moving to electric mobility will help the country meet its NDC target to be carbon neutral by 2050. • the total energy-related CO2 emissions increased from 20 MtCO2Eq in 2005 to 28 MtCO2Eq in 2013 representing an almost 50% growth. This jump in emissions was attributed to increase in fuel consumption in mining and transportation alone. • Air quality is very poor in Freetown, much of the pollution coming from the old vehicle fleet and much of this from 2 and 3 wheelers, creating another reason for the government to promote the electrification of 2 and 3 wheelers.	Sierra Leone's transport sector is expected to account for a larger share of greenhouse gas emissions and as well as air pollution as motorization and urbanization continue to rise in the country. To achieve Sierra Leone's INDC, significant improvement in energy efficiency should be made in the transport sector where an aging vehicle fleet and high reliance on diesel hinder efficiency. The project will demonstrate up to 20 electric vehicles within both public and private sector captured fleets as well as solar recharging in Freetown. It will prepare for the large-scale introduction of electric mobility and low-carbon power charging through the development of context-specific finance schemes, business models and procurement guidelines. Local start-ups will be included in the project to develop business models for charging infrastructure and local manufacture and/or assembly of electric 2&4 wheelers. Finally, long term sustainability will be promoted through the promotion of renewable power.
St. Lucia	Supporting the Shift to Electric Mobility in Saint Lucia	Accelerating the introduction of electric mobility through capacity building and demonstration of electric light commercial/d	• Although St Lucia power grid is almost entirely fossil fuel based, the country has significant planned investments for renewable power generation. This is also expected to bring down electricity prices. • In its Nationally Determin	The project will build on the assessment previously carried out on electrifying government vehicles and will review and enhance the institutional framework, legislation arrangements and incentivize and establish mid and long-term strategies including, the establish

			uty vehicles, and preparation of upscaling and replication through development of adequate electric mobility policies, and development of business models and finance schemes.	ed Contribution, the Government has set an ambitious goal (UNFCCC, 2015) to reduce GHG emissions by 16% by 2025 and 23% by 2030. • The transport sector is the second major source of GHG emissions in Saint Lucia and is expected to increase as motorization continues to rise (OCADE, 2018), and the fleets are old. • This creates the conditions for the country to be able to promote electric mobility.	ment of an inter-sectorial electric mobility coordination body, communication campaigns and capacity building to promote the uptake of electric mobility in St. Lucia. A selected number of EVs and charging infrastructure in the government fleet will be demonstrated and deployed in Castries. This will prepare for the large-scale introduction of electric mobility and low-carbon power charging through the development of context-specific finance schemes and business models for the procurement and operation of various EV types. Private sector will invest into a solar charging facility at the airport to power electric vehicles. Finally, long term sustainability will be promoted through the integration of renewable power for charging and life-cycle issues for used electric vehicle batteries.
Togo	Support the Shift to Electric Mobility in Togo	Mitigation of GHG emissions, promote energy security, and improve air quality through promotion of electirc mobility in Togo	• Togo depends on fossil fuel imports for thermal power generation. • 30% of Togo's generating capacity comes from renewables, and they have 50MW of planned renewable energy generating capacity investments over the life of the project. • Togo is entirely reliant on imports to meet its petroleum products requirements, and the vehicle fleet is growing at 11% annually. ` • Transport remains the largest and fastest growing contributor to energy related GHG emissions in Togo. • 96% of the total vehicle fleet is composed of light duty vehicles, of which 65% are motorcycles (2-wheelers), and the average age of vehicles is 13 year. The project will thus focus on the uptake of electric light duty vehi	The proposed project, with the support of the Global Programme, will analyze the existing transport and fiscal policies; develop supportive legal, regulatory and institutional framework to promote the introduction and uptake of electric mobility, and demonstrate electric vehicles in Togo. The demonstration of up to 2 electric cars and 30 2&3 wheelers and incentivize private sector engagement in investing in electric vehicles in Togo, thus drastically helping to reduce air pollution and GHG emissions. The project will be piloted in Lomé, the administrative capital city and the country's industrial center and home to West Africa's major container port, focusing on electric LDVs and motorcycles, as well as strategies for uptake of electric buses. In particular, the project will pilot up to 2 electric cars, 20 electric motorcycles and 10 3

			uptake of electric light duty vehicles and motorcycles.	20 electric motorcycles and 10 3-wheelers. By linking different projects in Africa for the introduction of 2 & 3 wheelers, a network of African countries will create a market for the supply of local and international electric motorcycles tailor-made for use in Africa.
Ukraine	Transition Towards Low and No-Emission Electric Mobility in Ukraine: Strengthening Electric Vehicle Charging Infrastructure and Incentives	To support and enable the Government of Ukraine to make the transformative shift to de-carbonize transport systems by promoting the scaling up of electric mobility at a national scale	• The government of Ukraine aims to transform the on-road transportation sector through electric mobility. In its Strategy 2030 the target is for a >50 per cent share of electric vehicles as part of vehicle sales and 100 per cent electric vehicles for public transport. In addition, there are targets for local manufacturing and production of electric vehicles. • In late 2017, the Ukrainian Parliament adopted a provisional exemption on value-added tax and excise tax for all electric vehicles for 2018 – which it is now working to extend through 2019. • Ukraine also has the additional advantage for vehicle electrification due to its electricity grid. Ukraine's electricity grid currently provides power at 287 g CO2eq/kwh with a large share of nuclear, hydro and some coal.	The project aims to deploy targeted, convenient and safe recharging infrastructure across Kiev and other strategic points. As while Ukraine's electric vehicle fleet continues to grow, its recharging infrastructure is lagging. This will be achieved through awareness raising, capacity building and establishment of an institutional framework to strengthen the enabling environment for electric vehicle infrastructure in the Ukraine. It will prepare for the large-scale introduction of electric mobility and low-carbon power charging through the engagement with the private sector and government and the development of context-specific finance schemes and business models. The project will support the investment in electric vehicles recharging infrastructure to keep pace with the fast-growing electric vehicle market. Finally, the project will target renewable energy integration for charging and life-cycle issues for used electric vehicle batteries to enable an accelerated and sustainable market transformation.
Uzbekistan	Promoting Green Urban Development in Tashkent Through Accelerating Investments in Low-Emission Vehicles	To accelerate the adoption of electric vehicles in the City of Tashkent that can be replicated in other cities in the Republic of Uzbekistan, to significantly redu	• Uzbekistan is one of the most carbon intensive economies in the world. • Road Transport accounts for 60% of all air pollution in Uzbekistan – 3x higher than in most developed countries • In its Intended Nationally	The project will support the GoU and the Tashkent City Municipality implement its' Tashkent 2025 Project objectives on improving urban mobility and urban environmental conditions through a demonstration of 15 electric buses with integrated renewable power recharging for public transport on gr een urban corridors. The operati

		gnificantly redu ce GHG emissio ns in the transp ort sector and i mprove urban e nvironmental q uality	Determined Contribution, the Go vernment has set an ambitious goalto decrease specific emissi ons of GHG per unit of GDP by 1 0% by 2030 from the 2010 level. • Both the GoU and the Tas hkent City Municipality (TCK) ha ve placed the introduction of lo w- carbon vehicles as a high pri ority • National consumer surve ys have shown highly favorable attitudes towards EVs	een urban corridors. The operati on of electric buses in Tashkent will catalyze interest and develop ment of the electric vehicle indus try in Uzbekistan as well as mode rn public transport systems in Uz bekistan's cities. The project will do so, by awareness raising, cap acity building and improving the i nstitutional framework for green urban transport corridors that inc lude electric vehicles. It will prep are for the large-scale introductio n of electric mobility and low-car bon power charging through the development of context-specific finance schemes and business m odels. The project will support pri vate sector suppliers in offering a ffordable and tailor-made electric bus solutions that fit with the gre en urban transport corridors. Fin ally, the project will target renewa ble energy integration for chargin g and life-cycle issues for used el ectric vehicle batteries to enable an accelerated and sustainable market transformation.

D. Component 4 - Tracking Progress, Monitoring and Dissemination

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.

Monitoring: The component will develop a monitoring, reporting and verification framework against which the outcomes of the programme will be measured, during implementation and afterwards. This will build on data and information collection tools and templates already in use by IEA and UN Environment to gather information for countries. The monitoring, reporting and verification framework will enable the quantification of greenhouse gas and air pollutant emission reductions and resultant benefits stemming from the electrification of various modes of motorized transport. It will build on data such as:

- Registrations, mileages, energy use and pollutant emission classes of electric and other vehicles composing and entering the stock;
- The tank-to-wheel and well-to-tank emission properties of the fuel and energy carriers (including electricity) that they use.

The following types of indicators will be collected from and included in the framework:

- Number of newly registered vehicles by mode (incl. LDVs, HDVs, buses, 2 & 3 wheelers) and share of electric vehicles;
- Number of vehicles in the fleet by mode (incl. LDVs, HDVs, buses, 2 & 3 wheelers) and share of electric vehicles;
- Passenger kilometres and tonne kilometres performed by vehicle mode and share of electric mobility;
- Energy used by vehicle mode and fuel and share of electric mobility;
- GHG and air pollutants emitted by vehicle mode and share of electric mobility;
- Public charging infrastructure built (units);
- Investments into electric vehicles and charging infrastructure (USD);
- Number of electric mobility policies developed (a) and implemented (b)
- Renewable power generation capacity added (MW);
- Electricity storage capacity added (MWh);
- Used electric vehicle batteries re-used (a), recycled (b) and disposed (c) (units & kWh);

Awareness raising: Under this component UNEP and IEA will track key developments, outcomes and project progress of components 1, 2 and 3 above, and distribute these through a global programme website, flyers, presentations, webinars and through global meetings to national governments, industry stakeholders and beyond. The website will be maintained after the life of the project as distinct GEF products either on the IEA or UN Environment website. Dissemination will also take place through the presentation of the programme on various platforms, such as the EVI, the Global Fuel Economy Initiative (GFEI), the UN Environment Assembly, UNFCCC COPs, and the UN Environment Electric Mobility Programme.

The component builds on monitoring and tracking work the IEA is already undertaking through their EVI project and through the analysis developed every year in the Global EV Outlook publication series. The Global EV Outlook reviews the status of major countries through country assessments and the status of regions in their transition to electric mobility. This component will support an extension of the Global EV Outlook to target countries in the GEF and EC Solutions Plus programmes, beyond the current scope of the publication.

This component will also support a global meeting that will launch the programme. This meeting will involve all GEF and EC Solutions Plus in-country projects and all major partners involved in the two programs, including civil society and private sector partners. A second global meeting will be organised at the end of the project where results are presented and replication and sustainability (i.e. continuation after projects have ended) will be discussed. Both meetings will also present the global programme (and in the second meeting: its results) to the outside, including to the media.

Child project countries will be expected to finance the costs to track their own progress and report annually to the IEA; capture lessons learned and experiences with project materials and e mobility uptake. As part of this they will be expected to track emissions reductions from their projects and conduct country assessments on their e mobility markets to establish a baseline and track market up take. These costs have been estimated at USD 370,000.

List of expected outputs:

- Monitoring framework is established, and indicators and targets are tracked;
- Knowledge management and communications, including website, established;
- Global EV Outlook and other related publications are strengthened and expanded to additional countries, data, assessments, and case studies;
- One global project launch meeting and one global end of project electric mobility meeting are co-organised with other events

4. Alignment with GEF focal area and/or Impact Program strategies

This programme is aligned with Objective 1 of the Climate Change Focal Area to "Promote innovation and technology transfer for sustainable energy break-throughs", through CCM1-2 - Promote innovation and technology transfer for sustainable energy breakthroughs for electric drive technologies and electric mobility.

This global programme will develop a suite of tools, policy best practices, training materials and strategies to foster large-scale market introduction of electric mobility in GEF recipient countries worldwide. The in-country child projects on electric mobility under the global programme will use the materials to put in place conditions enabling this transformation. The link between the global programme and the child projects, but also between the different child projects, will be enabled by the engagement of child project countries in the work of the technical thematic working groups and through the regional support and investment platforms in Africa, Asia and the Pacific, and Latin America and the Caribbean. Thus, the project is very much geared towards the exchange of knowledge and experience on a South-to-South, North-to -South and Peer-to-Peer basis.

In particular, the programme aligns with point two of the objectives to promote "electric drive technologies and electric mobility". It also contributes to points 112, 113 and 114 of the GEF-7 Programming Directions to accelerate "the speed and scale of sustainable energy investment in developing countries", to develop "innovative business models that go beyond business as usual" and to foster innovation.

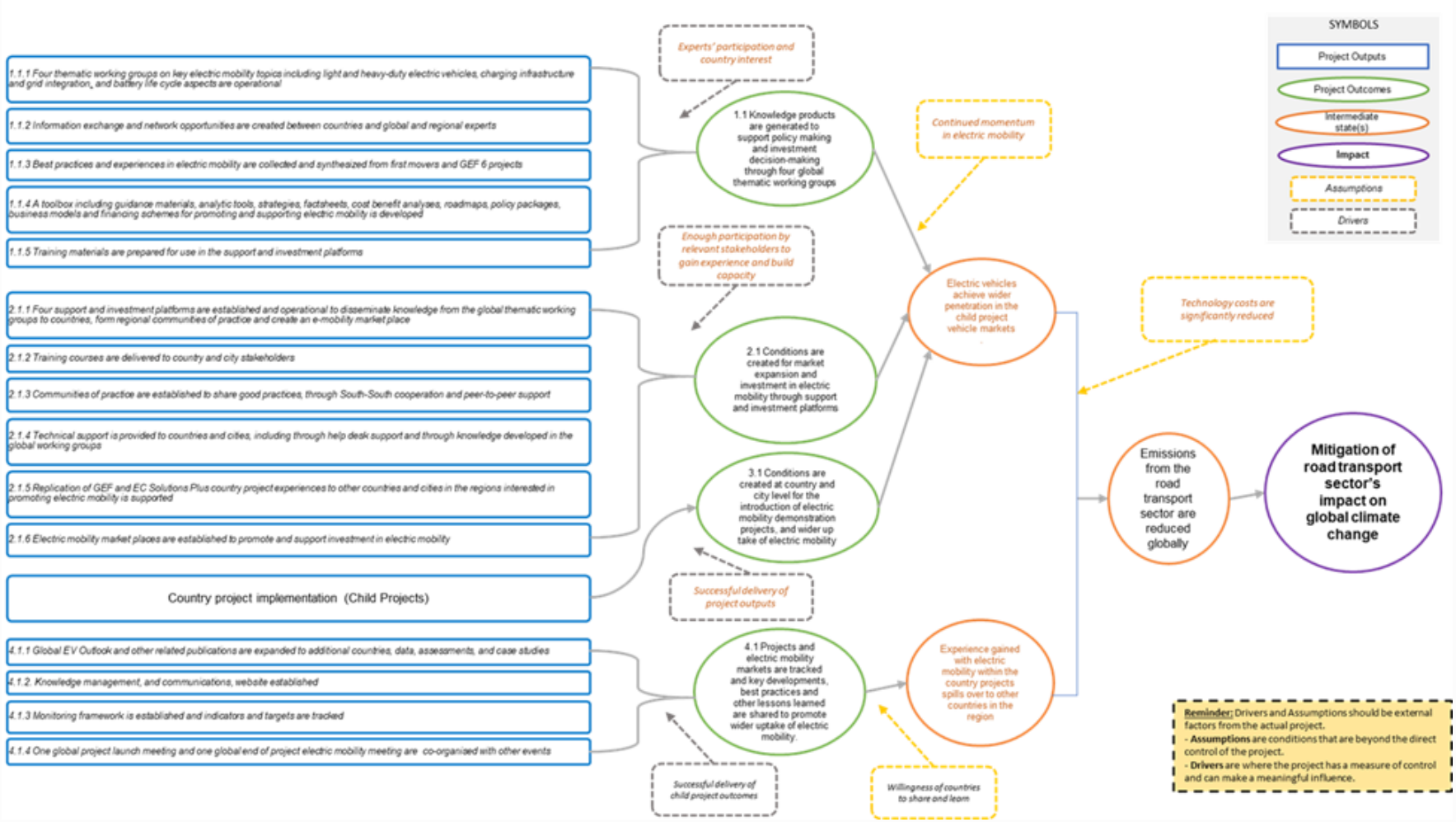
Since many of the in-country child projects under the global programme will develop electric mobility demonstration projects, the programme also aligns with the objective to focus "on the demonstration and early deployment of innovative technologies to deliver sustainable energy solutions that control, reduce or prevent GHG emissions".

In addition, the programme follows GEF's advice to deliver focused interventions "through programmatic approaches or regional projects".

The program's theory of change addresses the root causes of fossil-fuel dependency in the transport sector in participating low- and medium-income economies (child projects) and through this support and accelerate their processes to achieve low-emission transport sectors. The proposed approach includes generating best practice, creating conditions for investment and scale up of electric vehicles. This approach directly addresses the root causes of the environmental challenge (key barriers noted in the response to 2(a)), namely the high costs of electric vehicles, the lack of information and awareness, the policy and planning challenges, limited institutional capacity, and charging infrastructure and range anxiety. By addressing these head-on, the programme

supports countries and the global community to implement short-term (e.g. demonstrations) and long-term (policy frameworks, national strategies) measures for achieving the desired transformation. The outcomes of these efforts will be the multiple environmental benefits of reduced GHG and air pollutant emissions in the countries, regions and globally.

FIGURE 6: THEORY OF CHANGE



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

Markets are already beginning to respond to e-mobility technologies. The life cycle costs of electric buses are often already lower than least cost alternative technologies, electric 2 & 3 wheelers have relative short payback periods and many companies and consumers are now switching. Furthermore, the prices of electric cars are dropping and life cycle costs are starting to become at price parity with ICEs. However, except in a few cases, governments in GEF recipient

countries do not yet have the knowledge or experience to legislate and regulate electric vehicles. Without support, such countries may be unaware of effective policies or put in place sub-optimal policies that skew the market to attract sub-optimal technologies. The aim of this programme is to capture and transfer the latest knowledge on electric mobility to these countries and promote best practice options for creating and strengthening their electric mobility markets. The GEF is well placed to tackle this issue, since they are able to apply technical assistance for policy and best practice, as well provide risk capital for demonstrations, and they are able to engage international development banks and technical assistance agencies to do this.

This GEF programme will support the removal of the barriers described in section 1 above and demonstrate electric vehicles in GEF recipient countries. Such efforts will build local capacity, support the development of effective and context-specific policies, and reduce the investment risk. This will attract concessional funding for scaling-up the demonstration of electric vehicles, facilitating the transformation to market-wide electric mobility in the long term. The GEF7 and EC Solutions Plus programs will be the leading global programs to support a shift to electric mobility in GEF recipient countries. The GEF project can therefore significantly accelerate the large-scale market introduction of electric vehicles in GEF recipient countries which is necessary to support these countries to achieve their nationally determined contributions to the Paris Climate Agreement. There is only a short window of opportunity to avoid carbon lock-in, as vehicle fleets in developing countries are growing rapidly, and vehicles are on the road for up to 20 years or more in developing countries. So, vehicles introduced today will determine the emissions of the fleet for the coming decades.

A global project with large, medium and small developing and transitional countries from all over the world has the potential to significantly accelerate market introduction of electric vehicles and hence will contribute to a fast upscale of electric vehicles production numbers which in turn will result in accelerated price reductions.

No other global programme exists to start the demonstration of electric vehicles in GEF recipient countries and:

- Raise the urgently needed awareness for electric mobility;
- Initiate the knowledge dissemination process on the ground in many countries all over the world, as the existing potential to replicate lessons learnt from developed countries in Europe, North America and Southeast Asia to developing countries is limited.

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

The global programme on electric mobility is expected to have multiple benefits and co-benefits. First and foremost, it is intended to achieve the mitigation of significant amounts of CO_2 emissions in the child country projects.

The global component, the thematic working groups, and support and investment platforms, do not directly lead to GHG emission reductions. All emission reductions are expected to occur in the country projects (child projects). The table below provides an overview of the direct, secondary direct and indirect emission reductions projected to be achieved in the countries.

Overview of GHG emission reductions achieved in the country projects

Countries	Emissions mitigation (tons of CO2e)				
	Direct	Direct secondary	Total direct	Indirect	Total
Burundi	1,128	156,104	157,232	83,746	240,978
Armenia	707	330,157	330,864	73,711	404,575
Costa Rica	139,940		139,940	796,631	936,571
Peru	6,214	474,735	480,949	342,417	823,365
Sierra Leone	834	97,995	98,829	66,788	165,618
Ukraine	0	4,244,209	4,244,209	642,402	4,886,612
Togo	936	1,608,352	1,609,288	1,029,349	2,638,637
Maldives	346	128,684	129,030	128,742	257,773
Antigua and Barbuda	128,619		128,619	127,551	256,170
Chile	307,573		307,573	88,918	396,491
Madagascar	728	3,258,664	3,259,392	3,259,210	6,518,602
India	22,490,000		22,490,000	13,820,000	36,310,000
Cote d'Ivoire	1,518	99,283	100,801	76,578	177,379
Saint Luicia	412	49,784	50,196	9,256	59,452
Jamaica	1,335	101,734	103,069	69,969	173,038
Seychelles	221	14,032	14,253	2,941	17,195
Uzbekistan	217,341		217,341	5,600,000	5,817,341
Subtotal			**33,861,585**	**26,218,209**	**60,079,795**
Global Programme				7,500,000	7,500,000
Total			**33,861,585**	**33,718,209**	**67,579,795**

Countries	Energy savings [MJ]		
	Direct	Indirect	Total
Burundi	1,771,793,057	932,245,824	2,704,038,881
Armenia	3,825,619,522	852,281,332	4,677,900,854
Costa Rica	1,693,495,135	2,453,169,321	4,146,664,456
Peru	6,237,243,283	4,440,675,868	10,677,919,151
Sierra Leone	1,089,563,086	736,319,103	1,825,882,190
Ukraine	49,073,720,211	7,427,784,446	56,501,504,657
Togo	17,843,689,144	11,413,357,250	29,257,046,394
Maldives	1,494,520,544	1,491,190,030	2,985,710,574
Antigua and Barbuda	767,238,442	760,867,606	1,528,106,048
Chile	3,755,397,745	1,039,212,951	4,794,610,697
Madagascar	35,931,758,195	26,531,679,790	62,463,437,985
India	481,070,000,000	295,720,000,000	776,790,000,000
Cote d'Ivoire	1,111,299,362	844,242,840	1,955,542,202
Saint Luicia	580,388,320	107,021,221	687,409,541
Jamaica	1,336,667,000	907,402,691	2,244,069,691
Seychelles	164,800,664	34,011,086	198,811,749
Uzbekistan	387,414,112	9,982,174,688	10,369,588,800
Total	**608,134,607,822**	**365,673,636,048**	**973,808,243,870**

The emissions calculations are attributed to the project in the following categories: 1) direct emission mitigation from demonstration projects; 2) secondary direct emission mitigation; and 3) indirect emission mitigation. These categories are in line with those defined in the GEF "*Manual for Calculating Greenhouse Gas Benefits of Global Environment Facility Transportation Projects*" (prepared by the Institute for Transportation and Development Policy). The various mitigation contributions are calculated as follows:

· Direct emission mitigation from demonstration projects are the cumulative CO2 emissions saved from bringing on the road electric vehicles as part of a demonstration during the child project. Emission savings are the difference in life-time well to wheel emissions of the demonstrated electric vehicles versus the emissions of the same number of conventional vehicles.

· Secondary direct emission mitigation are the cumulative CO2 emissions reductions between the baseline and the alternative scenario resulting from changes in the vehicle fleet due to fiscal, regulatory and other policy measures developed and implemented as part of the project[2]. These emission mitigations result from top-down projections using UN Environment's E-Mobility Calculators, whereby the alternative scenario anticipates the accelerated introduction of electric vehicles in the respective country markets, taking into account country- and mode-specific scenarios for the development of electric vehicle sales shares between now and 2050[3]. Secondary direct emission reductions comprise the life-time emission reductions from electric vehicles being added to the fleet during the project life-time[4]. In order to reflect the contribution of the project to the top-down emission mitigation potential, GEF causality factor of Level I to III (20% to 60%) have been applied, depending on the scope of the policy intervention and the size of the demonstration project.

- **Indirect emission mitigation** reductions are calculated similarly to the secondary direct emission reductions and reflect the impact the child project is expected to have on electric vehicle sales based on the developed and implemented business models and finance schemes to remove barriers to the access of funding. The time frame comprises 10 years after the end of the project. Indirect mitigation effects from the project are based on the application of causality factors of Level I or II (20% or 40%) to the top-down emission mitigation.

Through this GEF7 programme **a cumulative of 67,580 million metric tons of CO_2** will be avoided until the year 2036 in the 17 countries part of this programme and the global child project. This includes the benefits of the replication and scaling-up phases in countries.

In conjunction with the substantial CO_2 emission reductions, a significant reduction of the emissions of air pollutants such as NOx, SO_x, PM and CO will be achieved in the child country projects, as electric vehicles will not generate any such pollutant emissions. Since many of the in-country electric mobility projects will be in urban areas, the programme as a whole will contribute to improved urban air quality, better human health and reduced related deaths.

In addition, the programme will contribute to significant cost reductions resulting from reduced expenditures by the child project countries on fuel imports, since the consumption of petroleum-based fuels will be reduced due to the increased deployment of electric vehicles. Therefore, the programme is also expected to improve energy security within the child project countries, since the share of local energy resources used in the transport sector will grow and dependency on imported fuels will decrease.

One of the thematic global working groups will focus on batteries used for electric vehicles, including issues with respect to extraction and processing of raw materials needed for the manufacturing of batteries as well as the re-use, recycling and safe disposal of used EV batteries. To that extent, the global programme aims at incorporating environmental issues related to the entire life-cycle of batteries for use in electric vehicles. Thus, the programme not only looks into the mitigation of GHG and air pollutant emissions but also anticipates emerging environmental issues stemming from a large-scale market introduction of electric vehicles worldwide and seeks to develop strategies and policies to mitigate the associated risks.

Finally, one of the thematic working groups will be dedicated to the integration of electric vehicle in the power generation, transmission and distribution systems. Part of that thematic platform will be the development of analysis and tools to evaluate the opportunities and challenges of an increased use of electric vehicles and the options to link-up with better integration of variable renewable power in grids around the world. To that end, the project may result in additional GHG emissions reduction stemming from the possible enabling role of electric mobility for the up-scaled integration of variable renewable power.

Currently, electric vehicles numbers are still modest, and, with the exception of China, are concentrated in OECD countries. However, there is significant demand from other countries to start introducing electric mobility and be part of the global introduction and shift to electric mobility. Given the environmental and economic benefits, there is a large potential to bring EVs to all markets around the world. In terms of economic benefits, the introduction of electric vehicles in GEF recipient countries not only reduces oil expenditures but also opens a pathway to increased industrialization, since the lower complexity of EVs might provide the leeway to locate vehicle manufacturing and assembling to parts of the world where this has not occurred to date. As such the growth in electric vehicles is predicted to be a major driver for the creation of a new green industry with green jobs. Early involvement of developing countries in the electrification of the global vehicle fleet will facilitate these countries to develop manufacturing and assembling opportunities.

7. Innovation, sustainability and potential for scaling up

Innovation: Electric vehicles and charging infrastructure are new technologies in all countries. The aim of this GEF7 programme will be to support countries develop suitable and innovative business models to underpin investment and growth of these technologies. Innovative schemes to finance electric mobility will be developed within the programme, combining, for example, commercial and concessional ways of funding. The programme will create opportunities for countries and cities to meet with technology providers and financiers to design programmes for investment in upscaling electric mobility. It will also support decision makers with the possibilities of splitting investment needs and economic risks when building up the necessary charging infrastructure among all interested stakeholders such as municipalities, vehicle manufacturers, utilities and electric vehicle supply equipment manufacturers.

Replication and scaling up: is included in the programme design. While the programme will focus first on child country projects that are using their STAR allocations and EC Solutions Plus budgets, the programme will also extend to other countries and cities as part of the scale-up strategy. And it will include cities projects with electric mobility activities as part of the GEF7 Impact Programme. As such, the programme is expected to result in many more countries

and cities developing electric mobility projects and programmes. WP5 of the EC Solutions Programme is geared towards the finance and bankability of scale-up and replication projects as well as policy development and provides a budget of USD 1,000,000 for implementation through the support and investment platforms. Activities will be fully coordinated with the support and investment platforms that will also support replication.

Sustainability: This project expects to conclude when the markets are in the scale-up phase. The project sustainability and exit strategy will be through the Support and Investment Platforms that will be driven by financers and support agencies for projects that will continue beyond the duration of the GEF programme. The platforms will be able to continue to provide support and finance to an accelerated electric mobility shift. The leads of the platforms, ADB, UNEP and the Molina Center, have committed to continue leading and supporting their platforms after the GEF programme. The GEF programme will be closely linked to existing electric vehicles initiatives of UN Environment and the IEA which will continue after completion of the GEF programme. Furthermore:

· Development banks have been included in the Global Programme since they will have interest in generating credit lines for countries to invest in electric mobility in the public and private sector once the preconditions are achieved to do so;

· Development banks already showed strong signals in providing follow-up funding, projects in India, and potentially in other countries will be designed in a way that demonstration projects funded by the GEF will be followed by significant upscaling transforming entire fleets to electric vehicles;

· Electric vehicle manufacturers involved in the programme will see the benefits of transferring lessons learnt from South to South and will provide more competitive offers, e.g. for electric buses, as they see the market becoming substantially bigger;

· As outlined above, the knowledge management will be sustained by IEA and UNEP beyond the lifetime of the project;

· The support and investment platforms will not only integrate countries participating in the GEF 7 Global Electric Mobility Programme but will address all countries in their respective region to participate in the knowledge exchange. The support and investment platforms will be sustained beyond the lifetime of the project (mainly by the developing banks and the regional knowledge partners);

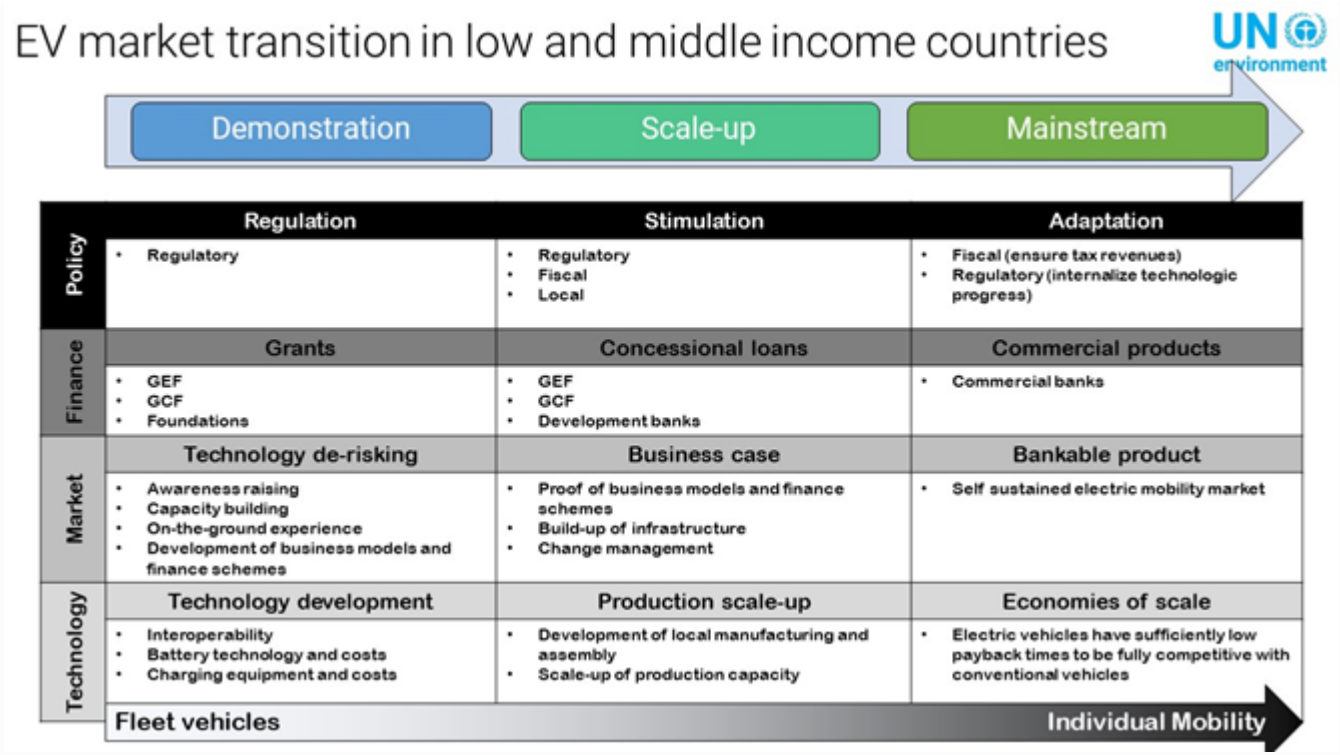
· Once EV and EVSE manufacturers see the benefits of the global programme they will also participate to sustain these support and investment platforms;

· The national GEF 7 Electric Mobility Child Projects will generate follow-up projects and investments funded by development banks, commercial banks and other funds such as the GCF.

The integral approach of the programme aims to maximize sustainability by covering the whole electric mobility ecosystem to ensure EVs will become competitive sooner. In addition, the GEF 7 Electric Mobility Programme is the first step out of a three-step approach (as in the Figure 7 below):


A screenshot of a social media post Description generated with very high confidence

Figure 7: EV MARKET TRANSITION IN LOW- AND MIDDLE-INCOME COUNTRIES



Step 1:

- Demonstrate the technology on the ground and develop the policy framework for EV market integration;
- Build capacity on how to integrate, operate and maintain EVs in transport fleets;
- Raise awareness;
- Learn about charging and grid integration issues and the link to renewable power;
- Develop finance schemes and business models including spreading the higher upfront investment over longer times and multiple partners;
- Reduce the investment risk (DEMONSTRATION)

Step 2:

- Attract concessionary funding to build on the demonstration project and scale-up to large pilot projects;
- Show the economic viability and long-term feasibility with commercial size pilot projects (e.g. the electrification of 10% to 20% of a cities bus fleet);
- Solve charging and grid integration issues and start integrating renewable power;
- Thoroughly test the business models and finance schemes and further develop them to raise the interest of commercial banks;

- Enable scale-up (SCALE-UP)

Step 3:

- Build on the large-scale pilot projects (based on concessionary ways of funding) and develop fully bankable projects using usual ways of financing;
- A sustainable EV market is achieved (MAINSTREAM)

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[1] For biodiversity projects, in addition to explaining the project's consistency with the biodiversity focal area strategy, objectives and programs, please also describe which Aichi Target(s) the project will directly contribute to achieving.

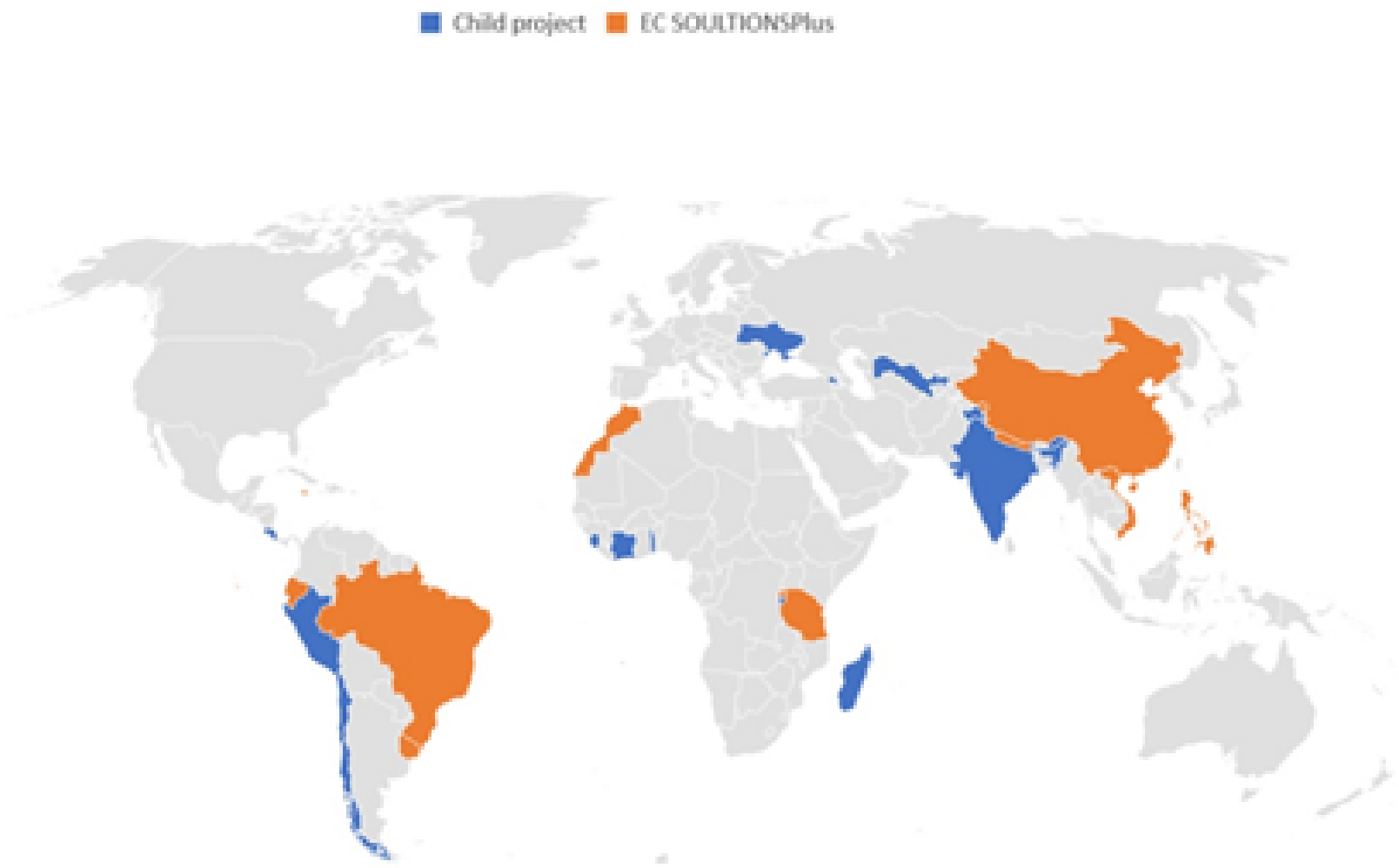
[2] As suggested in "Manual for Calculating Greenhouse Gas Benefits of Global Environment Facility Transportation Projects" and referred to in "Updated Results Architecture for GEF 7".

[3] The uptake in the EV market is translated into EV penetration of the vehicle stock based on a stock turnover model. Total vehicle stock and sales numbers are projected based on historic stock and sales data, population growth (based on the UNDESA medium growth population scenarios), gross domestic product projections (GDP PPP based on IMF data until the year 2022 and assumptions on economic growth until the year 2050) and elasticities linking vehicle sales with GDP per capita.

[4] The project life time is defined by the life time of the assets being demonstrated during the project. For example, in case EV demonstration starts by 2021 and the EVs have a life-time of 15 years, then the project life time comprises the years between 2021 and 2036.

1b. Program Map and Coordinates

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



2. Stakeholders

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

Civil Society Organizations Yes

Indigenous Peoples and Local Communities

Private Sector Entities Yes

If none,please explain why: No

N/A

In addition, provide indicative information on how stakeholders, including civil society and indigenous peoples, will be engaged in the program preparation, and their respective roles and means of engagement.

A wide range of stakeholders was consulted in the programme identification phase. Key stakeholders contacted for the development of the global programme include IEA EVI members and partners, and leaders, partners and coordinators of initiatives on fuel efficiency improvements and electric mobility, and GEF implementing agencies. In addition, the IEA reached out to the participants of its Mobility Model initiative and selected EVI member countries supporting the IEA in reaching out to businesses involved in e-mobility in their jurisdictions. The IEA also had initial consultations with the OECD working on the due diligence guidance for responsible business conduct and individuals working on the Global Battery Alliance at the World Economic Forum.

Key stakeholder consultation events include:

- Two EVI Advisory Board meetings (held in Kobe, Japan, on 28 September 2018,and on 25 May in Malmö).
- A side event of the GEF Sixth Assembly and associated meetings, held in Da Nang on 26 June 2018.
- An ad-hoc stakeholder consultation meeting, following a series of conference calls, targeting specific GEF implementing agencies, held in Paris, at the IEA premises, on 27-28 August 2018.
- The Urban Pathways Actions Planning Days 2019 on February 7 and 8, 2019 in Berlin, Germany. This eventbrought together the demonstration cities under the EC Solutions Plus project with the EC Solutions Plus consortium to set the scope for the demonstration projects. More than 40 participants joined the planning work shop and the outputs directly fed into the design of the city projects.

The global programme will also focus on engaging fleet manufacturers and financiers from the onset of the thematic working groups, so that they can be involved in the development and design of business models that reduce or spread the high upfront costs of EV fleets and allow the feasibility of bulk procurement of EV fleets. Some manufacturers, such as BYD, are already thinking of establishing revolving funds in key countries, such as in Brazil. This fund would procure buses and lease them to city bus operators, therefore circumventing two issues at the same time: the high upfront costs of EV buses and the deprecation burden of owning buses. The thematic platforms will gather all positive and successful approaches (such as that just mentioned) and compile them to share with all interested countries and cities. In addition, the support and investment platforms will facilitate the participation in the programme of development banks and other financiers to support scaling up that national and local governments will like to undertake to procure EV fleets.

Civil society organizations will actively participate in both the global and regional components as well as in the child-projects, as knowledge partners and for project execution support. For example, Centro Mario Molina Chile will lead the Latin America and Caribbean support and investment platform, participate in the Global Working group on heavy- duty vehicles and will also provide tailored in-country support to countries in Latin America and the Caribbean.

National, regional and international civil society groups are essential in i) bringing global experience and good practice to local contexts; ii) transferring expert local knowledge to government agencies and the private sector, leading to more sustainable policy and business practices iii) catalyzing skills, experience and knowledge in the design, implementation and evaluation of project activities such as the development of tools, policy best practice etc. ; iv) enhancing recipient country ownership and accountability of project outcomes through close relationships with local stakeholders and v) leveraging co-financing.

In the thematic working groups and regional support and investment platforms, civil society organizations will:

· Incorporate the voices of women, the elderly, disabled and indigenous groups in programme activities;

· Contribute to the development of analytical tools, training and capacity building materials, policy and identification of best practices to each of the global thematic working groups

· Contribute to the activities of the regional support and investment platforms through carrying out training and capacity building events and providing tailored support on a regional and sub-regional level (i.e. Clean Air Asia for the Asia support and investment platform)

Civil society support will play a major role in the country projects, mainly as on the ground knowledge partners. Additionally, the child projects will benefit from a wide range of civil society partners active in the global component that have vast networks and expertise in various segments of electric mobility.

A comprehensive but not exhaustive list of key stakeholders involved in the global programme is included in the following tables. In addition, stakeholders that are specific for the child projects are listed in the child project PIFs.

Name of stakeholder	Stakeholder category and role in the project:
International Energy Agency (IEA)	*Inter-Governmental Organization:* Executing agency, lead of LDV, Battery and Grid global working groups, steering committee member
UN Environment Programme (UNEP)	*Inter-Governmental Organization:* Implementing agency, execution support, technical support, lead HDV global w orking group, lead of Africa regional hub, steering comm ittee member
UN Development Programme (UNDP)	*UN-Agency:* Steering committee member, Jamaica and Peru GEF implementing agency and knowledge partner
Asian Development Bank (ADB)	*Development Bank:* Co-implementing agency, steering c ommittee member, knowledge partner, lead of the Asia-Pacific regional hub and India GEF implementing agency

European Bank for Reconstruction and Developme nt (EBRD)	*Development Bank:* Knowledge partner and contributor, Ukraine GEF implementing agency, steering group mem ber
European Commission (EC)	*Inter-Governmental Organization:* Steering committee m ember, funder of the EC Solutions Plus partner program me
African Development Bank (AFDB)	*Development bank:* financier for Africa projects
Centro Mario Molina	*NGO:* lead of the Latin America and Caribbean Support a nd Investment Platform, expert support to global themat ic working groups, support to child projects, steering gro up member
International Council on Clean Transportation (ICC T)	*Independent non-profit organization:* Knowledge partner, expert support to global thematic working groups and e xpert support for project execution, EC Solutions partner
Sustainable Transport Africa (STA)	*NGO*: technical support to Africa projects
Clean Air Asia	*EC Solutions Research Partner*: Knowledge partner, expe rt support to global thematic working groups and expert support for project execution in Asia,
Wuppertal Institute for Climate, Environment and E nergy	*EC Solutions Lead Partner*: Head of the consortium for E C Solutions Plus, expert support to global thematic work ing groups and policy and demonstration partners, steeri ng group member
UN Habitat	*UN agency:* participation in regional platforms, technical support to child projects
Canada, Ministry of Natural Resources	
China, Ministry of Science and Technology and Sh anghai International Automobile city group	
Finland, Ministry of economic affairs and employ ment	
France, Ministry for an Ecological and Inclusive Tra nsition	
Germany, Ministry of Economy and Energy	
India, Ministry of Power	
Japan, Ministry of Economy, Trade, and Industry	
Mexico, Secretariat of Energy (SENER)	
Netherlands, Netherlands Enterprise Agency	

New Zealand, Ministry of Energy and Ministry of Transport	*EVI member:* Knowledge partner, expert support to global thematic working groups, selected involvement in regional platforms and support to child projects
Sweden, Ministry of Environment and Energy	
United Kingdom, Office for Low Emission Vehicles	
Pasig, Philippines	*EC Solutions Plus partner*: Policy and demonstration partners
Kathmandu, Nepal	
Nanjing, China	
Montevideo, Uruguay	
Quito, Ecuador	
Dar es Salaam, Tanzania	
Kigali, Rwanda	
Madrid (EMT), Spain	
TAILG	*Industry:* supplier of electric 2 &3 wheelers, participant in global LDV working groups
REN21	*International non-profit organization*: Knowledge partner and expert support to global thematic working groups
Ampersand	*Industry:* Rwanda based electric motorcycle producer, supply of technology to Africa projects, global LDV working group
Kibo Motors	*Industry:* Kenya based electric motorcycle producer, supply of technology to Africa projects
BYD	*Industry:* supplier of electric busses, participant HDV global working group
FIA Foundation	*Philanthropic Foundation:* participant in global working groups
The Climate Group	*International non-profit organization*: Knowledge partner and expert support to global thematic working groups
Honda	*Industry:* participant global LDV working group
Nordic Energy Research	*Research Consortium:* Knowledge partner and expert support to global thematic working groups
World Resources Institute (WRI)	*International research institute:* Knowledge partner, expert support to global thematic working groups and expert support for project execution
Volvo	*Industry:* supplier technology, participants in global work

	ing groups
Scania	*Industry:* supplier of technology, participant in global working groups
Toyota	*Industry:* supplier of technology, participant in global working groups
TNO	*Research partner*: EC Solutions Plus co-lead, support to development of global toolbox
	NGO: Knowledge partner, city network for replication of e-mobility projects in cities around the world
C40	
China Academy of Transportation Science (CATS)	*EC Solutions Research Partner*: Knowledge partner, expert support to global thematic working groups and South-South Cooperation
Cooperation for urban mobility in the developing world (CODATU)	*EC Solutions Research Partner*: Policy and demonstration partners: involvement TBC
Centro Ricerche Fiat	
German Aerospace Center (DLR e.V.)	
ICLEI – Local Governments for Sustainability	*NGO*: Knowledge partner, city network for replication of e-mobility projects in cities around the world
Institute for Transportation and Development Policy (ITDP)	*NGO*: Knowledge partner, expert support to global thematic working groups and expert support for project execution in Africa
International Association of Public Transport (UITP)	*NGO*: Knowledge partner, expert support to global thematic working group on Heavy-Duty Vehicles and expert support for project execution
POLIS - Cities and Regions for Better Transport	*EC Solutions Research Partner*: Knowledge partner, city network for replication of e-mobility projects in cities around the world
Rupprecht Consult	*EC Solutions Research Partner*: Policy and demonstration partners
Technical University of Denmark (DTU)	
Technical University Berlin	
Zaragoza Logistics Centre	
VTT Technical Research Centre of Finland	
Renault-Nissan-Mitsubishi Alliance	*Industry:* suppler of technology, participant in global working groups

	king groups
Iberdrola	*Electricity sector industry:* involvement in child projects, participant in global working groups (esp. Grids working group)
E.ON	
Vattenfall	
Enel X	
Fortum	
ChargePoint	*EC Solutions Industry partner:* involvement TBC
ABB B.V.	
Applusplus IDIADA	
Alstom	
Dynniq B.V.	
ERTICO ITS Europe	
Enel X tbc	
FIER Automotive	
IVECO	
Pluservice s.r.l.	
Piaggio & C. SpA	
T-Systems	
Valeo Group	
Virtual Vehicle	

3. Gender Equality and Women's Empowerment

Are gender dimensions relevant to the success of program. Yes

If yes, please provide indicative information on these dimensions and how these will be addressed in the program. If no, please explain why

The successful development of electric mobility strategies and wide adoption of electric vehicles requires gender considerations in policy development. The project will explore options to integrate gender issues in mobility and work with policy-makers in designing gender-responsive policies and solutions.

Gender Action Plans will be developed as part of the child projects, to ensure that the development of EV policies considers the mobility needs and characteristics of men and women, as well as boys and girls. The role of electric mobility in supporting women's empowerment and girl's education by providing access to safe, affordable and reliable transport will be evaluated.

The programme intends to propose to collaborate with the IEA Clean Energy Education and Empowerment Technology Collaboration Programme (C3E TCP) to better understand gender specific drivers and barriers to the adoption of electric mobility and mobility needs of women and girls. Through the collection of information to better understand consumer preferences of women, the Gender Action Plans aim to integrate gender equality aspects within the development of national EV policies.

While electric vehicles as such may have limited gender issues, the introduction of new vehicles and new public transport systems using electric vehicles is likely to have major gender implications. Replacing diesel buses with electric busses or replacing petrol motorcycle taxis with electric ones provides excellent opportunities to integrate gender considerations. For example, women in East Africa are reluctant to use motorcycle taxis, as they need to hold onto the driver when seated on the back of the motorcycle. Recent introductions of electric motorcycle taxis in East Africa, designed and assembled in East Africa, are designed in such a way that women can hold onto custom designed grips and no longer need to hold on to the driver. While these design features are not related to the electrification of motorcycles, the introduction of new fleets of newly designed motorcycles provides opportunities to integrate gender considerations. Similarly, with the introduction of electric taxis, and electric three wheelers, opportunities exist to address gender issues. The same with the introduction of new buses. The programme will ensure that gender considerations are included in all child country projects with the introduction of new, electric, vehicles and fleets. All child projects will be supported to include a specific gender component as part of their national project.

Gender issues also have an integral role in the thematic working groups and support and investment platforms. The working group leads will assess and collate gender-relevant policies and identify best practices and ensure that this is disseminated to the policy makers. The working groups will also identify in which areas gender issues are more relevant and solutions can be sought. For example, electrification of public transport modes such as buses and 2/3

wheelers can benefit from and go together with measures that aim to make women and children feel safer and more comfortable. Each of the three support and investment platforms will appoint a gender focal point, who will ensure integration of gender issues in the work of the platform, especially the support and advice of the hub to the child country projects.

Awareness raising on the benefits of electric mobility is also one of the main components of the programme, which can include targeted campaigns aimed specifically at women and mobility needs for families.

Finally, the programme will ensure that gender considerations are respected during workshops, trainings and meetings and that all capacity building related activities consider gender specific issues and track gender participation. Gender as a topic will be addressed in the project team and stakeholder meetings, to help identify other areas where gender goals could be established. During the project development phase, a baseline will be established based on the participation of women in key stakeholder meetings, gender disaggregated data and indicators will be defined and a gender action plan will be developed.

In addition, please also indicate whether the program the program will include gender sensitive indicators in its result framework

Yes

4. Private sector engagement

Will there be private sector engagement in the program?

Yes

Please briefly explain the rationale behind your answer.

There are many ways in which the private sector will be involved in this programme. Private sector engagement will take place in work streams of the global component and may also occur in the child-projects.

Child projects

In the child projects, private sector partners will be invited to supply electric vehicles, and work with fleet operators, such as taxi operators, bus fleet operators, motorcycles and electric bicycle rental companies, courier services, etc. Some private sector partners have indicated an interest to donate electric vehicles for demonstration projects in this programme, or provide these for discounted prices (one electric bus provider has indicated interest to donate electric busses to some of the SIDs project while an electric motorcycle company has offered to donate demonstration fleets to Asian and African projects).

Private sector partners will present innovative solutions to overcoming some of the operational challenges related to the introduction of electric mobility in non-OECD countries. This includes charging infrastructure (for example for motorcycle taxis), battery swapping services, battery rental companies, etc. In most cases these will be local companies.

And in the child projects, utilities will provide co-funding through investment in recharging infrastructure or fleet operators investing in electric vehicles as part of the projects (for example, in Chile the utilities are included in the project providing significant co-funding).

Each of the child-projects will have the opportunity to benefit from private sector experience and support in implementing their plans. The child projects will benefit from a wide and accessible network of companies already active in the global and regional components activities and that have an interest in accompanying electric mobility projects all the way to their implementation phase. International private companies can build on experiences in other regions and, by optimizing between replication and adaptation, provide relevant local solutions (for example BYD and Toyota will offer support to the Costa Rica project and MAN will support the electric busses in Uzbekistan).

Regional support and investment platforms

The private sector will be invited to provide electric mobility solutions to the regional support and investment platforms where different child projects within a (sub) region come together to look at opportunities to introduce electric vehicle fleets.

And the private sector will be part of financiers involved in financing the introduction of electric mobility. Financial institutions, from the private sector and development banks, will be invited to the support and investment platforms child projects will meet with technology suppliers to identify and procure electric vehicles.

Global thematic working groups

The private sector will be actively contributing to the activities of each of the four global thematic working groups (light-duty vehicles, heavy-duty vehicles, charging infrastructure and grid integration, battery supply chain and end-of-life management). Businesses interested to engage will appoint global experts to one or several of the platforms, depending on the business area of each company. The experts will actively contribute to shaping up the outcomes of the thematic platforms.

Private businesses may also be invited to knowledge dissemination activities via the regional support and investment platforms. The contribution of private stakeholders active in each of the regions covered by the platform activities will provide region-specific and on the ground experience to better guide recommendations towards practical and efficient solutions. In addition, the development banks will be enablers of private sector engagement.

Private sector providing data and advise to the programme

The programme will also offer opportunities for private sector stakeholders involvement in the programme, including to:

· Share data on projected market volumes, penetration rates;

· Cooperate on the assessment of technology development, constraints and opportunities and contribute to the development of decision-making tools and policy recommendations;

· Support the development of technology specifications that are industry and user viable, inter-operable, and allow for technology innovation and development. An important example will be specifications for charging;

· Provide technical and market advise at the global working groups, regional support and investment platforms, and, where requested, at the child projects;

Private sector networks

The private sector engagement in the programme is expected to be substantial thanks to the network developed by the IEA and UN Environment. For example, through regular attendance of private sector stakeholders at the biannual EVI Advisory Board meetings and UN Environment mobility programs. In the case of EVI, the private sector is also a partner in the development of policy and technology messages delivered through the Global EV Outlook series and is supporting other activities of the IEA that allow the publication of the Global EV Outlook. This includes the Mobility Model initiative, supported by automotive companies that include Honda, the Renault-Nissan-Mitsubishi Alliance, Toyota and Volkswagen, as well as automotive supplier such as Bosch and Michelin and energy companies such as BP, Equinor (formerly Statoil), Shell, and Petrobras, amongst others.

Tangible proof of the engagement of private sector stakeholders in EVI activities and the value they see in the initiative to help steering the global agenda on e-mobility is the support offered, in September 2018, to the EV30@30 Campaign by seven major companies active in various aspects of the e-mobility business. This is the case of ChargePoint, Enel X, E.On, Fortum, Iberdrola, the Renault-Nissan-Mitsubishi Alliance and Vattenfall.

This momentum will be further scaled-up in the future, as the EV30@30 campaign becomes better known by electric mobility businesses and further relationships are developed with them. Several occasions will allow for this further scale up. Key examples include:

· The IEA became an institutional partner of the Paris Peace Forum (an initiative developed by the French President with the aim to foster the activities of innovative and cooperative governance solutions linked to environment, development, and new technologies, promoting multilateralism and collective responsibility with the participation of both governments and international bodies). Its coordination of EVI as selected as its showcased work;

· The multiple opportunities offered by the annual meetings of the Clean Energy Ministerial, where the IEA as the coordinator of EVI has a track record of successes in organizing round tables and exchange events bringing together high-level representatives of the private sector, research and academia, and public authorities.

UN Environment also has a long-standing cooperation with the private sector, in specific the oils and vehicles industry, in promotion cleaner and more efficient vehicles. UN Environment is hosting the secretariat of the public- private Partnership for Clean Fuels and Vehicles (PCFV - which has been supporting close to 100 countries with the introduction of cleaner fuels and vehicles). UN Environment also has close working arrangements with the local private sector in its country and regional projects. UN Environment is working with major bus providers around the world, such as Build Your Dreams (BYD). UN Environment is also working with producers of electric motorcycles, in Africa and in China, such as TailG.

It is envisaged that the support from vehicle, charging and battery manufacturers to be mostly in-kind at the beginning of the programme, shifting to substantial in-country investments over the time of the project, when concrete in-country projects will start to take shape and require the introduction of electric vehicles. Industry will play a major role from the beginning in:

· Providing expertise in the thematic working groups;

· Participating in conferences, meetings and trainings carried out by the support and investment platforms;

· Supporting demonstration projects in national e-mobility child project

The EC Solutions Plus project includes a large consortium of industry representatives, about 40 organisations – vehicle manufacturers, part manufacturers, and suppliers (all European). The industry representatives will participate in the 8 working packages of the EC Solutions Plus projects, as follows:

· Working Package 1 of the EC Solutions Plus project which develops a global toolbox (which will work closely with Component 1 of the GEF programme);

· Working packages 2 and 3 on capacity building, and markets & business models, that relate to the GEF7 component 2 - the Support and Investment Platforms;

· Working Package 4 - which is support to the EC Solutions Plus demonstration city projects, which relate to Component 3 of the GEF programme (the child projects);

· Industry partners will also be invited in tenders, which are included in Working Package 5 on scale up, finance and bankability. This related to the Investment Platforms of the GEF programme included in Component 2. Industry partners will provide knowledge, technical support, and equipment to the EC Solutions Plus project, for example through electric vehicles equipment such as chargers.

5. Risks

Indicate risks, including climate change, potential social and environmental risks that might prevent the Program objectives from being achieved, and, if possible, propose measures that address these risks to be further developed during the Program design (table format acceptable)

Risk	Rating	Risk mitigation measures
Negative perceptions about e mobility technology and the impacts this will bring to society and industry.	Medium	Awareness raising of the benefits of electrification and capacity building and training to manage the change from ICE to e-mobility
Materials developed are not relevant for country context	Low	Countries will be involved in the thematic working groups that will develop the materials
Countries are not interested in second life and disposal of batteries so early on in market transformation to electric vehicles	Medium	This global programme is dedicating one thematic working group to the life cycle of batteries, generating guidance for countries and globally to minimise the environmental impacts of batteries production and disposal. If this working group does not generate country interest it will use experts on this subject instead
The growing demand from electric vehicles in a country can destabilize the power supply	Low	There is a specific thematic working group on grid integration which will help countries to prepare for and avoid this possibility
Leadership change: change in leadership and priorities in the government	Medium	· Country selection criteria prioritizes countries with political commitment to promote electric mobility and a willingness to scale up activities. · The global programme will deliver outputs that will be available through a knowledge sharing platform and are intended to remain available, even in case of change in leadership and priorities in specific governments · Concrete child project outcomes and outputs are developed in line with the objectives of the global programme.
GHG savings achieved are limited in countries with a more carbon-intensive grid	Low	· The programme has a strong link to grid integration and decarbonization of the grid, promoting charging with electricity renewable sourcing and coupling of charging infrastructure with renewable electricity sources. · The country requirements prioritize countries who align their project to climate policies (e.g. NDCs, NDCs, sectoral mitigation targets, renewable energy targets), and to show interest in li

		miting lifecycle GHG emissions from EVs. · A separate thematic working group o n the topic of grid and system integration is estab lished to generate knowledge and policy guidanc e products for countries. A focus of the group is t o ensure that EVs deliver net reductions of GHG e missions (compared to baseline scenarios).
Higher upfront cost of electric vehicles may pos e a barrier to implementation and scale up of ac tivities	Low/Mediu m	· The thematic working groups will incl ude a finance component and raise awareness of the total cost of ownership versus the upfront co st perspective. · The programme will help countries to prioritize investment and first scale up actions to wards electric mobility modes with relatively lowe r costs and prioritize high utilization vehicles.
Objection or low commitment from industry to t echnology changes.	Low/Mediu m	Involving the industry and private sector is a core element of the programme. Thematic working gr oups will include strong links to the industry and t he development of business models. This will hel p to understand the main challenges and barriers faced by the industry and creates a link between national governments and the industry.
Insufficient and incomparable systems for tracki ng results	Low	· Indicators and standard guidance for tracking and documenting learnings and progress will be established early in the project, and in coo peration with countries, to ensure there is clarity and comparability between different project sites and timeframes. · The strong coupling with EVI activitie s, enabling access to established practices and methodologies for the collection, processing and analysis of data and information, will help countri es develop tools allowing them to track progress effectively.
Time lag of results: Major results of the project may not be seen before the end of the project p eriod.	Medium	· The project team will identify interim goals for each engagement to track progress and will develop leading indicators of project results. · The project includes both strategy an d resources for performance management, knowl edge management and information disseminatio n components. This will help ensuring that result s of the projects will have early visibility. · Some of the key indicators of succes

		s of electric mobility are represented by variable, such as the change in market share, that have sig nificant impact on the perception of changes, and are parameters that can be rapidly influenced by policy changes. This limits the likelihood of a per ception of a lack of tangible results before the en d of the project period, even if some of the conse quences of the project are in long-term developm ents. · A extension of the global programme is possible including a new round of interested co untries allowing continued support to the child pr ojects
Lack of interest or participation from market pla yers/private sector.	Low	· There is already a lot of interest from the private sector in electric mobility. Most major car manufacturers now produce one electric car model and some produce many electric models i n each segment. Tesla is now producing the mod el 3 at a comparable price to alternative ICE's mo dels, and at least 5 bus manufacturers are now pr oducing electric buses as well. · Country risk is one of the biggest iss ues for deployment and market transformation, a nd this is precisely the function of the project; to prepare country governments to put in place favo urable e-mobility policies to attract investment. C ountry risk does not stop with mobility policies; c ountry risk is also associated with the broader bu siness environment. This is where local manufact urers have a better understanding of country risk and can navigate these risks. This is why the glob al programme will engage and work with both int ernational and local manufactures. This will be d one through the thematic working groups and the support and investment platforms. In doing so str iving towards common standards that allow inter-operability will be very important.
Lack of linkages with available funding/financin g for EVs fleets.	Medium	The global programme will be focusing on engagi ng fleet manufacturers and financiers from the o nset through the thematic working groups, so tha t they can be plugged in the development and des ign of business models that may aim to reduce or spread the high upfront costs of EV fleets and all ow the feasibility of bulk procurement of EV fleet s. The thematic working groups will gather all pos itive and successful approaches and compile the m to share with all interested countries and citie

		s. In addition, the support and investment platforms will allow the development banks and other financiers to support any upscaling that national and local governments will like to put in place to procure EV fleets.
Inadequacy of the exit strategy and lack of ownership of the program after the end of the GEF funded activities and inability to source resources to continue the program's activities in the medium/long term (including thematic working groups and support and investment platforms).	Low	The programme will demonstrate a viable process for market transformation from demonstration, up-take, scale-up and broad diffusion. This project expects to conclude when the market is in the scale-up phase. Hence it is expected to be very active with growing levels of investment. The main project exit strategy will be through the support and investment platforms that will be driven by banks and investment interest generated by the child projects and other market experiences. They will be able to continue to provide support and finance to an accelerated electric mobility shift. However, other issues might arise towards the end of the project, such as the large introduction of private electric cars, complex grid integration, upstream battery manufacturing policies, integrated air quality and end of pipe car standards. In these cases, there will still be a need for additional financial support.

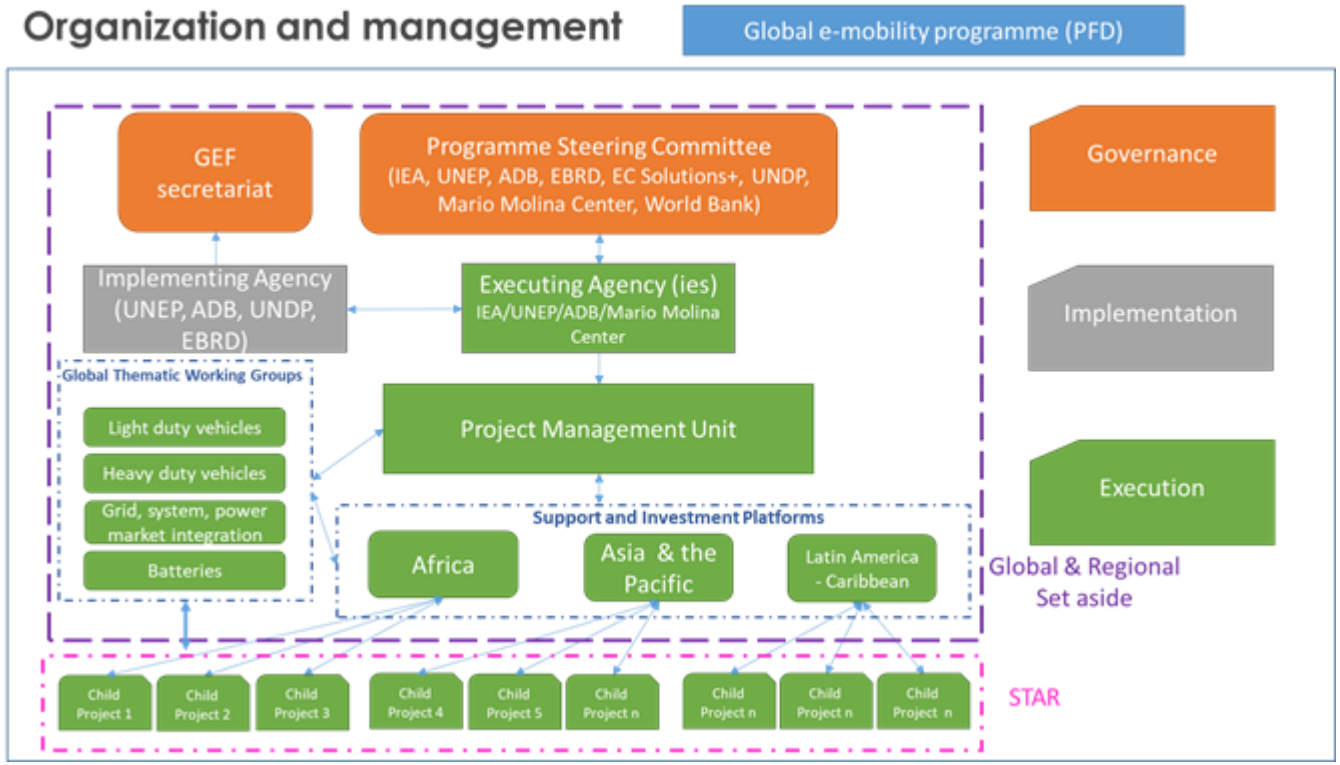
6. Coordination

Outline the institutional structure of the program including monitoring and evaluation coordination at the program level. Describe possible coordination with other relevant GEF-financed programs and other initiatives.

UN Environment will be the lead Implementing Agency of the e mobility Programme. UNEP and ABD will co-implement the global child project and the IEA, UN Environment and Mario Molina Center (Chile) will jointly execute the Global Child Project.

In-country child projects will be implemented by different GEF Implementing Agencies including the United Nations Environment Programme (UN Environment), the United Nations Development Programme (UNDP), the Asian Development Bank (ADB), and the Mario Molina Center (Chile), and the European Bank for Reconstruction and Development (EBRD), the EC Solutions Plus. All Implementing Agencies in the programme and Executing Agencies of the Global Child project and the World Bank, will be on the steering committee of the Global Child Project. It will be the task of the Steering Committee to advise the Executing Agencies of global programme activities. The programme will be closely linked to the European Commission Solutions Plus Programme, which will support cities around the world with the introduction of electric vehicle demonstration projects. The two programmes will work together to increase impact, country coverage, reduce overlap and duplication, and mutually reinforce each other.

FIGURE 9: ORGANIGRAMME OF THE GLOBAL ELECTRIC MOBILITY PROGRAMME



Programme coordination and management

The day-to-day management of the project will be done by the project management unit. The programmatic approach will ensure the efficient use of funds since all country projects benefit from the constant development and updating of the materials provided through the Global Programme.

Child project implementation

Child Projects will be implemented by GEF Agencies and executed by national partners, such as government agencies, academia and accredited NGOs. All child projects will have their own institutional governance and involve relevant stakeholders from government, private sector, academia and civil society. All child project countries will need to designate a leading agency as well as a project coordinator. Project coordinators of all child projects will meet once a year under the global programme to exchange ideas and experiences and programme coordinated actions.

Measurement, reporting and verification framework

The IEA will be developing a measurement, reporting and verification (MRV) framework based on the SMART indicators used to assess project implementation and progress for the GEF. The MRV indicators will be developed jointly with the Global Programme Steering Committee members. Child Projects will report at the mid-term and at the end of the project against these indicators, and the IEA will consolidate these reports. MRV will happen though the fourth component of this project “Tracking progress and facilitating replication”, which activities are detailed in the log frame.

A terminal evaluation by an independent consultant will be carried out at the end of both the Global Project as well as the Child Projects. The terminal evaluation of the Global Programme will be managed by the UN Environment Evaluation and Oversight Unit (EAO). The terminal evaluations of the Child Projects will be managed by the relevant bodies of the implementing agencies. Terminal evaluation reports will be sent to the GEF Evaluation office at the latest 6 months after the completion of the evaluation.

7. Consistency with National Priorities

Yes

Is the Program consistent with the National strategies and plans or reports and assesments under relevant conventions

National Action Plan for Adaptation (NAPA) under LDCF/UNFCCC

- National Action Program (NAP) under UNCCD

- ASGM NAP (Artisanal and Small-scale Gold Mining) under Mercury

- Minamata Initial Assessment (MIA) under Minamata Convention

- National Biodiversity Strategies and Action Plan (NBSAP) under UNCBD

- National Communications (NC) under UNFCCC

- Technology Needs Assessment (TNA) under UNFCCC

- National Capacity Self-Assessment (NCSA) under UNCBD, UNFCCC, UNCCD

- National Implementation Plan (NIP) under POPs

- Poverty Reduction Strategy Paper (PRSP)

- National Portfolio Formulation Exercise (NPFE) under GEFSEC

- Biennial Update Report (BUR) under UNFCCC

- Others

Most programme countries have identified the development low emission transportation as one of their key priorities for achieving their emissions reduction targets set in their NDCs, as presented below:

Country	Intended Nationally Determined Contribution (NDC) that correlate with e-mobility
Antigua and Barbuda (2015)	Unconditional Mitigation Contribution: Enhance the established enabling legal, policy and institutional environment for a low carbon emission development pathway to achieve poverty reduction and sustainable development Conditional Mitigation Contribution: By 2020, establish efficiency standards for the importation of all vehicles and appliances. By 2030, achieve an energy matrix with 50 MW of electricity from renewable sources both on and off-grid in the public and private sectors

	n and off-grid in the public and private sectors In 2014, the transport sector consumed over one quarter of the country's fossil fuel imports, 20% of which were gasoline and 11% diesel. The NEP addresses this emissions sector by inter alia recommending the use of vehicles with higher fuel efficiency and lower emissions, and support for hybrid, flex-fuel for electric vehicles as national targets. Antigua and Barbuda aims to, by 2020, establish efficiency standards for the importation of all vehicles and appliances
Armenia (2015)	Unconditional Mitigation Contribution: not stated. Conditional Mitigation Contribution: Achieve ecosystem neutral GHG emissions in 2050 (2.07 tons/per capita annual) with the support of adequate (necessary and sufficient) international financial, technological and capacity building assistance Armenia has identified 6 main sectors that will contribute to climate mitigation, among which is the Transport sector (including development of electrical transport).
Burundi (2015)	Unconditional Mitigation Contribution: Reduction of greenhouse gas emissions by 3% compared to the business-as-usual (BAU) scenario for 2030 (i.e. 1,958 Gg CO2e) Conditional Mitigation Contribution: Reduction of greenhouse gas emissions by 20%, beginning in 2016, compared to the business-as-usual scenario for 2030 (i.e. 14,897 Gg CO2e) National programmes associated with implementation of the NDC: "*Mitigation of greenhouse gas emissions and low carbon developments*", which includes the following component: Energy efficiency in production, transport, distribution and consumption (reduction of losses, low energy light bulbs and energy saving equipment) "*Promotion of research & development and technology transfers*", which includes the following component: Urban transit with low GHG emissions
	Unconditional Mitigation Contribution: Chile is committed to reduce its CO_2 emissions per GDP unit by 30% below their 2007 levels by 2030, considering a future economic growth which allows to implement adequate measures to reach this commitment Conditional Mitigation Contribution: In addition, and subject to the grant of international monetary funds, the country is committed to reduce its CO_2 emission per GDP unit by 2030 until it reaches a 35% to 45% reduction wi

Chile (2015)	d to reduce its CO_2 emission per GDP unit by 2030 until it reaches a 35% to 45% reduction wi th respect to the 2007 levels, considering, in turn, a future economic growth which allows to implement adequate measures to achieve this commitment. The transport sector has been identified as one of the priority sectors for mitigation in Chile in the National Greenhouse Gas Inventory (1990-2010). The processes for the implementation and follow-up of Chile's contributions include the foll owing tool (among other)s: Tax on the initial sale of lightweight vehicles pursuant to Law 20.780, which has been imple mented since December 28, 2014 and which taxes CO2 emissions indirectly, by charging a h igher tax inversely proportional to vehicle performance
Costa Rica (2015)	Unconditional Mitigation Contribution: The country is committed to a maximum of 9.37 Mt CO2eq net emissions by 2030, with pro posed emissions per capita of 1.73 net tons by 2030, 1.19 Net Tons per Capita by 2050 and -0.27 Net Tons per Capita by 2100. Costa Rica's commitment includes an emissions reducti on of GHG of 44%, of a BAU scenario, and a reduction of 25% of emission compared to 2012 emissions. To accomplish this goal Costa Rica would have to reduce 170,500 tons of GHG p er year until the year 2030. Conditional Mitigation Contribution: not stated. The mitigation options proposed by Costa Rica in its National Contribution are categorized i nto four broad policy options, among which: Reducing energy demand and GHG emissions (Energy efficiency & conservation, low emissi ons development pathways) Fuel switching in end-uses (Buildings, transport, industry) Transport sector: Most of the proposed emissions abatement measures hinge on a greater use of electric tran sportation, both public and private. These measures had a greater level of consensus in the transport and energy sector dialogues. Public Transportation needs to improve its fleet com position as well as its working design. This can be accomplished through an Integrated Publ ic Transportation system where routes are improved, train service strengthened, and availabi lity of non-motorized transportation enhanced, etc. Costa Rica has made the intercity electri c train a priority, which will provide a significant contribution to the country's emission mitiga tion goals, creating new employment and low emissions mobility. It is necessary to improve the freight sector through multi-modal options. This will require an ambitious investment por tfolio in sustainable transportation over the coming decades
	Unconditional Mitigation Contribution: not stated.

Cote d'Ivoire (2015)	Conditional Mitigation Contribution: 28% reduction below a business as usual (BAU) reference scenario by 2030, based on the reduction efforts contained in the strategic sectoral development plans with the support of technical partners and financiers An additional 8% for a total 36% reduction below BAU, is subject to capacity building, technology development and transfer, and financial support that is new, additional and easily accessible In its NDC, Cote d'Ivoire outlines mitigation actions in the agriculture and forestry, energy and transport, and waste sectors. Particularly, the document mentions the following measures and actions for the Transport sector: Improve mobility and develop low-carbon transport solutions Integrate the energy / climate nexus into territorial planning policy documents in order to limit distances, working on mixed-use / functionality and proposing efficient public transport policies Support municipalities in the elaboration of public transport plans Facilitate the purchase of low-emitting vehicles and phasing out the most polluting ones through norms, incentives or minimum performance standards
India (2015)	India has a definite plan of action for clean energy, energy efficiency in various sectors of industries, steps to achieve lower emission intensity in the automobile and transport sector, a major thrust to non-fossil-based electricity generation and a building sector based on energy conservation." India communicates its Intended Nationally Determined Contribution for the period 2021 to 2030: To put forward and further propagate a healthy and sustainable way of living based on traditions and values of conservation and moderation. To adopt a climate friendly and a cleaner path than the one followed hitherto by others at corresponding level of economic development To reduce the emissions intensity of its GDP by 33 to 35 percent by 2030 from 2005 level. To achieve about 40 percent cumulative electric power installed capacity from non-fossil fuel-based energy resources by 2030 with the help of transfer of technology and low-cost international finance including from Green Climate Fund (GCF). One of India's key climate change mitigation strategies is the "*Safe, Smart and Sustainable Green Transportation Network*" strategy. This strategy includes "*Faster Adoption and Manufacturing of Hybrid & Electric Vehicles in India"* (FAME India), which is a scheme formulated as part of the National Electric Mobility Mission Plan 2020 (NEMMP) to promote faster adoption and manufacturing of hybrid and electric vehicles in the country by providing incentives.
	Unconditional Mitigation Contribution:

Jamaica (2015)	Jamaica's intended nationally determined contribution will mitigate the equivalent of 1.1 million metric tons of carbon dioxide per year by 2030 versus the BAU scenario. This is a reduction of 7.8% of emissions versus BAU. This target is predicated on the current level of implementation of the National Energy Policy and the existing pipeline of renewable energy projects Conditional Mitigation Contribution: Jamaica will conditionally increase its ambition to a reduction of GHG emissions of 10% below the BAU scenario, subject to the provision of international support. This reduction target is based on enhanced implementation of the National Energy Policy. In particular, Jamaica's NDC states that the country seeks support for the expansion of energy efficiency initiatives in the electricity and transportation sectors, in line with sector action plans and policies currently under development.
Madagascar (2015)	Unconditional Mitigation Contribution: not stated. Conditional Mitigation Contribution: In 2030, Madagascar aims to reduce approximately 30 MtCO2 of its emissions of GHG, representing 14% of national emissions, compared to the BAU scenario, with projections based of GHG inventory from year 2000 to 2010. In the Energy sector, Madagascar has identified several actions to contribute to the reduction of GHG emissions, among which: Facilitate access to energy by strengthening existing systems and by promoting renewable and alternative energies Reinforce renewable energy (hydraulic and solar) from the current level of 35% to 79%) The share of transport related emissions on energy emissions was 33.10% in 2011 and is the fastest growing source of emissions
Maldives (2015)	Unconditional Mitigation Contribution: In accordance with Decisions 1/CP.19 and 1/CP.20, Maldives communicates that it intends to reduce unconditionally 10% of its Greenhouse Gases (below BAU) for the year 2030. Conditional Mitigation Contribution: The 10% reduction expressed above could be increased up to 24% in a conditional manner, in the context of sustainable development, supported and enabled by availability of financial resources, technology transfer and capacity building.

	Transportation has been identified as one of the priority sectors for climate change mitigation in Maldives' NDC.
Peru (2015)	Unconditional Mitigation Contribution: The Peruvian State considers that a 20% reduction will be implemented through domestic investment and expenses, from public and private resources. Conditional Mitigation Contribution: The Peruvian NDC envisages a reduction of emissions equivalent to 30% in relation to the Greenhouse Gas (GHG) emissions of the projected Business as Usual scenario (BaU) in 2030. The transport sector is the highest energy consumer, accounting for 45,2% of national energy consumption, and the vehicle fleet is growing 9.5% annually. The transport sector has been addressed in Peru's NDC and includes one measure on electric transport, which aims to have 5% of the national vehicle fleet (heavy and light duty) electric by 2030.
Seychelles (2015)	Unconditional Mitigation Contribution: The Republic of Seychelles will reduce its economy-wide absolute GHG emissions by 122.5 ktCO2e (21.4%) in 2025 and estimated 188 ktCO2e in 2030 (29.0%) relative to baseline emissions Conditional Mitigation Contribution: not stated. The country's Energy Policy 2010 has provided guidance regarding energy use scenarios in the power sector (electricity production and consumption) and transport to 2030. For the Transport sector, this entails keeping a high penetration of public transport, targeting fuel efficiency and biofuels in import regulation, and moving towards electric vehicles and two-wheelers, have the potential to reduce oil imports for transport purposes by 15% to 30% (or perhaps more) by 2030 compared to the baseline. Projections have been made in the 2nd National Communication regarding the increase in baseline emissions from road transport sector from 66,525 tCO2 in 2005 to 167,087 tCO2 in 2030. The projections correspond to an increase in the number of vehicles from 10,622 in 2005 to 20,000 in 2030. Fossil fuel consumption is expected to increase from 21,324 t (2005) to 53,620 t in 2030. Using a target of 30% reduction in fuel use, the total emissions arising from road transport is expected to be 116.96 ktCO2 in 2030. This target corresponds to a GHG reduction of 50.13 ktCO2 in 2030. Assuming a target of 18% for 2025, the corresponding GHG reduction is expected to be 26.5 ktCO2.

	Mitigation actions identified in the land Transport sector: 30% of private vehicles are electric by 203015.8 MW of solar PV for meeting the energy dem and of electric vehicles
Sierra Leone (2015)	Unconditional Mitigation Contribution: not stated. Conditional Mitigation Contribution: Sierra Leone's NDC intends to maintain the emission levels of Sierra Leone relatively Low (cl ose to the world average of 7.58 MtCO2e) by 2035 or neutral by 2050 by reducing her carbo n footprint and by following green growth pathways in all economic sectors. Sierra Leone has identified 7 priority climate change response strategies in the area of mitig ation of greenhouse gas emissions. Among these, Strategy 6 states the following: Diversific ation of economic growth through strengthened transport sub-sector, particularly the infrast ructure to contribute to the reduction of regional and global emissions of greenhouses and b uild a stable economy. Present GHG emission contributions as part of Sierra Leone's "Internationally communicate d pre-2020 GHG emissions reduction plans under the Copenhagen Accord" related to the tra nsport sector: Development and enforcement of regulations on regular maintenance of vehicles (vehicle e mission testing): formulation of transport plans. Improved and promoting use of public transport (e.g. road, rail and water) for passengers an d cargo to reduce traffic congestion and GHG's emissions
St Lucia (2015)	Unconditional Mitigation Contribution: not stated. Conditional Mitigation Contribution: The mitigation targets are a 16% reduction (121 GgCO2eq) in 2025 and a 23% reduction (18 8 GgCO2eq) in 2030 compared to BAU projections. The mitigation targets of St Lucia's NDC consider emissions reductions from the Energy Demand, Electricity Generation and Transpo rtation sectors. Proposed Interventions in the Transport sector: Efficient VehiclesImproved and Expanded Public Transit Key National Policies, Legislation and Actions that address Climate Change Mitigation: Introduced a new levy to control importation of used vehicles

	Reduction of excise tax and duty for importers of fuel efficient vehicles and alternative energy vehicles Escalating taxes on higher engine capacity vehiclesProposed Transport Policy and Strategy
Togo (2015)	Unconditional Mitigation Contribution: Under the business-as-usual (BAU) scenario (accounting for the implementation of already programmed measures), the overall reduction rate in 2030 would be 11.14% compared with Togo's total 2030 emissions based on the baseline year (2010). This reduction in emissions is attributed to the implementation of sectoral work. Conditional Mitigation Contribution The conditional target for additional GHG emissions reduction, according to the most ambitious scenario, is estimated at 20% compared to the dynamic BAU. The conditional target for the total reduction would therefore be 31.14% in 2030, compared to the projections if no measures were to be applied. GHG mitigation measures and options Togo's GHG mitigation measures in its three priority sectors (energy, agriculture, and land use, land use change and forestry) […] In the energy sector, they pertain to the promotion of household use of biomass, plus solar electricity and road transport. […] In terms of road transport, the planned actions aim to reduce the consumption of fossil fuels in Togo by 20% over the course of the period under review, by improving the road system, promoting the use of public transport, reducing the average age of imported vehicles (to 5-7 years) and promoting active modes of transport (bicycles, walking, bike paths). Current transport-related policies and strategies: The Declaration of General Governmental Policy on the Restructuring of the Transport Sector of 29 May 1996 made operational in 2013 through the definition of the National Strategy for the Development of Transport in Togo. Action to be taken: Revision of current national transport policy; adoption and application of the measures within the national strategy, especially the sections limiting the age and setting standards for the quality of imported used vehicles
Ukraine (2015)	Unconditional Mitigation Contribution: Ukraine defines ambitious, but at the same time substantiated and fair target with regards to the level of GHG emissions. It will not exceed 60% of 1990 GHG emissions level in 2030 (i.e. which means a 40% reduction compared to that level). Conditional Mitigation Contribution: not stated.
	Unconditional Mitigation Contribution: To decrease specific emissions of greenhouse gases per unit of GDP by 10% by 2030 from l

	level of 2010.
Uzbekistan (2017)	Conditional Mitigation Contribution: not stated.

8. Knowledge Management

Outline the Knowledge management approach for the Program, including, if any, plans for the Program to learn from other relevant Programs and initiatives, to assess and document in a user-friendly form, and share these experiences and expertise with relevant stakeholders.

A and UN Environment will develop a knowledge management strategy at the start of the project that will be presented in a written document and shared with all levant project partners so that partners will be part of the development and implementation of the knowledge management component of the programme. The nowledge management strategy will have the following seven components:

- Overview of existing lessons and best practice that inform project concept

The IEA and UN Environment host leading global electric mobility initiatives, the IEA through the EVI and UN Environment is supporting close to 45 country projects in all regions. The lessons learned from these initiatives have formed the basis for the development of this GEF7 programme. So for example, the design and topics of the global thematic working groups address what are considered the key challenges for non-OECD countries. And the support and investment platforms are designed in such a way that they can provide maximum support to the child projects.

- Plans to learn from relevant projects, programs, initiatives& evaluations

The programme is designed such that there is maximum opportunity to share lessons learned and best practices among the child projects (and the EC Solutions plus city projects). The global thematic working groups are aimed to develop relevant knowledge, based on demand and based on operating environments of the child projects. The main purpose of the support and investment platforms is to create a community of practice where countries and cities can share experiences and best practices. By inviting non GEF /EC projects to these communities, the opportunities for countries and cities to share experiences and best practices is maximized.

- Proposed processes to capture, assess and document info, lessons, best practice& expertise generated during implementation

omponent 4 of the global project is aimed at tracking progress, monitoring and dissemination of project results. Knowledge and lessons will be generated, recorded, nd shared at all three levels of the project – in the thematic global working groups, the support and investment platforms, and in the country projects. An MRV amework will be set up in the project to capture data and lessons (details of this can be found in the section that describes component 4, section 3.4 above).

- Proposed tools and methods for knowledge exchange, learning& collaboration

n easily accessible monitoring tool will be developed for country child-projects, based on several indicators, including the number of electric vehicles deployed, harging infrastructure installed, CO_2 emissions and pollutants impacts, and grid integration indicators. Such a tool will leverage on the energy and CO_2 emissions in ansport analysis capabilities already existing through the IEA Mobility Model. This “progress calculator" will provide a common tool to all child projects and hence the portunity to benchmark progress against each project's targets, and across different child projects. Experiences, progress made, and lessons learned will be nowcased at the Global Conferences organized by the programme.

he Support and Investment Platforms will collect best practices and tools and disseminate these among the countries in the regions. Building communities of actice at (sub) regional level aims to encourage cities and countries to share their experiences, practices and approaches. These platforms will also facilitate the ansfer of knowledge generated in the thematic working groups to the country level.

· Proposed knowledge outputs to be produced and shared with stakeholders

The four thematic working groups will develop a set of tools, and in close cooperation with the EC Solution plus project – that are also planning to develop factsheets and tools-, package this into a global toolbox. The global toolbox will be made available to all child projects, plus any other interested parties, to provide concrete and detailed expertise, knowledge and best practices on introducing electric vehicles, - motorcycles, cars and busses – in non-OECD countries.

ıe regional support and investment platforms are designed to exchange knowledge and provide training, including on the global toolbox. These trainings will take ace at least once per year (target: twice per year) over the course of the programme in each region. Further workshops and trainings may also be organized upon quest of the child projects. These could be sub-regional or issue specific training sessions.

ıe knowledge products leveraged through the global thematic working groups and regional support and investment platforms will be made accessible digitally. A gital platform will be continuously fed with content created from the various activities and knowledge products (data, key policy principles by topic stemming from e global thematic platforms, presentations made at workshops/forums, tools for decision-making support, pieces of analysis from the Global EV Outlook or other ıblications) and from the experiences gathered at the Support and Investment Platforms. The digital platform will be part of the global programme website. Finally, ıild-project countries will have continuous remote access to experts involved in the programme. This will happen through the helpdesks to be set up at the support ıd investment platforms and through peers. Thus, countries can seek easily accessible, informal and targeted support when necessary to make progress in their ectric mobility projects.

· Discussion on how knowledge and learning will contribute to overall project/ program impact and sustainability

The tools developed, best practices collected and knowledge generated during the project will continue to be available to countries and cities after the project has ended. UN Environment, with EC plus partners, will continue with supporting the regional platforms so that these can continue to take the lead in supporting a shift to electric mobility in their respective regions. As non GEF and EC projects will be included in the platforms and the communities of practice from the start of the GEF programme, the platforms will continue after the GEF programme has ended. All knowledge and tools will thus continue to support a shift to electric mobility in the three regions.

· Plans for strategic communications

As this will be the first global electric mobility programme, much interest is expected, especially in the progress that the child projects make on the ground with shifting to electric mobility. All could project will include a communications and media component, aimed at communicating the progress made in the project.

vo global conferences will be organized over the course of the programme to bring together all stakeholders of the GEF7 electric mobility programme, including e in-country projects, in collaboration with the EC Solutions Plus project. The first conference will be a global launch of the programme and will be a joint launch of e GEF and EC Solutions Plus. It is expected to involve all partners and other interested organisations, will outline the global programme, and will start developing ırtnerships and networks. It will also have a communications and media component.
ıe second global conference will take place at the end of the programme and will showcase progress made by the country projects and the programme more broadly. will be an additional opportunity to exhibit the knowledge and materials generated by the global thematic platforms. It will also ensure continuation and sustainability the programme after the 4-year project term expires. It will also communication and media component and will include a press release and press conference.

ıe programme will develop a communication plan at the start of programme implementation, to list planned communication activities at all three levels, global vorking groups & global meetings), regional (platforms) and country level (child projects).

9. Child Program Selection Criteria

Outline the criteria used or to be used for child program selection and the contribution of each child program to program impact.

The strategic selection criteria for the programme is detailed below:

- Countries from each region, with a minimum of 10 countries in total;
- GEF recipient countries;
- Countries covering demand for a selection of the main e-mobility technologies including buses, cars and 2-3 wheelers;
- A mix of GEF implementing agencies involved in the programme to bring a full complement of expertise, including development banks for their capacity to leverage investment.

Criteria for individual countries to join the programme:

Country commitment to electric mobility market transformation (for example)

- Demonstration of country priorities on e-mobility and or ambition in reducing GHG and short-term climate pollutant emissions (such as NDC or national transport policy);
- Existing e-mobility policies or incentives already in place or under development;
- Ambition to link public transport and electric mobility
- Early moves by the market in the country with evidence of technology and infrastructure investments;

Emissions reduction potential (for example)

- High share of energy related emissions from the transport sector
- Private and public vehicle fleet with a strong growth rate
- High share of renewables in the power mix and/ or ambitious plans for the introduction of renewables in the future. Including the need to show functioning integration of renewables.
- Cities in the country facing heavy air pollution problems
- High urbanization rates

Cost effectiveness (for example)

- Electrification of the targeted vehicle mode is cost efficient
- High fuel prices and high vulnerability to price volatility

- Business opportunities in the country with evidence of strong private and public sector interest

Part III: Approval/Endorsement By GEF Operational Focal Point(S) And Gef Agency(ies)

A. RECORD OF ENDORSEMENT OF GEF OPERATIONAL FOCAL POINT (S) ON BEHALF OF THE GOVERNMENT(S): (Please attach the Operational Focal Point endorsement letter with this template).

Name	Position	Ministry	Date
Diann Black-Layne	Ambassador for Climate Change	Ministry of Health and the Environment	10/1/2018
Erik Grigoryon	GEF Operational Focal Point	Ministry of Nature Protection of the Republic of Armenia	2/4/2019
Emmanuel Ndorimana	Operational Focal Point, Permanent Secretary	Ministry of Environment, Agriculture and Live stock	9/12/2018
Miguel Sutzin Schottlander	Operational Focal Point	Ministry of Environment	9/12/2018
Enid Chaverri	Director International Cooperation	Ministry of Environment and Energy	3/22/2019
Manju Pandey	Joint Secretary	Ministry of Environment, Forest and Climate Change	4/1/2019
Kone Bakayoko Alimata	Permanent Secretary	Ministry of Economy and Finance	3/22/2019
Gillian Guthrie	For Permanent Secretary	Ministry of Economic Growth and Job Creation	4/4/2019
Christine Edmée Ralalaharisoa	General Director	General Directorate for Environment	4/3/2019
Miruza Mohamed	Director, Operational Focal Point	Ministry of Environment and Energy	3/5/2019
Martha Cuba de Cronkleton	GEF Operational Focal Point	Ministry of Environment	4/1/2019
Abdul Bakarr Salim	Deputy Director, CCS, EPA	Office of the President	2/12/2019

Caroline Eugene	Permanent Secretary	Ministry of Education, Innovation, Gender Relations and Sustainable Development	4/3/2019
Comlan Awougnon	Director, Administrative and Financial Affairs	Ministry of Environment, Sustainable Development and Nature Protection	3/28/2019
Wills Agricole	Principal Secretary Energy and Climate Change	Ministry of Environment, Energy & Climate Change	4/5/2019
Vladyslav Marushevskyi	Head of International Cooperation Office	Ministry of Ecology and Natural Resources of Ukrain	4/24/2019
Nodirjon Yunusov	GEF Operational Focal Point and Acting Head	Tashkent City Department on Ecology and Environmental Protection	4/26/2019

ANNEX A: LIST OF CHILD PROJECTS UNDER THE PROGRAM

CHILD PROJECTS UNDER THE PROGRAM/							
			GEF AMOUNT ($)				
COUNTRY	PROJECT TITLE	GEF AGENCY	FOCAL AREA 1	FOCAL AREA 2	TOTAL	AGENCY FEE ($)	TOTAL ($)
			PROJECT	PROJECT	PROJECT		
	FSPS						
INDIA	Electrifying Mobility – Investing in the Transformation to Electric Mobility in India	UNEP	2,146,791		2,146,791	193,211	2,340,002
		ADB	3,220,185		3,220,185	289,817	3,510,002
GLOBAL PROGRAMME	Global Programme to Support Countries with the Shift to Electric Mobility	UNEP	2,802,500		2,802,500	252,225	3,054,725
		ADB	400,000		400,000	36,000	436,000
ANTIGUA AND BARBUDA	Antigua and Barbuda Sustainable Low-Emission Island Mobility Project	UNEP	3,245,000		3,245,000	292,050	3,537,050
UZBEKISTAN	Tashkent - Sustainable Green Cities - Pro	UNDP	3,569,725		3,569,725	321,275	3,891,000

	moting Green Urban Development in Tashkent Through Accelerating Investments in Low Emission Vehicles						
	Subtotal		15,384,201		15,384,201	1,384,578	16,768,779
-	Msps						
ARMENIA	Transition Towards Electric Mobility in Armenia	UNEP	592,202		592,202	53,298	645,500
BURUNDI	Support the Shift to Electric Mobility in Burundi	UNEP	775,688		775,688	69,812	845,500
CHILE	Accelerating the Adoption of Electric Mobility In Chile	UNEP	1,784,862		1,784,862	160,638	1,945,500
COSTA RICA	Accelerating the Move To Electric Buses In Costa Rica	UNEP	876,712		876,712	78,904	955,616
IVORY COAST	Integrated, Sustainable and Low Emissions Transport In Cote D'ivoire	UNEP	408,716		408,716	36,784	445,500
JAMAICA	Supporting Su	UNDP	1,784,862		1,784,862	160,638	1,945,500

	stainable Transportation Through the Shift To Electric Mobility In Jamaica				4,862	38	500
MADAGASCAR	Support the Shift To Electric Mobility In Madagascar	UNEP	1,142,661		1,142,661	102,839	1,245,500
MALDIVES	Integrated, Sustainable and Low Emissions Transport In The Maldives	UNEP	1,826,339		1,826,339	164,371	1,990,710
PERU	Enhancing Sustainability In E-Mobility for Low Carbon Urban Transport And An Extended Producer Responsibility (Epr) Approach In Batteries And Vehicle Components	UNDP	1,784,862		1,784,862	160,638	1,945,500
SEYCHELLES	Support The Shift To Electric Mobility In The Seychelles	UNEP	423,716		423,716	38,134	461,850
SIERRA LEONE	Supporting Sierra Leone With the Shift To Electric Mobility	UNEP	423,716		423,716	38,134	461,850

ST. LUCIA	Supporting the Shift To Electric Mobility In Saint Lucia	UNEP	785,688		785,688	70,712	856,400
TOGO	Support the Shift To Electric Mobility In Togo	UNEP	423,716		423,716	38,134	461,850
UKRAINE	Transition Towards Low and No-Emission Electric Mobility In Ukraine: Strengthening Electric Vehicle Charging Infrastructure And Incentives	UNEP	901,376		901,376	81,124	982,500
		EBRD	700,000		700,000	63,000	763,000
	SUBTOTAL		14,635,116		14,635,116	1,317,160	15,952,276
	TOTAL		30,019,317		30,019,317	2,701,738	32,721,055

ANNEX A1: Project Map and Geographic Coordinates

Please provide geo-referenced information and map where the project intervention takes place

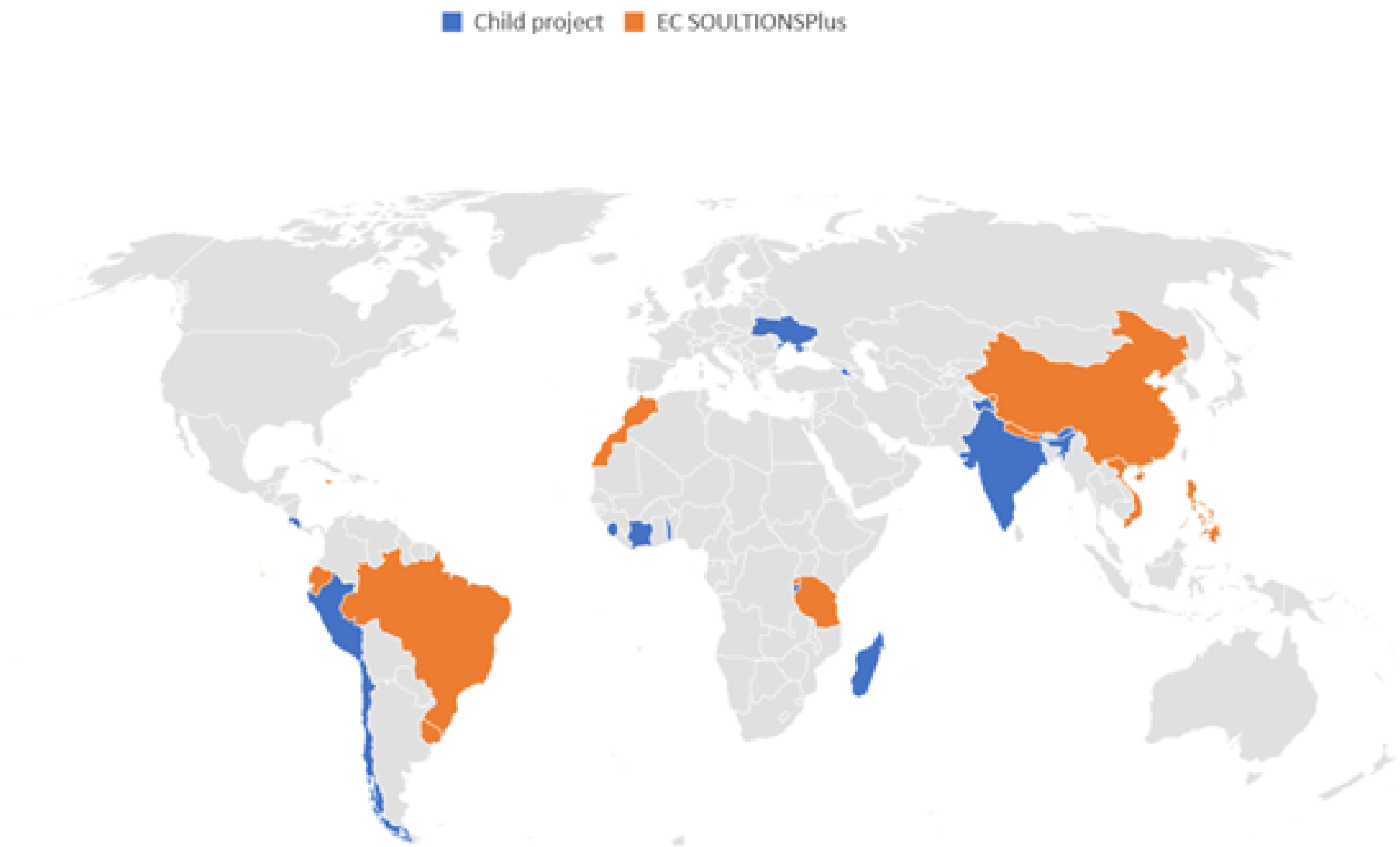


TABLE 1 COORDINATES OF PILOT SITES

	Antigua, Antigua and Barbuda	17.0747° N, 61.8175° W
	Yerevan, Armenia	40.1792° N, 44.4991° E
	Bujumbura, Burundi	3.3614° S, 29.3599° E
	Chile	TBD
	San José, Costa Rica	9.9281° N, 84.0907° W
		TBD

Child projects	India	TBD
	Abidjan, Ivory Coast	5.3600° N, 4.0083° W
	Toamasina, Madagascar	18.1443° S, 49.3958° E
	Malé, Maldives	4.1755° N, 73.5093° E
	Peru	TBD
	Canaries, Saint Lucia	13.9047° N, 61.0668° W
	La Digue, Seychelles	4.3591° S, 55.8412° E
	Freetown, Sierra Leone	8.4657° N, 13.2317° W
	Lomé, Togo	6.1256° N, 1.2254° E
	Ukraine	TBD
	Tashkent, Uzbekistan	41.311028° N, 69.29508° E
ECSOULTIONSplus	Belo Horizonte, Brazil	19.9167° S, 43.9345° W
	Casablanca, Morocco	33.5731° N, 7.5898° W
	Dar es Salaam, Tanzania	6.7924° S, 39.2083° E
	Hanoi, Vietnam	21.0278° N, 105.8342° E
	Kathmandu, Nepal	27.7172° N, 85.3240° E
	Kigali, Rwanda	1.9706° S, 30.1044° E
	Kingston, Jamaica	44.2312° N, 76.4860° W
	Kochi, India	9.9312° N, 76.2673° E
	Montevideo, Uruguay	34.9011° S, 56.1645° W
	Nanjing, China	32.0603° N, 118.7969° E
	Pasig, the Philippines	14.5764° N, 121.0851° E
	Quito, Ecuador	0.1807° S, 78.4678° W
	Santiago, Chile	33.4489° S, 70.6693° W