



United Nations Development Programme

Project title: <i>Lebanon Sustainable Low-Emission Transport Systems</i>		
Country: Lebanon	Implementing Partner (GEF Executing Entity): UNDP	Execution Modality: <i>Direct implementation (DIM)</i>
Contributing Outcome (UNDAF/CPD, RPD, GPD): <i>CPD 2017-2020:</i> <i>Outcome 4.1. Tons of CO2 eq emissions (or equivalent) reduced in the industrial and commercial sectors</i> <i>Outcome 4.3: Number of national development plans and processes integrating: biodiversity, renewable energy, energy efficiency, sustainable consumption and production, climate change, sound chemical management, sustainable consumption & production and ecosystem services values</i>		
UNDP Social and Environmental Screening Category: <i>Substantial</i>	UNDP Gender Marker: 2	
Atlas Award ID: 00127080	Atlas Project/Output ID: 00120993	
UNDP-GEF PIMS ID number: 6468	GEF Project ID number: 10358	
LPAC meeting date: 03/03/2022		
Last possible date to submit to GEF: 19/06/2021		
Latest possible CEO endorsement date: 19/12/2021		
Project duration in months: 60		
Planned start date: 01/06/2022	Planned end date: 31/05/2027	
Expected date of Mid-Term Review: 01/11/2024	Expected date of Terminal evaluation: 28/02/2027	
Brief project description: <i>The project aims curbing the unsustainable trends in passenger transport in Lebanon, accelerating the country's transition towards sustainable mobility in Lebanon as a means to reduce GHG emissions,</i>		

to increase the quality of transport services and the competitiveness and sustainable practices of companies, and improving the quality of life and social and gender inclusion.

The project will propose policy actions addressing the government, the civil society and the private sector. It includes a National e-mobility strategy, to facilitate the transition towards electric vehicles, certified green public transport and green fleet management concepts, so that bus operators and large car fleet managers can voluntarily adhere to sustainable practices, and a roadmap to increase the sustainability of end-of-life vehicle management practices, including their adaptation to address the new challenges raised by the introduction of electric vehicles in the country. The project will address the improvement of walking and cycling accessibility, with a focus on its interaction with the public transport systems, prior to the future implementation of the BRT system in the northern corridor.

FINANCING PLAN (only cash transferred to UNDPs bank account and included in the TBWP for this specific GEF project should be included under this section (1), all others should be included under section (2)).

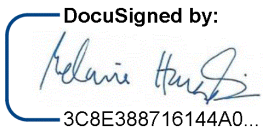
GEF Trust Fund grant (specify if fund is LDCF/SCCF and include only the portion approved by GEF CEO under UNDP)	USD 3,552,968
UNDP TRAC resources ¹ (only if included in the Total Budget and Work Plan for this specific GEF project)	USD 200,000
Confirmed cash co-financing to be administered by UNDP	USD 0
(1) Total Budget administered by UNDP	USD 3,752,968
CO-FINANCIERS THAT WILL DELIVER PROJECT RESULTS INCLUDED IN THE PROJECT RESULTS FRAMEWORK (FUNDS NOT ADMINISTERED THROUGH UNDP ACCOUNTS)	
<i>Ministry of Interior and Municipalities</i>	USD 663,300 ²
<i>Ministry of Energy and Water</i>	USD 250,000
<i>Municipality of Jbeil</i>	USD 331,700 ³
<i>World Bank</i>	USD 42,690,000 ⁴
<i>UNDP</i>	USD 342,182
(2) Total confirmed co-financing	USD 44,277,182
(3) Grand-Total Project Financing (1)+(2)	USD 48,030,150

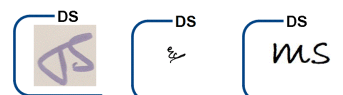
¹ This is not a mandatory requirement.

² LBP 1 billion, assuming the LBP/USD official exchange rate of 1 USD = 1,507.5 LBP.

³ LBP 0.5 billion, assuming the LBP/USD official exchange rate of 1 USD = 1,507.5 LBP.

⁴ The WB's co-financing letter refers to an approved loan of USD 295 million. In accordance with the WB's Project Appraisal Document associated to this loan, its disbursement is foreseen in 7 years. As the WB cannot provide further details at this stage, the project designers make the conservative assumption that the loan disbursement will start in 2024 and considers the disbursements of the first 3 years (2024-2026: USD 2.11 million, 17.40 million and 23.18 million) as effective co-financing.

SIGNATURES:		
Signature: DocuSigned by:  3C8E388716144A0... Melanie Hauenstein	Agreed by UNDP	Date: 29-May-2022



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Acronyms and Abbreviations

AIA	Association des Importateurs d'Automobiles (Car Importers' Association)
B2B	Business-to-business
BRT	Bus Rapid Transit
CDR	Council for Development and Reconstruction
CoM	Council of Ministers
EDL	Electricité du Liban (Public Utility)
EIB	European Investment Bank
ELV	End-of-Life Vehicle
ESMF	Environmental and Social Management Framework
ESMP	Environmental and Social Management Plan
EV	Electric vehicle (Any reference to EV technology in this project should be understood in a wide sense, including hybrid electric vehicles (HEV) and plug-in hybrid electric vehicles (PHEV).)
FSP	Full Sized Project
GBPTP	Great Beirut Public Transport Project
GEF	Global Environment Facility
GEFSEC	Global Environment Facility Secretariat
GiZ	Gesellschaft für Internationale Zusammenarbeit (German Cooperation Society)
GoL	Government of Lebanon
ISF	Internal Security Forces (National Police)
ITS	Intelligent Transport Systems
LAU	Lebanese American University
LBP	Lebanon Pound (1 USD = 1507.5 LBP, https://www.bdl.gov.lb/statistics/table.php?name=t5282usd)
MoE	Ministry of Environment
MoEW	Ministry of Energy and Water
MoIM	Ministry of Interior and Municipalities
MoPWT	Ministry of Public Works and Transport
NCLW	National Council for Lebanese Women
PIF	Project Identification Form
PPG	Project Preparation Grant
PRM	Persons with Reduced Mobility
RfQ	Request for Quotation
SEP	Stakeholder Engagement Plan
SESA	Strategic Environmental and Social Assessment
SESP	Strategic Environmental and Social Procedure
ToR	Terms of Reference
TpT	Train of Trainers
TRACS	Transportation Coactives (coalition of public transport associations)
USD	United States Dollar
WB	World Bank

II. DEVELOPMENT CHALLENGE

1. The Lebanese transport sector is the second largest consumer of energy in Lebanon. It entirely relies on gasoline and diesel, and contributes to approximately 23% of the nation's greenhouse gas (GHG) emissions⁵, more than 60% of all NOx and NMVOC emissions, 99% of all CO emissions, 5% of all SO2 emissions and other pollutants such as particulate matter (PM10 and PM2.5), VOC, copper, zinc and lead⁶. The car fleet in Lebanon is very old and fuel intensive, with around 54% of it manufactured before 2001⁷. As for the contribution of the different vehicle categories, passenger cars have the highest share of the emissions with 58.38% of the total transport GHG emissions while light-duty vehicles (LDV), heavy-duty vehicles (HDV), and motorcycles account for 17.46%, 23.81%, and 0.35% respectively⁸. Air quality degradation and impacts (on human health in particular) in Lebanon is estimated to be approximately 1% of gross domestic product (GDP), and a significant portion of this is attributed to the transport sector⁹. It is estimated that air pollution from polluting old cars costs at least USD 200 million of economic loss per year resulting from morbidity, adult mortality, child mortality and discomfort, not including the cost from health care services¹⁰. A substantial additional impact is that of congestion. Driven by high penetration of the passenger cars, lack of reliable public transport, uncoordinated public works and urban design, congestion in the cities increase travel times, so that the burden of congestion is estimated at 8% of GDP per annum¹¹.
2. The MPWT is responsible for planning and regulation of public transport, licensing of companies, fare setting and planning, and supervising RPTA. Public transport services in Lebanon are provided by RPTA and by authorized private bus operators. The role of RPTA has become increasingly marginal. In 2019, only 35 buses were still in operation across nine lines in Beirut and one line in the Bekaa area (outside Beirut). The number of authorized buses (with red plates) is 6,202, fully owned and operated by individuals and private entities. According with Decree-Law 118/1977, Municipal Councils and the Municipal Union are entitled to establish or manage directly or indirectly, among others, all local means of public transportation and urban infrastructure. However, no municipality currently provides direct public transportation services.
3. The development challenge can be described as follows: Passenger mobility in Lebanon follows an increasingly unsustainable path, with a variety of effects: environmental (growing GHG emissions and deteriorating air quality), economic (decreasing productivity and growing mobility costs in terms of time and money), social (long travel times and poor quality conditions, particularly for vulnerable social groups), basic human rights (e.g. women's personal security) and spatial (cars claiming an ever growing share of public spaces, making streets unsafe for pedestrians and residents and blighting the urban ecosystem and landscape).
4. This development challenge is raised in a context of extremely reduced capacity for governmental action, as a consequence of the deep economic, political and social crisis in Lebanon. The economic growth period (2000-2015) was coupled with chronic fiscal deficits and increasing difficulties for the government to undertake much needed public infrastructure improvements in the water, electricity and transport sectors. Since the summer of 2019, political unrest, severe economic slowdown and fiscal deficit led to currency exchange volatility, capital control and a severe economic crisis, further aggravated by the COVID-19 pandemic lockdown and by the devastating explosion on August 4th, 2020 at the port of Beirut, which led to the resignation of the

⁵ MoE, UNDP, & GEF 2016. Lebanon's Third National Communication to the UNFCCC, Beirut, Lebanon.

⁶ IPTEC et al, 2016.

⁷ MoE & UNDP, 2016.

⁸ MoE & UNDP, 2015, Mobility Cost – Case Study in Lebanon.

⁹ MoE, UNDP, Ecodit, 2011. The State and Trends of the Lebanese Environment (SOER), Beirut, Lebanon.

¹⁰ MoE & UNDP, 2015, Mobility Cost – Case Study in Lebanon.

¹¹ World Bank, 2018. Project Appraisal Document on a Proposed Loan in the Amount of \$295 million to the Republic of Lebanon for a Greater Beirut Public Transport Project.

government. The political crisis is illustrated not only by the inability to put together a new government, but also by the chronic lack of resources to put in place adequate public policies. The population has increased by nearly 500,000 between 2006 and 2016 in addition to an influx of displaced Syrians since 2011, and is increasingly concentrated in the Greater Beirut Area (GBA), reaching 2.2 million inhabitants in 2016. Jobs remain located in cities, and particularly in Beirut, but the high cost of living in cities force many to live in overcrowded suburbs. Therefore, transportation in the three main radial access to Beirut (northern, east and southern corridors) becomes vital for the living conditions of the growing Lebanese population.

5. Poor transport conditions are particularly harming for women and other vulnerable groups, which cannot always afford the most convenient transport means. Additionally, women are also more exposed to street harassment and harassment in public transport, hindering their mobility freedom and their access to social and economic opportunities. Air quality is a critical public health problem in cities and it can be improved as an associated benefit by GHG mitigation measures in urban transport. The mitigation potential in urban mobility is higher than in other transport subsectors, and so is the potential to attain favorable gender, social and environmental impacts.
6. Even in the current Lebanese context of reduced capacity for action of the national government, the experience in many countries shows that there is room for a transition towards low-carbon passenger mobility, based on the growing worldwide interest among the public on sustainability mobility, the ever-growing availability of technological and non-technological innovations and the action of many organizations within the civil society. However, there are three main causes hampering such trends in Lebanon: a governmental structure/bureaucracy poorly suited to foster sustainable mobility practices (institutional barrier), a limited knowledge and accessibility of the transport sector to sustainable mobility solutions (technical barrier), and a cultural barrier reluctant to changes and favoring private car use and road expansion. The problem tree is presented in the figure below.

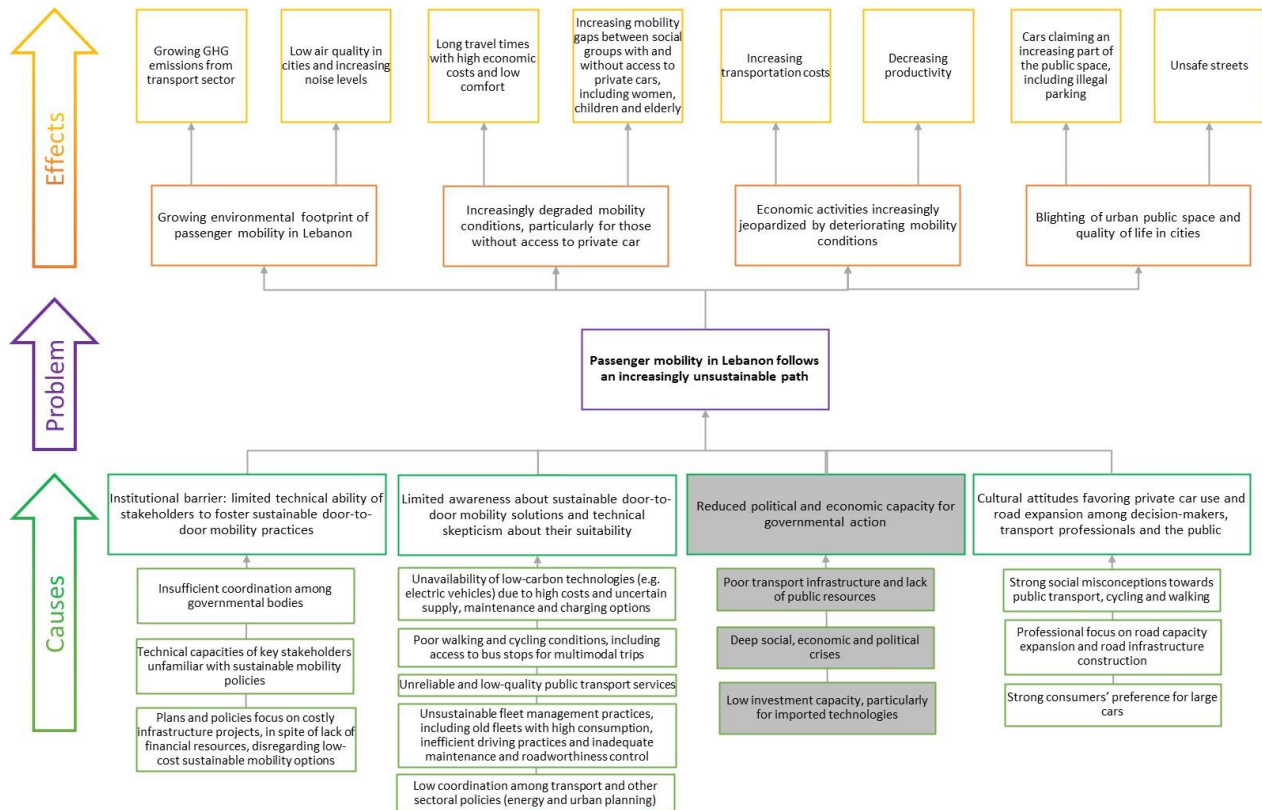


Figure 1: The problem tree

7. (i) Institutional barrier: Limited technical ability of the government to foster sustainable door-to-door mobility practices. The roots of this institutional barrier include insufficient coordination among governmental bodies, and a planning practice focusing on costly infrastructure projects, in spite of the lack of financial resources to undertake them, disregarding low-cost sustainable mobility options. Changes in this approach are hampered by technical silos within the governmental structures, lacking the multidisciplinary capacities necessary to develop sustainable mobility alternatives. This is illustrated by last national land transport strategy¹² presented by the Government to the Parliament on 11 February 2020: it covers infrastructure investment in all transport means, with a strong focus on road network upgrading and overhauling of the mass transit system (BRT and rail); the plan is not considering any soft measures (such as the necessary improvement of walking access conditions to the mass transit system or the transition to low-carbon technologies) or social dimensions, such as women's and other vulnerable groups' mobility needs or the low share of women in decision-making positions in the transport sector, including not only public institutions but also private companies.
8. Among the transport infrastructure projects designed in the last years, it is worth highlighting the Greater Beirut Public Transport Project, consisting of BRT systems serving each of the three road corridors providing access to Beirut, starting by the north corridor. This project is financed through an already-approved World Bank's loan, and includes infrastructure works and the involvement of private operators that would undertake the system operation and maintenance of the buses, stations, ITS and fare collection. Additionally, RPTA and Ministry of Public Works and Transport (MPWT) initiated the detailed design of Tripoli bus network and its terminals with the support of European Investment Bank (EIB), as well as an integrated tariff and ticketing system with reform of concessionary fares and subsidy system and the creation of a new Tripoli Transport Authority (TTA) under RPTA. Ironically, these ambitious projects are preventing stakeholders from undertaking immediate action to stop the deterioration of public transport services or to protect pedestrians and cyclists, even if these measures would path the way to achieve the results intended by those ambitious investments. This is one critical gap than needs to be addressed.
9. The same lack of action occurs in other areas. The Intended Nationally Determined Contribution (INDC) report of Lebanon, submitted to the UNFCCC in September 2015, summarizes Lebanon's intended targets related to voluntary GHG emission reductions. It mostly relies in infrastructure development and fleet renewal, making it strongly dependent on the availability of substantial financial resources¹³. The implementation of the INDC is supported by projects and programmes to build capacities within the government, such as the NDC Support Project (NDCSP) at the Ministry of Environment (MoE), and the transport NAMA; the latter was approved in 2017, but has been put on hold due to lack of resources¹⁴.

¹² The 2020 National Land Transport Strategy builds upon previous governmental plans and strategies that have always found unsurmountable difficulties to be implemented: the draft Transport Policy, prepared in 2001 by the Directorate General for Land and Marine Transport; the National Integrated Strategy for Public Transport in Lebanon, delivered to the Ministry of Public Works and Transport (MPWT) in 2013 by the Support Programme for Infrastructure Sector Strategies and Alternatives Financing (SISSAF) Project financed by the European Union (EU), and the National Strategy for Public Transport, proposed by Rail and Public Transport Agency (RPTA, affiliated to MPWT) in 2016.

¹³ The INDC presents two general reduction scenarios compared with the business-as-usual (BAU) scenario until 2030. The unconditional strategic target for the transport sector is to reach a share of person-kilometers driven annually using public transport at 36% by 2030. Actions include improving the bus system in the Greater Beirut Area. This will generate 2% reductions in GHG emissions compared with the sectorial emissions in the BAU business-as-usual scenario up to 2030. The conditional target is to increase the share of public transport to 48% by 2030. This will be achieved through infrastructure projects, including improving the bus system in the Greater Beirut Area, introduction of a bus rapid transit system and revitalization of the railway system. In addition, a share of 20% fuel efficient vehicles is to be achieved by 2030 using incentivizing activities such as scrappage programs. This will generate 8% reductions in GHG compared with the sectorial emissions in the BAU scenario up to 2030.

¹⁴ A NAMA initiative on taxi fleet transformation was approved by the Council of Ministers in 2017. It was designed to look into financial mechanisms and operational structures for private sector taxi fleets to accelerate the transition of the road transport sector to low-carbon options. This NAMA aimed at establishing an enabling environment for the car scrappage and replacement program as well as the replacement of polluting taxi cars. However, the NAMA has been put on hold as purchasing a new vehicle is out of the reach of most potential beneficiaries in the rapidly deteriorating economic conditions since 2019.

10. (ii) Limited awareness about sustainable door-to-door mobility solutions and technical skepticism about their suitability. Beyond the national government structures, other key stakeholders in the transport sector, such as public transport operators, fleet managers and municipalities, have limited awareness about the options they have to move towards sustainable mobility, and the benefits they can seize. Furthermore, the challenging economic situation in the country and the almost impossibility to get financing for any investments discourage them to explore these options. For example, the government's provision of fiscal incentives to electrification¹⁵ has not influenced consumers' demand yet, due to the difficult economic situation. This is isolating the Lebanon transport sector from on-going low-carbon innovations, not only concerning e-mobility, but also areas such as fleet management, the provision of high-quality bus services, the renaissance of walking and cycling or the facilitation of smooth intermodal access to the public transport systems. Lastly, there is limited awareness about the strengthened coordination needs required by electrification between transport policies and other sectoral policies, mainly energy (deployment of renewables) and urban planning (charging infrastructure and land use patterns).
11. (iii) Cultural attitudes favoring private car use and road expansion among decision-makers, transport professionals and the public. The roots of this social barrier include strong social misconceptions towards public transport, cycling and walking and other mobility options¹⁶, a professional focus on road capacity expansion and road infrastructure construction, and a strong consumers' preference for large cars. A number of non-governmental organizations (NGOs) are fighting these attitudes while promoting sustainable mobility in Lebanon¹⁷, and UN-HABITAT has recently issued a Guide for Mainstreaming Transport and Mobility in Lebanon's National Urban Policy¹⁸. Stating the lack of human and financial resources of the Lebanese state institutions, exacerbated by the recent economic and humanitarian crisis, the UN-HABITAT report recommends the engagement and mobilization of the private sector and civil society at large as to create the

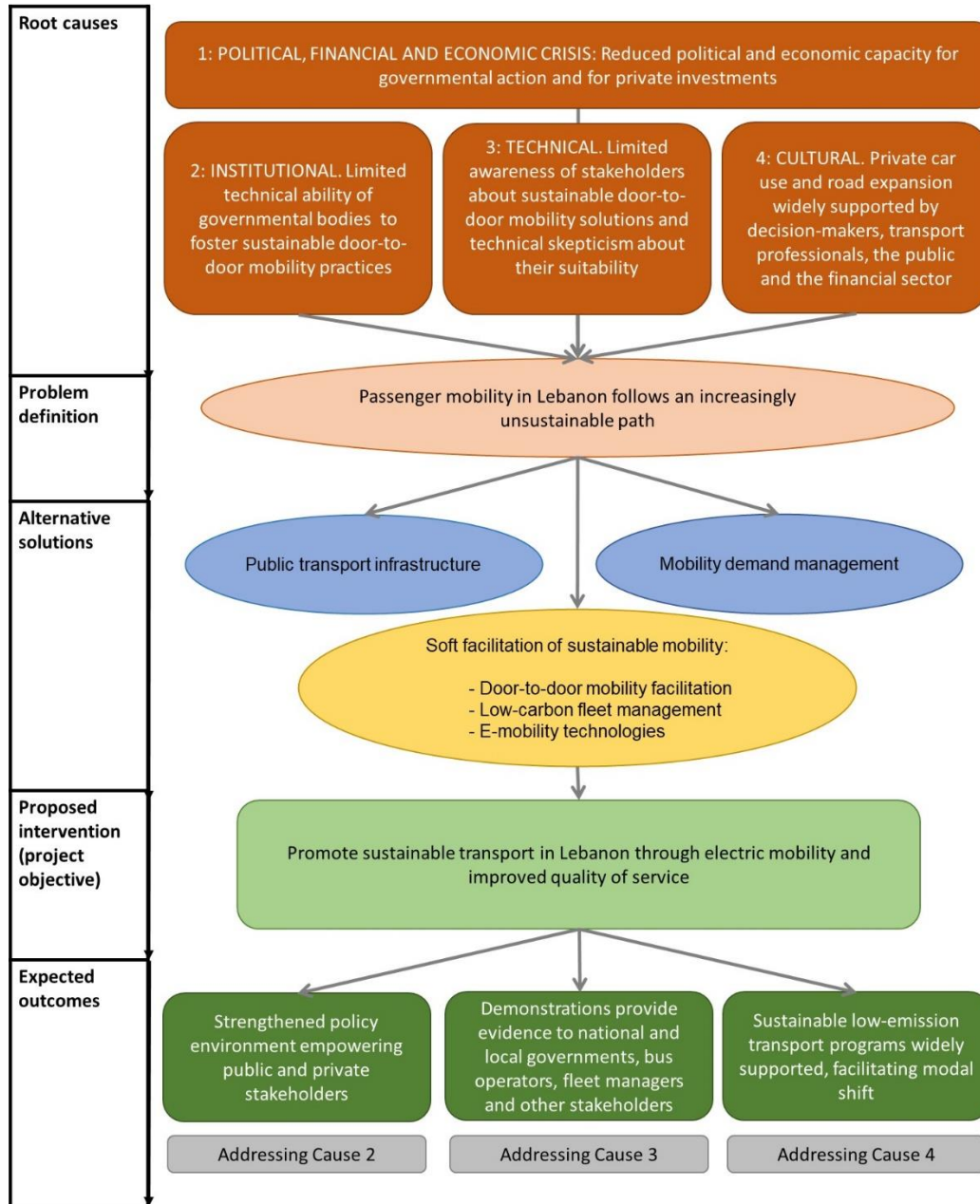
¹⁵ Electrification of road transport (generally referred to as e-mobility) is one of the key game-changers, and developing countries are lagging behind in the adoption of this new technology. The Government of Lebanon (GoL) has made some attempts to support the transition to electric vehicles: Article 55 of Law 79 (dated 18/04/2018) reduces certain taxes and fees, sometimes in full, for hybrid and electric vehicles: Car buyers wishing to purchase a hybrid vehicle pay only a 20% rate (of the vehicle value) as customs fees if that vehicle is for private use (instead of 50%), and 10% if the vehicle is intended for public use; electric vehicles (EVs) are exempted from the customs fees altogether. Additionally, hybrid and electric vehicle owners do not pay registration nor the first *Mécanique* (road-worthiness test) fees. In case of economic recovery, there are concerns about the sustainability of these schemes, as the government is highly dependent on tax income from fuel and vehicle sale taxes, which would be reduced as electrification kicks-off and expands.

¹⁶ In 2017, bike sharing systems were introduced in Beirut (Bike4All) and Jbeil, but they were subsequently put on hold due to the deteriorating political and financial situation. E-scooters and e-bikes are available for purchase in the country, but their prices are too high for average citizens under the current circumstances.

¹⁷ For example, Kunhadi is a non-profit organization concerned established in 2006 and promoting road safety awareness, and avoiding dangerous driving behavior, especially among young people. In 2007, Kunhadi created the Taxi Night concept, introducing a culture of "taxiing safely back home" as a practical and trendy alternative to drunk and fatigue driving. By May 2017, Kunhadi had organized eighteen editions of Taxi Night. TRACS is a coalition of public transport associations established in 2019, seeking to develop a sustainable transportation plan for Lebanon established in 2019. Several activities in collaboration with Bike Lebanon were conducted in 2019 to promote the usage of bicycle. Several seminars and surveys were performed to promote and assess current behavior and perception toward sustainable transportation. TRACS aims to have contact with Donors (e.g. Embassies) to highlight the importance of implementing sustainable transportation projects. Train is a non-profit organization, founded in 2010, to actively advocate, facilitate and support the preservation of Lebanese railway heritage and the establishment of a modern railway network providing inter-city and international rail connectivity for Lebanon. The Youth Association for Social Awareness (YASA) was established in 1996. YASA aims at safety promotion and injury prevention through public awareness campaigns. In 2001, YASA International started its work through participating and organizing events and programs aiming towards safety promotion in various Arab countries. YASA also focuses on the upcoming generation and tries to promote among them safety through partnerships with media and educational institutions.

¹⁸ Haddad, M (2020). Guide for Mainstreaming Transport and Mobility in Lebanon's National Urban Policy. Final Draft. UN-Habitat Lebanon. This was prepared within the formulation stage of UN HABITAT's National Urban Policy project. The guide provides a comprehensive assessment of urban mobility in Lebanon, stressing the challenges of high motorization rates, pervasive traffic congestion, poor quality of public transport services with inadequate buses and absence of rail, and lack of appropriate space and infrastructure for pedestrians and cyclists, among others.

enabling conditions necessary for a transition towards sustainable low-carbon mobility. Last but not least, some stakeholders (such as vehicle dealers and importers) are aware of global trends towards sustainability and electrification, and asking for a reliable roadmap for the country¹⁹.



¹⁹ A UNDP co-sponsored conference held in March 2019 gathered together most of the local stakeholders to revise existing barriers, identify possible infrastructure and policy instruments and suggest possible common actions. They highlighted that the transition towards electric vehicles needed prior clarification of the institutional, policy, technical and financial mechanisms necessary for such transition, as well as comprehensive perspective of the EV life cycle, including technical guidelines for the adequate disposal of EV (and particularly lithium batteries) at their end of life. In particular, it stressed the need to set up an appropriate technical and regulatory framework for the deployment of the charging infrastructure network, in coordination with the country's strategy to enhance the resilience of the electricity system and decrease its carbon footprint. It also calls for awareness-raising activities to include in the electrification debate additional stakeholders, such as vehicle insurance companies, educational and training institutions, financial institutions and managers of large vehicle fleets, such as the internal security forces (ISF).

Figure 2: Connecting the problem tree with the project's outcomes

III. STRATEGY

12. To overcome the current unsustainable path of passenger mobility in Lebanon, the project develops a strategy with the objective to promote sustainable transport in Lebanon, considering two key dimensions of sustainable mobility: on the one hand, the facilitation of the transition towards electrification; on the other hand, the improvement of the quality of service. Technology and a focus on users' experience (particularly vulnerable groups) are therefore at the centre of the project. The strategy aims at creating the enabling conditions to facilitate the deployment of electric drive technologies in Lebanon within a sustainable door-to-door mobility perspective. This strategy needs to be consistent with the exceptional situation Lebanon is going through (a complex political, financial and economic crisis). As the project does not have the capacity to influence the situation, its strategy aims at empowering the civil society (including the private sector), municipalities and the national government to undertake sustainable mobility options that can already make a difference even within such challenging environment, and that will empower them to move further once the environment has improved, and when these stakeholders can again have access to financial resources, and undertake investments in sustainable mobility infrastructure and technologies and push forward again regulatory reforms. The project aims at creating such enabling conditions by building capacities, and by identifying and implementing low-cost actions that will facilitate the subsequent implementation of ambitious investments in low-carbon electric-drive technologies, such as the deployment of BRT systems serviced with e-buses, fleet renewal with a focus on low-carbon technologies and the enhancement and adaptation of the public space to the new practices induced by e-mobility²⁰. The project strategy is illustrated in Figure 2.

13. While keeping its focus on electric drive technologies and electric mobility (CCM-1-2), the project's strategy is consistent with the recently-issued UN-HABITAT's Guide for Mainstreaming Transport and Mobility in Lebanon's National Urban Policy²¹, within the formulation stage of its National Urban Policy project. The guide provides a comprehensive assessment of urban mobility in Lebanon, stressing the challenges of high motorization rates, pervasive traffic congestion, poor quality of public transport services with inadequate buses and absence of rail, and lack of appropriate space and infrastructure for pedestrians and cyclists, among others. The project embraces the "Enable-Avoid-Shift-Improve" (EASI) framework of this document for policy formulation- with a focus on modal shift and technological improvements- in order to:

- Enable sustainable mobility by establishing an effective governance system with the needed institutions, trained human resources and adequate financial resources to regulate, manage and finance the development and operation of the transport sector and all its systems.
- Avoid or minimize individual motorized travel and trip length through the integration of land-use and transportation planning to develop compact cities where residential, work and leisure districts are closely connected and intermixed.
- Shift to sustainable mobility modes such as public transport and non-motorized travel to make them the main modes of transport for the majority of commuters.
- Improve vehicle technology and fuel efficiency for passenger cars and public transport.

²⁰ The deployment of e-mobility is expected to be accompanied by a reduced use of privately-owned cars and increased multimodality, in which traditional walking and cycling are accompanied by the emergence of electric-drive micromobility (e-g-e-scooters), sharing services (electric-drive cars, bikes and scooters) and a regained centrality of electrified public transport services. Traditional public transport stops and stations may become e-mobility hubs in which users conveniently change from one of these modes to another. Cities are adapting their streets to these trends by reallocating their public space, providing space to the users of new electric micromobility and shared services, while protecting traditional soft modes (that could otherwise be displaced), and reconfiguring key public transport hubs. Sperling, D. (2018). Three revolutions: Steering automated, shared, and electric vehicles to a better future. Island Press. Bell, D. (2019). Intermodal Mobility Hubs and User Needs. *Social Sciences*, 8(2), 65.

²¹ Haddad, M (2020). Guide for Mainstreaming Transport and Mobility in Lebanon's National Urban Policy. Final Draft. UN-Habitat Lebanon.

14. The concept of sustainable transportation promotes a balance between transportation's economic and social benefits and the need to protect the environment. A transportation system is sustainable when (1) it allows individuals and societies to meet their access needs safely and in a manner consistent with human and ecosystem health, and with equity within and between generations, and ensuring gender-equal access; (2) it is affordable, operates efficiently, offers choice of transport mode, and supports a vibrant economy, increasing access to economic opportunities to vulnerable groups, including women; and (3) it limits emissions and waste within the planet's ability to absorb them, minimizes consumption of non-renewable resources, limits consumption of renewable resources to the sustainable yield level, reuses and recycles its components, and minimizes the use of land and the production of noise. Promoting sustainable passenger mobility in Lebanon will result in a reduced environmental footprint and improved quality of services for vulnerable social groups.
15. The Theory of Change (ToC) addresses three of the four barriers identified in the problem tree described in the previous section. The remaining barrier refers to the challenging socio-economic and political context in Lebanon, which cannot be removed by the project but that must be taken into consideration while developing the project strategy. Accordingly, the project intends to implement low-cost interventions delivering short-term results and empowering stakeholders to undertake more ambitious and expensive actions in the future, when financial resources become available. Therefore, the project's strategy (i) addresses the institutional barrier through a mixed approach that empowers and supports not only the public administration (top-down) but also the relevant stakeholders (bottom-up) through the provision of institutional and policy support as well as local-level engagement and awareness raising for the promotion of sustainable low emissions transport systems. It also promotes women's participation in policy-making processes and increases the share of women at decision-making positions. This approach is consistent with the conclusions of the UN-Habitat report mentioned above in creating the enabling conditions in which the private sector and the civil society at large can compensate the political weakness of the national government, in order to create the wide consensus needed to transition towards sustainable and gender-responsive urban mobility.
16. The project strategy (ii) addresses the technical barrier leading to skepticism towards electrification and other sustainable mobility measures through the design and completion of demonstrations in those areas more suitable to provide short-term results and to facilitate the subsequent deployment of the infrastructure projects in the pipeline. Furthermore, the strategy combines the encouragement to adopt self-imposed sustainability and quality measures with access to the use of electric vehicles by bus operators and one institutional car fleet. Additionally, the project will work with one municipality (Jbeil, within the future northern BRT corridor) to identify and implement key pilot actions facilitating non-motorized access to key public transport stops, and therefore exploring the optimal conditions for attractive door-to-door multimodality in anticipation of the future construction of the BRT.
17. Finally, the project strategy (iii) addresses the cultural barriers that are favoring private car ownership and use through the facilitation of replications and taking up of the demonstrations' results through awareness-raising and networking activities aiming at increasing the support of the public and influential stakeholders to sustainable mobility options. The comfort and security gains provided by the project's technical contributions provides a strong leverage to increase the acceptability of sustainable mobility options. Furthermore, the project's support to a national e-mobility network should empower a variety of stakeholders interested in sustainability, EV commercial opportunities and social integration to come together, establish a shared vision and roadmap and sustain a bottom-up approach to expand the project's demonstrations and support the implementation of the national e-mobility strategy.
18. The challenging political, social and economic situation in Lebanon has all but cancelled access to financing, strongly limiting the ability of the GoL and other stakeholders to act, but it also opens opportunities to implement disruptive policies, including in the transport sector. The project intends to navigate this challenging context through a bottom-up approach²², while keeping significant actions also at the institutional level (e.g. through the development of a national e-mobility strategy), and also by firmly aligning its strategy with that of key international donors and financial institutions in the promotion of mass transit and the

²² Including civil society organizations aware of the gender gap related to transportation.

support to e-mobility, low-carbon emission approaches and alternative mobility options. The approach is illustrated in the figure below: the project provides guidelines and strategy (outcome 1), demonstrations (outcome 2) and upscaling (outcome 3). To mainstream the project outcomes, it is expected that Lebanon will get out of its current crisis, so that (i) municipalities have financial resources to redesign their streets and public spaces putting pedestrians, cyclists and public transport users at the center, (ii) the WB financed scheme of BRT corridors is implemented, and (iii) users can get financing to renew their fleets in a context in which EVs become widely available.

19. The project's envisages the deployment of e-mobility through the interaction of an e-mobility strategy providing the general framework for the GoL's national policy in this area, and bottom-up facilitation of electrification through three key topics:

- **Door-to-door (sustainable) mobility:** In this project, door-to-door sustainable mobility (or just door-to-door mobility) refers to the need to provide a seamless and attractive multimodal mobility alternative to travelers from origin to destination through the combination of sustainable transport modes, as a convenient alternative to door-to-door mobility provided by the private car (notwithstanding parking issues). The emergence of electric-drive technologies provides additional opportunities to strengthen the appeal of such sustainable alternatives, as they reduce the physical effort associated to walking and cycling (e.g. electric micromobility devices and electric bikes) and increase the number of potential users. To sustain the use of such options, the street space has to be redesigned accordingly, reducing the space occupied by the general traffic, establishing clear rules and providing enough space and priority-if needed- to public transport, and increasing the space dedicated to the users of the new micromobility devices while preserving- and even enhancing- the conditions for pedestrians and conventional cyclists. Traditional public transport stops and stations are seen as a cornerstone of the concept, as they may become e-mobility hubs in which users conveniently change from one of those modes to public transport services, which provide for the longest part of the itinerary. To facilitate door-to-door mobility, cities need to adapt their streets and to reconfigure their key public transport hubs²³.
- **Green Public Transport Services (GPTS).** In this project, Green Public Transport Services refer to the combination of minimum service quality requirements (such as reliability, comfort, frequency, information prior and during the trip, safety, security, drivers' capacities...) and minimum environmental performance (vehicle's compliance with emission standards, environmental footprint of vehicle maintenance routines, drivers' training in eco-driving practice, management of vehicles and components at their end-of-life...) in public transport. GPTS is a stepping stone towards electrification, as it improves management capacities and users' experience, so that the public transport system can fully benefit of social advantages provided by electric buses in the future. These requirements can be established by regulations, can be included in authorizations or concession contracts or can be voluntarily established by service providers (public or private) as a part of their marketing or social corporate responsibility policies. The compliance with these requirements can be directly controlled by a public authority, certified by a third party or self-certified by the company itself. In the case of self-certification, companies integrate the self-certification procedures in order to improve their performance and efficiency. Self-certification is an attractive option for improvements in any sector when public authorities do not have the capacities and resources to enforce requirements and can be subsequently strengthened through voluntary agreements among those companies willing to implement such requirements in order to move towards a certification procedure made by a third independent party²⁴. The provision of service information (planned and real-time) can also be provided by the bus operators or through independent platforms managed by app developers (such as the limited information currently provided by Yallabus in Lebanon).
- **Green Fleet Management (GFM).** In this project, Green Fleet Management refers to the integration of sustainability considerations within traditional fleet management, a necessary step to reduce the carbon footprint

²³ Abenoza, R. F, Cats, O & Susilo, Y. O, (2018). How does travel satisfaction sum up? An exploratory analysis in decomposing the door-to-door experience for multimodal trips. *Transportation (Dordrecht)*, vol. 46, no. 5, pp. 1615-1642. ISSN 0049-4488. DOI 10.1007/s11116-018-9860-0. Also Müller, B. & MEYER, G., (2020). *Towards User-Centric Transport in Europe 2*. Cham: Springer International Publishing AG. ISBN 9783030380274.

²⁴ Kim, Dong-Young & Hwang, Young-Ha, (2014). Self-certification framework for technological innovation: a case study. *The International journal of quality & reliability management*, vol. 31, no. 7, pp. 751-763. ISSN 0265-671X. DOI 10.1108/IJQRM-10-2012-0139.

of transport operations in institutions and corporations and to undertake fleet renewal plans factoring-in the environmental performance of vehicle technologies, ultimately accelerating electrification. Traditional fleet management provides corporations and institutions operating car fleets with guidance concerning the optimal size and composition of their fleets, rules for the assignment of vehicles to the different demands (considering travel distance, number of passengers, characteristics of the route...), planning of maintenance activities, or fleet replacement, among others. Fleet management systems typically provide historical records for every car and driver, as well as key performance indicators (maintenance costs, fuel consumption, idling time...) facilitating the identification of gaps and the adoption of remediation actions. On top of the efficiency focus of traditional fleet management, green fleet management includes as a relevant objective, together with costs and economic efficiency, the reduction of the environmental footprint of the company's or institution's car fleet. The latter is usually measured in terms of total GHG and pollutant emissions, although it can integrate other dimensions, such as the selection of the car fleet in accordance with life-cycle impact of the vehicles (including manufacturing and end-of-life disposal). Together with monitoring of vehicles' use and consumption and drivers' behavior, GFM typically includes the development of fleet replacement plans with a focus on rightsizing and the inclusion of electric vehicles, mobility management measures to encourage ride-sharing and use of alternative transport means (including public transport) for professional trips, and the regular training and awareness-raising of drivers and the whole staff in sustainable mobility choices²⁵.

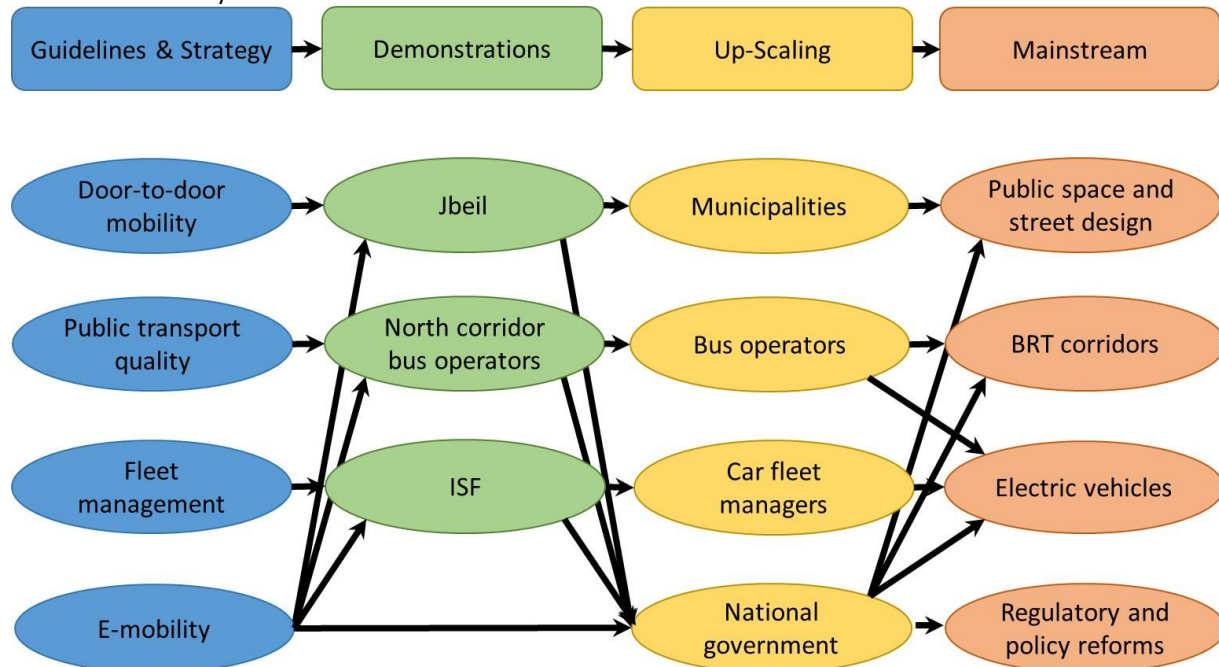


Figure 3: Project mainstreaming strategy

20. As a result of the project's components and outputs, it is expected that the current GoL's focus on "hard" infrastructure investments will be balanced with soft regulatory measures protecting transport users and citizens from the current dominance of car use. The demonstrations with a variety of partners (the municipality of Jbeil, bus operators and ISF) will provide evidence of the competitiveness and social appeal of sustainable mobility solutions, empowering key players (local municipalities, fleet managers and public transport operators) to scale up their results, through self-managed processes to transition towards electric mobility. In this transition, it is recognized that the introduction of EVs (besides the necessary financial resources) needs to be preceded by sound reforms providing better management of the fleet and, in the case

²⁵ Herrmann, C., Mennenga, M.S. & Böhme, S., 2018. *Fleets Go Green*. 1st ed. 2018. S.l.: s.n. ISBN 3-319-72724-9. Also YOON, T. & CHERRY, C. R., 2018. Migrating towards using electric vehicles in campus-proposed methods for fleet optimization. *Sustainability* (Basel, Switzerland), vol. 10, no. 2, pp. 285. ISSN 2071-1050. DOI 10.3390/su10020285.

of bus operators, higher quality of service. Up-scaling is strongly relying in the project's networking and capacity building of interested stakeholders, as well as in the project's campaigns to increase awareness and support to sustainable mobility options. Assuming that the socio-economic and political conditions in Lebanon improve and the WB's BRT project is implemented, at the end of the project the deployment of sustainable mobility options will be much easier. Besides reducing the environmental footprint of passenger mobility, the project will also provide a crucial change in transport policy, as public transport, walking and cycling (all of them more relevant than car use for women and many vulnerable social groups²⁶) will gain centrality among decision-makers.

21. In addition, the project's demonstrations are expected to accelerate the transition to low-emission urban mobility. The current poor quality of sustainable transport modes in Lebanese cities- electrified or not- is unable to attract car users, and needs to be improved with the guidance of consistent quality roadmaps associating public transport and soft modes. Furthermore, public transport operators and public and private and public car fleet managers are unlikely to make use of innovative electric technologies if this not accompanied by clear roadmaps to improve the services they are asked to provide. Last but not least, the project provides long-term sustainability for the future expansion of EVs, generating wider support to more sustainable operational practices and regulatory conditions in which the environmental advantages of EVs can be fully appreciated; this includes strengthened coordination of transport with the sectoral policies in energy and urban planning, so that the electrification transition is consistent with the deployment of renewables and urban codes facilitate the deployment of the charging infrastructure.
22. The project's strategy includes the mobilization of civil society organizations and especially those supporting gender equality, as a key support for effective implementation. This will also facilitate the effective integration of gender dimensions in the project, as women are better represented within CSOs than in other projects' stakeholders such as municipalities, bus operators or institutions and corporations with large car fleets.
23. The project aligns its sustainability and exit strategy with the EV market transition design provided by the Global E-mobility Programme (figure below). It is a first step towards mainstreaming of EVs making them competitive in all market segments, while embedding the effort within the national and local governments' actions to improve and expand the public transport system and to modernize the country's fleet.

²⁶ As women (and other vulnerable groups) have much lower access to car ownership and use due to lack of economic resources, cultural barriers, or physical unsuitability (e.g. children, teenagers, elderly and many persons with reduced mobility (PRM) cannot drive...).

EV market transition in low and middle income countries

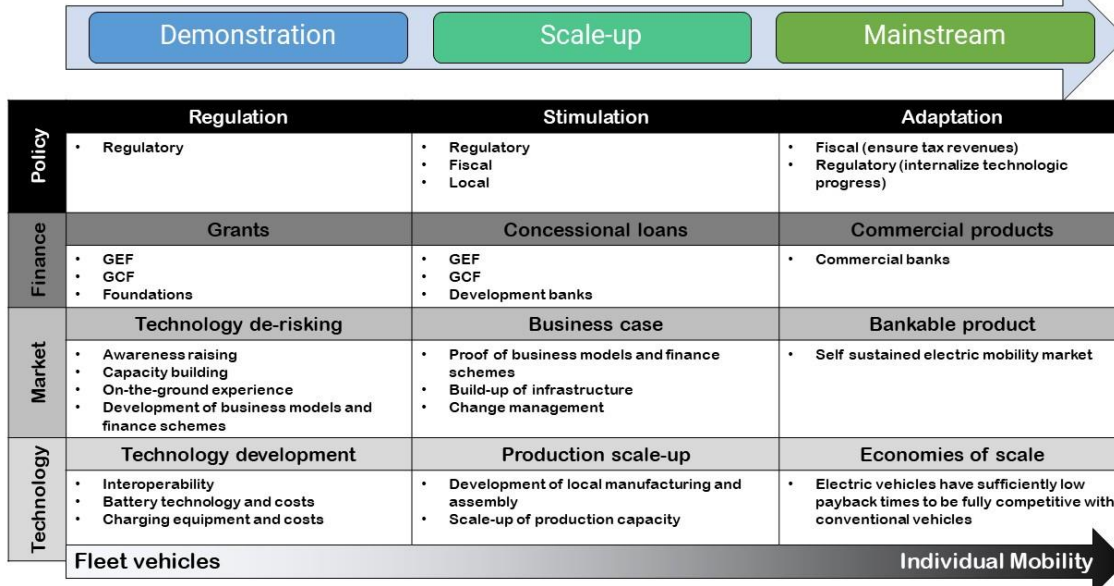


Figure 4: Global E-mobility strategy (Source: UNEP, Global E-Mobility Program Framework Document)

24. The chosen strategy is fully aligned with Objective 1 of the Climate Change Focal Area, which is to “Promote innovation and technology transfer for sustainable energy breakthroughs”, and more specifically with CCM1-2, to “Promote innovation and technology transfer for sustainable energy breakthroughs for electric drive technologies and electric mobility”. By creating a favorable institutional and regulatory framework for sustainable mobility and promoting innovative transport management practices (including EV deployment), the project will contribute to point 112 of the GEF-7 Programming Directions to accelerate “the speed and scale of sustainable energy investment in developing countries” and to point 113, developing “innovative business models that go beyond business as usual”.

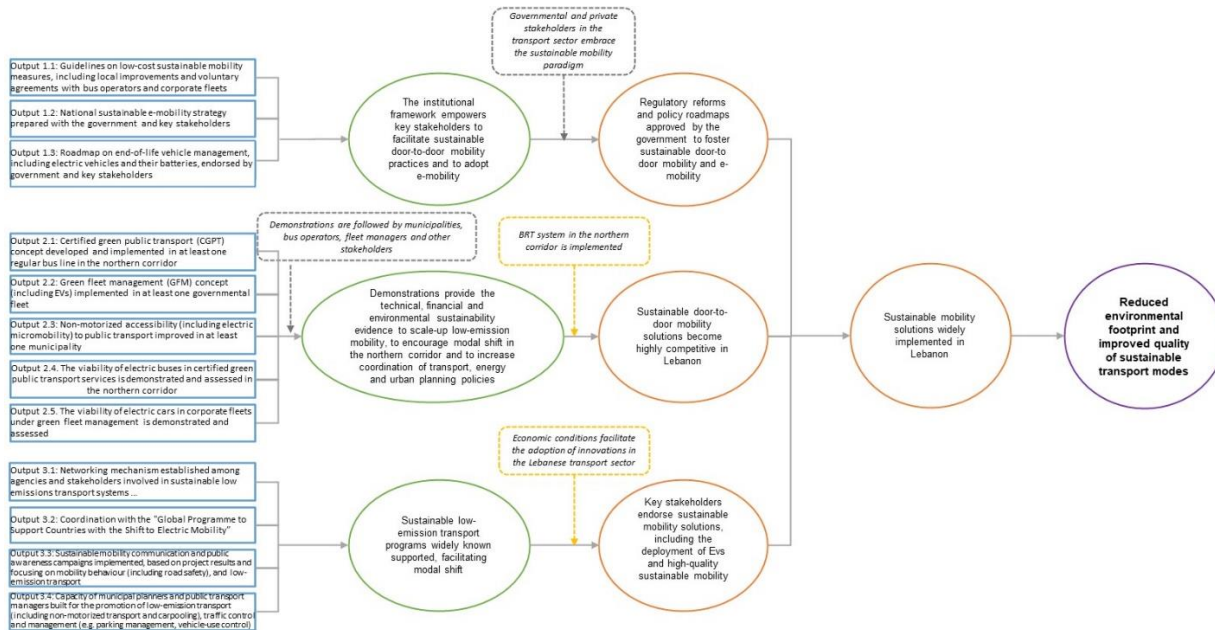


Figure 5: The project’s Theory of Change

IV. RESULTS AND PARTNERSHIPS

Expected Results:

25. The main expected result of the project is the reduction of GHG emissions and the reduction of the mobility gap among non-car users (with a disproportionate share of vulnerable groups) and car users through the provision of higher quality alternatives to car mobility (improving bus service quality together with their inter-modality with non-motorized modes) and better fleet management practices.
26. The project's leading partner within the government is the Ministry of Interior and Municipalities (MoIM). As the key focal point for the relations between the GoL and local governments, the MoIM is in a central position to encourage and support municipalities in facilitating walking, cycling and the use of public transport. Furthermore, MoIM is responsible for the vehicle registration, and can therefore lead a national fleet renewal process fostering electrification. The project contributes to the energy efficiency strategy of the Ministry of Energy and Water (MoEW), which is also relevant in the adaptation of the electric to grip to cope with future EV charging needs. The project also contributes to the climate change mitigation strategy led by the Ministry of Environment (MoE). The Ministry of Public Works and Transport (MoPWT) is responsible of public transport regulations, and is the key partner of the WB in the implementation of the regulatory and operations changes associated to the implementation of the BRT corridors.
27. As a means to achieve that result, the project also foresees to empower the government and key stakeholders (bus operators and car fleet managers) as well as CSOs that are actively engaged in the sector to adopt or promote gender-responsive sustainable mobility practices and to foster universal accessibility, including transitioning towards electrification.
28. The project intends to achieve these results through three components delivering outcomes that address the institutional, technical and cultural barriers mentioned in the previous section, and one additional component providing project monitoring and knowledge management:

COMPONENT 1: Institutional and policy support for the promotion of sustainable transport systems and e-mobility

29. **Outcome 1:** The institutional framework empowers key stakeholders to facilitate sustainable door-to-door mobility practices and to adopt e-mobility.

30. This outcome addresses the institutional barrier, providing a strengthened environment to support the promotion of sustainable low-emission transport systems and modal shift. In accordance with the central role of the civil society (including the private sector) in the reconstruction and recovery plans, the project expects to build such support from institutions (through a newly established Sustainable and Electrified Mobility Subcommittee within the already-existing Climate Change Committee) and from private companies and civil society organizations active in the transport sector (through their involvement in the design of guidelines implementation of voluntary agreements aiming at sustainable mobility and electrification).
31. The project does not intend to push for changes in the current legislation concerning vehicle approval and taxation. Such legislative changes have already been approved (as stated in the context section above), although the financial crisis have prevented any investments in EVs or charging stations. In the case of public transport, substantial legislative reforms (including concession contracts for the exploitation of BRT and feeder lines and reform of RTPA, the public transport authority) are envisaged within the implementation of the BRT project with WB support. Changes in legislation may be necessary to facilitate the deployment of the charging network, but these changes can only be undertaken once the legislative reforms in progress to support the deployment of renewables and the resilience of the electricity grid are implemented. Accordingly, the project will provide guidance on these regulatory reforms within the e-mobility strategy.
32. Financing of imported vehicles for fleet renewal (or any other purpose) is all but unavailable to most Lebanese companies under the current socio-economic crisis. Therefore, the project cannot put in place financial schemes to facilitate access to EVs. However, the project can work together with the interested stakeholders (e.g. the Lebanese financial industry and vehicle importers and dealers) so that future lending and leasing facilities can also target EVs.
33. The enhanced institutional environment will facilitate the implementation of top-down initiatives to inform the national government's future policy (to be enshrined in a national e-mobility strategy), whereas the enhanced social environment will encourage bottom-up actions empowering key private and public stakeholders (such as bus operators, municipalities and institutions and companies managing large car fleets) to adopt sustainable mobility practices, including electrification options, on a voluntary basis, respecting the existing legislation while offering a clear way forward to those stakeholders eager to seize the opportunities linked to transport innovations: in the case of car fleet managers, the cost and environmental footprint reductions that EVs and innovative fleet management can provide; in the case of bus operators, the passenger increase expected from higher service quality; in the case of municipalities, the improved public space conditions and the reduction in car pressure due to the facilitation of door-to-door sustainable mobility through improved walking, cycling access conditions to bus stops, as in the absence of these conditions, public transport services- even with the BRT operating- are unlikely to attract many car users.
34. This outcome is achieved through the delivery of the following project outputs.
35. **Output 1.1:** Guidelines on low-cost sustainable mobility measures, including local improvements and voluntary agreements with bus operators and corporate fleets. These guidelines intend to create favourable conditions that can subsequently facilitate the future deployment of electric drive technologies. Three groups of stakeholders (cities, bus operators and large car fleet managers) are targeted by these guidelines.
36. Local accessibility improvements are a prerequisite for the feasibility of multimodal door-to-door mobility options in cities and are critical for the deployment of passenger e-mobility. EVs are not intended to merely replace ICE vehicles, but to go hand-in-hand with the development of multimodal alternatives to private car use, in which they can materialize their huge sustainability potential. The physical reconfiguration of the urban space is a pre-condition for this, in order to accommodate the expected growth in walking, cycling and micromobility options facilitated by the new array of electric devices. The upgrading of public transport stops is also necessary to facilitate the exchange between these soft modes (old and new) and an invigorated public transport system integrating feeder lines and trunk BRT services operated by e-buses, as envisaged in the WB-financed Greater Beirut Public Transport Project (GBPTP). These local improvements are the responsibility of municipalities, usually with few economic and technical resources and many competing policy priorities. The project will provide basic guidance and ready-to-implement designs of low-cost improvements consistent with these future needs, to safely accommodate the users of future e-bikes and electric micromobility devices

without interfering with pedestrians and conventional bike users, and to improve the safety and comfort conditions at bus stops and a seamless transfer experience from soft modes, electric or not, to bus services, encouraging the future use of e-buses, facilitating their routing and schedules and encouraging connectivity. The guidance material will be developed closely with the Jbeil municipality and will be integrated into the urban management plan it is designing. Ultimately, the guidance material and approaches to improve low-cost sustainable mobility will be provided to the Ministry of Interior to be shared with other municipalities and/or can be shared by UNDP directly with interested municipalities in the region and along the northern corridor for replication.

37. Bus operators are in need of support to identify low-cost improvements to increase their efficiency and their customers' satisfaction, empowering them to undertake their future transition to the use of electric drive technologies and to the integrated system envisaged in the WB-financed GBPTP. Similarly, large car fleet managers (corporations and institutions), which can find low-cost measures to improve the efficiency of their fleets, as a way to prepare their own transition towards an electrification scenario, which requires adequate skills to deliver the expected benefits to car fleet owners. Voluntary agreements in different sectors have proven useful to engage and mobilize key stakeholders in pursuing environmental objectives without requiring enacting direct governmental regulations²⁷.
38. The project initially targets two areas with substantial potential in terms of GHG emission reduction and future electrification: bus services and large car fleets. In both cases, the project will provide guidance to interested beneficiaries on how to properly manage their fleets to reduce their environmental footprint (which is usually associated also with long-term cost savings). Additionally, guidance to bus operators will include the identification of some quality thresholds, which should result in higher quality of service and the ability to attract more customers. Several international standards (e.g., EN 13816²⁸) provide a useful basis to establish a framework consistent with the national context in Lebanon. Companies and institutions adhering to such voluntary agreements (GPTS in the case of bus operators and GFM in the case of fleet managers) (can establish their self-regulated bodies to monitor progress in compliance levels and approve the integration of new members. They can also include such compliance in their corporate strategies on social and environmental responsibility and within their marketing and branding strategies to attract new customers.
39. The civil society will be actively engaged in this output. As identified in the stakeholder engagement plan, there are several Lebanese CSOs working in the promotion of sustainable mobility and interested in electrification. Their contribution will provide a better understanding of the users' priorities, the barriers for their acceptance of multimodal options and the identification of short-term and low-cost actions that can be immediately implemented.
40. These guidelines also provide the basis for the subsequent definition of the demonstrations included in component 2. The guidelines on local improvements will be used in the design of the demonstration in Jbeil; the guidelines for bus operators will be the basis to establish the GPTS concept to be demonstrated with the use of e-buses; and the guidelines for car fleet managers will be the basis for GFM and for the ISF fleet management demonstration including the use of 4 EVs, The guidelines will be validated with all stakeholders (including CSOs), presented to the government and widely disseminated among bus operators and private sector companies managing large fleets to share lessons learnt and replicate their use, particularly once the benefits are observed.
41. Three bus operators have initially confirmed their interest in developing and implementing such voluntary agreements. Their characteristics are summarized in the table below.

²⁷ Voluntary agreements have often served as a useful bridge to facilitate transitions, raising awareness and building up support toward environmental goals. They are subsequently replaced by regulations, once the political framework allows it. For an overview, see OECD (2003), *Voluntary Approaches for Environmental Policy: Effectiveness, Efficiency and Usage in Policy Mixes*, OECD Publishing, Paris, <https://doi.org/10.1787/9789264101784-en>.

²⁸ European Norm 13816:2002 Transportation - Logistics and services - Public passenger transport; Service quality definition, targeting and measurement.

Company name	Number of buses	Of which, over 10-m	Main lines served	Total staff	Of which, bus drivers
Connexion	24	14	Tripoli-Jbeil-Beirut	17	9
Connex Liban SAL	62	(50 over 7 m)	Tripoli-Jbeil-Beirut	140	70
Ahdab Commuting & Trading Company	25	NA	Tripoli-Jbeil-Beirut	30	25

Table 1: Bus operators interested in the project's voluntary agreements

42. Four car fleet managers have initially confirmed their interest in developing and implementing such voluntary agreements. Their characteristics are summarized in the table below.

Company name	Number of cars (M1) registered	Number of drivers
Aramex	70	130
DHL	45	45
Totters	TBA	TBA
Red Cross	More than 650	800 (approx.)

Table 2: Car fleet managers interested in the project's voluntary agreements

43. The contents of this output are well aligned with the GoL's policies to improve fleet management and public transport systems, as stated in the co-financing letter provided by MoIM.

44. This output will include the following activities:

- Activity 1.1.1: Guidelines to municipalities to facilitate door-to-door sustainable mobility and to implement short-term actions, with a focus on intermodality between public transport and non-motorized modes. The guidelines will focus on local conditions in the northern corridor, and particularly in the municipality of Jbeil. The guidelines will be prepared through a participatory process steered by the PMU and involving CSOs (providing the perspective of different residents and users' groups), transport stakeholders and municipal and national governments. This activity includes the publication and dissemination of the guidelines by the project, and its presentation to the GoL for their endorsement and further dissemination, through the MoIM.
- Activity 1.1.2: Guidelines addressing the legal, financial and regulatory aspects related to the implementation of Self-Certified Green Transport agreements, including review of international best-practice. The guidelines will be prepared through a participatory process steered by the PMU and involving CSOs (providing the perspective of different residents and users' groups), bus operators and other transport stakeholders and municipal and national governments. This activity includes the publication and dissemination of the guidelines by the project, and its presentation to the GoL for their endorsement and further dissemination, through the MoIM.
- Activity 1.1.3: Guidelines addressing the legal, financial and regulatory aspects related to the implementation of Self-Certified Green Fleet Management agreements, including review of international best-practice. The guidelines will be prepared through a participatory process steered by the PMU and involving CSOs (providing the perspective of different residents and users' groups), fleet managers, car dealers and other transport stakeholders and the national government. This activity includes the publication and dissemination of the guidelines by the project, and its presentation to the GoL for their endorsement and further dissemination, through the MoIM.

45. **Output 1.2:** National sustainable e-mobility strategy prepared with the government and key stakeholders. The national sustainable e-mobility strategy addresses four key areas: (i) the expansion of EVs²⁹ within the vehicle fleet in Lebanon, with a focus on bus, institutional and corporate fleets; (ii) door-to-door sustainable e-mobility, including convenient access to a public charging network and to electrified public transport services,

²⁹ Any reference to EV technology in this project should be understood in a wide sense, including hybrid electric vehicles (HEV) and plug-in hybrid electric vehicles (PHEV).

as well as the conditions for the deployment of soft e-mobility (e-bike sharing, and micromobility options) and their integration with public transport (main bus stops as “e-mobility hubs”); (iii) the role of electrification in the modernization of the public transport system; (iv) the role of EVs in the country’s transition towards renewables and distributed generation, and (v) government’s guidelines for the involvement of national and international financial institutions in financing the e-mobility transition. Economic impacts, geographical deployment and environmental and social dimensions that are key for the development of these four intervention areas will be considered and integrated into the strategy. To this end, the national e-mobility strategy will provide guidelines on technological and industrial development, legal and regulatory framework reforms needed, and a strategy to raise awareness and build capacities in support of e-mobility implementation. Financing policy guidelines will be established in consultation with international and national financial institutions for creating an enabling environment to determine future funding options to upscale e-fleets in both the public and private sectors (to be further developed in component 3). A gender analysis and action plan will be included in the strategy to ensure EV deployment in Lebanon is gender-responsive and contributes to gender-equality in the energy and transport sectors.

46. The contents of this output are well aligned with the GoL’s policies to improve energy efficiency in the transport sector and to mitigate GHG emissions, as stated in the co-financing letters provided by MoEW and MoE. The e-mobility strategy will also build on the NDC agenda and the work on climate mitigation. The MoEW will steer the process for the government’s endorsement and approval of the e-mobility strategy, following the existing NDC coordinating body. It will be integrated, to the extent possible, within the national reform agenda.

47. This output will include the following activities:

- Activity 1.2.1: Assessment of progress in NDC transport targets and NAMA initiatives completed. This activity updates the baseline of sustainable transport initiatives in Lebanon, on which the project will build-up its contributions. Data collected during this activity must be gender-disaggregated, whenever feasible.
- Activity 1.2.2: Guidelines, including financial models and incentives, to support the supply and access to EV in Lebanon (focus on bus operators corporate and institutional car fleets).
- Activity 1.2.3: Study on electrification options for the Lebanese fleet (car and bus fleets), including future electricity demand by EVs deployment of renewables, integration of EVs into the energy system, challenges for the national electricity grid and regulatory reforms needed for the deployment of charging stations.
- Activity 1.2.4: Drafting the national e-mobility strategy.
- Activity 1.2.5: Gender analysis and action plan and strategic environmental and social assessment (SESA) of the national e-mobility strategy.
- Activity 1.2.6: Integration in the national e-mobility strategy of lessons learnt and technical challenges identified during the project demonstrations (including results from the integrated lifecycle analysis for the use of the EVs).
- Activity 1.2.7: Setting up an institutional coordination body (Sustainable and Electrified Mobility Subcommittee within the National Climate Change Committee) to promote the endorsement of the national e-mobility strategy by key stakeholders and its implementation. The coordination body is expected to be chaired by the MoIM. The project will provide secretarial and organizational support to this Subcommittee. It will include national and local governmental institutions, and may also be open to the participation of the private sector, academia and civil society (which are expected to interact more intensely within the e-mobility network established through output 3.1). This Subcommittee will enable convergence among the various ministries and public institutions involved in e-mobility and more generally in sustainable transport, facilitating the preparation and approval of official policies and regulations, and will also serve as an entry point for partnerships with non-governmental stakeholders. Two stages are envisaged: initially, the key stakeholders will be convened with support from the project to establish and agree upon a mandate and working plan for the coordination space. Once finalized, the joint working plan will be delivered to the various governmental institutions involved in order to establish the adequate formal structure within the government.

48. **Output 1.3:** Roadmap on end-of-life vehicle (ELV) management, including electric vehicles and their batteries, endorsed by government and key stakeholders. This roadmap will consider ELVs components, with a focus on EVs and their batteries, including the promotion of second-life use. There is limited documented information on current end-of-life vehicle ELV management practices in Lebanon (no information on the rate of vehicles

that are properly disposed or on the vehicle withdrawal rate); as ELV management generates valuable products, it usually is organized on a B2B basis, however without the intervention of producers; this can generate environmental hazards due to inadequate (or lack of treatment) of particular components (e.g., tires, lead batteries or lubricants). As identified at the Social and Environmental Screening, the future management for EVs at their end-of-life raises two challenges in Lebanon: on the one hand, the need to strengthen current waste management chains for ELV, or at least for some components; on the other hand, the need to introduce an adequate management approach for the EV battery. The management of ELVs and their parts, particularly batteries, falls within the mandate of the Ministry of Environment, which will be engaged in the development of the roadmap. The technical recommendations will feed into the national solid waste management strategy of the Ministry of Environment, which builds on Law 80 of 2019 on National Solid Waste Management.

49. In March 2021, UNDP started one project on e-waste management in Lebanon, with the support of the Government of Japan. The project includes analysis of battery recycling management and studies on disposal practices, as well as technical support related to e-waste (see UNDP's co-financing letter). It provides an excellent basis and complement to this output.

50. Although still at its infancy, EV battery management is likely to be organized globally around the use of batteries for energy storage (second life), rather than recycling. Demand for energy storage systems is likely to increase substantially in Lebanon, considering current supply shortages and the strong market forces towards the expansion of a distributed renewable generation system. It is unclear whether the original EV (or battery) producer should be held responsible for the second-life use of its batteries, or whether this can be left to market forces, due to the relatively high value of used batteries. There is however a case to implement an EPR approach, in order to extend the lifespan of batteries as much as possible, as the production of a Lithium battery can emit between 39 kg CO₂e/kWh and 196 kg CO₂e/kWh: finding a new use for EV batteries when they are no longer fit for their original purpose is a smart way to reduce their carbon footprint, before recycling. At the global level, battery recycling is aiming at including some kind of credit system so that manufacturers using recycled materials can claim the associated emissions reduction. The project will align its ELV management guidelines to these global trends and in particular will make use of the lessons learnt from the Global E-mobility Programme, as well as from other UNDP e-mobility projects.

51. In order to address all these issues comprehensively, while focusing on the promotion of second-life battery use, this output will include the following activities:

- Activity 1.3.1: Roadmap on end-of-life vehicle management. Based on the lessons learnt from other UNDP projects and from the Global E-mobility Programme, the roadmap will be drafted through a participatory process and in close coordination with the Ministry of Environment, and will be supported by PMU's advocacy and promotional activities to secure timely approval.
- Activity 1.3.2: Strategic social and environmental assessment (SESA) of the ELV management roadmap.
- Activity 1.3.3: Business models for second life of EV batteries and end-of-life management of EVs. This will require the screening of successful financial and business models on ELV components and second-life battery use, and the subsequent development of commercially viable business models for Lebanon, including cost benefit analysis and estimates of investment needs and financing options.

COMPONENT 2: Short-term barrier removal through e-mobility and other low-carbon demonstrations

52. **Outcome 2:** Demonstrations provide evidence of technical, financial and environmental sustainability to plan for scale-up of low-carbon electric mobility, to encourage modal shift in the northern corridor and to increase coordination of transport, energy and urban planning policies.

53. This outcome addresses the existing technical, financial and environmental barriers. The demonstrations provide technical evidence to subsequently scale-up low-emission mobility and to encourage modal shift in the northern corridor and in the rest of the country. Furthermore, the demonstrations are expected to strengthen the case to undertake improved coordination of transport, energy and urban planning policies during the electrification transition. In the past, plans, projects and policies have been designed to foster sustainable mobility, but their implementation has often been hampered by institutional barriers and financial

constraints, particularly in the last two years. Therefore, the project adopts a bottom-up approach to demonstrations, working directly with a few stakeholders that can immediately implement reforms in their practices. Their experience can have a significant impact and serve as references to other stakeholders and the general public.

54. The three project demonstrations build upon the guidelines developed in Component 1 and provide complementary alternatives to the problems associated to car dominance. They are also consistent with the GoL's long-term plans to improve public transport through the WB's financed Greater Beirut Public Transport Project (GBPTP, see WB's co-financing letter) expected to be completed by 2031, to encourage the efficient use of cars (see MoEW co-financing letter) and to support municipalities in the promotion of alternative modes (see MoIM co-financing letter). The latter is of particular relevance: whereas the promotion of walking and cycling strongly relies in local action, and much can be done without relatively scarce financial resources, municipalities lack technical capacities, guidance and reference models to undertake this. Ironically, lack of action on this front results in limited use of public transport, as the conditions in the walking or cycling trip to and from the bus stop can discourage users, and take them back to cars (a critical challenge for the GBPTP project). The plans included within the current reform agenda are intended to provide adequate response to the current situation in the country. With the same purpose, the WB is considering the redesign of the GBPTP, in order to better align it with the expected increase in the use of public transportation and to better serve users' mobility needs from a door-to-door perspective. In this sense, the demonstration projects will provide data and lessons learnt to improve the design and operations envisaged for the GBPTP, to facilitate transfer from soft modes and to make the most of the contributions that electric drive technologies can provide.
55. Accordingly, the project will provide demonstrations in the areas of public transport services (working with bus operators), car fleet management (working with the national police department (Internal Security Forces, ISF)) and facilitation of door-to-door travel through improved intermodality between non-motorized modes and public transport (working with the municipality of Jbeil, located in the area to be served by the future BRT northern corridor). In the three cases, the contributions of electrification are at the centre of the demonstrations: In the first two cases, the demonstrations include the use of EVs; in the third case, the facilitation of door-to-door mobility will consider the integration of the new opportunities offered by electrification (not only through the electrification of public transport, but also with the expansion of e-bikes and electric devices for micromobility and the facilitation of intermodal transfers, even if these deployments will have to wait until the Lebanese socio-economic context improves), and provide suggestions to adapt streets, bus stops and public spaces accordingly. Through these demonstrations, the project's partners will provide factual evidence of their benefits, and useful implementation lessons to their peers, encouraging them to adopt similar sustainable mobility practices.
56. All the project demonstrations include two levels of stakeholders: core stakeholders, directly involved in the implementation and operation of the demonstration, and followers, participating in the monitoring and of the demonstrations and in the dissemination of results, lessons-learnt and conclusions and in the discussion on follow-up actions. The core stakeholders are the MoIM, the municipality of Jbeil, ISF and the bus operators adopting the GPTS concept and selected for the operation of the electric buses. Of them, MoIM plays a particular critical role, as the project's focal point in the GoL: on top of its role as ministry in charge of ISF, MoIM is expected to facilitate the administrative authorizations for implementing all the demonstrations (e.g. importing and registration of the electric vehicles and associated infrastructure, technical clearance of project's interventions in Jbeil, if needed, etc.). CSOs and research institutions active in the mobility field will be engaged since the design activities of the demonstrations in component 2.
57. Other stakeholders will be engaged as followers. These include other ministries and agencies in the GoL (MoEW, MoE, MTPW, RPTA...), all interested bus operators, institutions and corporations managing large car fleets and municipalities. The engagement activities are described in component 3. Core stakeholders and followers will meet at the e-mobility network established in output 3.1. The network will be regularly informed of the demonstration monitoring activities and results. The dissemination of the demonstrations' results will follow the guidelines of the project dissemination plan developed in output 3.3 (see description of component 3 for details).

58. The public transport demonstration is based on the voluntary implementation of self-certified Green Public Transport Services (GPTS) by a few interested bus operators in some of their services in the northern corridor, and their access to the temporal (3 -6 months, depending on the number of participating bus operators) use of one electric bus. These pilots will allow bus operators to assess the users' response to improvements in the quality of bus services and their associated costs and benefits, as well as to gain direct access and know-how about the EV technology. In this way, these operators will be empowered to adapt to the changing conditions that the northern BRT corridor will bring in the future. Those bus operators not participating in the demonstration will also benefit from these demonstrations, through the project's dissemination activities and knowledge management platform.

Procurement, ownership and operation of the project e-buses

Procurement

Main technical characteristics of the e-buses:

Vehicle length: 12-m, with capacity (seating and standing) for 80 passengers

Maximum motor power: 2x150 kW

Maximum climb gradient: 18%

Battery capacity: 350 kWh

GPS tracking system including information of km travelled, number of passengers.

The availability of e-buses in Lebanon has been confirmed by their manufacturers or by local importers for the brands Yutong, BYD, VDL and Solaris.

The procurement can be made by UNDP (e-buses to be owned by UNDP or to be transferred to a third party) or by a third party.

Ownership

The main difficulties are linked to the financial crisis in Lebanon: the purchase of any e-bus must be paid in advance in USD at a time of extreme volatility of the local currency and capital control mechanisms temporarily in place. Lending by financial institutions has all but disappeared. Under these conditions, the usual contributions to the demonstration of e-buses in other countries become unsuitable for Lebanon: Even if the project provides the difference between the e-bus and a regular bus or if the project provides a generous compensation per veh-km operated with e-buses, there are no bus operators that can envisage to invest in new buses at all.

There are several ownership options: (1) ownership by UNDP, (2) private ownership by the bus operator, (3) private ownership by another for-profit private entity (e.g. the e-bus manufacturer or importer); (4) ownership by a not-for-profit third party (an electric utility, an NGO or a project's responsible party).

Option (1) is feasible in Lebanon. UNDP has already experience in the ownership of GEF's project's assets (Small Decentralized Renewable Energy Power Generation Project), to cope with the political and financial challenges in the country). Under UNDP's ownership, some bus operators, complying with certain minimum requirements and commitments, can make use of the e-buses for a period of time, reporting UNDP about the results and gaining first-hand experience on the advantages of the new technology, facilitating their subsequent transition towards electrification.

Option (2) is not feasible in Lebanon, due to the economic crisis, as bus operators lack financial resources to purchase buses, even if they could subsequently recover part of the investment through the project's payments for operating the e-buses during the project demonstration.

Option (3) is feasible, although extremely difficult, due to the economic crisis, as manufacturers and local importers do not have expectations in the short-term about a demand for new buses (electric or not) in Lebanon, due to the economic crisis. They cannot expect to recover the full investment in buses from the project. After project termination, they would need to sell or lease them to bus operators, but it is uncertain

that they can find an interested partner for doing so. Another challenge is the relationship between the e-bus owner and the e-bus operator, which could interfere with the demonstration.

Option (4) is feasible, although there are no obvious reliable partners. There is no association of bus operators in Lebanon. The government (RTPA or MoIM) or the electricity utility (EDL) do not have the resources and capacities, although this is expected to change by the end of the project. An academic & research partner (e.g. Lebanese American University, LAU) seems a feasible option, but cannot guarantee that the e-buses will continue operating after the project's termination.

Operation

E-bus are operated by regular bus operators, selected through a competitive process, in which certain minimum requirements are set including service quality standards, insurance, provision of the operation permit (red plate). The selection of the operator is made by the bus owner (UNDP, for-profit private entity or not-for-profit private entity).

The e-bus operator must contract full-coverage insurance during the project demonstration. This will reduce the risk of the demonstration being interrupted in case the e-bus gets involved in an accident and needs to be repaired.

The compensation provided by UNDP will take into account insurance costs and other incremental costs incurred by the bus operator (assuming that the e-buses are replacing the operator's regular buses) and will be paid in accordance with the kilometers actually driven by the e-buses during the demonstration.

Contractual arrangements

Depending on bus ownership, different contractual arrangements are possible:

- (1) UNDP ownership. Two contracts are necessary: one for the procurement of the e-buses and one for its operation.
- (2) For-profit third-party ownership. One contract is necessary, for providing the regular e-bus services during the project demonstration.
- (3) Not-for-profit third-party ownership. One contract is necessary, stating the commitments of the third party (including the arrangements for the operations during the demonstration and transferring the funds for purchasing the e-buses).

Ownership transfer at the end of project

This is an issue in the case that the e-buses are procured by UNDP or by a not-for-profit third party. In both cases, the e-buses are expected to be transferred to MoIM or to the Municipality of Jbeil, so that the GoL or local authority can continue lending them to interested bus operators in the country and therefore ensure sustainability. By the time this takes place, it is expected that the financial situation in the country would have stabilized and market incentives would have kick-in to encourage the operation of these buses.

Project's approach

The project's budget, procurement plan and indicative ToR are based on option (1) (UNDP ownership and two contracts). Depending on the conditions at the time of the demonstration design, these elements provide all the information needed to move to options (2) or (3).

59. The selection of the bus operators participating in the demonstration will be established through an open and competitive procedure, based on their technical capacities and experience, their commitment to comply with the terms of the "green public transport service" concept, the economic compensation requested for the kilometers of service provided during the demonstration, and subject to the provision of registered plates and full insurance for the vehicles. Two electric buses will be procured by UNDP, lend to each participating bus operator in the framework of a contract establishing responsibilities and monitoring commitments, and transferred to MoIM (in accordance with the project's results and lessons learnt) at the end of the project. MoIM is committed to make the e-buses available to other interested bus operators and to municipalities interested in using them in their own public transport services as a way to increasing awareness and interest on the use of this technology in public transport.

60. The car fleet demonstration is based on the voluntary implementation by the partner entity (ISF) of the Green Fleet Management (GFM) concept, including issues such as effective and timely car maintenance procedures, prioritization of cleaner and low-carbon vehicles (including EVs) in procurement and fleet renewal plans, staff behavior (e.g., eco-driving), and the inclusion of sustainability indicators (e.g. GHG emissions) in the fleet monitoring dashboard. As a way to gain direct access and know-how on EV technology, the project will transfer up to 4 electric cars to ISF, which will be regularly monitored together with the whole GFM system, during the whole demonstration.

Procurement, ownership and operation of the project e-cars

Procurement

The procurement of 4 electric cars will be made by UNDP with the following technical characteristics:

- Minimum Battery capacity 35 kWh; engine power: 100 kW; GPS tracker and fleet management software.
- The procurement contract includes a 4-year warranty and free-of-charge maintenance for at least 3 years.
- ISF commits itself to keep digital records of each car use, consumption and maintenance requirements, through the GPS tracker and software system provided by the project.
- The procurement includes the provision of a car fleet management software and the provision of 10 GPS trackers (4 for the project cars, 6 for conventional cars in the fleet, to serve as a baseline).

Ownership

The electric cars will be transferred to ISF at the beginning of the project demonstration, and will remain under ISF property after project completion.

Operation

ISF commits itself to make use of each car for at least an average of 1,500 km per month during the project demonstration period.

ISF will provide full-coverage insurance of the four cars during the project demonstration period. A dedicated amount will be allocated in the ISF budget to cover any damage/accident.

61. At the time of preparation of this document, the use of electric cars in this pilot seemed feasible and provided the best option to introduced electric cars in Lebanon. Concerns about the reliability of electricity supply were solved by the fact that ISF enjoys priority service and has reliable electricity generation back up, if necessary. However, if the conditions in Lebanon further deteriorate, the project would procure plug-in hybrid or hybrid electric cars, instead. Both options offer GHG emission reduction potential similar to electric cars, considering the emission factor of electricity generation in Lebanon.

62. The procurement of electric buses and electric cars will be done by the UNDP following a competitive and transparent bidding and selection process. Supplier contracts shall include clauses for performance monitoring, vehicle servicing and training of drivers and maintenance staff from the participating entities (ISF and bus operators).

63. The preparation of the RFP requirements and the subsequent review and assessment of the proposals received for the operation of the e-buses will include a third-party expert to verify that the subsidy provided does not exceed the incremental costs incurred while operating the electric buses (including insurance), compared to the conventional buses of similar performance they are replacing.

64. The demonstration on sustainable door-to-door travel will be based on the previous development of a technical study in Jbeil (benefiting with the on-going work in progress for the preparation of the Urban Master Plan) to establish a comprehensive roadmap for the improvement of walking and cycling accessibility to key bus stops. Modal shift to walking and cycling remains one of the most effective measures for GHG mitigation, and mostly relies on the action of local governments; this is acknowledged in the Urban Master Plan Jbeil is currently

drafting, and the project demonstration will help to further develop this topic in the city (as stated in the co-financing letter provided by this municipality). Walking and cycling often require friendly conditions in the urban spaces (which not necessarily need to result in costly street reconfigurations and public works) pedestrians and cyclists travel through, and the demonstration will serve to test these conditions, based on the guidance provided by Component 1 and best international practice. Finally, there is little chance that public transport can attract current car users without convenient walking and cycling access to bus stops. This makes of this topic an essential contribution of municipalities for the success of the future WB's GBPTP, as it provides the adequate last-mile access to bus stops prior to the expected restructuring of the BRT feeder bus lines and stops that will take place by 2031, once the BRT infrastructure has been completed.

65. The project will select a number (2 to 4) of bus stops to take part in the demonstration. Detailed construction projects will be prepared for these bus stops through a participatory co-creation process, and a monitoring plan will be implemented including number of passengers using the bus stops, the public's awareness, acceptance and satisfaction, safety and security or universal accessibility, among others.
66. **Output 2.1:** Self-certified green public transport services (GPTS) concept developed and implemented in at least one regular bus line in the northern corridor. This output provides the detailed adaptation of the GPTS concept (developed in output 1.1) to the conditions of the bus operators participating in this demonstration. A feasibility study with the participation of the interested bus operators and municipalities in the northern corridor will provide the agreed specifications to be included in the GPTS concept, and the conditions to participate in the pilot. The selection of the participating bus operators will follow, based on an open and competitive process. The project will subsequently provide technical support to the selected bus operators to implement the GPTS specifications in their bus services and to build-up a self-certification procedure with the cooperation of all the participants, so that they can establish adequate internal controls of compliance with the GPTS requirements, and the PMU can receive regular reporting and eventually provide support to improve compliance.
67. This output provides an opportunity to help bus operators to move towards a post-COVID environment. COVID has generally disrupted public transport operators (PTO) around the world, with a collapsing demand following mobility restrictions and raising operating costs to cope with additional sanitation requirements. Mobility patterns under COVID have also shown some opportunities, raising general awareness about the advantages of partial trip avoidance (e.g. through teleworking or teleshopping), increasing the support to car restriction measures and urban space reallocation and the vital role played by public transport. Most PT customers have also become more aware about the relevance of quality of service, including the provision of safe travelling environments. The project will explore, and include within the GPTS, specifications to provide services that will improve the customers' experience and regain their trust in regular bus services. The GPTS concept will also include specifications on service resilience, disruption contingency plans, contactless accessibility (e.g. ticketing), passenger identification, cleaning and sanitation, asset repurposing and a general approach to engage with clients, in accordance with UITP's COVID recommendations³⁰.
68. The academic sector and the CSOs specialising in climate change and transportation will be actively engaged in the promotion of the benefits of the GPTS concepts and in the raising awareness on the improved service delivery. Their network will be used to encourage other bus operators, municipalities and vehicle fleet owners (including in their own academic circles and in the private sector) to expand users and promote the benefits of e-mobility. The establishment of the GPTS certification procedure will be promoted by the CSOs, NGOs and academic sector and the most suitable national body to establish the procedures will be identified and engaged.
69. This output will include the following activities:
- Activity 2.1.1: Feasibility study on the green public transport service concept to implement them in the bus operators in Lebanon. Following the guidelines established in output 1.1, this exploratory activity identifies the

³⁰ UITP (2020). The Future of Mobility post-COVID: Turning the crisis into an opportunity to accelerate towards more sustainable, resilient and human-centric urban mobility systems.

concrete key performance indicators, targets, and internal control mechanisms to establish for the participating bus operators.

- Activity 2.1.2: Participating bus companies and services (existing bus lines) selected, and GPTS operational, monitored and evaluated. The selection of the participating bus companies will include a private sector risk analysis. A SESP will be undertaken so that the full range of the environmental and social risks are assessed and management measures are developed prior to the implementation of the GPTS concept. Prior to commencing bus services under GPTS, a Code of Conduct reflecting SES requirements will be prepared for the project so that all bus drivers abide by them. Training will be offered to participating individuals (activity 3.4.4) to ensure they are aware of their responsibilities.
- Activity 2.1.3: GPTS certification procedure established.

70. **Output 2.2:** Green fleet management (GFM) concept (including EVs) implemented in one governmental fleet. This output provides the detailed adaptation of the GFM concept (developed in output 1.1.) to the conditions of the demonstration. As, during the project design stage, ISF has been identified as a suitable institution to undertake the pilot, the GFM concept will be adapted to its particular conditions. However, the feasibility study will be open to the participation of other interested public and private fleet managers. As ISF manages a large car fleet, with different models, the project will need to identify which part of the fleet is suitable to undertake the pilot (including the replacement of 4 units by electric cars, see output 2.5). The project will subsequently provide technical support to ISF to implement the GFM specifications in the demonstration fleet.

71. Given that the ISF has confirmed its willingness to share data from the demonstration of the use of electric vehicle and its own fleet management, the project team as well as the academic and NGO sectors will work on data monitoring, analysis and impact assessment of the GFM concept so that lessons learnt and benefits are promoted in other governmental and/or private fleet operators such as taxi service company, delivery and postal service providers and other similar structures. The technical assessments and analysis will then be translated into policy recommendations that would be provided to the government to strengthen the case for the e-mobility strategy and replication of these practices.

72. This output will include the following activities:

- Activity 2.2.1: Planning and implementation of the green fleet management concept in ISF. This activity adapts and implements the GFM concept designed in component 1 to the particular conditions of ISF. It includes the preparation of a GFM implementation roadmap for ISF and capacity-building on ecodriving training and fleet management to the relevant staff. This activity also establishes the monitoring and evaluation framework to be implemented in activities 2.2.2 and 2.5.3.
- Activity 2.2.2: Pilot fleet selected within ISF, and GFM operational, monitored and evaluated. A SESP will be undertaken so that the full range of the environmental and social risks are assessed and management measures are developed prior to the implementation of the GFM concept. Prior to commencing operation of the vehicle fleet, a Code of Conduct reflecting SES requirements will be prepared for the project so that all users of the vehicles abide by them. Training will be offered to participating individuals (activity 3.4.4) to ensure they are aware of their responsibilities. Monitoring data are collected by ISF following the procedures indicated in the evaluation framework provided by activity 2.2.1, including weekly reporting for each vehicle in the selected pilot fleet of mileage, drivers, fuel consumption, maintenance operations and incidents.

73. **Output 2.3:** Non-motorized accessibility (including electric micromobility) to public transport improved in at least one municipality. This output provides the demonstration of a variety of design options to facilitate the walking or cycling access to bus stops. The walking or cycling stage is often the weak link in the multimodal door-to-door trip, reducing the appeal of public transport and hampering the mobility of its users, especially women and other vulnerable groups. As electric drive technologies provide new alternatives (e.g. e-bikes and micromobility devices), which attract additional users, including vulnerable ones, there is a need for alternative designs with a more adequate distribution of the space and safer conditions for pedestrians, cyclists and users of electric devices to reach at least the main bus stops. These designs will be materialized around and inside the bus stops, including adequate width, pavement design and conditions, continuity of

itineraries, protection and priority from general traffic and commodities at the bus stops. During the project design stage, the municipality of Jbeil was identified as an optimal partner for this demonstration. Jbeil is currently revising its master plan, is located within the future northern BRT corridor, has a substantial commuting flow with Beirut and has previous experiences in the implementation of sustainable mobility measures. The project will assess the accessibility conditions to bus stops and the profile of their current and potential users, and will develop design options to increase their accessibility and convenience. Subsequently, the project will implement the recommended improvements in 2 to 4 bus stops, through a co-creation design process involving bus users and residents ensuring the involvement of women and other vulnerable groups, and the project will monitor and assess the accessibility gains obtained for different user profiles. The location of the main bus stops in Jbeil is presented in the Figure below.

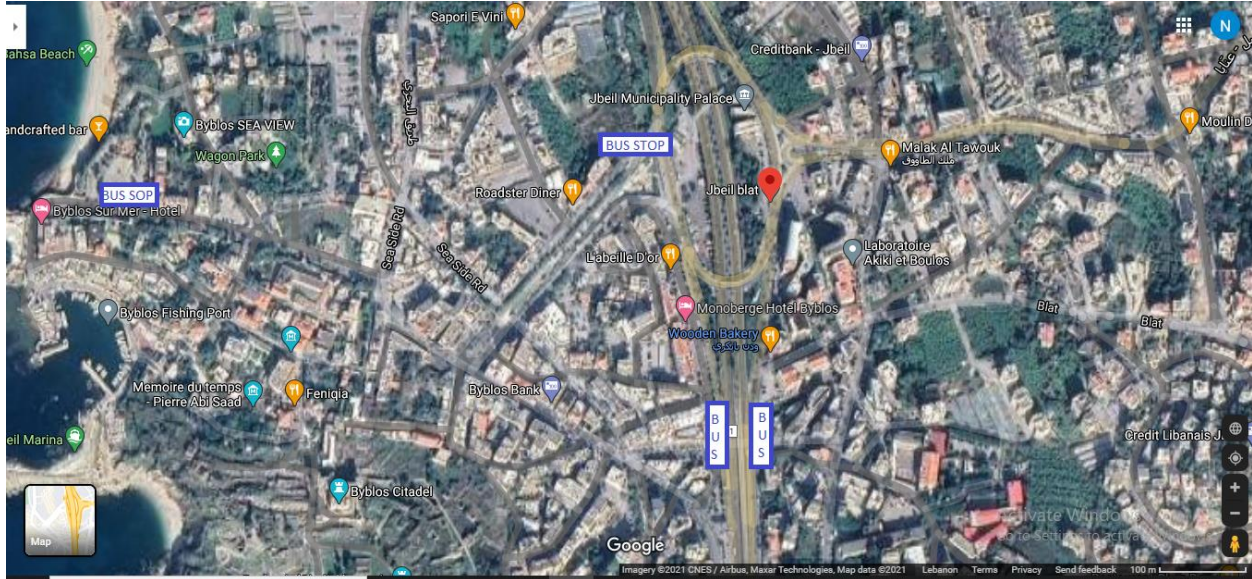


Figure 6: Location of the main bus stops in Jbeil

74. Given the increased focus on decentralization and local-level service provision in Lebanon as a means to overcome the shortcomings in central government financing challenges and management, municipalities are taking on increased responsibilities for local and regional solutions to meet the needs of their constituents. This is backed by the reform agendas that encourage such engagement within the larger national plans and so it is expected that other municipalities in the area would be keen to replicate this project's interventions once the demonstration provide evidence of its potential and benefits. During the project design, other municipalities such as Tripoli and Zahle already showed interest. The project will use the information gathered and the technical lessons learnt to encourage to replicate the intervention elsewhere through the network and dissemination activities envisaged in component 3. The MoIM plays a relevant role, serving as the focal point of the GoL in its relations with municipalities and contributing with its own channels to disseminate best practices at the local level.

75. This output will include the following activities:

- Activity 2.3.1. Accessibility criteria and conditions defined and pilot sites selected. In accordance with SESP and ESMF, the selection of the pilot sites will take into consideration their resilience to extreme weather events and changes in climate, building upon the municipal services' experience.
- Activity 2.3.2. Detailed construction plans developed (including ESMP), implemented and monitored in the pilot sites.
- Activity 2.3.3. Report on results, lessons learnt and replication options.

76. **Output 2.4:** The viability of the use of electric buses in certified green public transport services is demonstrated and assessed in the northern corridor with 2 electric buses. This output builds upon the results of output 2.1

Jbeil bus depot

The project e-buses will be operated from the main Jbeil bus depot, located close to the Municipality Palace (diamond shape in the figure below). The project will install fast charging infrastructure in the area north of the Municipality Palace (rectangle shape in the figure below), connected to solar panels and an electricity storage unit. Charging from the electricity grid will also be possible (See Annex 13 for technical details of the charging infrastructure). The solar panels will be installed on the roof of the Municipality Palace (rectangle shape in the figure below). The Municipality Palace consists of three buildings with an available space of more than 1,000 m².

E-buses are expected to operate in the northern corridor during peak hours, and to recharge during off-peak periods and at night.

The charging infrastructure envisaged includes:

- One fast-charger (between 500 and 850VDC) providing DC power, able to fully load 2 e-buses with lithium battery with capacity of at least 350 kWh in less than 6 hours), connected to the electricity grid and to a PV system.
- Provision and installation of the PV system with capacity of 100kWp to feed the charger.
- Free-of charge provision of maintenance and technical service during at least four years.

in order to facilitate the transition of bus operators towards the use of electric buses. The current economic conditions in Lebanon make all but impossible to invest in new buses (electric or not). Furthermore, current instabilities in the electricity supply market add uncertainty about the feasibility of the e-bus technology in Lebanon. Therefore, this output will facilitate a trial access to e-buses to interested bus operators (all those participating in output 2.1 and implementing the GPTS concept), so that they can gain first-hand experience in its operation and performance. UNDP will procure two e-buses and will lend them to the participating bus operators for a 3-to-6 month trial. The procurement process will serve to assess the consistency of the supply and maintenance services in Lebanon (car dealers and importers, maintenance know-how, spare parts...), and to develop recommendations to strengthen it. Consumption, mileage and other parameters of the e-bus operation will be regularly tracked and results will be made publicly available. Charging equipment, including solar panels and energy storage, will be installed in a bus depot in Jbeil. In this way, different charging (charging from grid, generated electricity sent to the grid, generated electricity storage to charge the e-bus) and bus exploitation (early morning and late evening services, charging during the mid-day, long-distance or short-distance lines to be served..) strategies can be tested. As a result of this output bus operators will be in a much better position to make well-informed decisions, once the economic conditions in the country allow them to undertake the renewal of their fleets. At the end of the project, the e-buses will be transferred to the MoIM.

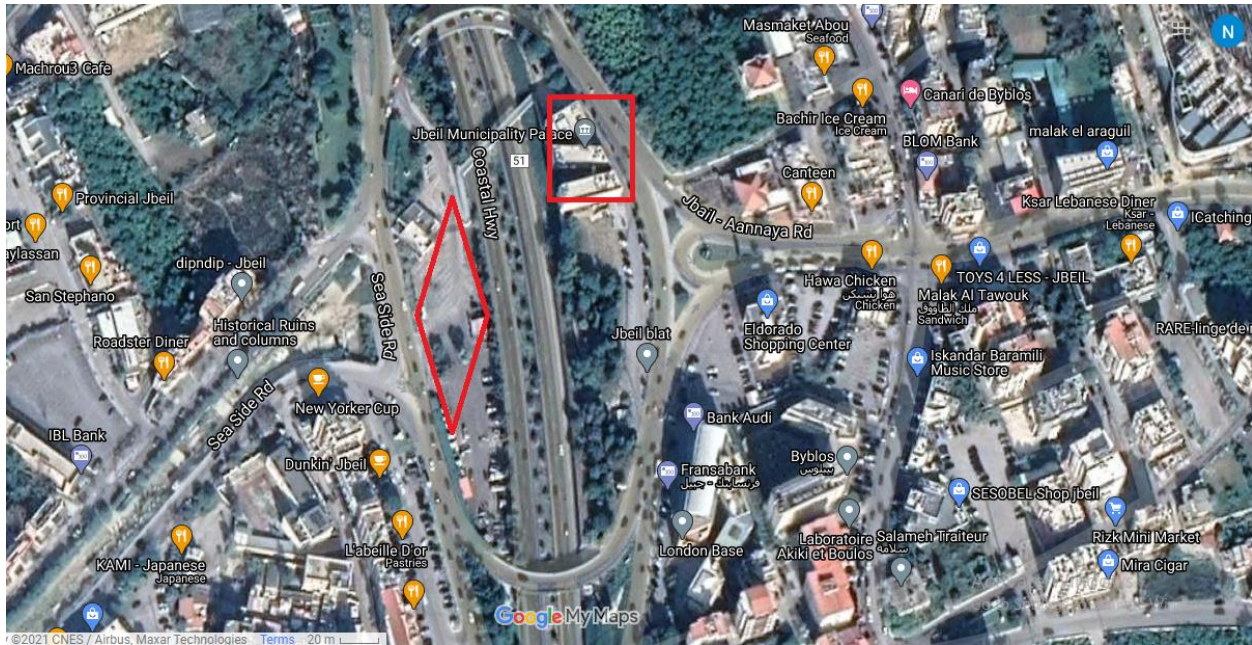


Figure 7: Location of the bus depot in Jbeil

77. This output will include the following activities:

- Activity 2.4.1: Defining specifications for an e-bus compatible to the local environment and needs and the procurement of two e-buses and their operation.
- Activity 2.4.2: Design, procurement and installation at the bus depot in Jbeil of charging infrastructure based on renewable energy.
- Activity 2.4.3: Operation, monitoring and reporting of e-buses, including, lessons learnt and replication options. This activity includes the competitive selection of the bus operators that will use the project's e-buses during the demonstration, and the regular reporting of the demonstration results during the first year of operation (project year 4), as well as follow-up report for the second year of operation (year 5). The regular reporting follows the monitoring framework provided in output 2.1 and is based on weekly information provided by the bus operators on distance transport (on-route and off-route, passengers, drivers, electricity consumption, maintenance and incidents). The evaluation of the demonstration will include an integrated lifecycle analysis of the e-buses, including infrastructure, resource scarcities and recycling.

78. Output 2.5. The viability of electric cars in corporate fleets under green fleet management is demonstrated and assessed with 4 electric cars. This output provides 4 electric cars to ISF³¹, which will be included in the fleet included in the GFM concept implemented in output 2.2. These cars will be procured by the project and transferred to ISF. The procurement process will serve to assess the consistency of the supply and maintenance services in Lebanon (car dealers and importers, maintenance know-how, spare parts...), and to develop recommendations to strengthen it. The project will provide ISF with guidelines on maintenance needs, routing characteristics and other related operational issues to optimize the information gathered from the demonstration. GPS tracking of the vehicles will provide data on mileage, consumption and other performance indicators, which will be publicly available to provide public and private car fleet managers in Lebanon with valuable information to support their fleet renewal options, once the economic conditions in the country

³¹ If the conditions in Lebanon further deteriorate, the project would procure plug-in hybrid or hybrid electric cars, instead. Both options offer GHG emission reduction potential similar to electric cars, considering the emission factor of electricity generation in Lebanon.

improve. The evaluation of the demonstration will include an integrated lifecycle analysis of the EVs, including infrastructure, resource scarcities and recycling.

79. This output will include the following activities:

- Activity 2.5.1: Procurement of 4 e-cars and slow electric car chargers (domestic wall plug chargers).
- Activity 2.5.2: Guidelines to ISF for the operation of the cars, including routing selection and maintenance.
- Activity 2.5.3: Report on results, lessons learnt and replication options.

COMPONENT 3: Knowledge management, capacity development and awareness raising.

80. **Outcome 3:** Sustainable low emissions transport programs widely supported.

81. This outcome addresses the cultural barriers and provide the necessary support to up-scale the demonstrations results and to build up the framework for the sustainability of the project results, so that sustainable low-emission transport programs receive wide support and, consequently, substantial changes in mobility practices and modal shift materialize.

82. **Output 3.1:** Networking mechanism established among agencies and stakeholders involved in sustainable low emissions transport systems to accelerate the implementation of the e-mobility strategy, the adoption of GPTS and GFM by corporations and public bodies and sustainable mobility policies by the GoL. UNDP will establish this networking mechanism, which supports the project's bottom-up approach with an open structure gathering together all stakeholders interested in electrification and sustainable mobility, raising public awareness and lobbying the national government. The network will liaise with the Sustainable and Electrified Mobility Subcommittee envisaged in output 1.2 to provide advice and support to operationalize the targets set up in Lebanon's updated NDC. UNDP's current role in Lebanon in climate mitigation policies and its strong involvement with international and local partners in the national climate reform agenda provide an excellent position to build-up and expand such a network. The open character of the network- like similar initiatives in other countries³²- provides excellent complementarity with the institutional subcommittee established in output 1.2. It also provides the necessary structure to disseminate the project's results and lessons learnt, discuss monitoring results and undertake the capacity building activities envisaged within this component.

83. This output will include the following activities:

- Activity 3.1.1. Convene and carry out periodic meetings with all key stakeholders participating in the network.
- Activity 3.1.2. Provide technical support to establish the mandate, structure, governance and working plan for the network.

84. **Output 3.2:** Coordination with the "Global Programme to Support Countries with the Shift to Electric Mobility" (participation at thematic working groups and at the Support and Investment Platform).

85. This output will include the following activities:

- Activity 3.2.1. Participation in UNEP-led Global E-mobility Programme working groups and activities and participation and benefit from the Regional Support and Investment Platform to be established under the Global E-mobility Programme.
- Activity 3.2.2. Report on lessons learnt from the UNEP-led Global E-mobility Programme and adaptation to the Lebanese context.
- Activity 3.2.3. Exit project strategy for the deployment of e-mobility in Lebanon.

86. **Output 3.3:** Sustainable mobility communication and public awareness campaigns implemented, based on project results and focusing on mobility behavior (including road safety), and low-emission transport (including EVs, public transport, walking and cycling). These activities will integrate a gender-sensitive approach, in accordance with the guidance provided in the Gender Action Plan, With the newly collected data and e-

³² E.g. the Platform for Electromobility in the European Union or the "AEDIVE" platforms in Peru and Spain.

mobility information available, the project will make linkages with the reform agendas and the national context (financial, socio-economic and development needs) to design focused communication strategies that promote e-mobility and other low-carbon transportation options. Awareness raising on e-mobility will be integrated into the climate communication and other development strategies.

87. This output will include the following activities:

- Activity 3.3.1. Project communication plan, including monitoring and evaluation. The communication plan is expected to identify the different target groups for the project's dissemination activities and identify the adequate communication channels, key messages, materials and activities, with detailed timelines, milestones and key performance indicators. The design of the communication plan will be open to the contributions of the participants in the networking mechanism, and in particular of the CSOs active in the mobility field.
- Activity 3.3.2. Implementation of campaigns targeting general users.
- Activity 3.3.3. Supporting materials and workshops targeting transport companies and professionals.

88. **Output 3.4:** Capacity of municipal planners and public transport managers built for the promotion of low-emission transport (including non-motorized transport and carpooling), traffic control and management (e.g., parking management, vehicle-use control). Following the project's gender action plan, capacity-building activities will facilitate female participation, including future professionals (e.g., female university students in the relevant fields).

89. This output will include the following activities:

- Activity 3.4.1: Supporting training and awareness-raising materials targeting municipal planners and decision-makers.
- Activity 3.4.2: Training workshops
- Activity 3.4.3: Support to a networking platform on sustainable mobility and electrification
- Activity 3.4.4: Train-the-trainer workshops on charging infrastructure, and EV and hybrid vehicle maintenance and driving. This activity facilitates access to the new job opportunities provided by e-mobility and builds upon the materials and services provided by UNEP-led Global E-mobility Programme.

COMPONENT 4: Monitoring & Evaluation

90. **Outcome 4:** The project monitoring and evaluation plan is implemented.

91. Under this component, all the project's monitoring and evaluation activities are undertaken. Results from monitoring and evaluation activities will be regularly shared with the E-mobility Global Programme to support knowledge management activities at the global and regional levels.

92. **Output 4.1:** The project monitoring and evaluation plan and knowledge-management strategy are designed and implemented.

93. The project monitoring and evaluation plan is outlined in Annex 4, and the monitoring and evaluation budget is presented in Section VI. This plan will be revised and updated during the inception workshop and will ensure the regular reporting on the project's indicators established in the PRF.

94. The project knowledge management (KM) strategy is outlined in the knowledge management section of this document, including liaison with the Global Programme. This strategy will be revised and updated during the inception workshop and will ensure the regular exploitation and dissemination of the materials developed under the other project components, including training and dissemination materials, policy and technical recommendations and technical tools.

95. This output will include the following activities:

- Activity 4.1.1: M&E plan designed and implemented.
- Activity 4.1.2: Mid-term evaluation completed.
- Activity 4.1.3: Terminal evaluation completed.

- Activity 4.1.4: Project monitoring platform and development & compilation of KM products.
- Activity 4.1.5: Monitoring of social and environmental safeguards management measures, stakeholder engagement activities and gender action plan.

Partnerships:

96. The project intends to build upon the activities already initiated in Lebanon to revitalize public transport, to expand the share of renewables in energy generation and with the reconstruction strategies adopted after the August 4th 2020 blast. Stakeholders participating in these projects will be invited to the inception workshop and to the e-mobility network to be set up in component 3; more details are provided in Annex 8 (Stakeholder Engagement Plan). The following initiatives are currently active in the related areas:
97. With the Support of the EU, the MPWT developed a National Integrated Strategy for Public Transport in Lebanon (MPWT & EU, 2016). The Strategy envisaged the purchase of 250 buses circulating on 20 routes, the erection of 911 new bus stops (310 in Municipal Beirut), and the establishment of an innovative ticketing system and the design of dedicated/priority bus lanes on main roads. The project is aligned with this approach, and envisages to integrate the electrification transition within this broader strategy to recover public transport in Lebanon, which has not been implemented until now due to the difficult environment in the country.
98. Institutional Support to the RPTA. This was a UNDP managed project providing support to the Railways and Public Transport Authority (RPTA) and concluded in 2019. It built capacities and speeded-up cooperation with RPTA, the government's agency supervising public transport services in the country. The project provided RPTA with a strategy to enhance its work and with a reform plan and roadmap, aiming at updating the institutional and technical structural abilities of the RPTA and strengthening the public transportation sector in Lebanon.
99. Greater Beirut Public Transport Project (GBPTP) or Bus Rapid Transit (BRT) project. In 2018, a USD 295 million concessional finance package was agreed by the World Bank with the Government of Lebanon³³ to implement a comprehensive national public transport program, including a BRT network of three trunk BRT lines in the center of the highways providing the Northern, Southern, and Eastern accesses to Beirut. It also envisages BRT lines extending within Beirut to connect the three trunk lines, improving connectivity between Beirut and the regions as well as within Beirut. The BRT network will be complemented by some 20 lines of feeder buses as well as investments to improve access to the system (bus stops, sidewalks, park and ride facilities). The program will be executed in three phases/stages with phase one being a BRT on the Northern Highway and on the outer ring road of Beirut with complementary feeder lines/buses. January 2022 was the initial date envisaged for ground-breaking, but the challenging situation and Lebanon has delayed the start of the implementation of the project and is likely to request some restructuring. Once works start, the infrastructure construction could take at least 2 years, but soft-measures (e.g. the restructuring of current bus lines into feeder lines) could be implemented in advance. The WB remains committed in support the transport sector in the country, as it is essential for its economic recovery (see WB's co-financing letter). There have been also feasibility studies on the renewal of the bus fleet for the new services, including hybrid and electric technologies. Therefore, this project can be seen as a useful preparatory pilot for the GBPTP.
100. The CDR (Council for Development and Reconstruction) is responsible for executing all project-related infrastructure (e.g., roadworks, bridges, stations, and land acquisition) and procurements. The Railway and Public Transport Agency (RPTA) is in charge of oversight of the private operators that will undertake the system operation and maintenance of the system. The CDR will lead the selections of the operators in close collaboration with the RPTA and will transfer contract management to the RPTA. While feeder/regular buses will be fully financed by the Government, BRT fleets will be co-financed by the private operators. At the completion of the BRT project, expected by 2031 (therefore outside the scope of what the project will deliver), the BRT network is expected to attract about 300,000 passengers per day and halve the commuting time between Beirut and its northern suburbs by public transport.

³³ Council of Ministers Decision 66, 2018/5/16.

101. Sustainable Urban Public Transport (Bus) Investment Program in Greater Tripoli. Tripoli is the second largest city in Lebanon and located at 85 km northeast of the capital Beirut. With the support of European Investment Bank (EIB), RPTA and Ministry of Public works and Transport (MoPWT) has initiated the development of detailed design of construction of Tripoli bus network and its terminals and tender documents. The program will update the transport strategy and its implementation plan. The new bus network will have an integrated tariff and ticketing system with reform of concessionary fares and subsidy system. In addition, Tripoli Transport Authority (TTA) will be created under RPTA by reorganizing the transport sector in Tripoli. On a later stage following the project appraisal, the Bank is willing to provide his financial support to the Lebanese government for (a) the construction of the intermodal public transport hubs (new bus terminal) as Bahsass Transport Center; (b) acquisition of new buses and (b) implementation ITS systems (traffic management, passenger information system, priority of public transport on the roads).
102. The municipality of Jbeil has undertaken the preparation of a new Master Plan, with the support of Dr. Tony Lahoud from the Lebanese American University. It is envisaged to be concluded and subsequently approved by the Municipality Council by 2024. The Master Plan provides a vision for 2040 including the objectives to preserve and enhance the historical architectural urban infrastructure of the old city of Byblos and to integrate it with the social economical activities of the urban city. In the urban mobility sector, the Master Plan calls for the promotion of sustainable mobility through enhancing non-motorized transportation systems by integrating intelligent transportation tools and encouraging pedestrian activities.
103. In addition, the project will liaise with the UNEP-led Global E-mobility Programme in order to participate in the global working groups and to network with similar projects in other countries. This is expected to maximize the impact of the incremental financing provided by GEFTF, through the optimization of capacity building and knowledge management activities, guidance on EV procurement, provision of generic tools for business and financial modelling, etc.
104. Risks: The project analysis has identified seventeen risks for the achievement of the intended results, as described in Annex 7. They include environmental, financial, political, cultural and health risks. All of them are rated as moderate or low, which is consistent with the project's bottom-up strategy, not focusing on changes in the institutional and regulatory framework that would have required political will and action that is not possible today in Lebanon. Similarly, demonstrations are providing enabling conditions without requiring strong investments that are unlikely to be feasible in the current economic context.
105. The mitigation measures for the risks mentioned above (and others) build upon the already substantial experience of the UNDP country office (including several projects in the energy sector), the support of the e-mob global programme and the experience and engagement of private and civil society stakeholders and the municipality of Jbeil in mobility issues. These projects and initiatives have been successful in building and widening social and political consensus on sustainable mobility, on which the project will build up.
106. Furthermore, the project is including activities addressing these risks: for example, the project is integrating gender, climate change adaptation or COVID challenges within its deliverables, and develops awareness-raising and networking activities to gain broader consensus around its proposed sustainable mobility policies as a way to facilitate their perception by the national government as non-controversial measures with low political risk.
107. Covid risk analysis
108. On February 21, 2020, the first case of Covid-19 was identified in Lebanon. The Lebanese government initiated a National Committee for Covid-19 (NCC) to oversee national preparedness and response through a public-private partnership with the Ministry of Health and other ministries to manage the implementation. On March 15, Lebanon declared a state of "public health emergency" and announced full mobilization to combat the Covid-19. The transport sector was called to comply with the mobilization guidelines and the government announced two-weeks closure of Beirut Airport, seaports, and land entrances to begin on March 18. Starting March 26, Lebanon imposed a partial curfew from 7 p.m. to 5 a.m. On April 9, the government extended the national lockdown for an additional two weeks. On May 5, the government extended the lockdown by including more measures: national travel bans and overnight curfew. During this period, vehicles are only

permitted on the road on an odd/even license plate system with no vehicles allowed on Sundays. A limit of three passengers in one vehicle, including the driver, was enforced and all citizens and residents over the age of 65 were required to remain at home. On May 13, a full lockdown was enforced till May 18. On August 18, another two-weeks lockdown was enforced. After this period, a partial lockdown was enforced on a weekly basis for municipalities and villages with high rate of infected cases while maintaining a nationwide curfew from 9 p.m. to 5 a.m.

109. On January 14, 2021, with more than 5,000 daily confirmed cases and a total 230,000 confirmed reported cases, Lebanon went into a full and a tight national lockdown with full restriction for vehicles and pedestrians. The full lockdown is extended till February 8, 2021.

110. On January 21, 2021, the World Bank approved a reallocation of USD \$34 million under the "Lebanon Health Resilience Project" to support vaccines for Lebanon. The financing will provide vacancies for over 2 million residents starting February 2021.

111. The project risk associated to the COVID-19 pandemic has been included. The eventual implementation of lockdown and social distancing measures is expected to have a low impact on the project, as its activities can be undertaken under mobility-restricted conditions. In fact, the deterioration of economic and social conditions due to the pandemic has highlighted the critical importance of urban mobility and increased the attention of governments and key stakeholders to safe mobility. Urban mobility demand has decreased, and non-collective transport modes (walking, cycling and private transport) have been perceived as safer by many users. In most countries, public transport authorities and operators have reacted by establishing safety protocols, and the critical importance for cities of safe urban public transport systems has become even more relevant. The project provides additional arguments for the use of PT, based on higher quality and safer door-to-door mobility. The demonstrations are expected to include innovative protocols for a safe trip by the bus operators and car fleets participating in the project, but their ability to reach the expected number of beneficiaries will largely rely on gaining the trust of their users.

112. In the identification of the mitigation measures on Covid-19 risks, the following aspects were considered:

- Availability of Technical Expertise and Capacity and Changes in Timelines
 - Government capacity as human resources are mobilized elsewhere;
 - Change in capacity of other executing entities and the effectiveness of the overall project implementation arrangement;
 - Limited capacity and experience for remote work and online interactions as well as limited remote data and information access and processing capacities that projects will need to strengthen
 - Changes in project implementation timelines;
 - Changes in baseline;
 - Changes in conditions of beneficiaries;
- Stakeholder Engagement Process: Mobility and stakeholder engagement, including risk mitigation measures for both project staff and stakeholders.
- Enabling Environment
 - Government focus on environment during crisis;
 - Government priorities during COVID-19 response.
- Financing : Co-financing availability and price increase in procurement.

113. This analysis has also identified the emergence of some opportunities, associated to the COVID-19 pandemic, to advance towards sustainable, low-carbon urban mobility³⁴. Surprisingly, most of these opportunities are independent of the particular contextual and socio-economic conditions of the cities considered.

³⁴ Basu (2021): Basu, R. and J. Ferreira (2021). "Sustainable mobility in auto-dominated Metro Boston: Challenges and opportunities post-COVID-19." *Transport Policy*. 103: 197-210.
 Fatmi, M. R. (2020). "COVID-19 impact on urban mobility." *Journal of Urban Management*. 9(3): 270-275.

114. First, the pandemic has exposed how a good number of city dwellers can reduce their mobility needs through teleworking and teleshopping. Interestingly, these are largely that part of the urban population with higher income, more prone to use private cars and more influential in local decision-making: people that in many cases oppose car restrictions. The conclusion could be that in fact, citizens with this profile have now realize that they can easily adapt to car-restrictions, and have now abandoned their traditional opposition to sustainable mobility policies.
115. Second, the COVID pandemic provides a stronger case to improve public transport quality and dedicate the necessary public resources to it. There is now a stronger case for public subsidies and adequate control of service conditions in public transport. Many passengers have deserted public transport due to concerns of lack of adequate social distance, and contagion risks; they have exposed the poor conditions of public transport rides in many cities and the need to dedicate public resources to provide a safe environment. Public transport is facing a strong fiscal challenge and governments will need to offer financially sustainable solutions, dedicating more resources to sustain and also to control the quality of the services provided.
116. Third, walking and cycling have gained visibility as safe and healthy modes, and have receive more attention- and more public space- by many local authorities.
117. Together, the increased public's awareness and acceptance - to implement more restrictions to private car use, to dedicate more public resources to improve the quality and safety of public transport services and to give priority and more space to walking and cycling- provide unique opportunities to local and national decision-makers to accelerate the transition towards sustainable, low carbon mobility.
118. Climate risk screening.
119. Climate hazards. Climate hazards. In accordance with the Third National Communication to UNFCCC (2016), Lebanon is a country with ecosystems particularly vulnerable to climate change. Analysis of climatic records of Lebanon with future emissions trajectories indicates that the expected warming in Lebanon has no precedent. Climate projections show an increase of temperature, and a decrease in precipitation of with drier conditions. Projections also show increasing trends of warming, with additional days with maximum daily temperature higher than 35°C and an increase in number of consecutive dry days when precipitation is less than 1.0 mm. This combination of significantly less wet and substantially warmer conditions will result in hotter and drier climate. Impacts of climate change in Lebanon climatic changes are expected to have diverse implications on Lebanon's environment, economy, and social structure. Extreme weather events can have adverse impacts on public health, human settlements, transport infrastructure, agriculture production, power supply and the economy at large. The fragile biodiversity, ecosystems, and natural habitats will be threatened by increased forest fires, pest outbreaks and sea level rise. Climate change impacts are: less snow, less water availability, increase drought period, less agriculture productivity, higher energy demand, sea level rise, forests at risk, increased mortality and morbidity, and damaged infrastructure. Based on the 2015 National Strategy on Climate Change, Lebanon has developed climate scenarios to reduce GHG emissions by 15% by 2030 as an unconditional target and by 30% as a conditional one. Emissions reduction will emanate from the implementation of various strategies and policies related to the main sources of greenhouse gas emissions in Lebanon. A 22% GHG reduction in 2030 is estimated to be delivered by 13 key projects actions: 8 energy, 3 transport, 1 irrigation, and 1 waste.
120. Vulnerability and exposure. The project's vulnerability to climate change is related to the disruption in the operation of EVs due to their inability to be recharged. This vulnerability may come from (a) disruption in electricity supply or (b) lack of access or disruption of the charging infrastructure. According to the third National Communication, increasing resilience includes improving energy-use efficiency of transportation systems and developing energy-supply systems that are less vulnerable to the disruptions of extreme weather events, higher average temperatures, and other aspects of climate change. The national energy policy³⁵ is reducing this vulnerability through the expansion of renewables and distributed generation, as well as with improvements in the integrated distribution grid; the future availability of charging infrastructure relies on the

³⁵ MoEW & LCEC (2016), The National Renewable Energy Action Plan for the Republic of Lebanon (NREAP) 2016-2020.

adequate deployment of the network, for which the project will contribute through the preparation of the e-mobility strategy. The exposure of the project to changes in climate is low, due to the fact that the electricity network in Lebanon, especially in Beirut and Byblos, is highly integrated, the availability of charging infrastructure is already growing, and the primary charging points for the fleets targeted by the project will be located in Beirut and Byblos, with lower exposure to the effects of climate events.

121. The probability of occurrence of climate events can be rated as moderate, considering the vulnerability of Lebanon, and the impact of such events on the project can be rated as low, considering the likelihood of major electricity disruptions in Beirut and Byblos, the expected location of the charging stations, the availability of alternative charging ports in both cities, and the quick response capacity, through the installation of alternative charging points. This risk is accordingly rated as low.
122. The adaptation measures considered in the project include the preparation of the national e-mobility strategy and the study of the charging networks in Beirut and on the northern corridor, in which the resilience of the system will be integrated; during the preparation of the pilots, contingency plans will be prepared to make it possible to recharge the EVs in case of disruption or failure of the project's charging points and to provide quick recovery of these points.
123. Mitigation measures on Climate Change Adaptations risks. The exposure of the project's outputs to changes in climate have been assessed during project design (see risk #8 in Annex 7 and the additional information on climate screening in the same section), and the project has built resilience within the design of activities xxx in accordance with the relevant guidance in the National Adaptation Plan.
124. Vulnerability and exposure. One of the project's key vulnerabilities to climate change is related to the disruption in the transport infrastructure provided. This is relevant for EV charging equipment and also for the newly designed walking/ cycling accesses to bus stops. For example, changes in climate can result in disruptions in electricity supply (which is already a problem in Lebanon); furthermore, the access of EVs to charging infrastructure could be hampered in future by the effects of extreme weather events. The latter can be mitigated by including a vulnerability analysis of the locations selected to charge the EVs during the demonstration, and through the integration of a climate change adaptation analysis within the national e-mobility strategy. A similar analysis can be included in the selection and design of the walking accessibility improvements to bus stops.
125. The probability of occurrence of climate events can be rated as moderate, considering the vulnerability of Lebanon, and the impact of such events on the project can be rated as high considering the likelihood of major electricity disruptions in Lebanon, even if the location of the charging stations is thoroughly chosen. For this reason, the project is including self-generation and storage of energy from solar cells.

Stakeholder engagement and south-south cooperation:

126. The stakeholder engagement plan is attached as Annex 9. The plan includes all relevant stakeholders: national and local government services, public transport operators, the public electricity utility, EV providers, academia and civil society, as well as vulnerable groups.
127. During the project design stage, the process of identifying the private sector actors that are co-financiers of the project consisted of two stages. First, an initial mapping was carried out by UNDP, based on the contacts established during the preparation of the PIF. Second, the project design team verified the capacities of the actors identified through bilateral meetings and interviews, as well as during the validation workshop. The following main elements were relevant in the selection of stakeholders:
- Identification of actors that could benefit and be disadvantaged with the development of project's activities.
 - Level of knowledge / information that the actors have on electric vehicles a sustainable mobility.
 - Previous collaboration among actors and their stated level of interest in the project.
 - The likely benefits the project could deliver for each actor.

128. The engagement plan envisages initial consultations with stakeholders since the first months and during implementation, information disclosure through public reports, website and publications, as required, and periodic reporting. Engagement activities aim at increasing the involvement of key partners (national and local governments, public transport stakeholders, vulnerable groups, the electricity sector) during all project activities, and particularly during the demonstrations. They also aim at providing a collaborative space for the preparation of strategic planning, regulatory proposals and voluntary agreements. Finally, the engagement plan also intends to give voice to vulnerable groups and to integrate their mobility needs during the demonstrations, scaling-up and replications after project conclusion.
129. The engagement tools are based on different meetings: regular (quarterly or annual) meetings for project implementation and *ad hoc* meetings with particular stakeholders, as project activities are deployed. The project includes training activities and awareness-raising workshops to further facilitate the engagement of stakeholders.
130. Resources for stakeholder engagement activities are included within design and awareness-raising activities, as well as within the project management budget.
131. South-South and Triangular Cooperation (SSTrC) opportunities and technology transfer from peer countries will be further explored during project implementation. To present opportunities for replication in other countries, the project will codify good practices and facilitate dissemination through global ongoing South-South and global platforms, such as Africa Solutions Platform, the UN South-South Galaxy knowledge sharing platform and PANORAMA³⁶. The project intends to liaise with the UNEP-led Global E-mobility Programme, which provides an excellent platform for cooperation with the other participating countries and particularly with those in the Mediterranean, Europe and Central Asia region. The project will facilitate the participation of local stakeholders and Lebanese government officials in the working groups and other activities organized within the global programme. The project will also network with other transport-related initiatives and opportunities for regional and global cooperation.
132. In addition, to bring the voice of Lebanon to global and regional fora, the project will explore opportunities for meaningful participation in specific events where UNDP could support engagement with the global development discourse on sustainable mobility and transport electrification. The project will furthermore provide opportunities for regional cooperation with countries that are implementing initiatives on sustainable mobility and transport electrification in geopolitical, social and environmental contexts relevant to the proposed project in Lebanon.

Gender equality and Women's Empowerment:

133. The preparation of the gender analysis and action plan were integrated within the project design stage, and are presented in Annex 11. The project follows the recommendations of the UNDP's Lebanon Gender Analysis, published in 2021 under the UNDP's NDC Support Programme, to integrate the gender perspective in the design and implementation of GHG emission reduction projects and programmes.
134. The gender analysis states that women in Lebanon are less likely to work than men and more likely to undertake unpaid work such as caring for children and elderly or doing the house chores (washing, cooking, cleaning). They have a lower economic power compared to men and fewer opportunities to hold a decision-making position within and outside their household. Participation of women in decision-making processes is very low, although increasing. Gender policies remain perceived as a low-priority niche, a "women's matter" in the Lebanese political system. In the labor market, the participation of women is low, generally limited to assistant positions (only 29% of managerial positions are occupied by women) and with lower salaries.
135. The gender analysis also states the additional challenges faced by women due to uncontrolled and informal urbanization trends in Lebanon, with poor supply of vital services (water, waste, energy and transport). The insufficiency of services is partially replaced by private actors, sometimes outside the legal framework, such

³⁶ <https://panorama.solutions/en>

as NGOs, political parties and sectarian groups, which are not always committed to implementing the gender equality provisions of the Lebanon legal system. In particular, access to transportation means is one of the key challenges faced by women living in suburban areas, especially the most marginalized ones such as refugees or domestic workers. Access to transportation means, including cars, bus or taxi, varies according to income level. Many women do not feel safe in transportation means, and harassment and sexual abuse may occur during their journey, especially in shared-taxis, and abusers are rarely taken accountable for their behavior. Furthermore, as the transport system has low coverage, walking distances to bus stops are long and there is not always a safe walking environment, from crossing facilities to street lighting. This strengthens cultural attitudes in favor of car use and road expansion over the development of an urban public transport system. Considering that the lack of security and comfort of transport means in Lebanon undermines women's mobility, the gender analysis recommends making available and accessible safe transportation for women, with a focus on those of vulnerable socio-economic backgrounds, to facilitate their access to education and livelihood opportunities.

136. The key elements of the gender action plan aim at increasing the participation of women's and other underrepresented groups in the economic and social development by making transportation accessible for all and thus to improve their living conditions. This is made through the involvement of women at all levels of the policy making process in project activities, the provision of capacity building activities with a gender focus, raising awareness on the gender dimensions of e-mobility, collecting gender-disaggregated data (and data disaggregated by age, place of residence, nationality) to understand the needs, behaviors and perceptions to support an inclusive transport system; and promoting women's participation in networking, access to job and trainings provided by the project for bus companies, car fleet businesses and at institutional level.
137. Gender-sensitive activities have been included in all relevant outputs within all the project's components: Output 1.1, 1.2, 2.3, 3.1, 3.3., 3.4 and 4.1. The project includes gender-responsive measures to address gender gaps or promote gender equality and women's empowerment at various levels: at the institutional, planning and regulatory levels (activities 1.1.2 and 1.2.5); in the removal of barriers to sustainable mobility and electrification, including the project's demonstrations (activities 2.3.1, 2.1.2, 2.2.2, 2.3.2), and in capacity-building, networking and awareness-raising (activities 3.1.1, 3.3.1, 3.3.2, 3.4.1, 3.4.2, 3.4.4) and project monitoring and evaluation (activity 4.1.5).
138. The project is expected to contribute to gender equality in the results areas of improving women's participation and decision-making, and generating socio-economic benefits or services for women (through improved transport services, better suited to their mobility needs).
139. The project's results framework includes gender-responsive indicators in what refers to project's beneficiaries (indicators B and C), and training activities (indicators 2.1 and 3.2). Furthermore, the gender action plan includes additional indicators and targets for all the project activities with a relevant gender dimension.

Innovativeness, Sustainability and Potential for Scaling Up:

140. The technological innovativeness of the project is very high, as the deployment of EVs is still low in most countries, and the characteristics of the EVs available in the market have been developed attending to contexts in countries, which are not facing the challenges of Lebanon. The project will be innovative in facilitating access to EVs to bus operators and ISF, and partnering with vehicle dealers, in order to look for electrification strategies that can be consistent with the Lebanese conditions and able to meet the needs of Lebanese users.
141. Another relevant innovation is the analysis and upgrading of end-of-life vehicle practices in Lebanon, including the management of EVs and its components. The introduction of EVs offers an excellent ecosystem to undertake this task, considering the reduced number of stakeholders initially involved. Furthermore, action at the international level is expanding in order to establish global recycling chains, at least for batteries, and regional legislation is being drafted (e.g. in the European Union). The project will facilitate access to the innovations associated to these recycling chains and their adaptation to national conditions.

142. Replication and scaling up is included in the project design at three levels: (i) within the demonstrations, through the support to bus operators participating in the demonstrations in the provision of higher quality of service and in the preparation of fleet renewal plans including EVs, facilitated by their first-hand experience gained from the project; (ii) at the broader country level, through support to set up a permanent network of stakeholders interested in sustainable mobility and electrification, for which the project will provide wide dissemination and full accessibility of demonstration results; and (iii) at the level of large fleets (bus operators and large corporate car fleets), through the provision of a national e-mobility strategy and the implementation of voluntary certification schemes, which jointly provides a roadmap and concrete tools to improve the sustainability of the transport sector. Thanks to these activities the Lebanese government and stakeholders will be able to make the most of the demonstration result, well beyond the short-term impact provided by the EVs acquired by the project:
143. Moreover, the project will facilitate the efforts to accelerate the shift towards EVs globally, through the cooperation channels envisaged by the Global E-mobility Programme.
144. The project's sustainability and exit strategy equally relies on the Lebanese government and the civil society. This is consistent with the social, economic and political situation in the country. On one hand, the project will provide capacity-building, technical support and strategic roadmaps to the government in order to move forward towards sustainable mobility and electrification. On the other hand, the project empowers key stakeholders in the civil society and municipalities, so that they can undertake significant steps towards sustainable mobility on their own, through self-certification processes, low-cost facilitation of walking and cycling in cities and more influential networking capacities. The institutional and informal networks established by the project's activities can provide a more favorable environment for the future implementation of sound regulations, if the political mood improves, but they also can facilitate the search of business models and financing schemes by interested transport operators and corporations on their own, facilitated by a robust network of stakeholders interested in e-mobility. Furthermore, awareness-raising and training activities will provide the necessary know-how in the transport sector at large, including national and local decision-makers. This friendly environment is expected to facilitate action from key stakeholders. Managers of public transport and other fleets can more easily find electric alternatives to their vehicle needs with reliable information and competent local expertise.
145. The e-mobility network sustained by the project is a key instrument for the project's exit and sustainability strategy, as it can bring together all market actors behind the national e-mobility strategy and a shared action plan. This network (hopefully with the active engagement of the government) is able to monitor future progress in the electrification of road transport mobility in Lebanon based on the project's results and the continuation of the operation of the knowledge management platform developed during the project.
146. The continuation of the project's intervention to accelerate Lebanon's transition towards sustainable mobility and electrification once the project is completed builds upon the Global E-mobility Programme strategy outlined in Figure 4. It aims at unleashing the potential of dynamic stakeholders in the private sector and the civil society at large, providing municipalities with affordable options to encourage sustainable mobility behavior, and build capacities in the national government to sustain, rather than hamper, such bottom-up trends. The project sees itself as a preparatory stage to overcome the current stalemate and bridge the gap towards the completion of the substantial investments the World Bank and other IFI have agreed with the Government of Lebanon to promote sustainable mobility (such as the BRT corridors). Thanks to this project, these and other future investments will find a more favorable ecosystem to succeed.

V. PROJECT RESULTS FRAMEWORK

This project will contribute to the following Sustainable Development Goal (s): 7 (Affordable and Clean Energy), 9 (Industry, Innovation and Infrastructure), 11 (Sustainable Cities and Communities) and 13 (Climate Action).				
This project will contribute to the following country outcome CPD 2017-2020): Outcome 4.1. Tons of CO2 eq emissions (or equivalent) reduced in the industrial and commercial sectors Outcome 4.3: Number of national development plans and processes integrating: biodiversity, renewable energy, energy efficiency, sustainable consumption and production, climate change, sound chemical management, sustainable consumption & production and ecosystem services values				
	Objective and Outcome Indicators (no more than a total of 20 indicators)	Baseline³⁷ <i>Must be determined during PPG phase</i>	Mid-term Target³⁸ <i>Expected level of progress before MTR process starts</i>	End of Project Target <i>Expected level when terminal evaluation undertaken</i>
Project Objective: Promote sustainable transport in Lebanon through electric mobility and improved quality of service	Mandatory Indicator 1: # direct project beneficiaries disaggregated by gender (individual people) ³⁹	0	0	704,000 women and 713,000 men
	Mandatory GEF Core Indicator 6.2: Indicator 2: Expected (direct) metric tons of CO ₂ e avoided (at the time of measurement)	0 tons	0 tons	39,069 tons (5,209 tons at end of project)
	Indicator 3: # indirect project beneficiaries disaggregated by gender (individual people)	0	0	1,105,000 women and 1,118,000 men
Project component 1	Institutional and policy support for the promotion of sustainable transport systems and e-mobility			
Project Outcome⁴⁰ 1: Strengthened policy and social environment to support the promotion of sustainable low emissions transport systems	Indicator 5: National e-mobility strategy prepared with key stakeholders	No national e-mobility strategy	National e-mobility strategy presented to key stakeholders	National e-mobility strategy completed with government and at least 4 other key stakeholders
	Indicator 6: Number of voluntary agreements signed in the transport sector	0	2 (minimum number of bus companies necessary to carry out the pilots)	5
Outputs to achieve Outcome 1	Output 1.1: Guidelines on low-cost sustainable mobility measures, including local improvements and voluntary agreements with bus operators and corporate fleets Output 1.2: National e-mobility strategy prepared with government and key stakeholders Output 1.3: Roadmap on end-of-life vehicle management, including electric vehicles and their batteries endorsed by government and key stakeholders			

³⁷ Baseline, mid-term and end of project target levels must be expressed in the same neutral unit of analysis as the corresponding indicator. Baseline is the current/original status or condition and needs to be quantified. The baseline can be zero when appropriate given the project has not started. The baseline must be established before the project document is submitted to the GEF for final approval. The baseline values will be used to measure the success of the project through implementation monitoring and evaluation.

³⁸ Target is the change in the baseline value that will be achieved by the mid-term review and then again by the terminal evaluation.

³⁹ Provide total number of all direct project beneficiaries expected to benefit from all project activities until project closure. Separate the total number by female and male. This indicator captures the number of individual people who receive targeted support from a given GEF project and/or who use the specific resources that the project maintains or enhances. Support is defined as direct assistance from the project. Direct beneficiaries are all individuals receiving targeted support from a given project. Targeted support is the intentional and direct assistance of a project to individuals or groups of individuals who are aware that they are receiving that support and/or who use the specific resources.

⁴⁰ Outcomes are medium term results that the project makes a contribution towards, and that are designed to help achieve the longer-term objective. Achievement of outcomes will be influenced both by project outputs and additional factors that may be outside the direct control of the project.

Project component 2	Short-term barrier removal through e-mobility and other low-carbon demonstrations			
Outcome 2: Demonstrations provide evidence of technical, financial and environmental sustainability to plan for scale-up of low-carbon electric mobility	Indicator 7: Number of passengers (women and men) making use of green public transport services in the northern corridor	0	Daily average: 2,500 women and 2,000 men	Daily average: 10,000 women and 8,000 men [Figures to be checked]
	Indicator 8: Number of EV registered in Lebanon	0 (2020)	+4 cars, +1 bus (those provided by the project)	+20 cars, +4 buses
Outputs to achieve Outcome 2	Output 2.1: Self-Certified green public transport services (GPTS) concept developed and implemented in at least one regular bus line in the northern corridor Output 2.2: Green fleet management (GFM) concept (including EVs) implemented in one governmental fleet Output 2.3: Non-motorized accessibility (including electric micromobility) to public transport improved in at least one municipality Output 2.4. The viability of electric buses in certified green public transport services is demonstrated and assessed in the northern corridor with 2 electric buses Output 2.5. The viability of electric cars in corporate fleets under green fleet management is demonstrated and assessed with 4 electric cars			
Project component 3:	Knowledge management, capacity development and awareness raising			
Outcome 3: Sustainable low-emission transport programs widely supported	Indicator 9: Number of governmental and non-governmental stakeholders actively engaged in the network	0	5 governmental, 5 non-governmental	8 governmental, 10 non-governmental
	Indicator 10: Number of public and private decision-makers trained (women and men)	0	10 women, 10 men	20 women, 20 men
Outputs to achieve Outcome 3	Output 3.1: Networking mechanism established among agencies and stakeholders involved in sustainable low emissions transport systems to accelerate the implementation of the e-mobility strategy and the adoption of GPTS and GFM by corporations and public bodies Output 3.2: Coordination with the "Global Programme to Support Countries with the Shift to Electric Mobility" (participation at thematic working groups and at the Support and Investment Platform) Output 3.3: Sustainable mobility communication and public awareness campaigns implemented, based on project results and focusing on mobility behavior (including road safety), and low-emission transport (including EVs, public transport, walking and cycling) Output 3.4: Capacity of municipal planners and public transport managers built for the promotion of low-emission transport (including non-motorized transport and carpooling), traffic control and management (e.g. parking management, vehicle-use control)			
Project component 4:	Monitoring & Evaluation			
Outcome 4	Indicator 11: Number of reports on best practices and lessons learned on the project shared with the global programme	0	0	6 reports (corresponding to activities 1.2.6, 2.3.3, 2.4.3, 2.5.3, 3.2.2 and 3.2.3)
Outputs to achieve Outcome 4	Output 4.1: The project monitoring and evaluation plan and knowledge-management strategy are designed and implemented			

VI. MONITORING AND EVALUATION (M&E) PLAN

147. The project results, corresponding indicators and mid-term and end-of-project targets in the project results framework will be monitored annually and evaluated periodically during project implementation. If baseline data for some of the results indicators is not yet available, it will be collected during the first year of project implementation. The Monitoring Plan included in Annex details the roles, responsibilities, and frequency of monitoring project results.
148. Project-level monitoring and evaluation will be undertaken in compliance with UNDP requirements as outlined in the [UNDP POPP and UNDP Evaluation Policy](#). The UNDP Country Office is responsible for ensuring full compliance with all UNDP project monitoring, quality assurance, risk management, and evaluation requirements. Additional mandatory GEF-specific M&E requirements will be undertaken in accordance with the [GEF Monitoring Policy](#) and the [GEF Evaluation Policy](#) and other relevant GEF policies⁴¹. The costed M&E plan included below, and the Monitoring plan in Annex, will guide the GEF-specific M&E activities to be undertaken by this project.
149. In addition to these mandatory UNDP and GEF M&E requirements, other M&E activities deemed necessary to support project-level adaptive management will be agreed during the Project Inception Workshop and will be detailed in the Inception Report.

Additional GEF monitoring and reporting requirements:

150. Inception Workshop and Report: A project inception workshop will be held within two months after the project document has been signed by all relevant parties to, amongst others:
- a) Re-orient project stakeholders to the project strategy and discuss any changes in the overall context that influence project strategy and implementation;
 - b) Discuss the roles and responsibilities of the project team, including reporting and communication lines and conflict resolution mechanisms;
 - c) Review the results framework and finalize the indicators, means of verification and monitoring plan;
 - d) Discuss reporting, monitoring and evaluation roles and responsibilities and finalize the M&E budget; identify national/regional institutes to be involved in project-level M&E; discuss the role of the GEF OFP in M&E;
 - e) Update and review responsibilities for monitoring the various project plans and strategies, including the risk log; SESP, Environmental and Social Management Plan and other safeguard requirements; project grievance mechanisms; the gender strategy; the knowledge management strategy, and other relevant strategies;
 - f) Review financial reporting procedures and mandatory requirements, and agree on the arrangements for the annual audit; and
 - g) Plan and schedule Project Board meetings and finalize the first year annual work plan.
 - h) Formally launch the Project.
151. GEF Project Implementation Report (PIR): The Project Manager, the UNDP Country Office, and the UNDP-GEF Regional Technical Adviser will provide objective input to the annual GEF PIR covering the reporting period July (previous year) to June (current year) for each year of project implementation. The Project Manager will ensure that the indicators included in the project results framework are monitored annually in advance of the PIR submission deadline so that progress can be reported in the PIR. Any environmental and social risks and related management plans will be monitored regularly, and progress will be reported in the PIR. The PIR submitted to the GEF will be shared with the Project Board. The UNDP Country Office will coordinate the input of the GEF Operational Focal Point and other stakeholders to the PIR as appropriate. The quality rating of the previous year's PIR will be used to inform the preparation of the subsequent PIR.

⁴¹ See https://www.thegef.org/gef/policies_guidelines

152. GEF Core Indicators:

The GEF Core indicators included as Annex will be used to monitor global environmental benefits and will be updated for reporting to the GEF prior to MTR and TE. Note that the project team is responsible for updating the indicator status. The updated monitoring data should be shared with MTR/TE consultants prior to required evaluation missions, so these can be used for subsequent groundtruthing. The methodologies to be used in data collection have been defined by the GEF and are available on the GEF [website](#)

153. Independent Mid-term Review (MTR): The terms of reference, the review process and the final MTR report will follow the standard templates and guidance for GEF-financed projects available on the [UNDP Evaluation Resource Center \(ERC\)](#).

154. The evaluation will be ‘independent, impartial and rigorous’. The evaluators that will be hired to undertake the assignment will be independent from organizations that were involved in designing, executing or advising on the project to be evaluated. Equally, the evaluators should not be in a position where there may be the possibility of future contracts regarding the project under review.

155. The GEF Operational Focal Point and other stakeholders will be actively involved and consulted during the evaluation process. Additional quality assurance support is available from the BPPS/GEF Directorate.

156. The final MTR report and MTR TOR will be publicly available in English and will be posted on the UNDP ERC by 01 November 2024. A management response to MTR recommendations will be posted in the ERC within six weeks of the MTR report’s completion.

157. Terminal Evaluation (TE): An independent terminal evaluation (TE) will take place upon completion of all major project outputs and activities. The terms of reference, the evaluation process and the final TE report will follow the standard templates and guidance for GEF-financed projects available on the UNDP Evaluation Resource Center.

158. The evaluation will be ‘independent, impartial and rigorous’. The evaluators that will be hired to undertake the assignment will be independent from organizations that were involved in designing, executing or advising on the project to be evaluated. Equally, the evaluators should not be in a position where there may be the possibility of future contracts regarding the project being evaluated.

159. The GEF Operational Focal Point and other stakeholders will be involved and consulted during the terminal evaluation process. Additional quality assurance support is available from the BPPS-GEF Directorate.

160. The final TE report and TE TOR will be publicly available in English and posted on the UNDP ERC by 28 February 2027. A management response to the TE recommendations will be posted to the ERC within six weeks of the TE report’s completion.

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

162. Agreement on intellectual property rights and use of logo on the project’s deliverables and disclosure of information: To accord proper acknowledgement to the GEF for providing grant funding, the GEF logo will appear together with the UNDP logo on all promotional materials, other written materials like publications developed by the project, and project hardware. Any citation on publications regarding projects funded by the GEF will also accord proper acknowledgement to the GEF. Information will be disclosed in accordance with relevant policies notably the UNDP Disclosure Policy⁴² and the GEF policy on public involvement⁴³.

⁴² See http://www.undp.org/content/undp/en/home/operations/transparency/information_disclosurepolicy/

⁴³ See https://www.thegef.org/gef/policies_guidelines

Monitoring and Evaluation Plan and Budget:		
<i>This M&E plan and budget provides a breakdown of costs for M&E activities to be led by the Project Management Unit during project implementation. These costs are included in Component 4 of the Results Framework and TBWP. For ease of reporting M&E costs, please include all costs reported in the M&E plan under the one technical component. The oversight and participation of the UNDP Country Office/Regional technical advisors/HQ Units are not included as these are covered by the GEF Fee.</i>		
GEF M&E requirements	Indicative costs (US\$)	Time frame
Inception Workshop	8,050	Within two months from the date of First Disbursement
Inception Report	6,050	Within two weeks of inception workshop
M&E of GEF core indicators and project results framework	17,250	Annually and at mid-point and closure
GEF Project Implementation Report (PIR)	11,980	Annually typically between June-August
Monitoring of Environmental and Social Management Plan, Stakeholder Engagement Plan, Gender Action Plan and knowledge generation	35,150	On-going
Supervision missions	9,270	Annually
Independent Mid-term Review (MTR)	37,600	01/11/2024
Independent Terminal Evaluation (TE)	47,600	28/02/2027
TOTAL indicative COST	172,950	

Table 3: Monitoring & Evaluation Plan

VII. GOVERNANCE AND MANAGEMENT ARRANGEMENTS

Roles and responsibilities of the project's governance mechanism:

163. **Implementing Partner:** The Implementing Partner for this project is the UNDP Country Office in Beirut, Lebanon. The Implementing Partner is the entity to which the UNDP Administrator has entrusted the implementation of UNDP assistance specified in this signed project document along with the assumption of full responsibility and accountability for the effective use of UNDP resources and the delivery of outputs, as set forth in this document.

The Implementing Partner is responsible for executing this project. Specific tasks include:

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

164. The project will follow the Direct Implementation Modality (DIM), where the UNDP CO in Lebanon will act as the Implementing Partner (IP), responsible for the UNDP-GEF project execution and accountable for the disbursement of funds and the achievement of the project goals, according to the approved results framework and work plan presented in this Project Document.

165. Project stakeholders and target groups: To ensure sound management of project implementation and continuous engagement of stakeholders in all project activities, the UNDP CO in Lebanon will follow UNDP rules and procedures to ensure. More data on stakeholder engagement is presented in Annex 9 (Stakeholders' Engagement Plan)

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

UNDP being the implementing partner for this project, a strict firewall will be maintained between the delivery of project oversight and quality assurance performed by UNDP and charged to the GEF Fee and project execution undertaken primarily by the Implementing Partner and charged to the project management costs.

167. Project organisation structure: The project organisation structure is as follows:

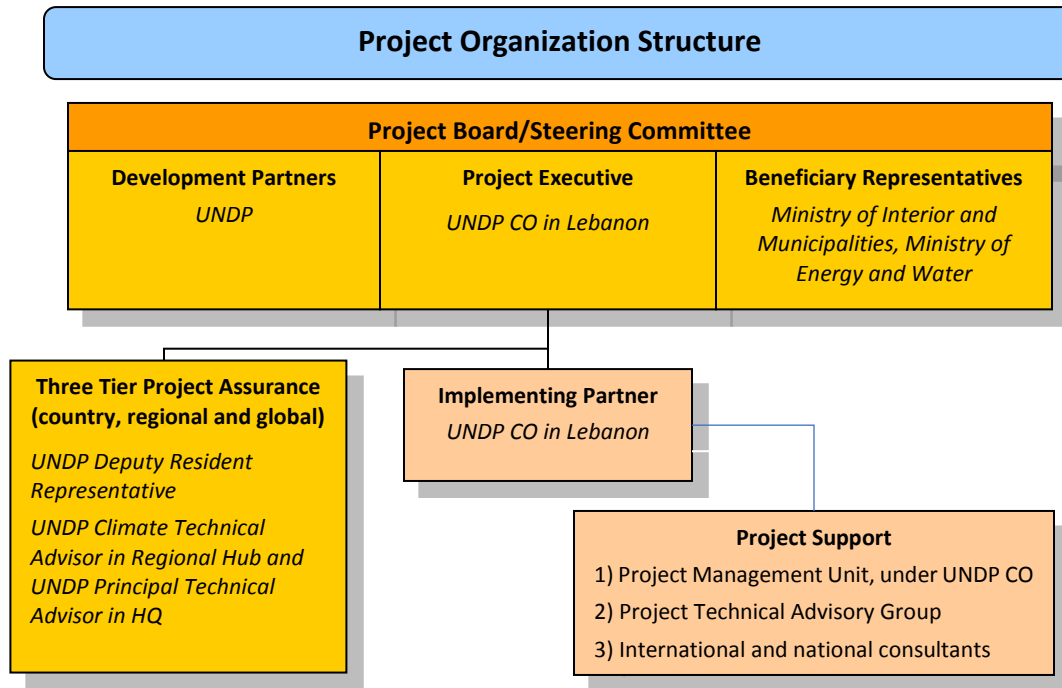


Figure 8: Project Organization Structure

168. Project Board: The Project Board (also called Project Steering Committee) is responsible for making by consensus, management decisions when guidance is required by the Project Manager, including recommendations for UNDP/Implementing Partner of project plans and revisions, and addressing any project level grievances. In order to ensure UNDP's ultimate accountability, Project Board decisions should be made in accordance with standards that shall ensure management for development results, best value money, fairness, integrity, transparency, balanced gender representation and effective international competition. In case a consensus cannot be reached within the Board, final decision shall rest with the UNDP Resident Representative. The Project Board will be responsible for directing the project and will ensure adherence of planned activities to intend long-term and immediate objectives as well as timeliness and quality of deliverables produced. The Project board will meet once a year (more frequently if required) and will review project work plan and progress as well as approve budget and activity revisions.

169. Specific responsibilities of the Project Board include:

- Provide overall guidance and direction to the project, ensuring it remains within any specified constraints;
- Address project issues as raised by the project manager;
- Provide guidance on new project risks, and agree on possible counter measures and management actions to address specific risks;
- Agree on project manager's tolerances as required; within the parameters set by UNDP-GEF, and provide direction and advice for exceptional situations when the project manager's tolerances are exceeded;
- Advise on major and minor amendments to the project within the parameters set by UNDP-GEF;
- Ensure coordination between various donor and government-funded projects and programmes;
- Ensure coordination with various government agencies and their participation in project activities;
- Track and monitor co-financing for this project;
- Review the project progress, and provide direction and recommendations to ensure that the agreed deliverables are produced satisfactorily according to plans;

- Appraise the annual project implementation report, including the quality assessment rating report; make recommendations for the workplan;
- Ensure commitment of human resources to support project implementation, arbitrating any issues within the project;
- Review combined delivery reports prior to certification by the implementing partner;
- Provide direction and recommendations to ensure that the agreed deliverables are produced satisfactorily according to plans;
- Address project-level grievances;
- Approve the project Inception Report, Mid-term Review and Terminal Evaluation reports and corresponding management responses;
- Review the final project report package during an end-of-project review meeting to discuss lesson learned and opportunities for scaling up.
- Ensure highest levels of transparency and take all measures to avoid any real or perceived conflicts of interest.

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

171. a) Project Executive: The Executive is an individual who represents ownership of the project who will chair the Project Board. The Executive will be UNDP Senior management represented by the Resident Representative or the Deputy Resident Representative.

172. The Executive is ultimately responsible for the project, supported by the Senior Beneficiary and Senior Supplier. The Executive's role is to ensure that the project is focused throughout its life cycle on achieving its objectives and delivering outputs that will contribute to higher level outcomes. The executive has to ensure that the project gives value for money, ensuring cost-conscious approach to the project, balancing the demands of beneficiary and supplier.

173. b) Beneficiary Representatives: Individuals or groups representing the interests of those who will ultimately benefit from the project. Their primary function within the Board is to ensure the realization of project results from the perspective of project beneficiaries. The Beneficiary Representatives are the Ministry of Interior and Municipalities and the Ministry of Energy and Water, represented by their respective National Focal Points.

174. c) Development Partners: Individuals or groups representing the interests of the parties concerned that provide funding and/or technical expertise to the project. The Development Partner(s) is/are: Resident Representative or the Deputy Resident Representative *at UNDP CO in Lebanon*.

175. d) Project Assurance: UNDP performs the quality assurance and supports the Project Board and Project Management Unit by carrying out objective and independent project oversight and monitoring functions. This role ensures appropriate project management milestones are managed and completed, and conflict of interest issues are monitored and addressed. The Project Board cannot delegate any of its quality assurance responsibilities to the Project Manager. UNDP provides a three – tier oversight services involving the UNDP Country Offices and UNDP at regional and headquarters levels. Project assurance is totally independent of project execution.

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

VIII. FINANCIAL PLANNING AND MANAGEMENT

177. The total cost of the project is *USD 48,030,150*. This is financed through a GEF grant of *USD 3,552,968* administered by UNDP, and additional support of *USD 44,477,182*. UNDP, as the GEF Implementing Agency, is responsible for the oversight of the GEF resources and the cash co-financing transferred to UNDP bank account only.

178. Confirmed Co-financing: The actual realization of project co-financing will be monitored during the *mid-term review* and terminal evaluation process and will be reported to the GEF. Note that all project activities included in the project results framework that will be delivered by co-financing partners (even if the funds do not pass through UNDP accounts) must comply with UNDP's social and environmental standards. Co-financing will be used for the project activities/outputs indicated in the table below. WB co-financing, which covers activities outside the scope of that the project will deliver (as the completion of the BRT project is not expected until 2031) is also included in the table.

Co-financing source	Co-financing type	Co-financing amount	Planned Co-financing Activities/Outputs	Risks	Risk Mitigation Measures
Ministry of Interior and Municipalities	<i>In-kind</i>	USD 663,300 ⁴⁴	ISF fleet operation, maintenance and improvements; support to municipalities' actions in mobility and public space	Ministry's co-financed actions poorly aligned with the project's innovative approaches	Regular bilateral meetings of PMU with relevant partners at MoIM and ISF to avoid conflicting actions
Ministry of Energy and Water	In-kind	USD 250,000	Follow-up of the SODEL project, improving energy efficiency in the transport sector. Promotion of renewables and electricity supply resilience	Policies on transport efficiency and electricity supply poorly aligned with the promotion of e-mobility	PMU closely follows energy efficiency and electricity sector policies to prevent conflicts with the project's e-mobility strategy. Awareness-raising of MoEW officials through involvement in global programme activities.
Municipality of Jbeil	In-kind	USD 331,700 ⁴⁵	Preparation, approval and implementation of the Urban Master Plan. Walking and cycling improvement plans and capacity building	Urban Master Plan approval and implementation delayed	Preparation, approval and implementation of the Urban Master Plan. Walking and cycling improvement plans and capacity building
World Bank	Investment	USD	Detailed design of the GBTP	Complex project, vulnerable to the	The project activities and pilots can serve to

⁴⁴ LBP 1 billion, assuming the LBP/USD official exchange rate of 1 USD = 1,507.5 LBP.

⁴⁵ LBP 0.5 billion, assuming the LBP/USD official exchange rate of 1 USD = 1,507.5 LBP.

Co-financing source	Co-financing type	Co-financing amount	Planned Co-financing Activities/Outputs	Risks	Risk Mitigation Measures
		42,690,000 ⁴⁶	infrastructure and of new bus lines and bus fleet renewal. Completion of the GBPTP expected by 2031	political and economic situation.	clarify some of the options and the diminish the project vulnerabilities
UNDP	Investment	USD 342,182	Analysis and design of policies on e-waste recycling, management and disposal in Lebanon (until end 2022)	Little attention to the challenges of EV batteries compared to other e-waste raising more urgent challenges	PMU to coordinate with this project team to establish synergies on EV battery management activities
UNDP	Grant	USD 200,000	Analysis and design of policies on e-waste recycling, management and disposal in Lebanon (until end 2022)	Little attention to the challenges of EV batteries compared to other e-waste raising more urgent challenges	PMU to coordinate with this project team to establish synergies on EV battery management activities

Table 4: Confirmed co-financing

179. Budget Revision and Tolerance: As per UNDP requirements outlined in the UNDP POPP, the project board will agree on a budget tolerance level for each plan under the overall annual work plan allowing the project manager to expend up to the tolerance level beyond the approved project budget amount for the year without requiring a revision from the Project Board.

180. Should the following deviations occur, the Project Manager and UNDP Country Office will seek the approval of the BPPS/GEF team to ensure accurate reporting to the GEF:

- a) Budget re-allocations among components in the project budget with amounts involving 10% of the total project grant or more;
- b) Introduction of new budget items that exceed 5% of original GEF allocation.

181. Any over expenditure incurred beyond the available GEF grant amount will be absorbed by non-GEF resources (e.g. UNDP TRAC or cash co-financing).

182. Audit: The project will be audited as per UNDP Financial Regulations and Rules and applicable audit policies. Audit cycle and process must be discussed during the Inception workshop.

183. Project Closure: Project closure will be conducted as per UNDP requirements outlined in the UNDP POPP. All costs incurred to close the project must be included in the project closure budget and reported as final

⁴⁶ The WB's co-financing letter refers to an approved loan of USD 295 million. In accordance with the WB's Project Appraisal Document associated to this loan, its disbursement is foreseen in 7 years. As the WB cannot provide further details at this stage, the project designers make the conservative assumption that the loan disbursement will start in 2024 and considers the disbursements of the first 3 years (2024-2026: USD 2.11 million, 17.40 million and 23.18 million) as effective co-financing.

project commitments presented to the Project Board during the final project review. The only costs a project may incur following the final project review are those included in the project closure budget.

184. Operational completion: The project will be operationally completed when the last UNDP-financed inputs have been provided and the related activities have been completed. This includes the final clearance of the Terminal Evaluation Report (that will be available in English) and the corresponding management response, and the end-of-project review Project Board meeting. **Operational closure must happen at the end date calculated by the approved duration after the Project Document signature or at the revised operational closure date as approved in the project extension. Any expected activity after the operational date requires project extension approval.** . The Implementing Partner through a Project Board decision will notify the UNDP Country Office when operational closure has been completed. At this time, the relevant parties will have already agreed and confirmed in writing on the arrangements for the disposal of any equipment that is still the property of UNDP.
185. Transfer or disposal of assets: In consultation with the Implementing Partner and other parties of the project, UNDP is responsible for deciding on the transfer or other disposal of assets. Transfer or disposal of assets is recommended to be reviewed and endorsed by the project board following UNDP rules and regulations. Assets may be transferred to the government for project activities managed by a national institution at any time during the life of a project. In all cases of transfer, a transfer document must be prepared and kept on file⁴⁷. The transfer should be done before Project Management Unit complete their assignments.
186. Financial completion (closure): The project will be financially closed when the following conditions have been met: a) the project is operationally completed or has been cancelled; b) the Implementing Partner has reported all financial transactions to UNDP; c) UNDP has closed the accounts for the project; d) UNDP and the Implementing Partner have certified a final Combined Delivery Report (which serves as final budget revision).
187. The project will be financially completed **within 6 months of operational closure or after the date of cancellation**. Between operational and financial closure, the implementing partner will identify and settle all financial obligations and prepare a final expenditure report. The UNDP Country Office will send the final signed closure documents including confirmation of final cumulative expenditure and unspent balance to the BPPS/GEF Unit for confirmation before the project will be financially closed in Atlas by the UNDP Country Office.
188. Refund to GEF: Should a refund of unspent funds to the GEF be necessary, this will be managed directly by the BPPS/GEF Directorate in New York. No action is required by the UNDP Country Office on the actual refund from UNDP project to the GEF Trustee.

⁴⁷ See

https://popp.undp.org/_layouts/15/WopiFrame.aspx?sourcedoc=/UNDP_POPP_DOCUMENT_LIBRARY/Public/PPM_Project%20Management_Closing.docx&action=default.

IX. TOTAL BUDGET AND WORK PLAN

Total Budget and Work Plan			
Atlas Award ID:	00127080	Atlas Output Project ID:	00120993
Atlas Proposal or Award Title:	Lebanon Sustainable Low-Emission Transport Systems		
Atlas Business Unit	LBN10		
Atlas Primary Output Project Title	Lebanon Sustainable Low-Emission Transport Systems		
UNDP-GEF PIMS No.	6468		
Implementing Partner	United Nations Development Programme Country Office Lebanon		

Atlas Activity (GEF Component)	Atlas Implementing Agent (Responsible Party/ ⁴⁸ , IP, or UNDP)	Atlas Fund ID	Donor Name	Atlas Budgetary Account Code	ATLAS Budget Account Description	Amount 2022 (USD) (7 months)	Amount 2023 (USD)	Amount 2024 (USD)	Amount 2025 (USD)	Amount 2026 (USD)	Amount 2027 (USD) (5 months)	Total (USD)	See Budget Note:
COMPONENT 1 <i>Institutional and policy support for the promotion of sustainable transport systems and e-mobility</i>	UNDP	62000	GEF Trustee	71300	Local consultants	-	5,000	-	5,000	-	-	10,000	1
				71400	Contractual services - Individuals	31,173	6,250	16,050	19,210	5,560	22,267	100,510	2
				72100	Contractual services - Companies	50,000	40,000	203,000	52,000	-	155,000	500,000	3
					sub-total GEF	81,173	51,250	219,050	76,210	5,560	177,267	610,510	
	04000	UNDP	71400	Contractual services - Individuals	7,292	1,250	5,000	3,750	1,250	5,208	23,750	2a	
				Sub-total UNDP	7,292	1,250	5,000	3,750	1,250	5,208	23,750		
					Total Outcome 1	88,465	52,500	224,050	79,960	6,810	182,475	634,260	
COMPONENT 2: <i>Short-term barrier removal through e-mobility and other low-carbon demonstrations</i>	UNDP	62000	GEF Trustee	71300	Local consultants	-	16,000	-	-	-	-	16,000	4
				71400	Contractual services - Individuals	50,085	58,740	35,250	33,410	24,600	35,775	237,860	5
				72100	Contractual services - Companies	5,000	259,000	253,000	18,000	4,000	10,000	549,000	6
				72200	Equipment and furniture	-	1,060,000	-	-	-	-	1,060,000	7
				72300	Materials & goods	-	150,000	-	-	-	-	150,000	8

Atlas Activity (GEF Component)	Atlas Implementing Agent (Responsible Party/ ⁴⁸ , IP, or UNDP)	Atlas Fund ID	Donor Name	Atlas Budgetary Account Code	ATLAS Budget Account Description	Amount 2022 (USD) (7 months)	Amount 2023 (USD)	Amount 2024 (USD)	Amount 2025 (USD)	Amount 2026 (USD)	Amount 2027 (USD) (5 months)	Total (USD)	See Budget Note:	
					sub-total GEF	55,085	1,543,740	288,250	51,410	28,600	45,775	2,012,860		
		04000	UNDP	71400	Contractual services - Individuals	7,000	13,750	6,250	3,750	7,500	5,000	43,250	5a	
					sub-total UNDP	7,000	13,750	6,250	3,750	7,500	5,000	43,250		
					Total Outcome 2	62,085	1,557,490	294,500	55,160	36,100	50,775	2,056,110		
COMPONENT 3: <i>Knowledge management, capacity development and awareness raising</i>	UNDP	62000	GEF	71200	International consultants	-	-	2,000	4,000	14,000		20,000	9	
				71300	Local consultants	-	2,000	7,090	7,089	-		16,179	10	
				71400	Contractual services - Individuals	-	68,240	112,520	99,680	99,340		379,780	11	
				71600	Travel	-	4,500	6,000	6,000	3,000		19,500	12	
				72100	Contractual services - Companies	-	13,000	37,000	28,000	3,000		81,000	13	
				72400	Communic & Audio Visual Equip	-	2,000	8,000	-	-		10,000	14	
				74200	Audio Visual&Print Prod Costs	-	-	17,000	16,000	8,000		41,000	15	
				75700	Training, workshop, conference	-	2,000	6,000	8,000	4,000		20,000	16	
					sub-total GEF	-	91,740	195,610	168,769	131,340	-	587,459		
		04000	UNDP	71400	Contractual services - Individuals	-	3,250	8,250	12,500	12,500			36,500	11a
					sub-total UNDP	-	3,250	8,250	12,500	12,500	-	36,500		
					Total Outcome 3	-	94,990	203,860	181,269	143,840	-	623,959		
COMPONENT 4: M&E	UNDP	62000	GEF Trustee	71200	International consultants	-	-	30,000	-	40,000		70,000	17	
				71300	Local consultants	-	3,000	5,000	5,000	2,000		15,000	18	
				71400	Contractual services - Individuals	-	35,420	8,230	16,150	16,150		75,950	19	

Atlas Activity (GEF Component)	Atlas Implementing Agent (Responsible Party/ ⁴⁸ , IP, or UNDP)	Atlas Fund ID	Donor Name	Atlas Budgetary Account Code	ATLAS Budget Account Description	Amount 2022 (USD) (7 months)	Amount 2023 (USD)	Amount 2024 (USD)	Amount 2025 (USD)	Amount 2026 (USD)	Amount 2027 (USD) (5 months)	Total (USD)	See Budget Note:
				72100	Contractual services - Companies	-	2,000	3,000	3,000	2,000		10,000	20
				75700	Training, workshop, conference	1,000	-	-	-	-	1,000	2,000	21
					sub-total GEF	1,000	40,420	46,230	24,150	60,150	1,000	172,950	
					Total Outcome 4	1,000	40,420	46,230	24,150	60,150	1,000	172,950	
PROJECT MANAGEMENT UNIT⁴⁹	UNDP	62000	GEF Trustee	71600	Travel	400	400	400	400	400		2,000	22
				71400	Contractual services - Individuals	15,983	9,650	6,550	9,650	28,950	11,417	82,200	23
				72200	Equipment and furniture	13,589	-	-	-	-		13,589	24
				72300	Materials & goods	400	400	400	400	400		2,000	25
				72400	Communic & Audio Visual Equip	-	1,371	1,371	1,371	1,371	1,371	6,855	26
				72500	Supplies	2,500	5,000	5,000	7,500	12,500	2,500	35,000	27
				72800	Information technology equipment	3,900	-	-	-	-		3,900	28
				73100	Rental & Maintenance-Premises	300	300	300	300	300		1,500	29
				73400	Rental & Maint of Other Equip	329	329	329	329	329		1,645	30
				74100	Professional services	-	2,000	2,000	2,000	2,000	2,000	10,000	31
				74700	Transport, Shipping and handle	300	300	300	300	300		1,500	32
				74500	Miscellaneous expenses	800	1,800	1,800	1,800	1,800	1,000	9,000	33
									sub-total GEF	38,501	21,550	18,450	24,050

Atlas Activity (GEF Component)	Atlas Implementing Agent (Responsible Party/ ⁴⁸ , IP, or UNDP)	Atlas Fund ID	Donor Name	Atlas Budgetary Account Code	ATLAS Budget Account Description	Amount 2022 (USD) (7 months)	Amount 2023 (USD)	Amount 2024 (USD)	Amount 2025 (USD)	Amount 2026 (USD)	Amount 2027 (USD) (5 months)	Total (USD)	See Budget Note:
		04000	UNDP	71400	Contractual services - Individuals	12,367	15,850	14,300	14,300	16,550	8,833	82,200	23a
	74500			Miscellaneous expenses	2,000	2,860	2,860	2,860	2,860	860	14,300	33a	
				sub-total UNDP	14,367	18,710	17,160	17,160	19,410	9,693	96,500		
					Total Management	52,868	40,260	35,610	41,210	67,760	27,981	265,689	
		TOTAL GEF				175,759	1,748,700	767,590	344,589	274,000	242,330	3,552,968	
		TOTAL UNDP				28,659	36,960	36,660	37,160	40,660	19,901	200,000	
		PROJECT TOTAL				204,418	1,785,660	804,250	381,749	314,660	262,231	3,752,968	

Summary of Funds:

	Amount 2022 (USD)	Amount 2023 (USD)	Amount 2024 (USD)	Amount 2025 (USD)	Amount 2026 (USD)	Amount 2027 (USD)	Total (USD)
GEF grant administered by UNDP	175,759	1,748,700	767,590	344,589	274,000	242,330	3,552,968
UNDP	28,659	36,960	36,660	37,160.00	40,660	19,901	200,000
TOTAL	204,418	1,785,660	804,250	381,749	314,660	262,231	3,752,968

Budget note number	
1	Gender expert for activities 1.1.2 (0.5 pm), 1.2.5 (0.5 pm) @ USD 10,000/pm
2	Project manager (2.5 pm output 1.1; 5.5 pm output 1.2; 2 pm output 1.3) @ USD 6,900/pm. Transport engineer (1.0 pm output 1.2) @ USD 5,200/pm. Project assistant (1.0 pm output 1.1; 4.1 pm output 1.2) @ USD 3,100/pm. Project safeguards officer (1.2 pm output 1.1; 3.0 pm output 1.2) @ USD 2,500/pm
2a	Project safeguards officer (2.5 pm output 1.1; 5.0 pm output 1.2; 2.0 pm output 1.3) @ USD 2,500/pm
3	Technical assistance for activities 1.1.2 (4 pm), 1.1.3 (3.5 pm), 1.1.1 (9 pm), 1.2.2 (4 pm), 1.2.3 (4 pm), 1.2.4 (4 pm), 1.3.1 (8.5 pm), 1.3.2 (1.5 pm) and 1.3.3 (10.0 pm) @ USD 10,000/pm. Environmental expertise team for activity 1.2.5 (1.5 pm) @ USD 10,000/pm
4	Gender expert for activities 2.1.2 (0.3 pm), 2.2.2 (0.3 pm), 2.3.2 (1.0 pm) @ USD 10,000/pm

Budget note number	
5	Project manager (3.0 pm output 2.1; 2.4 pm output 2.2; 1.5 pm output 2.3; 0.8 pm output 2.4; 0.8 pm output 2.5) @ USD 6,900/pm. Transport engineer (10.0 pm output 2.1; 7.0 pm output 2.2; 7.0 pm output 2.3; 4.0 pm output 2.4; 4.0 pm output 2.5) @ USD 5,200/pm. Project assistant (1.0 pm output 2.1; 0.5 pm output 2.2; 1.1 pm output 2.3) @ USD 3,100/pm. Project safeguards officer (0.5 pm output 2.1; 0.5 pm output 2.2; 0.9 pm output 2.3) @ USD 2,500/pm.
5a	Project safeguards officer (3.0 pm output 2.1; 2.8 pm output 2.2; 1.5 pm output 1.3; 5.5 pm output 2.4, and 4.5 pm output 2.5) @ USD 2,500/pm
6	Technical assistance for activities 2.1.1 (3.7 pm), 2.1.3 (2.0 pm), 2.2.1 (1.7 pm), 2.3.1 (2.0 pm), 2.3.3 (1.0 pm), 2.4.1 (2 pm), 2.4.3 (1 pm), 2.5.1 (2.0 pm), and 2.5.3 (1.0 pm) @ USD 10,000/pm. Construction works in Jbeil (activity 2.3.2) USD 375,000. Environmental expertise team for activity 2.3.2 (1.0 pm) @ USD 10,000/pm
7	Procurement of 2 e-buses (2@ USD 450,000); procurement of pilot cars and fleet management hardware and software (USD 160,000) (to be owned by UNDP until end of the project and transferred to the government afterwards).
8	Procurement and installation of fast-charging equipment for e-buses (USD 150,000) (to be owned by UNDP until end of the project and transferred to the government afterwards).
9	Technical assistance to activities 3.2.2 (1.0 pm) and 3.2.3 (1.0 pm) @ USD 10,000/pm
10	Gender expert for activities 3.1.1 (0.2 pm); 3.3.1 and 3.3.2 (0.4 pm); 3.4.1 and 3.4.2 (0.2 pm) @ USD 10,000/pm. Planners and decision-makers: training materials (USD 2,179); gender training materials (USD 4,000); social & environmental materials (USD 2,000).
11	Project manager (9.0 pm output 3.1; 11.0 pm output 3.2; 5.0 pm output 3.3; 3.0 pm output 3.4) @ USD 6,900/pm. Transport engineer (6.0 pm output 3.1; 6.0 pm output 3.2; 9.0 pm output 3.4) @ USD 5,200/pm. Project assistant (5.5 pm output 3.1; 2.5 pm output 3.2; 3.5 pm output 3.3; 5.8 pm output 3.4) @ USD 3,100/pm. Project safeguards officer (2.5 pm output 3.1; 1.6 pm output 3.2, 3.5 pm output 3.3; 1.9 pm output 3.4) @ USD 2,500/pm.
11a	Project safeguards officer (3.4 pm output 3.1; 2.5 pm output 3.2; 5.0 pm output 3.3; 3.7 pm output 3.4) @ USD 2,500/pm
12	13 trips @ USD 1,500 to participate at UNEP's E-mob Global Programme activities
13	Technical assistance to output 3.3 (communication plan, 1.7 pm or USD 17,000). Transport professionals: Training and supporting materials (USD 18,000) and gender training materials (USD 10,000). Planners and decision-makers: 2 workshops (USD 16,000). Train-of-trainers workshops: 2 workshops (USD 20,000)
14	Technical assistance to output 3.1 (virtual platform and website, 1.0 pm) @ USD 10,000/pm
15	General public campaigns (USD 40,000). Social & environmental audio visual and printed materials (USD 1,000).
16	E-mobility network meetings: 10 meetings (USD 20,000)
17	Mid-term evaluation (USD 30,000). Terminal evaluation (USD 40,000)
18	Gender expert: monitoring of gender action plan (USD 7,000). Technical assistance to monitor social and environment safeguards (USD 8,000)
19	Project manager (4.5 pm output 4.1) @ USD 6,900/pm. Transport engineer (6.0 pm output 4.1) @ USD 5,200/pm. Project assistant (2.0 pm output 4.1) @ USD 3,100/pm. Project safeguards officer (3.0 pm output 4.1) @ USD 2,500/pm
20	Technical assistance on project monitoring platform and compilation of knowledge products (USD 10,000).
21	Inception workshop (USD 2,000).
22	5 trips for public consultancies @ USD 400
23	Project manager (4.5 pm) @ USD 6,900/pm. Project assistant (16.5 pm) @ USD 3,100/pm.
23a	Project manager (4.5 pm) @ USD 6,900/pm. Project assistant (16.5 pm) @ USD 3,100/pm.
24	Office furniture (USD 13,589 in year 1)
25	PPEs, first aid kits (400 USD/year)

Budget note number	
26	(50 USD docusign+ 156 USD e-mail subscription+227 USD Office 365+24 USD Zoom) *3 staff*5 years
27	Office supplies (USD 5,000 per year in years 1, 2 and 3; USD 7,500 in year 4; USD 12,500 in year 5)
28	3 computers @ USD 1,300
29	Custodial and Cleaning services, Utilities (300 USD/year)
30	Maintenance of equipment (329 USD/year)
31	5 independent financial audits @ USD 2,000
32	Mailing and clearances (300 USD per year) * 5 = 1,500
33	Office operations (USD 1,800 per year) * 5 = 9,000
33a	USD 2,860 per year * 5 = 14,300
<p>General note: 1 person-month (pm) corresponds to 1/12 of the effective working hours provided by one person in one year, working as individual consultant or within a consultancy company. It includes all the indirect costs related to her activities. Assuming 216 working days per year, 1 person-month corresponds to 18 working days.</p>	

X. LEGAL CONTEXT

189. This project document shall be the instrument referred to as such in Article 1 of the Standard Basic Assistance Agreement between the Government of Lebanon and UNDP, signed on 10 February 1986. All references in the SBAA to “Executing Agency” shall be deemed to refer to “Implementing Partner.”
190. This project will be implemented by the United Nations Development Programme (“Implementing Partner”) in accordance with its financial regulations, rules, practices and procedures only to the extent that they do not contravene the principles of the Financial Regulations and Rules of UNDP. Where the financial governance of an Implementing Partner does not provide the required guidance to ensure best value for money, fairness, integrity, transparency, and effective international competition, the financial governance of UNDP shall apply.
191. The designations employed and the presentation of material on this document do not imply the expression of any opinion whatsoever on the part of the Secretariat of the United Nations or UNDP concerning the legal status of any country, territory, city or area or its authorities, or concerning the delimitation of its frontiers or boundaries.

XI. RISK MANAGEMENT

192. UNDP as the Implementing Partner will comply with the policies, procedures and practices of the United Nations Security Management System (UNSMS).
193. UNDP as the Implementing Partner will undertake all reasonable efforts to ensure that none of the [project funds]⁵⁰ [UNDP funds received pursuant to the Project Document]⁵¹ are used to provide support to individuals or entities associated with terrorism and that the recipients of any amounts provided by UNDP hereunder do not appear on the list maintained by the Security Council Committee established pursuant to resolution 1267 (1999). The list can be accessed via <https://www.un.org/securitycouncil/content/un-sc-consolidated-list>. This provision must be included in all sub-contracts or sub-agreements entered into under this Project Document.
194. Social and environmental sustainability will be enhanced through application of the UNDP Social and Environmental Standards (<http://www.undp.org/ses>) and related Accountability Mechanism (<http://www.undp.org/secu-srm>).
195. UNDP as the Implementing Partner will: (a) conduct project and programme-related activities in a manner consistent with the UNDP Social and Environmental Standards, (b) implement any management or mitigation plan prepared for the project or programme to comply with such standards, and (c) engage in a constructive and timely manner to address any concerns and complaints raised through the Accountability Mechanism. UNDP will seek to ensure that communities and other project stakeholders are informed of and have access to the Accountability Mechanism.
196. In the implementation of the activities under this Project Document, UNDP as the Implementing Partner will handle any sexual exploitation and abuse (“SEA”) and sexual harassment (“SH”) allegations in accordance with its regulations, rules, policies and procedures.
197. All signatories to the Project Document shall cooperate in good faith with any exercise to evaluate any programme or project-related commitments or compliance with the UNDP Social and Environmental Standards. This includes providing access to project sites, relevant personnel, information, and documentation.
198. UNDP as the Implementing Partner will ensure that the following obligations are binding on each responsible party, subcontractor and sub-recipient:
- a. Consistent with the Article III of the SBAA *[or the Supplemental Provisions to the Project Document]*, the responsibility for the safety and security of each responsible party, subcontractor and sub-recipient and its personnel and property, and of UNDP’s property in such responsible party’s, subcontractor’s and sub-recipient’s custody, rests with such responsible party, subcontractor and sub-recipient. To this end, each responsible party, subcontractor and sub-recipient shall:
 - i. put in place an appropriate security plan and maintain the security plan, taking into account the security situation in the country where the project is being carried;
 - ii. assume all risks and liabilities related to such responsible party’s, subcontractor’s and sub-recipient’s security, and the full implementation of the security plan.
 - b. UNDP reserves the right to verify whether such a plan is in place, and to suggest modifications to the plan when necessary. Failure to maintain and implement an appropriate security plan as required hereunder shall be deemed a breach of the responsible party’s, subcontractor’s and sub-recipient’s obligations under this Project Document.

50 To be used where UNDP is the Implementing Partner

51 To be used where the UN, a UN fund/programme or a specialized agency is the Implementing Partner

- c. In the performance of the activities under this Project, UNDP as the Implementing Partner shall ensure, with respect to the activities of any of its responsible parties, sub-recipients and other entities engaged under the Project, either as contractors or subcontractors, their personnel and any individuals performing services for them, that those entities have in place adequate and proper procedures, processes and policies to prevent and/or address SEA and SH.
- d. Each responsible party, subcontractor and sub-recipient will take appropriate steps to prevent misuse of funds, fraud or corruption, by its officials, consultants, subcontractors and sub-recipients in implementing the project or programme or using the UNDP funds. It will ensure that its financial management, anti-corruption and anti-fraud policies are in place and enforced for all funding received from or through UNDP.
- e. The requirements of the following documents, then in force at the time of signature of the Project Document, apply to each responsible party, subcontractor and sub-recipient: (a) UNDP Policy on Fraud and other Corrupt Practices and (b) UNDP Office of Audit and Investigations Investigation Guidelines. Each responsible party, subcontractor and sub-recipient agrees to the requirements of the above documents, which are an integral part of this Project Document and are available online at www.undp.org.
- f. In the event that an investigation is required, UNDP will conduct investigations relating to any aspect of UNDP programmes and projects. Each responsible party, subcontractor and sub-recipient will provide its full cooperation, including making available personnel, relevant documentation, and granting access to its (and its consultants', subcontractors' and sub-recipients') premises, for such purposes at reasonable times and on reasonable conditions as may be required for the purpose of an investigation. Should there be a limitation in meeting this obligation, UNDP shall consult with it to find a solution.
- g. Each responsible party, subcontractor and sub-recipient will promptly inform UNDP as the Implementing Partner in case of any incidence of inappropriate use of funds, or credible allegation of fraud or corruption with due confidentiality.

Where it becomes aware that a UNDP project or activity, in whole or in part, is the focus of investigation for alleged fraud/corruption, each responsible party, subcontractor and sub-recipient will inform the UNDP Resident Representative/Head of Office, who will promptly inform UNDP's Office of Audit and Investigations (OAI). It will provide regular updates to the head of UNDP in the country and OAI of the status of, and actions relating to, such investigation.

- h. UNDP will be entitled to a refund from the responsible party, subcontractor or sub-recipient of any funds provided that have been used inappropriately, including through fraud or corruption, or otherwise paid other than in accordance with the terms and conditions of this Project Document. Such amount may be deducted by UNDP from any payment due to the responsible party, subcontractor or sub-recipient under this or any other agreement. Recovery of such amount by UNDP shall not diminish or curtail any responsible party's, subcontractor's or sub-recipient's obligations under this Project Document.

Where such funds have not been refunded to UNDP, the responsible party, subcontractor or sub-recipient agrees that donors to UNDP (including the Government) whose funding is the source, in whole or in part, of the funds for the activities under this Project Document, may seek recourse to such responsible party, subcontractor or sub-recipient for the recovery of any funds determined by UNDP to have been used inappropriately, including through fraud or corruption, or otherwise paid other than in accordance with the terms and conditions of the Project Document.

Note: The term “Project Document” as used in this clause shall be deemed to include any relevant subsidiary agreement further to the Project Document, including those with responsible parties, subcontractors and sub-recipients.

- i. Each contract issued by the responsible party, subcontractor or sub-recipient in connection with this Project Document shall include a provision representing that no fees, gratuities, rebates, gifts, commissions or other payments, other than those shown in the proposal, have been given, received, or promised in connection with the selection process or in contract execution, and that the recipient of funds from it shall cooperate with any and all investigations and post-payment audits.
- j. Should UNDP refer to the relevant national authorities for appropriate legal action any alleged wrongdoing relating to the project or programme, the Government will ensure that the relevant national authorities shall actively investigate the same and take appropriate legal action against all individuals found to have participated in the wrongdoing, recover and return any recovered funds to UNDP.
- k. Each responsible party, subcontractor and sub-recipient shall ensure that all of its obligations set forth under this section entitled “Risk Management” are passed on to its subcontractors and sub-recipients and that all the clauses under this section entitled “Risk Management Standard Clauses” are adequately reflected, *mutatis mutandis*, in all its sub-contracts or sub-agreements entered into further to this Project Document.

XII. MANDATORY ANNEXES

1. GEF Budget Template (available from BPPS NCE-VF)
2. GEF Execution Support Letter (available at www.thegef.org or from BBPS NCE-VF)
3. Project Map and geospatial coordinates of the project area
4. Multiyear Workplan
5. Monitoring Plan
6. Social and Environmental Screening Procedure (SESP)
7. UNDP Atlas Risk Register
8. Overview of technical consultancies/subcontracts
9. Stakeholder Engagement Plan
10. Environmental Social Management Framework (ESMF)
11. Gender Analysis and Gender Action Plan
12. Procurement Plan – for first year of implementation especially
13. GEF focal area specific annexes (GHG calculations, beneficiaries)
14. Additional agreements: such as cost sharing agreements, project cooperation agreements signed with NGOs (where the NGO is designated as the “executing entity”), letters of financial commitments etc..
15. GEF Core indicators
16. GEF Taxonomy
17. [Partners Capacity Assessment Tool and HACT assessment](#) may not be required for EAs if less than US\$300,000 will be transferred to IP
18. UNDP Project Quality Assurance Report (to be completed in UNDP online corporate planning system)
19. Signed LOA between UNDP and IP requesting UNDP Support Services (if required on exceptional basis and authorized by the GEF)

Annex 1: GEF Budget Template

Expenditure Category	Detailed Description	Component (USDeq.)						Total (USDeq.)	Responsible Entity
		Component 1	Component 2	Component 3	Sub-Total	M&E	PMC		(Executing Entity receiving funds from the GEF Agency)[1]
		Sub-component 1.1	Sub-component 2.1	Sub-component 3.1					
Equipment	Procurement and installation of fast-charging equipment for e-buses (USD 150,000) (to be owned by UNDP until end of the project and transferred to the government afterwards).		150,000		150,000			150,000	UNDP
Equipment	Technical assistance to output 3.1 (virtual platform and website, 1.0 pm) @ USD 10,000/pm			10,000	10,000			10,000	UNDP
Equipment	PPEs, first aid kits (400 USD/year)						2,000	2,000	UNDP
Equipment	(50 USD docuSign+ 156 USD e-mail subscription+227 USD Office 365+24 USD Zoom) *3 staff*5 years						6,855	6,855	UNDP
Equipment	3 computers @ USD 1,300						3,900	3,900	UNDP
Equipment	Maintenance of equipment (329 USD/year)						1,645	1,645	UNDP
Equipment -Vehicles	Procurement of 2 e-buses (2@ USD 450,000); procurement of pilot cars and fleet management hardware and software (USD 160,000) (to be owned by UNDP until end of the project and transferred to the government afterwards).		1,060,000		1,060,000			1,060,000	UNDP
Equipment -Vehicles	Office furniture (USD 13,589 in year 1)						13,589	13,589	UNDP
Contractual Services – Company	Technical assistance for activities 1.1.2 (4 pm), 1.1.3 (3.5 pm), 1.1.1 (9 pm), 1.2.2 (4 pm), 1.2.3 (4 pm), 1.2.4 (4 pm), 1.3.1 (8.5 pm), 1.3.2 (1.5 pm) and 1.3.3 (10.0 pm) @ USD 10,000/pm. Environmental expertise team for activity 1.2.5 (1.5 pm) @ USD 10,000/pm	500,000			500,000			500,000	UNDP

Contractual Services – Company	Technical assistance for activities 2.1.1 (3.7 pm), 2.1.3 (2.0 pm), 2.2.1 (1.7 pm), 2.3.1 (2.0 pm), 2.3.3 (1.0 pm), 2.4.1 (2 pm), 2.4.3 (1 pm), 2.5.1 (2.0 pm), and 2.5.3 (1.0 pm) @ USD 10,000/pm. Construction works in Jbeil (activity 2.3.2) USD 375,000. Environmental expertise team for activity 2.3.2 (1.0 pm) @ USD 10,000/pm		549,000		549,000			549,000	UNDP
Contractual Services – Company	Technical assistance to output 3.3 (communication plan, 1.7 pm or USD 17,000). Transport professionals: Training and supporting materials (USD 18,000) and gender training materials (USD 10,000). Planners and decision-makers: 2 workshops (USD 16,000). Train-of-trainers workshops: 2 workshops (USD 20,000)			81,000	81,000			81,000	UNDP
Contractual Services – Company	Technical assistance on project monitoring platform and compilation of knowledge products (USD 10,000).					10,000		10,000	UNDP
Contractual services- Individual	Project manager (2.5 pm output 1.1; 5.5 pm output 1.2; 2 pm output 1.3) @ USD 6,900/pm. Transport engineer (1.0 pm output 1.2) @ USD 5,200/pm. Project assistant (1.0 pm output 1.1; 4.1 pm output 1.2) @ USD 3,100/pm. Project safeguards officer (1.2 pm output 1.1; 3.0 pm output 1.2) @ USD 2,500/pm	100,510			100,510			100,510	UNDP
Contractual services- Individual	Project manager (3.0 pm output 2.1; 2.4 pm output 2.2; 1.5 pm output 2.3; 0.8 pm output 2.4; 0.8 pm output 2.5) @ USD 6,900/pm. Transport engineer (10.0 pm output 2.1; 7.0 pm output 2.2; 7.0 pm output 2.3; 4.0 pm output 2.4; 4.0 pm output 2.5) @ USD 5,200/pm. Project assistant (1.0 pm output 2.1; 0.5 pm output 2.2; 1.1 pm output 2.3) @ USD 3,100/pm. Project safeguards officer (0.5 pm output 2.1; 0.5 pm output 2.2; 0.9 pm output 2.3) @ USD 2,500/pm.		237,860		237,860			237,860	UNDP

Contractual services-Individual	Project manager (9.0 pm output 3.1; 11.0 pm output 3.2; 5.0 pm output 3.3; 3.0 pm output 3.4) @ USD 6,900/pm. Transport engineer (6.0 pm output 3.1; 6.0 pm output 3.2; 9.0 pm output 3.4) @ USD 5,200/pm. Project assistant (5.5 pm output 3.1; 2.5 pm output 3.2; 3.5 pm output 3.3; 5.8 pm output 3.4) @ USD 3,100/pm. Project safeguards officer (2.5 pm output 3.1; 1.6 pm output 3.2, 3.5 pm output 3.3; 1.9 pm output 3.4) @ USD 2,500/pm.				379,780	379,780			379,780	UNDP
Contractual services-Individual	Project manager (4.5 pm output 4.1) @ USD 6,900/pm. Transport engineer (6.0 pm output 4.1) @ USD 5,200/pm. Project assistant (2.0 pm output 4.1) @ USD 3,100/pm. Project safeguards officer (3.0 pm output 4.1) @ USD 2,500/pm						75,950		75,950	UNDP
Contractual services-Individual	Project manager (4.5 pm) @ USD 6,900/pm. Project assistant (16.5 pm) @ USD 3,100/pm.						82,200		82,200	UNDP
International Consultants	Technical assistance to activities 3.2.2 (1.0 pm) and 3.2.3 (1.0 pm) @ USD 10,000/pm				20,000	20,000			20,000	UNDP
International Consultants	Mid-term evaluation (USD 30,000). Terminal evaluation (USD 40,000)						70,000		70,000	UNDP
Local Consultants	Gender expert for activities 1.1.2 (0.5 pm), 1.2.5 (0.5 pm) @ USD 10,000/pm	10,000				10,000			10,000	UNDP
Local Consultants	Gender expert for activities 2.1.2 (0.3 pm), 2.2.2 (0.3 pm), 2.3.2 (1.0 pm) @ USD 10,000/pm		16,000			16,000			16,000	UNDP
Local Consultants	Gender expert for activities 3.1.1 (0.2 pm); 3.3.1 and 3.3.2 (0.4 pm); 3.4.1 and 3.4.2 (0.2 pm) @ USD 10,000/pm. Planners and decision-makers: training materials (USD 2,179); gender training materials (USD 4,000); social & environmental materials (USD 2,000).				16,179	16,179			16,179	UNDP
Local Consultants	Gender expert: monitoring of gender action plan (USD 7,000). Technical assistance to monitor social and environment safeguards (USD 8,000)						15,000		15,000	UNDP
Trainings, Workshops, Meetings	E-mobility network meetings: 10 meetings (USD 20,000)				20,000	20,000			20,000	UNDP
Trainings, Workshops, Meetings	Inception workshop (USD 2,000).					-	2,000		2,000	UNDP

Travel	13 trips @ USD 1,500 to participate at UNEP's E-mob Global Programme activities			19,500	19,500			19,500	UNDP
Travel	5 trips for public consultancies @ USD 400						2,000	2,000	UNDP
Office Supplies	Office supplies (USD 5,000 per year in years 1, 2 and 3; USD 7,500 in year 4; USD 12,500 in year 5)						35,000	35,000	UNDP
Other Operating Costs	General public campaigns (USD 40,000). Social & environmental audio visual and printed materials (USD 1,000).			41,000	41,000			41,000	UNDP
Other Operating Costs	Custodial and Cleaning services, Utilities (300 USD/year)				-		1,500	1,500	UNDP
Other Operating Costs	5 independent financial audits @ USD 2,000				-		10,000	10,000	UNDP
Other Operating Costs	Mailing and clearances (300 USD per year) * 5 = 1,500						1,500	1,500	UNDP
Other Operating Costs	Office operations (USD 1,800 per year) * 5 = 9,000						9,000	9,000	UNDP
Grand Total		610,510	2,012,860	587,459	3,210,829	172,950	169,189	3,552,968	

Annex 2: Project map and Geospatial Coordinates of project sites

Any maps included in this project document must conform to maps accepted by the UN Cartographic Unit (see <https://www.un.org/Depts/Cartographic/english/htmain.htm>)



Figure A.3.1: The Northern BRT Corridor

Project sites	Latitude	Longitude
ISF depot (Emile Helou Police Station, Beirut)	33.8809	35.4820
Jbeil, bus depot (Municipality Palace)	34.1240	35.6516

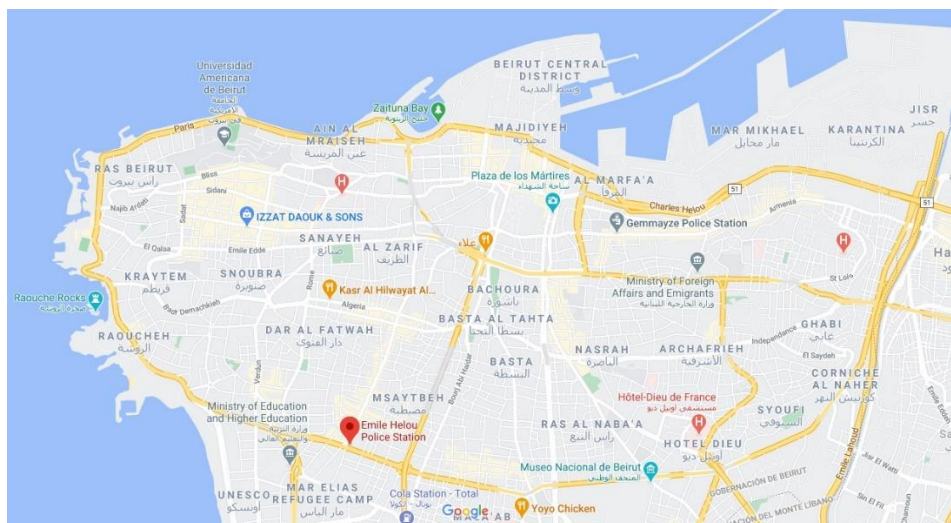


Figure A.3.2: Beirut. ISF depot (Emile Helou Police Station)



Figure A.3.3: Jbeil. Municipality Palace (Bus depot)

Annex 3: Multi Year Work Plan

	Outcomes	Outputs	2022		2023				2024				2025				2026				2027		
			Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4			
Component 1	1	1.1																					
		1.2																					
		1.3																					
Component 2	2	2.1																					
		2.2																					
		2.3																					
		2.4																					
		2.5																					
Component 3	3	3.1																					
		3.2																					
		3.3																					
		3.4																					
Comp.4	4	4.1																					

Annex 4: Monitoring Plan

This Monitoring Plan and the M&E Plan and Budget in Section VI of this project document will both guide monitoring and evaluation at the project level for the duration of project implementation.

Monitoring	Indicators	Targets	Description of indicators and targets	Data source/Collection Methods ⁵²	Frequency	Responsible for data collection	Means of verification	Risks/Assumptions
Project objective: Promote sustainable transport in Lebanon through electric mobility and improved quality of service	Indicator 1: # direct project beneficiaries disaggregated by gender	704,000 women and 713,000 men	Number of individuals (men and women)	Bus operators; WB estimates of commuters in northern corridor; municipal estimates of tourists in Jbeil; municipal census in Jbeil; national census	Annually Reported in DO tab of the GEF PIR	UNDP Country Office; Project consultant	Consultant report National statistics report Bus operators' passenger records	Project demonstrations start in month 25, at the latest
	Indicator 2: Expected (direct) metric tons of CO ₂ e avoided (at the time of measurement)	Mid-term: 0 End of project: 5,209 t.	CO ₂ e savings from EVs, from improved operating conditions and modal change	Project monitoring reports (EV tracking and surveys in Jbeil)	Annually after implementation	Project Management Unit and Project Consultant	Consultant report	Project demonstrations start in Month 25, at the latest. Minimum annual mileage achieved for each vehicle (see GHG Annex)
	Indicator 3: # indirect project beneficiaries disaggregated by gender		Number of individuals (men and women)	Bus operators; WB estimates of commuters in all corridors; municipal census in Jbeil; national census	Annually	UNDP Country Office; Project consultant	Consultant report National statistics report Bus operators' passenger records	Project demonstrations start in month 25, at the latest

⁵² Data collection methods should outline specific tools used to collect data and additional information as necessary to support monitoring. The PIR cannot be used as a source of verification.

Monitoring	Indicators	Targets	Description of indicators and targets	Data source/Collection Methods ⁵²	Frequency	Responsible for data collection	Means of verification	Risks/Assumptions
Project Outcome 1	Indicator 4: <i>E-mob strategy</i>	<i>Mid-term: Draft strategy presented End: Draft Strategy completed with government and 4 other stakeholders</i>	<i>National e-mobility strategy prepared with key stakeholders</i>	Reports from meetings with government and other key stakeholders	Annual	PMU	<i>Public statements from government and other key stakeholders</i>	The government keeps a sustained interest in the preparation of the national e-mobility strategy.
	Indicator 5: <i>Voluntary PT agreements signed</i>	<i>Mid-term: 2 End: 5</i>	<i>Number of voluntary agreements signed in the public transport sector</i>	Reports from meetings with bus operators	Quarterly	PMU	<i>UNDP requests for proposals. Signature of agreement documents</i>	<i>The financial conditions of bus operators improve, so that they can dedicate resources to improve the quality of their services</i>
Project Outcome 2	Indicator 6: <i>Green public transport users</i>	<i>Mid-term: 2,500 women, 2000 men End: 10,000 women, 8,000 men</i>	<i>Number of daily passengers (women and men) making use of green public transport services in the northern corridor</i>	Bus operators' records on tickets sold. Survey	Quarterly	PMU, participating bus operators, project consultant	Project surveys, bus ticketing records	Participating bus operators provide distinctive marks/logos to buses providing Green Public Transport Services Fares for GPTS remain affordable
	Indicator 7: <i>EVs registered</i>	<i>Mid-term: 4 cars, 2 buses End: 20 cars, 4 buses</i>	<i>Number of EVs newly registered in Lebanon</i>	<i>Official register of vehicles (MoPWT)</i>	<i>Semester</i>	PMU	<i>Official statistics</i>	<i>Financial climate improves in Lebanon, encouraging fleet renewal</i>

Monitoring	Indicators	Targets	Description of indicators and targets	Data source/Collection Methods ⁵²	Frequency	Responsible for data collection	Means of verification	Risks/Assumptions
Project Outcome 3	Indicator 8: Stakeholders in e-mobility network	Mid-term: 5 government; 4 non-gover. End: 8 government, 10 non-governm.	Number of governmental and non-governmental stakeholders actively engaged in the network	Minutes from network's meetings	Semester	PMU	Interviews with stakeholders	Financial climate improves in Lebanon, so that stakeholders become more interested in technological innovations
	Indicator 9: Decision-makers trained	Mid-term: 10 women, 10 men. End: 20 women, 20 men	Number of public and private decision-makers trained (women and men)	Reports from training activities	Semester	PMU	Interviews with participants	Conflicting priorities among decision-makers due to the current crisis. The project is positioning itself within the national reconstruction effort to mitigate this risk.
Project Outcome 4	Indicator 10: Reports to the e-mob global program	Mid-term: 0 End: 6 reports (corresponding to activities 1.2.6, 2.3.3, 2.4.3, 2.5.3, 3.2.2 and 3.2.3	Number of reports on best practices and lessons learned on the project shared with the global Programme	Presentation of the reports at regional or global events of the UNEP E-mob Programme	Semester	PMU	Minutes from global events	Project needs to be aligned with global program activities, in order to have the opportunity to present its reports at the appropriate global events and meetings
<p>Indicators included in gender action plan, stakeholder engagement plan or other monitoring plans</p> <p>Indicators included in the SESP and ESMF are presented in Annex 6 and 10</p> <p>Indicators included in the SEP are presented in Annex 9</p> <p>Indicators included in the gender action plan are presented in Annex 11</p>								

Annex 5: UNDP Social and Environmental Screening Procedure (SESP)

The project's SESP is presented as a separate document.

Annex 6: UNDP Risk Register

#	Description	Risk Category	Impact & Probability	Risk Treatment / Management Measures	Risk Owner
1	Government's inaction in the project, due to pervasive political instability	Political	I = 3 L = 4	The project includes a bottom-up approach, working with private stakeholders and civil society, as well as with local governments and public agencies, less exposed to political instability. The project would further strengthen this approach, in case the expected national government's involvement does not materialize	PMU
2	Investments envisaged in other projects do not materialize, due to the financial crisis	Financial	I = 3 L = 4	The project is creating enabling conditions on sustainable mobility that will remain useful and operational in case of delays in the expected investments, and will remain valuable once these investment materialize	PMU
3	EV technologies and other technical deliverables not adapted to the country conditions	Technical	I : 4 L = 2	UNDP will liaise with the technical teams in various ministries and local stakeholders to determine the needs for technical information. During project implementation. Support from UNEP's e-mob global programme will also mitigate this risk.	PMU
4	Pervasive electricity shortages weaken interest in EVs	Technical	I = 3 L = 2	The design of the pilots includes distributed generation alternatives for assessment, and actions will be taken with the Ministry of Energy and Water as one of the key stakeholders	PMU, MoEW
5	High upfront investment competing with cheap second-hand imported vehicles	Financial	I = 1 L = 2	Significant investment in EVs is not envisaged during the project lifetime, which is consistent with the economic context in Lebanon. The national e-mobility strategy will provide regulatory proposals to address this, consistent with the economic expectations at end of project	PMU, GoL
6	Negative public perception on e-mobility technology and its societal and economic impacts	Cultural	I = 2 L = 1	Awareness raising activities will be attuned to the current social perception so that the communication is targeted to the specific negative impressions	PMU
7	COVID 19 pandemic remains as a threat, resulting in sustained changes in mobility and social behavior	Health	I = 4 L = 2	The project concepts (particularly in the design of demonstrations) will integrate changes in mobility and social behavior. COVID prevention policies in Lebanon include mobility as a key area for action, and the project will include COVID lessons learned in other countries. The following mitigation measures will be implemented if the pandemic results in continued application of lockdown and social distancing measures:	PMU

#	Description	Risk Category	Impact & Probability	Risk Treatment / Management Measures	Risk Owner
				<p>Physical meetings will be replaced by virtual meetings. Online tools (such as clouds for document preparation) will be used to facilitate the development of draft documents. Travel to activities of the Global E-mobility Programme will be held through means of 'virtual missions' if travel restrictions are established.</p> <p>Instructions will be provided for the operation of the vehicles used in the demonstrations, in line with those issued by public transport authorities. Targets for the relevant indicators will be revised accordingly.</p> <p>Additional efforts will be made by PMU to identify potential positive mobility practices issued from the COVID quarantine contributions and encourage its continuation.</p>	
8	Exposure and vulnerability to climate change of charging stations and bus stops	Environment	I = 3 L = 2	<p>Selection of the bus stops where rehabilitation activities will be undertaken (Activity 2.3.1) and charging stations installed (Activity 2.4.2) will take into consideration risk of flooding as described in the ESMF and project activities themselves. If this risk cannot be avoided, then the design (Activity 2.3.2) will include climate adaptation measures and measures added in the ESMP. (Addressed also as risk 3 in SESP).</p>	PMU
9	Inadequate (or lack of) treatment of EVs and their particular components (e.g., tires, batteries or lubricants) in the e-mobility strategy and during operation of the e-buses and cars	Environment	I = 4 L = 3	<p>In line with the ESMF that has been prepared for the project, a SESA (Activity 1.3.2) will be undertaken during preparation of the roadmap (Activity 1.3.1) to ensure that socioeconomic implications of the road map have been taken into account and that environmentally sound options for management of EV batteries and other components potentially containing hazardous material have been considered.</p> <p>For that purpose, Activity 1.3.3 entails preparing business models for second life of EV batteries and end-of-life management of EVs. This will require the screening of successful financial and business models on ELV components and second-life battery use, and the subsequent development of commercially viable business models for Lebanon. As for operation of the e-vehicles and hybrid cars (Activity 2.1.2 and Activity 2.2.2), a SESP will be undertaken once the GPTS and GFM concepts have been defined, so that the full range of the risks are assessed and management measures developed. (Addressed also as risk 6 in SESP).</p>	PMU

#	Description	Risk Category	Impact & Probability	Risk Treatment / Management Measures	Risk Owner
10	Master Plan of Jbeil not approved, impacting on the implementation of the pilots	Political	I = 2 L = 2	Although the Master Plan provides a favorable framework for implementation, the PMU can approach the pilots in Jbeil (improved access to some bus stops) as stand-alone actions that can be undertaken even if the approval of the Master Plan is delayed	PMU
11	Marginalized populations (especially people living in poverty, persons with disabilities and older people) and women are not involved in decision making on the E-mobility strategy and ELV roadmap for issues that may affect them, such as disposal location of the ELVs	Social	I = 3 L = 3	As this project is rated overall as a Substantial Risk project, and according to the Environmental and Social Management Framework (ESMF) that was prepared during the project preparation phase (ProDoc Annex 10), a Strategic Environmental and Social Assessment (SESA) (Activities 1.2.5 and 1.3.2) for the e-mobility strategy (Activity 1.2.4) and roadmap on end-of-life management (Activity 1.3.1) will be prepared. (Addressed also as risk 1 in SESP).	PMU
12	Marginalized population, women and small business owners prevented from participating in decision making on issues that affect them.	Social	I = 3 L = 3	In line with the ESMF, and in order to address the issue of business disruptions during the improvements in 2 to 4 bus stops (Activity 2.3.2), an Environmental and Social Management Plan (ESMP) will be prepared (based on an appropriately scoped ESIA), which will require engaging local businesses and obtaining their feedback on scheduling of rehabilitation activities and additional measures such as ensuring accessibility to reduce disruption to their activities to the extent possible. A Grievance Redress Mechanism (GRM) will be set up during project implementation to collect feedback from residents and other stakeholders and address any complaints. The project also includes a Stakeholder Engagement Plan (SEP) (ProDoc Annex 9) and Gender Action Plan (ProDoc Annex 11) that ensures consultation with local community and women during decision-making for the project. (Addressed also as risk 2 in SESP).	PMU
13	Air and dust emissions, noise, vibration, injuries, and physical hazards from	Health	I = 2 L = 4	The ESMP that will be prepared for the project will include an Occupational and Community Health and Safety Plan, Spill Prevention and Management Plan, and Traffic Management Plan for the rehabilitation activities for the bus stops and	PMU

#	Description	Risk Category	Impact & Probability	Risk Treatment / Management Measures	Risk Owner
	rehabilitation activities of bus stops and other accessibility infrastructure			other accessibility infrastructure (Activity 2.3.2) aiming at reducing the potential impacts related to emissions, noise and risk of accidents and injuries. (Addressed also as risk 4 in SESP).	
14	Spread of respiratory diseases (such as Covid-19) among workers and community during bus operation and rehabilitation activities	Health	I = 3 L = 3	WHO guidelines to limit the spread of Covid-19 will be applied during bus operation (Activity 2.4.3) and rehabilitation (Activity 2.3.2). (Addressed also as risk 5 in SESP).	PMU
15	Inappropriate behavior by drivers of the buses and ISF personnel using the vehicles provided by the project	Health	I = 4 L = 2	Prior to commencing operation of the vehicle fleet (Activity 2.1.2 and Activity 2.2.2), a Code of Conduct reflecting SES requirements will be prepared for the project such that all users of the vehicles must abide by them. Training will be offered to participating individuals to ensure they are aware of their responsibilities. (Addressed also as risk 7 in SESP).	PMU
16	Damage to cultural heritage sites during rehabilitation of bus stops and other accessibility infrastructure	Cultural	I = 4 L = 3	Per the ESMF, during selection of the bus stops and accessibility infrastructure to be rehabilitated (Activity 2.3.2), the ESIA will consider the location of cultural heritage sites and necessary measures for SES compliance will be included in the ESMP. (Addressed also as risk 8 in SESP).	PMU
17	Working conditions at the bus companies and services selected by the project do not meet national or labor laws and international labor commitments	Social	I = 3 L = 3	Engagement of the private sector (in particular the bus companies in activity 2.1.2) will be preceded by a private sector risk assessment (supplemented by a SESP) to ensure compliance with SES. (Addressed also as risk 9 in SESP).	PMU

Annex 7: Overview of Project Staff and Technical Consultancies

Guidance to project developer: The following template includes example text to help guide the completion of this template for the project in question and must be edited

Consultant	Time Input	Tasks, Inputs and Outputs
For Project Management		
Local / National contracting		
Project Manager Rate: \$6,900/month	5 years or 260 weeks	<p>The Project Manager (PM) will be responsible for the overall management of the project, including the mobilization of all project inputs, supervision over project staff, consultants and sub-contractors.</p> <p><u>Duties and Responsibilities</u></p> <ul style="list-style-type: none"> • Manage the overall conduct of the project. • Plan the activities of the project and monitor progress against the approved workplan. • Execute activities by managing personnel, goods and services, training and low-value grants, including drafting terms of reference and work specifications, and overseeing all contractors' work. • Monitor events as determined in the project monitoring plan, and update the plan as required. • Provide support for completion of assessments required by UNDP, spot checks and audits. • Manage requests for the provision of UNDP financial resources through funding advances, direct payments or reimbursement using the FACE form. • Monitor financial resources and accounting to ensure the accuracy and reliability of financial reports. • Monitor progress, watch for plan deviations and make course corrections when needed within project board-agreed tolerances to achieve results. • Ensure that changes are controlled and problems addressed. • Perform regular progress reporting to the project board as agreed with the board, including measures to address challenges and opportunities. • Prepare and submit financial reports to UNDP on a quarterly basis. • Manage and monitor the project risks – including social and environmental risks - initially identified and submit new risks to the Project Board for consideration and decision on possible actions if required; update the status of these risks by maintaining the project risks log. • Capture lessons learned during project implementation. • Prepare revisions to the multi-year workplan, as needed, as well as annual and quarterly plans if required. • Prepare the inception report no later than one month after the inception workshop. • Ensure that the indicators included in the project results framework are monitored annually in advance of the GEF PIR submission deadline so that progress can be reported in the GEF PIR.

Consultant	Time Input	Tasks, Inputs and Outputs
		<ul style="list-style-type: none"> • Prepare the GEF PIR. • Assess major and minor amendments to the project within the parameters set by UNDP-GEF. • Monitor implementation plans including the gender action plan, stakeholder engagement plan, and any environmental and social management plans. • Monitor and track progress against the GEF Core indicators. • Support the Mid-term review and Terminal Evaluation process. • Undertake the following technical tasks: <ul style="list-style-type: none"> • Assess progress in the achievement of NDC targets and NAMA initiatives related to transport, and steer the process for the preparation of self-certified Green Public Transport Service (GPTS) Agreements and Green Fleet Management (GFM) Agreements. • Steer the process for drafting the national e-mobility strategy as well as facilitating its adoption by key stakeholders. • Steer the drafting of the roadmap on end-of-life vehicle management, including business models for second life of EV batteries and end-of-life management of EVs. • Steer the process for the adoption of GPTS, including selection of bus operators and setting up self-certification procedures. • Steer the process to implement and monitor the GFM concept in ISF. • Supervise the selection of walking and cycling improvement works in Jbeil, their implementation and evaluation. • Coordinate the report on results, lessons learnt and replication options for the GPTS and e-buses demonstration. • Coordinate the report on results, lessons learnt and replication options for the GFM and e-car demonstration. • Facilitate the establishment and operation of the networking mechanism supporting sustainable mobility and the e-mobility strategy. • Act as focal point to liaise the project with the UNEP/GEF Global Programme to Support countries with the Shift to Electric Mobility. • Steer the preparation, implementation, monitoring and evaluation of the project’s communication plan. • Steer the preparation, implementation, monitoring and evaluation of capacity-building activities addressed to municipal planners and public transport managers. • Steer the setting-up of the project Grievance Redress Mechanisms.
<i>Project Assistant Rate: \$3,100/month</i>	<i>5 years or 260 weeks</i>	<p><u><i>Duties and Responsibilities</i></u> <i>Under the guidance and supervision of the Project Manager, the Project Assistant will carry out the following tasks:</i></p> <ul style="list-style-type: none"> • <i>Assist the Project Manager in day-to-day management and oversight of project activities;</i> • <i>Undertake M&E activities and knowledge resources management;</i> • <i>Assist in the preparation of progress reports;</i>

Consultant	Time Input	Tasks, Inputs and Outputs
		<ul style="list-style-type: none"> • <i>Ensure all project documentation (progress reports, consulting and other technical reports, minutes of meetings, etc.) are properly maintained in hard and electronic copies in an efficient and readily accessible filing system, for when required by PB, TAC, UNDP, project consultants and other PMU staff;</i> • <i>Provide PMU-related administrative and logistical assistance, including:</i> <ul style="list-style-type: none"> • <i>Keep records of project funds and expenditures, and ensure all project-related financial documentation are well maintained and readily available when required by the Project Manager.</i> • <i>Review project expenditures and ensure that project funds are used in compliance with the Project Document and Gol financial rules and procedures.</i> • <i>Validate and certify FACE forms before submission to UNDP.</i> • <i>Provide necessary financial information as and when required for project management decisions-</i> • <i>Provide necessary financial information during project audits.</i> • <i>Review annual budgets and project expenditure reports and notify the Project Manager if there are any discrepancies or issues.</i> • <i>;</i> • <i>Support the project manager in the following technical tasks:</i> <ul style="list-style-type: none"> • <i>Preparation of self-certified Green Public Transport Service (GPTS) Agreements and Green Fleet Management (GFM) Agreements.</i> • <i>Drafting the national e-mobility strategy as well as facilitating its adoption by key stakeholders.</i> • <i>Adoption of GPTS, including selection of bus operators.</i> • <i>Implementation of the GFM concept in ISF.</i> • <i>Selection of walking and cycling improvement works in Jbeil, their implementation and evaluation.</i> • <i>Support the establishment and operation of the networking mechanism supporting sustainable mobility and the e-mobility strategy.</i> • <i>Support the participation of Lebanon in the activities of the UNEP/GEF Global Programme to Support countries with the Shift to Electric Mobility.</i> • <i>Support the preparation, implementation, monitoring and evaluation of the project’s communication plan.</i> • <i>Support the preparation, implementation, monitoring and evaluation of capacity-building activities addressed to municipal planners and public transport managers.</i> • <i></i>
<i>Project Transport Engineer Rate: \$5,200/month</i>	<i>5 years or 260 weeks</i>	<u><i>Duties and Responsibilities</i></u> <i>The Project Transport Engineer will be responsible for providing overall technical backstopping and management support to the Project:</i>

Consultant	Time Input	Tasks, Inputs and Outputs
		<ul style="list-style-type: none"> • <i>Integrate lessons learnt from the demonstrations in the national e-mobility strategy.</i> • <i>Implement the adoption of GPTS, including selection of bus operators and setting up of self-certification procedures.</i> • <i>Implement and monitor the GFM concept in ISF.</i> • <i>Undertake the selection of walking and cycling improvement works in Jbeil, their implementation and evaluation.</i> • <i>Under the supervision of the project manager, drafting of the report on results, lessons learnt and replication options for the GPTS and e-buses demonstration.</i> • <i>Under the supervision of the project manager, drafting of the report on results, lessons learnt and replication options for the GFM and e-car demonstration.</i> • <i>Provide technical support to the networking mechanism supporting sustainable mobility and the e-mobility strategy.</i> • <i>Report on project's activities and results to the UNEP/GEF Global Programme to Support countries with the Shift to Electric Mobility.</i> • <i>Provide technical input to the preparation, implementation, monitoring and evaluation of capacity-building activities addressed to municipal planners and public transport managers</i> <p><i>The Project Transport Engineer will also be responsible for providing overall project monitoring and evaluation, as well as knowledge management:</i></p> <ul style="list-style-type: none"> • <i>Design and implements the project's M&E plan, under the guidance of the project manager.</i> • <i>Design and implements the project's monitoring platform, under the supervision of the project manager.</i> • <i>Monitor project progress and participate in the production of progress reports ensuring that they meet the necessary reporting requirements and standards;</i> • <i>Ensure project's M&E meets the requirements of the Government, the UNDP Country Office, and UNDP-GEF; develop project-specific M&E tools as necessary;</i> • <i>Oversee and ensure the implementation of the project's M&E plan, including periodic appraisal of the Project's Theory of Change and Results Framework with reference to actual and potential project progress and results;</i> • <i>Oversee/develop/coordinate the implementation of the stakeholder engagement plan;</i> • <i>Oversee and guide the design of surveys/ assessments commissioned for monitoring and evaluating project results;</i> • <i>Facilitate mid-term and terminal evaluations of the project; including management responses;</i> • <i>Facilitate annual reviews of the project and produce analytical reports from these annual reviews, including learning and other knowledge management products;</i> • <i>Support project site M&E and learning missions;</i> • <i>Visit project sites as and when required to appraise project progress on the ground and validate written progress reports.</i> • <i>Develop and compiles the project knowledge management products, under the supervision of the project manager.</i>

Consultant	Time Input	Tasks, Inputs and Outputs
Project Safeguards Officer: \$2,500/month	5 years or 260 weeks	<p><u>Duties and Responsibilities</u></p> <p>Under the guidance and supervision of the Project Manager, the Project Safeguards Officer will carry out the following tasks:</p> <ul style="list-style-type: none"> • Undertake M&E activities and knowledge resources management related to the project safeguards; • Assist in the preparation of progress reports, in what refers to the project safeguards; • Undertake SESP & ESMF related activities: <ul style="list-style-type: none"> • Monitor progress in development/implementation of the project ESMP/ESMF ensuring that UNDPs SES policy is fully met and the reporting requirements are fulfilled. • Oversee/develop/coordinate implementation of all safeguard related plans. • Ensure social and environmental grievances are managed effectively and transparently. • Review the SESP annually, and update and revise corresponding risk log; mitigation/management plans as necessary; • Ensure full disclosure with concerned stakeholders. • Ensure environmental and social risks are identified, avoided, mitigated and managed throughout project implementation. • Work with the project transport engineer to ensure reporting, monitoring and evaluation fully address the safeguard issues of the project. • Support gender-related activities: <ul style="list-style-type: none"> • Monitor progress in implementation of the project Gender Action Plan ensuring that targets are fully met and the reporting requirements are fulfilled; • Oversee/develop/coordinate implementation of all gender-related work; • Review the Gender Action Plan annually, and update and revise corresponding management plans as necessary; • Work with the M&E officer and Safeguards Officer to ensure reporting, monitoring and evaluation fully address the gender issues of the project; • Support the project manager in setting-up of the project Grievance Redress Mechanisms.
International / Regional and global contracting		
MTR consultant	Month 33-36	<p><u>Mid-Term Evaluation</u></p> <p>The Mid-Term Evaluation will assess progress towards the achievement of the project objectives and outcomes as specified in the Project Document, and assess early signs of project success or failure with the goal of identifying the necessary changes to be made in order to set the project on-track to achieve its intended results. The MTE will also review the project's strategy and its risks to sustainability.. The evaluator will receive assistance from the Country Office (CO) and Project Team to obtain financial data and other factual evidence, which will be included in the mid-term evaluation report.</p>

Consultant	Time Input	Tasks, Inputs and Outputs
		<p>The principal responsibility for managing this evaluation resides with the UNDP CO in Lebanon. The Project Team will be responsible for liaising with the evaluator to set up stakeholder interviews, arrange field visits, coordinate with the Government, etc.</p> <p>The mid-term evaluator must present the following qualifications:</p> <ul style="list-style-type: none"> • Master's or equivalent degree in urban transport, urban studies, civil engineering, environment or related field. • Minimum 10 years of progressive experience in urban transport and mobility planning and development, urban planning and development, environment and in addition experience related to climate change mitigation projects. • Knowledge of UNDP and GEF evaluation procedures. • Previous experience with results-based monitoring and evaluation methodologies. • At least 5 similar evaluation/review tasks in urban transport projects completed. • Excellent English is required. <p>Assets would include:</p> <ul style="list-style-type: none"> • Experience in implementing GEF funded or relevant/ similar donor funded transport projects • Experience in the Mediterranean and Mid-East region
TE consultant	Month 54-57	<p>Terminal evaluation</p> <p>The Terminal Evaluation will assess the key financial aspects of the project, including the extent of co-financing planned and realized. The evaluator will receive assistance from the Country Office (CO) and Project Team to obtain financial data and other factual evidence, which will be included in the terminal evaluation report. In particular, the Terminal evaluation will include the following:</p> <ul style="list-style-type: none"> • MAINSTREAMING. The evaluation will assess the extent to which the project was successfully mainstreamed with other UNDP priorities, including poverty alleviation, improved governance, the prevention and recovery from natural disasters, and gender. • IMPACT. The evaluation will assess the extent to which the project is achieving impacts or progressing towards the achievement of impacts. • CONCLUSIONS, RECOMMENDATIONS & LESSONS. The evaluation report must include a chapter providing a set of conclusions, recommendations and lessons. <p>The principal responsibility for managing this evaluation resides with the UNDP CO in Lebanon. The Project Team will be responsible for liaising with the Evaluator to set up stakeholder interviews, arrange field visits, coordinate with the Government, etc.</p> <p>The Terminal evaluator must present the following qualifications:</p> <ul style="list-style-type: none"> • Master's or equivalent degree in urban transport, urban studies, civil engineering, environment or related field.

Consultant	Time Input	Tasks, Inputs and Outputs
		<ul style="list-style-type: none"> • <i>Minimum 10 years of progressive experience in urban transport and mobility planning and development, urban planning and development, environment and in addition experience related to climate change mitigation projects.</i> • <i>Knowledge of UNDP and GEF evaluation procedures.</i> • <i>Previous experience with results-based monitoring and evaluation methodologies.</i> • <i>At least 5 similar evaluation/review tasks in urban transport projects completed.</i> • <i>Excellent English is required.</i> <p><i>Assets would include:</i></p> <ul style="list-style-type: none"> • <i>Experience in implementing GEF funded or relevant/ similar donor funded transport projects</i> • <i>Experience in the Mediterranean and Mid-East region</i>
For Technical Assistance		
Outcome 1		
International contracting		
<p><i>GPTS consulting company</i> <i>USD 77,000</i></p>	<p><i>Month 6 (June 2022)</i> <i>(7.7 person-month)</i></p>	<p><i>Technical assistance for activity 1.1.2 (Guidelines addressing the legal, financial and regulatory aspects related to the implementation of Self-Certified Green Public Transport Service agreements, including review of international best-practice) and 2.1.1 (Feasibility study on the green public transport service concept).</i></p> <ul style="list-style-type: none"> • <i>Review of international best practice in the certification and standardization of quality of bus services in urban and regional public transport.</i> • <i>Identification of international best practices in voluntary agreements and self-certification, with a focus on the passenger transport sector.</i> • <i>Review of Lebanese legal framework, and its requirements towards voluntary agreements and self-certification in the passenger transport sector.</i> • <i>Assessment of financial needs for introducing voluntary agreements and self-certification concepts and identification of financial instruments.</i> • <i>Review of Lebanese regulations in the field of transport, standardization and certification, with a focus on the passenger transport sector.</i> • <i>Consultations with transport authorities, bus operators and other relevant private and public stakeholders.</i> • <i>Surveys to public transport and car users in the northern corridors to identify their bus service quality priorities and willingness to pay.</i> • <i>Development of guidelines for the implementation of self-certified green public transport services.</i> • <i>Feasibility study and detailed roadmap for the implementation of the GPTS concept in the northern corridor.</i> • <i>Development of draft call for proposals for the selection of the bus operators willing to implement the GPTS concept.</i>

Consultant	Time Input	Tasks, Inputs and Outputs
Consulting company USD 52,000	Month 6 (June 2022) (5.2 person-month)	<p>Technical assistance for activity 1.1.3 (Guidelines addressing the legal, financial and regulatory aspects related to the implementation of Self-Certified Green Fleet Management agreements, including review of international best-practice) and 2.2.1 (Feasibility study on the green fleet management concept).</p> <ul style="list-style-type: none"> • Review of international best practice in green car fleet management. • Review of international best practice in the certification and standardization green car fleet management and experiences in voluntary agreements and self-certification procedures. • Review of the Lebanese legal framework, and its requirements towards voluntary agreements and self-certification related to large corporate (public and private) car fleets. • Assessment of financial needs for introducing voluntary agreements and self-certification concepts and identification of financial instruments. • Review of Lebanese regulations in the field of transport, standardization and certification, with a focus on fleet management. • Consultations with public and private institutions and corporations managing large car fleets and other relevant private and public stakeholders. • Surveys to Unions and staff in the interested institutions and corporations to identify their fleet management priorities. • Development of guidelines for the implementation of self-certified GFM concepts. • Feasibility study and detailed roadmap for the implementation of the GFM concept in ISF and, eventually, other interested institutions and corporations in Lebanon.
Mobility Assessment (consulting company) USD 90,000	Month 5 (May 2022) (9.0 person-month)	<p>Technical assistance for activity 1.2.1 (Assessment of progress in NDC transport targets and NAMA initiatives completed)</p> <ul style="list-style-type: none"> • Collection and analysis of existing studies on passenger mobility in Lebanon, with a focus on the northern corridor, including short-distance mobility and the relevance of walking and cycling. Identification of critical data needs. • Collection of critical data on passenger mobility in Lebanon, through mobility surveys, mobile phone data and other techniques. • Description and diagnostic of personal mobility in the northern corridor • Identification of critical needs and potential short-term improvements through participatory and co-designing methodologies. • Action plan with short-term, low-cost measures to improve sustainable mobility in the northern corridor and its urban areas.
Road electrification guidelines (consulting company) USD 40,000	Month 8 (Aug 2022) (4.0 person-month)	<p>Technical assistance for activity 1.2.2 (Guidelines, including financial models, to support the supply and access to EV in Lebanon (focus on bus operators and car fleets))</p> <ul style="list-style-type: none"> • Review of best international practice for the deployment of EVs, with a focus on bus operators and large car fleets. • Identification and analysis of existing and potential fiscal and regulatory incentives and disincentives supporting EVs • Analysis of financial facilities for bus and car fleet renewal and Lebanon and their suitability for EVs. • Review of manufacturing and job-creation opportunities associated to EVs in Lebanon.

Consultant	Time Input	Tasks, Inputs and Outputs
		<ul style="list-style-type: none"> • Consultation with public and private stakeholders and validation of findings • Guidelines with fiscal and regulatory incentives and innovative financial facilities to promote the deployment of EVs in bus and car fleets in Lebanon.
Fleet's electrification study (consulting company) USD 40,000	Month 8 (Dec 2022) (4.0 person-month)	<p>Technical assistance for activity 1.2.3 (Study on electrification options for the Lebanese fleet (car and bus fleets and national electricity grid))</p> <ul style="list-style-type: none"> • Identification of institutions and corporations with bus or car fleets and selection of fleets to be included in the detailed study. • Review of international best practice on fleet electrification and development of an evaluation matrix to analyze the sample of bus and car fleets. • Estimate of future electricity demand by EVs and challenges and opportunities for the national electricity grid. • Development of at least 3 scenarios including incentives, financial conditions and general economic climate in Lebanon. • Development of electrification options for each participating fleet, including cost-benefit and cost-efficacy analysis under the chosen scenarios. • Conclusions and recommendations (1) for each participating fleet and (2) for the project
E-mobility strategy (consulting company) USD 40,000	Month 8 (Oct 2024) (4.0 person-month)	<p>Technical assistance for activity 1.2.4 (Drafting the national e-mobility strategy)</p> <ul style="list-style-type: none"> • Review of best international practice in e-mobility strategies • Identification of enabling conditions for road transport electrification • Setting up and implementing a collaborative planning process, with identification of stakeholders, regular meetings and activities • Identification and in-depth analysis of critical barriers for road transport electrification • Development of a shared vision for 2035, validated by the government and participating stakeholders. • Backcasting identification of critical actions needed until 2035 (roadmap). • Detailed assessment of regulatory and financial needs, and programming of critical actions • Integration of SESA recommendations within the national e-mobility strategy • Development of a monitoring and evaluation platform for the e-mobility strategy • Follow-up with national government and key stakeholders for their endorsement of the strategy
SESA of e-mobility strategy (consulting company) USD 40,000	Month 34 (Oct 2024) (4.0 person-month)	<p>Environmental expertise team: Technical assistance for activity 1.2.5 (Gender analysis and action plan and strategic environmental and social assessment (SESA) of the national e-mobility strategy)</p> <ul style="list-style-type: none"> • Support to the gender expert in the development of its Gender Analysis and Action Plan and integration of their conclusions with the SESA of the national e-mobility strategy. • Scoping of the environmental of social assessment required by the national e-mobility strategy • Screening of interested stakeholders • Development of a participatory procedure, aligned with Lebanese legislation on Strategic Impact Assessment.

Consultant	Time Input	Tasks, Inputs and Outputs
		<ul style="list-style-type: none"> Development and validation of the SESA Integration of SESA recommendations within the national e-mobility strategy
ELV roadmap (consulting company) USD 185,000	Month 25 (Jan 2024) (18.5 person-month)	<p>Technical assistance for activity 1.3.1 (Roadmap on end-of-life vehicle management) and 1.3.3 (Business models for second life of EV batteries and end-of-life management of EVs).</p> <ul style="list-style-type: none"> Data collection on current legislation and real practice of ELV management in Lebanon, including the social and economic characteristics of the ELV management subsector. Diagnostic of ELV management in Lebanon: challenges and opportunities. Review of international legislation and best practice on ELV management, including electric vehicles and their batteries. Roadmap for ELV management improvement in Lebanon. Integrating EVs within the ELV management roadmap, including: (1) Recommendations for managing EVs at their end of life in Lebanon, including their batteries; (2) recommendations for developing second-life use for batteries; (3) recommendations for battery recycling and disposal at their end of life.
Outcome 2		
Local / National contracting		
GPTS feasibility (consulting company) USD 37,000	Month 11 (Nov 2022) (3.7 person-month)	<p>Technical assistance for activity 2.1.1 (Feasibility study on the green public transport service concept)</p> <ul style="list-style-type: none"> Promotion of the GPTS concept among bus operators in the northern corridor. Identification of barriers for implementation and mitigation actions. Detailed design of self-certification procedures and control mechanisms Support to interested bus operators in the implementation of GPTS
GPTS implementation (consulting company) USD 20,000	Month 22 (Oct 2024) (2 person-month)	<p>Technical assistance for activity 2.1.3 (GPTS self-certification procedure established)</p> <ul style="list-style-type: none"> Provide technical support to PMU in the selection of the participating bus operators. Provide technical support to participating bus operators for establishing and managing self-certification procedures Provide technical support to participating bus operators for implementing quality standards included in the GPTS Provide hot-line technical support to participating bus operators during the demonstration. Provide monitoring and evaluation framework on GPTS compliance.
GFM feasibility (consulting company) USD 17,000	Month 11 (Nov 2022) (1.7 person-month)	<p>Technical assistance for activity 2.2.1 (Planning and implementation of the green fleet management concept in ISF)</p> <ul style="list-style-type: none"> Provide technical support to PMU in the analysis of current fleet management practices in ISF. Establish roadmap for the implementation of the GFM concept in ISF Provide technical capacity buildign to ISF staff on fleet management and ecodriving, in accordance with the GFM roadmap Design monitoring and evaluation framework for the implementation of the GFM. Provide hot-line technical support to ISF during the demonstration.
Jbeil pilot design (consulting company)	Month 25 (Jan 2023)	<p>Technical assistance for activity 2.3.1 (Accessibility criteria and conditions defined and pilot sites selected in Jbeil)</p>

Consultant	Time Input	Tasks, Inputs and Outputs
USD 20,000	(2 person-month)	<ul style="list-style-type: none"> Provide selection criteria for the identification of up to four pilot sites (bus stops) in Jbeil (number of passengers, centrality, walkability, public space quality, population density, activities and facilities in the surroundings...). Technical support to the PMU and the municipality of Jbeil in the selection of the pilot sites. Provide recommended design standards to be applied in the pilot sites (sheltering, universal accessibility, information, pedestrian and cycling accessibility in a 400-m radius...) and blueprint of the suggested interventions.
Jbeil pilot implementation (contracting company) USD 375,000	Month 27 (March 2023)	<p>Construction plan and construction works in Jbeil (activity 2.3.2) (Detailed construction plans developed, implemented and monitored in the pilot sites):</p> <ul style="list-style-type: none"> Provide full construction project of the interventions and obtain the necessary construction permits. Complete all necessary construction works.
Jbeil pilot reporting (consulting company or individual consultant) USD 10,000	Month 49 (Jan 2025) (1 person-month)	<p>Technical assistance for activity 2.3.3 (reporting of demonstration results: Report on results, lessons learnt and replication options):</p> <ul style="list-style-type: none"> Prepare a detailed monitoring and evaluation framework and methodology for the demonstration in Jbeil. Provide monitoring and evaluation reports on the performance of the demonstration sites in Jbeil every 6 months after implementation.
Support to e-bus procurement (consulting company) USD 20,000	Month 13 (Jan 2023) (2 person-month)	<p>Technical assistance for the procurement of e-buses (Procurement of e-bus)</p> <ul style="list-style-type: none"> Development of detailed technical specifications for 2 e-buses, in accordance with service required Development of detailed technical specifications for a fast charger of the 2 e-buses, including changes in the electrical system of the e-bus depot site. Identification of international manufacturers and national importers and providers. Development of detailed RfQ for the procurement of 2 e-buses and procurement and installation of the fast charger, including maintenance needs for a 4-year period. Technical support to the PMU in the assessment of the proposals received.
Procurement of 2 e-buses (contracting company) USD 900,000	Month 18 (Jun 2023)	<p>Procurement of 2 e-buses</p> <ul style="list-style-type: none"> Provision of 2 e-buses in accordance with the RfQ (lithium battery with capacity of at least 350 kWh, 12-m buses). Free-of charge provision of maintenance and technical service during at least four years.
E-bus charging infrastructure (contracting company)	Month 18 (Jun 2023)	<p>Procurement and installation of fast-charging equipment for e-buses, based on renewable energy)</p> <ul style="list-style-type: none"> Provision of fast-charging equipment (between 500 and 850VDC to charge buses using DC power), able to fully load 2 e-buses with lithium battery with capacity of at least 350 kWh in less than 6 hours), connected to the electricity grid and to a PV system. Provision and installation of PV system with capacity of 100 kWp to feed the charger.

Consultant	Time Input	Tasks, Inputs and Outputs
USD 150,000		<ul style="list-style-type: none"> Free-of charge provision of maintenance and technical service during at least four years.
E-bus pilot reporting (consulting company) USD 10,000	Month 25 (Jan 2024) (1 person-month)	<p>Technical assistance for activity 2.4.3 (reporting of demonstration results, lessons learnt and replication options)</p> <ul style="list-style-type: none"> Data collection on GPTS compliance. Surveys on passengers and staff (bus drivers) satisfaction. Regular data collection on e-bus electricity consumption, maintenance needs, performance, occupancy and punctuality. Provide monitoring and evaluation reports on GPTS compliance 6 months and one year after implementation.
Support to e-car procurement (consulting company) USD 20,000	Month 16 (Apr 2023) (2 person-month)	<p>Technical assistance for activities 2.5.1 (Procurement of 4 demonstration cars and fleet management hardware and software) and 2.5.2 (Guidelines to ISF for the operation of the cars, including routing selection and maintenance)</p> <ul style="list-style-type: none"> Development of detailed technical specifications for 4 e-cars, in accordance with service required Development of detailed technical specifications for a slow charger of the 4 e-cars, including changes in the electrical system of the ISF depot site, if necessary Identification of international manufacturers and national importers and providers. Development of detailed RfQ for the procurement of 4 e-cars, procurement and installation of the slow charger, and procurement and installation of GPS trackers and fleet management software, including maintenance needs for a 4-year period. Technical support to the PMU in the assessment of the proposals received.
Procurement of 4 e-cars (contracting company) USD 163,589	Month 19 (Jul 2023)	<p>Procurement of pilot cars and fleet management hardware and software (Procurement of 4 demonstration cars and fleet management hardware and software)</p> <ul style="list-style-type: none"> Provision of 4 e-cars in accordance with the RfQ (lithium battery with capacity of at least 30 kWh). Free-of charge provision of maintenance and technical service of the e-cars during at least four years. Procurement and installation of low-charging equipment for e-cars connected to the electricity grid Provision and installation of GPS trackers for at least 20 cars, fleet management software and 2 computers.
E-car pilot reporting (consulting company) USD 10,000	Month 25 (Jan 2024) (1 person-month)	<p>Technical assistance for activity 2.5.3 (reporting of demonstration results, lessons learnt and replication options)</p> <ul style="list-style-type: none"> Data collection on green fleet management compliance (fuel consumption, mileage and maintenance records of the surveyed fleet, vehicle assignment procedures, drivers' records...). Surveys to staff (car drivers) on satisfaction. Provide monitoring and evaluation reports on GFM compliance 6 months and one year after implementation.
		<ul style="list-style-type: none">
Outcome 3		
Local / National contracting		
Communication plan (consulting company)	Month 7 (Jul 2022)	<p>Technical assistance for the project communication plan, including monitoring and evaluation</p> <ul style="list-style-type: none"> Preparation of the project communication plan, including identification of targeted audiences, detailed communication activities, indicators and targets and framework for monitoring and evaluation.

Consultant	Time Input	Tasks, Inputs and Outputs
USD 17,000	(1.7 person-month)	<ul style="list-style-type: none"> Detailed budget and ToR for key communication activities (e.g. public campaigns, publications, website)
		<p>Design, implementation and operation of virtual platform supporting the network and project public website, and KM platform providing project monitoring results and development & compilation of KM products</p> <ul style="list-style-type: none"> Design, implementation and operation of a virtual platform to facilitate the interaction among members of the project-sponsored sustainable and electric mobility network, including repository of documents and virtual activities.
Network meeting support (company) USD 20,000	Month 16 (Apr 2023)	<p>Technical and hospitality support for the network meetings (venue, catering, etc) (10 meetings)</p> <ul style="list-style-type: none"> Provision of meeting room, supporting equipment (audiovisuals, etc) and personel and catering
Campaigns (consulting company) USD 40,000	Month 39 (March 2025)	<p>Implementation of campaigns targeting general users</p> <ul style="list-style-type: none"> Design of campaigns on sustainable mobility, safety and e-mobility targetting the general public, including gender dimensions Implementation of the campaigns Report on impact achieved by each campaign and lessons learnt
Technical training materials (consulting company) USD 18,000	Month 25 (Jan 2024)	<p>Design, editing and publication of training and supporting materials for transport companies and professionals</p> <ul style="list-style-type: none"> Design, editing and publication of materials on eco-driving and sustainable fleet management Design, editing and publication of materials on quality in public transport operations Design, editing and publication of materials on low-cost improvements of walking, cycling and bus stops
Gender training materials (consulting company) USD 10,000	Month 25 (Jan 2024)	<p>Design, editing and publication of training and supporting materials on gender aspects in transportation (staff and customers) for transport companies and professionals</p> <ul style="list-style-type: none"> Design, editing and publication of materials on gender aspects in fleet management Design, editing and publication of materials on gender aspects in public transport operations Design, editing and publication of materials on gender aspects in the design of walking, cycling and bus stop improvements
Policy training materials (consulting company or individual consultant) USD 2,179	Month 31 (Jul 2024)	<p>Training and supporting materials for municipal planners and decision-makers:</p> <ul style="list-style-type: none"> Design, editing and publication of materials on the integration of sustainable mobility and urban planning Design, editing and publication of materials on the facilitation of walking, cycling and public transport
Gender policy training materials (consulting company)	Month 31 (Jul 2024)	<p>Design, editing and publication of training and awareness-raising materials with a gender focus targeting municipal planners and decision-makers:</p> <ul style="list-style-type: none"> Design, editing and publication of materials on the gender dimension in the integration of sustainable mobility and urban planning

Consultant	Time Input	Tasks, Inputs and Outputs
<i>or individual consultant)</i> <i>USD 4,000</i>		<ul style="list-style-type: none"> <i>Design, editing and publication of materials on the gender dimension in the facilitation of walking, cycling and public transport</i>
<i>Safeguards training materials (consulting company or individual consultant)</i> <i>USD 2,000</i>	<i>Month 31 (Jul 2024)</i>	<p><i>Training materials on social and environmental safeguards for municipal planners and decision-makers (Supporting training and awareness-raising materials targeting municipal planners and decision-makers)</i></p> <ul style="list-style-type: none"> <i>Design, editing and publication of materials on the integration of environmental and social challenges in sustainable mobility policies</i>
<i>Training workshops (consulting company)</i> <i>USD 2,000</i>	<i>Month 39 (March 2025)</i>	<p><i>Training workshops for municipal planners and decision-makers (at least 2 workshops) including:</i></p> <ul style="list-style-type: none"> <i>Integration of sustainable mobility and urban planning.</i> <i>Low-cost solutions for the promotion of walking, cycling and public transport in cities.</i> <i>Gender, social and environmental challenges in urban mobility</i> <i>Provision of children-friendly spaces to facilitate the attendance of women to the activities</i>
International contracting		
<i>Lessons-learnt report (individual consultant)</i> <i>USD 10,000</i>	<i>Month 34 (Oct 2024)</i> <i>(1 person-month)</i>	<p><i>Technical assistance to activity 3.2.2 (report on lessons learnt from the project)</i></p> <ul style="list-style-type: none"> <i>Report on lessons learnt from the Global E-mobility Programme and proposals for their adaptation to the Lebanese context</i> <i>Report on key lessons learnt from the project's activities for their communication to the global programme and to a wider audience.</i>
<i>Exit strategy (individual consultant)</i> <i>USD 10,000</i>	<i>Month 55 (Jul 2026)</i> <i>(1 person-month)</i>	<p><i>Technical assistance to activity 3.2.3 (Project's exit strategy for the deployment of e-mobility in Lebanon)</i></p> <ul style="list-style-type: none"> <i>Review of project's activities and terminal evaluation</i> <i>Report on exit strategy, including identification of funding opportunities for up-scaling and replication</i>
<i>Train-the-trainer workshops (consulting company)</i> <i>USD 20,000</i>	<i>Month 13 (Jan 2023)</i>	<p><i>Train-the-trainer workshops on charging infrastructure, EV and hybrid vehicles maintenance and driving</i></p> <ul style="list-style-type: none"> <i>Planning and implementation of at least 2 workshops addressing future trainers of professional staff (drivers, maintenance, etc) in transport companies and transport fleets, including hands-on training.</i> <i>Provision of training guidance and educational materials to be used by future trainers.</i> <i>One-year on-line support to trainers.</i> <i>Provision of children-friendly spaces to facilitate the attendance of women to the activities</i>
<i>Safeguards materials (individual consultant)</i> <i>USD 1,000</i>	<i>Month 25 (Jan 2024)</i>	<p><i>Audio-visual and print materials on social and environmental safeguards, targeting transport companies and professionals:</i></p> <ul style="list-style-type: none"> <i>Design, production and delivery of 5 copies of audiovisual presenting social and environmental challenges of urban passenger mobility in Lebanon to transport companies and professionals, and the answers provided by the project</i>

Consultant	Time Input	Tasks, Inputs and Outputs
Outcome 4: KM and M&E		
International contracting		
ESMF consultant (individual consultant) USD 8,000	Month 19 (Jul 2023)	<p>Monitoring of social and environmental safeguards management measures and stakeholder engagement activities</p> <ul style="list-style-type: none"> • Review and update the ESMF. • Plan and participate in social screening activities as well as review of grievance readdress mechanisms. • Undertake follow up monitoring to ensure that proposed mitigation measures are implemented according to an agreed upon environmental and social mitigation implementation plan; • Supervise the development of social and environmental impact measures of the relevant projects and actions to be undertaken by the project, and ensure that such measures are approved by relevant authorities before implementation; • Lead on developing and delivering a series of spot checks to ensure safeguards policies are properly implemented at in line with the ESMF. • Compile quarterly reports on social and environmental safeguards as part of the M&E project effort. • Provide assistance to the PMU to minimize the likelihood of risks to materialize.
Local / National contracting		
Gender (individual) consultant USD 41,000	Month 6 (June 2022)	<p>Gender expert for relevant project activities (1.1.2; 1.2.5; 2.1.2; 2.2.2; 2.3.2; 3.3.1, 3.3.2; 3.3.2; 3.4.1, 3.4.2; 4.1.5)</p> <ul style="list-style-type: none"> • Monitor progress in implementation of the project Gender Action Plan ensuring that targets are fully met and the reporting requirements are fulfilled.; • Oversee implementation of all gender-related work. • Review the Gender Action Plan annually, and update and revise corresponding management plans as necessary. • Work with the M&E officer and Safeguards Officer to ensure reporting, monitoring and evaluation fully address the gender issues of the project.
Kick-off meeting (contracting company) USD 2,000	Month 1 (Feb 2022)	<p>Support to the organization and implementation of the inception workshop:</p> <ul style="list-style-type: none"> • Venue, supporting equipment (audiovisual, computers, recording...), supporting staff (registration, welcome package) and catering
Auditor (consulting company) USD 10,000	Month 14 (Feb 2023)	Independent financial audits (annual)

Annex 8: Stakeholder Engagement Plan

1. Introduction

This Stakeholder Engagement Plan (SEP) is designed to ensure effective engagement of all relevant stakeholders throughout the sustainable transport project lifecycle in Lebanon. The following definitions⁵³ are used throughout this document:

Consultation: Consultation involves information exchanges among the government, the Implementing Agency, the project executing agencies, and other stakeholders. Although decision making authority rests with the government, the Implementing Agencies, and the project executing agencies, periodic consultations throughout the project cycle help managers make informed choices about project activities. More important, it provides opportunities for communities and local groups to contribute to project design, implementation, and evaluation.

Public Involvement: Public involvement consists of three related, and often overlapping, processes: information dissemination, consultation, and stakeholder participation. Stakeholders are the individuals, groups or institutions which have an interest or "stake" in the outcome of a GEF-financed project or are potentially affected by it. Stakeholders include the recipient country government; project executing agencies; groups contracted to carry out project activities and/or consulted at various stages of the project; project beneficiaries; groups of people who may be affected by project activities; and other groups in the civil society which may have an interest in the project.

Stakeholder participation: Where stakeholders collaboratively engage in the identification of project concepts and objectives, selection of sites, design and implementation of activities, and monitoring and evaluation of project outcomes. Developing strategies for incorporating stakeholder participation throughout the project cycle is particularly necessary in projects with impacts on the incomes and livelihoods of local groups, especially disadvantaged populations in and around project sites (e.g., indigenous peoples, women, poor households).

2. Regulations and requirements

Legal requirements for public consultation are explicitly established in the Environmental Lebanese legislation. The Decrees on Strategic Environmental Assessments (Decree 8213/2012, Article 5) and on Environmental Impact Assessments (Decree 8633/2012) include the need to consult public and private entities during the preparation of the respective assessment reports. In accordance with the Lebanese legislation, the contents of the sustainable transport project are not formally subject to the SEA (for the national e-mobility strategy) or environmental impact assessment (for the infrastructure implemented in Jbeil) processes. However, the project is including these procedures, consistent with its general approach to encourage broad participation in the development of public policies in the field of urban mobility.

Additionally, the right of access to governmental information is recognized by Law 28/2017 on the right to access information, and has been developed by Decree 6940/2020.

This document follows GEF guidelines⁵⁴ on stakeholder involvement. In accordance with them, all GEF funded projects are required to meet best international practice and specifically the requirements for stakeholder engagement and public consultations. The project stakeholder engagement activities should be robust, and enough disclosure on information should be made in order to promote better awareness and understanding of its strategies, policies and operations. During disclosure, the project is required to: (1) Identify people or communities that are or could be affected by the project as well as other interested parties; (2) ensure that such stakeholders are appropriately engaged on environmental and social issues that could potentially affect them, through a process of information disclosure and meaningful consultation; and (3) maintain a constructive relationship with stakeholders on an on-going basis through meaningful engagement during project implementation. The stakeholder consultations are an on-going process, taking place during the project life and during this process, it is necessary to ensure that stakeholders are informed about environmental and social consequences of the project implementation and ensure the opportunity for feedback.

⁵³ From GEF (2018). Guidelines on the Implementation of the Policy on Stakeholder engagement. Retrieved from https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&cad=rja&uact=8&ved=2ahUKEwim9PnSm5TmAhWD34UKHZScBRkQFjAAegQIBRAC&url=https%3A%2F%2Fwww.thegef.org%2Fsites%2Fdefault%2Ffiles%2Fdocuments%2FStakeholder_Engagement_Guidelines.pdf&usg=AOvVaw0eP2ZYZbiiUrD-sKV5Kqs_

⁵⁴ From GEF (2018). Guidelines on the Implementation of the Policy on Stakeholder engagement.

3. Summary of any previous stakeholder engagement activities

This Stakeholder Engagement Plan (SEP) builds upon the interviews and workshops conducted during project preparation. They had to adjust to the limitations imposed by the COVID pandemic, so that most of these activities were conducted remotely. The project design team undertook more than 20 bilateral interviews with all the stakeholders since May 2020 until February 2021. All the stakeholders were invited to the project validation workshop, held on March 5, 2021. Participants at the validation workshop reviewed the project's theory of change, components, and the project results framework. They also reviewed the Social and Environmental Screening, the Environmental and Social Management Framework, the Gender Analysis and the Gender Action Plan.

During its implementation, the sustainable transport project in Lebanon is expected to maintain a fluid two-way dialogue with the relevant national and local government institutions and agencies, the private sector, and civil society in the country, as well as with international institutions and the countries participating in the UNEP/GEF e-mobility global programme. The SEP provides the framework to make it possible.

The process for identifying the private sector actors potentially interested in the project consisted of two stages: first, an initial mapping was carried out by UNDP. This was based on the experience from previous activities, such as the preparation of Nationally Appropriate Mitigation Actions (NAMA) in the transport and power generation sectors, and activities to promote e-mobility, such as the April 2019 Conference on "Road to Sustainable Mobility"⁵⁵. Other relevant activities included the supporting studies and activities for the implementation of BRT corridors in the metropolitan area of Beirut. This mapping stage provided the main elements for the selection and analysis of stakeholders including:

Identification of actors that could benefit and be disadvantaged with the development of project's activities.

- Their level of awareness and acceptance of sustainable urban transport and e-mobility options.
- Their relationships with other stakeholders and their level of interest in the project's objectives.
- Their expectations from the project and the potential benefits they could obtain.

During the second stage, the project design team reviewed the capacities of the actors identified through bilateral meetings and interviews and at the validation workshop (held on March 5, 2021).

4. Project Stakeholders

4.1. Identification of stakeholders

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

- National government. Ministry of Interior and Municipalities (MoIM), Ministry of Energy and Water (MoEW), Ministry of Environment (MoE), Ministry of Public Works and Transportation (MoPWT) and Council for Development and Reconstruction (CDR). It is also worth mentioning the Internal Security Forces (ISF), the Directorate of Municipalities, the Vehicle Registration Department, and the Beirut Governate within MoIM, the Railway and Public Transportation Authority (RPTA) within MoPWT, and the Public Electric Utility, *Electricité du Liban* (EDL). MoIM and MoE are interested in the enhancement of the urban environment, including through the promotion of sustainable mobility options and low-carbon technologies. MoEW is interested in the reliable provision of electricity and the expansion of renewables in its generation. MoPWT, through RPTA, is interested in the improvement of public transport services. CDR is involved in various infrastructure projects in Lebanon in the areas of transport and electricity, including the WB-funded project for the deployment of BRT corridors in the radial routes providing access to Beirut. The project will support the coordination among these ministries, including the establishment of a national e-mobility strategy. Furthermore, the gender focal points at these ministries are interested in the gender dimension and impact of the project, as well as the Ministry of State for Economic Empowerment for Women and Youth (MoEEWaY).

⁵⁵ <https://www.lb.undp.org/content/lebanon/en/home/presscenter/articles/2019/RSM.html>

- Local governments. The municipalities of Beirut and Jbeil, as well as the Fayhaa Union of Municipalities (Tripoli region) share a common interest in sustainable mobility, including public transport along the northern corridor and the expansion of walking and cycling in local, short-distance trips. The project will work with the three cities in the improvement of public transport services along the corridor, and with Jbeil in the facilitation of walking and cycling access to bus stops.
- Bus operators. Bus operators, particularly those on the northern corridor, are interested in improving their performance and gain access to state-of-the-art technology. However, they are hampered by the financial situation in the country and the lack of governmental support and incentives. These operators will benefit from the project's development of a self-certified Green Public Transport Service scheme and some of them will be able to operate electric buses for some months during the project demonstrations. These activities will empower bus operators to introduce better practices, gain customers and prepare their transition towards electrification once the financial context allows them to undertake the much-needed renewal of their fleets. They are expected to be interested in knowing EV as an emerging technology, although initially, their interest in using EVs can be low, as it requires a higher upfront investment with long-term returns. The bus operators contacted by the project are those with running or planned activities in the northern corridor: Connexion, Ahdab Commuting and Trading Company, Sawi Zantout Lebanese Transport Co, and WeGo.
- International Financial Institutions. The World Bank has been active for decades in rebuilding and modernizing Lebanese transport infrastructure. Its BRT project for Beirut metropolitan area, starting by the northern corridor is the main planned investment in the country and includes the complete reorganization of bus system provision in the area, to establish a feeder system to the BRT services, and the introduction of modern (and eventually electric) buses to provide the new services. Likewise, the European Investment Bank has been exploring the feasibility of a project to enhance bus services in the area of Tripoli, but it is on hold now until the financial and COVID crisis recede. The financial sector is a key project partner to facilitate the access of operators to EVs. As EV provide a substantial reduction in operating costs in exchange of higher upfront capital costs, it offers a significant business opportunity to the financial sector to develop appropriate loans and leasing schemes. Finally, the Islamic Development Bank is exploring financial opportunities in the country, including the passenger mobility sector.
- Sectoral associations and vehicle importers/ dealers in the road vehicle industry are crucial partners for the project, as they can provide strong knowledge on the automotive market and access to a thick network of market players. Furthermore, their position is critical for the introduction of low-carbon vehicles in Lebanon. The project has interacted with *Association des Importateurs d'Automobiles* and with e-ecosolutions, a Lebanese consulting firm active in the Mediterranean region and involved in the organization of the annual E-MotorShow event..
- University departments and other academic institutions are keen in participating in the project, providing their knowledge and looking for upcoming challenges to accommodate e-mobility technologies and sustainable mobility within their curricula and their research agendas. For example, the Lebanese American University, with a campus located in the demonstration area, is highly interested in the project.
- There is a good number of grassroots associations and civil society stakeholders active in urban mobility from different sensitivities: the environment, urban living conditions, equity in mobility, safety and security. The project has received positive answers to participate in the project from TRACS (a network of associations in the transport sector), Kunhadi (an NGO working on road safety), Disability Hub, Lebanese Handicap Association, Carpolo (an NGO offering an app for carpooling), Yallabus (an association offering an app with information on regular bus services and electric scooter availability), YASA (the Lebanese branch of an international NGO active in road safety), the National Council for Lebanese Women and the Bus Map Project. It is worth mentioning here also GiZ, which is currently involved in a regional transport project (Euromed Transport Support Project), financed by the EU.
- For players in the electricity sector, the project provides an opportunity to increase electricity demand at a time in which most of the country is served by an integrated system, with a strong and still growing share of renewables and significant spare capacity. Furthermore, the project will support the consolidation of new market opportunities, such as infrastructure charging or electric bus leasing concepts based on energy provision. A number of companies managing large car fleets have been contacted during project

preparation: Aramex and DHL (logistics and courier), taxi companies (Charlie Taxi, Allo Taxi, Uber, Careem) and Toters Lebanon (food courier).

Stakeholders to be affected, directly or indirectly, by the outcomes of the Project implementation	Stakeholders that participate in the Project implementation	Stakeholders being able to influence and decide on the Project implementation or use project outcome for decision making
Bus operators and staff Vehicle dealers and importers Local population in Jbeil, within the area of influence of the pilots ISF staff Persons receiving training in sustainable mobility and EVs Municipalities of Beirut, Jbeil, Fayhaa Union	Project staff National government (MoIM, MoEW, MoE, MoPWT) National government's agencies (ISF, RPTA) Members of Project Board Bus operators participating in the demonstrations Municipality of Jbeil EV suppliers (dealers, importers, maintenance...) EV charging infrastructure suppliers International Financial Institutions Academia Civil society organizations and networks Companies with large car fleets	National government (MoIM, MoEW, MoE, MoPWT). Municipality of Jbeil Public Electricity Utility (EDL)

Table A9.1: Identification of stakeholders

4.2. Stakeholder Concerns Analysis

During its planning stage, the project organized a validation workshop on March 5 2021 and interviews with all the stakeholders identified above. These served to identify their interests, concerns and priorities and to integrate their expertise. As a result of the project design activities, the interests and concerns of the key stakeholder groups have been identified and are presented in the table below. The project is taking appropriate responsive measures throughout its lifespan to consolidate and maintain the wide current support built up during the planning stage.

Stakeholder group	Key expectations	Key concerns	Recommendations for project implementation
National government	Project support to implement policies on climate change mitigation, improvement of air quality in cities, and sustainable urban transport. National e-mobility strategy delivered by the project. Guidance on legislative and fiscal reforms (ELV, EVs...). Quicker and ordered deployment of EVs in Lebanon. Good practice in fleet management pilot (ISF) to be replicated in other public agencies.	Fiscal costs associated to the promotion of public transport. Need to update relevant legal framework. Impacts of electrification on the electricity sector (demand, resilience, tariffs).	Need to establish regular meetings with all the participating ministries to develop the e-mobility strategy. Identification of other large car fleets in the government, to disseminate results from ISF pilot.

Stakeholder group	Key expectations	Key concerns	Recommendations for project implementation
Local governments	Improvement in service quality of buses in the northern corridor. Coordinated strategy and governmental support to sustainable mobility. Guidance on promotion of walking and cycling.	Public's acceptance of sustainable mobility Affordability of Green Public Transport Service, EVs, and their impact on fares.	Active involvement of local governments in Project implementation and decision-making. Regular coordination of project activities at local level
CSO and social researchers working on gender and intersectionality	Affordable, accessible and safe mobility services, better tailored to their particular needs and priorities	Innovative mobility services can be more expensive and address the needs of women and users from marginalized social groups	Involvement of underrepresented groups in the design of local demonstrations. Inclusion of women in training activities.
Bus operators	Support to access green public transport service standards and EV technologies at reasonable costs. Capacity building on EV technologies and quality of service.	Affordability of new practices and impact on operating costs. Staff training requirements.	RfQ for selection and training of operators participating in the pilot. Extensive access to pilot results and dissemination of lessons learned among operators.
Large car fleet managers (public and private)	Support to access fleet management and low-carbon car technologies at reasonable costs. Capacity building on fleet management and low-carbon car technology.	Affordability of fleet management concepts and impact on operational costs. Staff training needs.	Outreach strategy to involve large car fleet managers in the project. Extensive public access to ISF pilot results and dissemination of lessons learned among managers
International Financial Institutions (and national financial sector)	New financial schemes and business opportunities associated to sustainable mobility and EVs.	EV technology is more expensive and need a more stable financial climate in Lebanon.	Develop new business models, including its financial viability, in close consultation with the financial sector. Technological risk reduced through demonstrations
Electricity utilities	Increased electricity consumption outside peak demand period. New business opportunities linked to charging infrastructure and services	EV market developing without clear regulations, and imposing additional burdens on utilities	Charging infrastructure and actions in the electricity sector to be included in the national e-mobility strategy within the project
Car importers and sectoral associations	Clear EV regulations established. Barriers to importing high-emitting, used or obsolete, ICE vehicles	Unregulated market competition of ICE vehicles and EV due to lack of or inappropriate regulations.	Stakeholders' involvement in the development of the projects' regulatory proposals
Academia	New research and educational opportunities linked to sustainable mobility and EVs.	Insufficient research resources and limited ability of the project to influence on this.	Networking with other projects and research partners within the e-mob global programme

Stakeholder group	Key expectations	Key concerns	Recommendations for project implementation
NGOs and civil society associations	Implementation of sustainable mobility practices in Lebanese cities. Improvement of urban mobility conditions of vulnerable groups and women	EV focus could compete for scarce resources and efforts with other priorities in sustainable mobility needs (walking and bus infrastructure, car restrictions)	The project approach should mobilize additional resources and stakeholders.

Table A9.2: Key interests and concerns of stakeholders

5. Stakeholder Engagement Programme

The project will engage or communicate to the identified stakeholders as outlined below.

Stakeholder name	Stakeholder group	Means of engagement	Rules for communication
MoE MoEW MoIM MPTW	National government	Project Board Regular meetings with PMU	Communication only through those officials Authorized to interact with the project. In accordance with administrative procedure requirements.
Municipality of Jbeil	Local governments	Project Board Regular meetings with PMU	Communication only through those officials Authorized to interact with the project. In accordance with administrative procedure requirements.
National Council for Lebanese Women	CSO and social researchers working on gender and intersectionality	Regular consultation meetings at national and local level.	Internal project communication rules to be defined in the communication strategy.
Connexion Ahdab CTC, Sawi Zantout LT, WeGo	Bus operators	Exchange of correspondence, meetings, training courses, demonstration design, supervision. Data collection templates and procedures	In accordance with external project communication procedures ⁵⁶ .
ISF, Aramex, DHL, Red Cross, Totters	Large car fleet managers (public and private)	Exchange of correspondence, meetings, training courses, demonstration design supervision. Data collection templates and procedures	In accordance with external project communication procedures.
WB EIB	International Financial Institutions (and national financial sector)	Exchange of correspondence, meetings	In accordance with external project communication procedures.
EDL	Electricity utilities	Exchange of correspondence, meetings	In accordance with external project communication procedures.

⁵⁶ To be defined at the beginning of the Project.

Stakeholder name	Stakeholder group	Means of engagement	Rules for communication
AIA, E-ecosolutions	Car importers and sectoral associations	Exchange of correspondence, meetings, training activities	In accordance with external project communication procedures.
LAU	Academia	Exchange of correspondence, meetings, training activities	In accordance with external project communication procedures.
TRACS, Kunhadi, Disability Hub, Lebanese Handicap Association, Carpolo, Yallabus, YASA, Bus Map Project, GiZ	NGOs and civil society associations	Exchange of correspondence, meetings, training activities	During public meetings and on-demand

Table A9.3: Engagement and communication approach

The project will have a knowledge management transversal approach, which will ensure to make information available to stakeholders and to the public, so that they can know the environmental and social risks and impacts associated with the project, as well as the opportunities it provides. Project data will enable them to take better-informed decisions in sustainable urban transport and e-mobility.

On an ongoing basis, the project will provide disclosure and consultation on the project's environmental and socio-economic performance to all stakeholders through its network platform (component 3), with project briefs or annual reporting. The project will also provide:

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

6. Timetable

Stakeholder engagement actions are identified in the table below, including materials, responsibility, location and dates.

Stakeholder group	Engagement method	Materials to use	Location	Responsible	Date
National government	Briefings on project implementation status. Training meetings on regulatory and data collection issues	Project reports Project surveys and data bases	Governmental offices	PMU	Quarterly Annual
Local governments	Scheduled meetings on local demonstrations. Training meetings on regulatory and data collection issues	Presentations, reports	Project office, local governments' offices	PMU	Quarterly Annual
CSO and social researchers working on gender and intersectionality	Consultation meetings Targeted group meetings, if necessary	Website, presentations, leaflets	Local civic centers	PMU	Quarterly (until end of pilots)
Bus operators	Scheduled meetings on local demonstrations and business models	Presentations, reports	Project office	PMU	As required
Large car fleet managers (public and private)	Scheduled meetings on local demonstrations and business models	Presentations, reports	Project office	PMU	As required

Stakeholder group	Engagement method	Materials to use	Location	Responsible	Date
International Financial Institutions (and national financial sector)	Scheduled meetings on sustainable mobility and EV financing options and business models	Presentations, reports	Project office	PMU	As required
Electricity utilities	Scheduled meetings on energy supply options for pilots and business models	Presentations, reports	Project office	PMU	As required
Car importers and sectoral associations	Scheduled meetings; workshops	Presentations, reports	Project office	PMU	As required
Academia	Design workshops, evaluation workshops	Presentations, reports	Project office	PMU	As required
NGOs and civil society associations	Workshops: design, evaluation and dissemination	Presentations, reports	Project office	PMU	As required

Table A9.4: Stakeholder management programme and timetable

7. Resources and Responsibilities

The resources allocated by the project to the various stakeholder engagement activities and the responsibilities to carry out such activities are presented in the table below.

Activity	Responsible	Estimate of resources	Resources (USD)	Key stakeholders
1.2.5: SESA of e-mobility strategy	PMU, consultant,	20% of consultant contract	3000	All stakeholders
1.2.7: Institutional e-mobility coordination body (Sustainable and Electrified Mobility Subcommittee)	PMU	Dedication of PM and PSO	13100	Institutional stakeholders
1.3.2: SESA of ELV roadmap	PMU, consultant	20% of consultant contract	3000	All stakeholders
2.1.1: Feasibility of GPTS concept	PMU, consultant	20% of consultant contract	7400	Bus operators, national and local governments
2.3.1. Selection of pilot sites in Jbeil	PMU, consultant	10% of consultant contract	2000	Jbeil municipality and residents, bus operators
2.3.2. Co-design of pilot actions in Jbeil	PMU, consultant	10% of consultant contract	37500	Jbeil municipality and residents, bus operators
2.3.2: EIA of pilot actions in Jbeil	PMU, consultant	20% of consultant contract	2000	All stakeholders
2.3.3: Satisfaction surveys Jbeil pilot	PMU, consultant	20% of consultant contract	2000	Jbeil residents
2.4.3: Satisfaction surveys GPTS pilot	PMU, consultant	20% of consultant contract	2000	E-bus users
2.5.3: Replication options of ISF fleet pilot	PMU, consultant	20% of consultant contract	2000	Corporate car fleet managers

3.1.1: Lebanese E-mobility network	PMU, contractor	10 meetings supported	20000	Private sector, academia, institutions
3.1.2: Website and virtual platform of the e-mobility network	PMU, consultant	100% of consultant contract	10000	All stakeholders, general public
3.2.3: Exit project strategy	PMU, consultant	20% of consultant contract)	2000	All stakeholders
3.3.1: Project communication plan	PMU, consultant	100% of consultant contract	17000	All stakeholders
3.3.2: Communication campaigns	Consultant	100% of consultant contract	40000	General public
3.4.1: Training materials for decision-makers	Consultant	100% of contract	2179	Decision makers in cities
3.4.2: Training workshops for decision-makers	PMU, consultant	2 workshops	16000	Decision makers in cities
4.1.2. Mid-term evaluation	Consultant	10% of consultant contract	3000	All stakeholders
4.1.3. Terminal evaluation	Consultant	10% of consultant contract	4000	All stakeholders
4.1.5: Monitoring of stakeholder engagement activities	PMU, consultant	100% of consultant contract	8000	All stakeholders
TOTAL			196,179	

Table A9.5: Resources allocated to the Stakeholder Engagement Plan

8. Grievance Mechanism

The grievance/reporting mechanism is available on the UNDP website, should complaints need to be logged. During the stakeholder engagement activities, particularly at the local level, the UNDP project will inform the local community and municipalities of the reporting mechanisms available and provide UNDP contact details for any concerns that need to be raised. Entry points also include the project team and also specific project staff within the UNDP Country Office.

9. Monitoring and Reporting

Monitoring is addressed project component 4, tracking and assessing progress towards achieving tangible development results associated with the project being implemented. It is an essential management tool which provides an opportunity to know whether results are being achieved as planned, what corrective action are needed to ensure delivery of the intended results and how they are making positive development contributions. This helps to detect problems earlier and coming up with appropriate measures to address them. Therefore, monitoring usually provides data used for analysis and synthesis prior to reporting for decision making. Monitoring and reporting responsibility and period are presented in the Table below.

	Parameter	Monitoring and reporting responsibility	Reporting period
1	Number of government agencies, civil society organizations, private sector and other stakeholder groups involved in the project implementation phase	PMU	Annual
2	Number of persons (gender-disaggregated) involved in project implementation	PMU	Annual

	Parameter	Monitoring and reporting responsibility	Reporting period
3	Number of engagement activities (e.g. meetings, workshops, consultations) with stakeholders during project implementation	PMU	Annual
4	Satisfaction rate provided by stakeholders on how their concerns are integrated in the project (gender-disaggregated)	Academia partners	Annual
5	Grievances handling mechanism (how grievances are received and results communicated to all stakeholders)	PMU, UNDP Social and Environmental Compliance Unit (SECU)	Annual

Table A9.6: Monitoring and reporting

Annex 9: Environmental Social Management Framework (ESMF)

The project's ESMF is provided as a separate document.

Annex 10: Gender Analysis and Gender Action Plan

1. Gender Analysis

Legal and political framework

Lebanon has ratified international instruments that promote gender equality and has included the mention of equality between all its citizens in its Constitution. Lebanon is a signatory of the Convention on the Elimination of All Forms of Discrimination Against Women (CEDAW) since 1997, and part of the Rio convention and the UNFCCC. It set a solid ground to implement policies that are in line with gender equality and women's empowerment, including in climate actions⁵⁷.

However, some aspects of Lebanon's laws and policies related to rights of women and men are not in line with these legal instruments. Lebanon has made several reservations to the CEDAW, including the right for women to pass on their nationality to their children⁵⁸ and the absence of concrete measures to eliminate discriminations against women in marriage and within family relations. Besides, Lebanon has not signed the Optional Protocol to the CEDAW, which allow individuals to submit complaints to the Committee.⁵⁹

There is no harmonized law for all Lebanese regarding family matters. Marriage (including child marriage⁶⁰), divorce, inheritance rights or guardianship and child custody are dealt with personal status laws that are different for each sect⁶¹ and discriminate between women and men for many aspects⁶². In fact, none of the personal status laws guarantee equality between women and men for these above matters.

This institutes a *de jure* discrimination between citizens, since their rights depend on the sect they are affiliated with and their sex. Studies show that women are often disadvantaged when it comes to divorce and guardianship of children, regardless of their sect affiliation⁶³. This makes them highly dependent on their husbands for many aspects of their private life.

Discriminatory laws related to inheritance (under the personal status laws) have a direct impact on gender equality with regard to land ownership. According to FAO, women in Lebanon represents only 7.1% of agriculture holders (no data is available for the overall land tenure). If women have less access to land ownership, it makes them directly reliant on their male relatives and undermines any initiative or projects they would want to implement⁶⁴.

The Labor law prohibits women from working in certain professions considered hard or hazardous (such as mining industry, welding and metalwork, glass work, alcohol production, as well as tanneries and slaughter houses). This aspect of the Lebanese law shows how gender-based *de facto* discriminations are enshrined in the legal framework. It is also the case for the rights of domestic workers, who have to work under the sponsorship system, and who are not protected against abuse and violence⁶⁵.

There are also aspects of the Lebanese penal law that inherit gender inequality such as the non-recognition of the marital rape or the absence of law enforcement to protection victim of domestic violence.

⁵⁷ Committee on the Elimination of discrimination against Women. (2018). '[General recommendation N°37 on Gender-related dimensions of disaster risk reduction in the context of climate change](#)'.

⁵⁸ Nationality Law Act No15

⁵⁹ [Sixth periodic report](#) submitted by Lebanon under article 18 of the Convention, due in 2019, Février 2020

⁶⁰ In 2017, 6% of children were married before 18 and 1% before 15 years old. Source: UNICEF. (2017). "The State of the World's children"

⁶¹ See [table on ages of marriage by sect and sex](#)

⁶² ESCWA, UN Women, UNFPA. (2018). "Gender-Related Laws, Policies and Practices in Lebanon", Lebanon, Beirut

⁶³ Ibid

⁶⁴ FAO. (2016). "[Developing gender-equitable legal frameworks for land tenure; a legal assessment tool](#)". FAO Legal papers N°98. "Development practitioners recognize that secure land rights have a strong empowering effect on women: it reduces their reliance on male partners and relatives, increases their bargaining power within the household and improves their chances of accessing extension services and credit. The confidence gained from increased tenure security can further encourage them to undertake land and other agricultural investments and to join producer organizations."

⁶⁵ UNFPA (2018), [Gender-Related Laws, Policies and Practices in Lebanon](#)

Gender institutions

Two main institutions are responsible to ensure gender equality and women's empowerment: The National Commission for Lebanese Women (NCLW), headed by the wife of the president (currently it is the daughter of the President who holds this role) and the Ministry of State for Economic Empowerment of Women and Youth (EEWAY), created in 2019 - replacing the Office of the Ministry of State for Women's Affairs (OMSWA) created in 2017.

The Department of Women's Affairs of the Ministry of Social Affairs has also prerogatives in the field of women's empowerment and protection from violence and the Committee on Women and Children established in the Lebanese Parliament manages legislative process on Women and Children's issues.

National policies on gender equality, women's empowerment and climate change

Adopted by the National Commission for Lebanese Women (NCLW) and validated by the Council of Ministers (CoM), the National Strategy for Women in Lebanon 2011 – 2021 is a road map for NCLW to promote gender equality in Lebanon. It includes 12 strategic objectives that focus on 12 areas of intervention such as the legal framework, health, women's political participation and place in decision-making positions, environment (by stressing on women's participation and capacity building) and gender mainstreaming (through gender focal points in Ministries). The document highlights the positive role that women can play along with men to improve social behaviors to mitigate climate change and to adapt to its impacts because of the gender role they hold for household management and education of children to eco-friendly behaviors.

Also, the Work Plan to implement the National Action plan on the UNSCR 1325 – adopted in 2019 for the period 2019-2022 – supports the implementation of the United Nations Security Council Resolution 1325 on the Women, Peace and Security agenda. It includes actions to increase women's participation in decision-making at all levels related to data collection and analysis, capacity building, women's representation, and implementation of laws related to gender equality.

Gender division of labor

Lebanon is a patriarchal society where men are generally expected to be the master of the family and women to be responsible for the organization of the house and raising the children; as shown by a legal system that promote this social organization. For instance, paternity leave is one day and the extension to three days is still pending the parliament's approval. This stresses on women's role to remain the main responsible for raising children.

Housework and children's care, responsibility for energy, food and water management at the household level limit women's free time. In Lebanon, men and women's responsibility to bring water, food and energy to the household is not specific and depends from areas and communities⁶⁶ and men are also involved in these tasks. Still, women are more likely to undertake the main house chores⁶⁷ and unpaid work.⁶⁸ Women in the Arab world undertake most of domestic work, spending an average of 5.3 hours a day for domestic chores⁶⁹. In Lebanon, women remain the main performers of household labor⁷⁰.

As a result of women and men's different occupation and daily activities, they are likely to have different needs and interests. Also, cultural norms, values and practices related to gender relations have a direct effect on these interests (linked to the socialization process⁷¹) and on the *de facto* discriminations.

⁶⁶ This point requires additional research, including consultation with women's rights organizations.

⁶⁷ A study from 2003 in Beirut show that women are more likely to be responsible for washing clothes (91% responded that this is an "only women" task), cleaning bathrooms (90%), cleaning kitchen (85%), ironing (84%), washing dishes (83%), preparing food (78%), cleaning rooms (75%). While house maintenance will be the man responsibility (in 63%). Providing care for 4 to 14 years old children and caring for sick family members are the most declared shared task (40% and 77%). Available at: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1854869/>

⁶⁸ Example in agriculture work. See Nowara *ibid*

⁶⁹ Al-Akhbar newspaper, [online](#)

⁷⁰ Habib R, Nuwayhid I., Yeretizian J. (2016). Paid Work and Domestic Labor in Disadvantaged Communities on the Outskirts of Beirut, Lebanon

⁷¹ Study Oxfam and Kafa. (2011). ["The Effects of Socialization on Gender Discrimination and Violence A Case Study from](#)

These cultural norms impose on both men and women specific social roles. It might be difficult for a woman to take another path than the one matching her gender including to build a strong career, share domestic chores with their husband, be unwilling to have children or to marry. While 76% of men from 25 to 29 years old and 42% from 30 to 34 are not married, this rate falls at 46% and 27% for women of the same age range⁷². These gender roles also limit men, who might be judged for doing domestic work or earning less than his spouse for instance.

While certain regions have witnessed flexibility such as Beirut or Jbeil where the Singulate Mean Age at Marriage is 1,5 years older and 1 year for Jbeil⁷³ than the national level⁷⁴ (4 years older than in Marjaayoun⁷⁵), some other remains strongly attached to these mentioned gender roles⁷⁶. This situation translates a *de facto* discrimination that increases according to women's economic dependence towards their male family members.

Access to resources and services

Equal access to education

Education is a link to access to knowledge and technology and plays a key role for one's involvement in actions related to mitigation and adaptation to climate change. In Lebanon, access to education is equal for men and women, including higher education⁷⁷ and the figures show that women represent more than 50% of the number of students at all levels. However, illiteracy rate is higher for women.⁷⁸ The main inequality is between urban and rural areas where higher education is not always available. Therefore, students who want to complete a tertiary degree need to migrate to cities⁷⁹. This can be an obstacle for women in certain families: they might not be authorized to leave the family house before getting married, depending on the social and cultural accepted norms.

Challenging access to health services

Only formal labor gives access to health coverage. 55,6% of the population residing in Lebanon have a health coverage. When women do not work, they do not have health coverage of their own. Instead, they are included under their working husband's social protection scheme (if they have a formal employment) and are dependent on their husband (or parents) to access health services.⁸⁰

[Lebanon](#)".

⁷² CAS (2020). Labour Force and Household Living Conditions Survey 2018-2019 Lebanon

⁷³ CAS (2020). Labour Force And Household Living Conditions Survey 2018-2019 In Jbeil

⁷⁴ CAS (2020). Labour Force And Household Living Conditions Survey 2018-2019 In Beirut

⁷⁵ CAS (2020). Labour Force And Household Living Conditions Survey 2018-2019 In Marjaayoun

⁷⁶ On Baalback: Study Oxfam and Kafa (2011). Ibid

⁷⁷ Figures of 2015 reported in the [Briefing Note](#) for countries on the 2016 Human Development Report (HDR), Human development for everyone, Lebanon.

⁷⁸ According to the Labour Force and Household Living Condition Survey 2018-19 (CAS): 8.7% of the female population is illiterate compared to 4.4% of male population".

⁷⁹ According to the last Household survey (CAS), the level of education of both men and women is higher in urban areas than in rural areas (16.4% of women and 10.7% of men hold a university degree in Hermel district and 28% of women and 31% of men in Beirut district)

⁸⁰ Lebanon's Support. (2016). "[Access to healthcare for Syrian Refugees, the impact of fragmented service provision on Syrian's daily lives](#)".

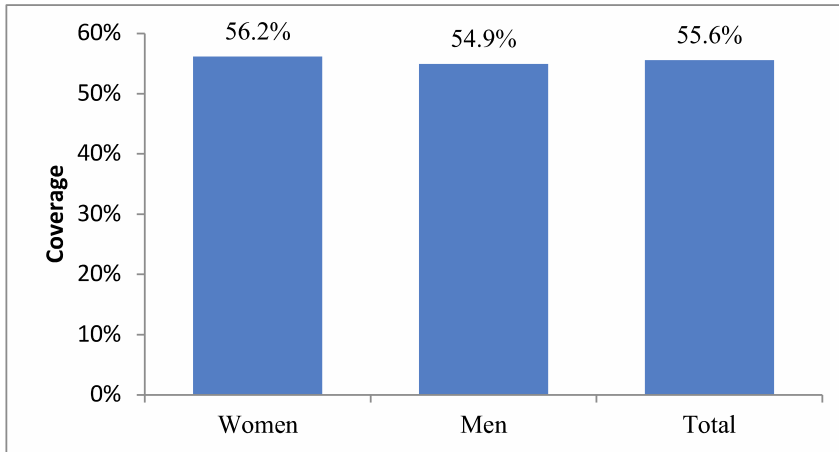


Figure A.11-1: Coverage by sex (percentages)

Unequal access to the labor market

Although women have equal access to education, the percentage of women in the labor force is very low (26,3%⁸¹). Also, when working, women earn on average less than men.^{82 83} For instance, women working in the public sector have the possibility to work part-time in exchange of a salary cut⁸⁴.

The total unemployment rate (female to male ratio) is 1,96⁸⁵.

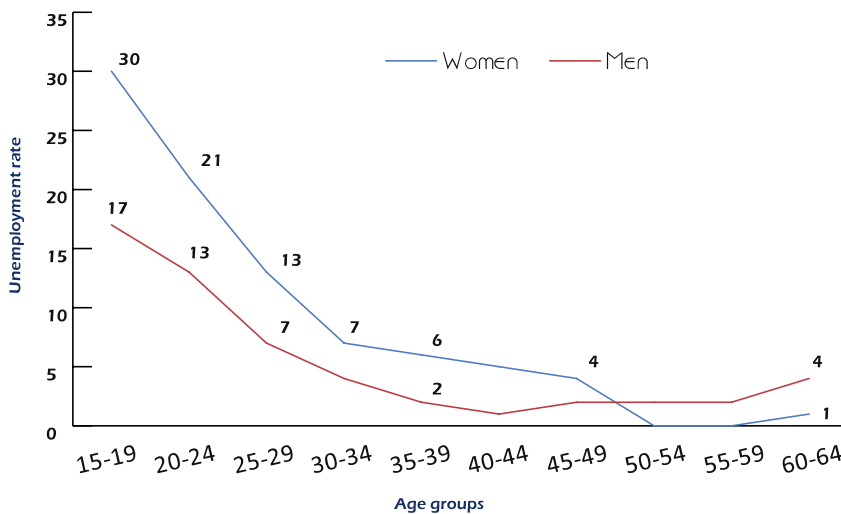


Figure A.11-2: Unemployment rate by age and sex

⁸¹ World Economic Forum. (2017). The Global Gender Gap Report.

⁸² According to the human development report, men’s gross national income is 5 times higher than women’s.

⁸³ Gender Wage Gap in Lebanon: Explorative Analysis (In 2009, men earned 16% more than women for the same education, experience and job category but “A study done by the United Nations Economic and Social Commission for Western Asia (ESCWA) (2009) revealed that although there are wage gaps between genders in the ESCWA region, in general, and Lebanon, in particular, the statistical information that supports this claim lacks reliability”)

⁸⁴ [‘Law 46 Dated 21/8/2018’](#) (Lebanese parliament, 2017)

⁸⁵ [Human development Indicators, 2020](#)

A vast majority of Lebanese women are outside the labor market because they take care of domestic tasks, care work and other unpaid works. As a result, they depend on their husband's salary and are less exposed to economic and financial opportunities.

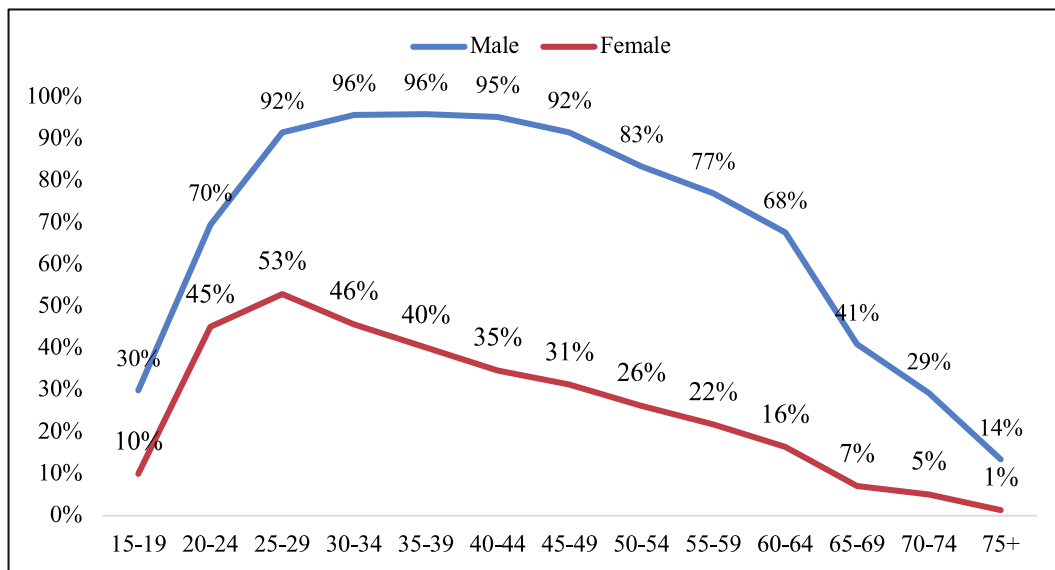


Figure A.11-3: Labor force participation rate by sex and age group (percentages)

In Palestinian gatherings, 14% of women are part of the labor market compared to 70% of men. 40% of these women are unemployed, when 17% of men are⁸⁶.

Women are over-represented in the service sector: 63% of the female labor force work in this sector while only 32% of the male labor force does.

Women are generally less paid than their male counterparts: The gender pay gap for all economic sector is 6% but reaches 38% for the sector of transport, post and telecom. In Palestinian gatherings, women earn 11% less than men, regardless of differences in socio-economic background or type of work.

55% of the employment are informal (in both the formal and informal sectors) and the informal sector represents around 35% of the jobs (including formal and informal employment), mainly for persons with a low level of education. The share of women in the informal employment (excluding agriculture) is equivalent to the men's share. While the agriculture sector represents a small share of the total employment, women are more likely to work as seasonal workers – especially migrant workers – and men more likely to own the production means and lands.

Participation in decision-making

At household level

As stated above, women are less likely to work than men and more likely to undertake unpaid work such as caring for children and elderly or doing the house chores (washing, cooking, cleaning). As a result, their economic power is more likely to be lower than their male counterpart and thus they have fewer opportunity to hold a decision-making position within their household. Indeed, only 18,5% of head of households are women (24,5% in Beirut, 19,9% in Baabda district, 21,4% in Metn and 14,4% in Jbeil districts).

⁸⁶ UNDP (2018). Assessing vulnerabilities in Palestinian gatherings in Lebanon - Results of the 2017 Household Survey

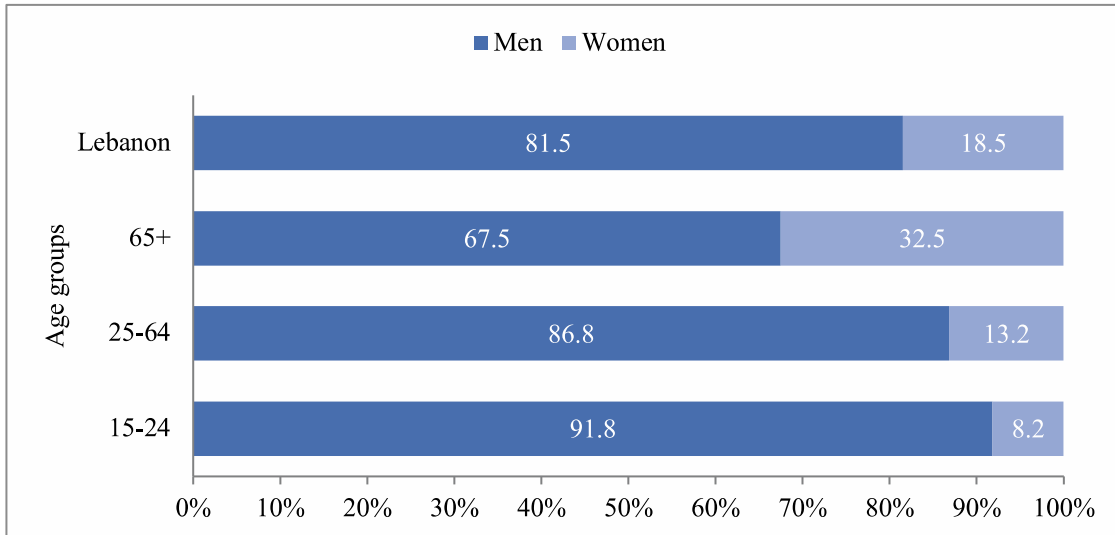


Figure A.11-4: Head of household by age group and sex (percentages)

Women in public institutions

Lebanon is a democratic political system and comprises an elected legislative chamber where women are underrepresented. Participation of women in decision-making processes is still relatively low, though their representation is increasing⁸⁷. In 2020, 4% of seats are held by women local government and 4,7% in parliament⁸⁸.

Gender is mostly perceived as a women’s matter in the Lebanese political system. The public institutions responsible for gender mainstreaming into national policies or administrations (the NCLW and the Office of the Ministry of State for Social and Economic Rehabilitation of Youth and Women)⁸⁹ may have overlapping mandates: gender mainstreaming, women’s rights and promotion of women’s empowerment.

Women’s representation in public institutions varies depending on the institution, the level of the position and the place in the decision-making process. The list of employees (and their position in the ministries) is rarely available and it is a challenge to obtain information on the sex of employees⁹⁰.

For instance, according to a census realized in 2018, most of the positions that take part in the decision-making process at the Ministry of Energy and Water (MoEW), in the General Directorate of Hydraulic and Electrical resources are held by men.

⁸⁷ “Female candidates for the May 2018 Parliamentary elections made up 14.4 percent of total candidates—clear progress from the two percent registered in 2009. Women made up 62.34 percent of candidates on the lists, and 6 of these women candidates became members of Parliament. During the 2016 municipal elections the share of women elected to municipal councils reached around 5.6 percent across all geographical districts, compared to 4.6 percent in the previous round in 2010”. In: “Lebanon’s Voluntary National Review (VNR) on Sustainable Development Goals (SDGs)”

⁸⁸ According to the Human Development Report

⁸⁹ <https://www.lbcgroup.tv/news/d/lebanon-news/424971/minister-violette-safadi-to-lbci-the-ministrys-nam/en>

⁹⁰ See “Empowering women in power” Lory Kantarjian, Issam Fares Institute Op-Ed, Reflection and recommendation on public policies for the year 2019, 15 March 2019

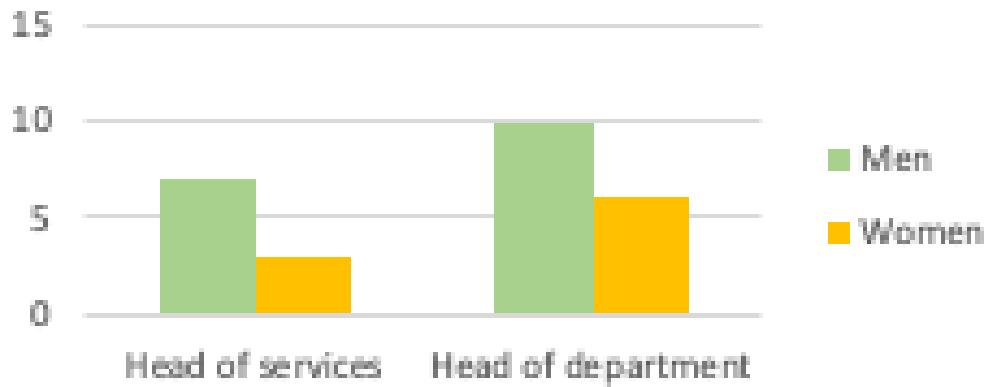


Figure A.11-5: Breakdown by type of position. General Directorate of Hydraulic and Electric Resources

A study at the American University of Beirut suggests that, if women are well-represented in the STEM (Science, Technology, Engineering and Mathematics) studies, they are more likely to study theoretical subjects which leads to jobs in the education sector. And men will study more technical/skill-based subjects which increases their presence in this field. Thus, the fact that most of the positions of the MoEW are technical (9/10 Services) and require an engineering degree can be a barrier for women to access jobs in this Ministry.

Also, the system of promotion at the ministry is based on several factors, including sect/political party/acquaintances network affiliations. In relation to this aspect, the fact that men are over-represented at decision-making positions can be a barrier for women to be promoted because of the glass-ceiling effect.

The gender focal points

In 2009, the NCLW asked ministries and institutions to nominate gender focal points through the circular n°23/2009. Designated by each Minister, their role is to make sure that gender is taken into consideration in planning processes and policies, to identify gaps and obstacles for gender mainstreaming and communicate regularly with other focal points to share experience and reinforce their capacities⁹¹. A gender focal points unit at the NCLW is responsible for managing and coordinating the network. In 2016, the OMSWA was established and 2 years later created a parallel gender focal points network. These focal points are represented in several ministries (interior, education, agriculture...) and public institutions (CoM, Beirut municipality...). However, several focal points are not aware of their role, and ministry employees are rarely aware of their existence, which makes their level of action challenging. It is still unclear whether the EEWAY will continue to support this focal point network.

In the private sector

In addition to the little share that women occupy in the labor market, as well as the gender pay gap in all economic sectors in Lebanon, women generally occupy assistant positions.⁹²⁻⁹³ Only 29% of managerial positions are occupied by women⁹⁴, 8.4% of all Lebanese executives, including legislators, senior officials and managers are women and women as a group constitute 13% of all Lebanese joint stock company board members⁹⁵.

⁹¹ Circular n° 23/2009

⁹² Nasnas R. (2016). Emerging Lebanon, Towards Economic Growth and Social Welfare, Dar An-Nahar

⁹³ "Women currently make up 27 percent of the newly appointed positions in the diplomatic corps, 30 percent of the Electoral Management Body, 23 percent of officials of national security positions, and 17 percent of the Social and Economic Council. Women constitute only 5.4 percent of local government. In October 2017 half (47.5 percent) of the justice sector were women. This is a marked increase from 15 percent in 1993. Female legislators with senior official and managerial positions account for 8%, and in 2013 little more than 4% of firms had women top managers" – Source: SDGs Report Builder | Arab Development Portal

⁹⁴ CAS (2018), Ibid

⁹⁵ International Finance Corporation (2019) Women on board in Lebanon. How Gender-Diverse Boards Bring Value to Lebanese Companies

	Share of managerial positions
Women	28.9 per cent
Men	71.1 per cent

Table A.11-1: Gender share of employment in managerial positions at main job (percentages)

The role of civil society organizations

Lebanon's civil society is well developed and counts many organizations and associations whose mandate is to defend and promote women's rights and gender equality. The governmental gender institutions work in collaboration with these organizations for specific projects related to women's empowerment, gender equality campaigns and development projects. Several organizations who work in the environmental sector have already fully integrated gender into their planning and projects. Those are mostly Beirut-based and grass-root women's organizations or rural women are underrepresented in the decision-making process.

Women and urban development

The uncontrolled and rapid urbanization (mostly due to internal forced displacement) has seen an increase of housing and living conditions in cities. Inhabitants who could not afford to live in the formal house sector have been pushed away. This has contributed to the development of misery belts around the city, including slums and informal Palestinian gatherings with poor living conditions and low access to services, where people from lower class, refugees and migrant workers live.

Around 84% of the Lebanese population live in urban areas, and 67% in large agglomerations (mostly Tripoli and Beirut) including 7,9% in Beirut and 45% in Mount Lebanon. If urbanization has its positive sides (economic, social and cultural development and diversity), it also increased inequalities with regard to access to livelihood and services.

These uncontrolled and informal urbanization poses a series of environmental and social challenges – such as water, waste and energy mismanagement and the development of informal economy (it represented 34% of Lebanon' GNP in 2000). The gap left by the public actors, the lack of services and the social and sectarian divides within the cities (poor/rich areas; Sunni/Shiite/Christian areas...) have been filled by private actors such as NGOs, political parties and sectarian groups⁹⁶, which are outside the legal framework and might not contribute to implement gender equality provisions of the Lebanon legal system.

Access to transportation means is one of the challenges faced by population living in these suburban areas, for which women are directly affected. Women represent more than 50% of the inhabitant of Beirut and its suburbs (54% in Beirut, 52% in Baabda district and 52% in Metn district). For those living in suburban areas, and especially the most marginalized such as refugees and domestic workers, the lack of sustainable transport is an additional challenge to their socio-economic participation.

Women and transportation

As stated, women in Lebanon are not fully included in the economic development (low participation in the labor market, high unemployment rate, high gender pay gap) and especially women of marginalized groups (lower class, refugees and migrants, including foreign domestic workers). If Lebanese women have equal access to education than Lebanese men, they are still underrepresented at decision-making position (in public institutions, in managerial and senior positions or in companies' boards) as well as having a lower decision-making power at the household level, being the household manager and realizing most of the unpaid care work and house chores.

Access to transportation means, including cars, bus or taxi, varies according to income level. Detailed qualitative and quantitative data is scarce to understand women's access to private cars or to public transport. Also, there is no centralized sex-disaggregated data on the transport sector, including the share of women holding jobs in this sector.

⁹⁶ UN-HABITAT (2018). Lebanon Urban profile - A desk review report

The gender gap in terms of access to transportation, including private transportation is corroborated by the figures provided by the Vehicle Registration Department: out of the 890 thousand driving licenses for commercial cars delivered (issued and renewed) from 1st January 2017 until 15th February 2021, only 23,5% were issued for women drivers. Also, according to the Internal Security Forces (ISF), women are underrepresented among ISF staff.

The lack of a sustainable transport system in Lebanon undermines women's access to social and economic opportunities, and women's participation in decision-making – especially women living outside the cities and in poor and marginalized areas.

Transportation is a mean for all groups to reach places where can be found job opportunities, training and education facilities and places of central power. There are several aspects that prevent women – more than men – to access accessible transportation and therefore access to socio-economic opportunities.

Women generally do not feel safe in transportation means. Harassment and sexual abuse occur during women's journey, especially in shared-taxis. In fact, women usually prefer minibus where the presence of more passengers can prevent harassment and unfriendly behaviors toward women. Even when women are defended by the other passengers, the perpetrator of harassment is rarely accounted for his behavior⁹⁷.

The Parliament of Lebanon passed a law in December 2020 that criminalizes sexual harassment, especially in the workplace. The law entails a sentence for perpetrators that goes up to two years in prison and a fine up to 20 times the value of the minimum wage (675,000 Lebanese pounds). However, the fact that the law does not protect the privacy of the victim might be an obstacle for a person to fill a complaint if fearing retaliation from the perpetrator or its family. Also, it is the victim who should prove the harassment and its psychosocial consequences, which make it difficult to actually implement the law⁹⁸.

Other aspects of Lebanese transportation do not support women's use of it. Women's role in child care follows generally a precise schedule. The lack of fixed schedule or the short operating hours are barriers for women to use the transport system in Lebanon.

The transport system has low coverage and requires walking some distance to use transportation. However, there is no safe walking environment – such as crossing facilities or street lighting - that can help prevent street harassment and encourage more women to use public transportation. Women have mentioned dressing in a particular way when they know they must take a bus or a taxi.

Finally, the lack of shelter in waiting areas (there is no or very few bus stops) to protect from bad and extreme weather, the bad condition of buses that exposes to wind and rain, added to the stress of road accident are additional barriers for public transport use.⁹⁹

This can explain the development or the reinforcement of cultural attitudes that favor car use and road expansion over the development of an urban public transport system.

Therefore, considering that the lack of security and comfort of transport means in Lebanon undermines women's mobility, to make available and accessible safe transportation can be key for women of certain socio-economic backgrounds to access education and livelihood opportunities.

⁹⁷ TFAILY (2017), "Gender and intersectionality in Lebanese Public Transports", Beirut Today, September 19, 2017

⁹⁸ MOUSSA (2020), "Dissecting the new sexual harassment law", Beirut Today, December 29, 2020

⁹⁹ YASSIN (2018). "Understanding the needs of MENA public transport customers: culture of service and gender-responsive recommendations". TeMA, Journal of Land use, Mobility and Environment - Urban travel behavior in the Middle East and North Africa

2. Gender Action Plan

Background

Context

Beirut, likewise to other MENA cities, has been facing a rapid and uncontrolled urbanization, with an increase of housing and living cost, that has contributed to push out of the city many people who could not afford it. Thus, a lot of workers and employees working in the city live further from their employment place. As a result, the city has witnessed the formation of a misery belt, as well as extensions of the Palestinian camps known as “Palestinian gatherings” where lower class, migrants and refugees have found shelter and the growing urbanization of outskirts in the south and the north. This has led to increase mobility needs to Beirut and especially from its Northern corridor.

Transportation in cities

Transportation is a mean to access economic and social opportunities. To ensure that the transport system is sustainable, it should be inclusive, meaning it is accessible for all, considering the needs of women, men, migrants, persons with disabilities from all social classes and all level of incomes. It also means reducing the impact on the environment and mitigating climate change. Women – because of the role they hold in the society – often feel concerned by environmental issues¹⁰⁰ (for instance, 91% of the only department of Environmental Science of the Lebanese University are women¹⁰¹). As such, they can be highly pro-active in finding mitigation strategies (as household managers, energy managers, care for other and careful to health...).

Current state of transport

Apart from private cars that is the preferred mean of transportation for those who can afford it, transportation in Beirut and the Northern corridor is comprised with shared taxis, private and public buses services. These means of commuting to and within the city is generally disorganized, without any fixed timetable nor bus stops, and with no or little walking areas to access shared transportation. Because of this cultural attitude favoring private car, walking and cycling in the city remain extremely challenging and generally unsafe.

The shared- transit system is especially challenging for women as it lacks of security, comfort, and coverage; for migrant women who face specific challenges when commuting (TFAILY, 2017); for persons with disabilities because of the lack of adequate walking and adapted facilities; and for population living in poor areas (especially women who have less access to economic opportunities) as it can be expensive, depending on the traveled distance. The lack of safe walking areas is an additional barrier to women’s equal access to transportation, especially at night.

This situation makes it difficult for people to commute through the public transit system, and whenever possible, private motorized vehicles are preferred when economically accessible.

A gender-responsive sustainable transportation system

In addition to reducing GHG emissions and the mobility gaps among the targeted population, the project will contribute to increase the participation of women’s and other underrepresented groups in the economic and social development by making transportation accessible for all and thus to improve their living conditions. It will also include the increase of gender balance amongst the Internal Security Forces department involved in the pilot project.

This will be possible through the involvement of women at all levels of the policy making process; capacity building in order for them to actively participate in decisions related to climate change mitigation at local and national levels; raising their awareness on e-mobility; collecting sex-disaggregated data (and data disaggregated by age, place of residence, nationality) to understand the needs, behaviors and perceptions to support an inclusive transport system; promoting women’s participation in networking, access to job and trainings related to e-mobility including as users, in bus companies, car fleet businesses and at institutional level.

¹⁰⁰ HABTEZION (2016) Gender and Climate Change: Overview of linkages between Gender and Climate Change, UNDP

¹⁰¹ Donia for sustainable development (2018) : Le rôle des femmes dans la protection de l’environnement dans le Caza de Tripoli

Implementation plan

To ensure a supportive institutional and social environment to promote sustainable low-emission transport systems in Lebanon, the project will put a particular focus on women participation, making sure they are fully involved in the e-mobility strategy design, implementation and monitoring, and that their needs are fully considered when planning, monitoring and evaluating the project impact and realizations.

In particular, the following aspects will be emphasized during the project design and implementation:

1/ Gender issues are integrated throughout the project via a comprehensive gender analysis of urban transport in Lebanon, accompanied with a gender action plan that addresses gender discriminations and promote gender equality.

2/ The collection of disaggregated data during project implementation will support the understanding of needs, behaviors and perceptions related to e-mobility and transportation of all users and provide a legacy to better tailor future transport policies in to the specific needs of women.

3/ The consideration of all transport users' needs and their response to improvement of quality will ensure a well-designed bus system services (it includes a focus on security, time, coverage and comfort).

4/ The inclusion of underrepresented groups in capacity building and trainings will promote a full participation of women and other marginalized groups in the project.

5/ The access to job and opportunities for women and economically marginalized groups.

This includes capacity building and inclusion of women in specific activities and jobs as well as their active participation in the decision-making process and policy making process.

The gender action plan will be implemented using the following resources:

- One project gender specialist.
- Training sessions (project staff and stakeholders).
- Follow up sessions of trainees.
- Evaluation of trainings' impact.

Proposed activities

Project component 1

Output 1.1. Guidelines addressing the legal, financial and regulatory aspects related to the implementation of Self-Certified Green Transport agreements, will be gender-responsive. They will address gender inequalities and ensure increased women's participation. They will follow UNDP's guidelines on gender mainstreaming in public policies.

Output 1.2. A National e-mobility strategy endorsed by the government and key stakeholders will include a gender analysis and a gender action plan to ensure EV deployment in Lebanon is gender-responsive and contributes to gender-equality in the energy and transport sectors. This will include data collection on e-mobility disaggregated by sex, age, place of residence, activity to understand practices and behaviors, and comprise clear steps forward to contribute increasing access to job opportunities for women in the e-mobility sector.

Project component 2

Output 2.3. Non-motorized accessibility (including electric micromobility) to public transport will be improved in at least one municipality and will take into account women and persons with disabilities needs. The assessment of accessibility conditions to bus stops and profiles of their current and potential users will adopt an inclusive lens – considering gender-specific response to the improvement. This will be done through qualitative surveys including focus group discussion and interviews with women, migrants and persons with disabilities. Selected participants will also be consulted for other activities of the project such as the communication plan.

Project component 3

Output 3.1. Women will participate actively in the network in sustainable low emissions transport system. It will be facilitated by the screening of sectors and stakeholders that will enable to identify where women are represented and active in the e-mobility field, to support their participation in networking mechanisms established throughout the project.

Output 3.3. The implemented sustainable mobility communication and public awareness campaigns will include gender-transformative project communication plans, adopting a gender specific communication to make sure women are targeted as well as other users. The gender-responsive campaigns will raise awareness on e-mobility in general, on gender-based discrimination and violence in transit facilities, and support access to jobs in e-mobility for women and other underrepresented groups. This activity should consider the ongoing stereotypes linked to women low participation in this sector and adapt the communication plans accordingly.

Output 3.4. Materials used to build the capacity of municipal planners and public transport managers will be gender-transformative to make sure gender-related issues are considered in the promotion of low-emission transport. This will be done through the active participation of gender experts and institutions in the design of the materials as well as the delivery of the workshops related to this output.

Project component 4

Output 4.1. The project monitoring and evaluation plan will include the gender action plan.

Indicators, targets and proposed budget

The proposed project monitoring approach includes gender-responsive indicators within the Project Results Framework (PRF), which will provide the necessary information to monitor the achievement of gender-responsive results at the outcome level, fully described in the PRF.

Outcome 1: Strengthened policy and social environment to support the promotion of a gender-transformative sustainable low emissions transport system.

Outcome 2: Demonstrations provide evidence of technical, financial and environmental sustainability to plan for scale-up of low-carbon electric mobility that is gender-inclusive.

Outcome 3: Sustainable low emissions transport programs widely supported through an inclusive and gender-transformative communication approach.

Furthermore, activity-level indicators and targets have been identified for adequate monitoring on the implementation of gender-responsive activities that are included in the project and in this Gender Action Plan. The latter are detailed in the table below, where the budget allocated to gender-related activities is also noted.

Project objective: Promote sustainable transport in Lebanon through electric mobility and improved quality of service						
COMPONENT 1: Institutional and policy support for the promotion of sustainable transport systems and e-mobility						
Outcome: Strengthened policy and social environment to support the promotion of sustainable low emissions transport systems						
Gender-related activity	Indicator	Target	Baseline	Budget	Timeline	Responsibility
Development of entry-points for the guidelines related to the implementation of Self-Certified Green Transport agreements to be gender-responsive (Activity 1.1.2)	The guidelines related to the implementation of Self-Certified Green Transport agreements is gender-responsive	Yes	No			PMU
Development of a gender analysis and action plan for the national e-mobility strategy (Activity 1.2.5)	Availability of a gender analysis and a gender action plan	1 gender analysis and 1 gender action plan are integrated into the e-mobility strategy	0	5000	Month 11-19	Individual Consultant PMU
COMPONENT 2: Short-term barrier removal through e-mobility and other low-carbon demonstrations						
Outcome: Demonstrations provide evidence of technical, financial and environmental sustainability to plan for scale-up of low-carbon electric mobility						
Gender-related activity	Indicator	Target	Baseline	Budget	Timeline	Responsibility
Design of women and persons with disabilities -friendly walking areas to access transport system (Activity 2.3.1)	# bus stops with walking accessibility for persons with disabilities Lighting at bus stops exist	4 Yes	0 No	10000	Mont 13-16	Individual Consultant PMU
Conduction of a gender specific survey to identify users' response to the improvement of the quality of service (Activity 2.1.2, 2.2.2, 2.3.2)	# women users' responses collected # persons with disability users response collected # migrants users response collected	150 20 50	0 0 0	2.1.2: 3000 2.2.2: 3000 2.3.2: 10000	2.1.2: M18-23 2.2.2: M18-23 2.3.2: M17-36	Individual Consultant PMU
COMPONENT 3: Knowledge management, capacity development and awareness raising						
Outcome: Sustainable low emissions transport programs widely supported						
Gender-related activity	Indicator	Target	Baseline	Budget	Timeline	Responsibility
Participation and inclusion of women in the network in sustainable low emissions transport systems (Activity 3.1.1.)	Census of women's share in stakeholders involved in e-mobility % women involved in the network	5 census 30%	0 0	2000	M22-54	Individual Consultant PMU
Design of a gender-transformative project communication plan (Activity 3.3.1)	Gender is integrated in the project communication plan	Yes	No	4000	M19-53	Individual Consultant PMU
Adaptation of the communication in the implemented campaigns targeting general users to target women, persons with disabilities and migrant populations (Activity 3.3.2)	# communication support(s) address(es) women's (and others') needs and perceptions	3	0	5000	M25-54	Individual Consultant PMU

Raise awareness on gender-based violence, harassment and discrimination in transport, including against women and migrant populations (Activity 3.3.2)	# communication support used to raise awareness on gender-based violence in transport # broadcast targeting gender-based violence in transportation	3 communication supports 15 radio/TV broadcasts	0 0	5000	M25-54	Individual Consultant PMU
Production of gender-transformative materials for supporting training and awareness-raising - targeting municipal planners and decision-makers (Activity 3.4.1)	# gender-transformative e-mobility training delivered to municipal planners and decision-makers	3	0	2000	M31-42	Individual Consultant PMU
Identification of women involved in the e-mobility sector (including students) to participate in training workshops (Activity 3.4.2)	# women identified # women participating in trainings	# 30 # 20	0 0	2000	M31-42	Individual Consultant PMU
Identification of women involved in the e-mobility sector to participate in ToT workshops on charging infrastructure, and EV and hybrid vehicle maintenance and driving (Activity 3.4.4)	# women trained	10	0	2000	M13-36	Individual Consultant PMU
Implementation of child-friendly spaces to ensure women taking care of children can actively participate in the trainings and network meetings (including domestic workers)	Child-friendly space available	Yes	No	Included in ToR for training activities	M13-42	PMU
Create jobs in the e-mobility sector for women and other underrepresented groups, including persons with disabilities in line with Law 220/2000, which addresses the access to all types of services in Lebanon (3.4.4)	# jobs occupied by women (and other under-represented groups) in the e-mobility sector after the completion of the project including # bus drivers # business owners # car fleet managers	15 12 1 2	3 3 0 0	Included in M&E	M13-36	Individual Consultant PMU
COMPONENT 4: Monitoring & Evaluation						
Outcome: The project monitoring and evaluation plan is implemented						
Gender-related activity	Indicator	Target	Baseline	Budget	Timeline	Responsibility
Monitoring and evaluation of the gender action plan ((Activity 4.1.5)	# mid-term report on gender action plan # final report on gender action plan	2 mid-term report 1 final report	0 0	7000	M19-54	M&E officer with project gender specialist

Annex 11: Procurement Plan

#	Type of Supply*	Type of Vendor	Description of goods (per item), services or works (per milestone/output)	**Expected date for specification/TOR /SOW to be submitted	Planned contract start date	USD
1	RFP	Consulting company	Technical assistance for activity 1.1.2 (Guidelines addressing the legal, financial and regulatory aspects related to the implementation of Self-Certified Green Transport agreements, including review of international best-practice) and 2.1.1	March, 2022	June, 2022	77,000
2	RFP	Consulting company	Technical assistance for activity 1.1.3 (Guidelines addressing the legal, financial and regulatory aspects related to the implementation of Self-Certified Green Fleet Management agreements, including review of international best-practice) and 2.2.1	March, 2022	June, 2022	52,000
3	RFP	Consulting company	Technical assistance for activity 1.2.1 (Study on preconditions: short-term improvements in public transport and non-motorized mobility)	March, 2022	May, 2022	90,000
4	RFP	Consulting company	Technical assistance for activity 1.2.2 (Guidelines, including financial models, to support the supply and access to EV in Lebanon (focus on bus operators and car fleets))	May, 2022	August, 2022	40,000
5	RFP	Consulting company	Technical assistance for activity 1.2.3 (Study on electrification options for the Lebanese fleet (car and bus fleets and national electricity grid))	September, 2022	December, 2022	40,000
6	RFP	Consulting company	Technical assistance for activity 1.2.4 (Drafting the national e-mobility strategy)	July, 2024	October, 2024	40,000
7	RFP	Consulting company	Environmental expertise team: Technical assistance for activity 1.2.5 (Gender analysis and action plan and strategic environmental and social assessment (SESA) of the national e-mobility strategy)	July, 2024	October, 2024	40,000
8	RFP	Consulting company	Technical assistance for activity 1.3.1 (Roadmap on end-of-life vehicle management) and 1.3.3	October, 2023	January, 2024	185,000
9	RFP	Consulting company	Technical assistance for activity 2.1.3 (GPTS certification procedure established)	October, 2023	January, 2024	20,000
10	RFP	Consulting company	Technical assistance for activity 2.3.1 (Accessibility criteria and conditions defined and pilot sites selected)	October, 2022	January, 2023	20,000
11	ITB	Contracting company	Construction plan and construction works in Jbeil (activity 2.3.2) (Detailed construction plans developed, implemented and monitored in the pilot sites)	February, 2023	May, 2023	375,000

#	Type of Supply*	Type of Vendor	Description of goods (per item), services or works (per milestone/output)	**Expected date for specification/TOR /SOW to be submitted	Planned contract start date	USD
12	RFP	Consulting company	Technical assistance for activity 2.3.3 (reporting of demonstration results) (Report on results, lessons learnt and replication options)	October, 2024	January, 2025	10,000
13	RFP	Consulting company	Technical assistance for the procurement of e-buses (Procurement of e-bus)	October, 2022	January, 2023	20,000
14	RFQ	Company	Procurement of 2 e-buses (Procurement of e-bus)	April, 2023	June, 2023	900,000
15	RFQ	Company	Procurement and installation of fast-charging equipment for e-buses (Procurement and installation of charging infrastructure based on renewable energy)	April, 2023	June, 2023	150,000
16	RFP	Consulting company	Technical assistance for activity 2.4.3 (reporting of demonstration results) (Report on results, lessons learnt and replication options)	October, 2023	January, 2024	10,000
17	RFP	Consulting company	Technical assistance for activities 2.5.1 and 2.5.2 (Procurement of 4 demonstration cars, fleet management hardware and software) and 2.5.2	January, 2023	April, 2023	20,000
18	RFQ	Company	Procurement of pilot cars and fleet management hardware and software (Procurement of 4 demonstration cars and fleet management hardware and software)	April, 2023	July, 2023	160,000
19	RFP	Consulting company	Technical assistance for activity 2.5.3 (reporting of demonstration results) (Demonstration of cars and GFM, including report on results, lessons learnt and replication options)	October, 2023	January, 2024	10,000
20	RFP	Consulting company	Technical assistance for the project communication plan, including monitoring and evaluation (Project communication plan, including monitoring and evaluation)	April, 2022	July, 2022	17,000
21	IC	Individual consultant - International	Technical assistance to activity 3.2.2 (report on lessons learnt from the project) (Report on lessons learnt from the E-mob programme and adaptation to the Lebanese context)	July, 2024	October, 2024	10,000
22	IC	Individual consultant - International	Technical assistance to activity 3.2.3 (exit project strategy) (Exit project strategy for the deployment of e-mobility in Lebanon)	April, 2026	July, 2026	10,000
23	RFP	Contracting company	Virtual platform and website supporting the network (Provide technical support to establish the mandate, structure, governance and working plan for the network) and 4.1.4	December, 2022	April, 2023	10,000

#	Type of Supply*	Type of Vendor	Description of goods (per item), services or works (per milestone/output)	**Expected date for specification/TOR /SOW to be submitted	Planned contract start date	USD
24	RFP	Contracting company	Technical assistance for project monitoring platform and compilation of K&M products (Project monitoring platform and development & compilation of KM products)	April, 2023	July, 2023	10,000
25	RFQ	Company	Technical and hospitality support for the network meetings (venue, catering, etc.) (Convene and carry out periodic meetings with all key stakeholders participating in the network)	December, 2022	April, 2023	20,000
26	RFP	Consulting company	Implementation of campaigns targeting general users (Implementation of campaigns targeting general users)	January, 2025	March, 2025	40,000
27	RFP	Consulting company	Training and supporting materials for transport companies and professionals (Supporting materials and workshops targeting transport companies and professionals)	October, 2023	January, 2024	18,000
28	RFP	Consulting company	Gender training materials for transport companies and professionals (Supporting materials and workshops targeting transport companies and professionals)	October, 2023	January, 2024	10,000
29	IC	Individual consultant	Training and supporting materials for municipal planners and decision-makers (Supporting training and awareness-raising materials targeting municipal planners and decision-makers)	April, 2024	July, 2024	2,179
30	IC	Individual consultant	Gender materials for municipal planners and decision-makers (Supporting training and awareness-raising materials targeting municipal planners and decision-makers)	April, 2024	July, 2024	4,000
31	IC	Individual consultant	SESP training materials for municipal planners and decision-makers (Supporting training and awareness-raising materials targeting municipal planners and decision-makers)	April, 2024	July, 2024	2,000
32	RFP	Consulting company	Training workshops for municipal planners and decision-makers (Training workshops for municipal planners and decision-makers)	January, 2025	March, 2025	16,000
33	IC	Individual consultant - International	Mid term evaluation (Mid-term evaluation completed)	January, 2024	April, 2024	30,000
34	IC	Individual consultant – International	Terminal evaluation (Terminal evaluation completed)	June, 2026	August, 2026	40,000

#	Type of Supply*	Type of Vendor	Description of goods (per item), services or works (per milestone/output)	**Expected date for specification/TOR /SOW to be submitted	Planned contract start date	USD
35	IC	Individual consultant - National	Monitoring of social and environmental safeguards management measures and stakeholder engagement activities (Monitoring of social and environmental safeguards management measures, stakeholder engagement activities and gender action plan)	June, 2026	August, 2026	8,000
36	IC	Individual consultant - National	Gender expert for activity 1.1.2; 1.2.5; 2.1.2; 2.2.2; 2.3.2; 3.3.1, 3.3.2; 3.3.2; 3.4.1, 3.4.2; 4.1.5	April, 2022	June, 2022	41,000
37			Travel to participate at UNEP's E-mob Global Programme activities (Participation in UNEP's E-mob programme working groups and activities)			19,500
38			Travel for public consultancies			2,000
39		Service contract - Individual	Project Manager	October, 2021	January, 2022	414,000
40		Service contract - Individual	Transport Engineer	October, 2021	January, 2022	312,000
41		Service contract - Individual	Assistant	October, 2021	January, 2022	139,500
42		Service contract - Individual	Safeguards Officer	October, 2021	January, 2022	46,500
43	RFQ	Company	Inception workshop (M&E plan designed and implemented)	January, 2022	February, 2022	2,000
44	RFQ	Company	SESP audio-visual and print materials (Supporting materials and workshops targeting transport companies and professionals)	October, 2023	January, 2024	1,000
45	RFQ	Company	Furniture	January 2022	Febr, 2022	3,589
46	RFQ	Company	Office supplies	January, 2022	February, 2022	16,800
47	RFQ	Company	Computers	January, 2022	February, 2022	3,900
48	RFQ	Company	Independent financial audits	November 2022	February, 2022	10,000

#	Type of Supply*	Type of Vendor	Description of goods (per item), services or works (per milestone/output)	**Expected date for specification/TOR /SOW to be submitted	Planned contract start date	USD
49	Petty cash	Transport, shipping and handling	Mailing and clearances (300 USD/year)			1,500
50	Petty cash	Rental Maintenance of other Equipment	Maintenance of equipment (329 USD/year)			1,645
51	Petty cash	Materials and Goods	PPEs, first aid kits (400 USD/year)			2,000
52	Petty cash	Communication and Audio-visual equipment	(50 USD docusign+ 156 USD e-mail subscription+227 USD Office 365+24 USD Zoom)*3 staff*5 years			6,855
53	Petty cash	Rental and Maintenance Premises	Custodial and Cleaning services, Utilities (300 USD/year)			1,500
54	Petty cash	Transport, shipping and handling	Office operations			1,500
55	RFP	Consulting company	Train-the-trainer workshops on charging infrastructure, EV and hybrid vehicles maintenance and driving (Train-the-trainer workshops on charging infrastructure, and EV and hybrid vehicle maintenance and driving)	October, 2022	January, 2023	20,000
			TOTAL			3,552,968

Procurement financed by UNDP TRAC resources

#	Type of Supply*	Type of Vendor	Description of goods (per item), services or works (per milestone/output)	**Expected date for specification/TOR /SOW to be submitted	Planned contract start date	USD
1		Service contract - Individual	Project Assistant	October, 2021	January, 2022	46,500
2		Service contract - Individual	Safeguards Officer	October, 2021	January, 2022	103,500

#	Type of Supply*	Type of Vendor	Description of goods (per item), services or works (per milestone/output)	**Expected date for specification/TOR /SOW to be submitted	Planned contract start date	USD
3	Petty cash	Miscellaneous expenses	Office operations (miscellaneous expenses)			50,000
TOTAL						200,000

*Type of Supply: Services from company (RFP), Individual consultant (IC), Civil Works (EOI then ITB), Goods (ITB/RFQ), etc.

**Expected date for specification/ToRs/SOW to be finalized: dd/mm/yy

Annex 12: GEF focal area specific annexes (Estimates of Direct and Consequential (Indirect) Greenhouse Gas Emission Reductions and beneficiaries)

1. Estimates of Direct and Consequential (Indirect) Greenhouse Gas Emission Reductions

Summary of results

GHG reductions and energy savings estimation	
Project information	
<ul style="list-style-type: none"> Project duration: 5 years. Starting in 2022 and ending in 2026 Time frame for indirect effects: 15 years. Starting in 2022 and ending in 2035 (Effects produced by the introduction of electric cars and buses and by the improvement of public transport services and conditions for pedestrians and cyclists) Causality factor: 20% 	
Total project emissions reductions, t CO₂	117,206
Total direct emission mitigation from demonstration projects, t CO₂	39,069
<i>A.1 : Intercity Public Transportation Beirut-Byblos- Tripoli</i>	<i>18,116</i>
<i>A.2 : Solar Panels- Municipality of Jbeil</i>	<i>1,550</i>
<i>A.3 : Police Patrol Fleet Replacement</i>	<i>1,435</i>
<i>A.4. Self-certified Green Public Transport Services (GPTS) concept</i>	<i>7,835</i>
<i>A.5. Green Fleet Management (GFM) concept</i>	<i>7,176</i>
<i>A.6. Pilot bus stops with improved pedestrian access in Jbeil</i>	<i>2,957</i>
Total indirect emission mitigation, t CO₂ (lower of values below)	78,137
<i>Bottom-up estimate (replication factor 2)</i>	<i>78,137</i>
<i>Top-down estimate (causality factor 20%)</i>	<i>98,684</i>
Total direct emission mitigation at the time of measurement, t CO₂	
At end of month 30 (mid-term) (all pilots' operational by month 37)	0
At end of month 60 (project termination)	5,209
Total project energy savings, MJ	1,423,086,470
Total direct energy savings from demonstration projects, MJ	474,362,157
<i>A.1 : Intercity Public Transportation Beirut-Byblos- Tripoli</i>	<i>234,965,817</i>
<i>A.2 : Solar Panels- Municipality of Jbeil</i>	<i>-</i>
<i>A.3 : Police Patrol Fleet Replacement</i>	<i>17,094,667</i>
<i>A.4. Self-certified Green Public Transport (GPTS) concept</i>	<i>101,613,465</i>
<i>A.5. Green Fleet Management (GFM) concept</i>	<i>85,473,336</i>
<i>A.6. Pilot bus stops with improved pedestrian access in Jbeil</i>	<i>35,214,872</i>
Total indirect energy savings, MJ	948,724,313

Methodology for the estimation of GHG reductions

Framework and key definitions

The methodology applied in this project follows the GEF 2019 updated Guidelines on Core Indicators and Subindicators, as well as the GEF guidelines on GHG emission estimates for GEF-6 projects, issued in 2015, in particular its Annex 3 on Urban Sector Projects and the transportation chapter of the Global Protocol for Community-Scale Greenhouse Gas Emission Inventories (GPC), published by WRI, C-40 and ICLEI in 2014.

Emission reductions are defined as follows:

Direct GHG emission reductions: Direct CO₂ emission reductions achieved by investments that are directly part of the results of the projects.

Consequential GHG emissions: Consequential GHG emission reductions are those projected emissions that could result from a broader adoption of the outcomes of a GEF project, plus longer-term emission reductions from behavioral change. Broader adoption of a GEF project proceeds through several processes including sustaining, mainstreaming, replication, scaling-up and market-change. Consequential emission reductions are typically achieved after GEF project closure and occur outside of the project logframe. Top-down and bottom-up approaches are usually recommended to estimate consequential emission reductions. They rely heavily upon assumptions and expert judgment regarding the GEF project investment and its assumed contribution to future market potential and penetration. As such, consequential GHG emission reductions should be reported separately from direct and/or direct post-project GHG emission reductions.

The following project elements provide potential GHG emission reductions. These are estimated in the remaining sections of this annex:

1. Intercity Public Transportation Beirut-Byblos- Tripoli.
2. Solar Panels- Municipality of Jbeil.
3. Police Patrol Fleet Replacement.
4. Self-certified Green Public Transport Services (GPTS) concept.
5. Green Fleet Management (GFM) concept.
6. Pilot bus stops with improved pedestrian access in Jbeil.

Intercity Public Transportation Beirut-Byblos- Tripoli

Public Transportation Baseline

The objective of this project activity is to operate two electric buses on the Beirut-Byblos-Tripoli route, where intercity public transportation services currently use diesel buses. The route serves the so-called north corridor from Tripoli (Nour Square) to Beirut (Charles Helou Station) and vice versa. The total trip distance, per leg, is estimated to be 100 km: 80.5 km between Beirut and Tripoli, and 19.5 km inside the built-up areas of Tripoli and Beirut to load and unload passengers. The route is expected to be integrated in the future within the World Bank financed BRT network project.

In Lebanon, the common current bus fleet is mostly composed of Euro IV diesel buses (50 seaters, 12m long), with air conditioned and usually operating under severe traffic congestion. The emission factor per passenger-kilometer for buses is assumed to be 272.57 g/CO₂/pass-km¹⁰². The number of passengers served by the project is estimated to be 51,100 passengers per year, based on two round trips per day, 35% bus occupancy and 2 buses.

For the calculation of GHG emission reductions for replacing two diesel buses with two electric buses, the CDM methodology¹⁰³ was applied, with some simplification. The baseline emissions are obtained from Equation (1) as follows:

$$BE_y = EF_{PKM, Bus} \times D_{Bus} \times P_y \times 10^{-6} \quad \text{Equation (1)}$$

Where:

BE_y = Baseline emissions in year y (tCO₂eq)

$EF_{PKM, Bus}$ = Emission factor per passenger-kilometre for buses (g CO₂eq/PKM)

¹⁰² MoEW/UNDP/SODEL (2017). Cost Benefit Analysis for the Use of Natural Gas and Other Low Carbon Fuels in the Transport Sector in Lebanon, page 33, figure 18.

¹⁰³ UNFCCC, CDM Methodology: AMS-III.C.: Emission reductions by electric and hybrid vehicles accessed at <https://cdm.unfccc.int/methodologies/DB/AWVYMI7E3FP9BDRQ646203OVPKFPQB..> CDM Methodology for bus rapid transit projects accessed at <https://cdm.unfccc.int/methodologies/DB/7DF4Q82IMUANFW97FIUFRHBZQTKXVF.>

D_{Bus} = Average trip distance travelled by buses in the project
 P_Y = Number of passengers served by the project buses in year y

BASELINE EMISSIONS			
Parameter	Description	Unit	Value
BE_y	Baseline emissions in year y	tCO ₂ eq	1,392.83
$EF_{PKM, Bus}$	Emission factor per passenger-kilometer for buses	gCO ₂ eq/PKM	272.57
D_{Bus}	Average trip distance travelled by buses in the project	km	100
P_Y	Number of passengers travelled in the project by the project system in year y	passengers	51,100

Baseline emissions are for this pilot project estimated to be 1,392.83 tCO₂eq per year.

Project Direct Emissions from Public Transportation

Project direct emissions are estimated to be 185.09 tCO₂eq, considering a well-to-wheel analysis. The suggested two electric buses have a capacity of 50 seats(12m), with a 350kWh battery. The average power consumption of the electric bus is 0.92 kWh/km¹⁰⁴. For the electricity of EV-charging, it was assumed that independent private generation would be used taking into account the unreliability of the utility electricity in Lebanon. Thus, the grid emissions factor is set to 0.689¹⁰⁵ tons CO₂eq/MWh (calculated in 2015 by MoE). The total distance driven by buses is estimated to be 292,000 km/year.

The project emissions are obtained from Equation (2) as follows:

$$PE_y = EF_{Km, Bus} \times DD_{Bus} \times 10^{-6} \quad \text{Equation (2)}$$

Where:

PE_y = Project emissions in year y (t CO₂eq)
 $EF_{Km, Bus}$ = Emissions factor per kilometer for buses in year y (gCO₂eq/km).
 DD_{Bus} = Total distance driven by buses in year y (km)

PROJECT GHG EMISSION			
Parameter	Description	Unit	Value
PE_y	project emissions in year y (t CO ₂ eq)	tCO ₂ eq	185.09
$EF_{Km, Bus}$	Emissions factor per kilometer for buses in year y	gCO ₂ eq/km	633.88
DD_{Bus}	Total distance driven by buses in year y	km	292,000

Project Direct Emission Savings from Public Transportation

The yearly GHG emissions reduction is obtained from Equation 3 as follows:

¹⁰⁴ Yutong Website, 2020

¹⁰⁵ Lebanon Third Biennial Update Report to the UNFCCC (2019). The grid emissions factor of private generation is 0.689 tons CO₂eq/MWh while that is 0.666 for EDL and 0.674 for the dual use of EDL and private generation. The grid emissions factor of private generation is used for the estimation of project direct emissions based on the situation of energy sector in Lebanon. This would also make the project direct GHG emissions saving conservative.

GHG emissions reduction (tCO₂eq) = $BE_y - PE_y$

Equation (3)

Emissions reduction for this pilot project is 1,207.74 tCO₂eq per year and 18,116.10 tCO₂eq over the project period of 15 years.

GHG Emission Reduction	Value	Unit	Description
ER _y	1,207.74	tCO ₂ eq/year	Emissions Reduction per year
ER	18,116.10	tCO ₂ eq	Emissions Reduction over project duration (15 years)

Solar Panels- Municipality of Jbeil

Within this activity, the project will install 100 kW solar PV system in the bus depot for the Municipality of Jbeil and will integrate this energy generation infrastructure with the bus-charging system to demonstrate and optimize electrification of bus network system. The energy produced from the solar PV for the buses would otherwise have to be supplied by the grid, which has an emissions factor of 0.689 tCO₂/MWh, as mentioned in the above section. For the suggested electric buses of 350kWh battery, an e-bus charger with a capacity of 100kW which will take up to 3 hours to fully charge the bus. To ensure high charging, it is recommended to get: a 3 – phase charger, V between 500 and 850VDC and charge the bus using DC power. Suggested types are: ABB¹⁰⁶ and Siemens¹⁰⁷.

This will require a PV capacity of 100kWp system, equivalent to 1,000sqm. Average capacity factor for such a decentralized PV system is considered 1,500 kWh/kW in line with the most recent Lebanon's report to UNFCC for the estimation of GHG emission reduction¹⁰⁵. The calculated yearly GHG emissions reductions from the solar PV system are estimated to 103,35 tCO₂eq/year and 1,550.25 tCO₂eq over the project period of 15 years.

GHG Emission Reduction	Value	Unit	Description
ER _y	103.35	tCO ₂ eq/year	Emissions Reduction per year
ER	1,550.25	tCO ₂ eq	Emissions Reduction over project duration (15 years)

Police Patrol Fleet Replacement

Police Patrol Fleet Baseline

The objective of this activity is to replace the current police patrol fleet with electric vehicles. Currently, the police patrol fleet consists of 400 Dodge Charger cars (manufactured before 2008) running on gasoline with high CO₂ emission. The objective is to replace four of these cars with by electric cars, which will provide service in areas inside Beirut.

The current Dodge-Charger cars are equipped with 5.7 liters, 8 cylinders, gasoline engines, manufactured before 2008. The average fuel consumption is 30 liter/100 km (Reference¹⁰⁸: ISF meeting, June 2020)

The emission factor per passenger-kilometer for passenger is estimated to be 382,65¹⁰⁹ gCO₂eq/PKM, by considering 3 passengers per vehicle. The average trip distance travelled by passengers in the project who shifted from passenger

¹⁰⁶ <https://new.abb.com/ev-charging/products/depotconnector-charging>

¹⁰⁷ : <https://new.siemens.com/global/en/markets/transportation-logistics/electromobility/ebus-charging.html>

¹⁰⁸ According to General Said Fawaz (ISF)

¹⁰⁹ Based on Emission factor of passenger vehicle (Gasoline) = 0.270 kgCO₂/km for 0.1176 l/km

vehicle is 115 km per day, based on average speed of 9.6 km/hr, 12 hours/day¹¹⁰. The number of passengers travelled by the project system per year is 1,095 passengers per vehicle.

The baseline emissions are obtained from Equation (4) as follows:

$$BE_y = EF_{PKM, PV} \times D_{PV} \times P_y \times 10^{-6} \quad \text{Equation (4)}$$

Where:

BE_y = Baseline emissions in year y (tCO₂eq)

$EF_{PKM, PV}$ = Emission factor per passenger-kilometre for passenger vehicle (g CO₂eq/PKM)

D_{PV} = Average trip distance travelled by passengers in the project

P_y = Number of passengers travelled in the project by the project system in year y

BASELINE EMISSIONS (Per Vehicle)			
Parameter	Description	Unit	Value
BE_y	Baseline emissions in year y	tCO ₂ eq	28.96
$EF_{PKM, PV}$	Emission factor per passenger-kilometer for passenger vehicle	gCO ₂ eq/PKM	229.59
D_{PV}	Average trip distance travelled by passengers in the project who shifted from passenger vehicle	km	115
P_y	Number of passengers travelled in the project by the project system in year y	passengers	1,095

Baseline emissions are for this pilot project estimated to be 28.96 tCO₂eq per year per vehicle, and 115.85 tCO₂eq per year for the four vehicles.

Project Direct Emissions from Police Fleet Replacement

The suggested electric car is Chevrolet Bolt (2018). The emission factor per kilometer is 119.9 gCO₂eq/km, with average power consumption 28kWh/100 mi (Reference¹¹¹: Fuel Economy, 2020). The total distance driven by the vehicle is 42,048 km per year, based on 115 km per day.

The project emissions are obtained from Equation (5) as follows:

$$PE_y = EF_{Km, Bus} \times DD_{Bus} \times 10^{-6} \quad \text{Equation (5)}$$

Where:

PE_y = Project emissions in year y (t CO₂eq)

$EF_{Km, P}$ = Emissions factor per kilometer for vehicles in year y (gCO₂eq/km).

DD_{PV} = Total distance driven by vehicles in year y (km)

PROJECT GHG EMISSION (Per Vehicle)			
Parameter	Description	Unit	Value
PE_y	Project emissions in year y (t CO ₂ eq)	tCO ₂ eq	5.04
$EF_{Km, P}$	Emissions factor per kilometer for vehicle in year y	gCO ₂ eq/km	119.95
DD_{PV}	Total distance driven by vehicle in year y	km	42,048

¹¹⁰ World Bank (2017). Reducing Traffic Congestion in Beirut : An Empirical Analysis of Selected Policy Options Policy Research Working Paper 8158. Original data from MoE, URC, GEF (2012). Technology Needs Assessment for Climate Change.

¹¹¹ <https://www.fueleconomy.gov/feg/Find.do?action=sbs&id=39786>

Project direct emissions are estimated to be 20.16 tCO₂eq for the four hybrid cars as follows.

Project Direct Emission Savings from Police Fleet Replacement

The yearly GHG emissions reduction is obtained from Equation 6 as follows:

$$\text{GHG emissions reduction (tCO}_2\text{eq)} = BE_y - PE_y \quad \text{Equation (6)}$$

Emissions reduction for this pilot project is 95.68 tCO₂eq per year for four electric cars and 1,435.2 tCO₂eq over the project period of 15 years.

GHG Emission Reduction	Value	Unit	Description
ER _y	95.68	tCO ₂ eq/year	Emissions Reduction per year
ER	1,435.2	tCO ₂ eq	Emissions Reduction over project duration (15 years)

Self-certified Green Public Transport Services (GPTS) concept

The objective of this project activity is to provide state-of-the art practices in Green Public Transportation for the bus operators on Beirut-Byblos-Tripoli. The estimated number of buses to participate in the project is 15 buses. The current baseline emission for bus on this route is 696.415 tCO₂eq/year per bus.

The expected outcome of this project is fuel saving of an amount of 5% of current consumption per participating bus due to enhanced maintenance and optimized eco-driving behavior. Thus, the emission reduction per bus is estimated to 34.82 tCO₂eq/year. Taken together, the yearly GHG emissions reduction from the CGPT is 522.3 tCO₂eq and 7,834.5 tCO₂eq over the project period of 15 years.

GHG Emission Reduction	Value	Unit	Description
ER _y	522.3	tCO ₂ eq/year	Emissions Reduction per year
ER	7,834.5	tCO ₂ eq	Emissions Reduction over project duration (15 years)

Green Fleet Management (GFM) concept

The objective of this project activity is to provide state-of-the art practices in Green Fleet Management for the police patrol fleet of the Internal Security Forces inside the city of Beirut. The current police patrol fleet is 3,000 cars but the target of this project is 400 cars, mainly the Dodge Charger cars. The current baseline emission for the Dodge Charger car is 23.92 tCO₂eq/year per vehicle inside Beirut.

The expected outcome of this project is fuel saving of an amount of 5% of current consumption per car due to enhanced maintenance and optimized eco-driving behavior. Thus, the emission reduction per car is estimated to 1.196 tCO₂eq/year. Therefore, the yearly GHG emissions reduction from the CGFM is 478.4 tCO₂eq and 7,176 tCO₂eq over the project period of 15 years.

GHG Emission Reduction	Value	Unit	Description
ER _y	478.4	tCO ₂ eq/year	Emissions Reduction per year
ER	7,176	tCO ₂ eq	Emissions Reduction over project duration (15 years)

Pilot bus stops with improved pedestrian access in Jbeil

The objectives of this project activity are (i) to install smart bus stops and (ii) to improve the level of service for pedestrian accessibility inside the city of Jbeil. The project will be aligned with new Urban Master Plan designed by the municipality of Jbeil to preserve the integrate historical monuments with transportation activities and to enhance non-motorized activities inside the city.

The outcome of this project is to reduce the number of motorized trips inside the municipality of Jbeil by 5% via maximizing the level of service for pedestrian activities. Currently, the number of vehicles owned by the current residents of Jbeil is estimated to be 10,000 personal cars, in addition to 5,000 vehicles used for commercial and business activities¹¹². The average trip distance (round trip) inside the municipality of Jbeil is estimated to be 4 km (due to the Highway) and the total number of yearly trips inside the municipality is 3.65 million trips, by considering an average of 1 trip/vehicle/day.

The emission factor per passenger-kilometer for car trips is assumed to be 270 g/CO₂/km/passenger¹¹³.

The calculation of GHG emission reductions from modal shift from motorized to non-motorized transport modes follows the CDM methodology, with some simplifications. The emissions reduction is obtained from Equation (7) as follows:

$$ER_y = EF_{PKM, PV} \times D_{PV} \times P_y \times S_{PV} \times 10^{-6} \quad \text{Equation (7)}$$

Where:

ER_y = Emissions Reduction in year y (tCO₂eq)

$EF_{KM, PV}$ = Emission factor per kilometre for passenger vehicle (g CO₂eq/KM)

D_{PV} = Average trip distance travelled by passenger vehicle in the project who shifted from passenger vehicle to non-motorized activities.

P_y = Number of trips in the project by the project system in year y

S_{PV} = Share of passengers in the project who shifted from passenger vehicle (%)

¹¹² Communication with Mayor of Jbeil Mr. Wissam Zaarour (June, 2020)

¹¹³ Lebanon's Second Biennial Update Report to the UNFCCC, 2017

EMISSIONS REDUCTION			
Parameter	Description	Unit	Value
ER_y	Emissions Reduction in year <i>y</i>	tCO ₂ eq	197.1
EF_{KM, PV}	Emission factor per kilometer for passenger vehicle	gCO ₂ eq/KM/PV	270
D_{PV}	Average trip distance travelled by passengers in the project who shifted from passenger vehicle	km	4
P_y	Number of passengers travelled in the project by the project system in year <i>y</i>	passengers	3.65 Million
S_{PV}	Share of passengers in the project who shifted from passenger vehicle	%	5%

The yearly GHG emissions reduction from this project 197.1 tCO₂eq and 2,956.5 tCo₂eq over the project period of 15 years.

GHG Emission Reduction	Value	Unit	Description
ER _y	197.1	tCO ₂ eq/year	Emissions Reduction per year
ER	2,956.5	tCO ₂ eq	Emissions Reduction over project duration (15 years)

GHG Emission Reduction Summary

Project Activity	GHG Emission Reduction	
	[tCO ₂ eq]/Year	[tCO ₂ eq] (15 Years)
A.1. Intercity Public Transportation Beirut-Byblos- Tripoli	1,207.74	18,116.10
A.2. Solar Panels- Municipality of Jbeil	165.36	2,480.40
A.3. Police Patrol Fleet Replacement	95.68	1,435.20
A.4. Self-certified Green Public Transport Services (GPTS) concept	522.30	7,834.50
A.5. Green Fleet Management (GFM) concept	478.40	7,176.00
A.6. Pilot bus stops with improved pedestrian access in Jbeil	197.10	2,956.50
Total GHG Emission Reduction [tCO₂eq]	2,666.58	39,998.70

Project consequential GHG emission savings (until 2037)

Summary of consequential GHG emission savings

- Bottom up: 39,998 * 2 (replication factor of 2) = 79,997 tCO₂
- Top down: 493,420 * 20% (causality factor) = 98,684 tCO₂

Bottom-up approach

The bottom-up approach considers a replication potential for the project activities of 5 in terms of expansion of electric vehicles, adoption of the Green Public Transport concept by bus operators, adoption of Green Fleet management concepts by companies with large car fleets and implementation of pedestrian-friendly designs in Jbeil and other cities.

Top-down approach

The top-down approach to the project consequential GHG emission savings follows the procedures and assumptions described below.

Assumptions:

- Only registered cars (white, green and red plates) and buses (white and red plates) are considered. The base year considered is 2021, with data extracted from the Vehicle Registration Department.
- The yearly growth of registered cars is calculated based on the difference between year 2014 and 2020, estimated to be 2.5%.
- The yearly growth of registered buses is estimated to be 1%.
- The average yearly distance for car is estimated to be 15,000 km.
- The average yearly distance for bus is estimated to be 30,000 km.
- Between year 2022 and year 2026: No growth in registered cars and buses is considered due to the current economic situation.
- Between year 2022 and 2026: No growth in electric cars and buses is considered due to the current economic situation.
- Between year 2027 and year 2046: the percentage of replaced electric cars (growth in share) is considered to be 0.5%.
- Between year 2027 and year 2046: the percentage of replaced electric buses (growth in share) is considered to be 0.5%.
- The percentage of cars replaced yearly is estimated to be 5%, based on a life cycle of 20 years.
- The percentage of buses replaced yearly is estimated to be 3%, based on a life cycle of 33 years.
- The emission factor per car is estimated to be 270 gCO₂/km.
- The emission factor per bus is estimated to be 2,1885 gCO₂/km, based on average between off-peak and peak conditions¹¹⁴.

Procedures:Step 1: Number of Electric Vehicles

To calculate the number of electric vehicle (car and bus) in year y, the below equation is implemented:

$$NEV_y = (NRE_y \times PRV_y \times GEV_y) + NEV_{y-1} \quad \text{Equation (8)}$$

$$NEV_{2021} = 0$$

Where

- NEV_y : Number of Electric Vehicle in year y
- NRE_y : Number of Registered Vehicle in year y
- PRV_y : Percentage of Replaced Vehicle in year y
- GEV_y : Growth in Electric Vehicle in year y

¹¹⁴ MoEW/UNDP/SODEL (2017). Cost Benefit Analysis for the Use of Natural Gas and Other Low Carbon Fuels in the Transport Sector in Lebanon.

Step 2: Yearly GHG Emission Savings

To calculate the GHG emission savings per vehicle type (car and bus) in year y, the below equation is implemented:

$$GES_y = NEV_y \times AYD_y \times EF_{km} \times 10^{-6} \quad \text{Equation (9)}$$

Where

- GES_y : GHG Emission Savings in year y, [tCO₂]
- NEV_y : Number of Electric Vehicle in year y
- AYD_y : Average Yearly Distance per vehicle, [km]
- EF_{km} : Emissions factor per kilometer for vehicles in year y (gCO₂eq/km).

Step 3: Consequential GHG Emission Savings

To calculate the consequential GHG emission savings, the below equation is implemented:

$$CES = \sum_{vehicles} \sum_{years} GES_y \times CF \quad \text{Equation (10)}$$

Where

- CES : Consequential GHG emission savings, [tCO₂]
- GES_y : GHG Emission Savings in year y, [tCO₂]
- CF : Causality Factor

The total emission savings in 493,418 tCO₂ due to 453,193 tCO₂ from electric cars and 40,224 tCO₂ from electric buses. Considering a causality factor of 20%, the consequential GHS emission savings is **98,684** tCO₂.

2. Estimate of direct and indirect beneficiaries

Summary of results

	TOTAL	Women	Men
Direct beneficiaries	1,417,000	704,000	713,000
Indirect beneficiaries	2,223,000	1,105,000	1,118,000
Total	3,640,000	1,809,000	1,831,000

Direct beneficiaries

In the absence of gender-segregated data, all estimates assume that the share of women in the number of beneficiaries is the same obtained in the last census (49.7%).

The estimate of direct project beneficiaries is based on the following assumptions:

1. At least 25% of the current public transport commuters in the northern corridor would benefit from services of higher quality, following the demonstration and replication of the Green Public Transport Service concept (including the demonstrations and future deployment of electric buses).

- Number of daily commuters in the northern corridor 455,000 (World Bank BRT study).
 - Percentage of services implementing the Green Public Transport Service concept: 25%
 - Number of beneficiaries (rounded): 57,000 women and 57,000 men.
2. At least 25% of the current residents in Jbeil benefit from the improvements in walking, cycling and bus stops.
- Residents in Jbeil: 40,000.
 - Percentage of residents benefiting from improved accessibility conditions: 25%.
 - Number of beneficiaries (rounded): 5,000 women and 5,000 men.
3. At least 40% of the annual tourists visiting Jbeil benefit from the improvements in walking, cycling and bus stops.
- Annual number of tourists: 1,520,000 (2019 figures)
 - Percentage of residents benefiting from improved accessibility conditions: 40%.
 - Number of beneficiaries (rounded): 302,000 women and 306,000 men.
4. At least 10% of the total Lebanese population benefit from the implementation of the national e-mobility strategy.
- Lebanese population: 6,856,000.
 - Percentage of the population benefiting from the implementation of the strategy: 10%.
 - Number of beneficiaries (rounded): 341,000 women and 345,000 men.

Indirect beneficiaries

In the absence of gender-segregated data, all estimates assume that the share of women in the number of beneficiaries is the same obtained in the last census (49.7%).

The estimate of indirect project beneficiaries is based on the following assumptions:

1. At least 80% of public transport users on the Beirut corridors (excluding those directly benefited in the northern corridor) would benefit from better operational practices, through partial or total replication of the demonstrations on quality improvement and e-bus operations.
- Number of daily commuters on Beirut corridors (excluding the northern corridor): 409,000 (World Bank BRT study).
 - Percentage of services implementing some improvements from demonstrations: 80%
 - Number of beneficiaries (rounded): 163,000 women and 165,000 men.
2. At least 20% of the urban population in Lebanon (outside Jbeil) benefit from some improvements in walking, cycling or bus stops.
- Urban population (excluding Jbeil): 6,045,000 (88.8% of the Lebanese population).
 - Percentage of residents benefiting from improved accessibility conditions: 20%.
 - Number of beneficiaries (rounded): 601,000 women and 608,000 men.
3. At least 10% of the total Lebanese population indirectly benefit from the implementation of the national e-mobility strategy.
- Lebanese population: 6,856,000.
 - Percentage of the population indirectly benefiting from the implementation of the strategy: 10%.
 - Number of beneficiaries (rounded): 341,000 women and 345,000 men.

Annex 13: Additional agreements: such as cost sharing agreements, project cooperation agreements signed with NGOs (where the NGO is designated as the “executing entity”), letters of financial commitments etc..

No additional agreements have been signed for this project

Annex 14: GEF Core indicators

Core Indicator	Greenhouse gas emission mitigated				(Tons)
6	Expected metric tons of CO ₂ e (6.1+6.2)				
		PIF stage	Endorsement	MTR	TE
	Expected CO ₂ e (direct)	24,618	39,069		
	Expected CO ₂ e (indirect)	49,236	78,137		
Indicator 6.1	Carbon sequestered or emissions avoided in the AFOLU sector				
		Expected metric tons of CO ₂ e			
		PIF stage	Endorsement	MTR	TE
	Expected CO ₂ e (direct)				
	Expected CO ₂ e (indirect)				
	Anticipated start year of accounting				
	Duration of accounting				
Indicator 6.2	Emissions avoided Outside AFOLU				
		Expected metric tons of CO ₂ e			
		Expected		Achieved	
		PIF stage	Endorsement	MTR	TE
	Expected CO ₂ e (direct)	24,618	39,069		
	Expected CO ₂ e (indirect)	49,236	78,137		
	Anticipated start year of accounting	2024			
	Duration of accounting	15 years			
Indicator 6.3	Energy saved				
		MJ			
		Expected		Achieved	
		PIF stage	Endorsement	MTR	TE
	Expected MJ (direct)		474,362,157		
	Expected MJ (indir.)		1,423,086,470		
Indicator 6.4	Increase in installed renewable energy capacity per technology				
		Capacity (MW)			
	Technology	Expected		Achieved	
		PIF stage	Endorsement	MTR	TE
	(select)				
	(select)				

Core Indicator 11	Number of direct beneficiaries disaggregated by gender as co-benefit of GEF investment				(Number)	
			Number			
			Expected		Achieved	
		PIF stage	Endorsement	MTR	TE	
	Female	700,000	704,000			
	Male	700,000	713,000			
	Total	1,400,000	1,417,000			

Annex 15: GEF 7 Taxonomy

Guidance to project developer: Please complete these tables as appropriate ticking the most relevant keywords/topics/themes. Double check on the GEF website here to ensure this is the most recent list: <https://www.thegef.org/documents/templates> This Annex must be completed by the submission deadline, but it does not need to be included in the ProDoc submitted to the GEF as this data must be manually entered into the GEF Portal.

Level 1	Level 2	Level 3	Level 4
<input checked="" type="checkbox"/> Influencing models	<input checked="" type="checkbox"/> Transform policy and regulatory environments		
	<input checked="" type="checkbox"/> Strengthen institutional capacity and decision-making		
	<input checked="" type="checkbox"/> Convene multi-stakeholder alliances		
	<input checked="" type="checkbox"/> Demonstrate innovative approaches		
	<input type="checkbox"/> Deploy innovative financial instruments		
<input checked="" type="checkbox"/> Stakeholders	<input type="checkbox"/> Indigenous Peoples		
	<input checked="" type="checkbox"/> Private Sector		
		<input type="checkbox"/> Capital providers	
		<input type="checkbox"/> Financial intermediaries and market facilitators	
		<input checked="" type="checkbox"/> Large corporations	
		<input checked="" type="checkbox"/> SMEs	
		<input type="checkbox"/> Individuals/Entrepreneurs	
		<input type="checkbox"/> Non-Grant Pilot	
		<input type="checkbox"/> Project Reflow	
	<input checked="" type="checkbox"/> Beneficiaries		
	<input type="checkbox"/> Local Communities		
	<input checked="" type="checkbox"/> Civil Society		
		<input type="checkbox"/> Community Based Organization	
		<input checked="" type="checkbox"/> Non-Governmental Organization	
		<input checked="" type="checkbox"/> Academia	
		<input type="checkbox"/> Trade Unions and Workers Unions	
	<input checked="" type="checkbox"/> Type of Engagement		
		<input checked="" type="checkbox"/> Information Dissemination	
		<input checked="" type="checkbox"/> Partnership	
		<input checked="" type="checkbox"/> Consultation	
		<input checked="" type="checkbox"/> Participation	
	<input checked="" type="checkbox"/> Communications		
		<input checked="" type="checkbox"/> Awareness Raising	
		<input checked="" type="checkbox"/> Education	
		<input checked="" type="checkbox"/> Public Campaigns	
		<input checked="" type="checkbox"/> Behavior Change	

Level 1	Level 2	Level 3	Level 4
<input checked="" type="checkbox"/> Capacity, Knowledge and Research			
	<input type="checkbox"/> Enabling Activities		
	<input checked="" type="checkbox"/> Capacity Development		
	<input checked="" type="checkbox"/> Knowledge Generation and Exchange		
	<input type="checkbox"/> Targeted Research		
	<input type="checkbox"/> Learning		
		<input type="checkbox"/> Theory of Change	
		<input type="checkbox"/> Adaptive Management	
		<input type="checkbox"/> Indicators to Measure Change	
	<input checked="" type="checkbox"/> Innovation		
	<input type="checkbox"/> Knowledge and Learning		
		<input type="checkbox"/> Knowledge Management	
		<input type="checkbox"/> Innovation	
		<input type="checkbox"/> Capacity Development	
		<input type="checkbox"/> Learning	
	<input type="checkbox"/> Stakeholder Engagement Plan		
<input checked="" type="checkbox"/> Gender Equality			
	<input checked="" type="checkbox"/> Gender Mainstreaming		
		<input checked="" type="checkbox"/> Beneficiaries	
		<input type="checkbox"/> Women groups	
		<input checked="" type="checkbox"/> Sex-disaggregated indicators	
		<input checked="" type="checkbox"/> Gender-sensitive indicators	
	<input checked="" type="checkbox"/> Gender results areas		
		<input type="checkbox"/> Access and control over natural resources	
		<input checked="" type="checkbox"/> Participation and leadership	
		<input type="checkbox"/> Access to benefits and services	
		<input checked="" type="checkbox"/> Capacity development	
		<input checked="" type="checkbox"/> Awareness raising	
		<input checked="" type="checkbox"/> Knowledge generation	
<input checked="" type="checkbox"/> Focal Areas/Theme			
	<input type="checkbox"/> Integrated Programs		
		<input type="checkbox"/> Commodity Supply Chains (Good Growth Partnership)	
			<input type="checkbox"/> Sustainable Commodities Production
			<input type="checkbox"/> Deforestation-free Sourcing
			<input type="checkbox"/> Financial Screening Tools
			<input type="checkbox"/> High Conservation Value Forests
			<input type="checkbox"/> High Carbon Stocks Forests
			<input type="checkbox"/> Soybean Supply Chain
			<input type="checkbox"/> Oil Palm Supply Chain

Level 1	Level 2	Level 3	Level 4
			<input type="checkbox"/> Beef Supply Chain
			<input type="checkbox"/> Smallholder Farmers
			<input type="checkbox"/> Adaptive Management
		<input type="checkbox"/> Food Security in Sub-Sahara Africa	
			<input type="checkbox"/> Resilience (climate and shocks)
			<input type="checkbox"/> Sustainable Production Systems
			<input type="checkbox"/> Agroecosystems
			<input type="checkbox"/> Land and Soil Health
			<input type="checkbox"/> Diversified Farming
			<input type="checkbox"/> Integrated Land and Water Management
			<input type="checkbox"/> Smallholder Farming
			<input type="checkbox"/> Small and Medium Enterprises
			<input type="checkbox"/> Crop Genetic Diversity
			<input type="checkbox"/> Food Value Chains
			<input type="checkbox"/> Gender Dimensions
			<input type="checkbox"/> Multi-stakeholder Platforms
		<input type="checkbox"/> Food Systems, Land Use and Restoration	
			<input type="checkbox"/> Sustainable Food Systems
			<input type="checkbox"/> Landscape Restoration
			<input type="checkbox"/> Sustainable Commodity Production
			<input type="checkbox"/> Comprehensive Land Use Planning
			<input type="checkbox"/> Integrated Landscapes
			<input type="checkbox"/> Food Value Chains
			<input type="checkbox"/> Deforestation-free Sourcing
			<input type="checkbox"/> Smallholder Farmers
		<input type="checkbox"/> Sustainable Cities	
			<input type="checkbox"/> Integrated urban planning
			<input type="checkbox"/> Urban sustainability framework
			<input type="checkbox"/> Transport and Mobility
			<input type="checkbox"/> Buildings
			<input type="checkbox"/> Municipal waste management
			<input type="checkbox"/> Green space
			<input type="checkbox"/> Urban Biodiversity
			<input type="checkbox"/> Urban Food Systems
			<input type="checkbox"/> Energy efficiency
			<input type="checkbox"/> Municipal Financing
			<input type="checkbox"/> Global Platform for Sustainable Cities
			<input type="checkbox"/> Urban Resilience
	<input type="checkbox"/> Biodiversity		
		<input type="checkbox"/> Protected Areas and Landscapes	
			<input type="checkbox"/> Terrestrial Protected Areas
			<input type="checkbox"/> Coastal and Marine Protected Areas

Level 1	Level 2	Level 3	Level 4
			<input type="checkbox"/> Productive Landscapes
			<input type="checkbox"/> Productive Seascapes
			<input type="checkbox"/> Community Based Natural Resource Management
		<input type="checkbox"/> Mainstreaming	
			<input type="checkbox"/> Extractive Industries (oil, gas, mining)
			<input type="checkbox"/> Forestry (Including HCVF and REDD+)
			<input type="checkbox"/> Tourism
			<input type="checkbox"/> Agriculture & agrobiodiversity
			<input type="checkbox"/> Fisheries
			<input type="checkbox"/> Infrastructure
			<input type="checkbox"/> Certification (National Standards)
			<input type="checkbox"/> Certification (International Standards)
		<input type="checkbox"/> Species	
			<input type="checkbox"/> Illegal Wildlife Trade
			<input type="checkbox"/> Threatened Species
			<input type="checkbox"/> Wildlife for Sustainable Development
			<input type="checkbox"/> Crop Wild Relatives
			<input type="checkbox"/> Plant Genetic Resources
			<input type="checkbox"/> Animal Genetic Resources
			<input type="checkbox"/> Livestock Wild Relatives
			<input type="checkbox"/> Invasive Alien Species (IAS)
		<input type="checkbox"/> Biomes	
			<input type="checkbox"/> Mangroves
			<input type="checkbox"/> Coral Reefs
			<input type="checkbox"/> Sea Grasses
			<input type="checkbox"/> Wetlands
			<input type="checkbox"/> Rivers
			<input type="checkbox"/> Lakes
			<input type="checkbox"/> Tropical Rain Forests
			<input type="checkbox"/> Tropical Dry Forests
			<input type="checkbox"/> Temperate Forests
			<input type="checkbox"/> Grasslands
			<input type="checkbox"/> Paramo
			<input type="checkbox"/> Desert
		<input type="checkbox"/> Financial and Accounting	
			<input type="checkbox"/> Payment for Ecosystem Services
			<input type="checkbox"/> Natural Capital Assessment and Accounting
			<input type="checkbox"/> Conservation Trust Funds
			<input type="checkbox"/> Conservation Finance
		<input type="checkbox"/> Supplementary Protocol to the CBD	

Level 1	Level 2	Level 3	Level 4
			<input type="checkbox"/> Biosafety
			<input type="checkbox"/> Access to Genetic Resources Benefit Sharing
	<input type="checkbox"/> Forests		
		<input type="checkbox"/> Forest and Landscape Restoration	
			<input type="checkbox"/> REDD/REDD+
		<input type="checkbox"/> Forest	
			<input type="checkbox"/> Amazon
			<input type="checkbox"/> Congo
			<input type="checkbox"/> Drylands
	<input type="checkbox"/> Land Degradation		
		<input type="checkbox"/> Sustainable Land Management	
			<input type="checkbox"/> Restoration and Rehabilitation of Degraded Lands
			<input type="checkbox"/> Ecosystem Approach
			<input type="checkbox"/> Integrated and Cross-sectoral approach
			<input type="checkbox"/> Community-Based NRM
			<input type="checkbox"/> Sustainable Livelihoods
			<input type="checkbox"/> Income Generating Activities
			<input type="checkbox"/> Sustainable Agriculture
			<input type="checkbox"/> Sustainable Pasture Management
			<input type="checkbox"/> Sustainable Forest/Woodland Management
			<input type="checkbox"/> Improved Soil and Water Management Techniques
			<input type="checkbox"/> Sustainable Fire Management
			<input type="checkbox"/> Drought Mitigation/Early Warning
		<input type="checkbox"/> Land Degradation Neutrality	
			<input type="checkbox"/> Land Productivity
			<input type="checkbox"/> Land Cover and Land cover change
			<input type="checkbox"/> Carbon stocks above or below ground
	<input type="checkbox"/> International Waters	<input type="checkbox"/> Food Security	
		<input type="checkbox"/> Ship	
		<input type="checkbox"/> Coastal	
		<input type="checkbox"/> Freshwater	
			<input type="checkbox"/> Aquifer
			<input type="checkbox"/> River Basin
			<input type="checkbox"/> Lake Basin
		<input type="checkbox"/> Learning	
		<input type="checkbox"/> Fisheries	
		<input type="checkbox"/> Persistent toxic substances	
		<input type="checkbox"/> SIDS : Small Island Dev States	

Level 1	Level 2	Level 3	Level 4
		<input type="checkbox"/> Targeted Research	
		<input type="checkbox"/> Pollution	
			<input type="checkbox"/> Persistent toxic substances
			<input type="checkbox"/> Plastics
			<input type="checkbox"/> Nutrient pollution from all sectors except wastewater
			<input type="checkbox"/> Nutrient pollution from Wastewater
		<input type="checkbox"/> Transboundary Diagnostic Analysis and Strategic Action Plan preparation	
		<input type="checkbox"/> Strategic Action Plan Implementation	
		<input type="checkbox"/> Areas Beyond National Jurisdiction	
		<input type="checkbox"/> Large Marine Ecosystems	
		<input type="checkbox"/> Private Sector	
		<input type="checkbox"/> Aquaculture	
		<input type="checkbox"/> Marine Protected Area	
		<input type="checkbox"/> Biomes	
			<input type="checkbox"/> Mangrove
			<input type="checkbox"/> Coral Reefs
			<input type="checkbox"/> Seagrasses
			<input type="checkbox"/> Polar Ecosystems
			<input type="checkbox"/> Constructed Wetlands
	<input type="checkbox"/> Chemicals and Waste		
		<input type="checkbox"/> Mercury	
		<input type="checkbox"/> Artisanal and Scale Gold Mining	
		<input type="checkbox"/> Coal Fired Power Plants	
		<input type="checkbox"/> Coal Fired Industrial Boilers	
		<input type="checkbox"/> Cement	
		<input type="checkbox"/> Non-Ferrous Metals Production	
		<input type="checkbox"/> Ozone	
		<input type="checkbox"/> Persistent Organic Pollutants	
		<input type="checkbox"/> Unintentional Persistent Organic Pollutants	
		<input type="checkbox"/> Sound Management of chemicals and Waste	
		<input type="checkbox"/> Waste Management	
			<input type="checkbox"/> Hazardous Waste Management
			<input type="checkbox"/> Industrial Waste
			<input type="checkbox"/> e-Waste
		<input type="checkbox"/> Emissions	
		<input type="checkbox"/> Disposal	
		<input type="checkbox"/> New Persistent Organic Pollutants	
		<input type="checkbox"/> Polychlorinated Biphenyls	
		<input type="checkbox"/> Plastics	

Level 1	Level 2	Level 3	Level 4
		<input type="checkbox"/> Eco-Efficiency	
		<input type="checkbox"/> Pesticides	
		<input type="checkbox"/> DDT - Vector Management	
		<input type="checkbox"/> DDT - Other	
		<input type="checkbox"/> Industrial Emissions	
		<input type="checkbox"/> Open Burning	
		<input type="checkbox"/> Best Available Technology / Best Environmental Practices	
		<input type="checkbox"/> Green Chemistry	
	<input checked="" type="checkbox"/> Climate Change		
		<input type="checkbox"/> Climate Change Adaptation	
			<input type="checkbox"/> Climate Finance
			<input type="checkbox"/> Least Developed Countries
			<input type="checkbox"/> Small Island Developing States
			<input type="checkbox"/> Disaster Risk Management
			<input type="checkbox"/> Sea-level rise
			<input type="checkbox"/> Climate Resilience
			<input type="checkbox"/> Climate information
			<input type="checkbox"/> Ecosystem-based Adaptation
			<input type="checkbox"/> Adaptation Tech Transfer
			<input type="checkbox"/> National Adaptation Programme of Action
			<input type="checkbox"/> National Adaptation Plan
			<input type="checkbox"/> Mainstreaming Adaptation
			<input type="checkbox"/> Private Sector
			<input type="checkbox"/> Innovation
			<input type="checkbox"/> Complementarity
			<input type="checkbox"/> Community-based Adaptation
			<input type="checkbox"/> Livelihoods
		<input checked="" type="checkbox"/> Climate Change Mitigation	
			<input type="checkbox"/> Agriculture, Forestry, and other Land Use
			<input checked="" type="checkbox"/> Energy Efficiency
			<input checked="" type="checkbox"/> Sustainable Urban Systems and Transport
			<input checked="" type="checkbox"/> Technology Transfer
			<input checked="" type="checkbox"/> Renewable Energy
			<input type="checkbox"/> Financing
			<input type="checkbox"/> Enabling Activities
		<input type="checkbox"/> Technology Transfer	
			<input type="checkbox"/> Poznan Strategic Programme on Technology Transfer
			<input type="checkbox"/> Climate Technology Centre & Network (CTCN)
			<input type="checkbox"/> Endogenous technology
			<input type="checkbox"/> Technology Needs Assessment

Level 1	Level 2	Level 3	Level 4
		<input type="checkbox"/> United Nations Framework on Climate Change	<input type="checkbox"/> Adaptation Tech Transfer
			<input type="checkbox"/> Nationally Determined Contribution
	<input checked="" type="checkbox"/> Rio Markers		
		<input checked="" type="checkbox"/> Paris Agreement	
		<input checked="" type="checkbox"/> Sustainable Development Goals	
		<input type="checkbox"/> Climate Change Mitigation 0	
		<input type="checkbox"/> Climate Change Mitigation 1	
		<input checked="" type="checkbox"/> Climate Change Mitigation 2	
		<input checked="" type="checkbox"/> Climate Change Adaptation 0	
		<input type="checkbox"/> Climate Change Adaptation 1	
		<input type="checkbox"/> Climate Change Adaptation 2	