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Bhutan Sustainable Low-emission Urban Transport Systems

Ministry of Information and Communications

2018



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United Nations Development Programme
Project Document for nationally implemented projects
financed by the GEF Trust Funds

Project title: Bhutan Sustainable Low-emission Urban Transport Systems		
Country: Bhutan	Implementing Partner: Ministry of Information and Communications (MoIC)	Management Arrangements: National Implementation Modality (NIM)
UNDAF/Country Programme Outcome: “Sustainable and green economic growth that is equitable, inclusive, climate and disaster resilient and promotes poverty reduction, and employment opportunities particularly for vulnerable groups enhanced”.		
UNDP Strategic Plan Output 1.4 (2014-2017) “Scaled up action on climate change adaptation and mitigation across sectors which is funded and implemented”		
UNDP Strategic Plan Output 2.5.1 (2019-2023) “Solutions developed, financed and applied at scale for transformation to clean energy and zero-carbon development, for poverty eradication and structural transformation”		
UNDP Social and Environmental Screening Category: Moderate	UNDP Gender Marker: GEN2: Gender equality as a significant objective	
Atlas Project ID/Award ID number: 00094488	Atlas Output ID/Project ID number: 00098606	
UNDP-GEF PIMS ID number: 5563	GEF ID number: 9367	
Planned start date: March 2018	Planned end date: February 2021	
LPAC date: 4 January 2018		
Brief project description: The objective of the project is to facilitate low-carbon transition in the Bhutan’s urban transport sector by promoting wider uptake of low emission vehicles (LEVs), in particular electric vehicles (EVs), as the preferred fuel source for transport in Bhutan. Component 1 “Policy support for low-emission transport” will remove policy and regulatory barriers hampering growth of LEV market. Component 2 “Awareness and capacity development” aims at addressing awareness, misperception and capacity gaps and constraints regarding		

LEVs among wide range of transport market stakeholders. Component 3 “Investment in low-emission transport systems and support services” will tackle barriers related to affordability of and access to finance for LEVs, as well as investment in electric vehicle supply equipment (EVSE). The project will, in partnership with local financial institutions and regulator, design and implement an innovative financial support mechanism and financial product for EVs. It will also support expansion of the charging infrastructure network and establishment of a viable business model to ensure its sustainability, reliability and further growth. The ambition and the expected scale of market transformation is to ensure that, by the end of this 3-year long project, the fleet of EVs (taxis) in Bhutan to increase 4-fold, i.e. from 99 vehicles today up to 399 by the project end.

FINANCING PLAN		
GEF Funds	USD 2,639,726	
(1) Total Budget administered by UNDP	USD 2,639,726	
PARALLEL CO-FINANCING (all other co-financing that is not cash co-financing administered by UNDP)		
Government	USD 10,318,000	
(2) Total co-financing	USD 10,318,000	
(3) Grand-Total Project Financing (1) +(2)	USD 12,957,726	
SIGNATURES		
Signature: Mr. Thinley Namgyel, Secretary, GNH Commission	Agreed by Government	28 th September, 2018
Signature: Dasho Karma W. Penjor, Secretary, Ministry of Information and Communications	Agreed by Implementing Partner	28 th September, 2018
Signature: Mr. Gerald Daly, Resident Representative, UNDP, Bhutan, Resident Coordinator, UN Bhutan	Agreed by UNDP	28 th September, 2018

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List of Acronyms

AC	Alternating current
ASI	Avoid-Shift-Improve
EV	Electric vehicle
CCS	Combined charging system
CO	Carbon monoxide
CO ₂ e	CO ₂ equivalent
DC	Direct current
EREV	Extended range electric vehicles
EVSE	Electric Vehicle Support Infrastructure
GEF	Global Environment Facility
GHG	Greenhouse gas
GNHC	Gross National Happiness Commission
HEV	Hybrid electric vehicle
ICE	Internal Combustion Engines
IPCC	Intergovernmental Panel on Climate Change
ISO	International Organization for Standardisation
IT	Information Technology
NDC	Nationally Determined Contribution
NO _x	Nitrogen oxides
OC	Opportunity charging
PIF	Project Information Form
RGoB	Royal Government of Bhutan
SDG	Sustainable Development Goals
SO _x	Sulphur oxides
TCO	Total cost of ownership
TDM	Transportation demand management
UNDP	United Nations Development Program

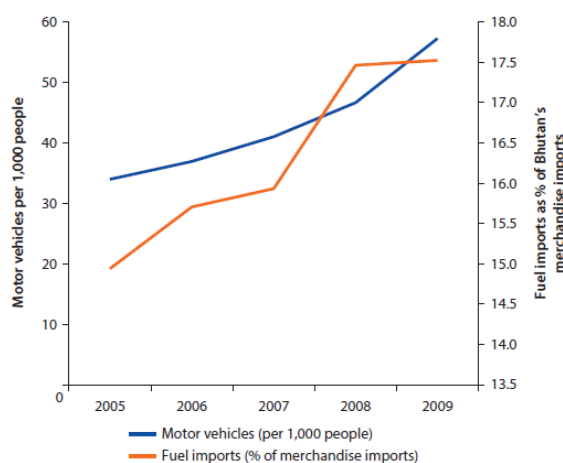
II. DEVELOPMENT CHALLENGE

Context

1. Bhutan is located in the foothills of the Eastern Himalayas, bounded by China in the North and India in the East, West and South with a total area of 38,394 square kilometres. It has a national population of approximately 757,979 people¹. Despite a relatively small population, similar to global trends, the country faces the challenge of increasing rural-urban migration. Between 2000 and 2015, the number of Bhutanese living in urban areas has doubled from around 150,000 in 2000 up to 300,000 in 2015². The population in the capital city of Thimphu has expanded even faster: in 2000, roughly 43,479 people lived in Thimphu compared to approximately 122,242 people today¹. It is expected that Thimphu will further double its population by 2040³.

2. Increase in the urban population results in larger city areas which in turn increases the demand for urban mobility, for instance due to workers' commutes, and leads to increases in private motorized transport. As a result, Bhutan is facing an alarming growth rate of private vehicles. Keeping aside the vehicle import restriction period from 2012 until July 2014, the numbers of light vehicles including taxis were increasing on a Compounded Annual Growth Rate (CAGR) of 11.5% per annum tripling from slightly less than 25,000 in 2000, to over 75,000 in 2015 (Figure 1)⁴ and reaching up to 89,300 in August 2017.

Figure 1: Motor vehicle ownership and fuel imports in Bhutan, 2005-2010



Source: World Bank (2016)

3. Consequently, Bhutan, especially the capital Thimphu, is facing some of the typical problems associated with traffic growth, i.e. growing distances travelled, traffic congestion, local air pollution, negative impact on health, decreasing road safety, social exclusion and inefficient land use. Further, since the transport sector is entirely reliant on imported fossil fuel, the rapid increase of private internal combustion engine (ICE) vehicles results in increasing fossil fuel imports as shown in Figure 1. The import of the petroleum products in particular diesel and petrol grew at a CAGR of about 9% from US\$ 10m (Nu. 721m) in 2002 to about US\$ 90m (Nu. 6 billion) in 2013⁵ and US\$ 115m (Nu. 7.53 billion) in 2016. This not only exerts budgetary pressures on foreign exchange accounts and exposes the country to energy security risk but also represents a serious threat to Bhutan's commitment to remain carbon neutral unless innovative low emission transport systems are promoted to become the preferred choice for urban mobility.

¹ Statistical Year Book of Bhutan 2016, National Statistical Bureau

² Analysis based on the data from World Development Indicators

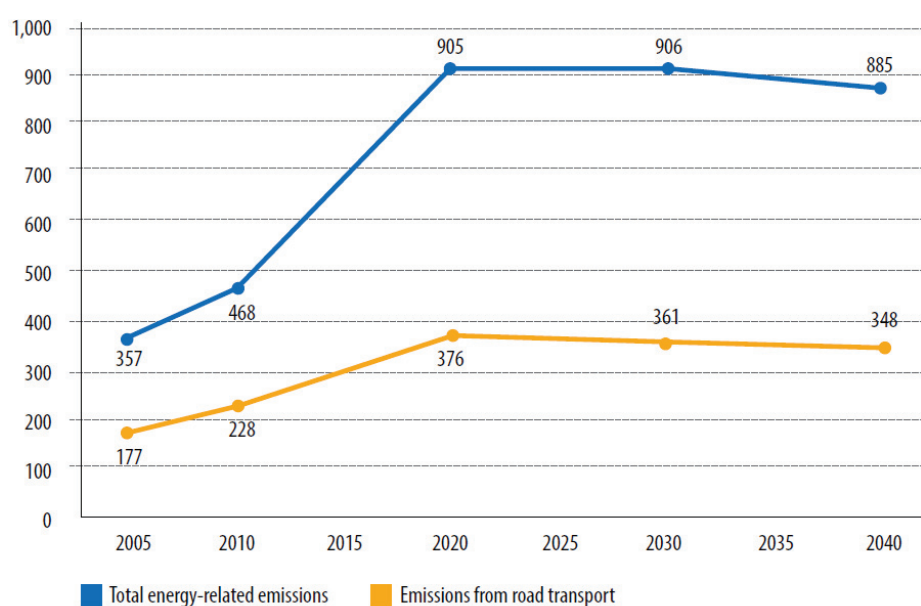
³ World Bank 2016

⁴ Analysis based on the data from Annual Info-Comm and Transport Statistical Bulletin 2016, MOIC

⁵ Bhutan Energy Data Directory 2015, Department of Renewable Energy, MoEA

4. Indeed, a direct consequence of traffic growth is the rapid increase in transport sector greenhouse gas (GHG) emissions, which are projected to more than double from 177,000 tCO₂ in 2005 to 376,000 tCO₂ in 2020 subsequently decreasing to 348,000 tCO₂ in 2040, based on assumption that the market for vehicles will become saturated as the need for transport services stabilizes (Figure 2). According to Bhutan's Second National Communication to UNFCCC (2011) and National GHG Inventory (2008), the energy sector (including transportation) is the second-highest contributor of GHG emissions after agriculture. The transport sub-sector emitted 118.11 Gg of CO₂e, accounting for about 45% of all energy-related emissions and about 8% of the total GHG emissions⁶ as shown in *Table 1*⁷.

Figure 2: GHG emissions from road transport compared to total energy related emissions (ktCO₂e), 2005-2040



Source: UNDP (2016)⁸

Table 1: GHG emissions from Energy Related Activities

Sl No.	Particular	GHG Emission [Gg CO ₂ e]	% Share
1	Energy Industries	0.7	0.26%
2	Manufacturing Industries & Construction	108.5	40.34%
3	Transport	118.11	43.92%
4	Other Sectors	41.64	15.48%
Total		268.95	

5. Emissions of air pollutants are among the most pressing urban environmental challenges faced by Bhutan. For example, emissions for Particulate Matter (PM₁₀) are rapidly increasing: 6-fold increase has been recorded between 2006 and 2011 (Figure 3), with some values even overcoming 75 µg/m³ threshold, i.e. the highest level allowed for sensitive hotspots, such as hospital or school areas. Even if PM₁₀ are not only produced by diesel

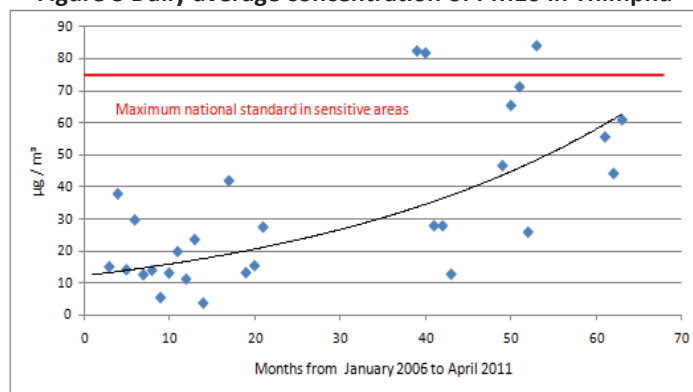
⁶ Second National Communication to UNFCCC, 2011, National Environment Commission

⁷ Analysis based on data from Second National Communication to UNFCCC, 2011, National Environment Commission

⁸ UNDP, 2016: Bhutan low emission development strategy for the transport sector. UNDP, Bhutan

engine vehicles (other particulate producers are mainly building construction and wood fire cooking), the impact of road transport on these concentrations is likely a large contributor⁹.

Figure 3 Daily average concentration of PM10 in Thimphu



Source: National Environmental Commission (NEC)

6. Further, gender analysis of Thimphu transport sector revealed that disparity exists in travel modes, patterns and needs of men and women. Specifically, women assume a higher share of households' travel burden and make more trips associated with reproductive and care responsibilities. Men have more access to private vehicles, while women predominantly rely on public transportation in their travel patterns (59% of all female trips are by public transport as opposed to 51% for men). Overall, women exceed men in their reliance on and use of public transportation, in particular for trips to hospitals, work or schools (See Figure 6 and Gender analysis in Annex G for further details).

Alignment with national priorities

7. The Royal Government of Bhutan (RGoB) recognizes the need to address and curtail the rapid growth of fossil fuel consumption and GHG emissions in transport sector, along with improving the quality and accessibility of transport services to the people. RGoB therefore puts significant emphasis on promoting sustainable low-emission transport systems in its key strategic and programmatic documents and plans in line with "Avoid-Shift-Improve (ASI)" framework which envisages the following three complementary types of policy measures (See also Figure 5):
 - **Avoid:** it focuses on reducing the demand for travel, either reducing the distance travelled or the number of trips needed, or a combination of both
 - **Shift:** this option involves the switch from private motorized transport (i.e. mostly cars and motorbikes) to a less carbon-intensive modes of transport, such as non-motorized transport or public transport
 - **Improve:** seeks the reduction of negative impacts of motorized transport, increasing efficiency and reducing fuel consumption or the introduction of alternative fuels.
8. *Bhutan's Vision 2020*, a 20-year strategy for national development, places transport and infrastructure development at the core of its strategy and, inter alia, highlights the need for development of a safe, reliable and comfortable system of public transport. Since then a *National Strategy and Action Plan for Low Carbon Development* has been prepared, which identifies significant additional GHG emission reduction potential in the road transport sector (i.e. by 15% by 2040 on top of forecasted decrease by 8% in the BAU – see Figure 2).
9. *Bhutan National Transport Policy 2006* (currently being updated), *Draft National Transport Policy 2017* vision is to provide the entire population with a safe, reliable, affordable, convenient, cost-effective and environmentally

⁹ ADB 2011. Capacity Buildings of the National Environmental Commission in Climate Change. Transport Sector Report.









friendly transport system. The policy supports the principles of inclusiveness, sustainability, sound asset management, effective governance and an emphasis on low carbon transport solutions such as Electric Vehicles (EVs).

10. The *Nationally Determined Contribution (NDC)* submitted in 2015 affirmed the Royal Government of Bhutan's (RGoB) target of remaining carbon neutral, which was pledged in 2009 at the 15th session of the Conference of the Parties to UNFCCC. The NDC notes that the emissions from transport are showing a rapidly increasing trend and includes the promotion of low carbon transport system as a key mitigation measure. *Bhutan's First National Communication (2000) and Second National Communication (2011) to UNFCCC* both report significant contributions of the energy sector to national GHG emissions. Options for the transport sector proposed include promotion of alternative fuels, electric and hybrid technologies and mass transport options.
11. The 11th Five-Year Plan (2013-2018) includes "*Carbon neutral/green and climate resilient development*" as one of the 16 key results and the plan envisages introduction of eco-friendly, safe, reliable and affordable transport, as well as alternative modes of transport. Draft 12th Five-Year Plan (2019-2024) also identifies promotion of EVs to address environmental issues and reduce dependency on fossil fuels as one of the key programmes envisaged for the transport sector and contributes to National Key Results Area 6 – Carbon Neutral, Climate and Disaster Resilient Development Enhanced.
12. In order to establish clean, safe and affordable and reliable mass transportation systems, *the Economic Development Policy (EDP) 2017* explicitly recommends introduction of electric/hybrid public transport system in major urban centres by 2017. It also encourages to provide subsidy and incentives in the targeted intervention where economic viability is at stake due to low mass.
13. The draft "*Vehicles Emission Road Map*" under development proposes a comprehensive packages of policy measures to control vehicle emissions which Bhutan intends to implement until 2025 to maintain clean air and reduce transport CO2 emissions additionally by 25%, including specifically development of a low-carbon vehicle roadmap with clear incentive instruments and targets. RoadMap also emphasizes the need for international climate finance to support its implementation and achievement of GHG emission reduction targets.

Relevance to SDGs

14. In 2016, Bhutan initiated the integration of Agenda 2030 and the 17 Sustainable Development Goals (SDGs) into the development of its 12th Five Year Development Plan. RGoB will strive to achieve all SDGs for the achievement of Gross National Happiness (GNH), with an initial priority focus on SDG 1 on poverty, SDG 13 on climate action, and SDG 15 on life on land. In 2010, the RGoB adopted Sustainable Transport Goals as part of the voluntary Bangkok 2020 Declaration agreed at the Fifth Regional Environmental Sustainable Transport (EST) Forum. The project will develop solutions, support financially and technically to shift to energy efficiency and transform to clean energy and zero-carbon development, and at the same time opening the livelihood opportunities for poverty eradication. Low carbon transport measures will contribute to SDG achievement, as set out in Table 2.

Table 2: Contribution of low-emission vehicles to SDGs

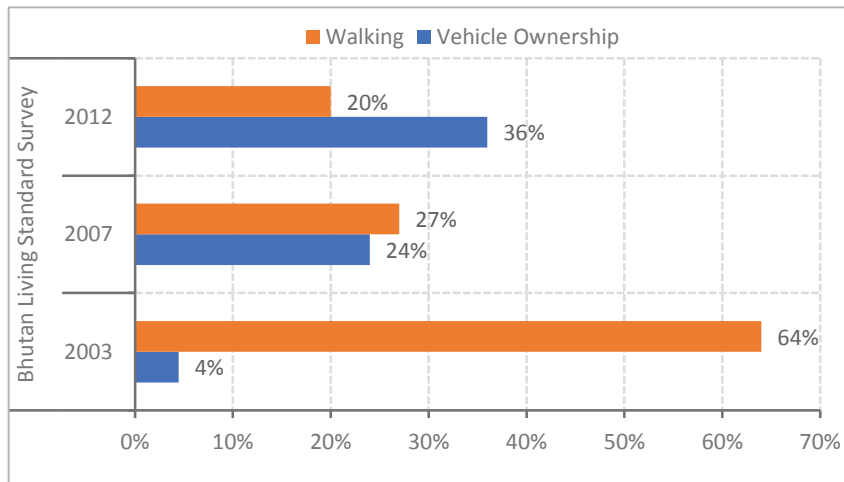
SDG Indicator	Rationale
	Improve accessibility of essential public services for all, including most vulnerable population groups and women with creation of livelihood opportunities in the Low Emission transport sectors
	Reduction of harmful emissions at local level reducing associated health impacts (i.e. respiratory diseases, deaths) Noise reduction
	Improved comfort and safety for women, through mobile application to monitor fare overcharge and ensure safety for those travelling, especially during the night <u>Facilitate access in the EV market providing training to women drivers</u>
	Provision of a suitable model to support use of clean energy in the passenger transport subsector, switching from fossil fuel use
	Creation of new jobs in the EVs market Support innovation and industrial development Reduction of fossil fuels imports
	Improvement of air quality at urban level and availability of low-carbon transport modes
	Support Bhutan in entering a new market and to develop sufficient technological knowledge and experience in the country
	Reduction of GHG emission associated with fossil fuel use in transport sector

Baseline scenario, root causes and barriers to low-emission transport system

- Despite high-level political support and international commitments, in the baseline scenario the trend in the private car ownership and car ridership is increasing. Each successive living standards survey conducted in 2003, 2007 and 2012 has shown an increasing trend toward private vehicle ownership and use, as shown in Figure 4¹⁰. In 2003, almost 64% of the people walked to the nearest post office or health centres, while only 4% of the households own a car. Over the years, the trend has been revised. In 2012, 36% of the households owned a car, whereas only 20% of the people walked to the regional headquarters or nearest service centres.

¹⁰ Analysis based on data from Bhutan Living Standard Survey 2003, 2007 and 2012, National Statistics Bureau

Figure 4: Trend in transport illustrated by Bhutan Living Standard Survey



16. Recognizing the urgency and scale of the problem, the RGoB aspires to make a technology leap and scale-up uptake of Low Emission Vehicles (LEVs), hybrid and/or electric vehicles, as a more sustainable alternative and preferred choice for urban mobility in Bhutan. Specifically, electric vehicles (EVs) were accorded the highest priority of the RGoB with an ambitious aspirational target to roll-out 3,000 electric vehicles by 2020.
17. Leapfrogging from the predominant use of conventional internal combustion engine (ICE) vehicles to LEVs and in particular EVs, requires addressing a wide range of barriers, which can be grouped into the following three categories: a) lack of enabling policy and regulatory framework for LEVs; b) misperceptions and low level of technical knowledge among the various market/sector stakeholders; and c) high up-front costs and inadequate infrastructure. Each of these categories is discussed in detail below.
18. **Lack of enabling policy and regulatory framework:** In its recent Global EV Outlook 2017, the International Energy Agency (IEA) concludes that the global electric car market growth is still largely driven by policy support. Policy support mechanisms are indispensable to lower barriers to wider adoption of LEVs; they can be grouped into several categories: targets, mandates and regulations, financial incentives, and other instruments to increase the appeal of electric cars over competing alternatives and provide advantages in terms of reduced fees, privileged access and time savings to electric car drivers. These targeted policies should be developed at the municipal level to suite the unique, local mobility conditions of each urban area, and facilitated by supportive national LEV policy frameworks. In Bhutan, despite existence of high-level political commitment to LEV promotion, a comprehensive policy support package has not been explicitly covered under the National Transport Policy 2006. On-going revision of the National Transport Policy seeks to address this gap in order to level the playing field for LEVs in comparison with conventional ICE vehicles.
19. However, there is currently limited capacity both in terms of knowledge and technical expertise in the country and key RGoB transport agencies, as well as in city/municipal councils to design and implement supportive LEV policies. Policy makers also lack the information on LEVs performance, technological development and results of relevant policy actions internationally. They are also in need of assistance to develop and implement appropriate mix of enabling mechanisms and regulations including vehicle characteristics assessment, standards and requirements for charging infrastructure, network planning, evaluation and accounting of policies' effectiveness and impacts.
20. **Attitudes, misperceptions and low level of technical knowledge among the LEV market/sector stakeholders:** Consumers' perception in terms of LEV risks and established preferences towards ICE vehicles is also a key barrier. This is compounded by the dearth of visible proof on the roads which is key to stimulate awareness and information. Much of the general public is either unaware or are not clear on key aspects of low emission

(carbon) transport options, particularly EVs. There is concern and lack of understanding among the public, for example, about health and safety issues from battery operated vehicles. Specifically, through stakeholder consultations and Gender analysis conducted in the course of PPG (See Annex G) a number of public concerns and misperceptions regarding operation and maintenance of EVs has been revealed, such as their limited mileage, unsuitability for Bhutan road conditions, complicated maintenance, under-developed technology, safety of the batteries and their disposal. Further, wider use of low carbon transport requires an improved understanding of operators/passengers needs and desires, as well as passengers' willingness to change travel behaviour.

21. Commercialization of LEVs in Bhutan is also complicated as the capacity and infrastructure for service delivery models are not sufficiently established, even though a few assemblers and manufacturers of private vehicles have come forward as early movers in this sector. The insufficiency of local after sales services and product standards complicated further the situation. Though Bhutan has started witnessing an early inflow of low emission vehicles such as EVs and hybrids, the quality of products varies across dealers and manufacturers. So far, there are no basic minimum standards and protocols for dealers and operators on vehicle safety and reliability, efficiency, battery performance and service life, charging infrastructure, to safeguard consumers from low quality and unreliable products.
22. Lack of technology validation issues, inadequate support infrastructure such as integrated charging solutions, perceived range anxiety vis-à-vis the costs involved, and problems with temperatures variation could pose several limitations to LEV performance and charging. On the other hand, lower temperature at -10°C, the battery charging power decreases by 15% compared to standard 20°C temperature¹¹. Lack of reliable and safe operation of vehicle while charging and improper management of battery waste could pose both environmental and safety risks¹².
23. **Weak coordination among different institutions:** There is no explicit clarity on the institutional mandates when it comes to transport system in general and the promotion of LEVs in particular. While MoIC has overarching mandate for transport sector development, many other national and local agencies, such as the Road Safety and Transport Authority, Royal Monetary Authority, Traffic police, municipalities and many others (See Figure 9) have a critical role to play in LEV market promotion. Absence of effective coordinating mechanism among those agencies on the issues related to LEVs is an important barrier to establishing enabling policy and regulatory environment for this new market. It is, therefore, important to clarify the roles and responsibilities of concerned agencies on how to provide supportive policy signals and implement specific programs or projects that address low emission transportation and LEVs in particular.
24. **High up-front costs:** financial incentives directed at electric car customers and users are essential for reducing the purchase cost and total cost of ownership (TCO) gap between electric and conventional cars. Currently in Bhutan there are several policy instruments that can influence the purchase decision of final users: pure EVs benefit from exemptions of import duties, sales tax and 10% green tax. However, this package of financial incentives is still insufficient to make a decisive influence regarding EV purchases and the latter remains less competitive economically than conventional ICE vehicles.
25. To understand and quantify the scale of the investment barrier and the appropriate level of additional financial incentives required to level playing field for EVs vehicles, the financial analysis has been undertaken in the course of project preparation phase. Main conclusions of this analysis are presented below, as well as in the Section V of this document (see Annex X for full report). The focus of the analysis has been on a taxi sector as a targeted market segment for initial up-take of EVs: the rationale and justification of the chosen segment are presented in the Section III (Strategy) of the project document.

¹¹ Juuso Lindgren and Peter D. Lund, Effect of extreme temperatures on battery charging and performance of electric vehicles, 2016 (Department of Applied Physics, Aalto University School of Science, Finland)

¹² Kjosevski, Kostikj and Kochov, Risks and safety issues related to use of Electric and Hybrid Vehicles, 2017 (University Mother Teresa in Skopje, Republic of Macedonia)

26. First, the financial analysis clearly demonstrated that, although retail prices of a new EV in Bhutan (taking into account available financial incentives¹³) are twice as high as the price of an analogous ICE vehicle, the total costs of ownership (TCO) of an EV compared to the TCO of its conventional (fossil fuel-based) analogue is lower (Table 3). It may therefore be concluded that purchase of a new EV is an attractive investment opportunity if comparison is made taking the full lifecycle costs and benefits into account.

Table 3 Total costs of ownership (TCO): ICE and EV

Details	Fossil Fuel	EV Taxi (Scenario 1)	EV Taxi (Scenario 2)
CAPEX	900,000	1,800,000	1,800,000
OPEX (Fuel)	275,000	0 (electricity)	12,000 (electricity)
O&M	9,000	9,000	9,000
Discount rate	10%	10%	10%
Life-cycle cost (Nu)	2,700,000	1,850,000	1,910,000

27. However, individual choices are being influenced by other short-term considerations, established preferences and convenience, and most importantly the limited availability of finance to afford the initial investment. The significant up-front cost of EV makes such investment not affordable for vast majority of potential consumers in Bhutan.
28. Specifically, through extensive consultation and interviews with potential EV buyers (taxi drivers) it has been established that the maximum amount of cash payment (equity) a buyer can provide up-front does not exceed 360,000 Nu (5,455 US\$), i.e. up to 20% of the EV retail price. The remaining funding gap, i.e. 80% of the CAPEX, has to be secured in the form of debt. However, current financial market regulation in Bhutan limits the total value of a loan that a commercial bank can provide to finance purchase of a vehicle to 30% of the CAPEX, i.e., 540,000 Nu (8,182 \$). This means that even if a potential buyer is willing to make a rational investment decision in favour of EV, there is a financing gap in the amount of 900,000 Nu (13,636 \$) or 50% of the CAPEX, which can't be covered through equity or debt and will have to be addressed through additional support mechanisms, such as concessional loan, grant financing and/or other financial incentives (Table 4).

Table 4 BAU Financing for EVs

	Nu	\$	%
CAPEX	1 800 000	27 273	100%
Equity available	360 000	5 455	20%
Loan maximum (30% - CAPEX)	540 000	8 182	30%
Financing gap	900 000	13 636	50%

¹³ The price of the EVs varies strongly by type and make. As of 2017, there were 99 EVs in Bhutan with only few types and brands. Indian EVs, such as the Mahindra-Reva is a small car with limited range compared to the other EVs and therefore the demand for these models have been rather limited so far. Its price is around Nu. 8.3 lakh (\$12,700). The second vehicle is the Nissan Leaf with a cost of around Nu.18 lakh (\$27,500). According to the experience of the users in Bhutan, it can achieve up to 70 percent of the range as specified by the manufacturer. A new model of the Nissan Leaf is expected to be introduced to the market in 2018, with a reported range of 400 km. The other model, such as Tesla, is yet to enter the Bhutanese market due to its very high cost although it provides longer ranges compared to other EVs. The models to be supported and promoted by the project will be selected in the course of project implementation based on proposed technical specifications, as explained in para 68 and Technical Annex B.

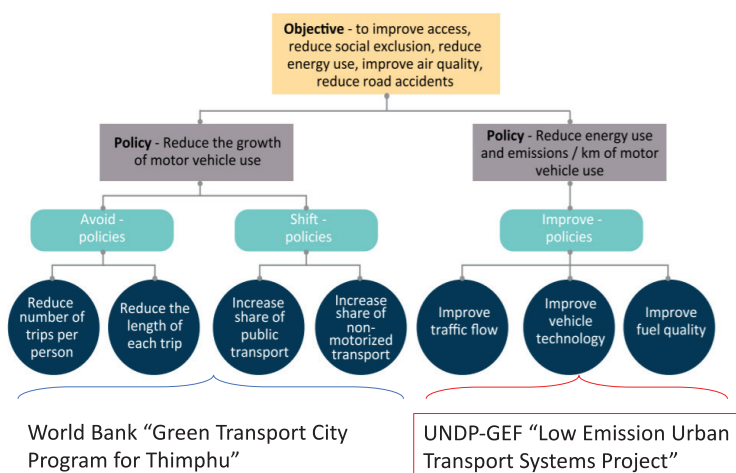
29. Additionally, it is also important to note that financial sector has insufficient knowledge about emerging low carbon emission transport technologies, such as EVs, and lack capacities, experience and positive track record with evaluating such loans, hence a tendency to over-estimate the risks resulting in the higher costs of EV loans compared to the cost of finance for conventional ICE vehicles.
30. ***Inadequate electric vehicle supply equipment (EVSE) (charging stations)***: EVSE is one of the key elements for the successful dissemination of LEVs in Bhutan, as in any other country. IEA analysis looking at early EV market developments shows that the availability of chargers emerged as one of the key factors contributing to the market penetration of EVs. Availability of a sufficiently extended network of recharging stations is necessary to enable and incentivize users to switch to EVs and to reach a comparable level of ease of refuelling to that of ICE vehicles. Different models of EVs have different ranges from 100 km to above 300 km and new models can reach 350 to 400 km. Range of the EVs is expected to increase over time, however the theoretical range of EVs in real life is reduced due to factors such as geography, weather conditions and driving habits. Beside the spatial coverage of charging stations, the connectivity of different EV types and different types of charging station needs to be considered. There are different standards for the charging stations connectors, depending on the brand and the type of charging provided (i.e. slow and fast).
31. There are currently only five quick charging stations installed in four different areas in Bhutan, of which only three (two in the capital Thimphu and two in Paro including one at the airport) are fully operational and serve on average 100 EVs per month (cca 3 EVs per day). While the number of stations is appropriate for the current nascent stage of EV market, it is clearly not sufficient to support achievement of RGoB's ambitious EV deployment plans. The national policy framework is needed to provide investment and financial incentives for individuals, businesses and local authorities willing to invest in the installation of EVSE. For example, there is a need to simplify building code requirement and the adaptation of property and tenancy laws to integrate EVSE charging infrastructure in building and to simplify EVSE deployment.

III. STRATEGY

32. The strategic objective of the project is to facilitate initial stage of low-carbon transition in the Bhutan's urban transport sector by promoting wider uptake of LEVs, in particular the EVs since this is one of the priority interventions as per the Low emission development strategy, as the preferred fuel source for transport sector in Bhutan. The ambition and the expected scale of market transformation is to ensure that, by the end of the project, the share of EVs in the taxi fleet in the country has increased substantially from 1.6% up to 6.5% or in absolute numbers from 99 up to 399 vehicles.
33. The project forms an integral part of a broader RGoB's efforts to significantly reduce fossil fuel import and its use to reduce GHG emissions in the Bhutan's transport sector in line with the objectives of the National Transport Policy and the Low-emission Development Strategy and based on the "Avoid-Shift-Improve (ASI)" framework. Under the ASI framework, RGoB collaborates with the World Bank on a larger "Green Transport City Program for Thimphu" initiative to support "Avoid-Shift" policies and investment to reduce the growth of motor vehicle use in Bhutan, specifically in the largest and most dynamic city, the capital Thimphu (Section IV for further details about the WB project)
- "Avoid": focuses on reducing the demand for travel by promoting integrated planning and management of the urban environment (master plan for low emission transport in Thimphu);
 - "Shift": promotes switch from private motorized transport to a less carbon-intensive modes of transport, such as public transport (e.g. preparation of investment in bus-rapid transit system for Thimphu).
34. Realizing that the residual demand for public and private transportation will have to be met by individual motorized vehicles, the proposed UNDP-GEF project focuses on the third "Improve" (I) component of the ASI framework aiming at reducing energy and emission intensity of motorized transport by promoting the shift from traditional ICE vehicles to alternative low or zero carbon vehicles, such as EVs, while keeping the total number

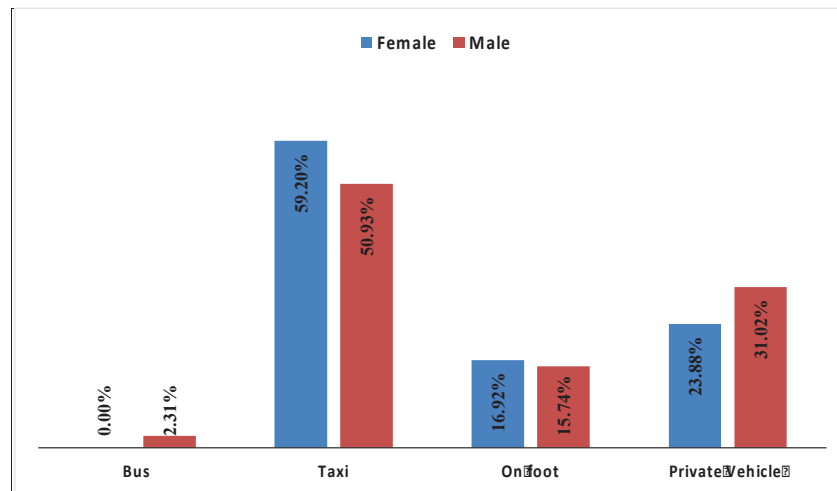
of vehicles on the roads at the same or even lower level than in the BAU. Figure 5 presents ASI Framework for low-carbon transition of the Bhutan's transport sector and the role UNDP-GEF project is intended to play in its implementation.

Figure 5 ASI Approach to Low-Carbon Transport Sector Development in Bhutan



35. The UNDP-GEF project consists of three inter-linked components dealing with 1) policy derisking, 2) awareness raising and capacity building and, 3) investment support. The first component addresses policy barriers by supporting the development and implementation of enabling policy and regulatory framework for LEVs. The second focuses on barriers related to awareness and technical capacities of the various market stakeholders. The third component envisages the design and implementation of the financial support mechanism to address affordability barriers, as well as investment in the EVSE (see Figure 7 for a graphical presentation of the Theory of Change).
36. The project target Bhutan's taxi sector as the primary market segment to enable and promote wide-scale deployment of electric vehicles. The focus on taxi cabs as the primary target and eventual driving force for EV market transformation in Bhutan has been made based on the following considerations:
 - *Higher potential for GHG emission reduction*: Even though taxis account for only 5% of the total vehicle fleet in Bhutan, their contribution to GHG emissions and fossil fuel use is 3 times higher, i.e. 15.53% of the fuel use/GHG emissions, due to higher travel intensity and higher annual mileage
 - *Business case*: due to taxi's high mileage (cca 75,000 km/year), a switch to electric car use would make a stronger economic case and faster return on investment for taxi drivers due to higher level of cost savings from fossil fuel
 - *Visibility and Communication*: taxis offer high visibility with regard to awareness raising among the inhabitants of Bhutan and are also effective and trusted source of information and knowledge about EVs operations and benefits among potential end-users
 - *Gender*: taxis are the main transport mode for Bhutanese women to access essential social services, such as health (See Figure 6). It is critical to ensure that this essential demand can be met in the most sustainable and low-carbon manner.

Figure 6 Preferred transport mode for men and women in Bhutan

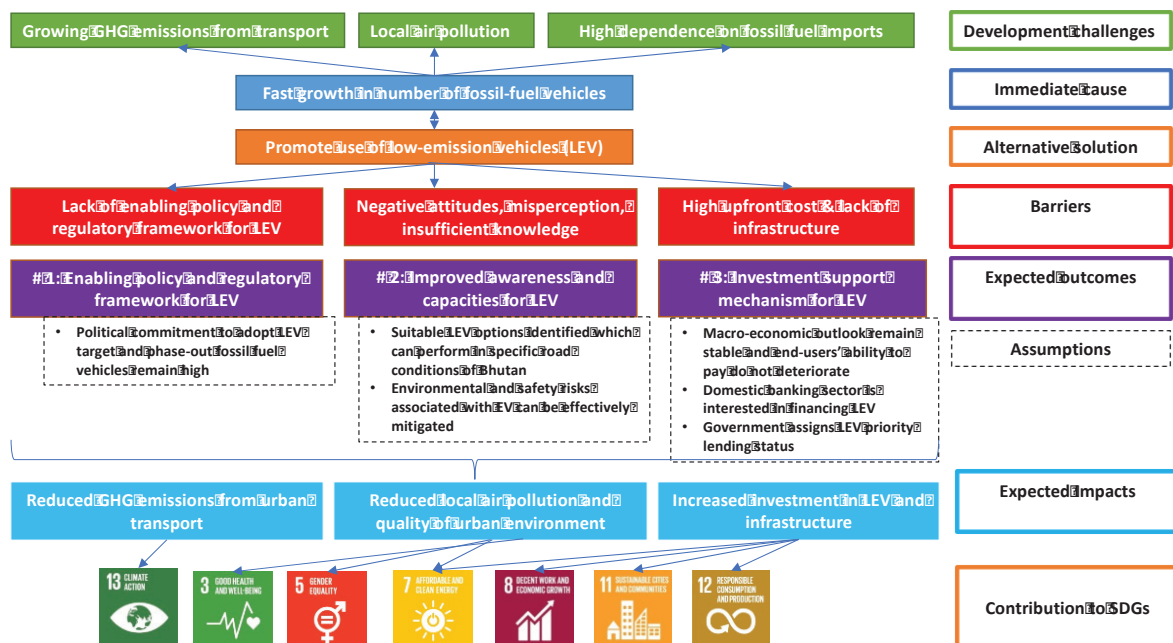


Source: Gender Analysis – Annex G

37. While the proposed project, due to its limited scope and budget, will target and directly support promotion of EV taxi (under Component 3), the goal in the long term is to incentivize EV uptake for other target groups (e.g. government and company fleets as well as private cars) through related policy work (Component 1) and capacity building (Component 2).

Figure 7 Theory of Change

Bhutan Sustainable Low-emission Urban Transport Systems- Theory of Change



38. Component 1 ***“Policy support for low-emission transport”*** will address policy and regulatory barriers hampering growth of LEV market in Bhutan. It will put in place conducive policy and regulatory framework for LEVs which combines a range of fiscal and other economic incentives with enabling technical regulation. Specifically, the project will provide technical assistance to RGoB to identify, adopt and enforce a range of policy measures enabling operation of EVs, in particular E-taxis, develop roadmap for gradual phase-out of ICE vehicles, as well as regulation addressing environmental risks associated with EV operations and disposal. The scope of work under this Component will include both legal and technical support with drafting and implementing relevant policy documents, as well as capacity building and advisory support to relevant public agencies involved in policy design and implementation.
39. Component 2 ***“Awareness and capacity development”*** aims at addressing awareness, misperception and capacity gaps and constraints among wide range of transport market stakeholders. The project will conduct nation-wide awareness raising campaign targeting various categories of potential EV end-users (taxis, but also public at large), financial sector - about economic and other benefits of low-emission vehicles, as well as about new public policies and financial support mechanism to be developed under Component 1 and 3 respectively. It will also develop and disseminate EV user information guide to clarify concerns regarding EVs (limited mileage, safety issue, gender-related concerns, batteries safe disposal and management, etc) and will promote sharing experience between existing and potential EV end-users, including women. This will also form a basis to enhance awareness on customer behaviour, vehicle and battery performance, financial benefits, charging infrastructure and other support services. In order to strengthen institutional capacities, the project will also support the establishment of coordination mechanism among public and donor agencies involved in low emission transport.
40. Component 3 ***“Investment in low-emission transport systems and support services”*** will address barriers related to affordability of and access to finance for LEVs, as well as investment in EVSE. It will, in partnership with the local financial institutions and regulator, design and implement an innovative financial support mechanism and financial product for EVs, including enabling revision of relevant banking and fiscal regulations, as well as capacity building for financial sector stakeholders. It will also support expansion of the charging infrastructure network and establishment of a viable business model to ensure its sustainability, reliability and further growth.
41. These components retain all of the elements and intended outcomes elaborated at the PIF stage, but the elements have been streamlined and reorganized for greater clarity and ease of orderly implementation. Collectively, these components seek to put in place cornerstone policy instruments for LEV promotion, supported by technical, policy-related, educational, and financial measures to raise capacity, reduce investor risks and address the funding gap. The three components will involve various planned outputs and activities, all designed to remove the barriers enumerated above. Table 5 shows how the planned work addresses the barriers. Then in the following section, outputs and activities are presented in detail.

Table 5 Key Planned Outputs and Activities to Address Barriers by the proposed UNDP-GEF Project

Barrier	Description	Mitigation measure(s)	Planned activities
Economic & financial	Lack of resources for the charging station network extension and maintenance.	<ul style="list-style-type: none"> Charging network expansion is crucial to ensure the uptake of the EV in Bhutan. Even the existing infrastructure will have to be properly maintained to ensure quality and safety of the service to EV drivers. The proposed project’s partners, government and private sector, will allocate sufficient resources for maintenance. Supporting models to mobilize resources (public and private) for expansion of the charging infrastructure will be identified. 	<ul style="list-style-type: none"> Activity 3.3.3 Procurement and installation of charging stations for EVs Activity 3.2.2 Identify and enable alternative sources of financial support to promote EV market development beyond project duration

Barrier	Description	Mitigation measure(s)	Planned activities
	Loss of taxi revenues due to recharging or problems during long distance journeys. Any stoppage time for the taxi drivers is seen as loss of business opportunities.	<ul style="list-style-type: none"> Install fast chargers in Thimphu and at sufficiently small distances along main highways to minimize recharging time. 	<ul style="list-style-type: none"> Activity 3.3.3 Procurement and installation of charging stations for EVs
	Initial investment cost for EVs is still too high. Existing financial incentives for supporting EV uptake are insufficient.	<ul style="list-style-type: none"> The required level of financial incentives should be calculated carefully in order to understand its impact on the Total Cost of Ownership (i.e. the cost for purchasing, operating, and maintaining a vehicle over its lifetime). 	<ul style="list-style-type: none"> Activity 3.1.1 Design of financial support mechanisms for EVs: National EV Discount Program for Taxi Drivers
	State budget is in deficit and cannot be used to provide long-term incentives for EV uptake.	<ul style="list-style-type: none"> Identification of a business model that can support EV purchase in the long term. 	<ul style="list-style-type: none"> Activity 3.2.2 Identify and enable alternative sources of financial support to promote EV market development beyond project duration
Technical & Knowledge	Long recharging time limits attractiveness of EVs for consumers. Only those customers that can recharge the vehicle at home during night time, or at the workplace will be satisfied with slow chargers.	<ul style="list-style-type: none"> Introduce fast chargers, see above. 	<ul style="list-style-type: none"> Activity 3.3.3 Procurement and installation of charging stations for EVs
	Lack of experienced technicians to ensure maintenance of EVs and charging stations.	<ul style="list-style-type: none"> Provision of capacity building and on-the-job training, ensuring sufficient mechanics have been trained to service all EVs in the country in a proper way. 	<ul style="list-style-type: none"> Activity 2.2.1 Development of EV user information guide and training package
	Performance of the EV does not satisfy users (e.g. shorter ranges, shorter battery life than stated by manufacturer), given Bhutanese road conditions and ruggedness of the country. This has been one of the main issues with EV dissemination to date.	<ul style="list-style-type: none"> Only EVs with sufficiently high performance should be included in the programme to avoid dissemination of vehicles with insufficient performance that would impact negatively the consumers' attitude towards EVs. 	<ul style="list-style-type: none"> Activity 3.1.2 Preparing technical specifications and selection of qualified EV suppliers
	Proper handling and disposal of batteries is not guaranteed.	<ul style="list-style-type: none"> To reduce potential future impacts of exhausted batteries the following measures should be taken: <ul style="list-style-type: none"> Ensure training of relevant personnel in Bhutan, including south-south learning to share experiences among the countries Target vehicles that are sold with the option of battery takeback. 	<ul style="list-style-type: none"> Activity 1.3.3 Supporting implementation of e-waste disposal and management regulation for EVs

Barrier	Description	Mitigation measure(s)	Planned activities
	Lack of awareness regarding EVs.	<ul style="list-style-type: none"> Ensure dissemination of information among the public regarding environmental benefits of EVs, both at local and global level through media and social media campaigns. 	<ul style="list-style-type: none"> Activity 2.1.3 Implement nation-wide marketing and awareness campaign about EVs
Political & institutional	Lack of continuous political support for EV dissemination over many years.	<ul style="list-style-type: none"> It will be crucial to ensure sufficient political support in the country is provided and relevant institutional stakeholders are committed to supporting EV dissemination over many years. 	<ul style="list-style-type: none"> Activity 1.2.2 Develop and adopt road-map and target for EV market development
	Poor coordination and low level of commitment from relevant stakeholders.	<ul style="list-style-type: none"> Key stakeholders in the RGoB will have to cooperate closely to ensure the successful implementation of the proposed project. Commitment over time is also another key element for success. Proposed mitigation measures are: <ul style="list-style-type: none"> Ensure inclusion of main stakeholders in the design, implementation and supervision of the project Periodic inter-ministerial coordination to ensure alignment of priorities. 	<ul style="list-style-type: none"> Activity 2.3.1 Strengthen cross-agency coordination mechanism

IV. RESULTS AND PARTNERSHIPS

Expected Results:

42. **Project goal** is to contribute to the key objectives of the Bhutan's draft National Transport Policy 2017:
- Establish an eco-system to promote sustainable and inclusive transportation services which is safe, reliable, accessible and affordable for all
 - Contribute to the goal of remaining carbon neutral at all times
 - Promote development of alternative and energy efficient transportation modes for both passenger and freight transport
43. **Project objective:** The strategic objective of the project is to "facilitate the initial stage of low-carbon transition in the Bhutan's urban transport systems" by promoting wider uptake of low emission vehicles (LEVs), with a particular focus on electric vehicles (EVs) and taxi sector.

Component 1: Policy support for low-emission transport

44. Component 1 will directly address identified policy and regulatory barriers hampering growth of LEV market in Bhutan and will be delivered by the main Governmental agency in charge of transport policies and project's National Implementing Partner, the Ministry of Information and Communication (MoIC) in close collaboration with numerous other public agencies and bodies (as detailed below in the stakeholder analysis). Specifically, this Component will collaborate with the complementary MoIC-led Sustainable Urban Transport Programme and the National Electric Vehicle Initiative under auspices of the Gross National Happiness Commission (GNHC). Expected outcome of this component is ***"By the end of the project period required policy and regulatory environments are in place to support the promotion of low emissions transport systems"*** which is to be achieved as a result of the following project-supported outputs.

Output 1.1: Regulations developed and promoted to enable operations of EVs and EVSE

Activity 1.1.1: Conduct detailed policy and regulatory gap analysis to identify a package of most suitable and appropriate policy and regulatory measures

45. Based on the analysis conducted, the specific regulatory measures and instruments will be identified which could shift preferences of the potential buyers, in particular taxi drivers, in favour of EVs. Such policy and regulations, at both national and local/municipal level, may include clarified and simplified procedures for obtaining operating licences for e-taxi drivers, reduced license fees, preferential provisions for parking and urban transit, additional fiscal and economic incentives for EV buyers, dealers and financial institutions (in conjunction with financial support mechanism design under Component 3).

Activity 1.1.2: Conduct EV sector stakeholder consultations to discuss and agree on the scope and modalities of proposed policy and regulatory measures.

46. The project will organize one stakeholder consultation with participation of all relevant public agencies, and also businesses and NGOs, to discuss, verify and prioritize the need for and scope of suggested policy and regulatory measures.

Activity 1.1.3: Develop technical norms, standards, regulations and guidelines to enable operations of EVs and EVSE.

47. The project will provide technical assistance to the relevant agencies to develop and facilitate official approval, if required, of the technical norms, standards and guidelines for operating EVs, installation of charging infrastructure, technical standards for design of charging infrastructure and its connection to national power grid, to assure the quality and safety of products per local context and requirements; guidelines for city authorities regarding approval of related supporting infrastructures (e.g., charging station locations, right-of-way for public transport, hybrid or electric vehicles), revisions of building codes to mandate investment in EVSE for all new commercial and public development projects, etc.

Output 1.2: Mid-term and long term target for National EV and EVSE developed

Activity 1.2.1: Conduct technical and economic analysis to establish achievable mid-term and long-term target for transition to EVs

48. The project will support the RGoB in formulating national mid-term and long-term EV deployment targets, i.e. quantified policy objectives, regarding transition to EVs, as well as sustained investment in EVSE. Such targets send an important signal to market stakeholders, especially those not yet present in the country, about new business opportunities and the strong Government commitment to promotion of e-mobility.

Activity 1.2.2: Develop road-map for EVs

49. In line with provision of the *Vehicles Emission Road Map* and based on recommendations prepared under Output 1.1, the project will support development of a Low-carbon Vehicle Roadmap with clear incentive instruments and EV deployment targets enabling achievement of the national policy objective to reduce vehicles' GHG emissions by 25% by 2025.

Output 1.3: Policy guidelines and regulations developed to address e-waste disposal and management

Activity 1.3.1: Develop policy guidelines and regulations for disposal and recycling of EV batteries

50. The project will liaise with relevant agencies to develop policy guidelines/regulation for the disposal or recycle of batteries to ensure health hazards from EV batteries are prevented. Relevant training will be provided to minimize or avoid any community health risks and safety issues stemming from batteries (see also Output 1.4).

Activity 1.3.2: Conduct feasibility study to explore options for batteries' re-use and recycling domestically

51. Feasibility of domestic re-use and recycling of the used car batteries will be explored through a study to be commissioned by the project. The study will also inform the design of appropriate regulation (under Activity 1.3.3)

Activity 1.3.3: Support implementation of e-waste disposal and management regulation for EVs of safe disposal and recycling of EV batteries

52. The project will work with the EV dealers to design and implement a pilot programme on proper collection, disposal and recycling of the batteries in line with developed policy guidelines and regulations.

Output 1.4: Technical capacity of the relevant agencies and public bodies are enhanced on various aspects of EVs and EVSE

Activity 1.4.1: Design and support provide the training and capacity development programme

53. To support RGoB in implementing proposed policy and regulatory changes (Outputs 1.1-1.3), training programme for relevant public bodies will be designed and delivered continuously through the course of the project to gradually strengthen capacities of public employees to apply and implement those policies and regulations in practice, in particular new technical standards and environmental regulation.

Component 2: Awareness and capacity development

54. Component 2 is aimed at addressing significant institutional and technical capacity constraints, as well as misperception and “disbeliefs” regarding EVs among general public, but more specifically among targeted category of end-users, the taxi drivers. This Component will be delivered in close partnership and collaboration with EV manufacturers, dealers and existing EV users. Expected outcome of this component is “**by the end of the project period institutions and consumers are fully aware and knowledgeable on the EVs**”, which will be achieved through following project-supported outputs interventions.

Output 2.1: Awareness campaign supported

Activity 2.1.1: Conduct awareness/perception survey (baseline)

55. To better understand the level of awareness about and attitudes towards EVs among general public and targeted group of taxi drivers and their clients, an opinion/perception survey will be conducted during the inception period of the project. The key objective of the survey is to identify main issues and concerns of the end-users which would have to be addressed and removed through awareness campaign and training. Women's specific needs as drivers and users of EVs will also be reflected in the design of the survey. The purpose of the survey is also to establish quantified baseline against which project progress and results will be tracked and monitored.

Activity 2.1.2: Design and publish relevant awareness and promotional materials

56. Based on the results of the survey (Activity 2.1.1), specific information and knowledge gaps will be identified and addressed through this activity by developing and publishing relevant awareness raising and promotional materials.

Activity 2.1.3: Implement nation-wide marketing and awareness campaign about EVs and their benefits

57. A nationwide marketing and awareness raising campaign focused on EVs will be designed and delivered across the country for targeted segments of end-users such as drivers, public vehicle operators, service providers and

general public. This campaign will cover: a) socio-economic, financial and environmental benefits of EVs; b) information about existing policies and regulations promoting and enabling EVs (Outcome 1); and c) information about financial support mechanism and financial loan products available (Outcome 3). This campaign will involve television, social media and other means aiming specifically to address the significant knowledge constraints regarding EVs among general population, in particular women. This will also form a basis to enhance awareness on customer behaviour, vehicle and battery performance, financial benefits, charging infrastructure and other support services.

Activity 2.1.4: Conduct awareness/perception survey to measure the level of awareness and perception (end-of-project)

58. By the project end analogous awareness/perception survey will be conducted following the same survey techniques and methodology as in the baseline survey. The purpose of the end-of-project survey is two-fold: a) monitor, assess and report on the achieved results and their effectiveness in terms of changes in perception and attitudes; and b) identify remaining capacity and knowledge gaps where additional PR/capacity building needs will have to be provided post project.

Output 2.2: Information Guide developed and technical training implemented on EVs

Activity 2.2.1: Develop EV user information guide and training package

59. Technical assistance will be provided to design EV user information guide and the associated training package and to provide other required technical advisory services (on-the-job training) to targeted EV users, such as taxi drivers, technical personnel on charging infrastructure and in O&M businesses.

Activity 2.2.2: Implement capacity and training program

60. It is envisioned that the project will work with Vocational Training Institute to conduct training, leading to certification, of local technical experts, existing and prospective taxi drivers. This way, the training programme will be formalized through key government agencies assuring long term sustainability well after the project closure.

Output 2.3: Effective and functional Coordination mechanism established to promote EVs

Activity 2.3.1: Support inter-agency coordination mechanism

61. The project will facilitate more effective and systematic coordination and collaboration (vertically and horizontally) among relevant transport management agencies and key stakeholders involved in low carbon transport, including GNHC, MoIC, Bhutan Power Corporation (BPC), Thimphu Municipality, etc. Support to be provided may include, for example, identification of gaps, overlaps and appropriate modalities for effective collaboration, organization of regular meetings and identification of specific issues which require coordination and collaboration. Wherever needed, additional regulatory and institutional changes will be proposed to increase the effectiveness of inter-agency work on transport issues.

Component 3: Investment Supported for Low Emission Transport Systems and other Services

62. Component 3 will directly address policy and investment barriers and will be implemented in partnership with national financial institution(s) and competitively selected EV manufacturers and their dealers. Expected outcome of this component is ***“by the end of the project period necessary financial support/incentive mechanisms are in place to increase investment in low emission transport systems and support services”*** which will be achieved as a result of the following project-supported outputs.

Output 3.1: Financial support mechanism for EVs established and operational

Activity 3.1.1: Design of financial support mechanisms for EVs: National EV Discount Program for Taxi Drivers

63. Strong financial incentives in the form of grants, subsidies or tax rebates proved their effectiveness in jump-starting EV market growth around the world. Based on comparative analysis of relevant international experience (See Text Box 1), the project will design financial as well as non-financial support mechanism for EVs with a specific focus on taxi cabs. During the project inception, regional and International best practices will be discussed further to identify appropriate elements during project implementation.

Text Box 1 International Examples of Financial and Non-Financial Incentives for EV

Japan: New subsidy scheme was introduced in 2016 that grants progressively higher subsidies as the electric range of the model increases, with the maximum subsidy set at JPY 850 000 (USD 7 700). For a medium-range model with a 30-kWh battery, the purchase incentive amounts to JPY 330 000 (USD 3 000).

India: India introduced the Faster Adoption and Manufacturing of Hybrid and Electric Vehicles Policy in 2015 to support EV uptake in the country. The scheme provides incentives to the purchase of EVs and hybrid vehicles (electric bicycles are also included) from 13,000 Rs up to 6.1 lakh Rs, depending on the vehicle model. In addition to this incentive, India is also reducing excise duties for hybrid and electric vehicles (from 30% for conventional, down to 12.5 and 6% for hybrid and EV respectively).

USA: The United States invested 25 billion USD for and Advanced Technology Vehicle Manufacturing Incentive program and 2.4 billion USD grants for EVs development. The tax credits for around 54 million USD for alternative refuelling, including charging have been provided. Furthermore, there are subsidies for the purchase of EVs and for charging making them more economic in terms of total cost of ownership in many American cities.

Norway: In Norway, EVs are exempt from acquisition tax, representing around NOK 100 000 (USD 11 600). Battery EV (BEVs) are exempt from the 25% value-added tax (VAT) on car purchases. This environment, coupled with a large number of waivers on fees such as road tolls and ferries, provides a highly favourable environment for electric car uptake and for BEVs in particular. BEV taxation should remain unchanged until 2020, while higher purchase rebates and tax waivers were introduced for plug-in hybrid EVs (PHEVs) in 2016 compared to 2015. Free parking for electric cars has also been provided for some time in the beginning of market development, but is no longer applicable nationwide as of 2016.

Netherlands: The Netherlands have a differentiated CO₂-based taxation scheme for which taxation rates are gradually evolving through 2020 (the rates for each year to 2020 have already been announced). The changes primarily affect PHEVs, which will be subject to tax rates that will keep increasing compared with the rates in 2015. Zero- emission cars are exempt from registration tax, while cars with CO₂ emissions per km corresponding to a PHEV were subject to a EUR 6 per g CO₂/km tax rate in 2016 – this will increase to EUR 20 per g CO₂/km in 2017.

Sweden: The Swedish government used to offer purchase rebate to PHEVs: initially at about SEK 40 000 (USD 4 500) in 2015 and then at SEK 20 000 (USD 2 250) in 2016 (for BEVs, this has been maintained at SEK 40 000 [USD 4 500] since 2011). The PHEV sales growth, in spite of the significant cut in purchase incentives, could be due to the large share of PHEVs sold as company cars and the incentives resulting from a reduction in value of the “fringe benefits” allowed for plug-in cars compared to conventional cars of the same class (estimated savings of SEK 1 000 [USD 110] or more per month).

64. Within the framework of financial and affordability analysis conducted at PPG phase, three potential design options of the financial support mechanism have been considered, including Option 1 “Grant (discount)”, Option 2 “Grant (discount) + Concessional loan (interest rate subsidy)”, and Option 3 “Concessional loan (interest rate subsidy)”. Option 3 “Concessional loan” has been found not feasible because the level of monthly loan

repayment even at concessional rate exceeds established affordability threshold (i.e. monthly disposal income), as well as limits set up by the financial regulations. Table 6 shows that costs and leveraging ratio of the two feasible options, i.e. Option 1 “Grant (discount) only” and Option 2 “Grant (discount) + interest rate subsidy” are comparable. However, Option 2 is slightly more expensive on a per vehicle basis. Also, transaction costs and complexity of designing, implementing and communicating a combined financial support package to potential clients would be significantly higher compared to Option 1. Based on these preliminary conclusions, it is suggested to prioritize Option 1 (EV Discount) for further consideration and detailed elaboration like increase in loan component and tenor of the loan at project implementation phase. (Please refer to Technical Annex A for full details of the conducted analysis)

Table 6 Cost of proposed financial support mechanism and leveraging ratio

	Discount	% subsidy	TOTAL, Nu	TOTAL, \$	# of EVs	Co-financing
Option 1 (Discount only)	360 000		360 000	5 538	300	6 646 152
Option 2(Discount +%)	180 000	188 582	368 582	5 670	293	6 491 396

65. The key elements and justification for the proposed design of the financial support mechanism is as follows:

- Potential EV owners (taxi drivers) are constrained in their ability to pay high up-front cost of EV and can’t fully afford monthly loan repayment at existing market rates and regulations for commercial loans;
- It is established that financing gap accounts for 20% of the EV retail price provided new financial regulation is enabled allowing to increase the maximum limit of the volume of loan as a share of CAPEX (from 30% up to 60%);
- Out the three considered alternatives¹⁴ to address financing gaps, “20% EV Discount program” represent the least complex, implementable and the most cost-effective option.

66. “EV Discount Program” envisages provision of GEF-sponsored 20% discount on the purchase of EV vehicles. Proposed financing structure for the investment in new EV under the Discount Program is presented in the Table 77 below and consists of 20% equity from the buyer, 60% commercial loan and 20% discount. The Program will thus address both affordability barriers for the investor as it requires only 20% investment upfront while at the same time monthly loan repayment will stay within 22, 770 Nu/month, as required by the banking regulation. However, implementation of EV Discount Program, as proposed, is only feasible when/if of the RGoB and Regulator approve changes in the banking regulation to allow for an increase in the maximum loan threshold - up to 60% of the CAPEX costs (See Output 3.2).

Table 7 Financing structure for Option 1

	Nu	\$	%
CAPEX	1 800 000	27 273	100%
Equity available	360 000	5 455	20%
Loan maximum (60%)	1 080 000	16 364	60%
Discount (20%)	360 000	5 455	20%
Financing gap	-	-	0%

¹⁴ Alternative 3 “Concessional finance only” is not feasible because monthly loan repayment even at concessional rate exceeds affordability threshold (i.e. monthly disposal income).

67. During inception phase, the project will support detailed elaboration of the EV Discount Program and its key parameters, including the exact size and eligibility criteria for the Discount, technical specification and categories of EVs, marketing and promotion activities, etc.

Activity 3.1.2 Preparing technical specifications and selection of qualified EV suppliers

68. The selection criteria developed during the PPG will be the basis for selecting the potential suppliers of EV cars.

Table 8 Criteria for selection of EV

Criterion	Description	Thresholds	Possible importance
A1	Suitable for operating conditions of Bhutan (e.g. climate, altitude, road gradient) <i>The specification of the operating conditions should be provided by the stakeholders.</i>	n.a.	[Yes / No]
A2	Vehicle age <i>We assume vehicles should be new. Otherwise, criteria on age / kilometre reading can be added.</i>	New	[Yes / No]
A3	Size of the car <i>To be suitable for taxi service operations.</i>	≥ 4 full seats	[Yes / No]
A4	Investment (purchase price), including 3 battery replacements <i>The lower the better. Price of below 35,000 USD should be [Yes / No] criterion</i>	≤ 15,000 USD	2 – 5
		≤ 25,000 USD	1 – 4
		≤ 35,000 USD	[Yes / No]
A5	Range <i>The higher the better. 100 km range should be [Yes / No] criterion</i>	≥ 100 km	[Yes / No]
		≥ 150 km	1 – 4
		≥ 200 km	2 – 5
A6	Motor power <i>The higher the better. 75 kW should be [Yes / No] criterion</i>	≥ 75 kW	[Yes / No]
		≥ 90 kW	1 – 4
		≥ 100 kW	2 – 5
A7	Battery capacity <i>The higher the better. 20 kWh should be [Yes / No] criterion</i>	≥ 20 kWh	[Yes / No]
		≥ 30 kWh	1 – 4
		≥ 50 kWh	2 – 5
A8	Capability of fast charging (DC) <i>All EVs should be capable of using fast charging to be suitable for taxi service operation.</i>	n.a.	[Yes / No]
A9	Charging protocol	CCS Combo Type 1: SAE	[Yes / No] 1-5

Criterion	Description	Thresholds	Possible importance
	<i>Should the stakeholders think one of the fast standards should be preferred as already existing in Bhutan or envisaged for future use, the corresponding standard could be assigned a higher importance level or even be selected as [Yes / No] criterion.</i>	J1772 / IEC 62196-3	
		CCS Combo Type 2: IEC 62196-3	[Yes / No] 1-5
		CHAdemo	[Yes / No] 1-5
		GB/T 20234.3-2015 (China)	[Yes / No] 1-5
A10	Compliance with existing or currently planned regulations on road vehicles in Bhutan if existing or comparable international regulation (e.g. safety equipment such as seat belts, ABS, airbags, etc.)	n.a.	[Yes / No]
A11	Maintenance, repair and supply of spare parts should be available in Bhutan	n.a.	[Yes / No]
A12	Manufacturer/supplier should offer to take used batteries back for environmental sound disposal / recycling.	n.a.	[Yes / No]
A13	Extended warranty of manufacturer/supplier (years or km) on the vehicle or at least its main components	50,000 km 1 year	1 - 3
		100,000 km 2 year	2 - 4
		150,000 km 3 year	3 - 5
A14	Any other incentives (e.g. comprehensive insurance, charging stations, etc.)	Yes	1-5
		No	0

Activity 3.1.3: Implementation of EV Discount Program

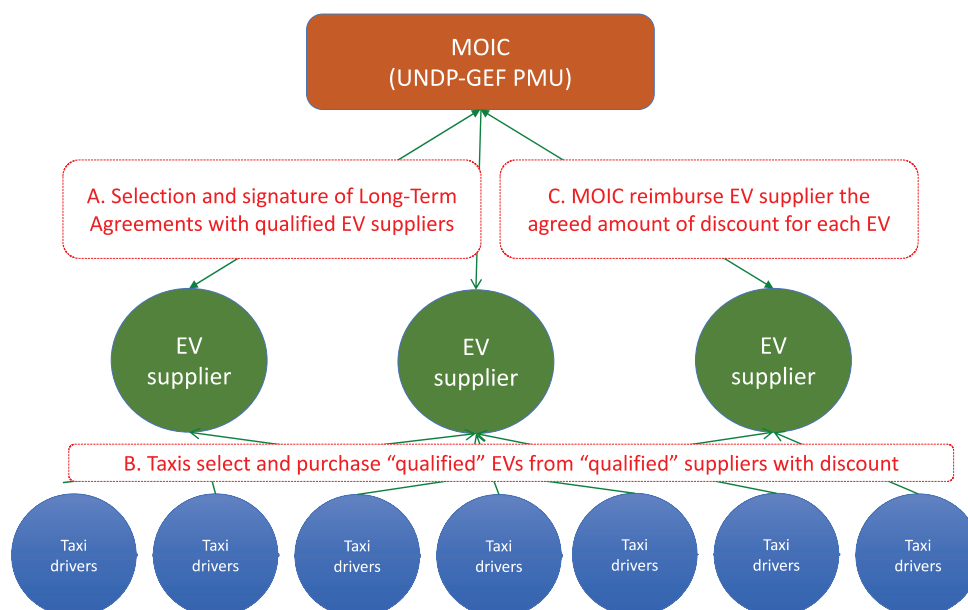
69. EV Discount Program will be implemented in stages as follows (see Figure 8):

- **Stage A:** MOIC will launch an open tender to pre-select several qualified suppliers of EVs on the Bhutanese market, based on agreed specifications (See Technical Annex B for proposed technical specifications), including established quality standards, availability of O&M services in Bhutan, and competitive market price for specified vehicle type and/or range. Long-term agreements (LTAs) will be signed with qualified suppliers. Based on LTAs, the project will reimburse up to 20% of the agreed EV price for each EV sold on the market. Each signed LTA will also have the upper limits on the number of vehicles for which discount can be offered within set-up timeframe.
- **Stage B:** Qualified EV suppliers and qualified buyers (registered and licenced taxi drivers with vehicles which are due to retire, i.e. reach end-of-service period, to avoid increase in the total number of taxis on the road)

enter into sale-purchase agreement for EV for up to 80% of the retail price (noting that additional discounts can be offered by the supplier at own costs)

- **Step C:** EV supplier invoice MoIC to claim reimbursement of up to 20% of the agreed retail price for each sold EV.
- **Step D:** MoIC pays to EV supplier based on LTA and invoice and provide financial report to UNDP on quarterly basis along with request for budget release.

Figure 8 Process diagram for implementation of the financial support mechanism



70. The main advantages of the proposed EV Discount Program and implementation modality compared to other alternatives are as follows:

- Avoiding market monopolization by single EV supplier (as would be the case of publicly-sponsored bulk procurement)
- Promote competition between EV supplier and further decrease in CAPEX
- Ensures high leveraging ratio, at least 1:4
- Ensures that only EV which meet pre-agreed quality standards and with available O&M are promoted on the market (See Technical Annex B)
- The scheme is technology and/or supplier neutral
- Consistent with UNDP POPP (no direct cash transfer/subsidy provisions to final beneficiaries): provision of subsidy component is done in line with UNDP procurement procedures
- UNDP keeps controls of the procurement and financial transactions.

Activity 3.1.4: Independent evaluation of EV Discount Program

71. In the course of the program implementation two independent evaluation will be carried out: after first year of its implementation and at the end. Mid-term evaluation will assess interim progress and suggest corrective measures in the Program design to account for lessons learnt, including the changes in the level of discount (higher or smaller depending on the market reaction), expansion to other type of beneficiaries and/or localities

in Bhutan, etc. Final evaluation will assess result and the need and scale for continuation of EV Discount Program beyond GEF project duration.

Output 3.2: Financial regulations are revised to enable implementation of EV Discount Program and its sustainability

Activity 3.2.1: Prepare a package of amendments and changes in the existing banking and financial regulations to enable and facilitate implementation of the EV Discount Program

72. In order to fully enable implementation of the EV Discount Program and address the established affordability barriers with regard to both up-front EV costs and monthly loan repayment, a number of changes in the existing financial regulations will be proposed, such as, for example, an increase threshold for maximum loan amount up to 60% of the CAPEX cost (against current 30%), regulations enabling provision of loans at reduced interest rate, increased tenor of the loans as well as possible financial incentives for banks with large loan portfolio for low-emission vehicles, etc.

Activity 3.2.2: Identify and enable alternative sources of financial support to promote EV market development beyond project duration

73. Under this activity, sustainability and exit strategy (aligned to a predetermined target penetration as per current transport policy, which targets 50% of vehicle fleet to be converted to clean and eco friendly technology by 2030) for financial support mechanism will be developed to assist decision makers in identifying potential funding sources to sustain and expand the EV Discount Program (if such will be required – based on the results of Program evaluation in the Activity 3.1.3); the latter may include additional fiscal measures, as well as international sources of climate finance. All the proposed options will be explored together with other non-financial incentives for faster promotion of EV adoption.

Output 3.3: Charging infrastructure expanded through demonstrated viable business model to ensure sustainability

Activity 3.3.1: Prepare cost – benefit analysis and develop business model for network operations (PPP, concession agreement) and develop technical design of the charging network expansion

74. Feasibility study will be prepared, including technical, economic and financial analysis, as well as environmental and social impact assessment of the proposed charging network expansion, in line with relevant provisions of the RGoB.

Activity 3.3.2: Design contractual and financial agreement mechanism for dedicated operator(s) is in place for EVSE

Activity 3.3.3: Prepare detailed specifications for charging infrastructure, procurement and installation of charging stations

75. Technical specifications and criteria for EVSE developed in the course of PPG (
- 76.

Table 9 Technical requirements and criteria for EVSE

77. 9) will be further refined based on analysis of relevant international experience, consultations with EV market stakeholders and EVSE suppliers/manufacturers. Based on agreed specifications and technical design for charging stations network (Activity 3.3.1), procurement, installation and commission of the equipment will be conducted. The MoIC will work on criteria for selecting the strategic locations of charging stations. The project will take into the considerations the criteria used for installing the current charging stations and lessons learned while finalizing the need.

Table 9 Technical requirements and criteria for EVSE

Criterion	Description	Thresholds	Possible importance
B1	Suitable for operating conditions of Bhutan (e.g. climate (temperature, humidity), altitude)	n.a.	[Yes / No]
B2	Equipment age <i>We assume EVSE should be new.</i>	New	[Yes / No]
B3	Compatible with selected EV and its fast charging protocol and mode of communication	n.a.	[Yes / No]
B4	Capability of fast charging (DC) <i>All EVs should be capable of using fast charging to be suitable for taxi service operation.</i>	n.a.	[Yes / No]
B5	Does the charging station model offer one or more additional fast charging protocol (multiple charging standard integrated in one charging station) <i>Should the stakeholders think one of the fast standards should be preferred as already existing in Bhutan or envisaged for future use, the corresponding standard could be assigned a higher importance level or be even select as [Yes / No] criterion.</i>	CCS Combo Type 1: SAE J1772 / IEC 62196-3	[Yes / No] 1-5
		CCS Combo Type 2: IEC 62196-3	[Yes / No] 1-5
		CHAdeMO	[Yes / No] 1-5
		GB/T 20234.3-2015 (China)	[Yes / No] 1-5
B6	Investment (purchase price of charging station), not including grid connection, transformer station, installation, etc. <i>The lower the better. 55,000 USD should be [Yes / No] criterion</i>	≤ 15,000 USD	2 - 5
		≤ 35,000 USD	1 - 4
		≤ 55,000 USD	[Yes / No]
B7	Suitable for outdoor installation	n.a.	[Yes / No]
B8	Maximum Output Power <i>The higher the better. 20 kW should be [Yes / No] criterion</i>	≥ 20 kW	[Yes / No]
		≥ 30 kW	1 - 4
		≥ 40 kW	2 - 5
B9	Number of vehicles that can be charged simultaneously per station.	1	1 - 3
		2	2 - 4

Criterion	Description	Thresholds	Possible importance
		4	3 - 5
B10	Compliance with existing or currently planned regulations on electric equipment in Bhutan (if existing), or comparable international regulation (e.g. safety, insulation, hardware and electronic protection, protection class (IP class), EMC compliance, emergency stop, etc.	n.a.	[Yes / No]
B11	Maintenance, repair and supply of spare parts should be available in Bhutan	n.a.	[Yes / No]
B12	Extended warranty of manufacturer/supplier (years) on charging station or at least some main components	≥ 1 year	1 - 3
		≥ 3 year	2 - 4
		≥ 5 year	3 - 5
B13	Human interface (e.g. display), communication (CAN or other standard to communicate with vehicles, etc.) and monitoring functionality (electricity provided for charging, timing and number of charging events, etc. submitted via Ethernet, GSM, etc.)	tbd	tbd
B14	Payment functionality (e.g. card, phone, cash, etc.) <i>We assume that the electricity is provided at public charging stations for free. However, if this might change, the topic would become relevant.</i>	tbd	tbd

Partnerships:

78. The project forms an integral part of a broader RGoB's efforts to reduce fossil fuel use and GHG emissions in the Bhutan's transport sector in line with the objectives of the National Transport Policy and the Low-emission Development Strategy. To ensure synergies and coherence of these efforts, the project under MOIC leadership will collaborate closely with the following initiatives:

- ❖ **Green Transport City Programme for Thimphu, MoIC under World Bank Support** (for which the funding from the Green Climate Fund (GCF) is being requested in the amount of 1.5 mln US\$ for project preparation grant). The programme envisages the following activities: (a) Development of master plan for low emission transport in Thimphu, including public and private LEVs; (b) Technical preparations for Program investments including a BRT system, Bus Information System, e-ticketing technology, pedestrianization works, an upgraded city bus depot, an upgraded city bus terminal, non-motorized transport infrastructure, a signal control system, a parking management system, and an integrated traffic control centre; (c) Knowledge development and transfer activities to strengthen the institutions that manage transport in Bhutan. The key element of the proposed partnership is the need to ensure that support and strategic planning for low-emission public transport in Bhutan by the World bank (GCF) and UNDP (GEF) is well coordinated and complementary. Specifically, coordination is required on such issues as design and compatibility of EV charging infrastructure for vehicles and buses, as well as design of the public transport network for Thimphu and other areas so that buses and taxis do not compete but effectively complement each other and at the same time ensuring that sufficient priorities have been given to EV-based and non-motorized transport modes.

- ❖ **NAMA for Enhancing the Urban Transport System in Bhutan:** Within the framework of UNDP-supported Low Emission Capacity Building (LECB) Programme, the Nationally Appropriate Mitigation Action (NAMA) to leverage financing for Enhancing the Urban Transport System in Bhutan has been developed which envisages, inter alia, the introduction of Intelligent Transport System (ITS) in public transport, such as cashless ticketing and real-time information system. The proposed UNDP-GEF project will coordinate efforts with planned ITS support measures, such as the development of web applications for taxi drivers and users to improve safety, comfort and quality of taxi services for end-users, in particular women.

79. The proposed project also envisages partnerships with three groups of private sector stakeholders: taxi drivers, EV suppliers/dealers and local banks. Each group has an important role to play in the market transformation process promoted by the project and therefore dedicated efforts will be made by the project team to establish collaboration and meaningful engagement in the project work. Following is an overview of each group of private sector partners:

- ❖ **Taxi drivers:** As of 31 August 2017, 4,290 registered taxies operated in the country while the total number of registered taxi drivers are 7,000¹⁵. The taxi association was formed in May 2017, as a formal organisation to represent interest of the sector and provide various forms of support to taxi operators. As of September 2017, about 3,000 taxi drivers have registered with the association.
- ❖ **EV dealers:** Singye Agencies is the first dealership who introduced Fully Electric Vehicle in Bhutan. Singye Agencies launched 1st fully electric car in 2011 called Mahindra “REVAi” a two door hatch back with four seating capacity (2 adults and 2 children). Total number of cars sold in 2011 were 8 units. Currently, the Singye Agencies are closely monitoring the two new models of EV, “REVA e2o Plus” a four door hatchback car and “E-Verito” a Sedan full electric car recently launched by Mahindra & Mahindra Ltd. The other agency is the Thunder Motors, which initiated the import of Nissan Leafs Electric Vehicles since February 2014. As of now, a total of 89 Nissan Leafs were imported. Of these 77 were new vehicles and 12 were used vehicles at the time of import. The Thunder Motors’s future plans are to import only new 2018 model Leafs since older models will not be made any longer. The 2018 Leafs have a battery capacity of 40 kWh and can drive for 350 km on a single charge.
- ❖ **Financial institutions:** Bhutanese financial sector comprises five commercial banks, Bank of Bhutan (BoB), Bhutan National Bank (BNBL), T Bank (TBL), Druk PNB and Bhutan Development Bank. In the non-banking sector in Bhutan, there are three insurance companies in Bhutan i.e., the Royal Insurance Corporation of Bhutan Ltd (RICBL) and the Bhutan Insurance Ltd. Both institutions offer retail loans. The Royal Monetary Authority of Bhutan (RMA) is the central bank of Bhutan and is responsible for the supervision of all these institutions.

Risks and Assumptions:

Some of the key risks identified are associated with safe management and disposal of battery, construction and operation of charging station and gender consideration. As per UNDP’s Social and Environmental Screening Procedures and Plans (SESP), the project has been categorized as “moderate risk”. Targeted assessments are proposed and would be validated at the project inception stage and implemented. Overall, the project risks are categorised as environmental, operational, market, financial and policy and specific risks and mitigation measures are indicated below:

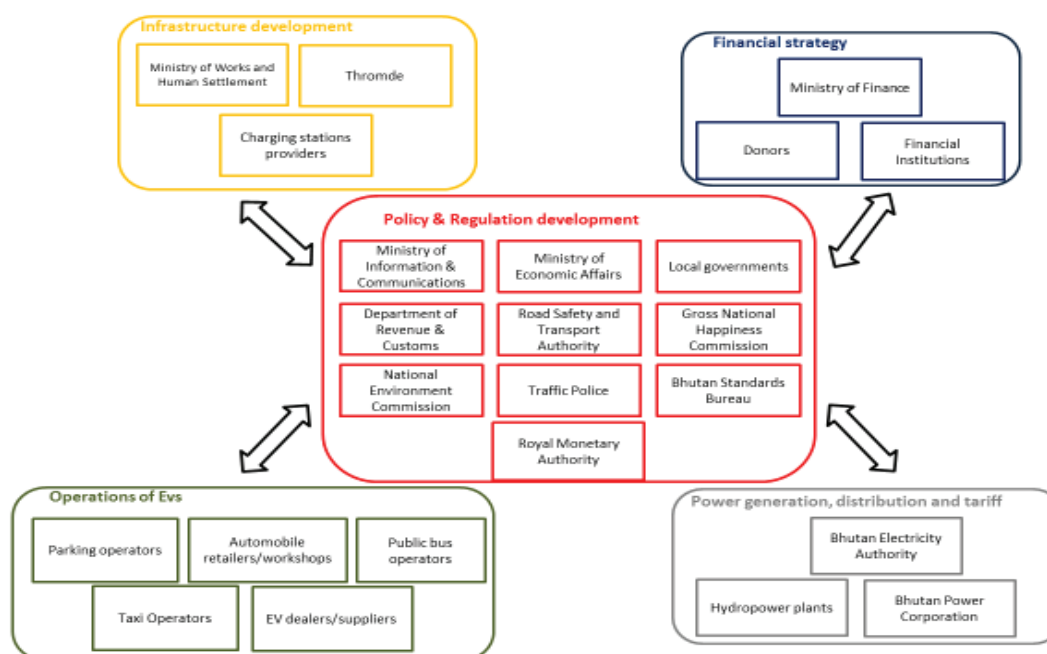
¹⁵ <http://www.bbs.bt/news/?p=80613>

Project risks			
Description	Type	Impact & Probability	Mitigation Measures
Inadequate E-waste management & disposal of used batteries	Environmental	P = 3 I = 3	Enabling regulation on e-waste management and its enforcement will be proposed, as well feasibility study to explore opportunities for domestic re-use and recycling scheme and implementation of pilot project to demonstrate proposed feasible options for re-use and/or recycling
EV Technology failure	Operational	P = 3 I = 3	The project will introduce strict technical qualification criteria for qualified EV suppliers and will also offer additional training to taxi drivers and technicians involved in O&M services
Low uptake of financial support mechanism	Market	P = 3 I = 3	The project proposes staged approach to EV Discount Program roll-out. After pilot first stage, evaluation will be conducted to assess its effectiveness and demand and corrective measures proposed in case demand is weak (i.e. stronger incentives will be proposed) or on the contrary if the program is over-subscribed the level of discount may be reduced.
Sustainability of financial support mechanism	Financial	P=2 I = 3	Project will work with RGoB to explore other alternative, domestic and international sources of financing to ensure sustainability of the EV discount program, but only after evaluation of the pilot and prove that such continuation is indeed needed. Experience from other countries suggest and actual call for gradual decrease in public subsidies once the market begins to pick up.
Potential delays in implementation of the required policy and regulatory changes may jeopardize the effectiveness and impact of the EV Discount Program	Policy	P=2 I = 3	Firm commitment has been secured from the RGoB regarding feasibility of timely implementation of the required policy and regulatory reforms, in particular revision of financial regulations. This has also been confirmed through consultation with relevant authorities and inclusion of relevant provisions in the key national strategic and planning documents.

Stakeholder engagement plan:

80. Transforming the currently existing transport sector in Bhutan to a sustainable Low-emission Urban Transport System requires a good knowledge of the involved stakeholders and their needs. Finally, they have to change their behaviour and develop willingness to invest in and use new modes of transportation to achieve a transformational change in the entire transport sector. In the following section, a brief overview of relevant stakeholders is presented. Figure 9 summarizes the main stakeholders in Bhutan that are involved in transport sectors. The stakeholders are clustered in four groups, according to the role they play in this sector: Policy & regulation development; infrastructure development; financial strategy; power generation, distribution and tariff; and operations of EVs.

Figure 9 Stakeholders involved with low-carbon transport



81. The main stakeholder for the implementation of the Project is the Policy and Planning Department of the Ministry of Information and Communication. It is the executing agency of the RGoB responsible for promoting the development of reliable and sustainable information, communications and transport networks and systems. The Ministry is also responsible to enhance access to sustainable, green and inclusive public transport, which this project fits well within their purview and mandate of surface transport. Further information about and roles of the various stakeholders is presented in the Annex F.

Gender equality and empowering women:

82. An efficient transport infrastructure is by far an important conduit to spurring the economic development of a city. Transport networks are considered important elements of a country's infrastructure and key to poverty reduction and promoting equality. Mobility is experienced differently by men and women due to gendered roles. Further economic, social and livelihood status greatly influence mobility of men and women. Literature indicate that mobility patterns of women are more complex, have inferior access to transportation and carry higher travel burden than men. Women not only contribute to the formal economy but provide fundamental services which are generally unrecognized and unpaid tasks such as care-giving and home-making. Given the opportunity in better health, education, employment, etc women contribute to the well-being of their communities and to the nation at large. To achieve balanced and sustainable development recognizing gender needs in transportation has become imperative.

83. The Gender Analysis for the Low Emission Urban Transport Project was conducted to analyze gender needs in urban transportation to develop an action plan to ensure gender is adequately mainstreamed into the project. Key Findings from the assessment indicate:
- Women use urban transportation more than men
 - Taxis (34.5%) are more preferred compared to buses (18.3%) and other modes
 - More women (38%) prefer taxis compared to men (31%)
 - Women assumes higher share of travel burden compared to men
 - Women have inferior access to transportation than men
 - Going to Hospital was the main reason for using urban transportation
 - Personal safety is of high concern while using urban transportation both for passengers and taxi drivers, especially female taxi drivers
84. Key recommendations included in the project Gender Action plan (Please refer to Annex G for full details on conducted analysis and action plan) are as follows¹⁶:
- Ensure equal access of Female Taxi Drivers to EV Discount Program
 - Ensure all female taxi drivers benefit and participate in the capacity building program offered by the project on EV maintenance and operations
 - Development of Intelligent Transport System to improve comfort and safety of female taxi end-users
 - Enhance Facilities of Taxi Stands
 - Raise awareness and building capacity of relevant authorities on the important of gender mainstreaming in transport policies

South-South and Triangular Cooperation (SSTrC):

85. The project will rely on relevant international experience and best practices with EV sector promotion, with a particular focus on countries with similar geographic and socio-economic context. Given its proximity, cultural and economic ties with Bhutan, as well as dynamic EV market, India stands out in this respect as a source of experience and expertise both in terms of design of EV supportive policy packages, incentive schemes, as well as a potential EV technology supplier. Already at PPG stage, contacts were made with Indian CSOs to learn about their experience with design and implementation of ITS and web-application tools for EVs. Though the project implementation, the efforts to learn and engage relevant experts and companies from India and countries with similar context will continue and will be facilitated through UNDP Regional Hub for Asia and Pacific (Bangkok).

Sustainability and Scaling Up:

86. By addressing key risks and the underlying barriers that impede the development of the LEV sector in Bhutan, the project aims at creating conditions for sustainable LEV market growth. The key element of the Project's sustainability is its focus on the private sector as a driving force both on the supply and demand side of the market. However, taken into account the very nascent stage of LEV market in Bhutan, provisions of financial incentives through EV Discount Program, is envisaged to stimulate the demand in the initial market development phase. The need for continued provision of subsidies after 3 years of project duration will be assessed at mid-term and final project evaluation which will determine the need for and required scale of the continued financial support. Development of the global LEV market place, in particular in the neighbouring countries, India and China, will also have an impact on the prices, demand and general level of LEVs acceptance and awareness in Bhutan. Should there continue to be a need for additional public subsidies to stimulate greater LEV uptake, the project will, under Activity 3.2.2, identify and enable alternative sources of financial support to promote EV market development beyond project duration. This may include additional fiscal and financial

¹⁶ At the Inception workshop, feasibility of implementing and attaining the proposed indicators will be further defined and agreed upon.

incentives to market players (EV suppliers, banks or end-users), as well as request for international support, i.e. within the framework of parallel WB-GCF Green Transport City Programme.

87. As the specific project aims at the introduction of EV vehicles and a primary focus on taxis, the maximum scaling-up potential can be defined as the total number of taxis operated in Bhutan (i.e. 4,256), and later by the total number of vehicles (i.e. 60,889). The actual scaling-up will depend on the development of the cost gap between fossil fuel and EV technology, the overall performance of EVs and the availability of government policies supporting EV acquisition. It was conservatively assumed that a possible replication potential of the project is in the same range as the project itself: this would result in the introduction of 300 EVs every two years, overall, 1500 EVs could be introduced over a period of 10 years (representing a scaling-up factor of 5).

V. PROJECT MANAGEMENT

Cost efficiency and effectiveness:

88. The Project will directly support investment in EV through EV Discount Program under Component 3 “Investment in low-emission transport systems and support services” and will therefore lead to direct GHG emission reductions. A GHG emission analysis has been conducted and is presented in Technical Annex B (Feasibility study, Section 4) based on the “Manual for Calculating Greenhouse Gas Benefits of Global Environment Facility Transportation Projects” (GEF 2011).
89. As a result of GEF support under Component 3 to design and implement EV Discount Program, the direct GHG emissions reductions per one EV over the investment life-cycle will be 103.32tCO₂ (Table 1010) and 43,000 tCO₂ for 300 EVs to be supported through the Program (Table 111).

Table 10: Emissions reduction potential for one EV

Type of use	Emission per km (kgCO ₂ /km)	Total distance travelled (km/year)	Emission reductions (tCO ₂ e/year)	Lifetime (years)	Total emission reductions over lifetime (tCO ₂ e)
Taxi	0.153	75,000	11.48	9	103.32
Private ¹⁷		37,500	5.74	7	40.18
Total		-	-	16	223.78

Table 11: Overview of the emission reduction potential based on the project design

Type of use	Number of EVs	Total distance travelled (tkm/year)	Emission reductions (tCO ₂ e/year)	Lifetime	Total emission reductions over lifetime (tCO ₂ e)
Taxi	300	22,500	3,440	9	30,960
Private		11,250	1,720	7	12,040
Total		-	-	16	43,000

¹⁷ Private car use after 9 years of taxi service should be seen optional and depends on actual status of the EVs retiring from taxi service. The EVs might not be in a condition to allow continued private car use for several years after being used for taxi service. Especially under heavy duty and under the conditions of Bhutan (road and climate conditions) continued use might not be possible.

90. In addition, the Project will undertake several activities that will stimulate market transformation, in particular support to the enabling policy and regulatory framework under Component 1. Further, experiencing convenient and reliable EV taxi service will trigger subsequent replacement of ICE-driven taxis by EV taxis among other taxi service operators. The passengers when they get familiar with the new technology might replace their private fossil fuel vehicles by EVs at the end of their technical life. A key barrier in transforming the transport sector from ICE-driven cars to EV technology is the non-existing (public) charging infrastructure which is slowly improving over time with the installation of few fast chargers. As such, the installation of charging infrastructure due to the project is a first step towards removing this barrier enabling the introduction of EVs in a broader scale. Since the GEF support for Components 1, 2 and 3 will be in the form of technical assistance, there will be consequential GHG emission reductions in the range of 93,000 tCO₂ to 410,000 tCO₂ over the period of 10 years after the end of the original project. These are estimated using bottom-up and top-down approaches based on the GEF methodology, as summarized in Table 122.

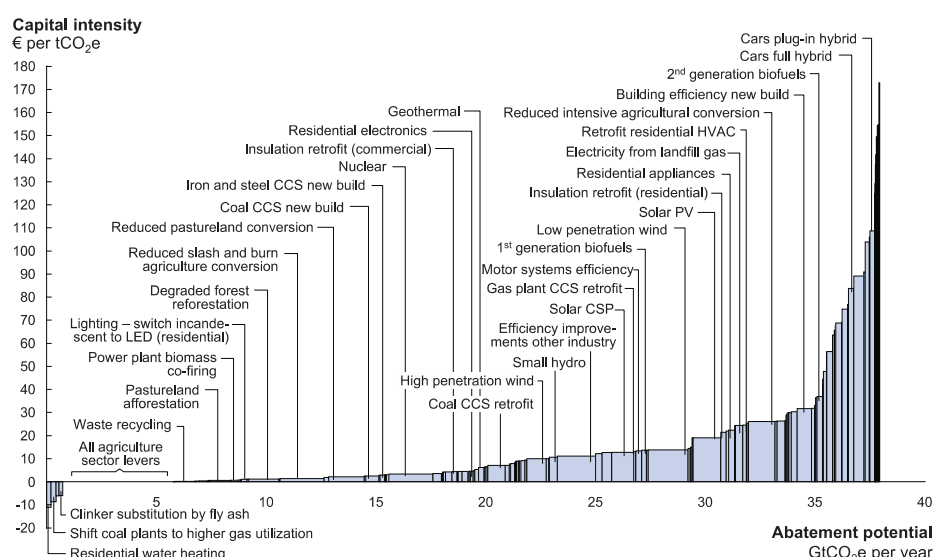
Table 12 Aggregated GHG Emission Reductions: Direct and Consequential

GHG Emission Savings (tCO ₂)*	2018-2020	2020-2030
Direct	43,000	
Consequential (bottom-up)		93,000
Consequential (top-down)		410,000

*Estimates are rounded to tCO_{2e}

91. Based upon a total GEF grant of \$2.64 million, the cost per tonne of direct CO₂ emissions reduction is \$61. McKinsey & Company¹⁸ estimated the marginal abatement costs for LEVs to be in the range of €110/tCO_{2eq} and €170/tCO_{2eq} (Figure 10). Based on these calculations, the project's direct GHG emission reduction potential is cost-effective. For consequential emissions, the total estimated cost (GEF funding) of CO₂ reduced is between \$6 and \$28/tCO_{2eq}.

Figure 10 Capital intensity by abatement measure



Source: McKinsey&Company

¹⁸ Naucler T, Enkvist P-A. Pathways to a low-carbon economy: version 2 of the global greenhouse gas abatement cost curve. New York: McKinsey&Company; 2009.

Project Management: The Implementing Partner for this project is Ministry of Information and Communications. A Project Management Unit will be established in Policy Planning Division under the Ministry based in Thimphu. The Project Manager will be appointed to manage the project and report to the Project Board. The project will solely target the taxi drivers from Thimphu to avail the scheme during the start of the project implementation. However, the Project Board will provide strategic guidance based on the progress of the project.

Then a Technical Committee will be instituted to support PMU as and when necessary to advise the PMU on technical matters related to EVs and its related infrastructures.

The Accounts officer from the Administration and Finance Division will support the project on issues related to financial aspects of the project. The project will work closely with the ongoing and new Transport related projects for larger impacts by focussing on complementarities and avoiding duplication of activities.

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 Policy¹⁹ and the GEF policy on public involvement²⁰.

¹⁹ See http://www.undp.org/content/undp/en/home/operations/transparency/information_disclosurepolicy/

²⁰ See https://www.thegef.org/gef/policies_guidelines

VI. PROJECT RESULTS FRAMEWORK

This project will contribute to the following Sustainable Development Goal (s): SDG 11 and SDG 13					
This project will contribute to the following country outcome included in the UNDAF/Country Programme Document (CPD):					
Outcome 1 “Sustainable and green economic growth that is equitable, inclusive, climate and disaster resilient and promotes poverty reduction, and employment opportunities particularly for vulnerable groups enhanced”					
Relevant CPD Output 1.1 “Increased capacities for integrated natural resource management, climate change adaptation and mitigation capacities, and poverty-environment linkages”, Indicator “Number of ‘green’ industries, services and products promoted”					
This project will be linked to the following outputs of the (draft) UNDP Strategic Plan 2018-2021:					
Outcome 2 Accelerate structural transformations for sustainable development					
	Objective and Outcome Indicators	Baseline ²¹	Mid-term Target ²²	End of Project Target	Assumptions ²³
Project Objective: <i>To facilitate the initial stage of low-carbon transition in the Bhutan’s urban transport systems as the preferred choice of mobility in Bhutan</i>	[GEF CCM Tracking tool] Lifetime direct GHG emissions avoided as a result of project-facilitated increase in LEVs	N/a	1,145 tCO2/year or 14,330 tCO2/ lifetime	3,440 tCO2/year or 43,000 tCO2/ lifetime	Please refer to Technical Annex B: Feasibility study for complete list of assumptions used in GHG emission reduction analysis
	[GEF CCM Tracking tool] Number of users of low emission vehicles (including female)	N/a	100,000 passengers per year for 100 EV taxis, including at least 50% (50,000) female	300,000 passengers per year for 300 EV taxis, including at least 50% (150,000) female	Modal share of taxi remains at the same level as in the baseline, e.g. 69% in Thimphu, as estimated by the Gender Assessment
	[GEF CCM Tracking tool] Volume of investment mobilized and leveraged by the project for low-emission vehicles, of which:	N/a	Private: 2,180,000\$ (80% of 100 EVs)	Private: 6,545,000\$ (80% of 300 EVs)	The commitment from Royal Government of

²¹ 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 need to be quantified. 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.

²² Target is the change in the baseline value that will be achieved by the mid-term review and then again by the terminal evaluation.

²³ Risks must be outlined in the Feasibility section of this project document.

	- public (mln US\$) - private (mln US\$) [UNDP Strategic Plan 2018-2023, Output 2.5.1] "Amount of resources brokered by UNDP for investment in renewable energy and zero-carbon development"		Public: 2,700,000 \$: (cca Nu.180.00 million - value of tax incentives/import duty exemption for 100 EVs + at least 11 charging stations)	Public: 10,318,000\$: (Nu.540.00 million - value of tax incentives/import duty exemption for 300 EVs + 45 charging stations)	Bhutan continues to promote EVs
Component/Outcome 1 <i>By the end of the project period required policy and regulatory environments are in place to support the promotion of low emissions transport systems</i>	Status of national targets for introduction of LEV	There are no officially approved target for EVs in Bhutan	National target for LEV proposed and adopted, including appropriate technical and financial justification	National target for LEV adopted	There is a potential for uptake of EVs due to clean hydro power generation
	Status of regulations enabling and incentivizing investment in LEV and support infrastructure	Package of fiscal incentive in place providing for exemption from VAT tax and import duties	At least 3 additional EV enabling regulations proposed	At least 3 additional EV enabling regulations proposed and adopted	The financial institutions support the proposed rules and regulations
	Status of regulations addressing e-waste disposal and management issues	No regulations	Regulations addressing e-waste disposal developed and proposed for adoption	Regulations addressing e-waste disposal adopted and piloted	The regulations are adopted and implemented by regulating agencies
Component/ Outcome 2 <i>By the end of the project period institutions and consumers are fully aware</i>	Number of public transport policy makers and transport staff and officials trained (including female)	N/a	100 (50 female)	100 (50 female)	There is enough interest among females to participate in the transport sector
	Status of coordination mechanism among public and donor agencies involved in low emissions transport	No coordination mechanism in place	Coordination mechanism in place	Coordination mechanism in place	Commitment, ability and sufficient power of authority of the lead governmental agency, MOIC, to coordinate

			100 EVs + at least 11 charging stations)	exemption for 300 EVs + 45 charging stations)	relevant transport sector stakeholders
	Share of taxi drivers willing to switch to EV	At least 25% of taxi drivers are willing to switch to EV car	At least 50% of taxi drivers are willing to switch to EV car	At least 75% of taxi drivers are willing to switch to EV car	Baseline assumption is based on Gender Assessment
	Number of taxi drivers (including female) benefitting from training and information about technical, safety and financial aspects of LEV ownership	N/a	200 (and all current women drivers - 35 female)	1,000 (and all current women drivers - 35 female)	The training module are developed as per the requirement and taxi drivers are interested to avail the training program
Component/ Outcome 3 <i>By the end of the project period necessary financial support/incentive mechanisms are in place to increase investment in low emission transport systems and support services</i>	Number of new EV purchases enabled by the project	N/a	100	300	Provided incentives and enabling policy and regulatory framework are adequate and sufficient to stimulate the switch to EVs
	[12th FYP] Number of electric vehicles registered				
	[CPD draft 2.3.3] Zero or low emissions vehicles uptake				
	Status of the financial support mechanism to promote LEV investment	N/a	Financial support mechanism piloted with GEF support	Financial support mechanism is operational on sustainable basis with the level of investment support reflecting changes in market development (gradual decrease)	The financial support mechanism is endorsed by regulatory authorities and it is attractive for taxi drivers to make a switch
	Leveraged investment in EV and support infrastructure enabled	N/a	Private: 2,180,000\$ (80% of 100 EVs) Public: 2,700,000 \$: (cca Nu.180.00 million - value of tax incentives/import duty exemption for 100 EVs + at least 11 charging stations)	Private: 6,545,000\$ (80% of 300 EVs) Public: 10,300,000\$: (Nu.540.00 million - value of tax incentives/import duty exemption for 300 EVs + 45 charging stations)	The taxi drivers are willing to meet the cost of EVs given its advantage over fossil based cars

VII. MONITORING AND EVALUATION (M&E) PLAN

92. The project results as outlined in the project results framework will be monitored annually and evaluated periodically during project implementation to ensure the project effectively achieves these results.
93. 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 will work with the relevant project stakeholders to ensure UNDP M&E requirements are met in a timely fashion and to high quality standards. Additional mandatory GEF-specific M&E requirements (as outlined below) will be undertaken in accordance with the [GEF M&E policy](#) and other relevant GEF policies²⁴.
94. 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. This will include the exact role of project target groups and other stakeholders in project M&E activities including the GEF Operational Focal Point and national/regional institutes assigned to undertake project monitoring. The GEF Operational Focal Point will strive to ensure consistency in the approach taken to the GEF-specific M&E requirements (notably the GEF Tracking Tools) across all GEF-financed projects in the country. This could be achieved for example by using one national institute to complete the GEF Tracking Tools for all GEF-financed projects in the country, including projects supported by other GEF Agencies.²⁵

M&E Oversight and monitoring responsibilities:

95. **Project Manager:** The Project Manager is responsible for day-to-day project management and regular monitoring of project results and risks, including social and environmental risks. The Project Manager will ensure that all project staff maintain a high level of transparency, responsibility and accountability in M&E and reporting of project results. The Project Manager will inform the Project Board, the UNDP Country Office and the UNDP-GEF RTA of any delays or difficulties as they arise during implementation so that appropriate support and corrective measures can be adopted.
96. The Project Manager will develop annual work plans based on the multi-year work plan included in Annex, including annual output targets to support the efficient implementation of the project. The Project Manager will ensure that the standard UNDP and GEF M&E requirements are fulfilled to the highest quality. This includes, but is not limited to, ensuring the results framework indicators are monitored annually in time for evidence-based reporting in the GEF PIR, and that the monitoring of risks and the various plans/strategies developed to support project implementation (e.g. ESMP, gender action plan, stakeholder engagement plan etc..) occur on a regular basis.
97. **Project Board:** The Project Board will take corrective action as needed to ensure the project achieves the desired results. The Project Board will hold project reviews to assess the performance of the project and appraise the Annual Work Plan for the following year. In the project's final year, the Project Board will hold an end-of-project review to capture lessons learned and discuss opportunities for scaling up and to highlight project results and lessons learned with relevant audiences. This final review meeting will also discuss the findings outlined in the project terminal evaluation report and the management response.
98. **Project Implementing Partner:** The Implementing Partner is responsible for 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.

²⁴ See https://www.thegef.org/gef/policies_guidelines

²⁵ See https://www.thegef.org/gef/gef_agencies

99. **UNDP Country Office:** The UNDP Country Office will support the Project Manager as needed, including through annual supervision missions. The annual supervision missions will take place according to the schedule outlined in the annual work plan. Supervision mission reports will be circulated to the project team and Project Board within one month of the mission. The UNDP Country Office will initiate and organize key GEF M&E activities including the annual GEF PIR, the *independent mid-term review* and the independent terminal evaluation. The UNDP Country Office will also ensure that the standard UNDP and GEF M&E requirements are fulfilled to the highest quality.
100. The UNDP Country Office is responsible for complying with all UNDP project-level M&E requirements as outlined in the [UNDP POPP](#). This includes ensuring the UNDP Quality Assurance Assessment during implementation is undertaken annually; that annual targets at the output level are developed, and monitored and reported using UNDP corporate systems; the regular updating of the ATLAS risk log; and, the updating of the UNDP gender marker on an annual basis based on gender mainstreaming progress reported in the GEF PIR and the UNDP ROAR. Any quality concerns flagged during these M&E activities (e.g. annual GEF PIR quality assessment ratings) must be addressed by the UNDP Country Office and the Project Manager.
101. The UNDP Country Office will retain all M&E records for this project for up to seven years after project financial closure to support ex-post evaluations undertaken by the UNDP Independent Evaluation Office (IEO) and/or the GEF Independent Evaluation Office (IEO).
102. **UNDP-GEF Unit:** Additional M&E and implementation quality assurance and troubleshooting support will be provided by the UNDP-GEF Regional Technical Advisor and the UNDP-GEF Directorate as needed.
103. **Audit:** The project will be audited as per UNDP Financial Regulations and Rules and applicable audit policies on NIM implemented projects.²⁶ While the project audits will be conducted by the Royal Audit Authority in line with standard practice in Bhutan, these will be annual and must be consistent with UNDP audit requirements.

Additional GEF monitoring and reporting requirements:

104. **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.
105. The Project Manager will prepare the inception report no later than one month after the inception workshop. The inception report will be cleared by the UNDP Country Office and the UNDP-GEF Regional Technical Adviser, and will be approved by the Project Board.

²⁶ See guidance here: <https://info.undp.org/global/popp/frm/pages/financial-management-and-execution-modalities.aspx>

106. GEF Project Implementation Report (PIR): The Project Manager, the UNDP Country Office, and the UNDP-GEF Regional Technical Advisor 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.
107. 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.
108. Lessons learned and knowledge generation: Results from the project will be disseminated within and beyond the project intervention area through existing information sharing networks and forums. The project will identify and participate, as relevant and appropriate, in scientific, policy-based and/or any other networks, which may be of benefit to the project. The project will identify, analyse and share lessons learned that might be beneficial to the design and implementation of similar projects and disseminate these lessons widely. There will be continuous information exchange between this project and other projects of similar focus in the same country, region and globally.
109. GEF Focal Area Tracking Tools: The following GEF Tracking Tool(s) will be used to monitor global environmental benefits: The baseline/CEO Endorsement GEF Focal Area Tracking Tool(s) – submitted as Annex to this project document – will be updated by the Project Manager/Team (not the evaluation consultants hired to undertake the MTR or the TE) (indicate other project partner, if agreed) and shared with the mid-term review consultants and terminal evaluation consultants before the required *review/evaluation* missions take place. The updated GEF Tracking Tool(s) will be submitted to the GEF along with the completed Mid-term Review report and Terminal Evaluation report.
110. Independent Mid-term Review (MTR): An independent mid-term review process will begin after the second PIR has been submitted to the GEF, and the MTR report will be submitted to the GEF in the same year as the 2nd PIR. The MTR findings and responses outlined in the management response will be incorporated as recommendations for enhanced implementation during the final half of the project's duration. The terms of reference, the review process and the MTR report will follow the standard templates and guidance prepared by the UNDP IEO for GEF-financed projects available on the [UNDP Evaluation Resource Center \(ERC\)](#). As noted in this guidance, the evaluation will be 'independent, impartial and rigorous'. The consultants 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. 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 UNDP-GEF Directorate. The final MTR report will be available in English and will be cleared by the UNDP Country Office and the UNDP-GEF Regional Technical Adviser, and approved by the Project Board.
111. Terminal Evaluation (TE): An independent terminal evaluation (TE) will take place upon completion of all major project outputs and activities. The terminal evaluation process will begin three months before operational closure of the project allowing the evaluation mission to proceed while the project team is still in place, yet ensuring the project is close enough to completion for the evaluation team to reach conclusions on key aspects such as project sustainability. The Project Manager will remain on contract until the TE report and management response have been finalized. The terms of reference, the evaluation process and the final TE report will follow the standard templates and guidance prepared by the UNDP IEO for GEF-financed projects available on the [UNDP Evaluation Resource Center](#). As noted in this guidance, the evaluation will be 'independent, impartial and rigorous'. The consultants 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. 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 UNDP-GEF Directorate. The final TE report will be cleared by the

UNDP Country Office and the UNDP-GEF Regional Technical Adviser, and will be approved by the Project Board. The TE report will be publically available in English on the UNDP ERC.

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

113. Final Report: The project's terminal 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.

Table 13 Mandatory GEF M&E Requirements and M&E Budget:

GEF M&E requirements	Primary responsibility	Indicative costs to be charged to the Project Budget ²⁷ (US\$)		Time frame
		GEF grant	Co-financing	
Inception Workshop	UNDP Country Office	USD 3,000		Within two months of project document signature
Inception Report	Project Manager	None	None	Within two weeks of inception workshop
Standard UNDP monitoring and reporting requirements as outlined in the UNDP POPP	UNDP Country Office	None	None	Quarterly, annually
Risk management	Project Manager Country Office	None	None	Quarterly, annually
Monitoring of indicators in project results framework	Project Manager	Per year: USD 2,000		Annually before PIR
GEF Project Implementation Report (PIR)	Project Manager and UNDP Country Office and UNDP-GEF team	None	None	Annually
NIM Audit as per UNDP audit policies	UNDP Country Office	Per year: USD 500		UNDP/RGoB projects are audited by Royal Audit Authority as per NEX manual between RGoB & UNDP
Lessons learned and knowledge generation	Project Manager			Annually

²⁷ Excluding project team staff time and UNDP staff time and travel expenses.

GEF M&E requirements	Primary responsibility	Indicative costs to be charged to the Project Budget ²⁷ (US\$)		Time frame
		GEF grant	Co-financing	
Monitoring of environmental and social risks, and corresponding management plans as relevant	Project Manager MOIC	2,000		On-going
Stakeholder Engagement Plan	Project Manager MOIC			On-going
Gender Action Plan	Project Manager UNDP Country Office UNDP GEF team			On-going
Addressing environmental and social grievances	Project Manager UNDP Country Office			On-going
Project Board meetings	Project Board UNDP Country Office Project Manager MOIC	3,000		Twice per year
Supervision missions	UNDP Country Office	None ²⁸		Annually
Oversight missions	UNDP-GEF team	None ²⁹		Troubleshooting as needed
GEF Secretariat learning missions/site visits	UNDP Country Office and Project Manager and UNDP-GEF team	None		To be determined.
Mid-term GEF Tracking Tool to be updated by	Project Manager	None		Before mid-term review mission takes place.
Independent Mid-term Review (MTR) and management response	UNDP Country Office and Project team and UNDP-GEF team	USD 20,000		Between 2 nd and 3 rd PIR.
Terminal GEF Tracking Tool to be updated by	Project Manager	None		Before terminal evaluation mission takes place
Independent Terminal Evaluation (TE) included in UNDP evaluation plan, and management response	UNDP Country Office and Project team and UNDP-GEF team	USD 20,000		At least three months before operational closure
TOTAL indicative COST Excluding project team staff time, and UNDP staff and travel expenses		USD 55,500		

²⁸ The costs of UNDP Country Office and UNDP-GEF Unit's participation and time are charged to the GEF Agency Fee.

²⁹ The costs of UNDP Country Office and UNDP-GEF Unit's participation and time are charged to the GEF Agency Fee.

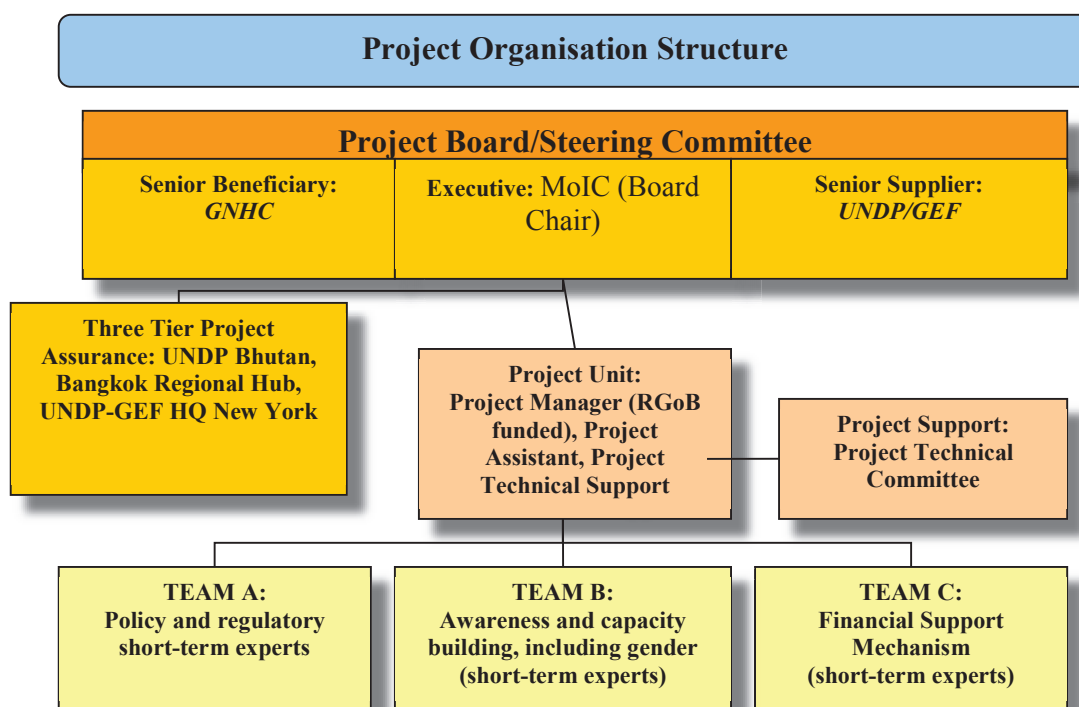
VIII. GOVERNANCE AND MANAGEMENT ARRANGEMENTS

114. Roles and responsibilities of the project's governance mechanism: The project will be implemented in accordance with the National Execution (NEX) Manual agreed between the Royal Government of Bhutan (RGoB) and UNDP. It implies that all management aspects of the project are the responsibility of the national authority. However, the national authority remains accountable to the UNDP Country Office (CO) for production of the outputs, achievement of objectives, use of resources provided by UNDP, and financial / technical progress reporting. UNDP CO in turn remains accountable for the use of resources to the UNDP Executive Board and the project donors.

115. The Implementing Partner for this project is MoIC. The Implementing Partner is responsible and accountable for managing this project, including the monitoring and evaluation of project interventions, achieving project outcomes, and for the effective use of UNDP resources. The Implementing Partner is responsible for:

- 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.

116. The project organisation structure is as follows:



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117. **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 approval 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 and effective international competition. In case a consensus cannot be reached

within the project board, final decision shall rest with UNDP Programme Manager together with the Government. The following are the proposed list of Project Board members and will be chaired by Honorable Secretary, MoIC:

- Gross National Happiness Commission
- Ministry of Finance
- Road Safety and Transport Authority
- National Environment Commission
- Thimphu Municipality
- Bhutan Power Corporation
- Ministry of Information and Communications

118. 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 countermeasures and management actions to address specific risks;
- Agree on project manager's tolerances as required;
- 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;
- Provide ad hoc direction and advice for exceptional situations when the project manager's tolerances are exceeded; and
- Assess and decide to proceed on project changes through appropriate revisions.

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

120. Executive: The Executive is an individual who represents ownership of the project who will chair the Project Board. This role can be held by a representative from the Government Cooperating Agency or UNDP. The Executive is: Secretary, MoIC. 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.

121. Specific Responsibilities: (as part of the above responsibilities for the Project Board)

- Ensure that there is a coherent project organisation structure and logical set of plans;
- Set tolerances in the AWP and other plans as required for the Project Manager;
- Monitor and control the progress of the project at a strategic level;
- Ensure that risks are being tracked and mitigated as effectively as possible;
- Brief relevant stakeholders about project progress;
- Organise and chair Project Board meetings.

122. Senior Supplier: The Senior Supplier is an individual or group representing the interests of the parties concerned which provide funding and/or technical expertise to the project (designing, developing, facilitating, procuring, implementing). The Senior Supplier's primary function within the Board is to provide guidance regarding the technical feasibility of the project. The Senior Supplier role must have the authority to commit or acquire supplier resources required. If necessary, more than one person may be required for this role. Typically, the implementing partner, UNDP and/or donor(s) would be represented under this role. The Senior Supplier is the GEF. Specific Responsibilities (as part of the above responsibilities for the Project Board)

- Make sure that progress towards the outputs remains consistent from the supplier perspective;

- Promote and maintain focus on the expected project output(s) from the point of view of supplier management;
- Ensure that the supplier resources required for the project are made available;
- Contribute supplier opinions on Project Board decisions on whether to implement recommendations on proposed changes;
- Arbitrate on, and ensure resolution of, any supplier priority or resource conflicts.

123. **Senior Beneficiary:** The Senior Beneficiary is an individual or group of individuals representing the interests of those who will ultimately benefit from the project. The Senior Beneficiary's primary function within the Board is to ensure the realization of project results from the perspective of project beneficiaries. The Senior Beneficiary role is held by a representative of the government or civil society. The Senior Beneficiary is: GNHC

The Senior Beneficiary is responsible for validating the needs and for monitoring that the solution will meet those needs within the constraints of the project. The Senior Beneficiary role monitors progress against targets and quality criteria. This role may require more than one person to cover all the beneficiary interests. For the sake of effectiveness, the role should not be split between too many people.

Specific Responsibilities (as part of the above responsibilities for the Project Board)

- Prioritize and contribute beneficiaries' opinions on Project Board decisions on whether to implement recommendations on proposed changes;
- Specification of the Beneficiary's needs is accurate, complete and unambiguous;
- Implementation of activities at all stages is monitored to ensure that they will meet the beneficiary's needs and are progressing towards that target;
- Impact of potential changes is evaluated from the beneficiary point of view;
- Risks to the beneficiaries are frequently monitored.

Project Manager: The Project Manager has the authority to run the project on a day-to-day basis on behalf of the Project Board within the constraints laid down by the Board. The Project Manager is responsible for day-to-day management and decision-making for the project. The Project Manager's prime responsibility is to ensure that the project produces the results specified in the project document, to the required standard of quality and within the specified constraints of time and cost. The Implementing Partner appoints the Project Manager, who should be different from the Implementing Partner's representative in the Project Board.

Specific responsibilities include:

- Provide direction and guidance to project team(s)/ responsible party (ies);
- Liaise with the Project Board to assure the overall direction and integrity of the project;
- Identify and obtain any support and advice required for the management, planning and control of the project;
- Responsible for project administration;
- Plan the activities of the project and monitor progress against the project results framework and the approved annual workplan;
- Mobilize personnel, goods and services, training and micro-capital grants to initiative activities, including drafting terms of reference and work specifications, and overseeing all contractors' work;
- Monitor events as determined in the project monitoring schedule plan/timetable, and update the plan as required;
- Manage requests for the provision of financial resources by UNDP, through advance of funds, direct payments or reimbursement using the fund authorization and certificate of expenditures;
- Monitor financial resources and accounting to ensure the accuracy and reliability of financial reports;
- Be responsible for preparing and submitting financial reports to UNDP on a quarterly basis;

- Manage and monitor the project 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 the annual workplan for the following year; and update the Atlas Project Management module if external access is made available.
- Prepare the GEF PIR and submit the final report to the Project Board;
- Based on the GEF PIR and the Project Board review, prepare the AWP for the following year.
- Ensure the mid-term review process is undertaken as per the UNDP guidance, and submit the final MTR report to the Project Board.
- Identify follow-on actions and submit them for consideration to the Project Board;
- Ensure the terminal evaluation process is undertaken as per the UNDP guidance, and submit the final TE report to the Project Board;

Project Assistant: The Project Assistant will support the Project Manager in implementing the approved activities.

Specific responsibilities include:

- Liaise with stakeholders and provide support from PMU
- Collect timely data and compile the progress report and submit to the Project Manager
- Work as M&E focal from PMU
- Support the PMU in conducting stakeholder consultations, procurement and other logistics

124. **Project Assurance:** UNDP provides a three – tier supervision, oversight and quality assurance role – funded by the GEF agency fee – involving UNDP staff in Country Offices and at regional and headquarters levels. Project Assurance must be totally independent of the Project Management function. The quality assurance role 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. The Project Board cannot delegate any of its quality assurance responsibilities to the Project Manager. This project oversight and quality assurance role is covered by the GEF Agency.

IX. FINANCIAL PLANNING AND MANAGEMENT

125. The total cost of the project is **USD 12,957,726**. This is financed through a GEF grant of USD 2,639,726 and USD 10,318,000 in parallel co-financing. UNDP, as the GEF Implementing Agency, is responsible for the execution of the GEF resources and any cash co-financing to be transferred to UNDP bank account only.

126. Parallel co-financing: The actual realization of project co-financing will be monitored during the mid-term review and terminal evaluation process and will be reported to the GEF. The planned parallel co-financing will be used as follows:

Co-financing source	Co-financier name	Co-financing type	Co-financing amount, US\$	Planned Activities/Outputs	Risks	Risk mitigation measures
National government	MolC	in-kind	\$318 000	Project Management (staff, office, office expenses) and support to EVSE (grid connection, land allocation, etc)	Low Risk	The budget will be met from the Annual budget of the MolC. If required supplementary budget will be proposed
National government	MolC	cash	\$10 000 000	Co-financing for charging stations, cost of O&M for charging infrastructure, as well as cost of electricity for charging EVs, financial incentives for EV Discount Program (tax and import duties exemption)	Medium Risk	The Government will continue to allocate budget to meet the cost of O&M of charging stations and allocate land for setting up charging stations

UNDP Direct Project Services as requested by Government (if any):

127. UNDP, as GEF Agency for this project, will provide project management cycle services for the project as defined by the GEF Council. In addition the Government of Bhutan may request UNDP direct services for specific projects, according to its policies and convenience. The UNDP and Government of Bhutan acknowledge and agree that those services are not mandatory, and will be provided only upon Government request. If requested, the services would follow the UNDP policies on the recovery of direct costs. These services (and their costs) are specified in the Letter of Agreement. As is determined by the GEF Council requirements, these service costs will be assigned as Project Management Cost, duly identified in the project budget as Direct Project Costs. Eligible Direct Project Costs should not be charged as a flat percentage. They should be calculated on the basis of estimated actual or transaction based costs and should be charged to the direct project costs account codes: "64397- Services to projects – CO staff" and "74596- Services to projects – GOE for CO".
128. 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. Should the following deviations occur, the Project Manager and UNDP Country Office will seek the approval of the UNDP-GEF team to ensure accurate reporting to the GEF: a) Budget re-allocations among components in the project with amounts involving 10% of the total project grant or more; b) Introduction of new budget items/or components that exceed 5% of original GEF allocation.
129. 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).

130. Refund to GEF: Should a refund of unspent funds to the GEF be necessary, this will be managed directly by the UNDP-GEF Unit in New York.
131. Project Closure: Project closure will be conducted as per UNDP requirements outlined in the UNDP POPP.³⁰ On an exceptional basis only, a no-cost extension beyond the initial duration of the project will be sought from in-country UNDP colleagues and then the UNDP-GEF Executive Coordinator.
132. 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. 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.
133. Transfer or disposal of assets: In consultation with the NIM Implementing Partner and other parties of the project, UNDP programme manager (UNDP Resident Representative) 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 file³¹.
134. Financial completion: 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).
135. The project will be financially completed within 12 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 UNDP-GEF Unit for confirmation before the project will be financially closed in Atlas by the UNDP Country Office.

³⁰ see <https://info.undp.org/global/popp/ppm/Pages/Closing-a-Project.aspx>

³¹ See https://popp.undp.org/_layouts/15/WopiFrame.aspx?sourcedoc=/UNDP_POPP_DOCUMENT_LIBRARY/Public/PPM_Project%20Management_Closing.docx&action=default.

necessary financial support/incentive mechanisms are in place to increase investment in low emission transport systems and support services				71300	Local Consultants	\$12,000	\$10,000	\$8,000	\$30,000	12
				71600	Travel	\$20,000	\$3,000	\$3,025	\$26,025	13
				72100	Contractual Services-Companies	\$20,000	\$550,000	\$1,100,000	\$1,670,000	14
				72200	Equipment & Furniture	\$480,000	\$0	\$0	\$480,000	15
				75700	Training Workshop and Conference	\$3,500	\$3,500	\$1,000	\$8,000	16
TOTAL ACTIVITY 3						\$535,500	\$586,500	\$1,192,025	\$2,314,025	
Project Management	UNDP/MoIC	62000	GEF	71400	Contractual Services Individual	\$24,000	\$24,000	\$24,000	\$72,000	17
				71600	Travel	\$4,900	\$5,900	\$5,401	\$16,201	18
				72500	Office supplies	\$2,500	\$1,500	\$2,000	\$6,000	19
				74100	Professional Services	\$500	\$500	\$500	\$1,500	20
				74596	Services to Projects	\$10,000	\$10,000	\$10,000	\$30,000	21
TOTAL ACTIVITY 4						\$41,900	\$41,900	\$41,901	\$125,701	
PROJECT TOTAL						\$668,400	\$709,400	\$1,261,926	\$2,639,726	

Summary of Funds: ³²

	Amount Year 1	Amount Year 2	Amount Year 3	Total
GEF	\$668,400	\$709,400	\$1,261,926	\$2,639,726
Government	\$4,100,000	\$3,100,000	\$3,118,000	\$10,318,000
TOTAL	\$4,768,400	\$3,809,400	\$4,379, 926	\$12,957,726

³² Summary table should include all financing of all kinds: GEF financing, cofinancing, cash, in-kind, etc...

Budget note #	Comments
1	International consultants for EV roadmap (Activity 1.2.2)
2	Local consultants for Activities 1.1.1, 1.1.3, 1.3.1, 1.3.2, 1.4.1
3	For local and international consultants in support of activities 1.1.1-1.1.3, 1.2.1-1.2.2, 1.3.1-1.3.3
4	Preparation and Implementation of e-waste disposal feasibility study and pilot (Activity 1.3.2)
5	Activity 1.4.1: training for public authorities
6	Local consultants to develop EV training guide (Activity 2.2.1) + Support to Coordination mechanism (Activity 2.3.1)
7	Travel related to outcome 2
8	EV Users Survey (before and after) and PR campaign implementation
9	Activity 2.2.2: training programme on EV O&M for drivers
10	PR materials
11	Cost of MTR and TE (55,000\$); International expertise for 3.2.2 (design of scaling-up programme)
12	Local consultants for Activities: 3.1.1, 3.1.2, 3.2.1, 3.3.1, 3.3.2
13	Travel related to Activity 3.3.1 and for MTR/TE
14	Activities 3.1.1 - 3.1.3: EV discount programme design and implementation and Activities 3.3.1-3.3.2: Specifications and Contract design for charging stations operations
15	Procurement and installation of charging stations
16	Stakeholder consultations in support of Activities 3.1.1 (EV Discount Program Design) and 3.2.2 (scaling-up strategy)
17	Cost of Project Assistant (MoIC) and Project Technical Support (UNDP)
18	M&E related travel
19	Office supplies and IT costs
20	NIM Audit
21	UNDP Support Services provided to the project are considered Direct Project Costs (DPC) (please refer to Annex J for details)

XI. LEGAL CONTEXT

136. This project document shall be the instrument referred to as such in Article 1 of the Standard Basic Assistance Agreement between the Government of (country) and UNDP, signed on 14th July 1978. All references in the SBAA to “Executing Agency” shall be deemed to refer to “Implementing Partner.”
137. This project will be implemented by the Ministry of Information and Communication (“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 apply³³.
138. Any designations on maps or other references employed in this project document do not imply the expression of any opinion whatsoever on the part of UNDP concerning the legal status of any country, territory, city or area or its authorities, or concerning the delimitation of its frontiers or boundaries.

XII. RISK MANAGEMENT

139. Consistent with the Article III of the SBAA, the responsibility for the safety and security of the Implementing Partner and its personnel and property, and of UNDP’s property in the Implementing Partner’s custody, rests with the Implementing Partner. To this end, the Implementing Partner shall:
- a) 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;
 - b) assume all risks and liabilities related to the Implementing Partner’s security, and the full implementation of the security plan.
140. 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 Implementing Partner’s obligations under this Project Document.
141. The Implementing Partner agrees to undertake all reasonable efforts to ensure that no UNDP funds received pursuant to the Project Document 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 http://www.un.org/sc/committees/1267/aq_sanctions_list.shtml.
142. 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>).

³³ In line with UNDP National Implementation (NIM) Guidelines, the Government is responsible for the management and procurement of the Project to achieve project outputs. Government regulations, rules and procedures therefore apply to project implementation to the extent that they do not contravene the principles of the Financial Regulations and Rules of UNDP. UNDP Financial Regulations section 16.05 state:

- “The administration by executing entities or, under the harmonized operational modalities, implementing partners, of resources obtained from or through UNDP shall be carried out under their respective 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 executing entity or, under the harmonized operational modalities, implementing partner, does not provide the required guidance to ensure best value for money, fairness, integrity, transparency, and effective international competition that of UNDP shall apply

143. The Implementing Partner shall: (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.
144. 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.
145. The Implementing Partner will take appropriate steps to prevent misuse of funds, fraud or corruption, by its officials, consultants, responsible parties, subcontractors and sub-recipients in implementing the project or using UNDP funds. The Implementing Partner 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.
146. The requirements of the following documents, then in force at the time of signature of the Project Document, apply to the Implementing Partner: (a) UNDP Policy on Fraud and other Corrupt Practices and (b) UNDP Office of Audit and Investigations Investigation Guidelines. The Implementing Partner 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.
147. In the event that an investigation is required, UNDP has the obligation to conduct investigations relating to any aspect of UNDP projects and programmes. The Implementing Partner shall provide its full cooperation, including making available personnel, relevant documentation, and granting access to the Implementing Partner's (and its consultants', responsible parties', 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 the Implementing Partner to find a solution.
148. The signatories to this Project Document will promptly inform one another in case of any incidence of inappropriate use of funds, or credible allegation of fraud or corruption with due confidentiality.
149. Where the Implementing Partner becomes aware that a UNDP project or activity, in whole or in part, is the focus of investigation for alleged fraud/corruption, the Implementing Partner will inform the UNDP Resident Representative/Head of Office, who will promptly inform UNDP's Office of Audit and Investigations (OAI). The Implementing Partner shall provide regular updates to the head of UNDP in the country and OAI of the status of, and actions relating to, such investigation.
150. UNDP shall be entitled to a refund from the Implementing Partner 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 the Project Document. Such amount may be deducted by UNDP from any payment due to the Implementing Partner under this or any other agreement.
151. Where such funds have not been refunded to UNDP, the Implementing Partner 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 the Implementing Partner 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.

152. Each contract issued by the Implementing Partner 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 the Implementing Partner shall cooperate with any and all investigations and post-payment audits.
153. Should UNDP refer to the relevant national authorities for appropriate legal action any alleged wrongdoing relating to the project, 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.
154. The Implementing Partner shall ensure that all of its obligations set forth under this section entitled “Risk Management” are passed on to each responsible party, subcontractor and sub-recipient and that all the clauses under this section entitled “Risk Management Standard Clauses” are included, *mutatis mutandis*, in all sub-contracts or sub-agreements entered into further to this Project Document.

XIII. MANDATORY ANNEXES

- A. Multi year Workplan
- B. GEF Tracking Tool (s) at baseline
- C. Overview of technical consultancies/subcontracts (tba)
- D. Terms of Reference for Project Board and Project Manager
- E. UNDP Social and Environmental and Social Screening Template (SESP) and Environmental and Social Management Plan (ESMP) for moderate and high risk projects
- F. Stakeholder Engagement Plan
- G. Gender Analysis and Action Plan
- H. UNDP Risk Log (to be completed by UNDP Country Office)
- I. Results of the capacity assessment of the project implementing partner and HACT micro assessment (to be completed by UNDP Country Office)
- J. LOA with the government regarding DPCs
- K. UNDP Project Quality Assurance Report (to be completed in UNDP online corporate planning system by UNDP Country Office, does not need to be attached as separate document)

Technical Annexes:

Technical Annex A: Financial analysis

Technical Annex B: Feasibility report

Annex A: Multi Year Work Plan

WORK PLAN	Budget	YEAR 1												YEAR 2												YEAR 3																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
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Output	Indicator	Responsible Party	Year 1				Year 2				Year 3			
			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Output 1.1. Regulations developed and promoted to enable operations of EVs and EVSE	Number of additional EV enabling regulations enabled	MOIC	X	X	X	X								
Output 1.2. Mid-term and long term target for National EV and EVSE developed	Status of national EV target and road-map	MOIC	X	X	X	X	X	X	X	X				
Output 1.3. Policy guidelines and regulations developed to address e-waste disposal and management	Status of regulations	MOIC	X	X	X	X	X	X	X	X				
Output 1.4 Technical capacity of the relevant agencies and public bodies are enhanced on various aspects of EVs and EVSE	Number of people trained	MOIC	X	X	X	X	X	X	X	X	X	X	X	X
Output 2.1 Awareness campaign supported	Number of people reached out by the	MOIC	X	X	X	X	X	X	X	X	X	X		

Annex B: Overview of Technical Consultancies

Consultant	Time Input	Tasks, Inputs and Outputs
For Project Management / Monitoring & Evaluation		
Local / National contracting		
Project Assistant (based in MOIC)	156 weeks / over 3 years	The Project Assistant (PA) will assist the Project Manager in day-to-day management and oversight of project activities, as well as in matters related to M&E and knowledge resources management. See the full TOR in Annex D for details.
Project Coordinator	156 weeks / over 3 years	The Project Coordinator (PC) will perform a liaison role with the government, UNDP and other UN agencies, CSOs and project partners, and maintain close collaboration with other donor agencies providing co-financing. See the full TOR in Annex D for details.
For Technical Assistance		
National contracting		
EV Policy and regulations	7 weeks/over 1 year	Conduct policy and regulatory gap analysis and develop proposal for comprehensive EV promotion roadmap, including required new regulations and amendments to existing ones
EV waste expert	7 weeks/over 2 years	Conduct feasibility study for save EV waste disposal and support its pilot implementation
Development of EV user information guide	3 weeks/over 1 year	Develop EV user information guide and training package
National specifications for EV and EVSE	4 weeks over 1 year	Prepare technical specifications for selection of qualified EV and EVSE suppliers and support tender process
International / Regional and global contracting		

Consultant	Time Input	Tasks, Inputs and Outputs
<i>Design of EV Discount Program</i>	<i>2 weeks over 1 year</i>	<i>Finalize the design of the financial support mechanism for EV promotion</i>
<i>Independent evaluators (mid-term and terminal)</i>	<i>3 weeks/over 3 year</i>	<i>Conduct independent mid-term and final evaluation of the EV Discount Program and UNDP-GEF project</i>
<i>Scaling-up plan and replication strategy for EV promotion</i>	<i>2 weeks/ over 1 year</i>	<i>Develop scaling-up proposal for EV promotion in Bhutan after GEF project completion</i>

Annex C: Terms of Reference

Terms of Reference for the Project Board

The Project Board (PB) will serve as the project's decision-making body. It will meet according to necessity, at least twice each year, to review project progress, approve project work plans and approve major project deliverables. The PB is responsible for providing the strategic guidance and oversight to project implementation to ensure that it meets the requirements of the approved Project Document and achieves the stated outcomes. The PB's role will include:

- *Provide strategic guidance to project implementation;*
- *Ensure coordination between various donor funded and government funded projects and programmes;*
- *Ensure coordination with various government agencies and their participation in project activities;*
- *Approve annual project work plans and budgets, at the proposal of the Project Manager;*
- *Approve any major changes in project plans or programmes;*
- *Oversee monitoring, evaluation and reporting in line with GEF requirements;*
- *Ensure commitment of human resources to support project implementation, arbitrating any issues within the project;*
- *Negotiate solutions between the project and any parties beyond the scope of the project;*
- *Ensure that UNDP Social and Environmental Safeguards Policy is applied throughout project implementation; and, address related grievances as necessary.*

These terms of reference will be finalized during the Project Inception Workshop.

- *Share information on project progress and lessons learned with related stakeholders at the national level;*
- *Other tasks as indicated by the Project Board*

Terms of Reference for Key Project Staff

Project Manager

Background

The Project Manager (PM), will be assigned by MOIC. The position will be appointed by the project implementing agencies and funded entirely by the Government. The PM will be responsible for the overall management of the Project, including the mobilisation of all project inputs, supervision over project staff, consultants and sub-contractors. From the strategic point of view of the Project, the PM will report on a periodic

Duties and Responsibilities

- *Plan the activities of the project and monitor progress against the approved work-plan.*
- *Supervise and coordinate the production of project outputs, as per the project document in a timely and high quality fashion.*
- *Coordinate all project inputs and ensure that they adhere to UNDP procedures for nationally executed projects.*

- *Supervise and coordinate the work of all project staff, consultants and sub-contractors ensuring timing and quality of outputs.*
- *Coordinate the recruitment and selection of project personnel, consultants and sub-contracts, including drafting terms of reference and work specifications and overseeing all contractors' work.*
- *Manage requests for the provision of financial resources by UNDP, through advance of funds, direct payments, or reimbursement using the UNDP provided format.*
- *Prepare, revise and submit project work and financial plans, as required by Project Board and UNDP.*
- *Monitor financial resources and accounting to ensure accuracy and reliability of financial reports, submitted on a quarterly basis.*
- *Manage and monitor the project 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.*
- *Report progress of project to the steering committees, and ensure the fulfilment of PSC directives.*
- *Oversee the exchange and sharing of experiences and lessons learned with relevant community based integrated conservation and development projects nationally and internationally.*
- *Assist community groups, municipalities, CSOs, staff, students and others with development of essential skills through training workshops and on the job training thereby increasing their institutional capabilities.*
- *Encourage staff, partners and consultants such that strategic, intentional and demonstrable efforts are made to actively include women in the project, including activity design and planning, budgeting, staff and consultant hiring, subcontracting, purchasing, formal community governance and advocacy, outreach to social organizations, training, participation in meetings; and access to program benefits.*
- *Assists and advises the Project Implementation Units responsible for activity implementation in the target sites.*
- *Carry regular, announced and unannounced inspections of all sites and the activities of the Project Implementation Units.*

Required skills and expertise

- *A university degree (MSc or PhD) in a subject related to natural resource management or environmental sciences.*
- *At least 5 years of experience in transport management.*
- *At least 5 years of experience working with ministries, national or provincial institutions that are concerned with transport management.*

Project Coordinator

The Project Coordinator (PC) will be locally recruited following UNDP procedure. The PC will report to the PM in close consultation with the assigned UNDP Programme Manager for all of the Project's substantive and administrative issues. The PC will perform a liaison role with the government, UNDP and other UN agencies, CSOs and project partners, and maintain close collaboration with other donor agencies providing co-financing.

Duties and Responsibilities

- *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;*
- *Coordinate the implementation of the stakeholder engagement plan;*
- *Oversee and guide the design of surveys/ assessments commissioned for monitoring and evaluating project results;*
- *Facilitate mid-term and terminal evaluations of the project; including management responses;*
- *Facilitate annual reviews of the project and produce analytical reports from these annual reviews, including learning and other knowledge management products;*
- *Liaise with UNDP, Project Board, relevant government agencies, and all project partners, including donor organisations and CSOs for effective coordination of all project activities.*
- *Facilitate administrative support to subcontractors and training activities supported by the Project.*
- *Oversee and ensure timely submission of the Inception Report, Project Implementation Report, Technical reports, quarterly financial reports, and other reports as may be required by UNDP, GEF and other oversight agencies.*
- *Disseminate project reports and respond to queries from concerned stakeholders.*

Project Assistant

Under the guidance and supervision of the Project Manager, the Project Assistant will carry out the following tasks:

- *Assist the Project Manager in day-to-day management and oversight of project activities, as well as in matters related to M&E and knowledge resources management;*
- *Assist in the preparation of progress reports;*
- *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, UNDP, project consultants and other PMU staff;*
- *Provide PMU-related administrative and logistical assistance.*

The Project Assistant will be recruited based on the following qualifications:

- *A Bachelors degree or an equivalent qualification;*
- *At least three years of work experience preferably in a project involving biodiversity conservation, natural resource management and/or sustainable livelihoods. Previous experience with UN project will be a definite asset;*
- *Very good inter-personal skills;*
- *Proficiency in the use of computer software applications especially MS Word and MS Excel.*
- *Excellent language skills in English (writing, speaking and reading) and in local languages*

Annex D: UNDP Social and Environmental Screening Procedure and plans as needed

Project Information

Project Information	
1. Project Title	Low-emission Urban Transport Systems in Bhutan
2. Project Number	PIMS 5563
3. Location (Global/Region/Country)	Bhutan

Part A. Integrating Overarching Principles to Strengthen Social and Environmental Sustainability

QUESTION 1: How Does the Project Integrate the Overarching Principles in order to Strengthen Social and Environmental Sustainability?

Briefly describe in the space below how the Project mainstreams the human-rights based approach

By ensuring access to clean, reliable and affordable transportation, the Project will contribute to upholding basic human rights of people of Bhutan through the delivery of interrelated impacts such as enhanced living standards through better livelihood opportunities, enhanced human health, improved education and reduced environment degradation through reduced level of GHG emissions. In addition, the project will have positive impact with no vehicular tailpipe emissions like Nitrogen oxides (NOx), Hydrocarbons (HC), Sulphur dioxide (SO2), Particulate matter (PM10), Ozone (O3). Hence, avoid environmental degradation associated with vehicular air pollution that potentially leads to smog, haze and other health problems and improves quality of life. Further the project aims to partner with private sector for supply of EVs which will result in growth of private enterprises and thus creation of more employment.

The project at large will contribute to the achievement of Bhutan's development philosophy of Gross National Happiness, in particular, pillar of environmental conservation and sustainability. Bhutan's has prioritized three SDG for the 12Five Year Plan (2018-2022) and this project will directly impact the two SDG – Goal 1 No Poverty and Goal 13. Climate Action.

Briefly describe in the space below how the Project is likely to improve gender equality and women's empowerment

The project is geared towards improved provision of accessible, reliable affordable and low emission transport system to all. The Project will create enhanced livelihood opportunities, better access to health, safer transportation system, especially, women passengers and train women taxi drivers. Some of the interventions such as the development of Intelligent transport system in turn will provide additional livelihood opportunities to women due to safe travel environment and enhance their income. A survey will be conducted during the inception period which will include parameters on women's specific needs as drivers and users of EVs. As per the gender analysis conducted during PPG phase (Annex G), the recommendations are:

- Ensure equal access of Female Taxi Drivers to EV Discount Program
- Ensure all female taxi drivers benefit and participate in the capacity building program offered by the project on EV maintenance and operations
- Development of Intelligent Transport System to improve comfort and safety of female taxi end-users
- Enhance Facilities of Taxi Stands
- Raise awareness and building capacity of relevant authorities on the important of gender mainstreaming in transport policies

Briefly describe in the space below how the Project mainstreams environmental sustainability

The proposed project is within the context of sustainable development in Bhutan, particularly contributing towards the country's commitment to remain carbon neutral. The project will result in direct GHG emissions reduction of 43,000 tCO₂ from the transition to 300 taxi EVs to be supported via Discount Program and additional; additionally, there will be consequential GHG emission reductions in the range of 93,000 tCO₂ to 410,000 tCO₂ over the period of 10 years after the end of the original project as a result of continued market transformation to be enabled by the project. It will also promote diversification of the resource base of the economy and improve the country's foreign exchange reserves due to reduced demand on imported fossil fuel. Environmental sustainability will be assured through the synergistic aspect of the integrated way the key stakeholders will be working together, and the higher chances of scaling-up/replication of whatever low carbon techniques/practices will be introduced, demonstrated, and promoted under the project.

Part B. Identifying and Managing Social and Environmental Risks

QUESTION 2: What are the Potential Social and Environmental Risks? <i>Note: Describe briefly potential social and environmental risks identified in Attachment 1 – Risk Screening Checklist (based on any “Yes” responses). If no risks have been identified in Attachment 1 then note “No Risks Identified” and skip to Question 4 and Select “Low Risk”. Questions 5 and 6 not required for Low Risk Projects.</i>	QUESTION 3: What is the level of significance of the potential social and environmental risks? <i>Note: Respond to Questions 4 and 5 below before proceeding to Question 6</i>	QUESTION 6: What social and environmental assessment and management measures have been conducted and/or are required to address potential risks (for Risks with Moderate and High Significance)?		
Risk Description	Impact and Probability (1-5)	Significance (Low, Moderate, High)	Comments	Description of assessment and management measures as reflected in the Project design. If ESIA or SESA is required note that the assessment should consider all potential impacts and risks.
Risk 1: The improper management and disposal of EV batteries could harm community health, through exposure to toxic and other chemicals (e.g. cadmium). (Standard 3.2 The Project poses potential risks to community health and safety due to the transport, storage, and use and/or disposal of hazardous or dangerous materials (e.g. explosives, fuel and other chemicals during construction and operation)) Standard 7.2 The proposed Project potentially may result in the generation of waste (both hazardous and non-hazardous)	P= 3 I=3	Moderate	The battery of an EV typically contains either Lithium ion or nickel-metal hydride and even traces of toxic material such as cadmium which warrants proper disposal. Awareness, education and advocacy on community health and risks of such potential toxic materials will be undertaken during project implementation. Batteries with aqueous electrolyte emit hydrogen	The PPG phase carried out environmental assessments highlighting potential gaps in policy guidelines/regulation for the disposal or recycling of batteries to ensure health hazards from EV batteries and risks during its operations. Measures: The project will develop a pilot programme for collection, safe disposal/waste management and recycling of the batteries. (Activity 1.3.3) Stakeholder plan has been developed and training proposed to minimize or avoid any community health risks and safety issues stemming from batteries related issues. Stakeholder engagement plan and capacity building programme would be developed for sustainable management of the EVs.

Standard 3.7 Does the Project pose potential risks and vulnerabilities related to occupational health and safety due to physical, chemical, biological, and radiological hazards during Project construction, operation, or decommissioning?				due to electrolysis this occurs at the end of charging and should therefore be taken under certain measures to avoid the risk of explosion. While charging the battery, electric vehicle is connected to the main electric distribution network and should take all precautions to avoid risk of electric shock.	
Risk 2. Inappropriate location of charging stations without due environmental consideration could lead to adverse impacts to habitats. Standard 1.1 Would the Project potentially cause adverse impacts to habitats (e.g. modified, natural, and critical habitats) and/or ecosystems and ecosystem services?	P=3 I=3	Moderate		The selection of the location of the charging station has to be done to avoid flood/ water logging prone areas and ecologically sensitive areas.	A Targeted Environmental Assessment is required and has been included as part of the project design. The project would conduct specific "Environmental and social impact assessment" of the proposed charging network expansion. (Activity 3.3.1) and an environmental social management plan will be implemented.
Risk 3: Limited women drivers and lack of equitable opportunities for women in transport sector could mean that the project reproduces those discriminations. Principle 2: 2. Would the Project potentially reproduce discriminations against women based on gender, especially regarding participation in design and implementation or access to opportunities and benefits?	P=3 I=3	Moderate		Specific and systematic efforts are required to engage women in transport sector as traditionally, the sector is dominated by men.	Gender analysis carried out during project development identifies several gaps. The project has gender action plan to address different aspects of gender including enhanced opportunities for women drivers/owners, which will be implemented by the project team.

QUESTION 4: What is the overall Project risk categorization?			
Select one (see SESP for guidance)			Comments
	<i>Low Risk</i>	<input type="checkbox"/>	
	<i>Moderate Risk</i>	<input checked="" type="checkbox"/>	Two risks are rated moderate and hence the overall project categorisation is considered as moderate.
	<i>High Risk</i>	<input type="checkbox"/>	
QUESTION 5: Based on the identified risks and risk categorization, what requirements of the SES are relevant?			
Check all that apply			
	<i>Principle 1: Human Rights</i>	<input type="checkbox"/>	
	<i>Principle 2: Gender Equality and Women's Empowerment</i>	<input checked="" type="checkbox"/>	The risk will be being addressed through a gender action plan implementation.
	<i>1. Biodiversity Conservation and Natural Resource Management</i>	<input checked="" type="checkbox"/>	The risk will be addressed through targeted assessments and environmental and social management plan
	<i>2. Climate Change Mitigation and Adaptation</i>	<input type="checkbox"/>	
	<i>3. Community Health, Safety and Working Conditions</i>	<input checked="" type="checkbox"/>	The risk will be addressed through stakeholder action plan and capacity building and closely monitored during implementation
	<i>4. Cultural Heritage</i>	<input type="checkbox"/>	
	<i>5. Displacement and Resettlement</i>	<input type="checkbox"/>	
	<i>6. Indigenous Peoples</i>	<input type="checkbox"/>	
	<i>7. Pollution Prevention and Resource Efficiency</i>	<input checked="" type="checkbox"/>	The risk will be addressed through introducing safe and proper battery disposal, awareness and close monitoring during project implementation.

Final Sign Off

Signature	Date	Description
QA Assessor		UNDP staff member responsible for the Project, typically a UNDP Programme Officer. Final signature confirms they have "checked" to ensure that the SESP is adequately conducted.
QA Approver		UNDP senior manager, typically the UNDP Deputy Country Director (DCD), Country Director (CD), Deputy Resident Representative (DRR), or Resident Representative (RR). The QA Approver cannot also be the QA Assessor. Final signature confirms they have "cleared" the SESP prior to submittal to the PAC.
PAC Chair		UNDP chair of the PAC. In some cases, PAC Chair, may also be the QA Approver. Final signature confirms that the SESP was considered as part of the project appraisal and considered in recommendations of the PAC.

SESP Attachment 1. Social and Environmental Risk Screening Checklist

Checklist Potential Social and Environmental Risks	
Principles 1: Human Rights	Answer (Yes/No)
1. Could the Project lead to adverse impacts on enjoyment of the human rights (civil, political, economic, social or cultural) of the affected population and particularly of marginalized groups?	No
2. Is there a likelihood that the Project would have inequitable or discriminatory adverse impacts on affected populations, particularly people living in poverty or marginalized or excluded individuals or groups? ³⁴	No
3. Could the Project potentially restrict availability, quality of and access to resources or basic services, in particular to marginalized individuals or groups?	No
4. Is there a likelihood that the Project would exclude any potentially affected stakeholders, in particular marginalized groups, from fully participating in decisions that may affect them?	No
5. Is there a risk that duty-bearers do not have the capacity to meet their obligations in the Project?	No
6. Is there a risk that rights-holders do not have the capacity to claim their rights?	No
7. Have local communities or individuals, given the opportunity, raised human rights concerns regarding the Project during the stakeholder engagement process?	No
8. Is there a risk that the Project would exacerbate conflicts among and/or the risk of violence to project-affected communities and individuals?	No
Principle 2: Gender Equality and Women's Empowerment	
1. Is there a likelihood that the proposed Project would have adverse impacts on gender equality and/or the situation of women and girls?	No
2. Would the Project potentially reproduce discriminations against women based on gender, especially regarding participation in design and implementation or access to opportunities and benefits?	Yes
3. Have women's groups/leaders raised gender equality concerns regarding the Project during the stakeholder engagement process and has this been included in the overall Project proposal and in the risk assessment?	No
4. Would the Project potentially limit women's ability to use, develop and protect natural resources, taking into account different roles and positions of women and men in accessing environmental goods and services? <i>For example, activities that could lead to natural resources degradation or depletion in communities who depend on these resources for their livelihoods and well being</i>	No
Principle 3: Environmental Sustainability: Screening questions regarding environmental risks are encompassed by the specific Standard-related questions below	
Standard 1: Biodiversity Conservation and Sustainable Natural Resource Management	
1.1 Would the Project potentially cause adverse impacts to habitats (e.g. modified, natural, and critical habitats) and/or ecosystems and ecosystem services? <i>For example, through habitat loss, conversion or degradation, fragmentation, hydrological changes</i>	Yes
1.2 Are any Project activities proposed within or adjacent to critical habitats and/or environmentally sensitive areas, including legally protected areas (e.g. nature reserve, national park), areas proposed for protection, or recognized as such by authoritative sources and/or indigenous peoples or local communities?	No
1.3 Does the Project involve changes to the use of lands and resources that may have adverse impacts on habitats, ecosystems, and/or livelihoods? (Note: if restrictions and/or limitations of access to lands would apply, refer to Standard 5)	No
1.4 Would Project activities pose risks to endangered species?	No
1.5 Would the Project pose a risk of introducing invasive alien species?	No
1.6 Does the Project involve harvesting of natural forests, plantation development, or reforestation?	No
1.7 Does the Project involve the production and/or harvesting of fish populations or other aquatic species?	No
1.8 Does the Project involve significant extraction, diversion or containment of surface or ground water? <i>For example, construction of dams, reservoirs, river basin developments, groundwater extraction</i>	No
1.9 Does the Project involve utilization of genetic resources? (e.g. collection and/or harvesting, commercial development)	No
1.10 Would the Project generate potential adverse trans-boundary or global environmental concerns?	No

³⁴ Prohibited grounds of discrimination include race, ethnicity, gender, age, language, disability, sexual orientation, religion, political or other opinion, national or social or geographical origin, property, birth or other status including as an indigenous person or as a member of a minority. References to "women and men" or similar is understood to include women and men, boys and girls, and other groups discriminated against based on their gender identities, such as transgender people and transsexuals.

1.11	Would the Project result in secondary or consequential development activities which could lead to adverse social and environmental effects, or would it generate cumulative impacts with other known existing or planned activities in the area? <i>For example, a new road through forested lands will generate direct environmental and social impacts (e.g. felling of trees, earthworks, potential relocation of inhabitants). The new road may also facilitate encroachment on lands by illegal settlers or generate unplanned commercial development along the route, potentially in sensitive areas. These are indirect, secondary, or induced impacts that need to be considered. Also, if similar developments in the same forested area are planned, then cumulative impacts of multiple activities (even if not part of the same Project) need to be considered.</i>	No
Standard 2: Climate Change Mitigation and Adaptation		
2.1	Will the proposed Project result in significant ³⁵ greenhouse gas emissions or may exacerbate climate change?	No
2.2	Would the potential outcomes of the Project be sensitive or vulnerable to potential impacts of climate change?	No
2.3	Is the proposed Project likely to directly or indirectly increase social and environmental vulnerability to climate change now or in the future (also known as maladaptive practices)? <i>For example, changes to land use planning may encourage further development of floodplains, potentially increasing the population's vulnerability to climate change, specifically flooding</i>	No
Standard 3: Community Health, Safety and Working Conditions		
3.1	Would elements of Project construction, operation, or decommissioning pose potential safety risks to local communities?	No
3.2	Would the Project pose potential risks to community health and safety due to the transport, storage, and use and/or disposal of hazardous or dangerous materials (e.g. explosives, fuel and other chemicals during construction and operation)?	Yes
3.3	Does the Project involve large-scale infrastructure development (e.g. dams, roads, buildings)?	No
3.4	Would failure of structural elements of the Project pose risks to communities? (e.g. collapse of buildings or infrastructure)	No
3.5	Would the proposed Project be susceptible to or lead to increased vulnerability to earthquakes, subsidence, landslides, and erosion, flooding or extreme climatic conditions?	No
3.6	Would the Project result in potential increased health risks (e.g. from water-borne or other vector-borne diseases or communicable infections such as HIV/AIDS)?	No
3.7	Does the Project pose potential risks and vulnerabilities related to occupational health and safety due to physical, chemical, biological, and radiological hazards during Project construction, operation, or decommissioning?	Yes
3.8	Does the Project involve support for employment or livelihoods that may fail to comply with national and international labor standards (i.e. principles and standards of ILO fundamental conventions)?	No
3.9	Does the Project engage security personnel that may pose a potential risk to health and safety of communities and/or individuals (e.g. due to a lack of adequate training or accountability)?	No
Standard 4: Cultural Heritage		
4.1	Will the proposed Project result in interventions that would potentially adversely impact sites, structures, or objects with historical, cultural, artistic, traditional or religious values or intangible forms of culture (e.g. knowledge, innovations, practices)? (Note: Projects intended to protect and conserve Cultural Heritage may also have inadvertent adverse impacts)	No
4.2	Does the Project propose utilizing tangible and/or intangible forms of cultural heritage for commercial or other purposes?	No
Standard 5: Displacement and Resettlement		
5.1	Would the Project potentially involve temporary or permanent and full or partial physical displacement?	No
5.2	Would the Project possibly result in economic displacement (e.g. loss of assets or access to resources due to land acquisition or access restrictions – even in the absence of physical relocation)?	No
5.3	Is there a risk that the Project would lead to forced evictions? ³⁶	No
5.4	Would the proposed Project possibly affect land tenure arrangements and/or community based property rights/customary rights to land, territories and/or resources?	No
Standard 6: Indigenous Peoples		
6.1	Are indigenous peoples present in the Project area (including Project area of influence)?	No

³⁵ In regards to CO₂, 'significant emissions' corresponds generally to more than 25,000 tons per year (from both direct and indirect sources). [The Guidance Note on Climate Change Mitigation and Adaptation provides additional information on GHG emissions.]

³⁶ Forced evictions include acts and/or omissions involving the coerced or involuntary displacement of individuals, groups, or communities from homes and/or lands and common property resources that were occupied or depended upon, thus eliminating the ability of an individual, group, or community to reside or work in a particular dwelling, residence, or location without the provision of, and access to, appropriate forms of legal or other protections.

6.2	Is it likely that the Project or portions of the Project will be located on lands and territories claimed by indigenous peoples?	No
6.3	Would the proposed Project potentially affect the human rights, lands, natural resources, territories, and traditional livelihoods of indigenous peoples (regardless of whether indigenous peoples possess the legal titles to such areas, whether the Project is located within or outside of the lands and territories inhabited by the affected peoples, or whether the indigenous peoples are recognized as indigenous peoples by the country in question)? <i>If the answer to the screening question 6.3 is "yes" the potential risk impacts are considered potentially severe and/or critical and the Project would be categorized as either Moderate or High Risk.</i>	No
6.4	Has there been an absence of culturally appropriate consultations carried out with the objective of achieving FPIC on matters that may affect the rights and interests, lands, resources, territories and traditional livelihoods of the indigenous peoples concerned?	No
6.5	Does the proposed Project involve the utilization and/or commercial development of natural resources on lands and territories claimed by indigenous peoples?	No
6.6	Is there a potential for forced eviction or the whole or partial physical or economic displacement of indigenous peoples, including through access restrictions to lands, territories, and resources?	No
6.7	Would the Project adversely affect the development priorities of indigenous peoples as defined by them?	No
6.8	Would the Project potentially affect the physical and cultural survival of indigenous peoples?	No
6.9	Would the Project potentially affect the Cultural Heritage of indigenous peoples, including through the commercialization or use of their traditional knowledge and practices?	No
Standard 7: Pollution Prevention and Resource Efficiency		
7.1	Would the Project potentially result in the release of pollutants to the environment due to routine or non-routine circumstances with the potential for adverse local, regional, and/or trans-boundary impacts?	No
7.2	Would the proposed Project potentially result in the generation of waste (both hazardous and non-hazardous)?	Yes
7.3	Will the proposed Project potentially involve the manufacture, trade, release, and/or use of hazardous chemicals and/or materials? Does the Project propose use of chemicals or materials subject to international bans or phase-outs? <i>For example, DDT, PCBs and other chemicals listed in international conventions such as the Stockholm Conventions on Persistent Organic Pollutants or the Montreal Protocol</i>	No
7.4	Will the proposed Project involve the application of pesticides that may have a negative effect on the environment or human health?	No
7.5	Does the Project include activities that require significant consumption of raw materials, energy, and/or water?	No

Annex E: Stakeholder Engagement Plan

During the project preparation (PIF and PPG stage), several stakeholder consultations were held with an objective of project design and activities to be as inclusive as possible and in line with the existing Acts, Rules and Regulations and the Royal Government of Bhutan's priorities and Five-Year Plans.

The following summarizes the stakeholder engagement activities to date:

- A stakeholder workshop cum PPG kick off meeting was held in Thimphu on 21st and 22nd September 2017 for wider consultations on project design that was followed by a validation workshop on 23rd November 2017
- Presentation on project objective and components for creation of awareness and seeking feedback through bilateral and group meetings, FGDs and survey with gender focus. Use of social media; Facebook and Twitter combined with formal meetings, workshops, FGDs and interviews to share with the public at large. The project was also covered in the National Television explaining about the project and its benefits to Country at large.
- The target groups and users interviewed to understand their travel pattern, preferences and gender aspects covered.
- Bilateral meetings conducted with the relevant agencies during the project formulation phase.
- Deliberations made on the financial support required from the project, criteria for selection of EVs as well as the charging stations and associated project and environment and social risks assessments.

Table below presents the Stakeholder Engagement plan and summarizes different categories of stakeholders (Taxi Drivers, Taxi Association, Taxi Users, Car Dealers, Financial Institutions, Government, Institutions, Power Utility, Relevant NGOs, Public, Land Owners if the charging station is installed in the private land).

Stakeholder engagement plan					
Stakeholder Group	Why included (interests)	Participation methods		Timeline In accordance with workplan; to be specified during project inception	Cost est.* Total: USD 100,000 (total)
		Method	Responsibility		
Gross National Happiness Commission	GNHC will serve as the Executing Agency and will provide the overall guidance in terms of policy, planning, monitoring and evaluation of project activities. GNHC will be a member of the project board.	Meetings	Within the domain of the four pillars of the Gross National Happiness ((good governance, sustainable socio-economic development, environmental conservation, and		

			preservation and promotion of culture) GNHC is responsible for ensuring mainstreaming carbon neutral development into the planning, policy making and implementation process, and for monitoring the implementation of development activities by instituting an effective monitoring and reporting system.		
Ministry of Information and Communications (MoIC)	MoIC will serve as the lead agency for the implementation of the Project and the chair of the PROJECT BOARD. MoIC will coordinate with UNDP and responsible partners, and relevant stakeholders regarding the activities of the Project. It will also provide administrative support, project management, monitoring, and financial management. It is also expected that MoIC to play a crucial role in engaging the private sector and exploring avenues of partnership through	Workshops, Meetings	MoIC is responsible for the overall planning, co-ordination and implementation of activities of the transport sector. Its roles and responsibilities include designing of policies and programmes for the transport sector, and providing day to day administration, policy and technical oversight to the line departments on the implementation of policies and programmes		

	various financing models.				
Ministry of Economic Affairs	Provide information on fuel import, electricity supply, pricing and trade balance.	Meetings	The Ministry of Economic Affairs comprises of four technical Departments namely, the Departments of Trade, Industry, Energy and Geology and Mines besides the four service Divisions namely the Policy and Planning, Administration and Finance, Human Resource and Intellectual Property. The vision of the Ministry is to promote a green and self-reliant economy sustained by an IT enabled knowledge society guided by the philosophy of GNH		
Ministry of Finance	Provide information on fiscal impacts from the incentives programme, tax structures and public investment in government fleet replacement and public charging infrastructure. The MOF will be a member of the project board.	Meetings	The Ministry of Finance has the prime authority over approving the use of government expenditure, including investment incentives. It sets out these decisions while formulating the annual government budget for the transport sector.		

National Environment Commission (NEC)	Provide information on the GHG inventory pertaining to Transport sector and support in the emission monitoring and reporting. Work with RSTA while developing transport safeguards. The NEC will be a member of the project board.	Meetings	The National Environment Commission (NEC) is the environmental apex body and the focal point to communicate with UNFCCC, and acts as the Designated National Authority (DNA) for CDM activities in Bhutan. It acts as the central nodal agency for low-carbon development in Bhutan is the oversight agency for environmental laws and regulations.		
Bhutan Postal Corporation Limited	Conduct consumer survey and provide information on public transport demand, routes, trunk/feeder planning, demo planning.	Meetings	Bhutan Post is an incorporated body that reports to the Ministry of Information and Communications (MoIC) and is subsidised by RGoB through the Ministry of Finance (MoF). The City Bus Services (CBS) in Thimphu started in 1999 with a fleet of two buses. It has come a long way, currently operating a fleet of 32 buses, of which 30 buses are being operated in Thimphu and		

			two in Phuentsholing		
Road Safety and Transport Authority	RSTA's in the project bestowed with the responsibility of formulation of the implementation guidelines for low emission transport systems, safe guards regarding EVs and hybrid vehicles. RSTA will be a member of project board.	Meetings	RSTA under MOIC, which was established in 1997 by consolidating all motor vehicle-related activities, such as vehicle registration, driving license, road worthiness testing, vehicle emission, passenger transport service regulation, traffic regulations and road safety, under one organisation.		
Municipalities	Provide information for demo planning, routes, non-motorised systems, park-and-ride, ITS, consumer preferences. Also, support and provide land for the construction of EV charging stations. Thimphu Thromde will be a member of project board.	Meetings	Thromde is the local government body responsible for municipal administration. It is responsible for planning as well as implementation of several activities, including those that are related to physical infrastructure in the cities.		
Bhutan Power Corporation Limited	Support in the investigation and provide power supply to all the charging stations including stepping down of voltage if required. BPCL will be a	Meetings	Bhutan Power Corporation Limited a public utility with the mandate of distributing electricity and also providing transmission		

	member of project board.		access for generating stations for domestic supply as well as export. One of BPC's basic mandate was to not only ensure that electricity is available to all citizens but to also make sure that it is reliable, adequate and above all within the means of all consumers.		
Financial Institutions	Support in the investigation and design of financial incentive mechanisms; provide commitment for financing EVs and detailed design of investment projects.	Meetings	Financial sector comprises five commercial banks, Bank of Bhutan (BoB), Bhutan National Bank (BNBL), T Bank (TBL), Druk PNB and Bhutan Development Bank. In the non-banking sector in Bhutan, there are three insurance companies in Bhutan i.e., the Royal Insurance Corporation of Bhutan Ltd (RICBL) and the Bhutan Insurance Ltd. Both institutions offer retail loans. The Royal Monetary Authority of Bhutan (RMA) is the central bank of Bhutan and is responsible for the supervision		

			of all these institutions including the mandate and authority over monetary policy.		
Private Suppliers/Dealers of EVs	The dealers will supply EVs as per the criteria and guidelines during the project implementation	Meetings	Importer and supplier of EV vehicles		
Taxi Drivers	They are the primary beneficiaries of the project	Meetings, FGDs	The main buyers of the EV cars through project		
Taxi Association	Support MoIC in the purchase of EV taxi cabs during the project.	Meetings	The taxi association a formal organisation which represent interest of the sector and provide various forms of support to taxi operators.		
Taxi Users	They need to use the EV taxi services	Public meetings, Media	Creating awareness and support EVs		
Media	Create awareness on EV cars and its benefits	Audio Visuals/Radio	For wider dissemination of information and screening of Awareness programs		

The project will effectively engage the stakeholders involved in the project to get their support, and guide the project implementation to achieve higher results.

- Project outreach proposed includes project website, media (print/audio visual), workshops, trainings etc.
- The PMU and the Project Steering Committee will ensure that the Gender Action Plan recommended by the project is pursued and implemented. The various groups especially women will be engaged during the consultation meetings, prioritized to avail the program and be included in the different capacity building programs. Then project will also ensure that it is in line with the National Transport Policy and be as inclusive as possible.
- Meetings, monitoring visits, surveys and written communications will be used to receive feedback to continue the ongoing dialogue as well as during the course of implementation.
- The project will follow a participatory approach in decision making by engaging all the relevant stakeholders. The Government agencies and the Private sectors will be actively involved during the project implementation.

Indicative timelines:

- Inception workshop – April 2018 (Once)
- First Project Steering Committee (twice a year) – April 2018
- Meeting with Financial Institutions – May 2018 (Bi-annually)
- Stakeholder consultations – May 2018 (Quarterly)
- Finalization of sites for installation of charging stations – June 2018 (Twice)
- Meeting with Taxi Drivers and Taxi Association - June 2018 (Quarterly)
- The meetings will be mostly organized in Thimphu, and will change the venue based on the proposed activities and needs.

Resources and Responsibilities

- The PMU is primarily responsible for carrying out the specified stakeholder engagement activities
- The stakeholders will be engaged while carrying out various assessments and studies. The tentative budget would be approximately USD 100,000

Grievance Mechanism

- People concerned with or potentially affected by the project can express their grievances for consideration and redress. The Project Management Unit will receive grievances, and will try to resolve at the PMU level if possible. If not possible then the issues will be referred to the Project Steering Committee and PSC will try to settle the issues amicably. In the event the party is not accepting the decision then he/she can put the case to Arbitration before taking up formal legal support and will be dealt as per the existing Law of the Country.

Monitoring and Reporting

- The project stakeholders would be engaged at various levels to carry out the monitoring activities. The drivers will provide input on the distance covered as this is crucial for calculating the GHG mitigation and provide feedbacks on the performance and suggest to further improve if necessary. Then the PMU will liaise with relevant Government agencies and other partners and collect data and monitor the activities on a regular basis.
- The PMU will report back the results to the stakeholders at the earliest through letters or conduct meetings both individually as well as through engagement of all relevant agencies.

GENDER ACTION PLAN

Objective	Activities	Indicators and Targets	Timeline	Responsibilities and Estimate cost
Component 1. Policy support for the promotion of low emissions modes of transport				
Create an equal opportunity for female taxi drivers to benefit from the low emission transport initiative	Offer first priority to current female registered taxi drivers to avail the subsidy for purchase of EV taxis	4 female taxi drivers purchased EV taxis	Within the final 3 rd year of the project	UNDP, MoIC, Taxi Association
Component 2. Awareness and institutional capacity development				
Ensure due considerations of gender issues and analysis in project planning, design and implementation procedures.	Raising awareness and building capacity for gender mainstreaming	100 (50 M, 50 F) nos of public transport policy makers and transport staff and officials trained. 100 nos of Male and all 35 female taxi drivers trained	Within 1 st year of project implementation	UNDP, NEC MOIC, RSTA USD 3000 (Nu.2000,000/-)
Encourage Taxi drivers, specifically women taxi operators to switch to EV	Capacity building of Tax Drivers on EVs	500 nos of taxi drivers trained in EV repair and maintenance All 35 female taxi operators in Thimphu trained in EV.	Within 1 st year of project implementation	UNDP, MOIC, Private Automobile Enterprises USD 3000 (Nu.2000,000/-)
Component 3. Investments in Low Emissions Transport Systems and Support Services				
Develop Intelligent Transport System to enhance safety in public transport, specifically taxis drivers	Partner NEC or MoIC to create linkages with ongoing projects on development of transport app	1000 taxis registered in the intelligent transport system	Within the 2 nd year of project implementation	MoIC, RSTA, Taxi Association No cost

Annex F: UNDP Risk Log

#	Description	Type	Impact & Probability	Countermeasures	Owner	Submitted/updated	Last update	Status
1	Inadequate E-waste management & disposal of used batteries	Environmental	P = 3 I = 3	Enabling regulation on e-waste management and its enforcement will be proposed, as well feasibility study to explore opportunities for domestic re-use and recycling scheme and implementation of pilot project to demonstrate proposed feasible options for re-use and/or recycling				
2	EV Technology failure	Operational	P = 3 I = 3	The project will introduce strict technical qualification criteria for qualified EV suppliers and will also offer additional training to taxi drivers and technicians involved in O&M services				
3	Low uptake of financial support mechanism	Market	P = 3 I = 3	The project proposes staged approach to EV Discount Program roll-out. After pilot first stage, evaluation will be conducted to assess its effectiveness and demand and corrective measures				

				proposed in case demand is weak (i.e. stronger incentives will be proposed) or on the contrary if the program is over-subscribed the level of discount may be reduced.				
4	Potential delays in implementation of the required policy and regulatory changes may jeopardize the effectiveness and impact of the EV Discount Program	Policy	P=2 I = 3	Firm commitment has been secured from the RGoB regarding feasibility of timely implementation of the required policy and regulatory reforms, in particular revision of financial regulations. This has also been confirmed through consultation with relevant authorities and inclusion of relevant provisions in the key national strategic and planning documents.				

Annex G: Country Office Support Service Agreement

COUNTRY OFFICE SUPPORT SERVICE (COSS) AGREEMENT

AGREEMENT BETWEEN UNDP AND THE ROYAL GOVERNMENT OF BHUTAN FOR THE PROVISION OF SUPPORT SERVICES

1. Reference is made to consultations between officials of the Gross National Happiness Commission, Royal Government of Bhutan (hereinafter referred to as "the Government") and officials of UNDP with respect to the provision of support services by the UNDP country office for nationally managed programmes and projects. UNDP and the Government hereby agree that the UNDP country office may provide such support services at the request of the Government through its institution designated in the relevant programme support document, as described below.
2. The UNDP country office may provide support services for assistance with reporting requirements and direct payment. In providing such support services, the UNDP country office shall ensure that the capacity of the Government-designated institution is strengthened to enable it to carry out such activities directly. The costs incurred by the UNDP country office in providing such support services shall be recovered from the administrative budget of the office.
3. The UNDP country office may provide, at the request of the designated institution, the following support services for the activities of the programme:
 - (a) Identification and/or recruitment of project and programme personnel and technical expertise;
 - (b) Procurement of goods and services to undertake agreed activities;
 - (c) Administration of the donor contribution;
 - (d) Management of grant agreements and related disbursements for project-related activities. (To be specified in the project details)
4. The procurement of goods and services and the recruitment of programme personnel by the UNDP country office shall be in accordance with the UNDP regulations, rules, policies and procedures.
5. The relevant provisions of the Standard Basic Assistance Agreement (SBAA) signed 14 July 1978 between the United Nations Development Programme and the Royal Government of Bhutan, including the provisions on liability and privileges and immunities, shall apply to the provision of such support services. The Government shall retain overall responsibility for the nationally managed programme through its designated institution. The responsibility of the UNDP country office for the provision of the support services described herein shall be limited to the provision of such support services detailed in the annex to the programme support document.
6. Any claim or dispute arising under or in connection with the provision of support services by the UNDP country office in accordance with this letter shall be handled pursuant to the relevant provisions of the above mentioned agreements.
7. The manner and method of cost-recovery by the UNDP country office in providing the support services described in paragraph 3 above shall refer to the enhanced UNDP UPL (Universal Price List) effective date 1 January 2017. The revised rate shall be applicable as when it is updated.
8. The UNDP country office shall submit progress reports on the support services provided and shall report on the costs reimbursed in providing such services, as may be required.
9. Any modification of the present arrangements shall be effected by mutual written agreement of the parties hereto.


Indicative COSS for the Bhutan Sustainable Low Emission Urban Transport Systems has been calculated as follows:

Sl. No.	Service Name	Unit	Volume	Unit Costs (US\$)	Total US\$
1	Extension of Service Contract	HR Unit	1	71.855	71.86
2	PO Ticket/Travel Creation (For Travel with Ticket Value USD 2,500 and Above Only)	Procurement/Programme/Finance Unit	10	88.27	882.70
3	Vendor Registration (for Workshop/Meeting Participant Only)	Finance/Programme Unit	41	14.33	587.53
4	Process payment	Finance Unit	40	28.61	1,144.40
5	Issue check only (Atlas Agency only)	Finance Unit	40	13.4	536.00
6	Vendor profile only (Atlas Agency only)	Programme Unit/Finance Unit	40	14.33	573.20
7	Project personnel recruitment written test***	HR Unit	3	134.18	402.54
8	Staff HR & Benefits Administration & Management (one-time fee, per staff).	HR Unit/Finance Unit	28	143.71	4,023.88
9	Recurrent personnel management services: Staff payroll & Banking Administration & Management	HR Unit/Finance Unit	20	320.89	6,417.80
10	Consultant recruitment	Procurement Unit	10	153.47	1,534.70
11	Interns management	Programme Unit	11	46.13	507.43
12	Interns Selection & recruitment***	HR/Programme Unit	0	273.3	0.00
13	Issue/renew IDs (UN ID)	Security Unit	3	27.02	81.06
14	Travel authorization	HR/Programme Unit	20	24.58	491.60
15	FI0 settlement	Finance Unit	20	22.66	453.20
16	Medical Evacuation Services ***	HR Unit	5	75.85	379.25
17	Position matching in Atlas ***	Programme Unit	8	4.1	32.80
18	Absence management in Atlas (for other agencies per staff & follow up) ***	Programme Unit	2	28.7	57.40
19	Payment cancellation for EFT & Check (Avg) ***	Finance Unit	1	10.25	10.25
20	Procurement process involving local CAP (low value procurement).	Procurement Unit	4	353.08	1,412.32
21	Procurement not involving local CAP	Procurement Unit	4	144.9	579.60
22	Contract renewal ***	Procurement Unit	12	44.6	535.20
23	Review ToR/Specification/Note to file ***	Procurement/Programme Unit	5	24.6	123.00
24	Registry Services***	ICT Unit	10	31.82	318.20
25	Consultant recruitment involving interview ***	Procurement Unit	9	171.45	1,543.05
26	Admin Services ***	Procurement/Finance/Programme Unit	5	230.19	1,150.95
27	Help Desk-Installation of software for new equipment	ICT Unit	1	57.4	57.40
28	Conference set up (VC)	ICT Unit	10	24.6	246.00
29	Office 365 subscription (email, MS office, other cloud services, accounts provision de-provisioning) and services	ICT Unit	5	73.8	369.00
30	Website development (basic)	ICT Unit	1	590	590.00

	Programme ***				
33	Organize meetings and workshop (NIM) ***	Programme Unit	2	141	282.00
34	HACT Training for quality Programme financial management ***	Programme Unit	3	318.15	954.45
35	AR Management Process	Programme Unit	5	23.62	118.10
	TOTAL				30,001.27

*** Based on LPL and others based on UPL

Yours sincerely,

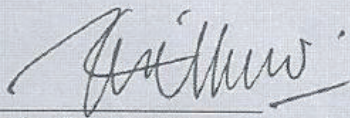


Signed on behalf of UNDP

Niamb Collier-Smith

Deputy Resident Representative

[Date: 15/1/2017]



For the Government

Rinchen Wangdi

Director

Gross National Happiness Commission

[Date: 10 Jan. 2018]



དཔལ་ལྷན་འབྲུག་གཞུང་། བརྟེན་དང་བརྟེན་འབྲེལ་ལྷན་ཁག།

Ministry of Information & Communications

Royal Government of Bhutan

Thimphu: Bhutan



RefNo: PPD/71/EV/ 342

11th Dec. 2017

To:

Mrs. Adriana Dinu

UNDP-GEF Executive Coordinator

New York, USA

Dear Mrs. Adriana Dinu,

The *Ministry of Information and Communications, Royal Government of Bhutan* would like to express our full support to the GEF Funding Proposal "Bhutan Sustainable Low Emission Urban Transport Systems" submitted by UNDP.

The project is fully aligned with the strategic objectives of the Royal Government of Bhutan (RGoB) to promote sustainable transport, in particular electric vehicles (EVs). RGoB attaches strategic importance to promoting e-mobility in the country, as reflected in its policy and investment priority and substantial contribution to this initiative, as detailed below.

With this letter, we would like to confirm our commitment to co-finance the aforementioned project. Our contribution to Component 3 "Investment in low emission transport systems and support services" will amount to Nu. 659.008 million over the course of project duration (2018-2020) and include the following inputs:

- Nu. 106.600 million for the procurement of charging stations
- Nu. 1.104 million to cover the cost of electricity consumption by EVs
- Nu. 2.304 million to cover the maintenance cost of charging stations
- Nu. 540.000 million in the form of tax breaks and import duties exception on the EVs

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P.O. Box No. 278, Website: <http://www.moic.gov.bt>

UNDP THIMPHU		
INFO	3/12/17	ACTION
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✓	DRR	
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- Nu. 9.000 million on the costs of land, grid connection and other supporting infrastructure for charging stations and other supporting equipment's for EVs

In addition, MOIC will provide in-kind contribution estimated at Nu. 11,700,000 towards project management and implementation of all project components in the form of RGoB staff time, office premises, utility costs and other essential administrative costs.

Sincerely,

(Karma W. Penjor)

SECRETARY

Enclosed: Cost breakup sheet for co-financing from the Ministry of Information and Communications.

Cc:

1. Hon'ble Lyonpo, MoIC for his kind information
2. Hon'ble Secretary, GNHC for information
3. ✓ DRR, UNDP for information
4. P.S to Hon'ble Prime Minister for information
5. Project Manager, PMU

