CTCN
CLIMATE TECHNOLOGY CENTRE & NETWORK

Technical Assistance Response Plan – Terms of Reference

Country	**Cambodia**
Request ID#	2019000003
Title	Development of low-emission mobility policies and financing proposals for Cambodia
NDE	Mr. Sum Thy, Director of Department of Climate Change, General Secretariat of the National Council for Sustainable Development, Ministry of Environment Phone: +855 16 907764 Email: cceap@online.com.kh
Proponent	Ms. Neth Baroda, Deputy Director of Department of Climate Change, General Secretariat of the National Council for Sustainable Development, Ministry of Environment Phone: +855 78 589985 Email: baroda.neth2013@gmail.com Mr. Doeun Dara, Vice Chief of Office of Policy and Coordination, Department of Climate Change, General Secretariat of the National Council for Sustainable Development, Ministry of Environment Phone: +855 78 232316

Summary of the CTCN technical assistance

Cambodia's reliance on road transport has increased throughout the country's economic development. Cambodia mainly relies on fossil fuel vehicles. Power generation in Cambodia is dominated by hydro-power and coal with a very small share of renewable energy (100 MW from solar energy).

The transport sector is expected to account for an increasingly larger share of greenhouse gas (GHG) emissions in Cambodia. In 2000, the transport sector, accounted for 709Gg of CO_2eq in 2000 rising to 4,752.35 Gg CO_2eq in 2016. With the rise in the number of vehicles on the road, Phnom Penh's air pollution is a growing concern as most vehicles are imported used with no age limits or emission standards.

The Government of Cambodia recognizes that the high level of dependence on imported fossil fuel poses a number of challenges in their transition to a sustainable development pathway and reducing GHG emissions and air pollution in the country. In its Intended Nationally Determined Contribution (INDC), Cambodia shared their intention to promote hybrid cars, electric vehicles and bicycles among its mitigation actions.

However, in order to successfully transition to a low-emission pathway, Cambodia must address a number of barriers including: 1) Lack of information; 2) Policy and planning barrier 3) Institutional capacity barrier; 4) Investment and market barrier; 5) Economic barriers; and 6) Technical barriers.

Several barriers have been identified which would potentially hinder the uptake of low-emission mobility in Cambodia. These barriers can be categorized as following:

1. **Lack of information** – Consumers, policy makers and vehicle manufacturers are not fully aware of the environmental and economic benefits related to cleaner fuels and vehicles. In many middle and low-income countries, introducing low-emission transport is still perceived as an expensive policy measure that is not adapted to local conditions. As a result, the long-term benefits of using low-emission vehicles from reduced energy use, CO_2 and air pollutant emissions are often overshadowed.
2. **Policy and planning barrier** – Many low and middle-income countries have no dedicated fiscal or regulatory policies to incentivize the uptake of cleaner fuels and vehicles. In fact, counterproductive policy measures are in place where many countries still subsidize petroleum fuels or have disadvantageous fiscal policies in place, which complicate the import of cleaner and more efficient vehicles, including electric vehicles.
3. **Institutional capacity barrier** – Decision makers in government lack the capacity to develop national electric mobility projects. The development of policies to foster the uptake of low-emission mobility most often includes stakeholders from various ministries and requires thorough analysis and understanding of the national transport sector. There is a whole suite of options to incentivise low-emission vehicles and a tailored set of interventions needs to be developed based on national circumstances. Decision makers need technical support during all stages of low-emission transport policy development.
4. **Economic and market barrier** – Large scale investment in electric mobility is hindered by the unbalanced timing of market uptake of electric vehicles versus charging infrastructure development. To address this all fiscal policies to support investments in transportation and promote uptake of more sustainable transport technologies need to be considered. This also includes the set-up of new business models which involves cross border actions between all stakeholders to spread the needed investment as well as the economic risk.

The objective of this Technical Assistance is 1) to provide Cambodia with a policy action plan for low-emission vehicle policy options to reduce emissions and energy use from the road transport sector, and 2) to assist Cambodia in accessing global environment funds to promote sustainable and low-emissions transport.

To meet these objectives, the project will:

1. Develop a policy action plan for sustainable and low-emission policies for Cambodia including an action plan for cleaner and efficient fuels and vehicle policies.

    - This activity will be implemented in tandem with the ongoing work of UN Environment within Global Fuel Economy Initiative (GFEI) on fuel economy baseline development and fuel economy trend analysis for Cambodia, supported by the Global Climate Partnership Fund (GCPF).

    - This activity will provide an overview of the transport situation in Cambodia including key policies and challenges. The overview includes the characterization of the vehicle fleet in Cambodia including the fuel economy baseline. Depending on the availability of data and resources, an assessment of the environmental impact of transport in Cambodia and the potential impact of low-emission mobility policies will be undertaken.

    - The deliverable from this activity will include development of a policy action plan for sustainable and low-emissions mobility in Cambodia. It will include recommendations and suggested policies for implementation to improve the fleet's fuel economy and efficiency. It is to be based on stakeholder consultations, literature review, and on the baseline fuel economy. The action plan will also integrate the trends and the estimate of the annual emissions of the car fleet in Cambodia, which will be an output of GFEI-GCPF project which UN Environment is leading.

2. Development of a sustainable and low-emissions transport proposal in Cambodia for possible submission to global environment funds including Green Climate Fund and/or Global Environment Facility

- Drawing on the findings and consultations from the above activities, assistance to the Cambodian partner will be delivered to develop a low-emission transport project proposal for submission to global environment funds (e.g. Green Climate Fund, Global Environment Facility) with a focus on introducing electric mobility in Cambodia. The proposal will be presented as a draft with finalization to be undertaken by the Government of Cambodia.

While ensuring close coordination with the ongoing and past initiatives in the country, the outcomes and activities of the proposed TA will be aligned with the priorities of Cambodia's relevant ministries and other key stakeholders. It is expected that the following stakeholders will be consulted: distributors, ministry of energy, customs authorities, transport department, etc. suggested that the project team meet with the following government agencies prior to planning an inter-agency workshop: Ministry of Environment, Ministry of Economy and Finance, General Department of Taxes, Ministry of Mines and Energy, and Institute of Standards of Cambodia.

The project is expected to take place over the course of 9 months.

Agreement:

National Designated Entity to the UNFCCC Technology Mechanism and Project Proponent
Name: Sum Thy
Title: National Designated Entity, Director of Department of Climate Change, General Secretariat of the National Council for Sustainable Development, Ministry of Environment
Date: 25/7/2019
Signature:

UNFCCC Climate Technology Centre and Network (CTCN)

Name: Mark Radka
Title: CTCN Acting Director
Date: 19/07/19
Signature:

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CLIMATE TECHNOLOGY CENTRE & NETWORK

Technical Assistance Response Plan – Terms of Reference

1. Background and context

National context

Transport sector is expected to account for an increasingly larger share of greenhouse gas (GHG) emissions in Cambodia. With the rise in the number of vehicles on the road and the fuel composition of Cambodia's energy mix, there have been concerns raised over the emissions and air quality degradation in urban areas in the country. Phnom Penh's air pollution problem, for example, was discussed as one of Cambodia's top environmental concerns during the recent visit of UN Environment's Executive Director's to Cambodia's Environment Ministry.

Cambodia mainly relies on fossil-fueled vehicles that are mostly second-hand and imported from USA, Europe, Japan and China. Power generation mix in Cambodia is dominated by hydro power and coal with a very small share of renewal energy (100 MW from solar energy).

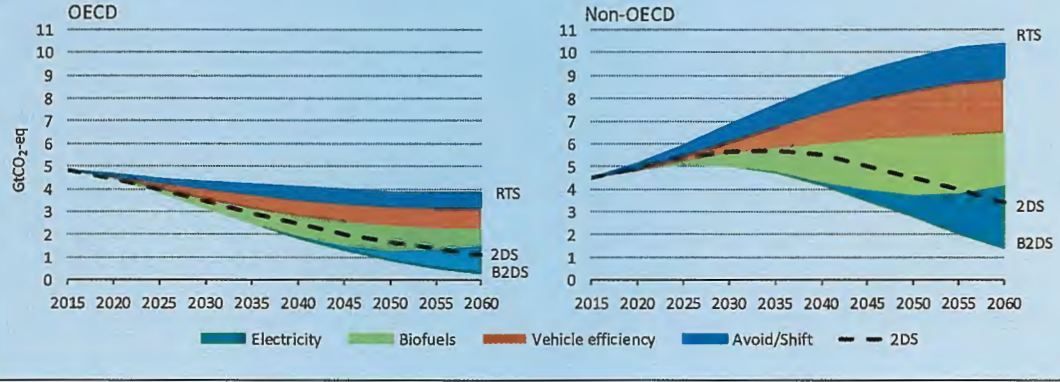
The Government of Cambodia recognizes that the high level of dependence on imported fossil fuel poses a number of challenges in their transition to a sustainable development pathway and reducing GHG emissions and air pollution in the country.

Cambodia's Intended Nationally Determined Contributions (INDC) to the UNFCCC have identified transportation as one of the main sectors to reduce GHG emissions. The most directly relevant actions to transport are as follows:

- Repairing and rehabilitating existing road infrastructure and ensuring effective operation and maintenance, taking into account climate change impacts;
- Promoting mass public transport; and
- Improving operation and maintenance of vehicles through motor vehicle inspection and eco-driving, and the increased use of hybrid cars, electric vehicles and bicycles.

Global context

Today, the transport sector accounts for 23% of global energy-related CO2 emissions, and road transport accounts for around three quarters of GHG emissions from transport. With the Paris Agreement signed by 195 countries and ratified by 172 countries (January 2018), the international community has shown a broad commitment to limit global warming to well below 2°C, aiming for 1.5°C. The IEA Beyond 2°C scenario (B2DS) lines out a pathway to achieve a sustainable emission trajectory. It aims for a 50% probability of limiting global warming to 1.75°C, which means that well-to-wheel (WTW) GHG emissions from transport need to be 83% lower in 2060 compared to the year 2015.



Source: IEA Energy Technology Perspectives 2017

Recent estimates suggest substantial additional, unrealized potentials exist with up to 50% improvements in vehicle fuel economy in MJ/km or litres/100 km units (or equal to 100% when measured as km/MJ, km/litre). Although most countries have emission regulations in road vehicles, they usually deal with air pollutants than GHG emissions. However, most OECD countries have established programmes to address transportation related GHG emissions. For example, Cambodia only allows importation of vehicles that were produced from year 2000.

Fuel economy policies and GHG emission targets, either mandatory or voluntary, have proven to be among the most cost-effective tools in controlling oil demand and GHG emissions from vehicles, thus could be adopted worldwide. The overall effectiveness of standards can be significantly enhanced if combined with fiscal incentives and consumer information. Taxes on vehicle purchase, registration, use, and motor fuels, as well as road and parking pricing policies, are important determinants of vehicle energy use and emissions.

On the other hand, there is a growing need to move away from reducing dependency on petrol to zero-emission electric mobility. The Paris Declaration on Electro-Mobility and Climate Change and Call to Action, announced at COP21, expresses the ambition to achieve 100 million electric cars and 400 million electric two-wheelers on the road by 2030. The IEA 2°C scenario (2DS) calls for one third more EVs than these targets, and the B2DS even assumes a doubling of these targets.

Electrification plays a major role in reducing GHG emissions (Figure 1) and is key to improving vehicle efficiency up to the point necessary to achieve the B2DS. The use of low carbon electricity in combination with efficient EVs contribute the largest share to transport decarbonisation alongside other measures such as avoiding unnecessary transport, shifting individual transport to more efficient ways of mass transport as well as the use of other low carbon fuels for example for aviation and shipping.

Considering the characteristics between all road transport modes in driving this transition is vital, as each mode has its own societal and environmental implications that electrification can help address:

- LDVs: As cars will see the largest growth rates in the future and already account for the largest part of transport energy use and emissions, electrification offers a huge greenhouse gas and air pollution emission reduction potential. Given the high share of individual motorized transport taking place in urban areas, the air pollution emission reduction can have great positive impact on health.
- 2/3 wheelers: Given the predominance of these modes especially in non-OECD countries (Figure 2) and in the urban environment, similar to cars electrification of 2/3 wheelers not only has a large potential for CO2 emissions reductions but also to effectively tackle urban pollution issues. Because of the relatively short ranges (hence smaller battery capacities), 2/3 wheelers also have a strong potential to be cost competitive with ICE equivalents in the very near term all over the world. Already today, electric 2-wheelers in China have a lower cost compared with conventional 2-wheelers.
- Buses and trucks: Both modes already account for 37% of global road transport CO2

emissions in 2015, and over half by 2060 in the RTS (Figure 3). Additionally, trucks are the second largest source of global oil demand after LDVs - and the fastest growing. Hence, electrification of both modes has a large CO2 mitigation potential. As for LDVs and 2/3 wheelers, the electrification of buses and trucks operating in the urban environment would also allow to significantly improve air quality along major urban corridors.

2. Problem statement

So far, numerous barriers have been identified to hinder the uptake of low-emission mobility in Cambodia. These barriers can be categorized as following: 1) Lack of information; 2) Policy and planning barrier 3) Institutional capacity barrier; and 4) Investment and market barrier.

1. **Lack of information** – Consumers, policy makers and vehicle manufacturers are not fully aware of the environmental and economic benefits related to cleaner fuels and vehicles. In many middle and low-income countries introducing low-emission transport is still perceived as an expensive policy measure which are not adapted to local conditions. On the contrary long-term benefits of using low-emission vehicles from reduced energy use, CO2 and air pollutant emissions are often out shadowed.

2. **Policy and planning barrier** – No or counterproductive policy measures are in place. Many low and middle-income countries have no dedicated fiscal or regulatory policies in place to incentivize the uptake of cleaner fuels and vehicles. On the opposite, many countries still subsidize petroleum fuels or have disadvantageous fiscal policies in place, which complicate for example the import of electric vehicles.

3. **Institutional capacity barrier** – Decision makers in government lack the capacity to develop national electric mobility projects. The development of policies to foster the uptake of low-emission mobility most often includes stakeholders from various ministries and requires thorough analysis and understanding of the national transport sector. There is a whole suite of options to incentivise low-emission vehicles and a tailored set of interventions needs to be developed based on the national preconditions. Decision makers need technical support during all stages of low-emission transport policy development.

4. **Economic and market barrier** – Large scale investment in electric mobility is hindered by the chicken and egg situation between market uptake of electric vehicles and charging infrastructure development. All sources of financing electric mobility projects need to be untapped. This includes looking at fiscal policies to support investments in transportation and promote uptake of more sustainable transport technologies. This also includes the set-up of new business models which involves cross border actions between all stakeholders to spread the needed investment as well as the economic risk.

3. Logical Framework for the CTCN Technical Assistance:

	Month											
	1	2	3	4	5	6	7	8	9	10	11	12
***Objective**: Formulation of implementation ready policies in consultation with stakeholders to promote low-emission mobility in Cambodia with supporting financial mechanism*												
Outcome: *Stakeholders makes informed decisions to promote low-emission mobility in Cambodia based on effective policies and supporting financial mechanism*												
Output 1: Implementation plan and communication documents	■											■
Activity 1: *All implementers must undertake the following activities at the beginning and at the end of the CTCN technical assistance.* i) A detailed work plan of all activities, deliveries, outputs, deadlines and responsible *persons*/organisations and detailed budget to implement the Response Plan. The detailed work plan and budget must be based directly on this Response Plan; ii) Based on the work plan, a monitoring and evaluation plan with specific, measurable, achievable, relevant, and time-bound indicators used to monitor and evaluate the timeliness and appropriateness of the implementation. The monitoring and evaluation plan should apply selected indicators from the Closure and Data Collection report template and enable the lead implementer to complete the CTCN Closure and Data collection report at the end of the assignment (please refer to item iv below and section 14 in the Response Plan); iii) A two-page CTCN Impact Description formulated in the beginning of the technical assistance and updated/revised once the TA is fully delivered (a template will be provided); iv) A Closure and Data Collection report completed at the end of the technical assistance (a template will be provided).	■											■
Deliverable 1: i) Detailed work plan ii) Monitoring and evaluation plan iii) CTCN Impact Description iv) Closure and Data Collection report	■											■
Output 2: Development of an action plan for sustainability and low-emissions transport including an implementation plan for cleaner and efficient vehicle policies		■	■	■	■							
Activity 2.1: Estimate emissions from the road transport sector in Cambodia, including but not limited to air pollution, CO2 and short-lived climate pollutants.		■										

Activity 2.2: Engage with stakeholder to identify policy, technology and financing options based on national circumstances	
Activity 2.3: Develop an action plan to implement policies that will promote sustainable and low-emissions transport including cleaner and efficient fuels and vehicles in Cambodia, based on the baseline development, the emissions estimate, and previous studies.	
Activity 2.4: Organize a national workshop to present and discuss the emissions estimates, and the action plan.	
Deliverable 2: A policy action plan for low-emission mobility in Cambodia A workshop report	
Output 3: Development of clean and efficient mobility project proposal	
Activity 3.1: Undertake a preliminary study of baselines and priority actions	
Activity 3.1: Organize a consultation workshop with key stakeholders	
Activity 3.2: Finalize the draft project proposal	
Deliverable 3: Draft proposal for Green Climate Fund on clean and efficient mobility in Cambodia	

4. Resources required and itemized budget:

Activities and Outputs	**Input: Human Resources** (Title, role, estimated number of days)	**Input: Travel** (Purpose, national vs. international, number of days)	**Inputs: Meetings/events** (Meeting title, number of participants, number of days)	**Input: Equipment/Material** (Item, purpose, buy/rent, quantity)	**Estimated cost (USD)** Please accumulate the costing at Activity and Output level and provide an estimated costing range for each activity and the total Response Plan	
					Minimum	**Maximum**
Output 1: Development of implementation planning and communication documents						
Activity 1.1: Formulation of i) Detailed work plan, ii) Monitoring and evaluation plan, iii) CTCN Impact	Coordinator, 5 days				2,000	2,500

Description, iv) Closure and Data Collection report.						
Output 2: Development of Action plan for sustainable and low-emissions transport policies						
Activity 2.1: Estimate emissions from land transport in Cambodia, including but not limited to air pollution, CO2 and short-lived climate pollutants.	Coordinator x 3 days International Expert x 1 days Research Assistant x 5 days				3,500	3,950
Activity 2.2: In consultation with stakeholders identify policy, technology and financing options	Coordinator x 2 days International Expert x 2 day Research Assistant x 5 days				3,500	3,950
Activity 2.3: Develop an action plan on sustainable and low-emissions transport including clean and efficient vehicles in Cambodia	Coordinator x 10 days International Expert x 7 days				8,900	10,600
Activity 2.3: Organize a national workshop to present and discuss the results of the baseline report, the emissions estimates, and the action plan.	Support staff: 10 person days International Expert x 2 days	Travel of 1 Regional Expert: Range of economy return air ticket to Cambodia: 600 2 days of perdiem: 500	Meeting room package (USD 55) x 30 persons: USD1,650 includes morning and afternoon coffee/tea breaks and lunch (1day)		6,750	7,150

Output 3: Development of sustainable and low-emissions transport project proposal						
Activity 3.1: Undertake preliminary study including literature review for proposal development	International Expert x 5 days National expert x 20 days				9,500	12,000
Activity 3.2: Organize a consultation workshop with key stakeholders	Coordinator x 5 days	Travel of 1 Regional Expert: Range of economy return air ticket to Cambodia: 600 2 days of perdiem: 400	Meeting room package (USD 55) x 30 persons: USD1,650 includes morning and afternoon coffee/tea breaks and lunch (1day)	1,000	6,050	6,750
Activity 3.3: Develop the project proposal	Coordinator x 3 days International Expert x 15 days National expert x 40 days				24,200	30,000
Estimated range of costing for the entire Response Plan					**63,500**	**76,900**

5. Profile and experience of experts

Experts required	Brief description of required profile
Coordinator – transport expert	• Bachelor's Degree, or equivalent, in Transport/Civil Engineering, Urban Planning, Economics, or other related fields • At least 5 years of project management experience with a focus on sustainable mobility is required • Experience in developing policy documents and developing transport/climate mitigation projects is required • Excellent oral and written communication skills in English is essential
Transport expert (national)	• Master's Degree, or equivalent, in Transport/Civil Engineering, Energy Economics and/or Urban Planning

	or other related fields is required • Relevant professional experience in the transport or energy sector, including development and implementation of transport/energy efficiency projects in Cambodia is required • Experience in climate finance is highly desirable • Excellent oral and written communication skills in English is essential
Transport expert (international)	• Master's Degree, or equivalent, in Transport/Civil Engineering, Urban Planning or other related fields • At least 10 years of experience in sustainable mobility is required • Experience in climate finance is required • Experience in developing policy documents and developing transport/climate mitigation projects is required • Excellent oral and written communication skills in English is essential

6. Intended contribution to impact over time

Cambodia consumed 5,201GWh of electricity during the year 2015 (ERIA, 2016). Coal contribution to total domestic production is 43.7%. While hydro has more than double the installed capacity of coal, from hydro dams fall significantly during the dry season when there is less water available in reservoirs. Cambodia relies on fuel imports mainly from Vietnam especially during the dry season and daytime peaks to cover shortfalls. Approx. 200 MW of diesel and heavy fuel oil generation account for more than 70% of overall demand in the country. The demand for electricity is projected to grow at an average of 7% annually through 2030 (ERIA, 2016).

The imported fossil fuel also accounts for a major share of GHG emissions. Cambodia produced a total of 9.3 million tonnes of CO_2 in 2016, of which transport sector was responsible for 5 million tonnes of CO_2. Of 5 million tonnes of CO_2, 4.2 million tonnes is from the road transport sector (IEA, 2018). The below tables shows the trends of Cambodia's CO_2 emissions from fuel combustion. With overall growth in Cambodia's GDP projected at ~7% annually, the trend is projected to continue.

Table 1 Cambodia's CO_2 emissions from fuel combustion (million tonne)

Source: IEA (2018)

Year	1995	2000	2005	2010	2015	2016
CO_2 emissions	1.5	2	2.6	4.6	8	9.3

The Tehcnical Assistance of CTCN will contribute to mitigation of GHG emissions from the road transport sector as well as improvement in energy security through promotion of clean and more efficient vehicles in Cambodia. An action plan for clean and efficient mobility for Cambodia, Output 2 under this TA, will contribute to creating conditions for a wide adoption of clean and efficient vehicle technologies in Cambodia. In addition, Output 3, the proposal for GCF will include demonstration of clean and more efficient vehicles and integration of renewables for electric mobility. The incremental effects of these activities will be able to extend the integrated, sustainable and low emissions concept to the transport system in Cambodia.

7. Relevance to NDCs and other national priorities

Although Cambodia is responsible for less than 0.1% of global greenhouse gas (GHG) emissions, the Royal Government of Cambodia (RGoC) has made commitment to addressing its GHG emissions. RGoC recognizes that the high level of dependence on imported fossil fuel poses a number of challenges in their transition to a sustainable development pathway and reducing GHG emissions and air pollution in the country.

In its INDC (2017), Cambodia has proposed a 27% reduction in emissions below BAU by 2030. In the mitigation area, a reduction of 3,100 Gg CO2eq compared to baseline emissions of 11,600 Gg CO2eq by 2030 has been proposed in energy industries, manufacturing industries, transport, and other sectors. In the transport sector, Cambodia has proposed below priority actions to reduce 390 Gg CO2eq and proposed the following actions:

- Repairing and rehabilitating existing road infrastructure and ensuring effective operation

and maintenance, taking into account climate change impacts [Section 2.2, page 5]

- Improving operation and maintenance of vehicles through motor vehicle inspection and eco-driving, and the increased use of hybrid cars, electric vehicles and bicycles. [Section 3.1, Table 1, page 6]
- Promoting mass public transport [Section 3.1, Table 1, page 6]

The Kingdom of Cambodia has policies and plans that align with the scope of this project, as summarised in the below table:

National Adaptation Plans	Cambodia supported the initial delivery of the INDC mainly through Cambodia Climate Change Strategic Plan (CCCSP) (2014–2023) which includes: - Promote climate resilience through improving food, water and energy security - Promote low-carbon planning and technologies to support sustainable development - Improve capacities, knowledge and awareness for climate change responses - Strengthen institutions and coordination frameworks for national climate change responses - Strengthen collaboration and active participation in regional and global climate change processes
Nationally Appropriate Mitigation Actions	In Cambodia's INDC (2017), below Climate Change Action Plan mentions actions on transport: • Implementation of Climate Change Action Plan for Transport Sector (2014-2018): this includes motor vehicle inspection, public transport and improving efficiency of vehicles • Implementation of Climate Change Action Plan for Manufacturing Industry and Energy Sectors (2014-2018): this includes efficient cookstoves, biodigesters, water filters.
National Strategic Plan on Green Growth 2013-2030	"...it is important to carry out some activities, such as… sharing of green transports by using buses, electrically-run trains, renewable energy-run vehicles, and electrically-run bicycles and motorcycles for travelling in towns. In addition, there shall be a regular analysis of gas emission from vehicles [https://policy.asiapacificenergy.org/sites/default/files/National-Strategy-Plan-on-Green-Growth-2013-2030-Cambodia.pdf Section 4.6, page 16 ; Annex on key projects for implementation for short-term and medium-term, page 39]
Rectangular Strategy - Phase IV (2018)	Among the four priority areas, four "Rectangles", enhancing transport, energy and digital connectivity is presented as a key action for Rectangle 2, as well as Further lowering the electricity prices, expanding supply coverage and enhancing electricity reliability "The Royal Government faces a number of challenges such as the master plan for land use and development direction strategy have not been studied or completed for most cities and provinces...master plan for urban physical infrastructure development in not comprehensive; urban transport and traffic are not in good order resulting in unnecessary social and economic costs. "The Royal Government will give priority to: Formulating an infrastructure master plan for main cities and urban area to support the development of roads, railways and waterways as well as electricity networks." [http://iric.gov.kh/wp-content/uploads/2018/09/Rectangular-Strategy-Phase-IV_ENGVersion.pdf page 41]
National Policy, Strategy and Action Plan on Energy Efficiency in Cambodia	Transport sector was not included among the five priority areas due to the lack of reliable data on fuel consumption status per transportation mode, suggesting that a study on its own on transport be undertaken.

(2013)	
Vehicle import policies	Age limit on used vehicles imported to Cambodia: Cambodia only allows importation of vehicles that were produced from year 2000. Imported vehicles largely come from USA, Europe, Japan and China. Cambodia also import used hybrid vehicles including electric bicycles; however, the imported vehicles are not required to be registered. Hence there is little data available on Cambodia's vehicle fleet.
National Solar Park project (2017-)	Development of 100 MW of capacity in a National Solar Park program by the end of 2020 with lending from the Asian Development Bank (ADB). The solar park is to be developed in two phases of approximately 30 MW and 70 MW.

This technical assistance is proposed to help accelerate the transformation to cleaner and efficient mobility in Cambodia and to contribute significantly to Cambodia's efforts in achieving its NDC goals and national strategies.

8. Linkages to relevant parallel on-going activities:

This Technical Assistance will build upon existing and past efforts within the scope of this TA including:

Assessment of Transport and Environment in Cambodia and Policy Development: Under this project, Global Climate Partnership Fund, UN Environment, as part of Global Fuel Economy Initiative (GFEI) is conducting targeted data collection to establish national light duty vehicle fleet fuel economy baseline for Cambodia. As part of this work, Clean Air Asia will conduct an inventory Cambodia that will include the characteristics of the vehicle fleet and the average fuel economy of light-duty vehicles and two-wheelers that have entered Cambodia from 2005. The baseline, which will be updated approximately every 2 years, will guide the future efforts by the government of Cambodia to reduce greenhouse gas emissions from vehicle fleets.

Sustainable Urban Mobility for All Initiative (SUMAI): This is a three-year project co-funded by UNDP and Grab, a Singapore-based ride-hailing service provider, aims at improving availability and quality of transport data in Phnom Penh to inform policies and investment decisions on urban transport. This project would focus its interventions to support improving efficiency of existing urban traffic and transport systems through generation of traffic and air quality data in Phnom Penh; reducing urban transport GHG emission through promotion of clean vehicles and fuel measures; and stimulating innovations in smart transport solutions to accelerate progress on safety and mobility for all.

9. Anticipated follow up activities after this technical assistance is completed:

A comprehensive low-emission policy action plan, resulting from this Technical Assistance will serve as an important piece of guidance that will help. As part of GFEI-GCPF Country Baseline setting project, UNEP will perform two additional Country Baseline updates at approximately two-year intervals, providing the updated baselines that will guide key stakeholders in the transport sector in Cambodia, including the private sector, policymakers, research institutions and civil societies.

A low-emissions mobility project proposal to be developed under this project can be submitted to Green Climate Fund and other global environment funds with a focus on introducing electric mobility in Cambodia. The project proposal will include a demonstration component and therefore provide Cambodia opportunities to gain experience in electric vehicles and relevant infrastructure along the strategic points of Cambodia. Promotion of electric vehicles coupled with the use of renewable energy will contribute to further reducing CO2 emissions, air pollution and energy dependence in Cambodia.

10. Gender and co-benefits:

Imbedded in design of the activities:	Transport networks are one of the most important elements of a country's infrastructure, and they are key to reducing poverty and promoting equality. In low-income countries, gender differences in mobility needs are very pronounced, requiring gender sensitive policy responses[1]. In many countries, women are highly under-represented in decision-making with majority of the transport sector being managed by men. A disruptive market change to cleaner and more efficient vehicles presents an opportunity to address this unequal distribution by increasing women's participation in the transport sector and provide socio-economic opportunities in new businesses and business models as drivers, charging solution providers, fleet operators etc. This transition will also contribute to reducing the negative public health implications from vehicles for women and children, which are more vulnerable to the impact of air pollution than men.
Gender and co-benefits intended as result of the activities:	Outcomes of this TA will make a number of direct and indirect contributions to addressing gender aspects of Cambodia's transport sector. Promotion of low-emission transport policies ultimately benefits everyone regardless of their gender as enhanced connectivity is vital for local economic development and poverty reduction. A core part of Output 2 will be a review of national mobility policies. This exercise can help Cambodia to understand gender disparities in Cambodia's mobility policies and can serve as a guidance for future policy developments. Ultimately, Output 3, by fostering the uptake of electric vehicles, will contribute to lower costs of transportation in the longer term. Women, particularly in rural Cambodia, who suffer from significantly lower income then men with poor access to labour market, will thus in particular benefit from lower mobility cost in terms of increased access to employment, markets, education and health services, but also to the caretaking and household responsibilities that the majority of women hold

[1] UNEP-DTI (2015). Gender Sensitive Transport Planning for Cities in India

11. Main in-country stakeholders in implementation of the technical assistance activities:

Using the table below, please list and describe the role of in-country stakeholders, participants and beneficiaries who will be involved in or directly consulted during implementation of the assistance.

In country stakeholder	Role in implementation of the technical assistance
National Designated Entity	Provide overall coordination
Ministry of Economy and Finance (General Department of Customs and Excise, and General Department of Taxation)	Implement and advise on fuel economy and energy efficiency fiscal measures and instruments
Ministry of Public Works and Transport (General Department of Land Transport)	Implement and advise on sustainable and low-emissions transport and vehicle registration policies
Ministry of Mines and Energy (General Department of Petroleum; General Department of Energy)	Advise on fuel economy policies
Institute of Standards of Cambodia	Advise on national standards for vehicles
Ministry of Environment/National Council for Sustainable Development	Implement and advise on regulatory policies on road transport vehicles emissions

12. SDG Contributions:

*Instructions: Please complete the grey section below for **a maximum of three SDGs** that will be advanced through this TA. A complete list of SDGs and their targets is available here: https://sustainabledevelopment.un.org/partnership/register/.*

Goal	Sustainable Development Goal	Direct contribution from CTCN TA (1 sentence for top 1-3 SDGs)
1	End poverty in all its forms everywhere	
2	End hunger, achieve food security and improved nutrition, and promote sustainable agriculture	
3	Ensure healthy lives and promote well-being for all at all ages	
4	Ensure inclusive and equitable quality education and promote life-long learning opportunities for all	
5	Achieve gender equality and empower all women and girls	
6	Ensure availability and sustainable management of water and sanitation for all	
7	Ensure access to affordable, reliable, sustainable, and modern energy for all (consider adding targets for 7)	
	7.1 - By 2030, ensure universal access to affordable, reliable and modern energy services	
	7.2 - By 2030, increase substantially the share of renewable energy in the global energy mix	
	7.3 - By 2030, double the global rate of improvement in energy efficiency	Increased awareness and understanding of efficient vehicle technologies is a direct result of this study.
	7.a - By 2030, enhance international cooperation to facilitate access to clean energy research and technology, including renewable energy, energy efficiency and advanced and cleaner fossil-fuel technology, and promote investment in energy infrastructure and clean energy technology	
	7.b - By 2030, expand infrastructure and upgrade technology for supplying modern and sustainable energy services for all in developing countries, in particular least developed countries, small island developing States, and land-locked developing countries, in accordance with their respective programmes of support	
8	Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all	
9	Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation	
10	Reduce inequality within and among countries	
11	Make cities and human settlements inclusive, safe, resilient and sustainable	The long-term impacts of this TA will bring the urban population in Cambodia both economic and health benefits.
12	Ensure sustainable consumption and production patterns	
13	Take urgent action to combat climate change and its impacts	This technical assistance will assist Cambodia in

		tackling their high dependence on imported fossil fuel.
	13.1 - Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters in all countries	
	13.2 - Integrate climate change measures into national policies, strategies and planning	
	13.3 - Improve education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning	
	13.a - Implement the commitment undertaken by developed-country parties to the United Nations Framework Convention on Climate Change to a goal of mobilizing jointly $100 billion annually by 2020 from all sources to address the needs of developing countries in the context of meaningful mitigation actions and transparency on implementation and fully operationalize the Green Climate Fund through its capitalization as soon as possible	
	13.b - Promote mechanisms for raising capacity for effective climate change-related planning and management in least developed countries and small island developing States, including focusing on women, youth and local and marginalized communities	
14	Conserve and sustainably use the oceans, seas and marine resources for sustainable development	
15	Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss	
16	Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels	
17	Strengthen the means of implementation and revitalize the global partnership for sustainable development	

13. Classification of technical assistance:

Please indicate primary type of technical assistance. Optional: If desired, indicate secondary type of technical assistance.

Please tick off the relevant boxes below	*Primary*	*Secondary*
☐ 1. Decision-making tools and/or information provision	☐	☐
☐ 2. Sectoral roadmaps and strategies	☑	☐
☐ 3. Recommendations for law, policy and regulations	☑	☐
☐ 4. Financing facilitation	☑	☐
☐ 5. Private sector engagement and market creation	☐	☐
☐ 6. Research and development of technologies	☐	☐
☐ 7. Feasibility of technology options	☐	☐
☐ 8. Piloting and deployment of technologies in local conditions	☐	☐
☐ 9. Technology identification and prioritisation	☐	☑

Please note that all CTCN technical assistance contributes to strengthening the capacity of in country actors.

14. Monitoring and Evaluation process

Upon contracting of the implementing partners to implement this Response Plan, the lead implementer will produce a monitoring and evaluation plan for the technical assistance. The monitoring and evaluation plan must include specific, measurable, achievable, relevant, and time-bound indicators that will be used to monitor and evaluate the timeliness and appropriateness of the implementation. The CTCN Technology Manager responsible for the technical assistance will monitor the timeliness and appropriateness of the Response Plan implementation. Upon completion of all activities and outputs, evaluation forms will be completed by the (i) NDE about overall satisfaction level with the technical assistance service provided; (ii) the Lead Implementer about the knowledge

and learning gained through delivery of technical assistance; and (iii) the CTCN Director about timeliness and appropriateness of the delivery of the activities and output.