CTCN Technical Assistance

Request Submission Form

Guidelines:

- This Request Submission Form should be completed by the organisation requesting technical assistance from the Climate Technology Centre & Network (CTCN) in collaboration with the National Designated Entity (NDE) of the country in question
- The Form must be signed by the NDE. Please see updated contact list of NDEs here: http://unfccc.int/ttclear/support/national-designated-entity.html
- The Form can be submitted as a Word file containing a digital signature or as a signed and scanned PDF file in combination with an un-signed Word file
- For requests submitted by multiple countries, all the NDEs of the respective countries shall sign identical Forms before official submission to the CTCN
- NDEs have the opportunity to submit CTCN requests in collaboration with National Designated Authorities (NDAs) for the Green Climate Fund (GCF) if targeting the GCF Readiness Programme.

Requesting country or countries:	Lao People's Democratic Republic
Request title:	Technical Capacity Enhancement for Planning Urban Public Transport System in Vientiane, Lao PDR
NDE	Mr. Syamphone Sengchandala, Director General, Department of Climate Change, Ministry of Natural Resources and Environment of Lao PDR Dongnasoktai Village, Sikhottabong District, Vientiane Capital, Lao PDR Syamphone_s@gmail.com
Request Applicant:	Dr. Bounta Onnavong, Director General, Department of Transport, Ministry of Public Works and Transport of Lao PDR Lane Xang Avenue, P.O. Box 10618, Vientiane, Lao PDR Bounta_ov@yahoo.com

Climate objective:

- ☐ Adaptation to climate change
- ☒ Mitigation of climate change
- ☐ Combination of adaptation and mitigation of climate change

Geographical scope:

- ☐ Community level
- ☒ Sub-national: Vientiane Capital
- ☐ National
- ☐ Multi-country

If the request is at a sub-national or multi-country level, please describe specific geographical areas (provinces, states, countries, regions, etc.).

Problem statement related to climate change (up to one page):

This section should answer the question "what is the problem?" Please summarize the problem related to climate change and/or the negative impacts of climate change in the country that the request aims to address.

Climate Change

- Lao PDR's national GHG emission was 52,790 Gg-CO2e and the removal was 2,047 Gg-CO2, totaling to a net GHG emission of 50,743 Gg-CO2e, according to Table 2-5 "National GHG emisions in CO2 equivalent, 2000 (Gg)", in the National GHG Inventory for 2000, described in the Lao Second National Communication.
- By sector, LULUCF sector was the single major source, accounting for 83% of total emissions, followed by the agriculture sector, at 15%. The energy sector including the transport sector contributed only 2% of the total GHG emissions, while emissions from the waste and industrial processes was negligible in proportion.
- For the energy sector, it is notable that all electricity in Lao PDR is generated by hydropower, hence emissions from this sector are negligible. The main energy sources consumed in Lao PDR are fuelwood, oil, electricity and coal. Fuelwood, electricity and coal are domestically produced, while fuel oil and LPG are imported. In 2000 a total of 326,093 tonnes of fuel oil was imported to Lao PDR. Of this, 145,641 tonnes were diesel, 102,439 tonnes were gasoline, 68,109 tonnes were kerosene, and 522 tonnes were LPG. Based on a study, about 70% of the imported diesel and gasoline was consumed by the road transport sector.
- GHG emission from the energy sector was 1,040 Gg-CO2e, according to Table 2-5 "National GHG emissions in CO2 equivalent, 2000 (Gg)", in the National GHG Inventory for 2000. Out of this figure, the transport sector emitted 447Gg-CO2e, which was comprised of 43% of energy-related GHG emission.
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Transport situation in Lao PDR

- The road transport has a 90% share in domestic passenger transport and a 70% share in domestic freight transport. Passenger movement by land has been increasing (2,100 million passenger-km in 2011 to 3,200 million passenger-km in 2015).[1]
- One of the reasons for this increase is an increase in the number of tourists arriving in Lao PDR (2.5 million in 2010 to 4.7 million in 2015).[2] The number of vehicle registrations is also rapidly increasing (0.2 million in 2000, and 1.0 million in 2010, to 1.7 million in 2015).[3]

Transport situation in Vientiane Capital

- Vientiane Capital has a population of 800,000 out of the national total population of 6.8 million. The population in Vientiane Capital is projected to reach 1.4 million in 2030. With rapid urbanization and economic growth, the number of registered road transport vehicles including cars and motorcycles have more than doubled in 2015 (692,016 registered vehicles) compared to

[1] JICA/Katahira & Engineering International (KEI) 2016 "Report of basic information collection, confirmation and survey of transport sector in Lao PDR" (Source: Department of Civil Aviation, Ministry of Public Works and Transport (MPWT); Department of Waterways, MPWT; Department of Transport, MPWT; Department of Railways, MPWT).

[2] JICA/KEI 2016 Report (Source: Statistical Report on Tourism in Laos 2015, Tourism Development Department, Tourism Research Division, Ministry of Information, Culture and Tourism).

[3] JICA/KEI 2016 Report. (Data source: "Vehicle Registration Statistics of Lao P.D.R. in 2000 to2015" by MPWT, DOT, Published January 2016).

2008 (319,511 registered vehicles). This causes traffic congestion, in particular during peak times in mornings and evenings. On the other hand, in Vientiane Capital the public transport share has remained at 4% since 2007. The improvement of public transport share is needed.

- On 3 December 2021, the Lao-China Railway was open to operation[4]. Although the country border of China is closed due to COVID-19, many passengers in Lao PDR use the railway trains. After COVID-19 pandemic, more Chinese visitors are expected to use the trains to arrive the Vientiane Capital.

Possible way forward to tackle both transport system and climate change issues

- Hydro-electricity driven public transport system in Vientiane Capital is desirable option to tackle both urban transport problems and climate change issues. It will reduce GHG emissions by:
  (i) fuel switch from fuel oil (diesel and gasoline) to hydropower electricity, and
  (ii) transportation modal shift from private road transport to (mass) public transport

Challenges and the requested assistance

- Currently the Japan International Cooperation Agency (JICA) is implementing a technical assistance project for Institutional Capacity Building for Sustainable Urban Transport System (to be completed in 2021), which includes the identification of suitable/sustainable public transport mode suitable to Vientiane Capital.
- Along with the JICA project, detailed planning and survey (feasibility study) should be necessary, to realize the public transport development in Vientiane Capital. The technical assistance from experienced international entities is needed to further enhance our institutional capacity to develop the detailed concrete system plan and undertake the feasibility study.

Past and on-going efforts to address the problem (up to half a page):

This section should answer the question "what has been done or is currently being done to address the problem?" Please describe past and on-going processes, projects or initiatives implemented in the country or region to tackle the climate problem as described above.

- According to Lao National Determined Contribution (NDC), Lao PDR has identified a number of actions to be undertaken in order to reduce GHG emissions, among which one transport-related activity is described:
  - Implementation of transport focused NAMAs: Systematic development of a road network and provision of buses to meet increasing demand for travel will mitigate GHG emissions while promoting economic development. The objective of road network development is to provide better networks so that vehicle kilometres will be reduced against the BAU scenario. In addition to reduction in GHG emissions, the activity will lead to a reduction in NOx and Sox emissions which will have significant co-benefits such as improvement in air quality which in turn has positive implications for human health.
- The 8th Five-year National Socio-Economic Development Plan (NSEDP) (2016-2020) sets priority activities, including the roads upgrading and the railway projects. Its mid-term review (draft) stated that 8th NSEDP is influenced by the concept of "Green Growth", and the National Green

[4] https://asia.nikkei.com/Politics/International-relations/China-Laos-railway-begins-with-limited-service2

Growth Strategy sets out to strengthen the transport sector and support more sustainable approaches, such as through plans to:

- Improve the quality and cost of public transport in urban areas, as well as between provinces and districts.
- Promote production, import and use of transport vehicle that use clean energy (e.g., bicycles and electric vehicles).
- Restrict import and use of personal vehicles that use fuel, as well as raise environmental standards on vehicle imports.

- "Environmentally Sustainable Transport (EST)" is the core strategy of transport policies in Lao PDR. The EST strategy includes environmental and people friendly urban transport infrastructures, public transport planning and transportation demand management (TDM), and non-motorized transport (NMT).
- With supports from Japan International Cooperation Agency (JICA), "Comprehensive Vientiane Capital Urban Transport Master Plan" was developed (2008), which suggests road network development, public transport system development and improved transport management.
- JICA is now supporting another project, namely "Project for Institutional Capacity Building for Sustainable Urban Transport System", aiming at the revision of the master plan of 2008, with the improvement of Lao transport administrative capacity including the capacity to further revise of future master plan(s).
- The Asian Development Bank (ADB) is also implementing "Vientiane Sustainable Urban Transport Project (VSUTP)" to establish a high-quality public bus transport system, a parking management system, and a national electronic vehicle registration system, and to improve traffic management and accessibility for pedestrians and non-motorized transport (NMT).
- The international railway project between China and Lao PDR was completed. Northern Vientiane station for this railway transport system was open on 3 December 2021. Since the international traffic is not open due to COVID-19, it will impact on the flow-in of passengers including tourists in Vientiane to lead increased passenger transport demands.

Specific technology[5] barriers (up to one page):

This section should answer the questions "what are the technology barriers that hinder national efforts described above" and "how will the CTCN technical assistance complement these efforts?" Building upon the problem statement and taking into consideration the existing efforts described above, please describe the specific technology barriers encountered by the requesting applicant to identify, assess or deploy climate technology(ies) in an effort to address the problem statement. The described barriers should be within the scope of the requested CTCN technical assistance (described in the section below).

[5] *"**any equipment, techniques, practical knowledge and skills** needed for reducing greenhouse gas emissions and adapting to climate change" (Special Report on Technology Transfer, IPCC, 2000)*

In general, based on the population growth and economic growth in developing countries, motorized transport is rapidly increased, to cause chronic traffic congestion in urban/city areas. Vientiane Capital has been experiencing slower growth of population than other Asian mega cities such as Bangkok, Jakarta and Metro Manila, and is not suffered from chronic huge traffic congestion happed in such mega cities. While the China-Laos international railway which was open on 3 December 2021 is expected to transport more passengers, it will bring the increase of flow-in population including visitors/tourists into Vientiane from China and other provinces within Lao PDR, which would result in a shortage of the urban passenger transport due to the rapid growth of the demand in Vientiane.
Due to less condensed capital city of Vientiane, some route buses for its urban public transport function have been sufficient. In recent years, the ADB started the VSUTP project to improve the urban public transport system by introducing Bus Rapid Transit (BRT) system to address Vientiane's future traffic problems. The VSUTP has recognized the lack of capacity to operate and administrate the BRT public transport system in Vientiane, and the ADB and JICA have provided assistances to improve such operation and administration capacity for the public transport system.
Since JICA supported the development of "Comprehensive Vientiane Capital Urban Transport Master Plan" (2008), the revision of the master plan is needed, but the lack of capacity in Lao PDR is observed. Then JICA has started the "Project for Institutional Capacity Building for Sustainable Urban Transport System", aiming at the revision of the master plan as well as the capacity building of Lao side. This project focuses on the enhancement of Lao capacity to undertake surveys and assessments for the revision of the plan and the transport system planning and installation including any modes of public transport.
The revised master plan to be developed through the support of the JICA project will provide a blueprint of Vientiane urban transport management toward 2035. The future plan of the Vientiane urban public transport system will also be contained in the master plan, with the possible identification of transportation mode, which will be discussed and determined through the project implementation managed jointly by JICA side and Laos side (mainly the Ministry of Public Works and Transport (MPWT) of Lao PDR), taking into account the VSUTP project and its BRT system establishment. However, Lao side would face to the challenges caused by the lack of capacity for more detailed planning, feasibility study, financial arrangement and institutional arrangement for the public transport system and network construction and operation.

Sectors:

Please indicate the main sectors related to the request:

☐ Coastal zones	☐ Early Warning and Environmental Assessment	☐ Human Health	☒ Infrastructure and Urban planning
☐ Marine and Fisheries	☐ Water	☐ Agriculture	☐ Carbon fixation
☐ Energy Efficiency	☐ Forestry	☐ Industry	☐ Renewable energy
☒ Transport	☐ Waste management		

Please add other relevant sectors:

Cross-sectoral enablers and approaches:

Please indicate the main cross-sectoral enablers and approaches

☐ Communication and awareness	☐ Economics and financial decision-making	☒ Governance and planning	☐ Community based
☐ Disaster risk reduction	☐ Ecosystems and biodiversity	☐ Gender	

Technical assistance requested (up to one page):

Founded on the problem statement, past/on-going efforts and technology barriers, please describe the requested technical assistance. The technical assistance should clearly contribute to mitigation or adaptation to climate change as described in the problem statement and contribute to overcome the specific technology barriers.

Within a clearly defined scope, the description of technical assistance should be structured into the following:

- *Overall objective*
- *Anticipated groups of activities to be performed by the technical assistance*
- *Anticipated products to be delivered by the technical assistance.*

Please note that the CTCN facilitates technical assistance and is not a project financing mechanism.

- Overall objective:
  The urban public transport system best suitable to Vientiane Capital with the projected population growth and increased visitors (tourists) will be planned, surveyed, assessed and implemented, based on the enhanced capacity for the urban public transport system development in Lao PDR. Based on this, CO2 emission reduction in the transport sector will be achieved by promoting a modal shift from private vehicle-based land transportation using fossil fuels (gasoline and/or diesel) to urban public transport system (potentially mass passenger transport mode).
  It is also expected that the introduction and operation of the urban public transport system will facilitate a smooth traffic stream in Vientiane, to decrease economic loss caused from traffic congestion. In addition, traffic accidents due to heavy dependency upon private vehicle-based road transportation will be decreased, and air quality will be improved, to contribute to the security of human health and lives, and the conservation of tourism resources in Vientiane of the historic city.

- Anticipated groups of activities to be performed by the technical assistance:
  Based on the JICA/KEI project and the ADB VSUTP project (introduction of BRT system in Vientiane), the technical assistance will provide the additional capacity enhancement to Laos and Vientiane Capital to develop and operate a public transport system.
  - Detailed planning survey for Vientiane urban public transport system & network, in line with the revised master plan, taking into account the ADB's VSUTP project and its BRT system

establishment and the effects of the Lao-China Railway and its Vientiane Station. [made with Department of Transport (DOT), MPWT of Lao PDR, and Department of Public Works and Transport of Vientiane Capital (DPWT-VC)]
- Pre-feasibility study for one possible urban public transport system to be developed in Vientiane, according to the proposals made by the JICA/KEI project. In this study, an expected route and/or structure of the possible urban public transport system would be assessed, and a rough estimated project costs for developing it would be calculated. [made with MPWT-DOT, and DPWT-VC]
- Capacity building for the operation and administration of the urban public transport system in Vientiane, including the institutional arrangement. [made with DPWT-VC, Vientiane Capital State Bus Enterprise (VCSBE) and/or other operating entity]

The climate change mitigation effects should be quantified through the activities of the technical assistance. In general, the modal shift in transportation from the conventional/existing transport mode to mass transit or more efficient transport mode is expected reduce greenhouse gas (GHG) emissions, in particular, in the urban area.

- Survey for an applicable methodology for quantifying GHG emission reduction effects. [made with MONRE and MPWT-DOT]
  One possible methodology is:
  - Emission reductions (ERy) are accounted by the difference between baseline emissions (BEy) and project emissions (PEy).
  - BEy = (average annual travel distance of the transportation *i* x vehicles) X (fuel consumption rate) X (NCV of fuel) X (CO2 emission factor)
  - PEy = (fuel consumption) X (NCV of fuel) X (CO2 emission factor)

- <u>Anticipated products to be delivered by the technical assistance:</u>
  - A detailed plan for Vientiane urban public transport system & network;
  - Draft implementation plan for one possible Vientiane urban public transport system, and its rough estimated cost calculation; and
  - Draft institutional arrangement plan for operating and administrating the Vientiane urban public transport network & system.

Expected timeframe:

Please indicate the expected duration period for the requested technical assistance. Please note CTCN technical assistance is limited to a maximum duration of 12 months.

1 year (2022.4 – 2023.3)

Anticipated gender and other co-benefits from the technical assistance:

Please describe the activities with gender linkages as well as the anticipated gender and other co-benefits (e.g. biodiversity, economic, social, cultural, etc.) that are likely to be generated as a result of the technical assistance.

For more information you can find guidelines on the CTCN's website here: https://www.ctc-n.org/technologies/ctcn-gender-mainstreaming-tool-response-plan-development

Further reading on gender can be found on the CTCN website here:

https://www.ctc-n.org/technology-sectors/gender

The urban public transport system and network serves the whole population of Vientiane Capital, as well as the visitors including the tourists in Vientiane. The technical assistance will help the construction of urban public transport system, which will provide the smooth transportation to passengers, in particular, the vulnerable people of Vientiane including women, the elderly and children. The project will serve the residents in Vientiane which will enjoy the health and safety and convenience in their daily lives from the improved transport system.

Key stakeholders:

Please list the stakeholders who will be involved in the implementation of the requested CTCN technical assistance and describe their role during the implementation (for example, government agencies and ministries, academic institutions and universities, private sector, community organizations, civil society, etc.).

Stakeholders	Role to support the implementation of the technical assistance
National Designated Entity: Ministry of Natural Resources and Environment (MONRE)	Supervise CTCN TA project implementation; Provide advisory information for contribution to Lao mitigation efforts in terms of climate change measures.
Request Applicant: Department of Transport (DOT), Ministry of Public Works and Transport (MPWT)	Build and enhance their capacity for detailed planning and operation of urban public transport system, in particular, in Vientiane Capital; Provide collaborative supports and directions to the Department of Public Works and Transport of Vientiane Capital (DPWT-VC) and the Vientiane Capital State Bus Enterprise (VCSBE), if applicable; Administer and manage the CTCN TA implementation and its progress.
Municipality (Vientiane Capital) (Department of Public Works and Transport (DPWT))	As the administrator of Vientiane urban public transport system, DPWT of Vientiane Capital (DPWT-VC) will build and enhance their capacity to operate the public transport system, including business planning and operation planning. In addition, DPWT-VC will also build and enhance their capacity to supervise the operating entity (possibly Vientiane Capital State Bus Enterprise (VCSBE) or other entity).

Alignment with national priorities (up to 2000 characters including spaces):

Please describe how the technical assistance is consistent with national climate priorities such as: Nationally Determined Contribution, national development plans, poverty reduction plans, technology needs assessments, Low Emission Development Strategies, Nationally Appropriate Mitigation Actions, Technology Action Plans, National Adaptation Plans, sectorial strategies and plans, etc.

<table>
<tr><td>Reference document (please include date of document)</td><td>Extract (please include chapter, page number, etc.).</td></tr>
<tr><td>Nationally Determined Contribution (NDC)</td><td>Direct alignment and contribution to NDC implementation is required for all CTCN technical assistances. Please include a direct reference to the INDC/NDC document (chapter, page number, etc.).

According to Lao PDR’s NDC to the UNFCCC (30 September 2015), “Lao PDR has ambitious plans to reduce its GHG emissions while at the same time increasing its resilience to the negative impacts of climate change.” (Chapter 1 ‘National Context’, p.2)

“Lao PDR is committed to the implementation of its NCCS (National Strategy on Climate Change) and its sectoral climate change action plans, for the national, regional and global benefit. However, it will require technical and financial support to deliver the mitigation and adaptation actions identified herein. With such support, the NCCS will be most efficiently implemented, the potential GHG reductions identified will be optimised”. (Chapter 1, p.3)

“Lao PDR has identified a number of actions which it intends to undertake in order reduce its future GHG emissions, subject to the provision of international support.” And one of actions are outlined in the Table 1. (Chapter 2 ‘Mitigation’, ‘2.1 Mitigation Contribution’, p.3)

Table 1: Intended Mitigation Activities to be implemented by Lao PDR in 2015-2030 includes:
<table>
<tr><th>Name of activity</th><th>Objectives of the activity</th><th>Estimated CO2eq reductions</th></tr>
<tr><td>Implementation of transport focused NAMAs</td><td>In one NAMA feasibility study, road network development is identified as a first objective which will reduce the number of kilometres travelled by all vehicles. The second objective is to increase the use of public transport compared to the business as usual (BAU).
In addition to a reduction in GHG emissions the activity will lead to a reduction in NOx and SOx emissions which will have significant co-benefits such as improvement in air quality which in turn will have positive impacts on human health.</td><td>Road network development is 33 ktCO2/pa, and 158 ktCO2/pa for public transport development</td></tr>
</table>
(Chater 2.1, p.3-4)</td></tr>
<tr><td>Technology Needs Assessment</td><td>According to Lao PDR’s “Technology Needs Assessments Report - Climate Change: Mitigation” (April 2013), the priority areas</td></tr>
</table>

For Energy sector, "the energy sector is an important sector for development and is expected to experience fast growth. As defined in the energy strategy to 2020 (MEM, 2010), the sector has the following development targets:

- 6,954.9 MW of electricity will be built. 1,800 MW will be lignite power plant and the rest will be from hydropower. 5,716 MW of installed capacity is planned for electricity export, of which 1,700 MW exported by lignite power plant;
- 70% of population have access to electricity in 2010 and 90% in 2020;
- Promote use of renewable energy such as solar, hydropower, wind, biogas and biomass.

Likewise, the energy demand is forecasted to increase 3.6 percent per year or from 1.8 Mtoe to 3.9 Mtoe from 2005 to 2025. In regard to different sectors, energy consumption is expected to increase from 6.1 percent in 2005 to 16.9 percent in 2025 in the industrial sector; 6.8 percent in 2005 to 34 percent in 2025 in the transport sector. By product, the biomass is expected to be main fuel form, followed by fuel oil.

However, the fuel oil demand is increasing much faster. Figured 3 is the projected demand of biomass, fuel oil, electricity, and coal which will increase from 1,322 ktoe, 36ktoe, 87 ktoe, and 30 ktoe in 2005 to 1,473 ktoe, 729 ktoe, 225 ktoe, 115 ktoein 2015 and then 1,624 ktoe, 1,523 ktoe, 516 ktoeand 308 ktoein 2025 respectively (MEM, 2011).

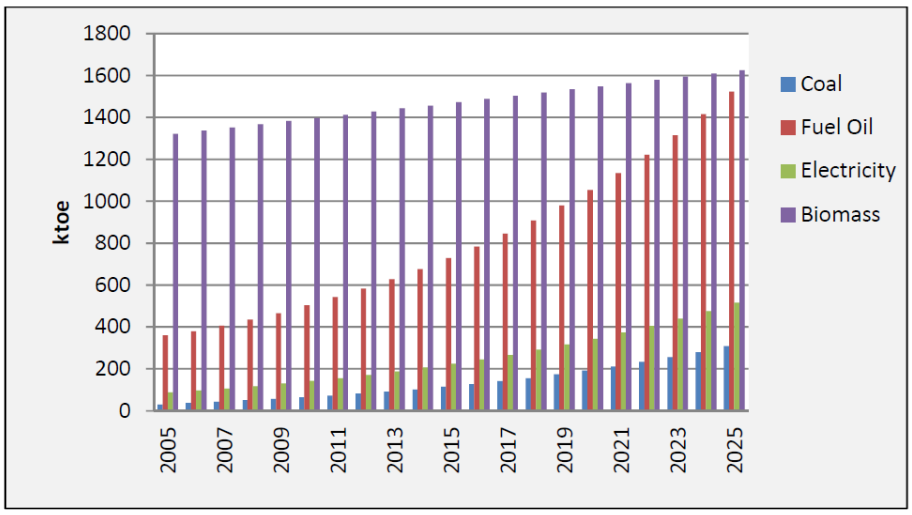

Figure 3 Energy consumption in 2005 and projected until 2025 (ktoe)

Source: MEM, 2011

Furthermore, for fuel oil, Lao State of Fuel predicted that the demand by type will also increase as shown in the table below.

Table 1 Estimate fuel oil demand from 2010 to 2020 in ktoe

Fuel type/Year	2010	2015	2020
Gasoline P	0.89	4.06	9.75
Gasoline R	145.22	245.34	406.85
Jet kerosene	10.29	12.84	14.17
Kerosene	459.88	738.81	1,175.53
Residential fuel oil	5.89	8.96	15.86
Lubricant	2.96	11.70	23.70

Source: Lao State of Fuel, 2011

(Part 1 – TNA Report, Chapter 3 'Sector selection', '3.1 An overview of greenhouse gas emissions status and trends of the different sectors', 'Energy Sector', p.26-27)

However, as the result of the sector selection, conducted in the sector selection workshop and application of multi-criteria, scoring and expert judgement as a key tool for supporting the selection, the agriculture and forestry sector were chosen according to the scores in the criteria in the table below.

Sectors/ Criteria	Contribution to GDP	Potential for GHGs Reduction / Sequestration	Benefiting Environment /Ecosystem	Contribute Poverty Reduction	Employment	Initiative (existing=5; none existing =1)	Total Score	Priority
Forestry	5	3	5	4	4	4	25	2
Transport	3	4	2	5	3	4	21	4
Industry	4	3	2	3	4	4	20	5
Residential/buildings	3	4	3	3	3	4	20	5
Agriculture	5	4	4	5	5	3	26	1
Waste	1	3	2	1	2	3	12	6
Energy production and supply	5	3	3	4	4	4	23	3

(Table 6 Result of the sector selections, '3.2 Process, criteria and results of sector selection', p.36).

According to this result, the transport sector is ranked as rather high.

National Adaptation Plans

Nationally Appropriate Mitigation Actions

In the 'Annex I: Mitigation Measures' of the Lao PDR's NDC, "Implementation of transport focused NAMAs" are described:

Implementation of transport focused NAMAs	
Description	Systematic development of a road network and provision of buses to meet increasing demand for travel will mitigate GHG emissions while promoting economic development.
Objective	The objective of road network development is to provide better networks so that vehicle kilometres travelled will be reduced against the business as usual (BAU) scenario. In addition to reduction in

	GHG emissions, the activity will lead to a reduction in NOx and SOx emissions which will have significant co-benefits such as improvement in air quality which in turn has positive implications for human health.
Base year	2007
Methodology for assessing base year and anticipated future emissions	The reference scenario is determined as BAU which is the scenario reflecting traffic volume trends between 2007 and project start. The scenario is pre-etermined and based on transport demand forecast surveys conducted prior to the project's implementation. The Japan International Cooperation Agency (JICA)-supported NAMA document from which projections are taken employs the ASIF (activity-structure-intensity-fuel) approach to calculate emission reductions ex-ante.
Anticipated emission reduction	A feasibility study for a JICA proposed NAMA estimates that emission reductions due to road network development is approximately 33 kt CO2e/pa, and emission reductions due to public transport development 158 kt CO2e/pa by against BAU by 2025, using 2007 as a base year for comparison.
Plan to Achieve the Goal	The actions are to be completed as part of a NAMA. Projects in road network development, public transport development and transport management sectors are planned to be implemented in three phases; short, medium and long term.
Main barriers for implementation	● Uncertain or unclear carbon market and mitigation incentives; ● Limited budget for road network and transport system improvement; ● Existing road network is rather complicated and it has not been integrated sustainable urban planning. Improving existing one might take time and costly.
Support required	● Capacity building on: ✧ Sustainable and integrated urban planning ✧ Law enforcement ✧ Financial models for road planning

	✧ Traffic controls ✧ Sustainable and climate resilient transport / technologies. ● Access to favourable terms for infrastructure funding.
	Estimated cost: USD 105 million (until 2020)
	(Annex I: Mitigation Measures, NDC, p.15)
Add others here as relevant	

Development of the request (up to 2000 characters including spaces):

Please describe how the request was developed at the national level and the process used by the NDE to approve the request before submitting it (who initiated the process, who were the stakeholders involved and what were their roles?) and describe any consultations or other meetings that took place to develop and select this request, etc.

Lao PDR has been assisted to develop the transport systems, in particular, urban transport improvement in Vientiane. Transport sector in Vientiane Capital is one of GHG emission sources, and the amount of GHG emissions is dramatically increasing due to the increased number of private vehicles and the increased traffic congestions. In responding to this, the Lao Ministry of Public Works and Transport (MPWT) would like to begin the consideration of the development of a near-future urban public transport system and network. JICA and ADB have started their projects to support Lao MPWT for the transport sector improvement, and the MPWT would like to enhance their capacity to administer public transport system projects, based on the results of JICA and ADB projects. Therefore, the MPWT has consulted with the Lao NDE, i.e., Ministry of Natural Resources and Environment (MONRE), to apply such assistance. MONRE, in charge of climate change issues in Lao PDR, also recognized the importance to address the transport issues in terms of GHG emissions and fossil fuel consumptions.

Background documents and other information relevant for the request:

- *Please list all relevant documents that will help the CTCN analyse the context of the request and national priorities. Please note that all documents listed/provided should be mentioned in this request in the relevant section(s), and that their linkages with the request should be clearly indicated. For each document, please provide web-links (if available) or attach to the submission form. Please add any other relevant information as required.*
- *Please indicate if this request has been developed with the support of the CTCN Request Incubator.*
  - JICA/Katahira & Engineering International (KEI), 2016, "Report of basic information collection, confirmation and survey of transport sector in Lao PDR" (http://open_jicareport.jica.go.jp/710/710/710_112_12270047.html (only Japanese version is available))
  - JICA, "Pre-project evaluation sheet for 'The Project for Institutional Capacity Building for Sustainable Urban Transport System in Lao PDR'" (https://www2.jica.go.jp/ja/evaluation/pdf/2018_1801863_1_s.pdf (available only in Japanese))

- ADB, "Lao People's Democratic Republic: Vientiane Sustainable Urban Transport: Concept Paper" (https://www.adb.org/sites/default/files/project-document/73998/45041-002-lao-cp.pdf)

OPTIONAL: Linkages to Green Climate Fund Readiness and Preparatory Support

The CTCN is collaborating with the GCF in order to facilitate access to environmentally sound technologies that address climate change and its effects, including through the provision of readiness and preparatory support delivered directly to countries through their GCF NDA. These actions are in line with the guidance of the GCF Board (Decision B.14/02) and the UNFCCC, particularly paragraphs 4 and 7 of 14/CP.22 that addresses Linkages between the Technology and the Financial Mechanisms[6].

The CTCN is therefore implementing some of its technical assistance using GCF readiness funds accessed via the country's NDA. Any application for GCF support, including the amount of support provided, is subject to the terms and conditions of the GCF and should be developed in conjunction with the NDA.

Please indicate whether this request has been identified as preliminarily eligible by the NDA to be considered for readiness support from the GCF.

☐ Initial engagement: The GCF NDA of the requesting country has been engaged in the design of this request and the NDA will be involved in the further process leading to an official agreement for accessing GCF readiness support.

☐ Advanced engagement (preferred): The GCF NDA of the requesting country has been directly involved in the design of this request and is a co-signer of this request, the signature indicating provisional agreement to use readiness national funds to support the implementation of the technical assistance.

NDA name:

Date:

Signature:

Monitoring and impact of the assistance:

By signing this request, I affirm that processes are in place in the country to monitor and evaluate the technical assistance provided by the CTCN. I understand that these processes will be explicitly identified in the CTCN Response Plan and that they will be used in the country to monitor the implementation of the technical assistance following standard CTCN procedures.

[6] Please see: https://unfccc.int/files/meetings/marrakech_nov_2016/application/pdf/auv_cop22_i8b_tm_fm.pdf

I understand that, after the completion of the requested assistance, I shall support CTCN efforts to measure the success and effects of the support provided, including its short, medium and long-term impacts in the country.

Signature:	
NDE name:	Mr. Syamphone Sengchandala, Director General, Department of Climate Change, Ministry of Natural Resources and Environment of Lao PDR
Date:	29 April 2022
Signature:	

THE COMPLETED FORM SHALL BE SENT TO THE CTCN@UNEP.ORG

The CTCN is available to answer all questions and provide guidance on the application process.