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TERMINAL EVALUATION REPORT

**Low Emission Capacity Building (LECB) project/LECB Enhanced support/
Intended Nationally Determined Contributions project (INDC)
(Award: 00065875/ 00082211/ 00095698)**

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ABBREVIATIONS AND ACRONYMS

ABI	Association of Bhutanese Industries
ADB	Asian Development Bank
ADP	Durban platform for Enhanced Action
AIT	Asian Institute of Technology
AWP	Annual Work Plan
BBS	Bhutan Broadcasting Service
BCCI	Bhutan Chamber of Commerce and Industry
BMU	Ministry for the Environment, Nature Conservation and Nuclear Safety of Germany
BSB	Bhutan Statistics Bureau
CCD	Climate Change Division
CCTV	Closed Circuit Television
CDCL	Construction Development Corporation Limited
CDM	Clean Development Mechanism
CO	Country Office
CPD	Country Program Document
DEDE	Department of Alternative Energy Development and Efficiency
DES	Department of Engineering Services
DGM	Department of Geology and Mines
DHS	Department of Human Settlement
DNA	Designated National Authorities
DNB	Department of National Budget
DoA	Department of Agriculture
DoFPS	Department of Forest and Park Services
DoI	Department of Industry
DoL	Department of Livestock
DoR	Department of Roads
DoT	Department of Trade
DPA	Department of Public Accounts
DRC	Department of Revenue and Customs
DRE	Department of Renewable Energy
EC	European Commission
EIMS	Environment Information Management System
EU	European Union
FYP	Five Year Plan
GHG	Green House Gas
GNHC	Gross National Happiness Commission
INC	Initial National Communication
INDC	Intended Nationally Determined Contribution
IPCC	Intergovernmental Panel on Climate Change

ITS	Intelligent Transport System
IWRM	Integrated Water Resource Management
KSA	Key Resource Analysis
LECB	Low Emission Capacity Building Program
LECRDS	Low Emission Climate Resilient Development Document
LEDs	Low Emission Development Strategy
LUCF	Land Use Change and Forestry
M&E	Monitoring and evaluation
MDGs	Millennium Development Goals
MoCHA	Ministry of Home and Cultural Affairs
MoE	Ministry of Education
MoEA	Ministry of Economic Affairs
MoF	Ministry of Finance
MoH	Ministry of Health
MoIC	Ministry of Information and Communications
MoWHS	Ministry of Works and Human Settlement
MRVs	Measuring, Reporting and Verification Systems
MSTCCCC	Multi-sector Technical Coordination Committee on Climate Change
NAMAs	Nationally Appropriate Mitigation Actions
NBSAP	National Biodiversity Action Plan
NCs	National Communications
NECS	National Environment Commission Secretariat
NEMA	National Environmental Management Authority
NFI	National Forest Inventory
NGO	Non-Government Organization
NHDCL	National Housing Development Corporation Limited
NIRs	National Inventory Reports
NPPFL	National Pension and Provident Fund Limited
NRDCL	Natural Resources Development Corporation Limited
NSB	National Statistics Bureau
PEMS	Public Expenditure Management System
PLAMS	Planning Monitoring System
PMB	Project Management Board
PMU	Project Management Unit
PPD	Planning and Policy Division
PPP	Private Public Partnership
RBP	Royal Bhutan Police
REDD	Reducing Emissions from Deforestation and Forest Degradation in Developing Countries
RGoB	Royal Government of Bhutan
RR	Resident Representative
RSPN	Royal Society for Protection of Nature

RSTA	Road Safety and Transport Authority
RTC	Royal Thimphu College
RUB	Royal University of Bhutan
ToR	Terms of Reference
TV	Television
TWGs	Technical Working Groups
UN	United Nations
UNDAF	United Nations Development Assistance Framework
UNDP	United Nations Development Programme
UNDP CO	UNDP Country Office
UNFCCC	United Nations Framework Convention on Climate Change
UNPF	United Nations Partnership Framework
USD	US dollar

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1. EXECUTIVE SUMMARY

1.1 Project description

This Terminal Evaluation report covers reporting for three projects funded through the Global LECB Programme. The 3 projects include:

1. Low Emission Capacity Building project with NEC (2013-2017)
2. Low Emission Capacity Building Enhanced Support through MOIC (2015-2017)
3. Intended Nationally Determined Contributions (INDC) with NEC (2016-2017)

The 3 project combined have been implemented over a duration of 5 years from 2013 through 2017. The Low Emission Capacity Building (LECB), LECB Enhanced support or INDC was implemented over a period of five years. This LECB programme is funded by the European Commission (EC), the German Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU), and the Australian government (AusAID and the Department of Climate Change and Energy Efficiency).

The outcomes of Bhutan's LECB project are: i) Develop/establish greenhouse gas inventory management systems; ii) Formulate Nationally Appropriate Mitigation Actions (NAMAs) in waste and transport; iii) Develop low-emission development strategies (LEDS) in the context of national development in the transport and Industry and iv) Design measuring, reporting and verification (MRV) systems to support implementation and evaluation of NAMAs and LEDS.

Additional support was mobilized from 2015-2017 to assist the Ministry of Information and Communications to support policy and operational aspects of sustainable urban transport. A total budget of USD 300,000 was supported through the LECB enhanced support to the MOIC. The project target was to bring out both short and long term solutions to reduce GHGs emission in the transport sector by reforming the urban public transport system through implementation of attractive, cost efficient public urban transport solutions.

The INDC project was supported from 2016-2017. Bhutan's NDC builds on the declaration to remain carbon neutral in 2009 during the COP15. It ensures that our emission of GHG does not exceed the sink capacity of our forests. Under Bhutan's INDC submitted to the UNFCCC on September 2015 covers ten priority adaptation needs and nine mitigation actions. These actions cover a range of sectors and draw on existing legislation, policies and strategies.

In total the LECB program budget is USD 1,134,600 with USD 32,100 for project design, USD 642,000 for LECB project, 300,000 for LECB enhanced support and 160,500 for INDC.

1.2 Purpose of the evaluation

This terminal evaluation of LECB/INDC has been performed as part of a standard mandatory requirement of all UNDP projects. The terminal evaluation took place from October 19, 2017 to December 22, 2017. The evaluation was done according to the 2012 Guidance for Conducting Terminal Evaluations of UNDP-Supported Projects.

The objective of the evaluation is to assess the achievement of project's objective, the affecting factors, the broader project impacts, its sustainability, and the project partnership strategy. The terminal evaluation focused specifically on recommendations and lessons learned that could be utilized in similar projects in other countries of UNDP operations.

1.3 Summary of evaluation findings

This Evaluation finds the project as designed relevant and appropriate to address national challenges and development needs in line with commitments to climate change mitigation. The project fits well in national efforts as guided by the Constitution of the Kingdom of Bhutan, National Environment Protection Act 2007, National Forest Policy 2011, Economic Development Policy 2010, Water Act of Bhutan 2011, Waste Prevention and Management Act 2009 and Waste Prevention and Management Regulation, 2012.

The project key objectives have been achieved and target outputs realized. The evaluation finds the project evolution justified and the added outputs vital for supplementing the outcomes in the initial project document. The outputs have been expanded through the inclusion of the LECB enhanced and INDC project to address mitigation issues and support in establishing structures and systems related to mitigation. The evaluation also finds that in addition, the LECB activities contributed substantially to the process of development of the INDC and ratification of the Paris Agreement.

The partnerships between NECS and other government ministries guided by UNDP CO were effective in delivering expected results. The NECS as DNA on climate change in Bhutan is the project's implementing government partner and provided high-level government support to the project through the Climate Change Division, NECS (being the member secretary of the Project Management Board). There were strong direct and tangential partnership arrangements with the relevant stakeholders in delivering project objectives. UNDP CO performed exceptionally well to ensure that the project was implemented smoothly. There was value for money as project funds were well utilized in implementation of planned activities. Financial management was well coordinated between UNDP, NECS and other partners involved in the project.

The project was a good prototype for incorporation of gender concerns, equality as well as women empowerment. During the execution of the project, women were actively involved both as part of

the project implementation team among the different stakeholders that were directly or indirectly involved in the project activities.

This evaluation finds that capacity building support provided under the project was guided by clearly defined institutional mandates and focused on strengthening low emission development. More specifically this included developing GHG inventory systems, NAMAs, LEDS, low emission strategies and the update of the National transport policy. Strengthening the technical and institutional climate change mitigation capacities allow the reinforcement of country mitigation actions to exploit climate change financing opportunities. Improvement of the climate change mitigation capacity will contribute to a reduction in emissions and anthropogenic climate change contributions which will in turn reduce risk and vulnerability in the country. It was also noted that the information generated by the performance indicators during project implementation was effectively used to adapt and improve the project and lessons learned reported which was good practice to support future projects and interventions.

The overall project is rated Satisfactory (S).

Criterion	Rating	Comments
Project Formulation	S	The formulation of the project complete and the design was partially inadequate.
Country Ownership	HS	The project goal and objectives properly addressed the country needs and were fully in-line with country priorities and policies.
Stakeholders' participation Production and dissemination of information Involvement of governmental institutions	HS S S	The Project design process involved consultation with the key stakeholder groups, analyzing characteristics, problems, needs, interests of potential stakeholders. The latter were therefore more inclined to participate during the implementation. Their participation was significant and a large amount of information was produced and disseminated
Replication Approach	HS	The project presents good ground for replication thanks to well-documented activities and sustainable achievements of the project
Project implementation General Management Relevance	S S S	The overall quality of the project is explained by a quite efficient adaptive management, successful partnerships and a good execution of financial resources over the project period. During its implementation, the project adapted to international progress in terms of mitigation's mechanisms.
Monitoring & Evaluation	S	The planning for the M&E was comprehensive and detailed in the project document. The implementation of the M&E strategy was very comprehensive and efficient.
Financial Management	S	The amounts and allocation between the different budget lines are appropriate and in line with the planned and implemented project activities

1.4 Main conclusions, recommendations and lessons learned

Based in the findings of this terminal evaluation, the evaluation conclusion and recommendations are:

- a) Technical assistance needs on climate change mitigation is still important in Bhutan. It is recommended to continue to support the country, both for assistance that responds to identified situations, and for long-term support, and to provide the country with the recent developments in designing and implementing a low carbon and climate resilient strategy. This technical assistance should focus on the new developments at the international level,

along the Paris Agreement.

- b) A second phase of the LECB project is a very important next step for Bhutan, to develop a NDC strategic framework that aligns with the 12FYP and SDG targets. The next phase should also cover implementation of the findings and recommendations consolidated through studies and assessment from the first phase. This should reassure certain beneficiaries as to the continuation of their activities, and that project results and lessons learned are shared with all stakeholders.
- c) The country, in particular through activities initiated by the project, is well informed of the new sources of climate finance and the strategies adopted through NAMAs, LEDS and MRV across major sectors of transport, energy efficiency and industry. The NDC submitted by Bhutan to the UNFCCC includes several other sectors that have been prioritized and its elaboration and focus needs to be implemented. It is suggested to adopt a coherent framework to achieve transformational change by using NDC implementation as a mechanism to scale up investments in inclusive, gender-responsive climate actions that help to achieve NDC targets and through this, deliver on the Paris Agreement and the SDGs. This will also gear up the RGoB with a stronger investment case for advancing the climate agendas and expand the option for attracting international, domestic and private capital.
- d) Much has been stressed on the role of the MSTCCC group however their role in the project board meeting was found to be almost negligent. The unstable representation also led to weak leadership and guidance as they were not familiar with the project objective and targets. Recommendation to sensitize the MSTCCC now C4 from project initiation and also appoint relevant members to represent in the Project board meeting for the next phase support
- e) The thematic working groups under the LECB programme was found to be too big leading to high project cost for capacity building programs. Contribution and commitment was observed from only few members. Recommendation to keep working groups small and focused during the next phase
- f) Under M&E and knowledge sharing although several sensitization workshops and meetings have been organized, there is no or limited documentation on good practices and lessons learnt. There is limited evidence of field reports, training reports, and workshop/meeting reports. For the next phase it is recommends to maintain small budget to capture results and impacts for dissemination to partners, stakeholders and donors
- g) A project manager was appointed for the implementation of the project in the NEC, however the focal person is also tasked with other responsibilities over and beyond the management of the LECB project. While the various working groups and project board was established the project submitted requests for multiple extensions leading to project completion delays by eighteen months. Some of the key reasons for extension include a) Non-availability of local and international experts to carry out the wide range of assessment supported through the project b) Delay in completion of assignments and request for no

additional cost extension and c) Activities stalled during absence of the project manager. During the next phase it is recommended that the project appoint an alternate project manager to ensure smooth flow of activities without any delay during the project manager's absence. The appointment of an alternate or a full time project manager will also reduce the burden on the project manager

However, challenges and barriers remain, to reach the GHG emissions reductions targets set by the country under the Paris Agreement, including financing and technical capacity. More sector-specific actions are needed to set targets and policies in each sector, especially in relation with energy production and consumption, forestry, agriculture and transport.

The following are the recommendations on the basis of Terminal Evaluation findings:

- a) Technical assistance needs are still important in Bhutan. It is recommended to continue to accompany the country, both for assistance that responds to identified situations, and for long-term support, and to provide the country with the recent developments in the formulation of projects;
- b) There is a need to develop a second phase of the LECB/INDC project in Bhutan. This second phase should reflect on the continued operation of the project and should reassure certain beneficiaries as to the continuation of their activities, and that project results and lessons learned are shared with all stakeholders.
- c) There is need of entities to be involved in the national mitigation to periodically meet with their regional counterparts to enhance their capacity in tackling climate change with mutual experience's sharing. For instance, aspects of the implementation and outcomes of the Low Emission Capacity Building Program could be considered as useful examples for neighboring country mitigation strategy and vice-versa.
- d) The country's National Determined Contribution strategy could benefit from engaging the private sector into its climate finance strategy. More public and private partnership could be enhanced to develop investments opportunities reducing the resource constraint for the implementation of mitigation mechanisms.

Further sensitization and awareness on gender-responsive climate change action should be stressed. The LECB program has had positive results in gender equality and inclusiveness, it is recommended to improve institutional framework and coordination mechanisms to integrate climate change and promote women's participation and analysis during the development of the next phase;

- e) Frequent changes in the trained officials from the government positions after training, poses a serious challenge to successful continuity. Due to this, newer employees need to be trained each time which results in a waste of time and resources by training people who then do not multiply the impacts. In this context, it is important to develop a system to retain those skilled employees in the agencies or to establish a system or mechanism to pass on the information and skills to the next level for continuity of the project;

- f) Lot of capacity building activities such as workshops and trainings were conducted but it is still not adequate because there is need for long term capacity building programmes such as degree in traffic engineers, transport planners, public transport managers, GHG inventory management and other climate change professions;
- g) Waste sector is a potential area for GHG mitigation. Working in this area can reduce GHG emissions by implementing solid waste management practices across all municipalities in 20 districts. This will not only enhance sustainable waste management practices but also promote private sector collaboration and investments. It will also promote market for recyclable wastes which in turn can generate revenue through effective and efficient service delivery.

2. PROJECT BACKGROUND AND RATIONALE

2.1 Introduction

The Low Emission Capacity Building Programme (LECBP) was launched in January 2011 as part of a joint collaboration between the European Union (European Commission and Member States) and the United Nations Development Programme (UNDP). Since its inception the LECB Programme has grown both in scope and breadth, proudly including 25 participating countries and enhanced technical support through generous contributions from the European Commission, the German Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety (BMUB), the Australian Government.

This collaborative, country driven programme aims to strengthen technical and institutional capacities at the country level, while at the same time facilitating inclusion and coordination of the public and private sector in national initiatives addressing climate change. It does so by utilizing the global networks and substantial experience that UNDP has established through wide portfolio of projects and programmes around the globe. The Low Emission Capacity Building Programme is part of the Climate Change and Disaster Risk Reduction cluster of UNDP and gains insight from and builds on global programmes and initiatives already developed by UNDP and donor countries.

The LECB project objective is to strengthen capacities in participating countries in the following areas:

- a) Develop greenhouse gas (GHG) inventory management systems
- b) Identify opportunities for nationally appropriate mitigation actions (NAMA)
- c) Design low emission development strategies (LEDS) in the context of national priorities
- d) Design systems for measuring, reporting, and verification (MRV) of proposed actions and means to reduce GHG emissions

Under the same LECB enhanced support (2015-2017), the project deliverables include:

- a) Review and update of urban design for core area of Thimphu with special focus on pedestrianization taking into account the extended municipal boundary,;
- b) Support the review of National Environment Strategy of 1998 so that climate change adaptation and mitigation is mainstreamed at the policy level which will further lead to creation of enabling environment for development of LEDS and NAMA's for respective sectors;
- c) Feasibility/assessment to introduce intelligent transport system, for Thimphu and Phuentsholing. This will lead to documentation of international best practices in the areas of ITS implementation, institutional requirements and financial costs for roll out of ITS, its implications on energy consumption (GHG emissions), environmental and social benefits. This output will also support establishment for MRV system for transport
- d) Analyze and review existing Public transport system including management system in Thimphu and Phuentsholing and recommend measures to improve efficient public transport system by making it gender friendly and ensuring safety measures for women, children, elderly and the disabled;
- e) Carry out capacity development programs for central and local governments, private sector and other stakeholders for efficient engagement and collaboration between policy makers, government executing agencies and private sectors in design and implementation of LEDS;
- f) Develop Information, education and communication awareness programs to increase ridership in sustainable urban transport.

The project goal was to bring out both short and long term solutions to reduce GHGs emission in the transport sector by reforming the urban public transport system through implementation of attractive, cost efficient public urban transport solutions.

The INDC project (2016-2017) led by the Climate Change Division of NECS includes the following milestones:

- a) INDC developed and submitted to the UNFCCC
- b) Assessment and Review of INDCs submission
- c) Capacity building, awareness and sensitization of stakeholders, parliamentarians, legislators, policy makers and private sector on the Paris agreement/ INDC
- d) Ratification of the Paris Agreement by the government

2.2 Purpose of Evaluation and Criteria

The purpose of this Terminal Evaluation is to assess performance of the LECB project, LECB Enhance Support or INDC in a comprehensive and systematic manner, from formulation and implementation, to an assessment of the results and their impacts. The evaluation has two primary purposes: provide evidence of results to meet accountability requirements and to promote operational improvement, learning and knowledge sharing through results and lessons learned. This final evaluation assessed the achievement of the project objectives and draws lessons that can

enhance the sustainability of the project benefits and contribute to future project formulation and implementation.

The project was evaluated using the following UNDP evaluation criteria: relevance, effectiveness, efficiency, sustainability and impact, against the specific development objective established in the Project Document. This is consistent with the UNDP Guidance for Conducting Terminal Evaluations¹.

In this context, the objective of the final evaluation mission was to verify whether the project objectives have been achieved after five years of implementation, to identify factors that helped or hindered the project, to document experience and lessons learned for similar projects in the future. To do so, several interviews were conducted with the different stakeholders involved in the Program allowing the analysis of the strengths and weakness of the project, the evaluation of activity completion and the appreciation of the dynamics and importance of the project's benefits. Recommendations and to all stakeholders in the project are made in this final evaluation report.

2.3 Situation prior to LECB

Bhutan is a net sink for greenhouse gases with an estimated sequestration capacity of forest of 6.3 million tons of CO₂ with the CO₂ emission of about 1.6 million tons in 2000. This is largely contributed due to huge areas of forest cover, low levels of industrial activity and almost 100% electricity generation through hydropower. Although the highest emissions are from the agriculture sector which remains more or less constant but emissions from other sectors such as industrial processes and transport are showing a rapidly increasing trend. During the period 2000-2013, emissions from the energy sector increased by 191.6% from 0.270 million tons of CO₂e in 2000 to 0.79 million tons of CO₂e in 2013. During the same period, emissions from industrial processes increased by 154.3% from 0.24 million tons of CO₂e to 0.6 million tons of CO₂e. Emission from waste management also increased by 247.54% from 0.047 million tons of CO₂e to 0.16 million tons CO₂e. As such, Bhutan is highly vulnerable to adverse impacts of climate change due to the fragile mountainous ecosystem and economic structure. The most vulnerable sectors are water resources, agriculture, forests & biodiversity and hydropower sectors. It was projected that both the frequency and intensity of extreme climate events would increase with changing climate.

Overall there was Constitution of the Kingdom of Bhutan along with the GNHC policy supported by the National Environment Protection Act 2007, National Forest Policy 2011, Economic Development Policy 2010, Water Act of Bhutan 2011, Waste Prevention and Management Act 2009 and Waste Prevention and Management Regulation, 2012. Further, there were other governing documents related to environment such as Environmental Standards 2010, Guideline for Preparation of Industrial Project Report and Environmental Codes for different practices. All

¹ <http://web.undp.org/evaluation/documents/guidance/GEF/UNDP-GEF-TE-Guide.pdf>

these laws and regulations were the only documents supporting decisions on climate change related programs and projects.

However, there wasn't much initiatives to tackle environment related programmes and mitigation actions to encounter climate change activities. During that time, there were not much of policy documents, strategy documents and other studies related to Low Emission in the Industrial Sector, transport, human settlements and solid waste management fields. Also, little was known about Intelligent Transport System (ITS) to the transport stakeholders prior to the ITS study conducted with support from the LECB enhanced project. ITS is basically using technology to control and manage traffic situation of the particular area or country such as CCTV, Bus Information system, traffic lights etc. Similarly, there were no documents and studies conducted on NAMAs and also there were difficulty in measurement, reporting and verification of environment related data and technical capacity on carbon related assessments.

The situation of waste was worse with lack of data and indiscriminate open dumping creating unsightly surroundings, choked drains and polluted waterways contaminating the natural environment and posing serious hazards to public health. Moreover, lack of proper waste management in place was jeopardizing Bhutan's reputation as a clean and green country.

2.4 Need for LECB

Bhutan's Carbon Neutral Strategy called as "National Strategy and Action Plan for Low Emission Development 2012" was developed as a follow-up to the carbon neutral commitment pledged by the government in Copenhagen in 2009. The strategy has considered six priority sectors; 1) energy intensive industries for non energy related emissions, 2) crop production and the related energy consumption, 3) livestock raising and related energy consumption, 4) municipal solid waste, 5) road transport, and 6) residential sector. At the same time, the strategy has recommended for data improvement for accuracy in determining sequestration capacity and carbon footprint. The strategy has recognized industries and road transport were the two main GHG emitting sectors with high potential to apply low emission development strategy (LEDS). It was also highlighted that due to lack of required data, the strategy has limited the scope of the strategy to elaborate on options and procedures.

The Second National Communication and the Carbon Neutral Strategy all recommended the development of a comprehensive national climate change strategy and mainstreaming climate change into national policies, plans and programmes. The Royal Government has initiated to mainstream Environment, Climate Change and Poverty into its 11th Five Year (2013-2018) developmental plan. Similarly, Bhutan's United Nations Development Assistance Framework (UNDAF) (2013-2018) also prioritized mainstreaming climate change in its focus areas. In order to develop a comprehensive climate change strategy, there was need of capacity and resources. Further, UNDP has been pursuing Low Emission Climate Resilient Development Strategies

(LECRDS) in developing countries as a proactive climate change action to respond more effectively to climate change. It was also learnt that preparedness in national development with potentially lesser GHG emitting activities and climate resilience go beyond just reducing vulnerability by expanding the scope of adaptation in enhancing the resilience to climate change and related disaster risks. For greater benefits and sustainability of the measures it is suggested to mainstream LECRDS in the national policies and planning. So the efforts to conceptualize such measures needs fund including capacity development of the national government, stakeholder institutions and individuals.

Capacity development on climate change at the national, sub-national and local levels in terms of planning, programming and developing guidelines, regulatory tools, and also assessments of climate impacts and monitoring systems has become fundamental and urgent requirement for a developing country like Bhutan. As stated in the Country Programme Document (CPD) 2008-2012, Bhutan attempts to balance development with environmental carrying capacity. However, the quest for economic progress through urbanization, infrastructure development and industrialization, coupled with frequent disasters, poses major challenges to embrace the noble concept. Capacity building is a preparedness tool to address the challenges and therefore this Low Emission Capacity Building (LECB) project will enhance Bhutan's preparedness to further decouple and reduce GHG emissions from its developmental activities. The capacity development required includes: enhancing institutional competency, inclusiveness of climate change in the plans and programs of the government, communities and other key stakeholders, and strengthening the knowledge management and technical support systems.

There were inputs from stocktaking and stakeholder consultations, as well as discussions from the inception workshop held on August 15, 2012, it was agreed that sectors like agriculture and land use change and forestry (LUCF), having high importance in Bhutan, are seen as more complex due to data and methodological issues. Mitigation efforts in the above sectors would also have adverse impact on the survival of the subsistence farmers. However, it was considered feasible and necessary to elaborate both NAMAs and LEDS for sectors with growing emissions such as the transport and industry sectors, while energy-efficiency NAMAs could be explored in the housing (both residential and institutions) and Municipal Solid Waste Management. The Agriculture and LUCF sectors, however, were considered for overall awareness and training programmes. Since the GHG inventory is updated regularly as part of the National Communications, so the only focus under GHG inventory systems would be to improve data management systems by providing support to the National Forestry Inventory and the Environmental Information Management System (EIMS) established at NEC.

Further, all developmental planning processes in Bhutan, including the Five Year Plans (FYP) beginning with 10th FYP, are subject to Results Based Management systems. The Gross National Happiness Commission (GNHC) regulates the Planning Monitoring Systems (PLAMS) for a planning MRV. Then a Multi-Year Rolling Plan is regulated in every 3 years by the Department

of National Budgets (DNB) in the Ministry of Finance (MoF) for the budgeting purpose of the national and sectoral plans. This further screens the relevance and result orientation of the developmental activities. Finally, the Public Expenditure Management Systems (PEMS), regulated by the Department of Public Accounts (DPA) in the MoF, monitors stringently the outcome and output of the activities both in terms of physical and financial achievements during budget release and reporting of the activities.

So LECB Project is the solution to link to NEC's 11th FYP and subjected to undergo all the physical and financial MRV systems of the Royal Government. Therefore, MRV in terms of physical and financial systems does not need additional inputs rather, the design of the MRV systems under the LECB project will be to integrate MRV of emission reductions, to the extent feasible, in the PLAMS, MYRP and the PEMS.

All these condition including the Bhutan's fragile mountainous ecosystem and its heavy dependence on the agriculture sector makes it vulnerable to changing climatic conditions. Country's recent development gains are at high risk of being potentially reversed due to climate change effects and there are very limited financial and technological resources to adapt to adverse impacts of climate change. All these factors address the need for concerted efforts to understand and embrace climate change-related technical information by bringing various stakeholders together to address climate change concerns through LECB.

2.5 LECB contributions

Significant groundwork has been undertaken for achieving the following results through the UNDP Low Emission Capacity Building (LECB) Project/LECB enhanced support and the INDC project (2013-17), funded by the European Commission and the governments of Germany and Australia. Among the key results of the LECB project in Bhutan are:

- a) National forest inventory and GHG inventory data improved and systematically archived;
- b) Nationally appropriate mitigation actions (NAMAs) for solid waste and transport developed and submitted for financing;
- c) INDC prepared through a highly consultative process and Parliamentarians sensitized on the Paris Agreement and the INDC prior to its ratification in 2017;
- d) National Environment Commission, the Ministry of Economic Affairs, the Ministry of Works and Human Settlements, and the Ministry of Information and Communication supported to prepare low-emission development strategies (LEDS) for industry, human settlements, energy efficiency, and transport respectively that "unpack" Bhutan's NDC priorities and help to address the impacts of rapid urbanization. The LEDS were all designed in close consultation with the private sector and other key stakeholders;
- e) Intelligent transport system study designed for Thimphu, and various measures piloted such as: e-tickets, model bus stop, distribution of VHF handsets for effective communication, new bus stop signs with information on bus timing and routes etc;

- f) Revision of the National Transport Policy and its submission to GNHC for policy screening approval
- g) Several capacity building of government partners on the National Forest inventory, trainings on GHG inventories, capacity building training on LEDS and NAMAs for the project's Technical Working Group members and training on GHG emission in the Industry, Energy and transport

2.6 National ownership

Bhutan's NDC reiterates the RGoB's commitment to remain carbon neutral and maintain current levels of forest cover. A number of strategies, plans and actions are also outlined for low-emission sustainable development in the sectors of: sustainable forest management and protection of biodiversity, transport, waste management, industry, energy, agriculture, and human settlements.

Since 2000, the NEC has also been the designated National Climate Change Committee to undertake decisions on all climate change related issues at the highest level. Until 2010, climate change issues were dealt with as part of the Policy and Planning Services or as standalone projects at the NEC. In 2010, a Climate Change Unit was established within the Environment Monitoring Division and upgraded to a full-fledged division in 2012 and this division takes the charges of a Project Management Secretariat of LECB. A Multi-sectoral Technical Coordination Committee on Climate Change (MSTCCCC) supports the NEC in coordinating climate change activities in Bhutan in a technical and advisory role.

2.7 Changes in the Project Scope

The following changes have been documented in the overall implementation of the LECB/Enhanced Support and INDC project. The changes were presented and endorsed in the project board meetings.

LECB project (NEC) Outputs	Changed Outputs
1. GHG inventory data system enhanced through improvement of Environment Information Management System (EIMS) and the National Forest Inventory (NFI)	No changes
2. Three energy efficiency NAMAs developed in transport, housing (residential & institutional) and municipal solid waste management sectors	NAMA developed for transport and waste sector. NAMA for the Energy Efficient Buildings including MRV systems is being coordinated by NEC in close consultation and collaboration with DRE, MoWHS and all the other relevant stakeholders through the Energy+ Programme

3. LEDS prepared for industrial and transport sectors	No changes
4. MRV system designed for identified NAMAs and LEDS.	The MRV for NAMAs and LEDS has been dropped as it has been supported through the Energy+ program as mentioned under activity 2
LECB enhanced support (MOIC)	
1. Review and update of urban design for core area of Thimphu with special focus on pedestrianization taking into account the extended municipal boundary,	This activity was dropped as the Thromde faced difficulty in finding experts to carry out the assignment. The budget was refunded and appropriated to support the Bhutan Post
2. Support the review of National Environment Strategy of 1998 so that climate change adaptation and mitigation is mainstreamed at the policy level which will further lead to creation of enabling environment for development of LEDS and NAMA's for respective sectors;	This activity has been dropped as this was supported through UNDP core funds. The activity support was revised to update revision of the National Transport policy (2006)
3. Feasibility/assessment to introduce intelligent transport system, for Thimphu and Phuentsholing. This will lead to documentation of international best practices in the areas of ITS implementation, institutional requirements and financial costs for roll out of ITS, its implications on energy consumption (GHG emissions), environmental and social benefits. This output will also support establishment for MRV system for transport	No changes
4. Analyze and review existing Public transport system including management system in Thimphu and Phuentsholing and recommend measures to improve efficient public transport system by making it gender friendly and ensuring safety measures for women, children, elderly and the disabled	No changes
5. Carry out capacity development programs for central and local governments, private sector and other stakeholders for efficient engagement and collaboration between policy makers, government executing agencies and private sectors in design and implementation of LEDS.	No changes
6. Develop Information, education and communication awareness programs to increase ridership in sustainable urban transport	No changes

INDC	
INDC developed and submitted to UNFCCC followed by ratification by the government and capacity building, awareness and sensitization of stakeholders, policy makers and legislators	No changes

7. PROJECT RESULTS

7.1 Overall achievement and results



Figure 1: Launch of e-ticket for city bus service



Figure 2: Launch of the model bus stop



Figure 3: Launch of ITS report



Figure 4: Bus wash bay



Figure 5: Smart card pilot in city bus



Figure 6: e-ticket launch



Figure 7: National transport policy consultation



Figure 8: Sensitization of Parliamentarians on the Paris Agreement



Figure 9: Visit to Australia

Project Results and Reporting Framework for LECB/ LECB Enhanced support and INDC (2013-2017)

LECB	Indicator	Baseline	Targets at End of Project	Key results
Outcome 1: GHG inventory data system enhanced through improvement of Environment Information Management System (EIMS) and the National Forest Inventory (NFI)	<ul style="list-style-type: none"> • GHG emissions data management improved by its incorporation into EIMS • Carbon sequestration data analysis and management incorporated in National Forest Inventory (NFI) • Number of training and seminar/workshops conducted on applying best practices to GHG data management (collection, analysis, storage, documentation, and dissemination) and incorporation with EIMS • Number of training and seminar/workshops 	<ul style="list-style-type: none"> • EIMS at NEC covers land, air and water through DPSIR model updated every 5 years in line with Bhutan Environment Outlook reports without GHG data • GHG inventory under INC & SNC prepared independently for UNFCCC reporting only and not incorporated into national reporting or information systems • Project task force members on GHG inventory and mitigation issues engaged under the Initial and the Second National Communications, and further involvement 	<ul style="list-style-type: none"> • Capacity of CCD/NEC strengthened to manage GHG inventory data and aligned for UNFCCC and also periodic national reporting (Bhutan Environment Outlook) • Enhanced EIMS and data dissemination by inclusion of and regular updates of GHG emission data and appropriate data management systems. • Carbon data management and analysis enabled in ongoing National Forest Inventory system for improved GHG reporting in LUCF sector for Tier 2 or 3 level assessments. 	<ul style="list-style-type: none"> • Capacity of NEC strengthened to manage GHG inventory data • Bhutan Environment Outlook 2016 was also published by NEC • The GHG National Inventory guideline manual developed • GHG inventory management systems enhanced for data collection • Twenty-nine members of the National Forest inventory (NFI) attended the “Field Demonstration of Forest Inventory” at the Global Advanced management Services, Thailand, from 5-10 April 2014. The trainings enhanced data collection of the core members engaged in field work of the NFI. • supported the participation of 2 thematic working group members(1 male and 1 female) for the NAIIS workshop on Greenhouse Gas Inventory in Manila (14-18 September 2013) • Awareness workshop conducted in conjunction with “Compliance Monitoring Processes and Protocol towards Environment Mainstreaming and Emission Reduction, from 8th- 13th September, 2013 in Phuentsholing targeting all environmental officers from various government and corporate agencies. • A five day training on Carbon assessment methodology conducted. The training was

	<p>ps conducted on forest carbon assessment, data management and dissemination under NFI process</p> <ul style="list-style-type: none"> • Relevant stakeholders identified and capable of updating regularly the GHG Inventory data and forest carbon data management 	<p>stopped with end of project</p> <ul style="list-style-type: none"> • National Forest Inventory of 1974 is the only comprehensive forest assessment for Bhutan to assess forest biomass. Land cover assessment using coarse remote sensing data done for base-year 1994 and 2000 does not include biomass information. New National Forest Inventory underway without adequate funds to complete all survey plots or carbon data assessment. 		<p>held in Bumthang from 2-6 December 2013 and witnessed 74 participants attended by National Forest Inventory (NFI) crew comprising of 60 forestry field personnel and some relevant officials from the functional divisions of the Department from all over 20 districts. The training aimed at being able to Impart concepts and knowledge of Carbon assessment to NFI crew, train the NFI crew on carbon assessment methodology as adopted by the Ministry and train the NFI crew on use of Carbon equipment</p> <ul style="list-style-type: none"> • A Second round of Carbon Assessment (for understory carbon pools namely Shrubs, Herbs, Litter and Soil Carbon) Methodology cum Open Foris Collect Earth Pre-Assessment training for National Forest Inventory (NFI) was organized by Forest Resources Management Division (FRMD) from 6th – 9th October, 2014 at Thimphu. The training was organized to re-train NFI crew on carbon assessment methodology and Open Foris Collect Earth pre-assessment tools for NFI; and to equip them with necessary skills and knowledge on carbon assessment fieldworks. 74 officials participated comprising of 51 NFI crews and 23 officials from FRMD • 04 TWG members (male) attended the IPCC expert meeting on National GHG Inventories in Sapporo, Japan from 10-13 December 2013 • TWG member to attend “Clean Energy & Emission Reduction Course” from 29
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				<p>September to 3rd October 2014 at the Nanyang Technological University, Centre for Continuing Education, Singapore.</p> <ul style="list-style-type: none"> • Capacity building training with focus on the validation of the tailpipe emission of vehicles was provided to seven officials from the Road Safety and Transport Authority. The training was provided to a target group of officials who will be involved in the revision of vehicle emission standards from 20-26 March 2015
<p>Outcome 2: Three energy efficiency NAMAs developed in transport, housing (residential & institutional) and municipal solid waste management sectors</p>	<ul style="list-style-type: none"> • Number of training and seminar/workshops conducted on understanding of the coordination, planning, design, implementation, and evaluation of NAMAs, and on mitigation and low emission actions and opportunities • 3 NAMAs proposals elaborated for transport, housing (residential & institutional) and solid waste 	<ul style="list-style-type: none"> • Carbon Neutral Strategy – “A National Strategy and Action Plan for Low Carbon Development 2012” containing broad actions that require further elaboration and analysis for specific activities • Economic Development Policy (2010) promoting “green growth” for economic development with room for appropriate incentives but no 	<ul style="list-style-type: none"> • 3 NAMAs (2015-2025) developed for road transport, housing (residential & institutional) and waste management sectors with clear scope objectives and. emission reduction targets • Clear institutional arrangements incl. lead/coordinating agency established for each NAMA • National Capacity strengthened to respond to mitigation actions under UNFCCC process and 	<ul style="list-style-type: none"> • 2 NAMAs developed for road transport and waste; • Energy Efficiency NAMA developed through the Energy plus program • Clear institutional arrangements established for each of the NAMAs with line ministries as the coordinating agencies supported by the concerned agencies or implementers; • National Capacity to respond to mitigation actions strengthened by providing various trainings, seminars and workshops both at the national as well as international arena; • Sensitization workshop on the LECB project, on NAMAs, LEDS, and MRV conducted on 15th May for LECB taskforce members and on 23rd May 2013 for project stakeholders • Rapid gender needs assessment completed by local consultant. Inception workshop held on 5th August 2013 and stakeholder consultation conducted on 29th August 2013

	<p>management sectors with clear scope and objectives, Institutional arrangements and process planning created</p> <ul style="list-style-type: none"> • Analytical tools for development of GHG emission scenarios chosen • Base year and timeframe for analysis determined • Reference (baseline) and mitigation emission scenarios developed • Financing needs determined 	<p>specific sectoral strategy</p> <ul style="list-style-type: none"> • No NAMAs or experience in developing NAMAs • Lack of technical capacity and expertise for mitigation analysis and scenario development. • No base year and timeframe for mitigation • According to SNC, general awareness about climate change is high among public but with limited understanding on causes and solutions including among key stakeholders 	<p>national priorities by targeting</p> <ul style="list-style-type: none"> • Key stakeholders to understand and manage low emission development approaches • Technical expertise in analytical tool usage, scenario modeling, for mitigation actions developed for key sectors and stakeholders groups. 	<ul style="list-style-type: none"> • 35 working group members of the project attended the training on climate mitigation at the Asian Institute of Technology (AIT) from 17th -23rd November 2014. The training covered sessions on NAMAs, LEDS, GHG inventory and gender mainstreaming in CC. It also included visits to pilot sites where low emission/carbon projects were being implemented. • A study visit on waste composting conducted for 11 officials from the Municipalities and Ministry of Works and Human Settlement at Dhaka, Bangladesh from 24-28 August. The visit was organized with support from UNDP CO and the ESCAP Bangkok. • Supported the Regional Environmental Consultation Workshop for Waste Regulation” in Mongar from 27-28 January 2016 to raise awareness and sensitization on the Regulation for the “Waste Prevention and Management Act of Bhutan, 2012”. • The final consultation workshop for the transport NAMA and LEDS was held in Paro from 21-22 April 2016. Over 20 participants from relevant agencies attended the meeting • A 5-day write shop was held from 5-9 September in Paro to review and finalize the transport NAMA, transport LEDS and Energy efficiency proposal with representatives from Dept of Renewable Energy, Ministry of Information and Communications, City Bus service,
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				UNDP CO, and the National Environment Commission
Outcome 3: LEDS prepared for industrial and road transport sectors	<ul style="list-style-type: none"> • Number of training and seminar/workshops conducted on, development of LEDS • LEDS developed for road transport and industries sector • Inputs from LEDS for industrial and transport sectors incorporated into sectoral plans. • Percentage of participants applying the training on the understanding of the coordination, planning, design, implementation, and evaluation of LEDS • Key institutions for Low emission development in Bhutan including NEC, MSTCCC and line agencies strengthened in 	<ul style="list-style-type: none"> • Carbon Neutral Strategy – “A National Strategy and Action Plan for Low Carbon Development 2012 “containing broad actions that require further elaboration and analysis for specific activities • National Environment Strategy (1998) without consideration of climate change actions • Economic Development Policy (2010) promoting “green growth” for economic development with room for appropriate incentives but no specific sectoral strategy • 11th Five year Plan requires sectors to contribute to 	<ul style="list-style-type: none"> • LEDS for road transport and industries (2015-2025) developed by 2015 along with clear objectives, timeline, lead agencies, financial, technical and capacity needs to implement LEDS identified • Technical expertise in analytical tool usage, scenario modeling, for LEDS developed among key sectors and stakeholders • Capacity on climate change with emphasis on mitigation and low emission development strategies built for key stakeholders such as MSTCCC, National CDM Committee, Environmental and Business NGOs • Capacity of NEC built to coordinate 	<ul style="list-style-type: none"> • LEDS for road transport developed with road map/action plan from 2015-2040 • LEDS for Industries developed • Technical expertise in analytical tool usage and scenario modeling for LEDS among key sectors and stakeholders partially achieved by providing professional trainings and development activities; • Two thematic working group members from NAMA transport and LEDS – Industries attended the Asia LEDS forum in Manila from 30th September-4th October 2013. The event was organized by USAID Low Emissions Asian Development (LEAD) program. The forum provided opportunities to share best practices, tools, and ideas for achieving sustainable, climate-smart development • Eight officials from the LEDS working group of transport and Industries were nominated to attend the LEDS Global Partnership meeting in Ethiopia in August 2014. • The final consultation workshop for transport LEDS was held on 21 April in Paro. • Fourth consultation workshop on LEDS industries was held from 27-28 April in Phuentsholing. More than 35 participants from the government agencies, private industries and UNDP country office participated

	<p>mitigation assessment and coordination at national and sectoral level</p> <ul style="list-style-type: none"> • Number of programs in media and awareness campaigns related to climate change covering LEDS and NAMAs 	<p>National Key Result Area of “Carbon neutral and climate resilient development”</p> <ul style="list-style-type: none"> • No sectoral LEDS • Low capacity of sectors to assess and plan relevant activities to align with national targets and goals of carbon neutral development. • Climate Change Division under NECS established to coordinate climate change has one Section for Mitigation issues and only one officer • Multi -Sectoral Technical Committee on Climate Change (MSTCCC) and National CDM committee established since 2009 but meeting irregularly and not provided with any formal training or 	<p>and manage emission and mitigation issues in Bhutan in line with national priorities and obligations under UNFCCC</p> <ul style="list-style-type: none"> • LEDS inform National Plans and policies • Awareness on climate change including mitigation solutions and low emission development strategies raised in general public 	
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		awareness program on climate change		
Outcome 4: MRV system designed for identified NAMAs and LEDS.	<ul style="list-style-type: none"> • Number of training and seminar/workshops conducted on MRV tools for NAMAs and LEDS • Number of government officials and local personnel trained • Percentage of participants applying the training on MRV tools for NAMAs and LEDS • MRV system designed for identified NAMAs and LEDS 	<ul style="list-style-type: none"> • Trainings on GHG inventory and mitigation options limited to the conduct of NCs • No MRV system established • No performance indicators available • No personnel trained in MRV tools • National M&E system (PLAMS) designed for financial and project monitoring 	<ul style="list-style-type: none"> • A clear and transparent system for MRVing of GHG emissions and NAMA co-benefits designed in context of identified NAMAs and LEDS • Capacity for MRV systems developed and systems in place to support funded NAMAs and national actions to fulfill Carbon Neutral objectives of 11th FYP. 	<ul style="list-style-type: none"> • Achieved through Energy+ programme
LECB project management				<ul style="list-style-type: none"> • Project accountant trained in Environmental Accounting in Seoul, South Korea, from 5-15 May 2014 • Four participants from Bhutan (2 male, 2 female) participated in the UNDP Low Emission Capacity Building (LECB) Programme's Annual Global meeting from 25-27 September, in Hanoi, Vietnam. The meeting focused on attracting climate

				<p>finance for low emission development, and included discussions on the preparation of Low Emission Development Strategies (LEDS)</p> <ul style="list-style-type: none"> • Project manager participated in the NAMA Net workshop organized by GSU from 27-28 February 2014 in NY, USA • partially supported the participation of an official from the project management unit of NEC to attend a workshop on Climate Change Diplomacy at Bangkok from 12th – 14th November 2014 • Apart of advocacy and awareness the project will support an awareness campaign titled “Move for Green Bhutan” in collaboration with Dagapela Middle Secondary School. The campaign is an initiative of the school and will be conducted by the scouts during their winter vacation. The campaign will be conducted from 17th – 29th January 2015 covering 14 districts. The campaign covers a wide range of topics of social and environmental concerns. As a part of the campaign awareness and sensitization on waste management and clean up campaigns will also be conducted. The support is jointly funded by the LECB Project and the Sustainable Development Secretariat under GNHC.
1. Feasibility/assessment to introduce intelligent transport system, for Thimphu and Phuentsholing. This will lead to documentation of international best practices in				<p>ITS report developed and launched. Few recommendation from the ITS reported have been implemented. This includes launch of e-ticket, CC TV installation, handsets for effective communication, model bus stop developed etc.</p>

the areas of ITS implementation, institutional requirements and financial costs for roll out of ITS, its implications on energy consumption (GHG emissions), environmental and social benefits. This output will also support establishment for MRV system for transport				
2. Analyze and review existing Public transport system including management system in Thimphu and Phuentsholing and recommend measures to improve efficient public transport system by making it gender friendly and ensuring safety measures for women, children, elderly and the disabled				<ul style="list-style-type: none"> ▪ Constructed the model bus stop which was officially launched in Thimphu on 14 December 2015 ▪ An e-ticketing system piloted and launched on September 2015 to promote efficiency for commuters and also address revenue leakage ▪ The inter-district terminals of Thimphu and Phuentsholing have procured and installed two TV screens. The screen is used to display bus schedules and timing. It also serves the purpose of displaying information related to road blocks, delays etc. ▪ The city bus stop signages in and around Thimphu were improved with information of the specific bus routes and time table; ▪ Installed city bus wash bay to wash and clean the city buses regularly so that

				<p>commuters can avail clean and hygiene mode of transport;</p> <ul style="list-style-type: none"> ▪ Successful installation of 140new bus stop signage covering the entire Thimphu city.
<p>3. Carry out capacity development programs for central and local governments, private sector and other stakeholders for efficient engagement and collaboration between policy makers, government executing agencies and private sectors in design and implementation of LEDS</p>				<ul style="list-style-type: none"> ▪ National Transport Policy revised and submitted to GNHC for screening approval ▪ Multiple Stakeholder consultations conducted with core team and wider task force members ▪ Supported inspection visit to India to examine the 18 new buses procured by the RGOB ▪ Supported 5 key stakeholders from MOIC, RSTA, TT, RBP,RSTA for an ITS study visit to Australia from 5-12 October 2015 ▪ Supported 2 officials from Bhutan Post in operations and management training in India ▪ Project manager from city bus service underwent a training on project management from 17-27 May 2016 in Bangkok, Thailand ▪ Two officials from MoIC attended the two day first ever Global Sustainable Transport Conference in Ashgabat, Turkmenistan on 26- 27 November 2016

				<ul style="list-style-type: none"> Two day workshop on Road Safety, Transport Management and Environment Friendly Transport Was conducted from 12th -13th December 2016 in Paro for stakeholders involved in the transport sector. 41 participants from RSTA, MoWHS, City Bus Services of Bhutan Postal Corporation Ltd and Traffic Police attended the workshop
5.Develop Information, education and communication awareness programs to increase ridership in sustainable urban transport				2D animation covering 3 topics i) GHG emission reduction using City Bus service ii) Dos and don'ts of using city bus service iii) Use of E-ticket and smart card system
INDC developed and submitted to UNFCCC followed by political endorsement and awareness and sensitization of stakeholders, policy makers and legislators				<ul style="list-style-type: none"> Two rounds of consultation workshops conducted for the preparation of Bhutan's INDCs towards the New Climate Agreement. An initial discussion on INDC was held from 18-20 May and a two day scoping workshop was also organized from 6-7 July. Participants from various sectors attended the meeting and presented their ongoing efforts and future programs for incorporation into the INDC. The third consultation workshop held from 28-30 July 2015 2 rounds of stakeholder consultations held on 6-7 July and 28-30 July in Paro on Bhutan's INDC.

				<ul style="list-style-type: none"> ▪ Bhutan's INDC submitted to the UNFCCC secretariat on 30th September 2015. ▪ Submitted Bhutan's INDC to UNFCCC on 30th September 2015 ▪ Completed the elaboration of mitigation actions for cleaner production in the Industries sector, integrating low emission development in urban and rural settlement strategies and designing an energy efficiency and conservation road map for Bhutan. ▪ Incountry and ex country capacity building of stakeholders from Dept of Industries, and Dept of Renewable energy supported ▪ On 9th August, 2016, a high level sensitization workshop on the Paris Agreement was held for the Parliamentarians. Prior to sensitizing the parliamentarians, 53 representatives (13 women & 40 men) from government and non-government organizations were sensitized on 5 August to further elaborate priority actions for implementation under the INDC ▪ The continuous engagement with the government and parliament members facilitated through both the LECB and INDC support led to the final ratification of the Paris Agreement in 12th May,
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				<p>2017 and the mainstreaming of these strategies into the 12 Plan (2018 – 2023)</p> <ul style="list-style-type: none"> ▪ Specifically, Government has identified as National Key Result Area 6 (NKRA 6) as “Carbon Neutral, Climate & Disaster Resilient Development Enhanced” with relevant important Key Performance Indicators ▪ A documentary awareness program on ‘Climate Change in Bhutan’ was designed aired through national television for awareness creation to the general public ▪ 2 officials from the NEC and one from UNDP attended the INDC global meeting held in Brussels from 13-15 June 2016. ▪ To support the Climate Public Expenditure Institutional review the INDC supported are view of policies and laws for coherence with Bhutan’s’ National Biodiversity Action Plan (NBSAP) and Bhutan's (I) NDC, leading to a new policy approach to guide implementation of biodiversity, climate and poverty reduction. ▪ Two day consultation on Industries - Cleaner productions held in Paro from on 13th and 14th of February 2017 to discuss the elements to be included in the
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				<p>CP document and to finalize CP options in the industrial sector.</p> <ul style="list-style-type: none"> ▪ Supported the participation of 8 participants from Industries (government and pvt sector) on cost sharing basis for training on Cleaner production in Industries, Market mechanism and MRV in AIT Bangkok from 27 Feb- 5th March 2017. ▪ Supported the participation of 8 officials from the Dept of renewable energy from 6-10 March in Bangkok on energy efficiency and conservation and renewable energy. The 5 day visit was organized in partnership with the Department of Alternative Energy Development and Efficiency (DEDE), Thailand. The visit was to learn from Thailand's experiences on energy development, energy efficiency codes in Industries, buildings, Energy Database Management System Development and Energy Efficiency Standards and Labeling Development in Thailand ▪ A three day write shop was organized from 24-26 May in Paro to review the following documents <ul style="list-style-type: none"> i. 24th may- LEDS industry and Cleaner Production and Mitigating GHG Emission in Bhutan
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				<p>ii. 25th may 2017-leds transport (morning)</p> <p>iii. 25th may 2017 – low emission strategy in urban and rural settlement afternoon)</p> <ul style="list-style-type: none"> ▪ 26th may - NAMA waste proposal supported the participation of 3 RGOB officials and one UNDP focal to attend the Global NDC conference ‘integrated governance, finance and transparency for delivering climate goals in Berlin from 2-6 May 2017
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8. PROJECT ORGANIZATION AND MANAGEMENT

8.1 Project team

There is a Project Manager from the Climate Change Division, NEC, to undertake full responsibility of day to day implementation of the project under the directives and guidance of the MSTCCCC and the Project Management Board. The Project Manager is the Head of the Project Management Secretariat, while the Chief Environment Officer/Head of the Climate Change Division (CCD) in the capacity of the Project Focal Person is a permanent advisor to the Project Manager on technicalities of climate change issues and national policies. The Project Focal Person is also facilitating in hiring of consultants to help deliver the project outputs.

The Project Manager is assisted by the Project Implementation Taskforce/Technical Working Groups in carrying out the technical activities, administration and financial management affairs. The Taskforce is being formed with representation from all the identified stakeholders of the project. Taskforce members receive all sorts of necessary trainings, and attended workshops and meetings related to the project and are supporting the Project Management Secretariat to identify relevant stakeholders and specific NAMAs & LEDS activities and frame methodologies, strategies, work plans and budgets to implement the activities. They also participate in the three Technical Working Groups (TWGs) that are organized to assist the Project Management Secretariat to develop NAMAs, LEDS, and national GHG inventory & MRV systems. The task force members basically consisted of the following three key result areas of the project:

- a) Technical Working Group 1: NAMAs in transport, housing (residential and institutions) and waste sectors,
- b) Technical Working Group 2: LEDS to elaborate the Carbon Neutral Strategy in industrial and transport sectors, and
- c) Technical Working Group 3: MRV Systems, including linkage to GHG inventory system

A. Thematic working group for NAMAs in Waste Management

- 1. Mrs. Sonam Peldon, Environment Officer, Samdrupjongkhar Thromde
 - 2. Mr. Jamtsho Dukpa, Solid Waste Incharge, Phuentsholing Thromde
 - 3. Ms. Sonam Desel, Sr. Environment Officer, PPD, MoWHS, Thimphu (TWG Leader)
 - 4. Mr. Tek Nath Kararia, Environment Division, Thimphu Thromde
 - 5. Mr. Lhendup, Environment Officer, Gelephu Thromde
 - 6. Ms. Dechhey Yangden, Dy. Executive Engineer, Urban Infrastructure Service Division, DES, MoWHS, Thimphu (TWG Leader)
 - 7. Mr. Karma Yonten, Greener Ways, Thimphu
 - 8. Yeshey Wangdi, Environment officer, TCC
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B. Thematic Working Group for Housing NAMA

1. Ms. Sonam Choden, Executive Engineer, NHDCL, Thimphu
2. Mr. Pema Dorji, Asst. Program Officer, Standardization Division, Bhutan Standard Bureau, Thimphu
3. Mr. Chhado Drukpa, Chief Urban Planner, PPD, MoWHS, Thimphu (TWG Leader)
4. Mr. Kesang Jigme, Sr. Planning Officer, PPD, MoWHS, Thimphu (TWG Leader)
5. Ms. Dechen P Yangki, Engineer, R&DD, Dept. of Renewable Energy, MoEA, Thimphu
6. Mr. Tshering Dorji, NECS

C. Thematic working group for Transport NAMA

1. Mr. Karma Pemba, Chief Transport Officer, RSTA (TWG Leader)
2. Mr. Passang Tshering, Manager, Bhutan Postal Corporation
3. Ms. Choden, Asst. Engineer, Dept. of Roads, MoWHS, Thimphu
4. Mr. Tashi Penjor, NECS
5. Sonam Y.Rabgye, UNDP

D. Thematic Working Group for Transport LEDS

1. Mr. Ugyen Chopel, Research Officer, BCCI, Thimphu
2. Mr. Chukey Wangchuk, Chief Program Officer, BTFEC, Thimphu
3. Mr. Sonam Dendup, Sr. Planning Officer, PPD, MoIC, Thimphu (TWG Leader)
4. Ms. Sonam Y Rabgye, Programme Associate, Environmental Unit, UNDP, Thimphu, Bhutan
5. Mr. Rinchen Tshering, Dept. of revenue & Customs, Thimphu

E. Thematic Working Group for Industrial LEDS

1. Ms. Tenzin Wangmo, Dy. Chief Planning Officer, PMCD, GNHC, Thimphu
2. Mr. Tshering Tashi, Sr. Planning Officer, PPD, Ministry of Finance, Thimphu
3. Mr. Birkha Bdr. Chhetri, General Secretary, ABI, Phuentsholing
4. Ms. Bumpa Lhamo, Dept. of Revenue & Customs, Thimphu
5. Mr. Dawa Chogyel, Dy. Chief Environment Officer, PPD, MoEA, Thimphu (TWG Leader)

F. Thematic Working Group for GHG/NFI

1. Mr. Younten Phuntsho, Forestry Officer, FRMD, DoFPS, MoAF, Thimphu
2. Mr. Tsheten Dorji, National Soil Service Center, DoA, MoAF, Semtokha, Thimphu
3. Mr. Garul Dhoj Bhujel, Statistical Officer, PPD, MoWHS, Thimphu
4. Mr. Rinzin Namgay, IT Officer, NEC
5. Mr. Tshering Tashi, Communicationi Officer, NEC
6. Mr. Minjur, Engineer, AED, Dept. of Renewable Energy, MoEA, Thimphu
7. Mr. Sonam Tenzin, National Statistical Bureau, Thimphu

8. Mr. Towchu Rabgay, Livestock Officer, Dept. of Livestock, MoAF, Thimphu
9. Mr. Dophu Tshering, JD, Dept. of Trade, MoEA, Thimphu

Following are the existing project team members from different organizations:

Name	Designation	Agency	Email
Sonam Dendup	Director (Transport)	City Bus Service, Bhutan Postal Corporation Limited, Thimphu	Sonam.dendup@bhutanpost.bt 17875525
Kezang Yangden	Dy. Chief Forestry Officer	Forest Resources Management Division, Department of Forests and Park Services, Ministry of Agriculture and Forests, Thimphu	kyangden@moaf.gov.bt 02 327723
Sonam Desel	Dy. Chief Environment Officer	Policy and Planning Division, Ministry of Works & Human Settlement, Thimphu	sdesel@mowhs.gov.bt 02 324395
Karma Pemba	Chief Transport Officer	Transport Development Division, Road Safety and Transport Authority, Thimphu	k.pemba@rsta.gov.bt 02 321948
Sithar Dorji	Senior Planning Officer	Policy and Planning Division, Ministry of Information & Communications	sdorji@moic.gov.bt 02 322567
Dawa Chogyel	Head	Environmental Unit, Department of Industry, Ministry of Economic Affairs, Thimphu	dchogyel@gmail.com 17648008
Sangay Chedar	Planning Officer	Gross National Happiness Commission, Thimphu	schedar@gnhc.gov.bt 17714022
Karma Yonten	Chief Executive Officer	Greener Way, Thimphu	yontentharchen@gmail.com 02 337464
Nima Wangmo	Environment Officer	Phuntsholing Thromde	nimawangmo90@gmail.com 05 252168
Phub Tshering	Environment Officer	Thimphu, Thromde	ptshering@thimphucity.gov.bt 02 336310
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Tobden	Dy. Chief Statistical Officer	Economic and Environment Statistics Division, National Statistics Bureau	tobden@nsb.gov.bt 77415125
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Project Finance

Project	Implementing partner	Budget (USD)
LECB project design	UNDP	32,100
LECB	National Environment Commission	642,000
LECB Enhanced Support	Ministry of Information and Communication	300,000
INDC	National Environment Commission	160,500
Total		1,134,600

Project	Source of funds	Fund/donor code	Total Fund Received	Total expenditure	Balance
LECB/LECB	AUSAID	30000- 11234	342,071.60	341,071.61	999.99
ENHANCED	EU	30079- 280	375,792.93	375,792.63	0.30
SUPPORT	BMU	23400- 117	256,412.69	256,412.69	-
			974,277.22	973,276.93	1,000.29
INDC	EU	30079- 280	75,000.00	74,969.47	30.53
	EU	30079 - 10159	85,525.53	85,031.33	494.20
			160,525.53	160,000.80	524.73
	UNDP TRAC	04000/00012	93,171.00	93,171.00	-
			1,227,973.75	1,226,448.73	1,525.02

Projects	Fund-Donor code	Total budget	Total Budget Received	2012	2013	2014	2015	2016	2017	total exp	Balance
LECB (AUS AID)	30000- 11234	342,260.00	342,071.60		-	238,986.83	58,715.98	8,688.13	34,680.67	341,071.61	999.99
LECB (EC)	30079- 280	331,840.00	375,792.93	8,230.92	74,434.07	4,225.97	81,434.50	150,977.32	56,489.85	375,792.63	0.30
LECB-ES	23400- 117	300,000.00	256,412.69			25,097.65	138,115.48	92,547.51	652.05	256,412.69	-
										-	
INDC	30079- 280 (2015)	160,500.00	75,000.00				32,678.22	50,071.61	77,250.81	160,000.64	524.89
	10159 (2016)		85,525.53							-	
Grand total				8230.92	74,434.07	268,310.45	310,944.18	302,284.57	169,073.38	1,133,277.57	1,525.18

8.2 Organizational structure

The organizational structure for implementation of the LECB Project in Bhutan is shown in the figure below. The National Environment Commission is the designated Implementing Partner for the LECB Project and the Project Management Secretariat is within the Climate Change Division of the NEC. The Gross National Happiness Commission (GNHC) is responsible for endorsement of the project on behalf of the Royal Government and undertakes the lead role in mainstreaming NAMAs, LEDS and MRV systems into the national policies, plans and strategies.

A Project Management Board is chaired by the NEC Secretary and represented by GNHC, UNDP and two members from the Multi-stakeholder Coordination Committee for Climate Change (MSTCCCC) which oversees the overall implementation of the project and endorse the project work plan, budgets and the project outcome/outputs. The ultimate outputs of the project are approved by the NEC on recommendation of the Project Management Board.

The Multi-stakeholder Coordination Committee for Climate Change (MSTCCCC) was established in 2010 as per the directives of the NEC with representation from the relevant stakeholders to coordinate and provide technical guidance on climate change issues in the country. The MSTCCCC is also chaired by the NEC Secretary. This same MSTCCCC provides technical guidance to the LECB Project Management Board.

The Project Management Secretariat undertakes the day to day functioning of the project headed by a Project Manager designated from amongst the officials of the Climate Change Division, NEC. A Taskforce for implementation of the technical activities of the project is constituted representing all the stakeholders involved in the project. This taskforce will be responsible for identifying relevant stakeholders, specific NAMAs and LEDS activities and developing the NAMAs, LEDS and MRV under the guidance of the Project Manager. The Project Implementation Taskforce members are also the Technical Working Group members when split into specific NAMAs, LEDS and MRV working groups. Periodic meetings for sharing progress and information are conducted for the TWGs by the project management.

There is also a **Project Management Board (PMB)** chaired by the Secretary, NEC, and co-chaired by a designated senior UNDP staff member, including a GNHC representative and two representatives from the MSTCCCC nominated by the MSTCCCC. The Project Management Board oversees the project implementation processes and the progress. The Board reviews and endorses the annual work plan, budget, progress reports and financial reports submitted by the Project Management Secretariat and the Technical Working Groups. The Board is also responsible for the successful execution of program outcomes and monitoring of interdependencies between projects and managing changes within and among projects. The main outcomes of the project (i.e., NAMAs, LEDS and MRV systems) are also reviewed by the Board prior to submission to the NEC for endorsement.

Then based on the approved Annual Work Plan (AWP), the Board meets quarterly with one meeting dedicated for Annual Review and endorses project annual and quarterly plans when required and authorizes any major deviation from those agreed quarterly plans. It is the authority that signs off the completion of each quarterly plan as well as authorizes the start of the next quarterly plan. These meetings take place at least once or twice a year to discuss on the progress, make follow-up actions and provide recommendations to bring about improvement in the project implementation. Following are the members present during the meeting:

Members present:

- a) Honorable Secretary, NEC, Chairman
- b) Department of Industry, MoEA
- c) Climate Change Division, NEC, Member Secretary
- d) Representative from UNDP, CO
- e) Department of Livestock, MoAF
- f) Gross National Happiness Commission
- g) Association of Bhutanese Industries
- h) PPD, Ministry of Works and Human Settlement
- i) LECB Project Manager

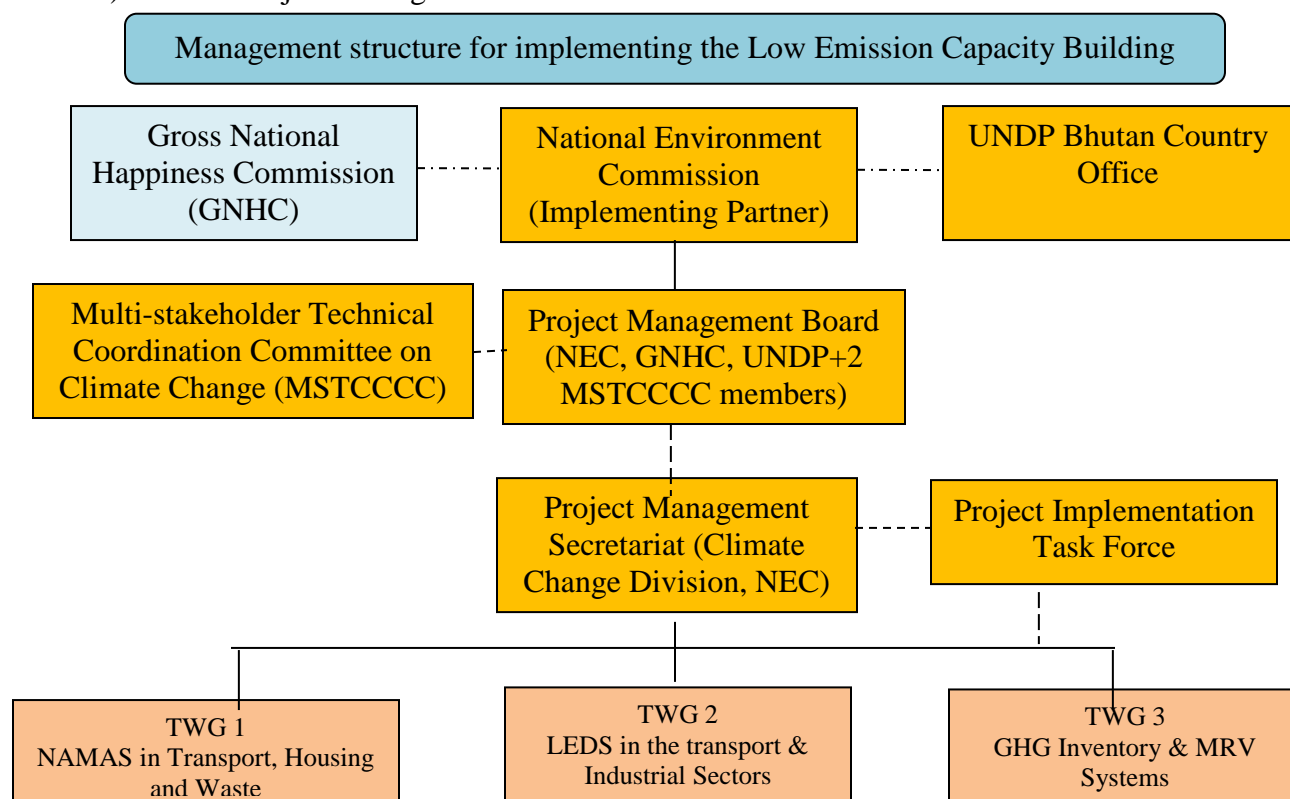


Figure 1: Organizational structure for Implementation of the Project

There is also a **Multi-Stakeholder Coordination Committee on Climate Change (MSTCCCC)**² to serve as a forum to coordinate climate change related activities in the country and to provide technical advice. The MSTCCCC, as and when required, also provides advice to the LECB Project team in the Secretariat and LECB consultants (international/national) on national policy matters in formulating the technical papers in part and/or complete formation of the GHG national inventory system, NAMAS, LEDS, and MRV systems. The MSTCCCC also provides guidance to the Project Manager and team in the Secretariat in formulating annual work plans, budget, identification of focus areas and stakeholders for the project. The MSTCCCC meets at least once in a quarter to consider the project implementation matters. The meeting takes place at least once a year to review on the critical policy interventions of the LECB project. The MSTCCCC has representatives from the following agencies:

- a) Secretary, NEC, Chairman
- b) Director General, Road Safety and Transport Authority, MoIC, Member
- c) Director General, Department of Local Governance, MoCHA, Member
- d) Director General, Department of Public Accounts, MoF, Member
- e) Secretary General, Tarayana Foundation, Member
- f) General Secretary, Bhutan Chamber of Commerce and Industry, Member
- g) Director General, Research and External Relation, RUB, Member
- h) Director, Department of Hydromet Services, MoEA, Member
- i) Director, Department of Public Health, MoH, Member
- j) Director, Department of Disaster Management, MoHCA, Member
- k) Director, GNHC Secretariat, Member
- l) Chief, Policy and Planning Division, MoWHS, Member
- m) Chief, Policy and Planning Division, MoAF, Member
- n) Chief, Policy and Planning Division, MoEA, Member
- o) Chief, Climate Change Division, NEC, Member Secretary

8.3 Partnership arrangements and collaboration

The project has laid out clear managements and partnership arrangements for the implementation of the project; they provided the project with clear roles and responsibilities for each party engaged in the implementation of the project. Overall the partnership arrangements were excellent and provided excellent synergies amongst the agencies involved in the implementation of the project. The table below provides a clear picture of the roles and responsibilities of each project component.

Key Partners	Role in project
National Environment Commission	NEC is the designated implementing partner for the LECB and INDC project. NEC is fully responsible and accountable for managing the project LECB/INDC and ensuring the successful implementation of the project, the progress and

² As per the executive order of the Prime Minister of Bhutan dated 18th October 2016

	achievement of the expected project outcomes and outputs and the effective use of the project resources. Specifically, the implementing partner prepares the annual work plans and with approval of the project management board, reviews and sign the combined delivery report at the end of the year and sign the financial report.
Ministry of Information and communication/ Bhutan Postal Corporation limited	MoIC was responsible for management of the LECB enhanced support project. They played a key role in liaising with the Bhutan Postal Corporation Ltd a key beneficiary of the project. They are also a member of the project board since the inception of the project from 2015-2017
Ministry of Works and Human settlement	As a key stakeholder the MOWHS has been responsible for developing NAMA in the waste sector and has also developed Integration of low emission strategies in urban and rural settlements in Bhutan
Dept of renewable energy, MOEA	DRE has developed the Energy Efficiency roadmap 2030 as part of the INDC elaboration
Dept of Industry, MoEA	As a key stakeholder, DOI has been responsible in the development of the LEDS industry and elaboration of GHG mitigation in the industry sector
UNDP Bhutan CO	The UNDP Bhutan office has acted as the overall coordinator and monitor of the project funds. It has helped in the mobilization and coordination with other partners through it's the LECB global program.
Gross National Happiness Commission	GNHC as the planning body has had a key role in ensuring project activities are in line with the approved AWP. They are part of the project board and have provided guidance and endorsements for changes from the initial scope of the project and also intervened to fast track project activities where necessary

8.4 Project timeline

The LECB project was officially commenced on 28th February 2013. The project document has been signed by UNDP CO, National Environment Commission Secretariat and Gross National Happiness Commission Secretariat. The LECB enhanced support with the MOIC started in 2015-2017 and the INDC project timeline is from 2016-2017. The end date for all three projects is December 2017.

9 RESULTS AND ACHIEVEMENTS

	2012-2013				2014-2015				2016-2017			
Outcomes/activities	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Implementation arrangements and project inception												
1. Finalization of the project document												
2. Approval of the project document												
3. Project inception workshop												
4. Finalization of project implementation and institutional arrangements and M&E plan												
5. Project staffing and operational procedures												
Outcome 1: National GHG inventory system enhanced through support to the Environment Information Management System (EIMS) at the NEC and the National Forest Inventory (NFI)												
1.1 Identify the capacity development needs and the relevant stakeholders												
1.2 Provide the necessary trainings and testing of the data analysis and storage												
Outcome 2: Three energy efficiency NAMAs formulated in road transport, housing (residential & institutional) and municipal solid waste management sectors												
2.1 Identify relevant stakeholders, NAMAs priority and training needs												
2.2 Provide training to the stakeholders, how to develop NAMAs and its implementation systems												
2.3 Complete scoping and development of emission and mitigation scenarios												
2.4 Identify policy interventions, actions and financing requirements												
2.5 Review and finalization of 3 NAMA proposals												
Outcome 3: LEDS designed in the context of national priorities for Industrial and road transport sectors												
3.1 Identify relevant sectors and training needs												
3.2 Provide training to the relevant sectors on LEDS preparation and follow-up implementation process												
3.3 Develop LEDS for key sectors (road transport and industries) and establish platform for LEDS actions												
Outcome 4: MRV systems designed for identified NAMAs and LEDS												
4.1 Identify stakeholders and training needs												
4.2 Provide training to the stakeholders												
4.3 Design a MRV system to support the implementation of identified NAMAs and LEDS												
4.4 Testing of MRV application on NAMAs and LEDS sectors and establish platform for a sustainable MRV												
Project management including M&E												
1. Establish the project management Secretariat												
2. Carry out regular implementation/periodic monitoring												

9.1 Success factors

The successful delivery of LECB related policies and projects requires the engagement, participation and inclusion of a broad range of stakeholders at all levels—from international organizations, NGOs and national governments, down to local governments and communities. The impact of climate change has a disproportionate impact on communities at the local level, and policy and the project success hinges on the participation and inclusion of local actors through polycentric institutional arrangements. The coordination and cooperation between “top-down” and “bottom-up” institutional designs, with national actors clustering and occupying the centre of the networking top-down designs, cooperating with many different actors increased the coordination by linking other disconnected actors for success of the LECB.

Environmental Conservation is considered a key contribution to GNH because in addition to providing critical services such as water and energy, the environment is believed to contribute to aesthetic and other stimulus that can be directly healing to people who enjoy vivid colours and light, untainted breeze and silence in nature’s sound. This is one of the factors contributing for success of LECB. Another factor is that the project provides focus area from all the existing documents which are independent and functioning separately. In the process of carrying out the project, it also got mainstreamed most of the climate change activities in the agencies. All these factors contributed into the success of the project.

There is also political commitment and willingness from the government to mainstream climate change issues at all levels including integration of LECB programmes into the sector’s Five Year Plans. There is also active involvement of stakeholder representatives and responsibilities taken up by each member of the programme for all types of LECB related activities. All these initiatives and contributions made by the decision makers, project representatives and the concerned sectors are the driving force behind its success.

9.2 Project co-benefits

In most developing countries and to a larger extent, agencies, communities and the private sectors where there is potential of projects, programmes and/or policies to deliver tangible co-benefits forms the basis of investment decision making. Co-benefits serve to strengthen the political case for NAMAs, LEDs and INDCs and the desire to obtain international support to design and finance mitigation actions that deliver mitigation and development benefits.

One of the sectors with the greatest opportunity of co-benefit is the waste management, which is a major problem in the country. Prevailing solid waste management practices typically consist of end-of-pipe solutions, such as open dumping and uncontrolled land filling, which not only lead to methane emissions from untreated waste streams, but also to significant environmental, social and

economic impacts in the local context. These negative impacts include environmental degradation around disposal sites, spread of diseases and the high costs incurred by municipal governments in collecting and disposing of waste. While the share of the waste sector in terms of greenhouse gas emissions is relatively small compared to other sectors such as energy supply, the sustainable development co-benefits associated with certain reduce, reuse and recycle (3R) approaches are potentially very large. At a smaller scale, the solid waste management has already generated a broad number of co-benefits such as green job creation, improved health, improved waste collection, cost savings from reduced need for land filling and improved crop yields through the use of composts among others. The promotion of such projects calls for the need to value and quantify the associated co-benefits in order to give greater substantiation to decision-making and policy design, including NAMAs.

Similarly, following are some of the co-benefits from other sectors:

- a) Creation of job in the transport sector, improved health through lesser pollution through use of public transport service, less traffic congestion and less burden to the government on management of increasing number of private cars in the country;
- b) Sustainable use of forest resources, proper land management and agriculture farming;
- c) Energy efficiency leads to safe and more secure energy supplies, surplus energy for export to earn extra revenue for the country, less dependency on fire wood, less dependency on other pollutant sources of energy;
- d) Other co-benefits are carbon credit, long term sustainability of the country through less emission of GHG etc.

9.3 Unintended benefits

LECB/INDC programme also resulted into numerous unintended benefits as follows:

Environmental benefits: The programme helped the private sectors to take up environmental related entrepreneurs and thus contributing to unemployment problems in the country partially. More awareness created to the policy makers, agencies and the general people on the importance of environment conservation and to mitigate climate change related measures. This led to lesser CO₂ emissions from the transport, waste and energy sectors.

Social benefits: LECB has the potential to enhance quality of life through energy efficiency measures, proper waste segregation and management and efficient transport system. This leads to lesser diseases, healthy life style living, less degradation and maintaining peaceful life of the people. There is benefit to the common people in terms of safer, reliable and efficient transport service for both urban and inter-district transport services.

Political benefits: LECB demonstrates the Bhutan's commitment to a holistic development inspired by GNH philosophy by taking environmental, economic and social concerns into the four outcomes. It has created room for initiatives and discussion for the government to either formulate new policies or incorporate the changes in the existing policies and regulations about the climate change factors.

Economic benefits: LECB often leads to savings for the government and for society in general. For example, an energy and water-efficient building may cost more up-front, but will save money in the long run. By creating demand for green goods and services, it also provides incentives to entrepreneurs for innovation. It can encourage farmers, manufacturers, innovators and entrepreneurs in Bhutan to produce and supply environmentally sustainable and socially responsible products and be competitive in the global market.

9.4 Gender impacts

To promote gender the LECB conducted a rapid gender needs assessment to guide the project team to address gender concerns towards national climate goals as part of the Nationally Appropriate Mitigation Actions (NAMAs) and Low Emission Development Strategies (LEDS) formulation process in the country. As part of the assessment a gender action plan (GAP) and Gender Analysis Matrix (GAM) was developed for implementation.

So following are the project benefits/impacts to the gender in Bhutan:

- a) In general, the programme has helped in building the technical capacity of both the genders (men and women) and specifically the gender focal officials in the ministries and agencies, particularly those women in decision making positions on gender issues and gender mainstreaming in climate policy making;
- b) During the execution of the project, women were actively involved from the implementation team to the different stakeholders that were directly or indirectly involved in the project. Different gender categories among stakeholders were involved in the project. The sector GHG teams that have been established comprise of both women and men.
- c) The Implementation Partner ensured that in all workshops, different gender was well represented. The Project Board, the key entity in-charge of the execution and management of the project, included several representatives of the gender issues.
- d) The city bus service has recruited women conductors as part of the gender equality in the male dominated profession and as of date they are doing well;
- e) As per the energy efficiency survey, 30 % of the households are headed by women who undertake energy related decisions. In the case of institutions too, most employees involved in energy decision-making are women;

- f) In the municipal waste sector, the current employment ratio in municipal waste management is considered to be more skewed towards females. There are more number of females engaged as daily workers both at the street cleaners as well as in the waste collectors or segregators;
- g) In the city bus service, awareness has been created to the general public for creation of priority seats for women, children, the old and physically challenged;
- h) In the model bus stop at Changjiji, provision has been kept for wheel chair ramp for the people with disability and CCTV for monitoring any mishaps at the spot.

9.5 Private sector collaboration efforts

- a) The GHG Inventory component requires involvement of various stakeholders including the private sector representatives as data providers to the national GHG inventory. So the efforts are underway to collaborate on the data collection. The private sectors such as Greener Way and others are already on board to attend all policy coordination workshops, peer-review reports and relevant hands-on trainings. The targeted audiences were provided with an overview of how emissions inventories are developed, have had a general understanding of the methods available, as well as main challenges in particular areas with regard to collection activity data, and selection of emissions factors and relevant parameters followed by applied methodological approaches. They have been consulted for developing the national system for monitoring and reporting of the greenhouse gas emissions and other information relevant to climate change. As result, it was ensured a better understanding and awareness of the representatives of private sector on the needs of national inventory system, strengthening and improving the collaboration and relationships at the institutional level.
- b) During the development of LECB relevant policies, strategies and other related systems, all interested parties including the private sector were invited to participate in the decision making process. The calls were made through direct invitation and emails to express their comments and amendments which they may consider most appropriate for them.
- c) All the climate change related projects cannot be handled by single entity but requires collaboration from all the relevant agencies including private sector. The Energy Efficiency projects related to buildings, appliances and renewable energy requires active involvement from the private sectors;
- d) The government has recently initiated Public Private Partnership Policy which has already invited number of proposals in terms of waste management, recycling, energy efficiency (appliances and products developed from locally available materials).

10 COMMUNICATIONS AND OUTREACH

10.1 Communications strategy

The Low Emission Capacity Building Programme represented an innovative pathfinder project-focused on building capacities on implementing the low-emission development pathways within the context of national circumstances and national development goals.

The national LECB project team has allocated some funds from the project budget for learning, knowledge sharing, communication and outreach activities and materials, as visibility is a major criterion from donors for measuring project.

- a) To inform and raise awareness among all stakeholders about the importance of reducing GHG emissions
- b) To disseminate appropriate information about LECB activities
- c) To increase the visibility of LECB by inviting media to reflect project's achievements

10.2 Measures to improve project visibility

The Project Secretariat is within the National Environment Commission Secretariat (NECS) which has its own webpage (<http://nec.gov.bt>). In addition to that, UNDP Country Office is the executing agency which has its own web page (www.undp.org/content/bhutan/en/.../low-emission-capacity-programme-lecb-.html). So all the LECB project related information was announced through either of these web pages. The successes of project outcomes were also advertised through these web pages as well as through print Medias. All events organized through the LECB project has been widely reflected on the national project webpage and media. Several press release based on project's activities was developed and send to local media, published on UNDP official web page and social media platforms. The awareness programmes were also aired through BBS and radio.

10.3 Quotes from key LECB stakeholders

Following are some of the quotes from the LECB stakeholders:

“There is so much of talk on the climate change, environment and related issues in the economy but in reality not much of such information are available for effective management and decision making on climate related issues.”

“With the execution of LECB projects, it has been able to train and build the technical capacity on low emissions and to understand the concepts of environment, mitigation strategies and its measurements”.

Some other members have said,” the project is all about preparation of documents on NAMAs, LEDS and study reports but implementation is an issue”.

“The segregation of waste and its treatment requires moulding of plastics which in turn is hazardous to health, so it is a challenge on how to do it”. It was also said, “Inventory on climate change and environment related issues are too complicated and difficult to comprehend due to so many factors involved in the field”.

“It is very difficult to convince the public to do 100 percent source segregation and even if the facilities are there, people are still reluctant to segregate and dispose the waste, so there need of proper Information Communication method for various groups of people”.

11 SUSTAINABILITY OF RESULTS

11.1 Capacity development

Numerous trainings and workshops were conducted for increasing the capacities of the relevant agencies and stakeholders to deal with climate change management and leadership. The details of the trainings/workshops attended by various officials from different agencies are shown in the annex-I.

11.2 National counterparts

The LECB Project in Bhutan responded to capacity gaps identified in the Gender Capacity Needs Rapid Assessment in NAMAs and LEDS with possible actions and also the project management board meetings, then to bring about closer implementation of NAMAs formulation under the project. The project is further aligned with the United Nations Partnership Framework (UNPF) focuses on strengthening the national policies and capacities to enable climate and disaster resilient, low emission economic development and sustainable consumption, thus accelerating the progress towards achieving the Millennium Development Goals (MDGs).

Since UNFCCC establishment the National Environment Commission Secretariat (NECS) in Bhutan as the state authority responsible for development and promotion of policies and strategies addressing environmental protection, rational use of natural resources and biodiversity conservation. On behalf of the Government, NECS is the in-charge of the implementation of international environment treaties along with the relevant agencies in Bhutan such as UNDP, DRE, DoFPS, MoWHS and others.

The NECS in collaboration with NSB is entirely responsible for the activities related to preparation of National Communications (NCs) and National Inventory Reports (NIRs). Within the LECB working group is responsible for estimating emissions by categories of sources and removals by categories of sinks, Key Sources Analysis (KSA), Quality Assurance (QA) and Quality Control (QC) procedures, uncertainties assessment, documentation, reporting and archiving of data related to GHG inventory preparation process. The de facto status of the Climate Change Division is that

of a Project Implementation Unit, supporting the implementing of the national climate change related policies.

It is mandatory to frame and implement programmes/projects through participatory and consultative processes. The project implementation conducts inception workshop at least within two months on approval of the project to agree on project's first year annual work plan, budget, project's overall management strategy, identify relevant and key stakeholders, etc. In the process of the project implementation, numerous reviews of work plans, budget, project progress and M&E meetings were held. Whenever necessary, emergency or adhoc meetings of the Project Management Secretariat, MSTCCC, and Project Management Board were also held. As relevant, possible stakeholders involved in the LECB project implementation includes:

- a) NEC - Climate Change Division, Environment Services Division, Compliance Monitoring Division, Policy and Planning Services
- b) Gross National Happiness Commission (GNHC)
- c) Ministry of Finance (MoF) which includes Department of National Budget (DNB), Department of Public Accounts (DPA) and Department of Revenue and Customs (DRC)
- d) Ministry of Economic Affairs (MoEA)- Policy and Planning Division (PPD), Department of Industry (DoI), Department of Trade (DoT), Department of Renewable Energy (DRE), Department of Geology and Mines (DGM)
- e) Ministry of Works and Human Settlement (MoWHS)- PPD, Department of Human Settlement (DHS), Department of Engineering Services (DES), Department of Roads (DoR)
- f) Ministry of Agriculture and Forest (MoAF)- DoFPS (Forest Resources Management Division, Watershed Management Division), Department of Agriculture (DoA), Department of Livestock (DoL)
- g) Ministry of Information and Communication (MoIC)- PPD
- h) Ministry of Education (MoE)
- i) Royal University of Bhutan (RUB)
- j) Road Safety and Transport Authority (RSTA)
- k) Bhutan Standards Bureau (BSB)
- l) National Statistics Bureau (NSB)
- m) Royal Bhutan Police (RBP)
- n) Local Governments (Dzongkhags, Geogs, Municipal Authorities)
- o) National Housing Development Corporation Limited (NHDCL)
- p) National Pension and Provident Fund Limited (NPPFL)
- q) Natural Resources Development Corporation Limited (NRDCL)
- r) Construction Development Corporation Limited (CDCL)

- s) Non-governmental Organizations (NGOs) like Royal Society for Protection of Nature (RSPN), Bhutan Chamber of Commerce and Industry (BCCI), Association for Bhutanese Industries (ABI)
- t) Private institutions like Greener Ways, Jungshi Paper Recycling Unit, and
- u) Significant GHG emitting Private industries

11.3 Scale up

The project has potential to scale-up in the context of future evolution of the appropriate mechanisms of financing the low carbon economy at the global level. The project has scopes for a series of extensive programmes, policies and initiatives that are designed to integrate mitigation into the National and Sectoral Development Strategies, to de-carbonize the national economy while increasing the energy security, maximize economic opportunities and establish a climate-resilient economy.

Stakeholder consultations in all target groups, including ministers, government agencies, academic institutes and universities, private sector actors and NGOs, were conducted as part of the preparatory phase of project design. These stakeholder consultations included meetings, round-tables discussions and interviews highlight the importance of the programme.

The Government's initiatives are consistent with the LECB Programme rationale that countries need support in terms of providing technical expertise and assistance in developing the capacity of stakeholders, including the Public Sector. Capacity development is essential to the country's efforts to tackle climate change. This includes increasing institutional capacities to provide appropriate mechanisms of support and coordination when addressing climate risks. It also includes strengthening technical knowledge in order to better understand and make use of climate information, and increasing relevant data and access to data for planning and decision-making. In these areas, the LECB Programme will play an important role in helping the country to understand how to take climate change into account more effectively when developing planning strategies and designing and implementing policies.

There are already plans for the national forest inventory to be carried out periodically and during the 12th FYP, the implementation of NFI exercise will be decentralized to the 14 territorial divisions and 10 protected area field offices. Further, NSB is also planning to take into account of all environmental accounts as part of the annual accounts to be published and submitted to the stakeholders for research and decision making.

In the transport sector, the modern efficient city bus services available in the capital city will be expanded to other major cities and towns to encourage general public on environmental pollution caused by increasing number of cars. The bus model stop which was installed in Thimphu will be

scaling up and similar stops in nearly 80 more locations are to be constructed in Thimphu within the next few years with the support from World Bank and other international sources of funding.

Similarly, in the waste management side with the success of Thimphu as model, other municipalities are planning to outsource to private entrepreneurs for the waste collection, segregation and treatment. Waste treatment and segregation are already extended to other parts of the country in terms of reduce, reuse and recycle concept. There are also plans for various energy efficiency mitigation measures and programmes to be developed in future for reliability, reduction of emissions and other hazards imposed by the use of modern appliances in the homes.

11.4 Linkages

The results obtained in the frame of LECB will be further sustainably used for ensuring a continuing and high-quality reporting to the UNFCCC. Referring to Government Decision (GD) on the organization and functioning of the national system for monitoring and reporting the greenhouse gas emissions and other information relevant to climate change. Through this GD it is established a mechanism for achieving the following objectives: (a) Ensuring timely, transparent, accurate, consistent and full monitoring and reporting of all anthropogenic emissions by sources and removals by sinks in respect to all greenhouse gas emissions not controlled by the Montreal Protocol to the Secretariat of the United Nations Framework Convention on Climate Change (UNFCCC) through reporting instruments (national communications, biennial update reports and national inventory reports); (b) Reporting and verifying the information on the national commitments made under the UNFCCC, the Kyoto Protocol, the Paris Agreement and decisions adopted there under, monitor the undertaken actions and assess national level progress regarding compliance with these commitments aimed at reducing emissions of all greenhouse gases in a cost-efficient manner. The provisions of GD apply to: (a) reporting progress in implementing low carbon development strategies at national level, as well as any updates thereof; (b) reporting progress in implementing national determined contributions; (c) emissions of greenhouse gases from source and sink categories, contained in national inventories of GHG emissions and taking place throughout the country; (d) independent CO₂ impact on climate associated with emissions from civil aviation; (e) projections of anthropogenic emissions by sources and removals by sinks of greenhouse gases not controlled by the Montreal Protocol, as well as policies and measures in connection therewith; (f) aggregated financial and technological support received from the industries; (h) actions taken at national level to adapt to climate change.

Also, the adapted template “Developing a National Greenhouse Gas Inventory System” will be used by the national GHG inventory experts, data providers and other interested institutions in building their capacities for development of a national GHG inventory. The national GHG Inventory team intends to update periodically (by end of each inventory cycle) the “Report on the National GHG Inventory System. The “Report on the Technical Review of the National Greenhouse Gas Inventories and the report on the Technical Review of the National Greenhouse

Gas Inventories elaborated in the frame of LECB Project were considered while developing the National Inventory Improvement Plan and the improvement proposals will be considered and implemented in the next national communications, biennial update reports and national inventory reports.

As a party to the United Nations Framework Convention on Climate Change (UNFCCC), Bhutan is required to prepare and submit periodic National Communications (NC) as a reporting obligation. The Initial National Communication for Bhutan was 2000(1990) and the Second National Communication 2011(2000). The Third National Communication (TNC) is now going to be initiated with support from GEF through UNEP. The three-year project ends by 2018 when the TNC from Bhutan will be submitted to UNFCCC. In preparing the project documents for the TNC and the first BUR from Bhutan, an inception workshop is scheduled on 29th December, 2015 at NECS Conference hall.

Besides these deliverables, capacity building of the national experts will be a key component of the exercise. Capacity Needs Assessment has been conducted to identify the existing capacity and the gaps within the sectors identified in the project. Till date Bhutan has completed two national greenhouse gas inventories; the initial national communication and the first GHG Inventory was submitted to the UNFCCC in the year 2000 and the second national GHG inventory was submitted in 2011. The main challenge in compiling the GHG inventory is the quantity and quality of activity data. Although, sectors maintain a data management system; the data do not necessarily serve the purpose for the GHG inventory compilation. There is lack of capacity of the stakeholders to collect data in the desired format to serve multiple purposes.

The main objective under the LECB project is to develop a functional GHG inventory data management system to ensure timely and quality data to reduce the uncertainty in the inventory process. The idea is to develop an effective and user friendly system to collect and manage data from all the sectors covered within the inventory process.

The forest carbon estimates generated from the analysis of NFI data will assist in updating the GHG inventory from forestry sector. The National Forest Inventory is also aimed at providing the baseline necessary for maintaining 60 % forest cover for all times to come as pledged in INDC.

12 IMPACTS

The impacts of the LECB, LECB Enhanced and INDC projects are as follows:

- a) To ease traffic congestion and reduce GHG emission, the Thimphu municipality has plans to pedestrianize Norzin lam(core town are), 2 multi car park facilities is under construction to support this effort

- b) There is increase in awareness among the institutions and the general public specially in the capital city and major towns on energy efficient buildings by adopting various energy conservation technologies in the building construction;
- c) Some of the institutions have initiated using local materials for construction purposes in order to conserve energy and to prevent impacts of modernization to environmental conservation;
- d) More than 70% of the urban population as well as those in the rural areas are segregating the waste from the source before disposing off to the landfill sites;
- e) There is increasing number of waste treatment business from the private entrepreneurs on recycle and reuse of the waste. This is because it creates job opportunities for the youth and also earns revenue from the waste;
- f) Private individuals are also taking up treatment of waste to other byproducts which are in demand to create employment opportunities;
- g) The industries have also adopted environmental norms to reduce emission from the industries and to comply with the environmental rules and regulations;
- h) Women representation in workshops, seminars and trainings has also been increasing over the years as part of the gender empowerment, equality and addressing women's issues in Climate change;
- i) The project has immensely contributed towards the development of plans and policies of the Royal Government. Now climate change and mitigation actions are integrated into Five Year Plans of the Royal Government through GNHC.

13 ASSESSMENT FINDINGS

Project design: The assessment of the barriers arising from the inception of project design shows that there were minor changes in the proposed activities after the project award and there were some instances where the amount of the budget had to be re-allocated to other activities (partly due to delays between the design and the project inception) and to the priorities of the agencies concerned. However, the expenditures for the revision of the project logical framework were necessary and appropriate to adapt to a new context. The rating of the conceptualization/design of the original project document is evaluated to be satisfactory (S).

Country ownership: The original project idea was initiated and developed by the National Environment Commission Secretariat with the assistance from the UNDP CO (who also hired international consultants). The project goal and objectives properly addressed the country needs and were fully in-line with the country's priorities and policies. The appropriate general focus of the project was highlighted by the exceptional long period between the time of original project concept and final project implementation, which cover a period of 5 years, on one hand and the fact that the project goal, focus, and approach is still up-to-date and very relevant, even when the country has witnessed major development over those last 5 years. The project established intensive

and effective cooperation with the Government of Bhutan. Practically all ministries planned were not involved in the project, but those involved provided significant amount of cooperation for all the project activities. So the overall assessment of country ownership is highly satisfactory (HS).

Relevance: The project has addressed the climate change mitigation commitments which are the national development priorities and identified in the UNDP cooperation frameworks in Bhutan. In particular, the UNDAF (2013-2018) and the UNDP CPD (2008-2012) focused support to the Royal Governments' efforts to balance development with environmental carrying capacity and disaster preparedness. It participated to achieving several existing National initiatives including the National Communications Support Programme, capacity developments conducted related to NAMAs and LEDS to the transport, energy efficiency for buildings and waste management sectors. The capacity building was also carried out for MRV and GHG inventory related to all the three sectors. So this criterion is ranked satisfactory (S).

Partnership strategy and stakeholders' participation: Project partners included the Royal Government of Bhutan (several ministries), UNDP CO and donors coordinated by the Project Management Secretariat, NECS and the Global Steering Committee and Global Support Unit at UNDP Headquarters.

The NECS was designated as the national executing agency, and responsible for the management of the funds, as well as for overall guidance, supervision and review in the course of the project implementation in coordination with UNDP CO. During the project formulation, a stakeholders' analysis had been made, with the main stakeholders and their roles in the project identified. The project design process involved consultation with the key stakeholder groups. Such consultations and communications continued during the Project implementation. So the stakeholders' participation facilitated the interventions of each project phase and strengthened the complementarity between the various project activities, receiving support from organizations and institutional supports from different ministries and agencies. Stakeholders' involvement in project implementation has rated as highly satisfactory (HS).

Production and dissemination of information: The project has produced and disseminated all information to all project beneficiaries, government staff and the development partners. A series of targeted seminars and workshops were held, printed materials and leaflets disseminated in national newspapers, social media, internet and also covered on national TV. The assessment of production and dissemination of information is rated satisfactory (S).

Replication approach: The project has a significant potential for replication in other parts of the country as well as to other countries or on other topics. The experts trained during the workshops now have the skills to initiate new programs and NAMA actions. Replication of the project could be done through existing networks and information sharing. This includes transmitting the results of the project to other agencies or countries with similar characteristics. The project has taken the

results-based approach to work planning and to review the work plan regularly. This work plan served as a mechanism to link inputs, budget, activities, outputs and outcomes, which were monitored and evaluated periodically. As lessons are learned, a flexible implementation approach with specific adjustments can ensure an effective replication of the program. The final evaluation confirms that the project presents good ground for replication thanks to well-documented activities and sustainable achievements of the project. This has been rated as highly satisfactory (HS).

In conclusion, the overall quality of the project implementation has been rated satisfactory (S) as explained by the different criteria, i.e. an efficient adaptive management, successful partnerships and good execution of financial resources over the project period.

Project management: The Project Management Board was responsible of supervising project execution and general management. This included evaluating project outputs to ensure that project activities are being carried out in a timely manner and to acceptable levels of quality, and reviewing the status and needs of each of the project's components throughout project implementation. The Project Management Board (PMB) is chaired by the Secretary, NECS and the Chief, CCD, NECS served as the Member Secretary. The PMB meets quarterly to report of the progress of the projects and to take decisions.

The overall responsibility of reporting to the PMB lies with the Project Manager and the Project Management Secretariat. Each Technical Team prepares progress and financial reports on a quarterly basis and submitted to the Project Manager. The Project Manager circulates the synthesis of the national reports as part of his/her quarterly progress report to the PMB, prior to meetings. The overall Project Management is rated as satisfactory (S).

Monitoring and evaluation: The planning for the M&E was comprehensive in the project document, integrating both internal M&E daily, quarterly, bi-annually and annually monitoring, and external evaluations. The evaluation of implementation and monitoring stage quality assurance was based on assessments of adaptive capacity, strategic planning, stakeholder involvement, knowledge-generation and use, gender inclusiveness tracking, project sustainability monitoring, risk management, M&E implementation, implementation tracking and results monitoring. So the overall quality of M&E is thus considered Satisfactory (S).

Financial management: During the project implementation, the financial management was well coordinated between UNDP and the project implementation partners especially NECS. The amounts and allocation between the different budget lines are appropriate and in line with the planned and implemented project activities according to the available financial reports. By comparing the actual disbursements to the originally budgeted and approved amounts in the project document, some minor changes between the different budget lines are apparent but, by taking into account the reported and actually observed results, these have been likely due to changing the

actual purpose of use of those funds. During the interviews with the project implementing partners and the review of progress reports, it is evident that the budget allocation has been followed as per the UNDP procurement guidelines and regulations. Financial management is thus considered Satisfactory (S).

Criterion	Evaluation guiding question	Rating
Adaptive capacity	Was the project pro-actively taking advantage of new opportunities, adapting its theory of change to respond to changes in the development context, including national priorities?	HS
	Was evidence generated through the project explicitly used to confirm or adjust the projects theory of change?	HS
Stakeholder involvement	Were target groups systematically engaged to ensure project remains relevant to them?	S
Knowledge generation and use	Was the project generating knowledge and reporting - particularly on lessons learned?	S
Gender inclusiveness	Were records kept and if necessary evidence based adjustments and changes made to address gender inequalities and women empowerment?	S
Monitoring & Evaluation implementation	Was the project M&E plan being adequately implemented?	S
Results monitoring	Was there regular monitoring and recording of cost-effectiveness taking into account the expected quality of results?	S

Quality of UNDP Implementing Agency: Along the evolution of this project, UNDP has demonstrated effective project implementation. The project benefitted from UNDP's experience in integrated policy development, human resources development, institutional strengthening, and nongovernmental and community participation. This was evident in project evolution that led to expansion of the project objectives to achieve the major goal. UNDP with its comparative advantage in sourcing experts from the region and HQ in NY has supported its partners NEC and MOIC through multiple recruitments of local and international experts. The quality of implementation of the project is thus considered highly satisfactory (HS).

Quality of Execution Agency: This project was executed by the Climate Change Division, NECS and the MOIC with support from the UNDP CO. The recruitment of consultants and other contractual arrangements such as procurement of goods and services of significant value were

provided by UNDP. The project was monitored by the Project Management Board (PMB) and the Multi-stakeholder Technical Coordination Committee on Climate Change (MSTCCCC) which regularly reviews the implementation progress, endorse work plans, provide guidance and assist in the resolution of any issues during the implementation. Despite of few delays in activity implementation, most of the project activities were successfully executed, so the evaluation is considered to be Satisfactory (S).

Linkages: The project responds directly to capacity building needs for low emission development within the NECS as well as its stakeholders. It was also found that there is sharing of experiences and lessons learnt between projects on similar issues notably climate change, land use change and waste management. The result of the LECB project, whose focus was to strengthen foundational capacities for climate change mitigation within the country, has allowed the country to develop other projects for climate change mitigation alongside this project. So the evaluation of linkages with other interventions is thus rated as highly satisfactory (HS).

The overall project is rated Satisfactory (S).

Criterion	Rating	Comments
Project Formulation	S	The formulation of the project complete and the design was partially inadequate.
Country Ownership	HS	The project goal and objectives properly addressed the country needs and were fully in-line with country priorities and policies.
Stakeholders' participation	HS	The Project design process involved consultation with the key stakeholder groups, analyzing characteristics, problems, needs, interests of potential stakeholders. The latter were therefore more inclined to participate during the implementation. Their participation was significant and a large amount of information was produced and disseminated
Production and dissemination of information	S	
Involvement of governmental institutions	S	
Replication Approach	HS	The project presents good ground for replication thanks to well-documented activities and sustainable achievements of the project
Project implementation	S	The overall quality of the project is explained by a quite efficient adaptive management, successful partnerships and a good execution of financial resources over the project period. During its implementation, the project adapted to international progress in terms of mitigation's mechanisms.
General Management	S	
Relevance	S	
Monitoring & Evaluation	S	The planning for the M&E was comprehensive and detailed in the project document. The implementation of the M&E strategy was very comprehensive and efficient.
Financial Management	S	The amounts and allocation between the different budget lines are appropriate and in line with the planned and implemented project activities

Highly Satisfactory (HS):	The project had no shortcomings in the achievement of its objectives in terms of relevance, effectiveness or efficiency
Satisfactory (S):	There were only minor shortcomings
Marginally Satisfactory (MS):	There were moderate shortcomings
Marginally Unsatisfactory (MU):	The project had significant shortcomings
Unsatisfactory (U):	There were major shortcomings in the achievement of project objectives in terms of relevance, effectiveness, or efficiency
Highly Unsatisfactory (HU):	The project had severe shortcomings

14 LESSONS AND RECOMMENDATIONS

14.1 Challenges

- a) The main barriers were to establish a permanent dialog with interested counterparts and focal points from ministries and agencies. The main problem was the changing of the responsible people and restructuring of the institutions that has changed several times. This is producing lost of knowledge and arrangements that were established before. If the contact person changes the project has to introduce the new person in the project subjects that are taking a lot of efforts and time.
- b) Another barrier that has faced the program was the non-performance of some of the consultants (both local and international) which delays the deliverables of the certain projects. In some cases, it was the members of the representative organizations who has to work on the projects and thus slowing the progress of the program.
- c) A critical barrier mentioned in most of the interviews is the lack of experience and expertise. There is lack of training, skills and knowledge to develop and implement LEDS and/or NAMAs. Most of the focal representatives of the LECB are just the normal professionals and they don't have any qualification on climate change related subjects. In particular, many lack the institutional and technical capabilities needed for the long-term planning horizons that LEDS and NAMAs involve. Developing a credible and realistic NAMA proposal or a LEDS requires the establishment of a rigorous baseline. What is missing as far as this is concerned is technical capacity: the skills and underlying data to lay the groundwork, as well as the technical ability to apply the full suite of available tools for scenario building, modeling, and forecasting so on, in order to effectively inform decision makers on mitigation policy.
- d) A precondition for an effective LEDS or NAMA that leads to transformational change is strong high-level commitment within the host country. Securing such commitment and obtaining the political buy-in has been noted as a critical challenge in all regions and levels of economic development. It has not proved to be an easy task to overcome the lack of political will and make the case for climate-change mitigation activities. Making these prominent among the priorities of economic growth and social development issues such as poverty, health and education has indeed been a challenge, as has achieving engagement, coordination and cooperation among key sectoral ministries/agencies.
- e) There are number of documents developed in terms of policies, LEDS and NAMAs for various sectors but the implementation is still under process due to lack of funds;
- f) There is lack of baseline data for solid waste management, GHG and other environment related information to make proper planning and to take informed decisions;
- g) Inventory on climate change and environment related issues are too complicated and difficult to comprehend due to so many factors involved in this field. Organizing a day long workshop is not adequate but need adequate training for actual implementation;

- h) Industrialist and business enterprises lack policy advocacy, virtually lack skills and information on climate change issues and as a whole, private sector feels LECB related projects are prime responsibility of NEC which deters fulfilling the mandates of the government.
- i) It is very difficult to convince the public to do complete source segregation on waste. Even if the facilities are there, people are still reluctant to segregate and dispose the waste in designated areas;
- j) The existing system of waste collection and segregation, recycling and safe disposal is very limited and operational in only a few population hubs. An integrated solid waste management system approach which considers all steps of the Solid Waste Management (SWM) cycle and all aspects of sustainability is currently lacking largely due to scarce capacity in terms of institutional set-up, trained human resources and funds;
- k) Similar activities are carried out by agencies through donor funded projects which leads to duplication of the works.

14.2 Lessons learnt

The LECB Programme has been catalytic for Bhutan because of the momentum it has created for policy and institutional reform. Bhutan had already developed number of National level policies and strategies to mitigate climate change related issues such as Transport Policy, Intelligent Transport System, GHG Inventory Management, LEDS for Transport and Industry, Waste Management System and other documents.

- a) The LECB Programme has provided continuity towards technical and institutional capacity building, as well as awareness in the area of climate change;
- b) Coordination and cooperation among concerned ministries was a prerequisite for successful LECB Project implementation- a proper inter-ministerial mechanism was required to serve as a framework for cooperation and for mainstreaming climate change into relevant sectors;
- c) Awareness raising and capacity building was crucial for climate change mainstreaming;
- d) There is a further need to maintain and improve climate change technical and institutional capacity of the relevant agencies that has been created and supported by the LECB Programme;
- e) Consistent and clear planning processes within concerned ministries/agencies are required for successful integration of climate change issues into the country's sustainable development policies;
- f) The report on the National GHG Inventory System and the National Inventory Report, Greenhouse Gas Sources and Sinks are considered critical for enhancing the sustainability of the inventory process, without which inventory team and the national inventory itself would not be able to benefit from the work that has been done before;

- g) Outcomes of the NAMAs Development Working Group within the LECB Project should be used for developing NAMAs project proposals and obtain support for their implementation from various international sources (i.e., GEF, GCF, ERBD, EIB, WB, etc.);
- h) There is a need to establish a user-friendly and efficient information system for collecting the activity data needed for GHG inventory compilation, as well as for collecting the information and parameters needed for reporting the impact of mitigation policies and measures, inclusive of NAMAs projects;
- i) International, Regional and National Technical Workshops and Hands-On Trainings, are one of the best mechanism for sharing results, experiences and providing training in different aspects relevant for process of implementing the LECB Programme;
- j) Education and awareness raising campaigns should be promoted to improve understanding about and mainstreaming of climate change into relevant stakeholders;
- k) LECB and LED related projects are expensive and is difficult to implement without the support from donor agencies;

14.3 Recommendations

The LECB project has nurtured sustainability as consequence of very efficient and effective support (general management and monitoring support) provided by UNDP Country Office and LECB Global Support Unit and UNDP office in New York to the Climate Change Division, National Environment Commission Secretariat during the implementation of the project.

- a) The decision to update the NDCs on regular basis, it is very important to ensure further regular organization of regional/global training workshops, specifically hands-on trainings for national experts involved in the mitigation assessments, to be considered in the NDCs, as it is one of the best mechanism for sharing results, experiences and receiving training in different aspects relevant for process of preparation the National Determined Contributions;
- b) Some of the LECB project approaches used may be replicated in other countries or regions;
- c) There is a need for a greater national expertise on the issue of climate change, even the expertise hired for the LECB related assessments did not have adequate capacity and experience on the subject;
- d) Frequent changes in the trained officials from the government positions after training, poses a serious challenge to successful continuity. Due to this, newer employees need to be trained each time which results in a waste of time and resources by training people who then do not multiply the impacts. In this context, it is important to develop a system to retain those skilled employees in the agencies or to pass on the information and skills to the next level for continuity of the project;
- e) Very limited reference resources are available for a LECB related studies in the country. So it is important to continue to build the GHG inventory system and data collection process

regularly. NSB is planning to engage other stakeholders on the environment related data collection and retrieving which should be taken forward by engaging all the relevant stakeholders;

- f) Lot of capacity building activities such as workshops and trainings were conducted but still it is not adequate because there is need of long term capacity building programmes such as degree in traffic engineers, transport planners, public transport managers, GHG inventory management and other climate change professions;
- g) LED Strategy should have come first followed by Energy conservation buildings, Intelligent Transport Systems and industries but in actual case it was the other way round. This leads to procedural lapses in the system;
- h) At the moment, the area coverage for waste collection in some of the municipalities are very minimal and if the area coverage is increased with a proper segregation at source, then the amount of the bio-degradable waste going to the landfill will reduce;
- i) In future, for better outcomes/results and to reap the benefits of the project and percolate deep down, the concerned focal agency such as NECS/GNHC must source out fund directly to the concerned sectors, whereby the project could be handled and managed by the concerned sectors itself. With this modality, there could be better representation and participation from relevant stakeholders, and the concerned sector can take responsibility and ownership of the project;
- j) The project could reduce GHG emissions by implementing solid waste management practices across all municipalities. This will indeed improve and promote private sector collaboration with relevant agencies. It will also promote market for recyclable wastes which in turn can generate revenue though effective and efficient service delivery;
- l) In the transport sector, women conductors were recruited but there is need to encourage female professional bus drivers. In addition, provision of day care services, health services and education for children of working women are some of the priorities in order to motivate the female mainstreaming through the programme.
- m) A survey carried out to prepare the waste management strategy shows that there is high public demand for regular door-to-door waste collection with a service fee, which is affordable for majority of the population. So it is recommended to go for door-to –waste collection in all the municipalities;
- n) Technical assistance needs are still important in Bhutan. It is recommended to continue to accompany the country, both for assistance that responds to identified situations, and for long-term support, and to provide the country with the recent developments in the formulation of projects;
- o) There is a need to develop a second phase of the LECB project in Bhutan. This second phase should reflect on the continued operation of the project and should reassure certain beneficiaries as to the continuation of their activities, and that project results and lessons learned are shared with all stakeholders.

- p) There is need of entities to be involved in the national mitigation to periodically meet with their regional counterparts to enhance their capacity in tackling climate change with mutual experience's sharing. For instance, aspects of the implementation and outcomes of the Low Emission Capacity Building Program could be considered as useful examples for neighboring country mitigation strategy and vice-versa.
- q) The country's National Determined Contribution strategy could benefit from engaging the private sector more into its climate finance strategy. More public and private partnership could be enhanced to develop investments opportunities reducing the resource constraint for the implementation of mitigation mechanisms.
- r) In-depth gender-responsive mitigation analysis needs to be considered and researched. Although the LECB program has had positive results in gender equality and inclusiveness, it is recommended to improve women's participation into the technical and managing teams and leaderships positions. The impact on gender issues could also be more considered while developing further NAMAs and NDCs;

14.4 Risk management

The main risks of the project were to achieve the projected results in time. Specific risks for different components of the project are:

- a) The waste treatment is taking place as an initiative towards recycle and reuse of the waste but there is health hazard from such waste treatment. For this there should be some measures in place to prevent such hazards;
- b) There is risk of some consultants not fulfilling the dateline for the projects which has led to re-tender and unnecessary delays the work. Such risk will be overcome by proper selection of consultants and looking into past records;
- c) There is already number of policies, plans and strategies for implementation of number of projects in line with the action plans but the risk is to acquire funds. If there is no fund, then the projects cannot take place in reality. This can be overcome through proper planning and assessment and approaching donor agencies and organizations;
- d) LECB project is time bound and will come to an end and the future of those projects are uncertain. So there is need of delivering discussion in length about those projects and seek interventions.

14.5 Replicability

- a) The project has big potential for replication in new initiatives for environment initiatives. The experts that were trained through trainings and workshops have the capacity to initiate new programs and NAMA actions.

- b) The Project has taken the results-based approach to work planning and agrees to the review of the work plan regularly. This work plan serves as a mechanism to link inputs, budget, activities, outputs and outcomes, which are monitored and evaluated periodically. As lessons are learned, a flexible approach to implementing the project should accommodate constant adjustments to ensure that the Project's outputs and other interventions are credibly linked to the achievement of the desired outcomes and outputs through the various forms of assistance provided by the Project.
- c) The city bus service management introduced in Thimphu can be easily replicated in other bigger towns such as Phuntsholing, Gelephu, Samdrup Jongkhar and other districts;
- d) The waste management system including waste segregation and outsourcing of waste collection to private entrepreneurs can be also replicated to other major towns and districts;
- e) Recruitment of female bus conductors, bus drivers and waste segregation activities can be also replicated to other regions as well.

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- q) External Evaluation of the United Nations Collaborative Programme on Reducing Emissions from Deforestation and Forest Degradation in Developing Countries (the UN-REDD Programme, January 2014
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16 ANNEXURE

Annex-I: Capacity Development Trainings Conducted

Training topic	Location	Duration	No. of people trained	Outcome
Addressing Climate Change in Development Assistance	Danida Fellowship Centre, Copenhagen, Denmark	19 days	3	Provided formal training on the concepts of climate change and its dimensions
Air & water quality monitoring, emission testing & climate change	Asian institute of Technology, Thailand	6 days	6	Provided concept of recycling and reuse of waste water and its treatment technologies
Low emission development assessment, tools and strategies	Asian institute of Technology, Thailand	7 days	8	Various concepts were introduced about the NAMA, GHG, LEDS, CDM and INDC and its application to different sectors
Regional capacity building workshop on measurement, reporting and verification (MRV)	Ministry of Foreign Affairs, Singapore	3 days	2	MRV obligations under UNFCCC, reporting & institutional arrangements for

framework under the UNFCCC				BURs, GHG inventories, mitigation actions and technical analysis
Trained on the forest carbon assessment methodologies and were also exposed to NFI of Thailand.	Thailand		60	Enhanced knowledge to generate forest cover estimates and monitor forest cover change over time
Training on the modern office management reloaded with computer application	Systems Plus Computer College, Manila, Philippines	10 days		Enhanced knowledge to develop capability of effectiveness performance
Training on Advanced Project and Finance Management	Thailand	15 days	1	Understanding project financial management
Conducted Regional Environmental Consultation Workshop for Waste Regulation	Monggar, Bhutan	2 days		Awareness and sensitization on the Regulation for the “Waste Prevention and Management Act of Bhutan, 2012”
Workshop on Transport Management, sustainable and environmental friendly urban transport system for drivers and conductors of the City Bus Services under Bhutan Post	Thimphu, Bhutan	½ day	75	Capacity building among the city drivers and conductors in the area of road safety, responsible driving, ITS, sustainable and environmental friendly urban transport system.
Workshop on Road Safety, Transport Management and Environment Friendly Transport	Paro, Bhutan	2 days	41	Transport Demand Management, Public Transport Planning and Management, Traffic Engineering, Transport Act and Regulations, Online systems such as eRaLIS, intelligent Transport Systems and environment friendly transport
Global Sustainable Transport Conference	Ashgabat, Turkmenistan	2 days	2	Engage in action-oriented dialogue that

				emphasized on integrated and cross cutting nature of sustainable transport
Training on project management	Thailand	11 days	1	Understanding project management concepts
Organized high level sensitization workshop on the Paris Agreement	Thimphu, Bhutan	1 day		Promoted awareness among the parliamentarians
Regional Dialogue on Intended Nationally Determined Contributions, INDCs, for Eurasia	Istanbul, Turkey	3 days	3	Understanding Intended Nationally Determined Contributions, INDCs
Training on Cleaner production in Industries, Market mechanism and MRV	AIT, Thailand	7 days	8	
Organized sensitization workshop to further elaborate priority actions for implementation under the INDC	Thimphu, Bhutan	1 day	53	
Training on energy efficiency and conservation and renewable energy.	Department of Alternative Energy Development and Efficiency (DEDE), Thailand;	5 days	8	Learnt their experiences on energy development, energy efficiency codes in Industries, buildings, Energy Database Management System Development and Energy Efficiency Standards and Labeling Development
Workshop on Transport Management, sustainable and environmental friendly urban transport system for drivers and conductors of the City Bus Services	Thimphu, Bhutan		75	Built capacity among the city drivers and conductors in the area of road safety, responsible driving, ITS, sustainable and environmental friendly urban transport system.

Training on climate mitigation focus on LEDS and NAMAs	Asian Institute of Technology. Thailand	7 days	35	Broadened the understanding of the working group members on the practicality and the challenges of designing and implementing mitigation projects
Clean Energy & Emission Reduction Course	Nanyang Technological University, Singapore.	5 days	1	
Hydropower and Environment	International Centre for Hydropower (ICH), Norway.	17 days	1	
Hands on training workshop for the Asia-Pacific region on the use of GHG Inventory software (NAIIS)	UNFCCC in Manila, Philippines	5 days	2	
IPCC expert meeting on National GHG Inventories	Sapporo, Japan	4 days	4	
NAIIS workshop on Greenhouse Gas Inventory	Manila, Philippines	5 days	2	
Asia LEDS forum	Manila, Philippines	5 days	2	
LEDS Global Partnership meeting	Ethiopia	3 days	8	
Workshop on decision support tools for NAMAs	Paro, Bhutan	2 days	25	Identified interventions for NAMA's in the waste and transport sector
Training workshop on Project management, low carbon Green Growth and human resource management	Singapore	5 days	1	
Study visit on waste composting	Dhaka, Bangladesh	5 days	11	Exposed to appropriate waste handling techniques covering the 3Rs and composting

Training for the Dept of Industry on Cleaner production in Industries, Market mechanism and MRV in AIT Bangkok from 2017. LECB	27 Feb- 5 th March 2017, AIT BKK	7	8	
Training/ study visit for DRE on energy efficiency, conservation and renewable energy. Organized in partnership with the Department of Alternative Energy Development and Efficiency (DEDE), Thailand. The visit was to	6-10 March, Bangkok	5	8	learn from Thailand's experiences on energy development, energy efficiency codes in Industries, buildings, Energy Database Management System Development and Energy Efficiency Standards and Labeling Development in Thailand LECB

Annex-II: List of stakeholders consulted for the evaluation

Name	Designation	Agency	Email
Sonam Dendup	Director (Transport)	City Bus Service, Bhutan Postal Corporation Limited, Thimphu	Sonam.dendup@bhutanpost.bt 17875525
Kezang Yangden	Dy. Chief Forestry Officer	Forest Resources Management Division, Department of Forests and Park Services, Ministry of Agriculture and Forests, Thimphu	kyangden@moaf.gov.bt 02 327723
Sonam Desel	Dy. Chief Environment Officer	Policy and Planning Division, Ministry of Works & Human Settlement, Thimphu	sdesel@mowhs.gov.bt 02 324395
Karma Pemba	Chief Transport Officer	Transport Development Division, Road Safety and Transport Authority, Thimphu	k.pemba@rsta.gov.bt 02 321948
Sithar Dorji	Senior Planning Officer	Policy and Planning Division, Ministry of Information & Communications	sdorji@moic.gov.bt 02 322567
Dawa Chogyel	Head	Environmental Unit, Department of Industry, Ministry of Economic Affairs, Thimphu	dchogyel@gmail.com 17648008
Sangay Chedar	Planning Officer	Gross National Happiness Commission, Thimphu	schedar@gnhc.gov.bt 17714022
Karma Yonten	Chief Executive Officer	Greener Way, Thimphu	yontentharchen@gmail.com 02 337464

Nima Wangmo	Environment Officer	Phuntsholing Thromde	nimawangmo90@gmail.com 05 252168
Phub Tshering	Environment Officer	Thimphu, Thromde	ptshering@thimphucity.gov.bt 02 336310
Lhendup	Environment Officer	Gelephu Thromde	lhendupnono@gmail.com 17658514
Tobden	Dy. Chief Statistical Officer	Economic and Environment Statistics Division, National Statistics Bureau	tobden@nsb.gov.bt 77415125
Bumpa Lhamo	Dy. Collector	Department of Revenue and Customs, Ministry of Finance, Thimphu	blhamo@gmail.com 02 333509
Ugyen Chopel	Research Officer	Research & Policy Department, Bhutan Chamber of Commerce & Industry, Thimphu	uncciaro@gmail.com 17653929
Sonam Dagay	Assistant Environment Officer	Climate Change Division, National Environment Commission, Thimphu	Sonamdagay@nec.gov.bt 02 323384

Annex-III: Evaluation Questions

Terminal Evaluation of Low Emission Capacity Building (LECB) project/ LECB Enhanced support / Intended Nationally Determined Contributions project (INDC)

Kindly arrange to spare few minutes to answer the following questions and return back within 3-4 working days. Please respond to the relevant questions. Further, please take this terminal evaluation seriously because this is going to determine the next phase of the LECB/INDC project through NEC and UNDP, Bhutan, Country Office. Thank you.

- Q1. Which LECB and INDC projects are within the jurisdiction of your office?
- Q2. What is the situation prior to LECB project in terms of policy, capacity and GHG emission?
- Q3. What situation led to NAMA design?
- Q4. What is the condition of GHG inventory, data management or MRV prior to LECB?
- Q5. What is the change in institutional structure after LECB compared to before LECB?
- Q6. What is the contribution of LECB towards policy goals, INDC and common areas of interest?
- Q7. Please indicate if there were any changes in the scope of the project document and why?
- Q8. What are the project outcomes and outputs of LECB and INDC?
- Q9. Can you describe the outputs that were adjusted from the original scope based on changing needs?
- Q10. Can you please describe the organizational structure of the project planning and implementation team?
- Q11. How the project team was engaged with the implementing partner?
- Q12. Describe the Steering Committee (e.g., members, number of meetings per year)

Q13. Describe the project working groups (e.g., members, numbers of meetings per year, how they interacted with other sections of the project team).

Q14. Describe the partnerships and collaboration with other agencies and their effectiveness. Also provide contact information of key partners.

Q15. Please provide a general timeline of the project along with when the project began, major LECB milestones of key outputs, events, etc.

Q16. What are the success factors of the project, co-benefits or sustainable development benefits, including capacity development, institutional strengthening, job creation, health benefits, less contamination etc.?

Q17. Is there any unintended or unexpected benefits related to LECB activities?

Q18. Are there any gender impacts from the project and how gender interests are addressed during the project implementation process?

Q19. Please provide summary of key substantive products (e.g., project data, reports, training manuals, critical institutional authorizations), list of training events (including number of participants, description of institutions, and key objectives), and number of key stakeholders, and highlighted project communications.

Q20. What are the efforts to collaborate with the private sector, the nature of the collaboration, and results obtained through the project?

Q21. What type of communications strategies were used and measures taken to improve LECB project visibility?

Q22. What actions were taken to build capacity to conduct mitigation activities related to training, technical assistance, new systems, community outreach?

Q23. What efforts were taken to ensure follow-up by national counterparts and mainstreaming efforts, including future support planned through national budget allocation and transitioning of responsibilities to national counterparts.

Q24. Are there any plans to reproduce or scale-up the project?

Q25. How project has created linkage with the National Communications, Biennial Update Reports, Intended Nationally Determined Contributions, etc.?

Q26. What are the challenges faced during the implementation of the project?

Q27. What are the lessons learnt from the project?

Q28. What types of risk were encountered during the project, how it is prevented and addressed?

Q29. Do you think that the project can be replicated to other projects, if so how easy it would it be to replicate the successes in another related initiatives?

Q30. Please provide any other comments related to the project.

Please provide your details below please:

Name:

Work title:

Organization:

Contact information:

Annex-IV: Terms of Reference

Post title:	National Consultant to conduct Terminal Evaluation
Agency/ Project:	Low Emission Capacity Building (LECB) project/ LECB Enhanced support / Intended Nationally Determined Contributions project (INDC)
Country Assignment:	Thimphu, Bhutan

I. BACKGROUND

Bhutan is one of the 25 countries participating in the UNDP Low Emission Capacity Building (LECB) programme jointly sponsored by the European Commission (EC), the German Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU), and the Australian government (AusAID and the Department of Climate Change and Energy Efficiency) from 2012 until 2017. The outcomes of Bhutan's LECB project are as mentioned below:

- 1) Develop/establish greenhouse gas inventory management systems;
- 2) Formulate Nationally Appropriate Mitigation Actions (NAMAs) in waste and transport
- 3) Develop low-emission development strategies (LEDS) in the context of national development in the transport and Industry and
- 4) Design measuring, reporting and verification (MRV) systems to support implementation and evaluation of NAMAs and LEDS

Under the same project an additional support was also received from 2015-2017 to assist the Ministry of Information and Communications to support policy and operational aspects of sustainable urban transport system for Thimphu and Phuentsholing. The project goal was to bring out both short and long term solutions to reduce GHGs emission in the transport sector by reforming the urban public transport system through implementation of attractive, cost efficient public urban transport solutions. The following are the key deliverables under the LECB enhanced support include:

- 1) Revision of the National Transport policy (2006),
- 2) Assessment to introduce intelligent transport system, for Thimphu and Phuentsholing which will lead to documentation of international best practices in the areas of ITS implementation, institutional requirements and financial costs for roll out of ITS,

- 3) Analyze and review existing Public transport system including management system in Thimphu and Phuentsholing and recommend measures to improve efficient public transport system by making it gender friendly and ensuring safety measures for women, children, elderly and the differently abled.
- 4) Carry out capacity development programs for central and local governments, private sector and other stakeholders for efficient engagement and collaboration between policy makers, government executing agencies and private sectors in design and implementation of transport systems
- 5) Develop Information, education and communication awareness programs to increase ridership in sustainable urban transport.

Under the umbrella of the Global LECB programme, Bhutan also received a total budget of USD 1,134,600 from 2015-2017. The fund was for preparation of the Intended Nationally Determined Contributions (NDC) towards the Paris Agreement. INDC was submitted in September 2015. The support was also utilized for elaboration of the priority action points in Bhutan's Nationally Determined Contributions. Three strategies, and action plans have been developed for low emission development and sustainable production in the sectors of Human Settlement, Industry and Energy. Capacity building of key stakeholders including sensitization of Parliamentarians on Bhutan's INDC and the Paris agreement have also been supported.

II. OBJECTIVE OF THE ASSIGNMENT

The LECB/ LECB enhanced support and INDC project is in its final year of implementation (2012-2017). The objective of the evaluation is to assess and take stock of all project results, achievements, gaps, challenges and draw on lessons that can improve the sustainability of the project for all three project components covering the LECB project under NEC implementation, the LECB enhanced support under MOIC and Bhutan Post Implementation and INDC project under NEC implementation for the purpose of the Terminal evaluation. All documentation for the one to one meetings or stakeholder consultation should be included in the annex as part of the TE report

III. SCOPE OF WORK

Methodology

The evaluation should be carried out in line with the UNDP evaluation criteria.

The key duties and responsibilities include:

The consultant should assess the project applying the UNDP evaluation criteria of relevance, effectiveness, efficiency, sustainability and impact of development efforts. The Final Project Terminal evaluation report should include the following elements and be submitted to UNDP Bhutan CO. Indicative page lengths for each section are provided.

1. Project Background and Rationale [5 pages]
 - a. Situation prior to LECB: relevant policies, institutional capacity for climate policymaking, what are the high GHG emitting sectors?

- b. Why LECB was needed (e.g., briefly describe sectoral situation that led to NAMA design, and describe the pre-LECB condition of the GHG inventory, data management or MRV, and relevant institutional structures)?
 - c. LECB contributions to national policy goals, including discussion on your country INDC and areas of common interest with the LECB project.
 - d. Description of country ownership of LECB, including institutional arrangements.
 - e. Indicate if there were changes in scope from the Project Document, and why.
2. Summary of Project Outcomes and Outputs [5-10 pages]
 - a. Descriptions of outcomes and outputs, including those from LECB/ LECB-Enhanced Support and INDC
 - b. Description of outputs that were adjusted from the original scope based on changing needs.
3. Project Organization and Management Arrangements [3-5 pages]
 - a. Names, work titles, organizations, contact information of LECB project team.
 - b. Organizational structure of the project planning and implementation team. This will include: how the project team was engaged with the implementing partner, description of the Steering Committee (e.g., members, number of meetings per year), and project working groups (e.g., members, numbers of meetings per year, how they interacted with other sections of the project team).
 - c. Partnerships and collaboration: description, contact information of key partners and effectiveness.
 - d. Provide a general timeline for the project, tracking when the project began, major LECB milestones of key outputs, events, etc.
4. Results and Achievements [10 pages]
 - a. Results for each project outcome.
 - b. Success factors.
 - c. Project co-benefits or sustainable development benefits, including capacity development, institutional strengthening, job creation, health benefits, less contamination.
 - d. Were there unintended or unexpected benefits related to LECB activities?
 - e. Discussion of any gender impacts and how gender interests were addressed during project implementation.
 - f. Summary of key substantive products (e.g., project data, reports, training manuals, critical institutional authorizations), list of training events (including number of participants, description of institutions, and key objectives), and number of key stakeholders, and highlighted project communications.
 - g. Efforts to collaborate with the private sector, the nature of the collaboration, and results.
5. Communications and Outreach (3 -5pages)
 - a. Describe the communications strategy.
 - b. Describe the measures used to improve LECB project visibility.
 - c. Provide links, videos, photographs, interviews, publications, and quotes from key stakeholders related to LECB.
6. Sustainability of Results [3-5 pages]

- a. Capacity built to conduct mitigation activities related to training, technical assistance, new systems, community outreach.
 - b. Efforts to ensure follow-up by national counterparts and mainstreaming efforts, including future support planned through national budget allocation and transitioning of responsibilities to national counterparts.
 - c. Plans to reproduce or scale-up.
 - d. Linkages created to National Communications, Biennial Update Reports, Intended Nationally Determined Contributions, etc.
7. Lessons and Recommendations [3-5 pages]
 - a. Barriers faced and solutions.
 - b. Key lessons learned, positive and negative.
 - c. Recommendations to improve future programming or similar projects, future support needs.
 - d. Risk management:
 - i. Discuss risks encountered, prevented, and addressed.
 - ii. Measures taken and recommendations.
 - e. Replicability of the project, indicating how easy it would be to replicate the successes in another related initiative.

IV: DURATION OF ASSIGNMENT AND EXPECTED PLACES OF TRAVEL

The consultant will be hired for 30 days spread over 60 days from the week of 23rd October – 22nd of December 2017. He/she will be based in Thimphu with a travel to Phuntsholing to meet the representatives from the Association of Bhutanese Industries. He /She is expected to consult with project team in UNDP and the RGOB including key stakeholders from the various thematic working groups formed under the project.

Expected Deliverables and Timeline

Deliverable	Tasks	Timeline(indicative)	Responsibility
Inception Report	Desk review of documents	23-27 th October (5 days)	Submit to UNDP Bhutan CO and project team in RGOB
Submission of the first draft report	one to one meetings with project team (NEC, MOIC, Bhutan Post) and thematic working group members	30 th October- 10 th November, 2017 (10 working days)	Submit to UNDP Bhutan CO and project team in RGOB
Presentation of first draft report	Presentation to UNDP, NEC and MOIC on initial findings of the first draft and seek feedback	13 th to 15 th of November (3 days)	UNDP Bhutan CO to support the National consultant in organizing the meeting inviting key representatives from the government (Venue :UNDP office)

Presentation and submission of the final draft	Prepare report incorporating feedback from all parties	20-24 th November, 2017 (5 days)	Submit to UNDP Bhutan CO and project team and RGOB
Submission of final report	Final draft presentation and incorporate pending comments	27 th November to 1 st of December (7 days)	Submit to UNDP Bhutan CO and project team in RGOB

V. MONITORING AND PROGRESS CONTROLS

The national consultant will work from the UNDP office under the guidance of the Portfolio Manager of the Environment and livelihoods unit and the Climate Change Specialist. The consultant will also work closely with the Project Manager of the LECB/INDC/LECB enhanced project in the office of the National Environment Commission and the Ministry of Information and Communications. The work and progress of the consultant will be closely monitored by UNDP Bhutan CO based on the timeline and milestones indicated in the TOR.

VI. DEGREE OF EXPERTISE AND QUALIFICATIONS

- Masters of higher degree in environment or Climate change, social science or related field of studies relevant to the assignment
- Minimum 3-5 years of demonstrated experience in carrying out evaluations/ impact evaluation
- Sound knowledge and understanding of Climate change mitigation, strategies and policy interventions etc
- Previous experience with results-based monitoring and evaluation methodologies
- Strong communication, facilitation and writing skills in English language

VII. RECOMMENDED PRESENTATION OF OFFER

Please submit the following documents with your Presentation of Offer:

- a) Duly accomplished **Letter of Confirmation of Interest and Availability**;
- b) **Personal CV or P11**, which can be downloaded from UNDP at <http://www.bt.undp.org/content/bhutan/en/home/operations/jobs/> indicating all past experience from similar projects, as well as the contact details (email and telephone number) of the Candidate and at least three (3) professional references;
- c) **Brief description** of why the individual considers him/herself as the most suitable for the assignment, and a methodology on how they will approach and complete the assignment.
- d) **Financial proposal** - please include a financial proposal and indicate the chosen fee structure:
 - a. Lump sum – including a breakdown of the lump sum i.e. daily fee, per diem, travel costs, etc. Travel outside of Thimphu is not expected as the project is mainly focused in Thimphu

Applications should be submitted by email to procurement.bt@undp.org along with CV and P11 Form.

VIII. PAYMENT TERMS AND CONDITION

- 15% upon submission and acceptance of the inception note detailing the work plan of the assignment
- 35% following submission of the first draft report
- 50% upon submission of the final evaluation report and acceptance of the report by UNDP Bhutan CO

IX. CRITERIA FOR SELECTION OF OFFER

The consultant who fulfills the requirements will be assessed based on a combined scoring of:

- Technical evaluation 70%.
- Financial evaluation 30%.

Criteria	Weight	Maximum Score
Technical Score		
The technical assessment will be based on the following criteria:	70	
1. Academic background		15
2. Relevant work experience of the consultant		20
3. Prior experience of working in Bhutan or similar countries or region		15
4. Quality of technical proposal		20
Sub-total (Technical)		100
Technical Score – A		70
*Financial Score – B		30
Total (A+B)- Combined Score		100