

FEASIBILITY STUDY OF NET ZERO EMISSION IN LUANG PRABANG - LAOS

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Introduction

Current climate change policy and Nationally Determined Contribution (NDC) in Luang Prabang

Complementing existing national level policy framework (2015 NDC)

Decree on Climate Change (Sep 19th, 2019): defines principles, regulations, and measures on management, monitoring of climate matters

Simultaneously, the Decree states that climate change must be mainstreamed into the national socio-economic development plans, sectoral as well as local strategies and plans.

2020 NDC: Approved in November 2020

- National level 2030 unconditional mitigation target: 60% GHG emission reductions compared to baseline scenario, or around 62,000 ktCO₂e.

The 60% GHG emission reductions national level 2030 target demonstrates the enhanced contribution of the country to the Paris Agreement, considering the 34% GHG emission reductions compared to the baseline scenario achieved in 2020.

- National level 2030 Conditional mitigation scenario and targets towards **net zero emissions 2050**

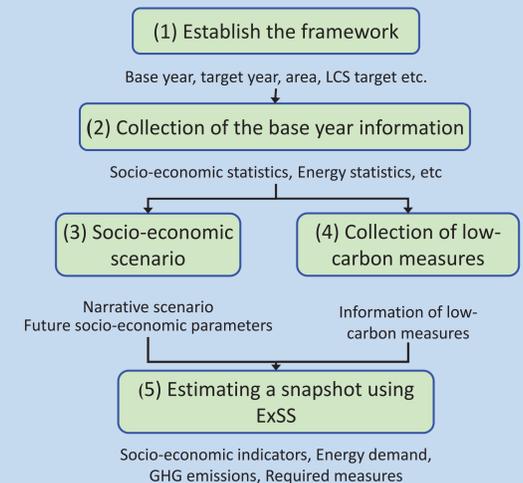
The conditional mitigation scenario and targets are the GHG emission reductions efforts that Lao PDR could achieve by 2030 contingent upon increased levels of financial support from developed country Parties.

Objective

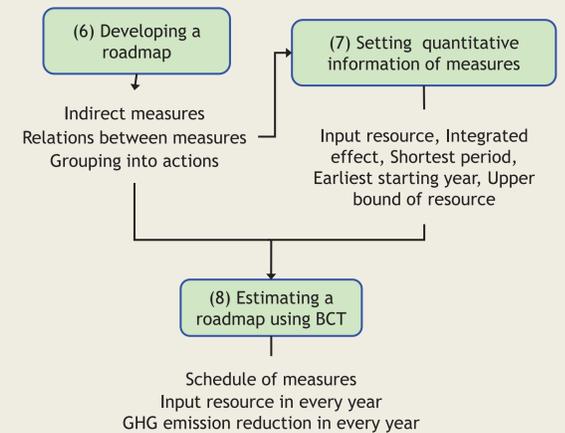
- To design the Luang Prabang Low Carbon City (LCC) scenario toward a net zero emission city
- To support enhancing the capacity of Low Carbon policy development of related organizations by introducing simulation models (AIM) to give comprehensive and consistent pathways
- To support Luang Prabang's government to develop actions and plans to achieve the national mitigation target.

Methodology

Phase 1. Procedure to create a "snapshot" including future socio-economic activity, GHG emissions, and required low-carbon measures to achieve the target.



Phase 2. To develop a "roadmap" which shows whose, when, and what kind of actions are needed to achieve the snapshot in the target year, and how much it costs.



Luang Prabang Municipality

- Area: 760 km².
- Population: Approx. 92,000 persons.
- Luang Prabang is located in northern Laos at the heart of a mountainous region.
- Luang Prabang is an UNESCO World Heritage site
- In 2018, visitor arrivals to Luang Prabang more than 800,000 tourist.
- Received award for the best attraction destination from Wanderlust Travel Magazine of England in 2006, 2007, 2008, 2011, 2012, 2015 and 2017.

To 2025, vision to 2030:

- Upper-middle income and with innovative, green and sustainable economic growth
- Develop Luang Prabang to become central of tourism site, protecting sustainable world heritage site, includes ensure green and sustainable economic growth.
- Increase forest areas.
- Promote clean agricultural production.

Setting of Framework

- **Base Year** : 2015
- **Target Year**: 2050 (follow targets of city development plans)
- **Scenarios**
2050 BaU (business as usual)
2050 LCC (low carbon city) with countermeasures.
- **Sectors**: Energy, Transport, Industry, Waste, (Agriculture, LULUCF)
- **Target GHG**: CO₂, CH₄, N₂O
- A set of counter measures were collected from our previous studies (Japan, and other Asian countries)

Research progress

Indicators	Status
Base year information	
Socio-economic	
Population	Obtained
Household size	Obtained
Social Accounting Matrix	Estimating
Transport	
Building	Not obtained
Energy	
Power supply table in the base year	Not obtained
Dispersed power generation	Not obtained
Energy demand	Collecting
Energy balance table	Estimating
Emissions	
GHG emissions factor	Obtained
Reference for future scenario: BaU and LCC	
Population projection	Obtained
Economic projection / planning	Collecting
Transport planning	Collecting
Energy strategy	Collecting
Potential of renewable energy	Collecting
etc.	Collecting

Acknowledgement

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Schedule of study FY2021

	2021						2022	
	July	August	September	October	November	December	January	February
AIM team	form team members and share necessary ppt			Base year and BaU scenario	CM scenario	Discussions between AIM team and LP	Finalize the 1st simulation scenario	Summary report
	identify current situation (data, related projects...)					side and revise scenarios based on discussions		
Luang Prabang	check current data in hand and statistic year book of LP							
Event	7/13: Kick-off meeting			10/4-10/5 AIM training	COP26		EAS High Level Seminar on Sustainable Cities	

Design a Low Carbon City



Definition of terms:

1. LCC Scenario: a plausible often quantitative description of how the future LCC may develop based on a coherent and internally consistent set of assumptions on social, economic, and technology development and their relationships

2. LCC Vision: the future image and also quantitative design of a city (group of cities) under not only GHG reduction targets but also social, economic and environmental targets

3. LCC Roadmap: the pathway of when and how each policy should be implemented in order to achieve the vision