

ASIA LOW CARBON BUILDINGS TRANSITION

Life Cycle Assessment for Transitioning to a Low-Carbon Economy | **PROJECT**



Project Location: Asia / Cambodia, India, Indonesia, Thailand, Vietnam

Project Period: August 2023 ~ August 2028

Project Funding: EUR 19.3 million

Theme: Green Buildings, Green Investment, Climate Action and Sustainable Energy

Project Code: ROA035

Project Summary

The Asia Low Carbon Buildings Transition (ALCBT) Project seeks to address regulatory, capacity, and financing gaps that prevent large scale adoption of low carbon buildings (LCB) in **Cambodia, India, Indonesia, Thailand, and Vietnam**. Project interventions build technical GHG emission reduction targets from building materials and operations, particularly from cooling; complementing regional and global initiatives.

Buildings are significant contributors to GHG emissions, making it imperative to reduce their energy demand and carbon footprints to meet Nationally Determined Contributions (NDC) targets. In Asia, high energy consumption and rising cooling demands from buildings propel governments to shift to bio-based materials, better design and efficient appliances.

Project Goal and Objectives

The ALCBT aims to significantly reduce GHG emissions by catalyzing nationwide transitions towards LCB in the project countries.

The project focuses on ensuring that technical, planning and institutional tools for LCB are successfully implemented and streamlined by key public and private stakeholders, resulting in direct emission reductions by 2028.



Standardized tools and systems for managing building carbon emissions



Enhanced capacity of key stakeholders to deliver low carbon buildings



Financial pathways established for low carbon buildings transition



Knowledge products produced to facilitate **replication and scaling up**

Implementing Partners

Lead:



GGGI



HEAT

Resource Partners

Supported by:



Federal Ministry
for Economic Affairs
and Climate Action



INTERNATIONAL
CLIMATE
INITIATIVE

on the basis of a decision
by the German Bundestag



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Key Project Participants



National
& local
government



Building
industry
professionals



Financial
services
institutions



Universities
& academia

Transforming existing and new buildings towards carbon neutrality by 2050 or earlier

The journey towards achieving carbon neutrality by 2050 requires decarbonization of existing and new buildings globally. The ALCBT Project works with rapidly growing Asian economies in top down (policy), bottom up (public awareness raising) and lateral (industry sensitization) to create momentum for low carbon buildings. The introduction of whole life cycle assessment (WLCA) tools covering upfront, embodied carbon and operational carbon, and end-of-life GHG of buildings will facilitate the transaction to measure and track the WLCA of buildings.

The added transparency will drive the demand for low carbon buildings and their financing. The tools and systems developed through ALCBT including building carbon performance assessment, measurement, reporting, and verification (MRV), and building registry, supplemented by capacity building will support building code implementation in project countries.

Context and Background

GHG emissions from buildings are a key driver for national emissions, with increased cooling demand driving GHG. In Asia, buildings operational energy account for 25% in India and 23% in the ASEAN region¹, with ASEAN countries seeing rapid growth. The projected growth in construction also drives the emissions embodied from construction materials. Embodied carbon accounts for 10% of global energy-related GHG emissions² and 20-25% of building life-cycle emissions. Mandatory standards for building emissions are not yet established in Asia – mostly due to limited understanding among subnational authorities, insufficient awareness among architects, designers, developers, and building owners, inadequate financing and incentives, and a lack of robust enforcement mechanisms.

^{1,2} Global Alliance for Buildings and Construction, [2021 Global Status Report for Buildings and Construction](#), Global ABC, accessed August 6, 2024.

Project Outcomes

By 2028, technical, planning, and institutional tools for LCB will be developed and successfully implemented by key public and private sector stakeholders in all project countries.

1.67 tCO₂eq
GHG emission reductions



51 entities
incorporating LCB tools, training programs



8 policy recommendations
will be adopted by governments



EUR 140 million
investment will be mobilized



6,000+ buildings
will be assessed, registered,
piloted with natural based air-conditioners



19,000+ individuals
with increased knowledge, low carbon skills



H.E. Say Samal, Deputy Prime Minister and Minister of Land Management, Urban Planning, and Construction, Cambodia

"While Cambodia is relatively new to green building concepts, we recognize the opportunity for eco-friendly and energy-saving in building and construction sector. This could boost growth in the sector and contribute to Cambodia's commitment to achieve carbon neutrality in 2050 under the Paris Agreement under the United Nations Framework Convention on Climate Change."

Vishal Kapoor, Chief Executive Officer of Energy Efficiency Services Limited, India

"In collaboration with the Global Green Growth Institute (GGGI), we are geared to address the challenges of surging electricity demand and contribute significantly to carbon emission reduction. A key focus includes retrofitting air conditioning systems in 60 Indian Buildings demonstrating our commitment to energy efficiency."

Mr. Rawiwat Panasantipap, President of the Thai ESCO Association

"... I am certain that this intent of GGGI in light of the ALCBT project will further land in a replicable model of energy efficiency in the building sector at the national level."



Cambodia

Capacity development and link building energy regulations to monitoring tools



India

Enhance implementation of building energy codes and promote sustainable cooling.



Indonesia

Capacity development and linkage with government green building regulations and creation of ESCO market



Thailand

Address technical barriers and scale up energy efficiency services



Vietnam

Boost capacity for tracking building carbon stocks and tackle barriers in the ESCO industry, particularly for efficient cooling

