

PEEB ASEAN

Why?

The Programme for Energy Efficiency in Buildings in ASEAN (PEEB-ASEAN) initiative is a response to the urgent need for improved energy efficiency in the building sector across Southeast Asia.

The ASEAN region is experiencing rapid urbanization and economic growth, leading to increased energy consumption and environmental impact. Buildings are significant contributors to energy demand and CO₂ emissions, making them a crucial target for energy efficiency improvements.

⚡ ENERGY DEMAND AND ENVIRONMENTAL IMPACT

According to the ASEAN Energy Outlook (7th edition), buildings account for 23% of total final energy consumption (TFEC) in ASEAN as of 2020 and contribute to 25%, or approximately 453.74 Mt CO₂-eq, of the region's total CO₂ emissions. This reflects intensified energy use and continued reliance on fossil fuels for energy generation. Without intervention, energy consumption in buildings (residential and commercial) is projected to increase by approximately 232.66% from 2020 to 2050 or 3.33 times the TFEC in 2020. This underscores the urgent need to mainstream energy efficiency measures to mitigate environmental impacts and achieve sustainability goals.

⚡ ECONOMIC BENEFITS

Improving energy efficiency in buildings not only reduces greenhouse gas emissions but also offers substantial economic benefits. Energy-efficient buildings lower operational costs, enhance energy security, and reduce the reliance on fossil fuels. These savings can be redirected to other critical areas, fostering economic

growth and development.

⚡ SUSTAINABLE DEVELOPMENT GOALS

The PEEB ASEAN initiative aligns with global and regional sustainable development goals, including the ASEAN Plan of Action for Energy Cooperation (APAEC) Phase II: 2021-2025. APAEC sets ambitious targets for a 32% reduction in energy intensity and a 23% share of renewable energy in total primary energy supply by 2025. By supporting energy-efficient buildings, the initiative contributes to these targets, promoting a sustainable and resilient future for the ASEAN region.

⚡ REGIONAL COLLABORATION

The initiative also emphasizes regional collaboration, bringing together governments, private sector stakeholders, and international partners to share knowledge, resources, and best practices. This collaborative approach ensures that the benefits of energy efficiency are widely distributed across all ASEAN Member States, fostering regional integration and cooperation.

ASSESSING THE CHALLENGE

What are we tackling?

The ASEAN region faces significant challenges in its quest for energy efficiency in the building sector. Rapid urbanization, population growth, and economic expansion have led to a surge in energy demand. The energy consumption and CO₂ emissions of buildings in the ASEAN region have risen for the past years, now accounting for approximately 30% of total final energy consumption and 25% of total emissions. This increasing trend is attributed to urbanization and economic growth, which have heightened the demand for energy in building operations, such as heating, cooling, and lighting.

⚡ WHAT ARE WE TACKLING?

The primary goal is reducing energy demand and avoiding CO₂ emissions. Inefficient buildings contribute significantly to these issues due to outdated construction practices, inadequate building codes, and insufficient enforcement of energy efficiency standards. Additionally, there is a lack of awareness and incentives for adopting energy-efficient technologies, which hinders progress.

⚡ ENVIRONMENTAL IMPACT

Inefficient energy use in buildings results in higher greenhouse gas emissions, contributing to climate change. Increased energy demand also puts a strain on natural resources and leads to higher energy costs for consumers and businesses. This situation demands immediate action to promote sustainable building practices and reduce environmental footprints.

⚡ ECONOMIC IMPLICATIONS

High energy consumption in buildings translates to increased operational costs and economic costs of opportunity. Inefficient building design limits the potential for savings that could be redirected to other essential sectors such as healthcare, education, and infrastructure. Addressing these inefficiencies is crucial for achieving economic resilience and sustainability.

⚡ REGULATORY AND POLICY GAPS

One of the significant challenges is the disparity in regulatory frameworks and enforcement across ASEAN Member States. While some countries have made strides in implementing energy efficiency policies, others lag due to limited resources and technical expertise. The PEEB ASEAN program aims to bridge these gaps by providing technical assistance, policy guidance, and capacity building to ensure a uniform approach to energy efficiency in buildings across the region.

HELPING GOVERNMENTS

to Push Energy Efficiency

⚡ HELPING GOVERNMENTS BOOST ENERGY EFFICIENCY

Governments are key players in promoting energy efficiency in buildings. The PEEB ASEAN initiative supports governments by providing the necessary tools and resources to develop and implement effective energy efficiency policies.

⚡ POLICY DEVELOPMENT AND IMPLEMENTATION

The initiative assists governments in drafting and updating building codes and energy efficiency standards. These policies mandate higher energy performance in new and existing buildings, ensuring that all constructions adhere to modern energy efficiency requirements. The initiative also helps establish regulatory frameworks that enforce compliance, providing clear guidelines for stakeholders.

⚡ CAPACITY BUILDING

To ensure effective policy implementation, PEEB ASEAN conducts training sessions and workshops for government officials and regulatory bodies. These capacity-building efforts enhance the understanding of energy efficiency principles and best practices, equipping governments with the knowledge and skills needed to drive energy efficiency initiatives.

⚡ INCENTIVE STRUCTURES

PEEB-ASEAN advises on designing and implementing fiscal and financial incentives to encourage investments in energy-efficient technologies. Incentives such as tax rebates, subsidies, and grants for energy audits and retrofits make it financially viable for building owners to adopt energy-saving measures. These incentives play a critical role in accelerating the adoption of energy efficiency practices.

⚡ PUBLIC AWARENESS CAMPAIGNS

The program collaborates with governments to launch public awareness campaigns highlighting the benefits of energy-efficient buildings. These campaigns aim to educate both the public and private sectors about the economic and environmental advantages of energy efficiency, fostering a culture of sustainability.

⚡ MONITORING AND EVALUATION

To track the progress and effectiveness of energy efficiency policies, PEEB ASEAN supports the establishment of robust monitoring and evaluation systems. These systems provide data on implemented measures, assess their impact, and offer insights for continuous improvement. By helping governments build these capabilities, the initiative ensures that energy efficiency initiatives deliver long-term benefits.

THE PROJECT IN DETAILS

The PEEB ASEAN initiative is designed to address the critical need for energy efficiency improvements in the building sector across ASEAN Member States. The program comprises two main components: enhancing enabling activities and investing in energy-efficient buildings implemented respectively by ACE and AFD.

COMPONENT 1

ENHANCEMENT OF ENABLING ACTIVITIES

This component aims to create a supportive environment for energy efficiency through policy development, capacity building, and knowledge sharing. Key activities include:

- **POLICY LANDSCAPE ANALYSIS:**
Establishing technical working groups to review and enhance existing building energy efficiency policies and address regulatory gaps. These groups work to harmonize policies across the region and ensure they are aligned with international best practices.
- **DIGITAL HUB DEVELOPMENT:**
Creating an ASEAN Building Energy Efficiency Digital Hub to centralize information, best practices, and innovations. This hub serves as a knowledge-sharing platform for stakeholders, providing access to the latest research, case studies, and tools for energy efficiency.
- **CAPACITY BUILDING PROGRAMMES:**
Implementing regional training programmes and study tours to improve the skills and knowledge of stakeholders involved in building energy efficiency. These programmes are tailored to the specific needs of each member state, ensuring relevant and practical training.
- **EFFECTIVE ENABLING ACTIVITIES:**
Identifying and supporting the implementation of the most effective enabling activities, such as energy efficiency awards and certification programmes. These activities incentivize stakeholders to adopt energy-efficient practices and recognize excellence in the field.

Through these initiatives, the PEEB ASEAN initiative aims to build a robust framework for energy efficiency in buildings, fostering a culture of sustainability and innovation in the ASEAN region.

THE PROJECT IN DETAILS

Building on the foundational activities outlined in Part 1, the PEEB ASEAN initiative focuses on specific national components to tailor its approach to the unique needs and contexts of each ASEAN Member State.

COMPONENT 2:

BUILDING ENERGY EFFICIENCY INVESTMENT

This component aims to provide technical and financial assistance to support energy efficiency investments in the building sector. Activities include:

- **TECHNICAL ASSISTANCE:**
Offering support for energy audits, detailed engineering designs, and project work plans to ensure effective implementation of energy efficiency measures. This assistance helps project developers identify and implement the most cost-effective and impactful energy-saving solutions.
- **FINANCING TOOLS:**
Developing financing mechanisms such as loans, grants, and guarantees to facilitate investments in energy-efficient building projects. These tools are designed to reduce financial barriers and make energy efficiency projects more attractive to investors.
- **CAPACITY ENHANCEMENT:**
Enhancing the capacity of project counterparts and other actors in the building industry through targeted training and technical assistance. This includes training in construction management, operation, and maintenance of energy-efficient buildings, ensuring long-term sustainability of energy efficiency measures.

EXAMPLE OF ACTIVITIES OF PEEB ASEAN

BRUNEI DARUSSALAM

- Building Energy Label Certificates (BELC): Introduction of voluntary and mandatory energy labelling for buildings to promote energy transparency and awareness among consumers.
- Public Awareness Campaigns: Efforts to educate the public on the benefits of energy-efficient buildings through targeted outreach and engagement.

CAMBODIA

- Energy & Environmental Leadership (CAMEEL) Certification: Establishment of a certification programme to recognize buildings that meet high energy efficiency and environmental standards.
- Capacity Building: Training programmes for local architects, engineers, and policymakers to enhance their knowledge and skills in energy-efficient building practices.
- Project Investment in Cambodia: In Cambodia, the Asian Development Bank (ADB), and AFD are co-financing a program called the Future Economy Sector Development Program (SFESDP). As part of this program, the following three technical training institutes will be modernized: (i) Koh Kong Province Polytechnic Institute, (ii) JVC Technical College located in Phnom Penh, and (iii) National Business Institute located in Phnom Penh.

PROJECT INVESTMENT IN LAOS

PEEB ASEAN's support for the Savannakhet Museum, part of the CHAMPA project supported by AFD, is expected to become more structured in future phases. This project aims to preserve cultural and natural heritage, promote tourism, and contribute to local community development. Specifically, in Savannakhet, the goal is to transform the city into a tourism gateway by leveraging its archaeological and historical assets, particularly following the discovery of a significant Sikhottabong Empire treasure. The museum's extension and requalification are top priorities, managed by the Department of Information, Culture, and Tourism of Savannakhet and the French School of Asian Studies, with AFD's support to integrate heritage protection with tourism development. PEEB ASEAN's involvement will aim to minimize cooling requirements and improve indoor comfort by optimizing the building envelope, especially in consideration of the local climate.

INDONESIA

- Green Building Codes: Implementation and enforcement of green building codes in major cities like Jakarta and Bandung to ensure new constructions meet energy efficiency standards.
- Energy Efficiency Awards: Annual awards to recognize and incentivize buildings and projects that demonstrate exceptional energy performance.

Through targeted interventions, the PEEB ASEAN initiative aims to drive substantial improvements in energy efficiency across the ASEAN building sector, contributing to regional and global sustainability goals.

These improvements include the construction of new buildings and the extensive renovation of existing buildings. In the context of this project, the ADB and AFD are planning to seek further support from the PEEB ASEAN to provide further assistance and inputs during the detailed technical design and construction phase.

THE NATIONAL COMPONENTS of PEEB ASEAN

*The PEEB ASEAN initiative is designed to adapt to the diverse needs and contexts of each ASEAN Member State.
Here are some of the key existing national components tailored to specific strategies in each ASEAN country:*

⚡ LAO PDR

- ASEAN Energy Award Participation: Encouraging participation in regional energy efficiency awards to showcase best practices and innovations.
- Policy Development: Support for developing national energy efficiency policies and standards for the building sector.

⚡ MALAYSIA

- Energy Audit Grants: Provision of conditional grants for conducting energy audits in commercial and industrial buildings to identify energy-saving opportunities.
- Green Building Index (GBI): Promotion and expansion of the GBI certification to encourage the construction of green buildings.

⚡ MYANMAR

- International Certifications: Adoption of international energy efficiency certification schemes such as LEED and EDGE to set benchmarks for local projects.
- Training Programmes: Capacity-building initiatives to train local professionals in energy-efficient building design and construction.

⚡ THE PHILIPPINES

- Government Energy Management Program (GEMP): Implementation of a mandatory energy efficiency reporting system for designated establishments to monitor and reduce energy consumption.
- Public-Private Partnerships: Encouragement of collaborations between the government and private sector to promote investment in energy-efficient technologies and practices.

⚡ SINGAPORE

- Building Energy Benchmarking Report (BEER): Annual publication of energy performance data for buildings to promote transparency and drive improvements.
- Green Mark Awards: Recognition of buildings that achieve high standards of energy efficiency and sustainability through the Green Mark certification.

⚡ THAILAND

- Building Energy Code (BEC): Enforcement of mandatory energy codes for new buildings to ensure compliance with energy efficiency standards.
- Energy Efficiency Revolving Fund (EERF): Provision of low-interest loans for energy efficiency projects to stimulate investment and reduce energy consumption.

⚡ VIET NAM:

- National Technical Regulation on Energy Efficiency Buildings: Implementation of energy efficiency standards for buildings to reduce energy consumption and emissions.
- Capacity Building Initiatives: Training programs for local architects, engineers, and policymakers to enhance their expertise in energy-efficient building practices.