

ACCELERATING ENERGY EFFICIENCY INITIATIVES AND OPPORTUNITIES IN SOUTHEAST ASIA

EXECUTIVE SUMMARY



AUGUST
2015

ENE-
RGY
ASIA
ACCELERATING
EFFICIENCY
SOUTHEAST ASIA
OPPORTUNITIES
INITIATIVES
ACCELERATING
IN
IT
IA
TI
VES
ASIA
SOUTH
ENE
RGY
EFFIC
IENCY
OPPORT
UNIT
IES
OPPORTUNITIES
SOUTHEAST ASIA

EFFI
CIEN
CY
SOUTH
EAST
SOU
THE
AST
ASIA
INITIA
TIVES
ENERGY
EFFICIENCY
ASIA
SOUTH

AC
CEL
ERA
TING
EFFIC
IENCY
OPPORT
UNIT
IES

OPP
ORTU
NITIES
ENERGY
ACCELERATING
ENERGY
SOUTH
EAST ASIA

INITIATIVES
OPP
ORTUNIT
IES
EFF
ICI
ENCY
AS
IA

S
OU
TH
AND
ENERGY
EFFIC
IENCY
ACCELE-
RATING
AND

ENERGY
SOUTHEAST ASIA
AND
INITIATIVES
AND

INTRODUCTION

Sustainable Energy for All (SE4ALL), an initiative launched by the UN Secretary-General and the President of the World Bank, has amongst its three objectives the goal of doubling the global rate of energy efficiency improvements by 2030. Meeting this ambitious energy efficiency target requires the mobilisation and partnership of government, the private sector, civil society and other stakeholders. Identifying key opportunities and taking action is critical to building momentum on energy efficiency.

Since its inception in October 2013, the Copenhagen Centre on Energy Efficiency (C2E2), which serves as SE4ALL's Energy Efficiency Hub, has been analysing and promoting opportunities for accelerating energy efficiency uptake globally. As part of this undertaking, C2E2 has focused on regional performance, engaging local partners to analyse and review the status of existing energy efficiency policies, priorities and opportunities in key countries of the following regions: Africa; Asia; Eastern Europe, the Caucasus and Central Asia; and Latin America.

The result is four reports that profile energy efficiency acceleration activities within constituent countries of these regions and, at the same time, aim to inform and support the future development and uptake of related policies and programmes. Executive summaries delivering a snapshot of these reports are provided here. However, we encourage you to see the full-length Accelerating Energy Efficiency reports online www.energyefficiencycentre.org for a comprehensive view of the targeted markets and opportunities.

- The Bariloche Foundation in Argentina for the Latin America and Caribbean Region
- The Asian Institute of Technology in Thailand for the Southeast Asia Region
- The Centre for Energy Efficiency (CENef) in Moscow for the Eastern Europe, the Caucasus and Central Asia Region
- The Energy Research Centre at the University of Cape Town in South Africa for the African Region

We would also like to acknowledge organisations that provided the information and insights that have informed these summaries and reports.

As the global energy efficiency dialogue continues to evolve and intensify, C2E2 is looking forward to playing an active role, engaging with stakeholders and supporting the critical work on the ground.

Jyoti Painuly
Head
Copenhagen Centre on Energy Efficiency

Vijay Deshpande
Senior Advisor and Regional Coordinator,
Asia

John M. Christensen
Director
UNEP DTU Partnership



The growth observed in the global demand for energy in the past few decades is expected to continue into the future as the need for energy grows due to increases in demand, population, energy access and developmental needs. The Sustainable Energy for All (SE4ALL) initiative aims to double the global rate of improvement in energy efficiency by 2030, besides its targets of increasing energy access and promoting renewable energy. Improving energy efficiency (EE) can reduce greenhouse gas (GHG) emissions and substantially reduce investments in power generation. This report presents an assessment of energy efficiency opportunities in the Southeast Asia region with a particular focus on Indonesia, Malaysia, the Philippines, Thailand and Vietnam, as well as summarizing the potential interventions that would further strengthen EE promotion in the region. The assessment was done through literature reviews, expert consultations, questionnaire surveys and in-country stakeholder consultation work-shops.

REGIONAL OVERVIEW OF ENERGY EFFICIENCY

Many institutions and organisations, such as, UNIDO, the ASEAN Centre for Energy, GIZ, UNDP and the EU, are actively promoting energy efficiency in this region by implementing sector-specific programmes. Many of these programmes have focused on improving energy efficiency in the industrial sector. Examples of interventions in the industry sector include the capacity building of energy management systems, including training on ISO 50001, the development and promotion of high efficiency motors, the harmonization of standards for air-conditioners, and the sharing of knowledge and success stories.

ENERGY EFFICIENCY STATUS IN SELECTED COUNTRIES

Energy efficiency and conservation have been on Indonesia's national agenda since 1982. A number of supportive plans and policies have been developed to facilitate improvement in energy efficiency, including setting a target of 26% GHG emissions reductions by 2020 through the implementation of re-newable energy technologies and improving energy efficiency. To this end, the government has been working with local institutions and regional agencies through a number of programmes which include initiatives such as awareness raising, the development of the local capacity of energy management systems (EnMS) and ISO 50001, as well as the development of energy managers in factories and companies. Energy efficiency programmes are also being implemented with the support of both government and external agencies, e.g. UNIDO and DANIDA, targeting the industrial (e.g. textiles and garments, food and beverage, pulp and paper, and chemical industries), building, residential and commercial (e.g. tourism) sectors. Support for the industrial sector is primarily in the form of capacity development focusing on energy management systems (EnMS) and ISO 50001. For the commercial sector, the programmes offer energy auditing services, while the residential sector benefits from the free distribution of CFLs (limited to selected target groups).

The Malaysian Government has been actively promoting energy efficiency through a number of programmes and initiatives. High-energy consumers (with energy consumption of 3 million kWh in six months) are required to demonstrate energy management in their operations, for example, by appointing an energy manager. The Energy Efficiency Rating Labelling programme requires all manufacturers of selected commercial appliances and equipment to affix the EE labels onto their products. There are also financial incentives for companies (e.g. income tax exemptions, import duty exemptions on certain goods, etc.) to support EE interventions in companies. Programmes implemented with the support of local and regional agencies focus on the industrial, building, transport and commercial sectors. Types of intervention include the implementation of national energy management standards, the application of system optimization in manufacturing industries, energy efficiency improvements in buildings through retrofitting, and stimulating the sales of energy-efficient vehicles. The Government of Malaysia is working on the National Energy Efficiency Plan to introduce mandatory requirements to achieve energy efficiency in all sectors. The draft plan is now going through a stakeholder consultation process.

The Department of Energy (DOE) of the Philippines is actively promoting energy efficiency in the country through various programmes, e.g. reduction of energy consumption in government buildings and operations by 10% annually. The Philippines has yet to introduce a national policy to enforce EE activities in the country. However, enactment of the Energy Efficiency and Conservation Bill is expected sometime soon. There are multiple programmes currently being implemented with support from donors and regional agencies, including the improvement of EE through capacity building training for industries, the replacement of CFC based chillers with energy-efficient non-CFC chillers, and the promotion of high-energy efficient motors for the sugar industry.

The Department of Alternative Energy Development and Efficiency (DEDE) is the key agency driving EE in Thailand. The recent introduction of 20-Year Energy Efficiency Development Plan 2010-2030 aims to achieve 20% reductions in final energy consumption by 2030 compared to the base year of 2010. The government has designated about 2,800 buildings and 5,400 factories which are required to reduce and report their energy consumption on a regular basis. The government implemented a Revolving Fund to strengthen the capacity of commercial banks to finance EE projects, developed the ESCO fund to enable smaller companies to access EE financing, and works with the Bureau of Investment to provide tax and duty exemptions for EE products. The private sector in Thailand provides energy efficiency services. The government also supports the organisation of energy fairs and the drawing up of promotional materials targeting energy efficiency improvements.

Vietnam's Energy Efficiency Conservation Law 2010 is a regulatory framework that mandates strict requirements for all sectors to improve their energy efficiency. The Vietnam National Energy Efficiency Programme (VNEEP) sets out a comprehensive plan to implement measures for improving energy efficiency and conservation across the economy. The government is also implementing a number of energy efficiency and conservation programmes, with support from donors and regional agencies, including the Energy Efficiency Promotion in the building sector, the Energy Efficiency and Clean Production (EECP) program, and the Improvement of Energy Sector Program, which aims to build new transmission lines and to introduce a smart grid.

CHALLENGES AND OPPORTUNITIES TO ENERGY EFFICIENCY IMPLEMENTATIONS

Barriers to EE interventions have been observed to be very similar in these countries and to cover a wide spectrum, including policy, institutional, technical, financial and social aspects. Two barriers that have been found to be common in all countries are: (a) a lack of interest by the top management of companies and factories to agree on EE investment; and (b) a lack of awareness about EE technologies and the benefits they can offer. While these two are somewhat interconnected, the first one is mainly due to the lack of knowledge that EE investment can make a good business case. Some barriers are country or industry specific, including:

- The low energy price (e.g. in Indonesia, Malaysia and Thailand) is a disincentive for the industries and companies to undertake EE measures.
- The lack of a regulatory framework in the Philippines inhibits the wider implementation of EE measures.
- The absence of an appropriate institutional mechanism (e.g. in Thailand and the Philippines) to provide long-term support for EE implementation.
- Insufficient capacity of governments and private sectors (e.g. in Indonesia) to deliver EE programmes and services.
- The lack of financial support to offset high capital investment for smaller companies (e.g. in Indonesia, the Philippines and Vietnam) to undertake EE measures.
- The lack of quality testing infrastructure, e.g. appliance and equipment testing laboratories in Indonesia and the Philippines, to implement standards and labelling programmes effectively.

POTENTIAL FOR SUPPORT AND INTERVENTIONS

To address the barriers that have been identified and to reap the opportunities that exist in the priority sectors in the selected countries, the following actions are recommended (in no particular order).

- Provide targeted capacity-building support to engage top management.
- Support to developing a targeted, long-term and result-driven awareness programme to increase knowledge about energy efficiency.
- Technical assistance with demonstrations of energy-efficient technologies.
- Support capacity-building programmes to develop energy managers and energy auditors.
- Deliver capacity-building programmes for ESCOs.
- Provide financial support to assist with capital investment.
- Capacity development for government employees.
- Establish quality testing infrastructure.
- Develop an enabling policy environment.
- Create a central repository of information on energy efficiency.
- Support the development of energy efficiency programmes for the transport sector.
- Develop energy efficiency programmes for the building sector.

While the selected countries are making progress in EE, there are opportunities to provide support to help them improve it further. However, these are sector- or industry-specific and, most importantly, supports should be tailored to suit specific target groups. Most of the past and existing programmes have focused on the industrial sector, with limited attention being given to the transport and building sectors. While there are minor needs for financial and technical support in specific sectors and industries, much support is needed in the form of capacity development in order to overcome institutional and cultural barriers.



PPORTUNITIES - SOUTHEAST ASIA. ACCELERATING ENERGY EFFICIENCY: INITIATIV
ST ASIA. ACCELERATING ENERGY EFFICIENCY: INITIATIVES AND OPPORTUNITIES - S
ERGY EFFICIENCY: INITIATIVES AND OPPORTUNITIES - SOUTHEAST ASIA. ACCELE
ATIVES AND OPPORTUNITIES - SOUTHEAST ASIA. ACCELERATING ENERGY EFFICIEN
ES - SOUTHEAST ASIA. ACCELERATING ENERGY EFFICIENCY: INITIATIVES AND OPP
CELERATING ENERGY EFFICIENCY: INITIATIVES AND OPPORTUNITIES - SOUTHEAST A
C EN-ITIATIVES AND OPPORTUNITIES - SOUTHEAST ASIA. ACCELERATING ENER
P RGY ITIES - SOUTHEAST ASIA. ACCELERATING ENERGY EFFICIENCY: INITIATIV
S RGY ACCELERATING ENERGY EFFICIENCY: INITIATIVES AND OPPORTUNITIES - S
ASIA CIENCY: INITIATIVES AND OPPORTUNITIES - SOUTHEAST ASIA. ACCELE
ACCELERATING OPPORTUNITIES - SOUTHEAST ASIA. ACCELERATING ENERGY EFFICIEN
EFFICIENCY LERATING ENERGY EFFICIENCY: INITIATIVES AND OPPO
SOUTHEAST ASIA OPPORTUNITIES - SOUTHEAST ASIA. ACCELERATING ENER
AST ASIA. ACCELERATING EFFI RGY EFFICIENCY: INITIATIV
ERGY EFFICIENCY: IN CIEN ES AND OPPORTUNITIES - S
SOUTH EAST ASIA. ACCELE RATING ENERGY EFFICIEN
ERATING ENERGY EFFI EAST Y: INITIATIVES AND OPP
CIENCY: IT ASIA ENERGY PORTUNITIES - SOUTHE ASIA THE
PPORTU IA SOUTH ASIA AST ASIA. ACCELERATING E INITIA THE
ST ASIA. TI ELERATI AND ENERGY EFFICIENCY: INITIAT EFFICIENCY ACCELERATING ENER
ERGY EFF VES CY: INITIATIVES AND OPPORTUNITIES ASIA EAST ASIA. ACCELE
ATIVES AND ASIARTUNITIES - SOUTHEAS OPP . ACCELE SOUTH ENERGY EFFICIENCY
ES AC EAST SOUTH IA. ACCELERATING NITIES EFFICIENCY: INITIATIVES AND OPP
CELER CEL EN ENY EFFICIENCY: IN ENERGY AND OPPORTUNITIES - SOUTHEAST
CIENCY: ERA RGY AND OPPOR ACCELERATING UTHEAST ASIA. ASCELERATING ENF
PPORTUN TING SOUTHEAS ENERGY IN INITIATIVES FFI OUNCY: INITIATIV
ST ASIA. ACCEFFIC TING ENE SOUTH IN OPP IATIVES ANDTHPOR EFFICIES - S
ERGY EFFICIENCY ITIATIVE EAST ASIAASIA IES EFF ERATING ENERGY GYACCELE-
ATIVES AND OPPORT IES S EAST ASIAASIA IES EFF ERATING ENERGY GYACCELE-
ES - SOUTHEAST UNIT CCELERATING ENERGY AS ICI NCY: INITIATIVES RATING
ELERATING ENER IES CIENCY: INITIATIVES AN IA OP CYRTUNITIES - SOUTHEAST A
CIENCY: INITIATIVES A OPPORTUNITIES TIES - SOUTHEAST ASIA. ACCELERATI AND ENF
PPORTUNITIES - SOUTHE SOUTHEAST ASIA ERATING ENERGY EFFICIENCY: INITIATIV
ST ASIA. ACCELERATING ENERGY EFFICIEN ENERGY SOUTHEAST ASIA OPPORTUNITIES - S
ERGY EFFICIENCY: INITIATIVES AND OPPORTUN AND S - SOUTHEAST ASIA. ACCELE

