

IMPACT SHEET • SWITCH-ASIA PROJECT
PROMOTION AND DEPLOYMENT OF ENERGY EFFICIENT
AIR CONDITIONERS IN ASEAN (ASEAN SHINE)

Promoting highly efficient air conditioners in the ASEAN region to reduce energy consumption



The *ASEAN SHINE* initiative led to the adoption of ASEAN-level and national-level policies for the promotion of highly efficient air conditioners. Due to its success, the initiative expanded to include efficient lighting. Together, this will contribute to reducing ASEAN's annual energy consumption by 24 173 GWh and greenhouse gas emissions by 13.9 million tonnes by 2020.



The Challenge



Air conditioners (ACs) represent close to 50% of household electricity consumption in ASEAN (Association of Southeast Asian Nations). Currently, the market share of ACs with an energy efficiency ratio (EER) at or above 3.2 (which is China's EER for Minimum Energy Performance Standard/MEPS) is only around 25%. Assuming all ASEAN countries adopt a MEPS of 3.2, the electricity consumption of residential sector would be reduced by 5 373 GWh per annum, corresponding to a reduction of 2.7 million tonnes of CO₂ emissions per annum.

Objective

The *ASEAN SHINE* project sought to phase out energy inefficient ACs and increase the market share of more highly efficient ACs within the ASEAN (Association of Southeast Asian Nations) region. This led to a reduction in electricity consumption and GHG emissions, as well as an enhanced regional market integration through harmonised standards. The specific project objectives included:

- Harmonising standards for testing methods;
- Developing a regional policy roadmap;
- Developing national policy and regulatory roadmaps for an increase of minimum energy performance standards;
- Building capacity of testing laboratories;
- Building capacity of local AC manufacturers (SMEs);
- Changing consumer purchasing attitudes in favour of more highly efficient ACs.

TARGET GROUPS

- National standard-making bodies
- Ministries in charge of energy (involved as project associates)
- Three national public laboratories and six private laboratories
- 20 small and medium-sized AC manufacturers
- 800 sales persons
- 3-4 consumer organisations in each ASEAN country

Activities / Strategy



Establishing an ASEAN-Level Roadmap for MEPS

The first key challenge was the harmonisation of standards for testing methods, which was overcome through the establishment of a regional Technical Working Group (TWG) composed of representatives from national standard making bodies and testing laboratories. Based on TWG's recommendations, ASEAN Member States adopted ISO 5151:2010 as a unified standard. Policymakers were then engaged to adopt policies that would align to and increase MEPS over time. With technical assistance from the project partners, United Nations Environment Programme (UNEP) and Collaborative Labelling and Appliances Standards Program (CLASP), the ASEAN energy ministers in October 2015 adopted the Regional Policy Roadmap (RPR). RPR set long-term goals which serve as a reference for the development of National Policy Roadmaps (NPRs). UNEP and International Copper Association (ICA) facilitated the development of NPRs in eight countries (Cambodia, Indonesia, Laos, Malaysia, Myanmar, Philippines, Thailand and Vietnam), which were later endorsed by the energy ministers in the second half of 2016.



Building Capacity on New Harmonised Standards

Following the adoption of these new standards for the testing method (ISO 5151:2010), capacity building for five testing laboratories was organised in Bangkok, at the Electrical and Electronics Institute of Thailand. With the progressive increase of MEPS as a result of the implementation of the national policy roadmaps, the capacity of local AC manufacturers (SMEs) was built to design more highly efficient ACs. Two workshops were organised, attended by over 80 participants from 15 manufacturers. Software was also developed to help engineers design heat exchangers with higher efficiency for the ACs.



Creating Market Demand

In order to increase the awareness of consumers regarding the economic benefits of more highly efficient ACs, a mobile phone app (AC SELECT) was developed and promoted via sales persons in retail stores. Exceeding the target, 2 500 sales personnel were trained and now play a key role in educating consumers. The app allows a consumer to calculate the total purchase and operating cost of two AC models, showing the money saved over five years opting for a more efficient AC.



Scaling-up Strategy



Expanding to Other Household Appliances

The project continued to harmonise energy efficiency standards for other household appliances, as agreed upon and described in the “Strategic framework for the harmonisation of energy efficiency standards for household appliances in ASEAN”, for which ACs constitute the first phase. In early 2016, ASEAN SHINE became a private public partnership between UNEP and ICA in support of “United for Efficiency and Sustainable Energy for All”. This new initiative included other technologies (lighting, refrigerators, etc.) and was endorsed by ASEAN energy ministers (AMEM) as a dialogue partner. LED lamps have a small but fast growing market share in ASEAN countries. However, linear fluorescent lamps still have a huge market share with stable annual sales, and there are significant differences in MEPS levels across the countries. A market transformation through implementation and enforcement of MEPS would reduce electricity consumption by 18.8 TWh, corresponding to a reduction of GHG emissions by 11.2 million tonnes CO₂ per year.



Creating Country Chapters

The cornerstone of the extension and scaling-up mechanism for this project is the EU-ASEAN Energy Efficiency Standards Harmonisation Initiative. It was organised regionally (regional policy roadmap) with country chapters (NPRs) assembling all strategic stakeholders in each of eight targeted ASEAN countries. The regional/national policy

roadmaps remain in place beyond the project’s life, ensuring its long-term sustainability strategy.



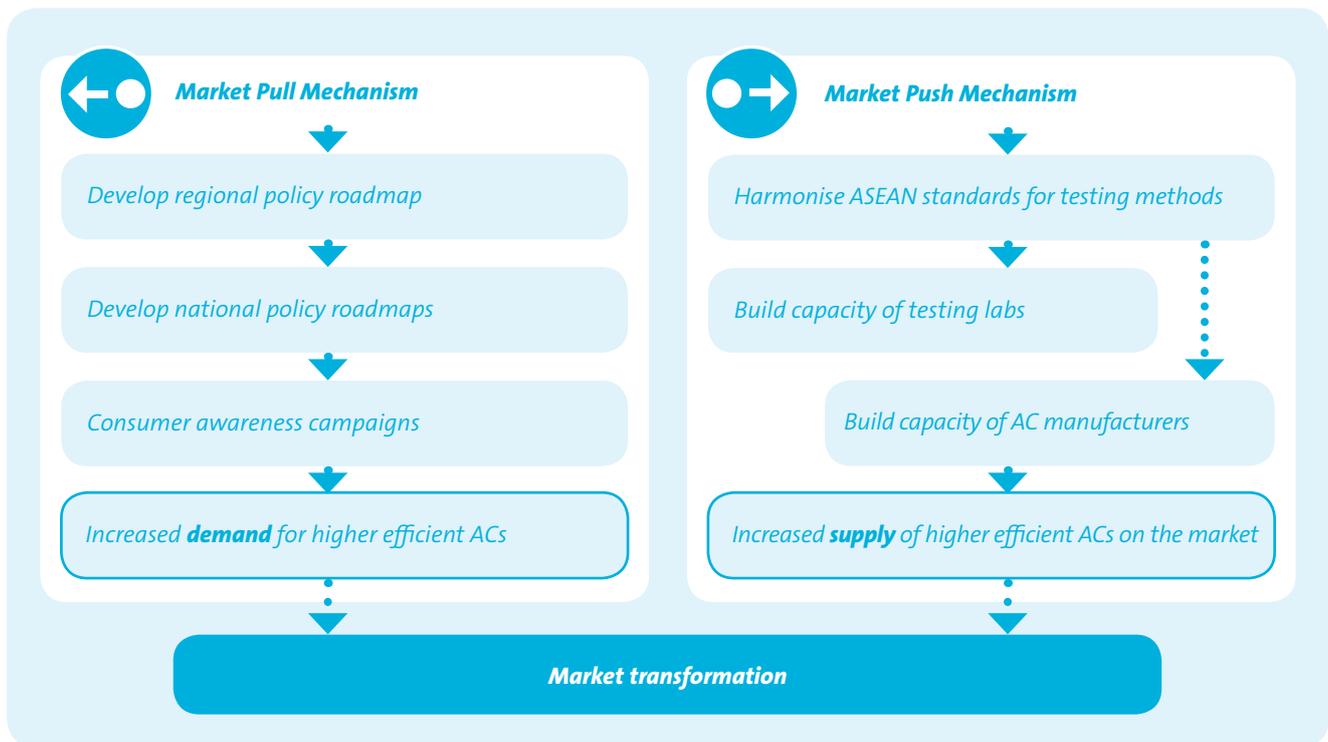
Conducting Awareness Campaigns

The project conducted consumer awareness campaigns. Through the involvement of governments and the private sector (AC manufacturers, retail chains), financial sustainability is secured to keep the awareness campaigns going. The trained 2 500 sales personnel across ASEAN countries will continue educating consumers on more efficient ACs by using the ‘AC SELECT’ app.



Creating the Right Conditions

The adoption of a single standard in ASEAN for the testing of AC energy performance (ISO 5151:2010) opened opportunities for regional cooperation in terms of market verification. ASEAN SHINE supported this effort by building the capacity of testing laboratories in ASEAN on ISO/IEC 17025 on laboratory testing and compliance competence. Technical staff from five testing laboratories attended the training courses at the Electrical and Electronics Institute of Thailand (August 2015). With the future increase in demand for more highly efficient ACs, it is critical to ensure that local AC manufacturers can compete. ASEAN SHINE therefore conducted training for AC manufacturers. Two software programmes were developed to assist AC manufacturers in the design of ACs with higher efficiency.



The project's approach

Results



Harmonised Standard for All ASEAN Countries

ASEAN countries have agreed to adopt a single harmonised standard for the testing method related to the energy performance of ACs, based on the international standard ISO 5151:2010. This achievement was an important milestone not only for the project, but also for the ASEAN market integration. The new harmonised standard removes technical barriers to trade, reduces the cost of compliance for AC manufacturers/exporters and builds the foundation for ASEAN countries to have a coordinated approach to promote more highly efficient air conditioners. It also paves the way for the future harmonisation of standards for other electrical products.



The achievements made by ASEAN SHINE have demonstrated great cooperation among the ASEAN countries to promote energy efficiency in our region. In Daikin, we contributed to this effort as we realised the importance of reducing the carbon footprint of air-conditioning equipment, which consumes the majority of the electrical power in buildings. We look forward to seeing the established Regional Policy Roadmap for Harmonisation of Energy Performance Standards for Air Conditioners to become a best practice for both manufacturers and consumers to follow in the drive to transform the market, which can be achieved through proper design, manufacture, selection and use high energy efficiency air-conditioning equipment for residential and commercial applications.

*Mr. Ooi Cheng Suan,
CEO Daikin Malaysia Sdn. Bhd.*



ASEAN SHINE steering committee meeting



The ASEAN SHINE initiative has paved the way for greater cooperation in ASEAN in terms of harmonisation of standards, contributing to the ASEAN Economic Community, as well as in promoting energy efficiency. Flushed with success, ASEAN SHINE has become a public-private partnership under the United for Efficiency Initiative managed by UN Environment (UNEP) and expanded its scope to lighting, refrigerators, electric motors and distribution transformers. With the strong support of ASEAN governments, manufacturers and the international community (through the Advisory Committee chaired by the International Energy Agency), ASEAN SHINE has become a platform to advance sustainable energy in ASEAN. The SHINE model is now being duplicated in Latin America.



*Mr. Kittisak Sukvivatn,
Project Manager
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Establishment of a Regional Policy Roadmap

The project facilitated ASEAN policymakers to work together to develop a regional policy roadmap for the promotion of more highly efficient air conditioners, adopted by AMEM in October 2015. This roadmap set aspirational goals for the region and serves as a basis to develop harmonised policies in ASEAN countries, sharing experience and best practice.

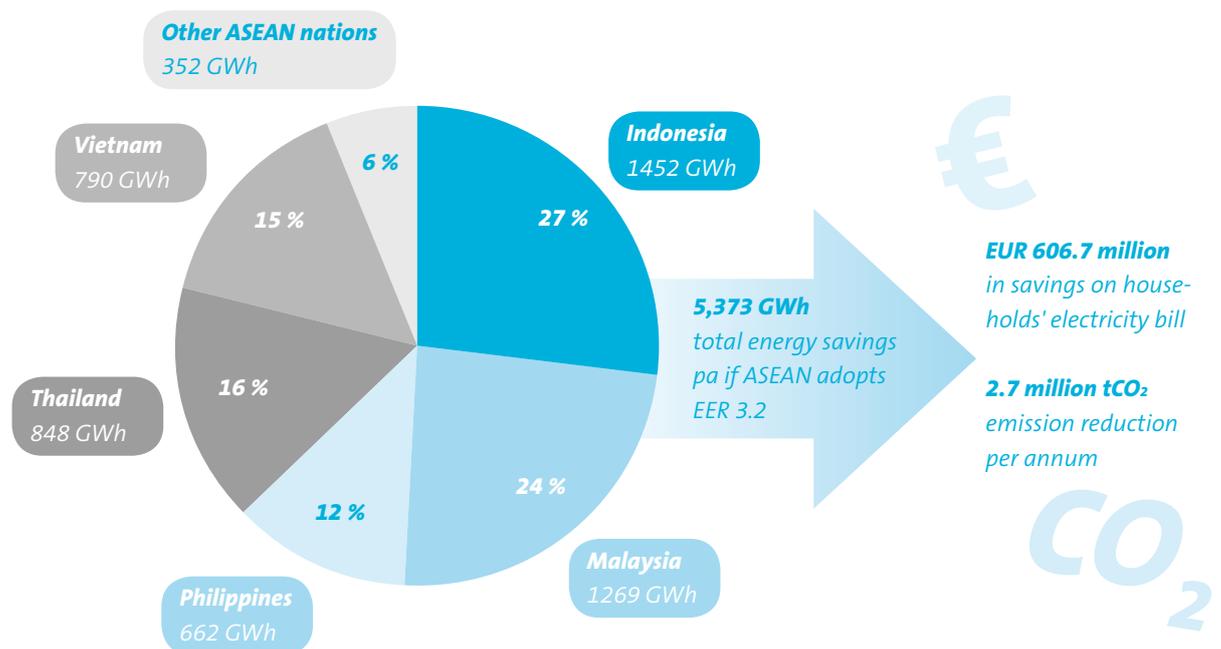


Direct Scaling up to Efficient Lighting

ASEAN SHINE proved to be effective in setting appropriate policy and regulatory mechanisms, and working with stakeholders throughout the value chain (testing labs, suppliers, consumers), and was duly recognised by the energy ministers (in a joint ministerial statement at the 34th ASEAN Energy Ministers Meeting/AMEM in September 2016) as a key programme to help ASEAN countries achieve their goals of promoting sustainable energy. ASEAN SHINE initiative also expanded its scope to include efficient lighting in early 2016, partnering with the en.lighten programme, which is implemented by UNEP and funded by the Global Environment Facility (GEF) and Australian Government.

Impact in Numbers

<p>Economic Impact</p> 	<ul style="list-style-type: none"> The successful harmonisation of energy efficiency standards across the region will have positive effects in boosting the regional trade (removal of non-tariff barriers to trade) by as much as 4.55%. For ASEAN consumers, buying more highly efficient air conditioners (ACs) would save them about EUR 678 million in electricity bills (over five years, monetary savings are on average EUR 217 per household). Technical assistance was provided to 13 AC manufacturers on the design of more highly efficient air conditioners. Local AC manufacturers now have the capacity to produce and sell more highly efficient ACs, which have a higher profit margin than low efficient ACs. 		<p>output (cooling). Lower electricity consumption directly reduces fossil fuel consumption for power generation, thereby reducing emissions not only of CO₂, but also of CO, NO_x, and SO_x.</p>
<p>Environmental Impact</p> 	<ul style="list-style-type: none"> Achieved a full-scale market transformation favouring more efficient ACs, which will happen by 2020 and lead to a reduction in electricity consumption by 5373 GWh per year. 	<p>Target Group Engagement</p> 	<ul style="list-style-type: none"> Trained 13 local AC manufacturers (SMEs) and 2 500 sales persons in ASEAN countries (beyond the target of 800 persons); Engaged with industry associations, media, government, standard making bodies, testing laboratories, and AC manufacturers in stakeholder consultation workshops, steering committee and technical working groups. Six stakeholder consultation workshops were attended by 20 participants from each target group.
<p>Climate Benefits</p> 	<ul style="list-style-type: none"> The implementation of project results will reduce GHG emissions by 2.7 million tonnes per year. More highly efficient air conditioners consume less electricity for the same 	<p>Policy Development</p> 	<ul style="list-style-type: none"> Engaged in policy dialogues with ASEAN policymakers through three consultation workshops and two steering committees; Established harmonised standards for testing methods for more efficient air conditioners in ASEAN; Established an ASEAN-level and five national-level policy roadmaps for an increase of minimum energy performance standards (MEPS).



Source: ASEAN SHINE Project Final Report (December 2016)



Legend

- Eligible countries for the SWITCH-Asia Programme
- Non-eligible Asian countries for the SWITCH-Asia Programme

Project implementation area

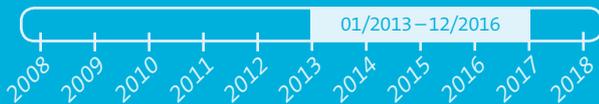
- City
- Region
- Country

The boundaries shown on this map do not imply on the part of the European Union any judgment on the legal status of any territory or the endorsement or acceptance of such boundaries.

OBJECTIVES

The project aimed at increasing the market share of highly efficient air conditioners (ACs) in the ASEAN region through harmonisation of test methods and energy efficiency standards, adoption of common minimum energy performance standards (MEPS), and changing consumer purchasing attitudes in favour of energy-efficient ACs.

DURATION



PROJECT TOTAL BUDGET

EUR 2 186 374 (EU contribution: 80%)

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