

# MALAYSIA

## ENERGY EFFICIENCY GOALS

### 1. GOVERNMENT POLICY ON ENERGY EFFICIENCY

Malaysia has recently published a Five Year Plan that focuses on sustainable growth and resource management. In this plan, Malaysia demonstrates a strong commitment to energy efficiency with aggressive targets and suggested actions.

Malaysia introduced its first Energy Efficiency Policy in 1979 with a main objective of promoting the efficient utilisation of energy and the elimination of wasteful and non-productive patterns of energy consumption. With this objective, many regulations and new policies were introduced such as:

- National Green Technology Policy (2009).
- National Automotive Policy (2014).
- Eleventh Malaysia Plan (2016-2020).

Related laws to Energy Efficiency are:

- Electricity Supply Act 1990 and the Electricity Supply Act (amended) 2001.
- Gas Supply Act 1990.
- Efficient Management of Electrical Energy Regulation 2008 (subsidiary regulation to Electricity Supply Act).
- Electricity Regulation 1994 and the Electricity Regulation (amended) 2013.

### 2. ENERGY EFFICIENCY STRATEGY

Malaysia is currently working on a Demand-side Management Strategy that will concentrate on Energy Efficiency. In the meantime, the following laws guide energy efficiency actions:

- Electricity Supply Act 1990 and the Electricity Supply Act (amended) 2001,
- Eleventh Malaysia Plan that spans 2016-2020 period that covers buildings, industries and households.
- National Automotive Policy - promotes EEV.
- National Energy Efficiency Action Plan 2016-2025 (NEEAP).
- Building Energy Intensity (BEI) Labelling

### FUNDING

Energy efficiency is funded through direct government budget, international aid, and some private funding.

## LINKS

Sustainable use of Energy paper: <http://www.epu.gov.my/sites/default/files/Strategy%20Paper%2017.pdf>

### 3. ENERGY EFFICIENCY ACTION PLAN

The recently developed National Energy Efficiency Action Plan 2016-2025 (NEEAP) contains the key actions to progress energy efficiency in the economy. This plan is aligned with the 11<sup>th</sup> Malaysia Plan (RMK-11) that governs policy across the economy.

## FUNDING

Government and private funding.

## LINKS

Sustainable use of Energy paper: <http://www.epu.gov.my/sites/default/files/Strategy%20Paper%2017.pdf>

### 4. ENERGY EFFICIENCY, INTENSITY OR EMISSIONS REDUCTION TARGETS

Malaysia is in the midst of formulating a new energy efficiency policy by initiating a demand-side management study covering the whole energy sector (as stated in Eleventh Malaysia Plan). Malaysia also has an emissions reduction target, as announced during COP21 Paris, to reduce its greenhouse gas (GHG) emissions intensity of GDP by 45% by 2030 relative to the emissions intensity of GDP in 2005. This consists of 35% on an unconditional basis and a further 10% is conditional upon receipt of climate finance, technology transfer and capacity building from developed countries.

The Malaysian government announced the third National Automotive Policy (NAP) in 2014 with aims to turn Malaysia into an energy efficient vehicle (EEV) hub in ASEAN. The Malaysia Automotive Institute (MAI) is working with the government in shaping a national industrial competitiveness in the automotive sector.

## LINKS

Green growth paper: <http://www.epu.gov.my/sites/default/files/Chapter%206.pdf>

INDC Malaysia:

<http://www4.unfccc.int/Submissions/INDC/Published%20Documents/Malaysia/1/INDC%20Malaysia%20Final%2027%20November%202015%20Revised%20Final%20UNFCCC.pdf>

Energy efficient vehicles:

[http://www.mai.org.my/index.php?option=com\\_content&view=article&id=25&Itemid=177&lang=en](http://www.mai.org.my/index.php?option=com_content&view=article&id=25&Itemid=177&lang=en)

### 5. SECTORAL ENERGY EFFICIENCY TARGETS

All targets were introduced under the 11<sup>th</sup> Malaysia Plan that covers the period 2016-2020.

Targets for buildings:

- Achieve a target of 700 registered electrical energy managers (REEMs).

- Extend EPC to other government buildings.
- All new government buildings to adopt energy efficient designs.
- Retrofit 100 government buildings.
- Register 70 energy service companies (ESCOs).
- Target 100 companies to implement ISO 50001.

Targets for industry:

- Introduce enhanced time of use (EToU) with three different time zones.
- Abolish the Special Industrial Tariff (SIT).
- Install 4 million smart meters.
- Increase on-grid co-generation capacity of 100 MW or more by reviewing utility standby charges.

Households:

- Additional appliances with minimum energy performance standards (MEPSs) and labelling programme.

Transport (forecast):

- Based on definition set by MAI, EEV accounted for around 33% of the total vehicle sales in 2015 and it is expected to reach 40% in 2016 and 85% in 2020.

## LINKS

Sustainable use of energy paper: <http://www.epu.gov.my/sites/default/files/Strategy%20Paper%2017.pdf>

Automotive target: <http://www.mai.org.my/v3/index.php/component/k2/item/1340-eev-bakal-kuasai-pasaran-2017>

## 6. LEAD ENERGY EFFICIENCY INSTITUTION

The Energy Section of the Economic Planning Unit (EPU) of the Prime Minister's Department (established in 1965) is the primary policy agency and the Ministry of Energy, Green Technology and Water (MEGTW) (established in 2009) leads implementation. Other agencies with energy efficiency responsibilities include the Energy Commission (EC) established in 2001; the Sustainable Energy Development Authority (SEDA), established in 2011; and the Malaysia Green Technology Corporation (MGTC).

### INSTITUTIONAL SETTINGS AND RESPONSIBILITIES

The role of the MEGTW is to formulate an energy efficiency policy, in coordination with the EPU. The EPU provides the general direction, strategies, and determines the level of implementation, while the EC is the regulatory agency for the electricity and piped gas supply industry. The commission's main tasks are to provide technical and performance regulations for the electricity and piped gas supply industry (as the safety regulator for electricity and piped gas) and advise the minister on all matters related to electricity and piped gas supply,

including energy efficiency and renewable energy issues. SEDA Malaysia and MGTC are the executing agencies for energy efficiency projects.

#### STAFF AND BUDGET

There are five officers in the MEGTW and 13 officers in SEDA Malaysia who deal with both renewable energy and energy efficiency issues, and 11 officers in the EC who handle only energy efficiency matters.

#### BUDGET USE

Government development budget for project implementation.

#### LINKS

Ministry of Energy, Green Technology, and Water: <http://www.kettha.gov.my/portal/index.php#>

Energy Commission: <http://www.st.gov.my/index.php/en/>

Sustainable Energy Development Authority: <http://www.seda.gov.my/>

### 7. OTHER ENERGY EFFICIENCY AGENCIES

The Ministry of International Trade and Industry (MITI) has come out with National Automotive Policy (NAP). Although NAP does not have any direct target in energy efficiency, the policy laid out help to improve energy efficient vehicle (EEV) penetration in domestic market. The Ministry of Science, Technology and Innovation (MOSTI) is responsible for some R&D grants for EE technologies. Malaysia Green Technology Corporation, an agency under the MEGTW, also promotes green technology.

#### LINKS

Ministry of International Trade and Industry: <http://www.miti.gov.my/>

Ministry of Science, Technology and Innovation: <http://www.mosti.gov.my/en/corporate-profile/about-mosti/>

Malaysia Green Technology Corporations: <http://www.greentechmalaysia.my>

### 8. ENERGY EFFICIENCY INFORMATION DISSEMINATION

The key source of energy information is the Malaysia Energy Information Hub (MEIH), which is a web based national energy database with information on energy supply and demand. Additionally, the National Energy Balances are published annually and the Malaysia Electricity Supply Outlook provides a view of the electricity sector.

#### LINKS

Malaysia Energy Information Hub: <http://meih.st.gov.my/>

## 9. ENERGY EFFICIENCY AWARENESS RAISING

The Malaysian government supports SWITCH! a Non-Government Organisation (NGO) campaign on energy efficiency with support from industry. It carries out events, produces publications and has a web-based information portal.

Yayasan Hijau Malaysia (YaHijau), which literally means Malaysia Green Foundation, is an NGO that promotes green technology and its benefits towards sustainable living.

The International Greentech & Eco Products Exhibition & Conference Malaysia (IGEM) is an annual event aimed at promoting green technologies and discussing energy issues.

Other events include the Energy Efficiency Challenge for secondary schools to promote awareness in students, similarly the Energy Efficiency Run is well attended biannual event with around 1,500 participants.

### LINKS

YaHijau: <http://www.yahijau.com/index.php/us/>

SWITCH!: <http://www.switch.org.my/v1/>

Greentech Conference: <http://www.igem.my/home/index.php>

## 10. GOVERNMENT SUPPORTED ENERGY EFFICIENCY TRAINING

The government supports a number of energy efficiency training initiatives including the Industrial Energy Efficiency for Malaysia Manufacturing Sector (IEEMMS) programme, the Energy Efficiency and Energy Management Training Programme provided by SEDA and the ASEAN Energy Management Scheme (AEMAS).

### LINKS

IEEMMS: <http://ieemms.org/>

SEDA: <http://www.seda.gov.my>

Greentech Malaysia Training: <http://greentechmalaysia.my/services/training/professional-programmes>

## 11. PRIVATELY OPERATED TRAINING

The Centre for Education, Training, Research in RE, and EE (CETREE), based at the University of Science Malaysia, offers a number of courses and publications on energy efficiency. The government supports this programme as well.

The Malaysia Association of Energy services Companies (MAESCO) also provides a number of courses.

### LINKS

MAESCO: <http://cetree.usm.my/index.php/ms/>

CETREE: <http://cetree.usm.my/index.php/ms/>

## 12. GOVERNMENT SUPPORTED RESEARCH & DEVELOPMENT

Technical research on energy efficiency and conservation is mainly conducted by government-sponsored universities. The government, through MEGTW set up the Malaysian Electricity Supply Industries Trust Account (MESITA) Fund to fund this kind of research.

### LINKS

Malaysia Science and Technology Information Centre: <http://mastic.mosti.gov.my/en/web/guest/home>

MESITA Fund: <http://mesita.kettha.gov.my/>

## ENERGY EFFICIENCY MEASURES

### 13. COLLECTION AND MONITORING OF ENERGY EFFICIENCY OUTCOMES

For one-off projects, the progress and achievement is monitored through an outcome-based assessment method. The assessment report is prepared twice (at half way and at the end of the plan) and submitted to the MEGTW or EPU.

The Energy Commission carries out a number of data collection and evaluation projects including:

- Regular data collections for different sectors.
- MEPS evaluation and implementation.
- Enforcement of Efficient Management of Electrical Energy Regulations 2008.

### LEGAL POWER

As energy regulator in Peninsular Malaysia and Sabah, the Energy Commission has the power to compel the provision of energy data from different sectors of the market, as per the Electricity Supply Act 1990.

### LINKS

Energy commission:

<http://www.st.gov.my/index.php/en/consumer/electricity/list-of-installation-affected-under-emeer-2008>

### 14. EVALUATION OF ENERGY EFFICIENCY PROGRESS OR POTENTIAL

No periodic evaluation initiated so far.

### LINKS

Not available.

### 15. SELF-EVALUATION OF ENERGY EFFICIENCY PROGRAMMES

Not applicable.

## 16. CROSS-SECTOR ENERGY EFFICIENCY INITIATIVES

### **Green Technology Financing Scheme**

#### OBJECTIVE

To provide financial support to local, green-technology industries, encourage local industries to embrace green technology, and help incorporate green-technology elements into specific projects related to the identified sectors with Energy, waste and water, building, and transport sectors are all applicable.

#### OUTLINE

The government has provided RM 3.5 billion to create the fund for this scheme. The fund provides soft loans to companies that supply or utilise green technology. The maximum financing for companies who are producers and users of green technology is RM 50 million and RM 10 million, respectively. The government will bear 2% of the total interest/profit rate. In addition, the government will provide a guarantee of 60% on the financing amount via the Credit Guarantee Corporation Malaysia Berhad, with the remaining 40% financing risk to be borne by participating financial institutions. Loan applications can be made through the Malaysian Green Technology Corporation (GreenTech Malaysia), an agency under the Ministry of Energy, Green Technology and Water.

Companies are required to submit their project proposals for technical evaluation to GreenTech Malaysia. Upon passing the technical evaluation, companies may apply for financing from any participating financial institution.

#### LINKS

GreenTech Fund: <https://www.gtfs.my/>

### **Green Investment Tax Allowance and Exemption (GITA&GITE)**

#### OBJECTIVE

To strengthen the development of green technology, the Government will continue to provide incentives in the form of investment tax allowances for the purchase of green technology assets and income tax exemption for the use of green technology services and system.

#### OUTLINE

The incentives, which were announced in Budget 2014, cover broader scope of green technology activities in the areas of energy, transportation, building, waste management, and supporting services activities. It also facilitates the transition of the expired (by 31 December 2015) tax incentives relating to renewable energy (RE) and energy efficiency (EE) projects under the Promotion of Investment Act (PIA), 1986.

#### LINKS

Tax incentives for green industry: <http://www.mida.gov.my/home/tax-incentives-for-green-industry/posts/>

## 17. INDUSTRY ENERGY EFFICIENCY INITIATIVES

### **Efficient Management of Electrical Energy Regulation 2008**

#### OBJECTIVE

Under the regulation, all installations that consume three million kWh or more of electricity over a period of six months will be required to employ an energy manager to analyse the total consumption of electricity, advise on measures to improve energy efficiency, and monitor the effectiveness of the measures taken.

#### OUTLINE

A mandatory regulation set for energy intensive industries and commercial. Penalties are imposed for non-compliance; however, this regulation only covers electricity use.

#### LINKS

Energy Commission:

<http://www.st.gov.my/index.php/en/consumer/electricity/list-of-installation-affected-under-emeer-2008>

### **Energy Efficiency and Conservation Guidelines Part 1 and 2 and MEPS for selected industrial equipment**

#### OBJECTIVE

To introduce MEPS for selected equipment, such as motors, chillers, cooling towers, and compressors. Currently, the development of a standard for motors is underway.

#### OUTLINE

The guidelines have been framed to encourage industries to adopt energy-efficient practices as well as manage and improve their energy utilisation and environmental management (on a voluntary basis).

#### LINKS

Audit Guidelines: <http://www.st.gov.my/index.php/en/download-page/category/95-guidelines-energy-efficiency?download=615:electrical-energy-audit-guidelines-for-building>

SEDA: <http://seda.gov.my>

### **Eleventh Malaysia Plan**

#### OBJECTIVE

The Malaysia plan is the overall policy guide for the government. In the Eleventh plan, there the government included a number of energy efficiency actions for the industry sector:

- Introduce enhanced time of use (EToU) with three different time zones.
- Abolish the Special Industrial Tariff (SIT), which a form of subsidy to energy intensive industry.

- Install 4 million smart meters.
- Increase on-grid co-generation capacity of 100 MW or more by reviewing utility standby charges.
- Energy Audit Conditional Grants (EACG).

## OUTLINE

Eleventh Malaysia Plan is a five-year development plan for 2016-2020. The annual budget for this plan is a mix of public-private funding.

## LINKS

Eleventh Malaysia Plan: <http://www.epu.gov.my/en/rmk/eleventh-malaysia-plan-2016-2020>

## 18. TRANSPORT ENERGY EFFICIENCY INITIATIVES

No current initiatives in the transport sector.

## 19. BUILDING ENERGY EFFICIENCY INITIATIVES

### **Green Building Index Malaysia and MyHijau Mark (Voluntary)**

#### OBJECTIVE

The Green Building Index Malaysia (GBI Malaysia) certification is a profession-driven initiative to lead the Malaysian property industry to become more environmentally friendly. The energy efficiency of a building is one of the criteria for this certification.

MyHijau Mark is Malaysia's official green labelling scheme endorsed by the government of Malaysia, bringing together certified green products and services that meet local and international environmental standards under one single mark.

#### OUTLINE

The Green Building Index (GBI) is Malaysia's industry recognised green rating tool for buildings to promote sustainability in the build environment and raise awareness among developers, architects, engineers, planners, designers, contractors and the public about environmental issues.

MyHijau Mark is to promote the sourcing and purchasing of green products and services in Malaysia. Its aim is to encourage the adoption of environmentally friendly practices in the country, while catalysing the growth of Malaysian's green economy.

#### LINKS

YaHijau: <https://www.myhijau.my/>

Building rating scheme: <http://new.greenbuildingindex.org/>

## Products Minimum Energy Performance Standards and Labelling

### OBJECTIVE

To raise awareness and provide energy consumption information of appliances and equipment to consumers by labelling appliances.

To reduce energy demand and promote innovation in the market by banning low performing appliances and equipment.

### OUTLINE

Currently, there are Minimum Energy Performance Standard (MEPS) for five electrical appliances: refrigerator, domestic fan, TV, air-conditioners and lamp. Further MEPS are under discussion.

### LINKS

Energy commission: <http://www.st.gov.my/index.php/en/consumer/electricity/minimum-energy-performance-standards-meps>

MEPS Status Presentation:

[http://bseep.gov.my/App\\_ClientFile/df08bc24-99fb-47a3-937f-dc25df9d3997/Assets/EE%20FEATURES/TEEAMBSEEP.pdf](http://bseep.gov.my/App_ClientFile/df08bc24-99fb-47a3-937f-dc25df9d3997/Assets/EE%20FEATURES/TEEAMBSEEP.pdf)

## Amendments to the Uniform Building By-Laws (UBBL)

### OBJECTIVE

Energy efficiency requirements under the MS1525, which is the Code of Practice on the Use of Renewable Energy and Energy Efficiency in Non-Residential Buildings, were incorporated in the amendments to the Uniform Building By-Laws (UBBL)

### OUTLINE

Although Uniform Building By-Laws were amended in 2013, responsibility lies with local government and has not yet been fully implemented.

### LINKS

Amendment presentation:

[http://architecturemalaysia.com/Files/Pool/81\\_170214\\_0739543954\\_pam\\_north\\_11jan2017\\_vonkl.pdf](http://architecturemalaysia.com/Files/Pool/81_170214_0739543954_pam_north_11jan2017_vonkl.pdf)

Passive design building guidelines: [http://bseep.gov.my/App\\_ClientFile/df08bc24-99fb-47a3-937f-dc25df9d3997/Assets/Building%20Energy%20Efficiency%20Technical%20Guideline%20for%20Passive%20Design.pdf](http://bseep.gov.my/App_ClientFile/df08bc24-99fb-47a3-937f-dc25df9d3997/Assets/Building%20Energy%20Efficiency%20Technical%20Guideline%20for%20Passive%20Design.pdf)

## Energy Performance Contracting for Government Buildings

### OBJECTIVE

Under the EPC concept, government buildings may engage energy services companies (ESCOs) to improve energy efficiency. This initiative can help develop an ESCO industry in Malaysia.

### OUTLINE

In 2013, the cabinet approved the implementation of EPC projects for government buildings.

### LINKS

EPC in Malaysia:

[http://bseep.gov.my/App\\_ClientFile/df08bc24-99fb-47a3-937f-dc25df9d3997/Assets/BSEEP%20NCA2017/PAPER%206%20-%20EPC%20Energy%20Efficiency%20Financing%20Program%20-%20BSEEP%20National%20Conference%202017%20New%20Template%20xNMN.pdf](http://bseep.gov.my/App_ClientFile/df08bc24-99fb-47a3-937f-dc25df9d3997/Assets/BSEEP%20NCA2017/PAPER%206%20-%20EPC%20Energy%20Efficiency%20Financing%20Program%20-%20BSEEP%20National%20Conference%202017%20New%20Template%20xNMN.pdf)

## Eleventh Malaysia Plan (2016-2020)

### OBJECTIVE

Under the Eleventh Malaysia Plan, targets for buildings are separated into residential and service buildings.

Services:

- Achieve a target of 700 registered electrical energy managers (REEMs).
- Extend EPC to other government buildings.
- All new government buildings to adopt energy efficient designs.
- Retrofit 100 government buildings.
- Register 70 energy service companies (ESCOs).
- Target 100 companies to implement ISO 50001.
- Wider adoption of the Green Building Index to benchmark energy consumption in new and existing buildings.

Residential:

- Additional appliances with minimum energy performance standards (MEPSs) and labelling programme.

### OUTLINE

The Eleventh Malaysia Plan is a five-year development plan for 2016-2020. The annual budget for this plan is a mix of public-private funding

## LINKS

EPU Buildings: <http://www.epu.gov.my/sites/default/files/Strategy%20Paper%2017.pdf>

Green buildings index: <http://new.greenbuildingindex.org/>

## 20. ENERGY EFFICIENCY COOPERATION

### COOPERATION AGREEMENTS WITH OTHER ECONOMIES OR ORGANISATIONS

Building Sector Energy Efficiency Project (BSEEP) supported by GEF and implemented by UNDP and Malaysia Public Works Department. The goal is to reduce the growth rate of greenhouse gas emissions in the building sector through improved energy efficiency in buildings, particularly in the commercial and government sectors. This programme ends in mid-2016.

The government has developed cooperation with non-government organisations such as the Federation of Malaysian Consumers Associations, the Water and Energy Consumer Association, the Malaysia Association of Energy Service Companies (MAESCO), the Federation of Malaysian Manufacturers (FMM), the Association of Consulting Engineers Malaysia (ACEM), and the Electrical and Electronics Association of Malaysia (TEEAM) to promote energy efficiency activities. The promotional activities are mainly in the form of campaigns, workshops, seminars, and publications of energy efficiency-related materials.

Industrial Energy Efficiency for the Malaysian Manufacturing Sector (IEMMS), launched in April 2012, will last for five years. Implemented by the United Nations Industrial Development Organisation (UNIDO) and SME Corporation Malaysia. The project aims to improve energy efficiency in the manufacturing sector through the optimisation of energy and production systems as well as the implementation of energy management systems based on the ISO 50001 standard.

### BILATERAL, REGIONAL OR MULTILATERAL COOPERATION AGREEMENTS

ASEAN Plan of Action for Energy Cooperation (APAEC). The APAEC outlines strategies such as ASEAN energy standards and labelling, the promotion of ESCOs, information sharing, and capacity building to improve energy efficiency in the region.

ASEAN Energy Management Accreditation Scheme (AEMAS), an initiative under the ASEAN Energy Efficiency and Conservation Sub-Sector Network (EE&C-SSN). The main objectives of the AEMAS are to reduce energy consumption in the industrial sector, reduce emissions of greenhouse gases, and increase the professional standing of accredited energy managers; and

ASEAN Standards Harmonisation Initiative for Energy Efficiency. Establishment of the EU-ASEAN Energy Efficiency Standards and harmonisation initiative as well as for testing methods.

EGEEC, an initiative under EWG that promotes energy efficiency and best practice sharing.

## LINKS

ASEAN Energy: <http://www.aseanenergy.org/programme-area/eec/>

APEC EGEE&C: <http://www.egeec.apec.org/>

## 21. OTHER ENERGY EFFICIENCY EFFORTS

Not applicable.