

# MALAYSIA

## 1. GOALS FOR EFFICIENCY IMPROVEMENT

### 1.1. Overall Energy Efficiency Improvement Goals

The Malaysian Government have implemented a number of programs to utilise energy efficiently including the Eighth Malaysia Plan (2001-2005) aimed at further strengthening the Utilisation Objective of Malaysia's Energy Policy (1979), which sought "to promote the efficient utilization of energy and the elimination of wasteful and non-productive patterns of energy consumption". To speed up the implementation of energy efficiency and conservation initiatives, the Ministry of Energy, Green Technology and Water is preparing an Energy Efficiency Master Plan setting clear goals and targets to coordinate and implement programs in a systematic and holistic manner. The Master Plan is scheduled for completion in June 2010.

### 1.2. Sectoral Energy Efficiency Improvement Goals

The National Energy Efficiency Master Plan will be focused on the industrial, commercial and building sectors.

### 1.3. Action Plans for Promoting Energy Efficiency

The Ninth Malaysia Plan (2006–2010) has outlined strategies for promoting energy efficiency improvement. Greater emphasis will be placed on energy efficiency under the Tenth Malaysia Plan (2011-2015).

#### a) Objectives

The primary objective of the energy efficiency programs set out in the Ninth Malaysia Plan is to ensure the security of energy supply, enhance economic growth through efficient energy management and mitigate the negative impact of energy activities on the environment.

#### b) Applicable sectors

Industry, commercial, residential and government buildings

#### c) Outline

- 1) Enforce the Efficient Management of Electricity Energy Regulation 2008 to ensure more efficient use of electricity among large users
- 2) Incorporate the Code of Practice on Energy Efficiency and Use of Renewable Energy for Non-Residential Buildings (MS1525:2007) into the Uniform Building By-Laws (UBBL)
- 3) Promote the use of highly energy-efficient appliances and equipment
- 4) Develop local expertise in the manufacture of energy-efficient appliances and equipment
- 5) Improve energy efficiency in government buildings
- 6) Develop human capacity in the area of energy efficiency.

#### d) Financial resources and budget allocation

Under the Ninth Malaysia Plan, MYR 19.3 million is allocated to implement the stipulated actions.

#### e) Method for monitoring and measuring effects of action plans

Progress and achievement is monitored through an outcome-based assessment method. The assessment report is prepared twice (at the middle of the Plan and at the end of Plan period). The reports will be submitted to the Economic Planning Unit of the Prime Minister's Department.

**f) Expected results****Industry**

- *The Efficient Management of Electrical Energy Regulation 2008, under the Electricity Supply Act.* Under the regulation, all installations that consume 3 million kWh or more of electricity over a period of six months will be required to engage an electrical energy manager who shall, among others, be responsible for analysing the total consumption of electrical energy, to advise on the development and implementation of measures to ensure efficient management of electrical energy as well as to monitor the effectiveness of the measures taken.
- *The Energy Efficiency and Conservation Guidelines Part 1: Electrical Energy-use Equipment.* The guidelines encourage industries to adopt energy efficiency practices as well as manage and improve their energy utilisation and environmental management. The guidelines, covering a number of commonly-used equipment such as fans, motors, pumps, chillers, transformers and air-compressors, also highlight best practices in selection and design with standard efficiency values as well as best practices in operation, monitoring and maintenance of the equipment.
- *The Industrial Energy Audit Guidelines.* The guidelines are prepared based on 54 energy audits in eight energy-intensive industrial sub-sectors, namely iron and steel, cement, wood, food, glass, pulp and paper, ceramics and rubber that were carried out under the Malaysian Industrial Energy Efficiency Improvement Project (MIEEIP).
- *Energy-use benchmarks* for eight energy-intensive industrial sub-sectors, namely iron and steel, cement, wood, food, glass, pulp and paper, ceramics and rubber.

**Commercial**

- *Energy efficiency requirements under MS1525*, which is the Code of Practice on the Use of Renewable Energy and Energy Efficiency in Non-Residential Buildings, will be incorporated in the amendments to the Uniform Building By-Laws (UBBL). Once the UBBL is enforced, all non-residential buildings will have to comply with the UBBL energy efficiency requirements.
- *10% reduction of electricity use in all government buildings.* The Ministry of Energy, Green Technology and Water is conducting energy audits in the top seven energy users in the government sector to estimate the real saving potential and to formulate a plan to achieve the stipulated target.
- *Showcase of Low Energy Office (LEO) and Zero Energy Office (ZEO) buildings* to promote energy efficiency in buildings through demonstration. The first LEO building of the Ministry of Energy, Green Technology and Water was built in 2004 and the Green Energy Office of Pusat Tenaga Malaysia was built in 2008.

**Residential**

- *Dissemination of information and awareness* to create a voluntary behavioural shift of residential energy users.
- *Voluntary energy performance labelling* of refrigerators and promotion on the sale of energy-efficient refrigerators and efficient lighting.

**g) Future tasks**

Enhance the legal framework for energy efficiency improvement and draw up a comprehensive plan to promote energy efficiency improvement holistically.

**1.4. Institutional Structure****a) Name of organisation**

The key Malaysian government ministries and agencies involved in energy efficiency improvement are the Energy Unit of Economic Planning Unit (EPU) of the Prime Minister's

Office, the Ministry of Energy, Green Technology and Water (MEGTW), the Energy Commission (EC) and Pusat Tenaga Malaysia (PTM) or the Malaysia Energy Centre.

**b) Status of organisation**

All agencies perform their duties for the central government.

**c) Roles and responsibilities**

The role of MEGTW is to formulate energy efficiency policy, in coordination with the EPU. The EPU provides the general direction and strategies and determines the level of implementation. 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 regulation for the electricity and piped gas supply industry, as the safety regulator for electricity and piped gas and to advise the Minister on all matters relating to electricity and piped gas supply including energy efficiency and renewable energy issues. PTM is an independent not-for-profit company for the development and coordination of energy research. The aim of PTM is to be the focal point on energy implementation and catalyst for linkages with universities, research institutions, industry, and domestic and international energy organisations.

**d) Covered sectors**

Industry, commercial, residential and government sectors

**e) Established date**

MEGTW was established in April 2009, following the reshuffle of the Malaysian Cabinet. Formerly, the Ministry was known as the Ministry of Energy, Water and Communications in 2004 and the Ministry of Energy, Communications & Multimedia in 1998. The EC was established in 2001, replacing the Department of Electricity and Gas Supply (DEGS), and PTM was established in 1997.

**f) Number of staff**

The MEGTW has five officers to handle renewable energy and energy efficiency, the EC has four staff members to handle energy efficiency matters, and PTM has a staff of 60 for energy research work and energy efficiency promotion activities.

**1.5. Information Dissemination, Awareness-raising and Capacity-building**

A large number of information dissemination seminars and workshops have been held for energy users by organisations involved in promoting energy efficiency, for example, PTM and the Centre for Education, Training, and Research in Energy Efficiency and Renewable Energy (CETREE), which is located in the Universiti Sains Malaysia.

**1.6. Research and Development in Energy Efficiency and Conservation**

Technical research on energy efficiency and conservation are conducted mainly by government-sponsored universities. The research work is funded by the Government through the Ministry of Science, Technology and Innovation. Non-technical research and development work is carried out by PTM and CETREE.

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**2. MEASURES FOR ENERGY EFFICIENCY IMPROVEMENTS**

**2.1. Government Laws, Decrees, Acts**

**a) Name**

Electricity Supply Act 1990 and the Electricity Supply Act (Amended) 2001 or Act A1116

**b) Purpose**

The main purpose of the act is to regulate the electricity supply industry. Act A1116 also has provisions on the efficient use of electricity.

**c) Applicable sectors**

All electricity users are bound under the act.

**d) Outline**

The act has the following provisions for the efficient use of electricity:

- Section 23A: The Minister may, from time to time, prescribe the standards, specifications, practices and measures to be adopted and any other matters in regard to the efficient use of electricity.
- Section 23B: No person shall use or operate any installation unless the installation meets such requirements as may be prescribed in regard to the efficient use of electricity.
- Section 23C: No person shall manufacture, import, sell or offer for sale or lease any equipment unless the equipment meets such requirements as may be prescribed in regard to the efficient use of electricity.

**e) Financial resources and budget allocation**

The main financial resource is the fee collected from the licensees of the act.

**f) Expected results**

Electricity savings and better electrical load management

**2.2. Regulatory Measures****a) Name**

Efficient Management of Electrical Energy Regulations 2008

**b) Purpose**

To promote efficient use of electrical energy through a better energy planning and management system

**c) Applicable sectors**

Industry and commercial

**d) Outline**

The Efficient Management of Electrical Energy Regulations 2008 was gazetted on 15 December 2008, and required any installation with total electricity consumption of 3 million kWh or more over six consecutive months to appoint electrical energy managers and implement efficient electrical energy management.

**e) Financial resources and budget allocation**

No information available

**f) Expected results**

No information available

**2.3. Voluntary Measures**

The Code of Practice on the Use of Renewable Energy and Energy Efficiency in Non-Residential Buildings (MS1525:2007) is a code that provides design recommendations for the energy efficiency of non-residential buildings. It provides criteria and minimum standards for energy efficiency in the design of new buildings, retrofitting of existing buildings and methods for determining compliance with these standards. MS1525:2007 is incorporated in the Green Building Index Malaysia (GBI Malaysia).

GBI Malaysia is a profession-driven initiative to lead the Malaysian property industry towards becoming more environment-friendly. The energy efficiency of a building is one of the criteria for the green building index certification.

The High-Efficiency Motor (HEM) program is a voluntary program to promote increased use of high-efficiency motors in Malaysia. The Energy-Efficient Refrigerator (EER) and Labeling Program is a voluntary program to promote energy-efficient refrigerators by introducing labels showing the energy use of appliances.

The Energy Efficiency and Conservation Guidelines Part 1: Electrical Energy-use Equipment is to encourage industries to adopt energy efficiency practices as well as manage and improve their energy use. The Guidelines, covering commonly-used equipment such as fans, motors, pumps, chillers, transformers and air-compressors, also highlight the best practices in selection and design with standard efficiency values as well as best practices in operation, monitoring and maintenance of the equipment.

## **2.4. Financial Measures Taken by the Government**

### **2.4.1. Tax Scheme**

The tax scheme for energy efficiency improvements is as follows:

Companies providing services for energy efficiency improvement are eligible for:

- Pioneer status with an income tax exemption of 100% of statutory income for 10 years or
- An investment tax allowance of 100% on the qualifying capital expenditure incurred within a period of five years. The allowance is to be set off against 100% of the statutory income for each year of assessment and
- An import duty and sales tax exemption on energy-efficient equipment that is not produced locally and a sales tax exemption on the purchase of equipment from local manufacturers
- Companies that make capital expenditures to improve their energy consumption are eligible for:
  - An investment tax allowance of 100% of the qualifying capital expenditure incurred within 5 years. The allowance is to be set off against 100% of the statutory income for each year of assessment and
  - An import duty and sales tax exemption on energy-efficient equipment that is not produced locally and a sales tax exemption on the purchase of equipment from local manufacturers.

Companies that import energy efficient products are eligible for:

- An exemption of import duty and sales tax on energy-efficient equipment such as high-efficiency motors and insulation materials for importers, including authorised agents, approved by the Energy Commission
- A sales tax exemption is given on the purchase of locally manufactured energy-efficient household appliances such as refrigerators, air conditioners, lighting, fans and televisions.

Owners of buildings with a Green Building Index Certificate are eligible for:

- A tax exemption equivalent to 100% of the capital expenditure incurred to obtain the GBI certificate. The exemption is allowed to be set off against 100% of the statutory income for each year of assessment. New buildings and retrofitted buildings are eligible for this incentive.

Buyers of buildings and residential properties awarded GBI certificates from real property developers are eligible for:

- A stamp duty exemption on instruments of transfer of ownership of such buildings. The amount of the stamp duty exemption is based on the additional cost incurred to obtain the GBI certificate.

#### 2.4.2. Low Interest Loans

**a) Name**

Green Technology Fund (issued at the Federal Government level)

**b) Purpose**

To promote green technology adoption

**c) Applicable sectors**

Industry and commercial

**d) Outline**

The fund provides soft loans to companies that supply or use green technology. For suppliers, the maximum financing is MYR 50 million and for consumer companies MYR 10 million. The Government provides an interest rate subsidy of 2% of the loans procured. The Government also provides a guarantee of 60% of the loan amount, with the remaining 40% guaranteed by banking institutions. Loan applications can be made through the National Green Technology Centre.

**e) Financial resources and budget allocation**

MYR 1.5 billion

**f) Expected results**

About 140 companies are expected to benefit from this fund and this will spur green technology development, especially market creation and penetration of green technology in the economy.

#### 2.5. Energy Pricing

Energy prices are regulated by the Government and are heavily subsidised. Under the Ninth Malaysia Plan, the Government has stated the policy to review the energy pricing structure to closely reflect market prices. As such, the Government took steps to gradually reduce subsidies on energy prices. Oil products prices, gas prices for the primer and non-primer sectors and electricity tariffs have been reviewed to reflect market prices.

#### 2.6. Other Efforts for Energy Efficiency Improvements

##### 2.6.1. Cooperation with Non-Government Organisations

The government has developed cooperation with non-government organisations such as the Federation of Malaysian Consumers Associations and the Water and Energy Consumer Association of Malaysia to promote energy efficiency activities. The promotion activities are mainly in the form of campaigns, workshops, seminars and publication of energy efficiency related materials.

##### 2.6.2. Cooperation through Bilateral, Regional and Multilateral Schemes

Malaysia is actively involved in regional and multilateral schemes on energy efficiency improvements. Malaysia and other South East Asia economies under the Association of South East Asian Nations (ASEAN) have agreed to improve energy efficiency through the ASEAN Plan of Action for Energy Cooperation (APAEC). The current APAEC (2004-2009) has outlined strategies such as ASEAN energy standards and labelling, promotion of Energy Services Companies (ESCOs), information sharing and capacity building to improve energy efficiency in the ASEAN region. In the East Asia Summit (EAS), of which Malaysia is a member, the members have agreed to work together to improve energy efficiency in the EAS

region. As a member of the United Nations, Malaysia hosted the Malaysian Industrial Energy Efficiency Improvement Project (MIEEIP) with assistance and co-funding from the United Nations Development Program (UNDP) and Global Environment Facility (GEF). The MIEEIP aimed to address barriers to energy efficiency and energy conservation in the Malaysian industrial sector.

### **2.6.3. Other Cooperation/Efforts for Energy Efficiency Improvements**

No information available

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## **REFERENCES**

Economic Planning Unit, the Prime Minister's Department (2004), *The Ninth Malaysia Plan 2006–2010*.

Ministry of Finance (2009) *Malaysia 2010 Budget Speech*, delivered by the Prime Minister on 23 October 2009.

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