

MALAYSIA

1. GOALS ON EFFICIENCY IMPROVEMENT

1.1. Overall energy efficiency improvement goals

Various efforts have been undertaken by the Malaysian Government to utilize energy efficiently. A number of key energy efficiency programmes were initiated in the Eighth Malaysia Plan (2001-2005), aimed at strengthening further the Utilisation Objective of Malaysia's Energy Policy (1979), which seeks "to promote the efficient utilization of energy and the elimination of wasteful and non-productive patterns of energy consumption". In our efforts to speed up the implementation of energy efficiency and conservation initiatives, the Ministry of Energy, Green Technology and Water is now in the midst of preparing an Energy Efficiency Master Plan with clear goals and targets to coordinate and implement energy efficiency and energy conservation in a systematic and holistic manner in the country. 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. Energy efficiency will be given greater emphasis under the Tenth Malaysia Plan (2011-2015).

a) Objectives:

The primary objective of the energy efficiency programmes set out in the Malaysia Ninth 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:

- i) Enforce the Efficient Management of Electrical Energy Regulation 2008 to ensure more efficient use of electricity among large users;
- ii) 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);
- iii) Promote the use of high energy efficient appliances and equipments;
- iv) Develop local expertise in the manufacture of energy efficient appliances and equipments;
- v) Improve energy efficiency in government buildings; and
- vi) Develop human capacity in the area of energy efficiency.

d) Financial resources and budget allocation

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

e) Method for monitoring and measuring effects of action plans

The 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 the Plan period). The reports will be submitted to the Economic Planning Unit of the Prime Minister's Department.

f) Expected results

a) Industry

- i) 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 to analyse 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;
- ii) The *Energy Efficiency and Conservation Guidelines Part 1: Electrical Energy-use Equipment*. The guidelines to encourage industries to adopt EE practices as well as manage and improve their energy utilisation and environmental management. The guidelines, covering a number of commonly-used equipments such as fans, motors, pumps, chillers, transformers, air-compressors, also highlight the best practices in the selection and design with standard efficiency values as well as best practices in operation, monitoring and maintenance of the equipment;
- iii) The *Industrial Energy Audit Guidelines*. The guidelines is prepared based on fifty-four (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 carried out under Malaysian Industrial Energy Efficiency Improvement Project (MIEEIP); and
- iv) Energy-use benchmarks for eight energy-intensive industrial sub-sectors namely iron and steel, cement, wood, food, glass, pulp and paper, ceramics and rubber.

b) Commercial

- i) 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, 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 energy efficiency requirements of the UBBL;
- ii) Ten percent 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; and
- iii) Showcase of Low Energy Office (LEO) building and Zero Energy Office (ZEO) to promote energy efficiency in building 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.

c) Residential

- i) Dissemination of information and awareness to create a voluntary behavioural shift of residential energy users; and
- ii) Voluntary energy performance labelling of refrigerators and promotion on the sale of energy-efficient refrigerators and efficient lightings.

g) Future tasks

Enhance the legal framework on energy efficiency improvement and drawing a comprehensive plan to promote energy efficiency improvement on a holistic manner.

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) and the Energy Commission (EC) and

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, 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.

d) Covered sectors

Industry, commercial, residential and government sectors

e) Established Date

The 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 has been established since 2001 replacing the Department of Electricity and Gas Supply (DEGS)

f) Number of Staff

The MEGTW has five officers to handle renewable energy and energy efficiency and The EC has four staff to handle energy efficiency matters

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, e.g. 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 works are funded by the Government through the Ministry of Science, Technology and Innovation.

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. The A1116 also has provisions on efficient use of electricity

c) Applicable Sectors

All electricity users are bound under the Act

d) Outline

The Act has following provisions on 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 respect of 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 respect of 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 respect of 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 saving and better electrical load management

2.2. Regulatory measures

a) Name

The Efficient Management of Electrical Energy Regulations 2008

b) Purpose

To promote efficient use of electrical energy through 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, which required any installation with total electricity consumption of 3 million kWh or more

over 6 consecutive months to appoint electrical energy managers and implement efficient electrical energy management.

e) Financial resources and budget allocation

N/A

f) Expected results

N/A

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 energy efficient of non-residential buildings. It provides the criteria and minimum standards for energy efficiency in the design of new buildings, retrofit of existing buildings and methods for determining compliance with these standards. MS1525:2007 is incorporated in the Green Building Index Malaysia (GBI Malaysia).

The GBI Malaysia is a profession driven initiative to lead the Malaysian property industry towards becoming more environment-friendly. 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 EE practices as well as manage and improve their energy use. The guidelines, covering a number of commonly-used equipments such as fans, motors, pumps, chillers, transformers, air-compressors, also highlight the best practices in the 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

Tax scheme for energy efficiency improvements are as follows:

Companies providing services for energy efficiency improvement are eligible for:

- Pioneer Status with income tax exemption of 100% of statutory income for 10 years; or
- Investment Tax Allowance of 100% on the qualifying capital expenditure incurred within a period of 5 years. The allowance to be set-off against 100% of the statutory income for each year of assessment; and
- Import duty and sales tax exemption on energy-efficient equipment that are not produced locally and sales tax exemption on the purchase of equipment from local manufacturers.

Companies which incur capital expenditure for improvements of their energy consumption are eligible for:

- Investment Tax Allowance of 100% of the qualifying capital expenditure incurred within 5 years. The allowance to be set-off against 100% of statutory income for each year of assessment; and

Import duty and sales tax exemption on energy-efficient equipment that are not produced locally and sales tax exemption on the purchase of equipment from local manufacturers

Companies which import energy efficient products are eligible for:

- Exemption of import duty and sales tax is given on energy-efficient equipment such as high efficiency motors and insulation materials to importers including authorized agents approved by the Energy Commission.

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

- 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:

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

2.4.2 Low-interest Loan

a) Name

Green Technology Fund

b) Level

Federal Government

c) Purpose

To promote green technology

d) Applicable Sectors

Industry and commercial

e) Outline

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

f) Financial Resources and Budget Allocation

RM 1.5 billion

g) 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 heavily subsidised. Under the Ninth Malaysia Plan the Government has stated the policy to review the energy pricing structure to reflect closely the market prices. As such, the Government had taken steps to gradually reduce subsidies on energy prices. Currently, the oil products prices, gas price for the primer and non-primer sectors as well as electricity tariffs had been reviewed to reflect close to 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 Federation of Malaysian Consumers Associations and Water and Energy Consumer Association of Malaysia to promote energy efficiency activities. The promotion activities are mainly in the form of campaign, workshop, seminar and publication of energy efficiency related materials

2.6.2. Cooperation through bilateral, regional and multi-lateral schemes

Malaysia actively involves in regional and multi-lateral schemes on energy efficiency improvements. Malaysia and other South East Asia economies under the Association of South East Asia Nations (ASEAN) are 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 improvement energy efficiency in ASEAN region. In the East Asia Summit (EAS), which Malaysia is one of the member, members are agreed to work together to improve energy efficiency in the EAS region. And as a member of United Nations, Malaysia hosted the Malaysian Industrial Energy Efficiency Improvement Project (MIEEIP) with assistance and co-funding from United Nations Development Program (UNDP) and Global Environment Facility (GEF). The MIEEIP was aimed to address barriers to energy efficiency and energy conservation in Malaysian industrial sector.

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.

Ministry of Finance (2008) *Malaysia 2009 Budget Speech*, delivered by the Prime Minister on 28 August 2008.