Green Technology initiatives in Malaysia

Ministry of Energy, Green Technology & Water

By

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INTRODUCTION
Low Carbon Society (LCS)
LCS in Malaysia...
What is Green Growth?
Green Growth for a better tomorrow...
Policy actions and Mitigation Measure – Green Technology

The introduction of policy actions and mitigation measures have been undertaken by the government to ensure the goals of sustainable development is achieved.

Green Technology has been identified as a driver of the future economy for the nation that would contribute to overall Green Growth and Sustainable Development.
The National Green Technology Policy

Energy
Seek to attain energy independence & promote efficient utilisation

Environment
Conserve and minimise the impact on the environment

Economy
Enhance the national economic development through the use of technology

Social
Improve the quality of life for all

Four Pillars
The National Green Technology Policy – Strategic Thrust

1. Strengthen The Institutional Frameworks
2. Provide A Conducive Environment For Green Technology Development
3. Intensify Human Capital Development In Green Technology
4. Intensify Green Technology Research And Innovations
5. Promotion And Public Awareness
Strengthening the Institutional Framework

1. The establishment of the Ministry of Energy, Green Technology and Water
2. The Restructuring of the National Energy Center to become the Malaysian Green Technology Corporation
3. The establishment of the Sustainable Energy Development Authority
4. The establishment of the National Green Technology and Climate Change Council
Ministry of Energy, Green Technology & Water

In April 2009, the Ministry of Energy, Green Technology and Water was established in a cabinet reshuffle to replace the Ministry of Energy, Water and Communications.

Low Energy Office (LEO)
Ministry of Energy, Green Technology and Water (KeTTHA), Putrajaya
The Malaysian Green Technology Corporation (GreenTech Malaysia)

The National Energy Centre was restructured to become the Malaysian Green Technology Corporation (GreenTech Malaysia).

To Malaysian Green Technology Corporation is the Focal Point for Green Technology Development in the country.

Green Energy Office (GEO)

Malaysian Green Technology Corporation, Bangi
The Sustainable Energy Development Authority (SEDA) was established in 2011.

The objective of SEDA is to administer the FiT mechanism in Malaysia and to oversee the development of Sustainable Energy in the country.

SEDA is governed by the SEDA Act 2011.
Established in January 2010, the objective of the Council is to have high level coordination among Ministries, Agencies, the private sector and all other stakeholders.

The council is chaired by the Honorable Prime Minister of Malaysia.

The council (MTHPI) is supported by a Steering Committee and eight (8) working groups on (i) Industry; (ii) Research & Innovation; (iii) Human Capital; (iv) Promotion and Public Awareness; and (v) Transportation (vi) Green Neighbourhood (vii) Climate Change & (viii) Green Growth.
Policy & Planning Strategies - Energy

1. The Energy Efficiency Master Plan (EEMP)
2. The National Renewable Energy Policy
3. The Renewable Energy Act & SEDA Act
4. The proposed Energy Efficiency & Conservation Act (EE&C)
The National Energy Efficiency Master Plan (NEEMP)

A study carried out in 2009 to 2010 covers Electrical and Thermal Energy

Aims to boost the nation’s energy efficiency & conservation Efforts

Reviewed by the APEC Peer Review Committee on EE From 29 Nov – 3 Dec 2010

Policy Statement:
Rational Use Of Energy Through Energy Efficiency & Conservation (EE & C) Instruments To Ensure Productive Use Of Energy To Achieve Energy Security And Sustainable Economic Development
# The National Energy Efficiency Master Plan – Strategic Thrust

<table>
<thead>
<tr>
<th>Thrust 1: Create a Legal &amp; Regulatory Framework for Energy Efficiency &amp; Conservation</th>
</tr>
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</table>
| • Currently no overall law on EE&C  
• To ensure a specific regulatory framework for EE&C  
• To define roles & powers of Minister of EGTW |

<table>
<thead>
<tr>
<th>Thrust 2: Create a Centralized Agency for Energy Efficiency &amp; Conservation Implementation</th>
</tr>
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</table>
| • One Stop Center /Implementing agency – Propose under SEDA  
• Empowered under the EEC Law |

<table>
<thead>
<tr>
<th>Thrust 3: Funding &amp; Financial Mechanism</th>
</tr>
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</table>
| • Allocation from MESITA Fund  
• Allocation budget from federal gov  
• Others (banks, international org, foreign gov) |

<table>
<thead>
<tr>
<th>Thrust 4: Capacity Building &amp; Training</th>
</tr>
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| • Training of teachers, lecturers, financial experts, other relevant professional - engineers, architects, lawyers etc.  
• Energy Managers, Energy Auditors and ESCOs |

<table>
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<tr>
<th>Thrust 5: Research &amp; Development</th>
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<tbody>
<tr>
<td>• Encourage R&amp;D to improve overall energy efficiency in a process or facility</td>
</tr>
</tbody>
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<table>
<thead>
<tr>
<th>Thrust 6: Education &amp; Awareness</th>
</tr>
</thead>
</table>
| • Education on EE&C from primary school level to all Institutions of Higher Learning (IHL)  
• Promote and create awareness among the masses |
The Malaysian National Renewable Energy Policy

Objectives

To increase RE contribution in the national power generation mix;

To facilitate the growth of the RE industry;

To ensure reasonable RE generation costs;

To conserve the environment for future generation; and

To enhance awareness on the role and importance of RE.

Policy Statement

Enhancing the utilisation of indigenous renewable energy resources to contribute towards national electricity supply security and sustainable socio-economic development.
The Malaysian National Renewable Energy Policy - Strategic Thrust

**Strategic Thrust 1:** Introduce Legal and Regulatory Framework

**Strategic Thrust 2:** Provide Conducive Business Environment for RE

**Strategic Thrust 3:** Intensify Human Capital Development

**Strategic Thrust 4:** Enhance RE Research and Development

**Strategic Thrust 5:** Create Public Awareness & RE Policy Advocacy Programmes
Renewable Energy Act & SEDA Act

RE Act 2011 (Act 725)
An Act to provide for the establishment and implementation of a special tariff system to catalyze the generation of renewable energy and to provide for related matters.

SEDA Act 2011 (Act 726)
An Act to provide for the establishment of the Sustainable Energy Development Authority of Malaysia and to provide for its functions and powers and for related matters.
Policy & Planning Strategies - Energy

1. The Green Technology Baseline Study
2. The Green Technology Master Plan
3. The Green Technology Legislation Baseline Study
Green Technology Baseline Study

The green technology roadmap which aims to spell out the direction Malaysia should take in implementing and encourage the adoption of green technology and green practices across economic sectors as well as the citizens.

The roadmap is divided into two phases where Phase-1 covers the baseline assessment and development of future strategic directions towards achieving low carbon economy. Subsequently, Phase-2 (GTMP) will provide the implementation framework with measurable target.
Green Technology Baseline Study

‘Social well being for the citizen’
Baseline Measurement area:
- No. of green jobs

‘Innovation on Green Technology’
Baseline Measurement area:
- Spending on GT R&D

Malaysia’s position in Global Index’
Baseline Measurement area:
- EPI index

‘Contribution of green businesses to national economy’
Baseline Measurement areas:
- GDP contribution
- GNI contribution

‘GHG emission by strategic sectors’
Baseline Measurement area:
- GHG Emission

INNOVATION

SOCIAL

ECONOMY

ENVIRONMENT

GLOBAL STANDING

Low Carbon Economy

Contribution of green businesses to national economy

Baseline Measurement areas:
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Baseline Measurement area:
- No. of green jobs
The Green Technology Master Plan

The GTMP shall cover overall green technology applications and action plans in all relevant economic sectors but with varying degree of coverage as detailed below. The scope of study is divided into four stages:

- Prepare GTMP framework based on six (6) key enablers viz. human capital, financial incentives, infrastructure, regulatory framework, innovation, and branding;
- Identify Prioritised Green Core Technologies and Businesses;
- Conduct Techno-Economic Modelling Analysis;
- Prepare comprehensive action plans and identify relevant implementing agencies. The GTMP can also be demonstrated through identification of potential Entry Point Projects (EPPs) or existing EPPs with GT applications.
A decision was later made to conduct a baseline study on the existing legislations in Malaysia and to determine if an act need to be developed or existing legislations should be amended.

The proposed baseline study will commence in 2012.

A Preliminary analysis was conducted on green growth related legislations in other countries.

A Stakeholders Consultation was conducted in July 2011 to ascertain constructive feedback on the need and requirement for a legislation pertaining to green technology/green growth.
To Provide a conducive environment for Green Technology

Provide a conducive environment for Green Technology

1. The Green Technology Financing Scheme (GTFS)
2. The Low Carbon Cities Framework and Assessment System (LCCF)
3. Green Labeling mechanism
4. Green/Low Carbon Vehicles
5. Green ICT
Green Technology Financing Scheme (GTFS)

RM1.5 billion soft loan

Up to RM50.0 million for producers and RM10.0 million for users of green technology

2% interest subsidy by the government

60% government guarantee

140 companies are expected to benefit from the scheme

GreenTech Malaysia to administer all applications

Effective in January 2010
LOW CARBON CITIES - PUTRAJAYA AND CYBERJAYA

To develop Putrajaya and Cyberjaya as pioneer townships in green technology, as a showcase for the development of other townships in the country.
Low Carbon Cities Framework & Assessment System (LCCF)

The Low Carbon Cities Framework and Assessment System (LCCF) was developed and launched by the Prime Minister in 2011.

This document is to assist local authorities, township developers, designers and individuals in assessing whether developments carried out within the city contributes towards the reduction or GHG emissions.

Strategic Partners have been identified for the implementation of Pilot Projects for the LCCF.

Training Modules have been developed to train the relevant authorities on the use and application of the LCCF.
The National Green Labeling Framework

KeTTHA with Green Tech Malaysia are developing The National Green Labeling Framework” comprising of:

- Eco labels
- Carbon footprint labels
- Energy efficiency ratings
Green Labeling

KeTTHA is working with the Standards and Industrial Research Institute of Malaysia (SIRIM) to develop standards, certifications and labeling mechanisms including green procurement manuals and procedure to enable government and private sector to embark on green purchasing.
## Green Labeling in Malaysia

<table>
<thead>
<tr>
<th>Certification Program</th>
<th>Scheme</th>
<th>Logo</th>
<th>Scheme Owner/Certification Body</th>
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<tbody>
<tr>
<td></td>
<td>National Eco Label Program</td>
<td></td>
<td>SIRIM QAS Int., CREAM (CIDB) &amp; IKRAM QA Services</td>
</tr>
<tr>
<td></td>
<td>• ISO 14024 (Jenis 1)</td>
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<tr>
<td></td>
<td>Carbon Footprint (in development)</td>
<td></td>
<td>SIRIM Berhad</td>
</tr>
<tr>
<td>Endorsement</td>
<td>Energy Efficiency Star Rating</td>
<td></td>
<td>Energy Commission</td>
</tr>
<tr>
<td></td>
<td>• MS ISO &amp; MS IEC</td>
<td></td>
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<tr>
<td></td>
<td>Water Efficiency (in development)</td>
<td></td>
<td>National Water Services Commission</td>
</tr>
<tr>
<td></td>
<td>GreenTag (in development)</td>
<td></td>
<td>Malaysian Green Technology Corporation</td>
</tr>
<tr>
<td></td>
<td>• ISO 14021 (Jenis 2)</td>
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Green Public Procurement (GPP)

KeTTHA is working with the Ministry of Finance (MoF) to develop a mechanism for Green Procurement to be implemented in government agencies.
Green Directory

The Malaysia Green Directory is an online shopping guide for green products and services, highlighting the green features of products, as well as providing information on vendors and manufacturers.

Created with consumer education in mind, the directory is the right platform for manufacturers and resellers to promote their green products to customers.

www.greendirectory.my
SME and Entrepreneurial Development

To increase awareness among local SMEs

To encourage participation of local entrepreneurs in green

To provide training programs

To increase the number of trainers and facilitators in green

To increase the number of local green companies and products

To expand the market of green products and services
Strategic Planning – SME & Entrepreneurial Development

- Promotion & Awareness
- Advisory & Facilitation
- Training & Capacity Development
- Technology Transfer
- Government Incentives
- Infrastructure & GT Hub
- Financial Assistance
- Marketing
LOW CARBON/GREEN VEHICLES

In support of the National Automotive Policy (NAP), KeTTHA is developing an infrastructure roadmap for the use of electric vehicles in Malaysia. KeTTHA with the Ministry of International Trade Industry (MITI) had facilitated the implementation of Fleet Test Vehicle Program with Malaysian car company (PROTON).
THE ELECTRIC VEHICLE - MILESTONE

Completed in August 2011

Contains 10 strategic plans

The Fleet Test programme is being implemented by PROTON
The Government through MAMPU, Prime Minister’s Department has introduced the Green IT guideline for the public sector.

A Green ICT Working Group is set up under the Malaysian Technical Standards Forum Berhad (MTSFB) a committee to actively promote the Green ICT concept in relation to the ICT industry, and to set up a minimum Green ICT guideline that can be used across industries.

KeTTHA has established a Green Data Center as a government first initiative towards Green ICT.

• KeTTHA is also working with the Global Computing Initiative (GCI) to come up with a Green Data Center rating system known as DAHLIA.
To Provide a conducive environment for Green Technology

Provide a conducive environment for Green Technology

1. The SAVE Programme
2. The Feed In Tariff (FiT) Mechanism
3. 10% Savings in Energy & Water
4. The Building Consumption Input System (BCiS)
The Sustainable Achieved Via Energy Efficiency (SAVE) Programme

**2011 TOTAL TARGET ENERGY SAVINGS**

137.3GWh

<table>
<thead>
<tr>
<th>Type of Appliances</th>
<th>Fridges</th>
<th>Air - Conditioners</th>
<th>Chillers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Target # of Units</td>
<td>100,000 units</td>
<td>65,000 units</td>
<td>72,000RT</td>
</tr>
<tr>
<td>Energy</td>
<td>24.9GWh</td>
<td>58.75GWh</td>
<td>53.6GWh</td>
</tr>
<tr>
<td>Cost</td>
<td>RM5.9mil</td>
<td>RM10.6mil</td>
<td>RM16.8mil</td>
</tr>
<tr>
<td>Estimated Lifetime Savings²</td>
<td>RM41.3mil</td>
<td>RM74.2mil</td>
<td>RM252mil</td>
</tr>
</tbody>
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<table>
<thead>
<tr>
<th>Allocation</th>
<th>Offered Rebates Per Unit</th>
<th>Total Budget Allocation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>RM200</td>
<td>RM20mil</td>
</tr>
<tr>
<td></td>
<td>RM100</td>
<td>RM6.5mil</td>
</tr>
<tr>
<td></td>
<td>RM200</td>
<td>RM14.4mil</td>
</tr>
</tbody>
</table>

¹ Target energy and cost savings at current tariff rate
² Lifetime saving for fridge and in 7 years; for chillers in 15 years
The SAVE programme was launched on the 7th July 2011 offering 100,000 rebate vouchers for energy efficient refrigerators and 65,000 vouchers for air conditioners.

The implementation of this programme includes various parties ranging from utility companies like TNB, SESB and SESCO and supported by 5-star electrical appliances producers and association.

Till now, 12 different brands of five-star air conditioners and refrigerators have been sold through this programme.
The Feed in Tariff (FiT)

Malaysia established the legal instrument for FiT implementation via the RE Act 2011.

Access to the grid is guaranteed – utilities legally obliged to accept all electricity generated by RE private producers.

- FiT rates
  - high enough to produce ROI + reasonable profit
  - fixed for a period (certainty & provide clear investment environment)
  - adequate "digressions" to promote cost reduction to achieve “grid parity"
10% savings of Energy & Water
In the government buildings in Putrajaya

This programme is undertaken by GreenTech Malaysia with the cooperation of KeTTHA and other government agencies.

Three (3) training sessions were conducted in 2011
The training session is divided into two (2):
(i) End users of buildings; and
(ii) Facility Managers (FM)
Building Consumption Input System (BCIS) is an online input database system for the purpose of monitoring the energy and water consumption of buildings.

This system is developed and administered by GreenTech Malaysia on behalf of the Government of Malaysia.

Goals
To support early development & implementation of Green/ Sustainable Township Guideline and Green Rating System at both Putrajaya & Cyberjaya
Five (5) parameters are collected and analyzed continuously through the BCIS. The required data is keyed in every month by the user/operator of the building:

- Monthly Electrical Energy (kWh)
- Maximum Demand (kW)
- Energy Chilled Water GDC (RTH)
- Maximum Demand GDC (RT/month)
- Water Consumption, m³
Intensifying Human Capital Development

1. The Green Technology Baseline Study
2. The Green Technology Master Plan
3. The Green Technology Legislation Baseline Study
The National Green Jobs Roadmap

The Ministry of Energy, Green Technology and Water is working with the Ministry of Human Resources and the International Labour Organization in developing a National Green Jobs Roadmap for the country.

The study will take one (1) and had commenced in June 2012.

The study will involve various stakeholders both in the green industry as well as social partners in Labour fraternity.
Green Skills Development in Malaysia

The Ministry of Energy, Green Technology and Water has worked with the Skills Development Department under the Ministry of Human Resources to develop relevant documents for the development of green skills.

• The National Competency Standards
• National Occupational Skills Standards and
• Occupational Analysis has been developed for Green Technology
Integration of Green Topics

KeTTHA is working with the Ministry of Education (MOE) in integrated green topics/syllabus into the national education system.

The government is also increasing the modules and courses related to green technology in institutes of higher education in both Public and Private.
Promotion & Awareness

1. IGEM
2. Events & Exhibition
3. Conference & Symposium
4. Green Portal
International GreenTech & Eco Products Exhibition & Conference (IGEM)

- Exhibition
- Conference
- Collaboration with Local Universities/Collages
  - Seminar s
  - Business Matching Sessions
- Business Networking
Events & Exhibitions

The Ministry of Energy, Green Technology and Water has organized various green community events (i.e. 1 hijau 1 Community Carnival in different places, Road shows on EE and the GTFS, Educational road shows and school events.

The Ministry has continued to participate in various awareness and promotional programmes organized by external parties both from the Public and Private sector.
Conferences & Symposia

For the purpose of knowledge sharing, conferences, symposiums and seminars have been conducted by the Ministry with the help of the Green Tech Corporation.

The seminars include areas like SME development on Green Technology, Eco labeling and Green Procurement, Low Carbon Cities, GTFS and educational awareness programmes with external parties wanting to spread the green agenda further.
Green Portal
Green Growth for Malaysia...
THANK YOU