



Istituto nazionale
per il Commercio Estero

Guida pratica

MALAYSIA

MALAYSIAN GREEN TECHNOLOGY AND RENEWABLE ENERGY INDUSTRY OVERVIEW

(updated December 2011)

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Green Technology (GT)

Malaysia, in acknowledging the issues of climate change and energy security, has taken the step to promote Green Technology (GT) as part of the solution. It is expected that the promotion of GT would facilitate the achievement of Malaysia's Copenhagen commitment to adopt an indicator of a voluntary reduction of up to 40 percent in terms of emissions intensity of gross domestic product (GDP) by the year 2020 compared to 2005 levels. In addition, GT has been highlighted as one of the emerging drivers of economic growth for our country to achieve high-income status while addressing the pressing issue of the sustainability as stated in the New Economic Model (NEM).

Strengthening Institutional Framework

To ensure a more comprehensive development of GT, the Ministry of Energy, Water and Communications was restructured as the Ministry of Energy, Green Technology and Water (KeTTHA) on 9 April 2009. KeTTHA subsequently formulated the National Green Technology Policy. In addition, a national Green technology was formed to better coordinate GT initiatives among ministries and agencies. These measures will be the main catalyst for the development of a dynamic and robust GT Industry.

GREEN TECHNOLOGY – POTENTIAL AREA OF GROWTH

Malaysia is looking at Green technology as the potential area of growth and to position its products as environmentally friendly and sustainable in order to compete globally. It aims to reduce carbon emission by 40% by 2020.

Realising its importance in the economic development, the Government launched the National Green Technology Policy in August 2009. The objective of the policy is to provide direction towards management of sustainable environment. At a glance, the national goals are as follow :

i) Short-term Goals (10th Malaysia Plan)

- Increase public awareness and commitment for the adoption and application of Green Technology through advocacy programmes;
- Widespread availability and recognition of Green Technology term of products, appliances, equipment and systems in the local market through standards, rating and labelling programmes;
- Increased foreign and domestic direct investments (FDIs and DDIs) in Green Technology manufacturing and services sectors; and
- Expansion of local research institutes and institution of higher learning to expand Research, Development and Innovation activities on Green Technology towards commercialization through appropriate mechanisms.

ii) Mid-term Goals (11th Malaysia Plan)

- Green Technology becomes the preferred choice in procurement of products and services;
- Green Technology has a larger local market share against other technologies, and contributes to the adoption of Green Technology in regional markets;
- Increased production of local Green Technology products;
- Increased Research Development and Innovation of Green Technology by local universities and research institutions and are commercialised in collaboration with the local industry and multi-national companies;
- Expansion of local SMEs and SMIs on Green Technology into the global market; and
- Expansion of Green Technology applications to most economic sectors.

iii) Long-term Goals (12th Malaysia Plan and beyond)

- Inculcation of Green Technology in Malaysian culture; Widespread adoption of Green Technology reduces overall resource consumption while sustaining national economic growth;

- Significant reduction in national energy consumption;
- Improvement of Malaysia’s ranking in environmental ratings;
- Malaysia becomes a major producer of Green Technology in the global market; and
- Expansion of international collaborations between local universities and research institutions with Green Technology industries.

Tenaga Nasional (national utility) could be legally required to buy renewable energy under new laws being drawn up by the Government. The move would increase the availability of renewable energy in Malaysia by 100-fold from the current 50MW to 2,000MW by 2020. One of the mechanisms the Government was looking into under the new law was “feed-in-tariffs”. Feed-in tariffs makes it compulsory for regional or national utility company to buy renewable electricity from eligible participants.

National Green Technology Policy

There are four pillars under National Green Technology Policy:

Energy	Environment	Economics	Social
Seek to attain energy independence and promote efficient utilization	Conserve and minimize the impact on the environment	Enhance the national economic development through the use of technology	Improve the quality of life

Key Areas of Focus

Energy

- Application of GT in power generation and energy supply side management, including co-generation by the industrial commercial sectors; and
- Application of GT in all energy utilization sectors and demand side management programmes

Building

- Adoption of GT in the construction, management, maintenance and demolition of buildings

Water and waste management

- Adoption of GT in the management and utilization of water resources, wastewater treatment, solid waste and sanitary landfills.

Transportation

- Incorporation of GT in Transportation infrastructure and vehicles, in particular biofuels.

GOVERNMENT INITIATIVES IN PROMOTING GREEN TECH

To further promote the development of green technology activities, the Government has taken the following steps :

- 1) Restructure the Malaysia Energy Centre as Malaysian Green Technology Corporation tasked with formulating a green technology development action plan. This Centre will function as the focal point to set standards and promote green technology. To intensify green awareness activities and practise environment-friendly lifestyle, an allocation of RM20 million (Euro 4.2 million) will be provided;
- 2) Organizing the International Greentech and Eco Products Exhibition and Conference Malaysia (IGEM) from 14-17 October 2010, to attract internationally renowned companies and experts in GT to showcase their products in Malaysia;
- 3) Develop Putrajaya and Cyberjaya as pioneer townships in Green Technology, as a showcase for the development of other townships ;
- 4) Give priority to environment-friendly products and services that comply with green technology standards in Government procurement.
- 5) To promote green technology, the Government has established a fund amounting to RM1.5 billion (Euro 0.3 billion).

PROMOTING CONSTRUCTION OF GREEN BUILDINGS

To expand the use of green technology, the Government launched the Green Building Index (GBI) on 21 May 2009. GBI is a green rating index on environmentally friendly buildings. Green buildings save utility costs and preserve the quality of the environment. To promote green technology, the Government proposes that :

- building owners obtaining GBI Certificates from 24 October 2009 until 31 December 2014 be given income tax exemption equivalent to the additional capital expenditure in obtaining such Certificates; and
- buyers purchasing buildings with GBI certificates from developers be given stamp duty exemption on instruments of transfer of ownership. The exemption amount is equivalent to the additional cost incurred in obtaining the GBI certificates. This exemption is given to buyers who execute sales and purchase agreements from 24 October 2009 until 31 December 2014.

Source – Ministry of Energy, Green Technology and Water, Malaysia

Italian participation in IGEM 2011

The Italian Pavilion at IGEM 2011, covering an area of 134 square meters, is one of the 8 national pavilions consisting of 14 Italian companies producing high standard of green equipment and systems. The Italian companies which taken part in the Italian Pavilion are H4 SIL Srl/Rainbow, Mei Power, Managing Evolution Srl, Site Impianti Industriali SpA, Depuracque Srl, Soel Srl, Marelli Motori SpA, Nexus Srl, Systematica SpA, Ducati Energia SpA, Oxigen SpA, Tre Tozzi Renewable Energy SpA, Advanced Gasification Technology Srl and E++ Srl.

The Italian participation sets to increase the understanding of public and private sector renewable energy stakeholders regarding the availability of cost-effective applications of renewable energy technologies of Italian companies. In view of the international conference, the Italian speaker, Mr. Gian Leonardo Fea is also shared his expertise regarding the traffic management and future trend of urban mobility.

A follow up meeting with Malaysian Green Technology Corporation also been arranged as a follow up action to promote Italian's best practices, experiences and know-how in renewable energy and discuss greater cooperation on a wide range of technologies aspects. In general, the four days exhibition generally received good response from the participants have shown the success of the event.

Renewable energy (RE)

Oil and gas have been the main energy sources in Malaysia. However, with its gas reserves estimated to last for another 33 years and oil reserves another 19 years, the Malaysian government is strengthening the role of renewable energy (RE) as the fifth cornerstone of energy generation. Many manufacturing companies in Malaysia are already trying to save energy costs. This creates opportunities to companies offering energy management services to determine ways for saving energy and costs.

Malaysia's commercial demand for energy is projected to continue its upward trend. This consumption growth is mainly driven by industrialisation. As it is common perception that a nation's economy and use of energy will always grow hand-in hand, the Malaysian government, in its 8th Malaysian Plan (2001-2005) has declared RE as the country's fifth fuel in the energy supply mix to diversify its energy source. Currently, the energy supply mix in the country is made up of gas (70 percent), coal (22 percent), oil (2 percent) and hydropower (6 percent).

Renewable Energy in the Tenth Malaysian Plan

The importance of RE as an enabler of strong economic growth is further reinforced in the 10th Malaysian Plan (10MP) (2011-2015), coupled with an emphasis towards Energy Efficiency (EE) both on production and utilisation, while meeting environmental objectives. By 2010, RE is expected to contribute 350MW to total energy supply in Malaysia, which is projected to reach 3,128 PJ. Biomass such as rice husks, palm oil and bio waste will be used on a wider basis mainly for power generation, followed by solar energy. In this case of solar power, the climatic conditions in Malaysia are favourable for the development of solar energy due to abundant sunshine with the average daily solar insolation is 5.5kWh/m², equivalent to 15MJ/m².

Establishment of SEDA

In order to promote renewable energy in Malaysia, SEDA has been established in 2011 to achieve the purpose. The Sustainable Energy Development Authority of Malaysia (SEDA Malaysia) is a statutory body formed under the Sustainable Energy Development Authority Act 2011 [Act 726]. The key role of SEDA is to administer and manage the implementation of the feed-in tariff mechanism which is mandated under the Renewable Energy Act 2011 [Act 725].

Functions of SEDA

SEDA Malaysia has all the functions conferred on it under the Renewable Energy Act 2011, any other sustainable energy laws as well as the following functions:

- To advise the Minister and relevant Government Entities on all matters relating to sustainable energy including recommendations on policies laws and actions to be applied to promote sustainable energy;
- To promote and implement the national policy objectives for renewable energy;
- To promote, stimulate, facilitate and develop sustainable energy;
- To implement, manage, monitor and review the feed-in tariff system including to carry out investigations, collect, record and maintain data, information and statistics concerning the feed-in tariff system, and to provide such data information and statistics to the Minister as he may from time to time require;
- To implement sustainable energy laws and to recommend reform to such laws to the Federal Government;
- To promote private sector investment in the sustainable energy sector including to recommend to the relevant Government Entities incentives in relation to taxes, customs and excise duties and other fiscal incentives applicable to such investment;
- To carry out or arrange for the conduct of researches, assessments, studies and advisory services, collate, analyse and publish information, statistics and factors influencing or relevant to the development of sustainable energy and to disseminate such relevant information, statistics and factors to Government Entities, the public and investors or potential investors investing in sustainable energy;
- To conduct promote and support, in such manner as SEDA Malaysia deems fit, research and innovation activities relating to sustainable energy;
- To conduct, promote and support, in such manner as SEDA Malaysia deems fit, training or other programmes relating to the development of human resources and capacity building in the sustainable energy sector;
- To implement measures to promote public participation and to improve public awareness on matters relating to sustainable energy;

- To act as a focal point to assist the Minister on:
 - matters relating to sustainable energy; and
 - climate change matters relating to energy
- To carry out any other functions conferred by or under any sustainable energy law and to perform any other functions that are supplemental incidental or consequential to any of the functions above

Sources: SEDA ACT 2011

Overview of the FiT System in Malaysia

Feed-in Tariff (FiT) system in Malaysia obliges Distribution Licensees (DLs) to buy from Feed-in Approval Holders (FIAHs) the electricity produced from renewable resources (renewable energy) and sets the FiT rate. The DLs will pay for renewable energy supplied to the electricity grid for a specific duration.

By guaranteeing access to the grid and setting a favourable price per unit of renewable energy, the FiT mechanism would ensure that renewable energy becomes a viable and sound long-term investment for companies industries and also for individuals.

Feed in Tariff rates

The applicable FiT rate will depend on the following factors:

1. The type of renewable resource used

Biomass (inclusive of municipal solid waste), biogas (inclusive of landfill/sewage), small hydro and solar photovoltaic. The rationale for selecting these renewable resources are based on proven technologies and technical potential under the local environment.

2. The installed capacity of the renewable energy (RE) installation

The maximum installed capacity of all eligible RE installations is 30MW unless special approval from the Minister is obtained. The FiT rate is lower as installed capacities increase, due to cost optimisation from economies of scale.

3. Whether the RE installation will meet any criteria entitling it to additional bonus FiT rates

Additional FiT rates will be given for those RE installations that meet the criteria entitling it to additional bonus FiT rates.

4. The date the RE installation is completed, connected to the grid and ready to produce RE for commercial sale i.e. the FiT Commencement Date.

The FiT rates for all renewable resources (except for small hydropower) will decrease with time according to their respective annual depression rates. The depression occurs at the start of each new calendar year from 2013 onwards. The depressed or reduced FiT rate for each RE installation is determined by the applicable rate at the time of its FiT Commencement Date. Thus RE installations that are completed in later years will have a lower FiT rate. However, the rate will not be reduced any further once the FiT Commencement Date has been achieved. The basis of the depression rate is that the costs of the RE technologies just like any other technologies are expected to drop as the technologies mature. The depression rate therefore reflects the maturity and the existing cost reduction potential of all renewable resources (except for small hydropower).

Business opportunities in Malaysia

Feed in Tariff (FiT) has been implemented from 1st December 2011. The business opportunities of the renewable energy will be increased and it would a right time for Italian companies to venture on it.

Following is the available Mega Watt installed capacity of FiT application. It covers Biogas, Biomass, Hydro and Solar PV.

Overview of the installed capacity

Year	2011 / 2012		2013		2014	
Available MW Installed capacity of FiT Application	H1	H2	H1	H2	H1	H2
Biogas	10.00	10.00	10.00	10.00	12.50	12.50
Biogas (Landfill / Sewage)	5.00	5.00	5.00	5.00	5.00	5.00
Biomass	60.00	35.00	30.00	30.00	35.00	35.00
Biomass (Solid waste)	11.00	11.00	14.00	14.00	20.00	20.00
Small hydro	40.00	35.00	40.00	40.00	32.50	32.50
Solar PV						
Individual (< 1MW)	4.00	5.00	3.50	3.50	4.00	4.00
Non-individual (<1 MW)	4.00	5.00	3.50	3.50	4.00	4.00
Non-Individual (> 1MW)	20.00	22.00	25.00	25.00	39.00	39.00

1) Fit Rates for Biogas (16 years from FiT Commencement Date)

Description of Qualifying RE Installation	FiT Rates (RM per kWh)		
	2011	2012	2013
a) Basic FiT rates having Installed capacity of:			
i) up to and including 4MW	0.3200	0.3200	0.3184
ii) above 4MW and up to and including 10MW	0.3000	0.3000	0.2985
iii) above 10MW and up to and including 30MW	0.2800	0.2800	0.2786
b) Bonus FiT rates having the following criteria (One or more)	2011	2012	2013
i) use of gas engine technology with electrical efficiency of above 40%	+0.0200	+0.0200	+0.0199
ii) use of locally manufactured or assembled gas engine technology	+0.0100	+0.0100	+0.0100
iii) use of landfill or sewage as fuel source	+0.0800	+0.0800	+0.0786

2) Fit Rates for biomass (16 years from FiT Commencement Date)

Description of Qualifying RE Installation	FiT Rates (RM per kWh)		
	2011	2012	2013
a) Basic FiT rates having Installed capacity of:			
i) up to and including 10MW	0.3100	0.3100	0.3085
ii) above 10MW and up to and including 20MW	0.2900	0.2900	0.2886
iii) above 20MW and up to and including 30MW	0.2700	0.2700	0.2687
b) Bonus FiT rates having the following criteria (One or more)	2011	2012	2013
i) use of gasification technology	+0.0200	+0.0200	+0.0199
ii) use of steam-based electricity generating systems with overall efficiency of above 14%	+0.0100	+0.0100	+0.0100
iii) use of locally manufactured or assembled gasification technology	+0.0800	+0.0800	+0.0786
iv) use of municipal solid waste as fuel source	+0.1000	+0.1000	+0.0982

3) Fit Rates for Small Hydro (21 years from FiT Commencement Date)

Description of Qualifying RE Installation	FiT Rates (RM per kWh)		
	2011	2012	2013
a) Basic FiT rates having Installed capacity of:			
i) up to and including 10 MW	0.2400	0.2400	0.2400

ii) above 10MW and up to and including 30MW	0.2300	0.2300	0.2300
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4) Fit Rates for Solar PV (21 years from FiT Commencement Date)

Description of Qualifying RE Installation	FiT Rates (RM per kWh)		
	2011	2012	2013
a) Basic FiT rates having Installed capacity of:			
i) up to and including 4kW	1.2300	1.2300	1.1316
ii) above 4kW and up to and including 24kW	1.2000	1.2000	1.1040
iii) above 24kW and up to and including 72kW	0.1800	0.1800	1.0856
iv) above 72kW and up to and including 1MW	1.1400	1.1400	1.0488
v) above 1MW and up to and including 10MW	0.9500	0.9500	0.8740
vi) above 10MW and up to and including 30MW	0.8500	0.8500	0.7820
b) Bonus FiT rates having the following criteria (One or more)	2011	2012	2013
i) use of gasification technology	+0.2600	+0.2600	+0.2392
ii) use of steam-based electricity generating systems with overall efficiency of above 14%	+0.2500	+0.2500	+0.2300
iii) use of locally manufactured or assembled gasification technology	+0.0300	+0.0300	+0.0276
iv) use of municipal solid waste as fuel source	+0.0100	+0.0100	+0.0092

TYPES OF RENEWABLE ENERGY (RE) PROJECTS IN MALAYSIA

- **Small Renewable Energy Power Programme (SREP)**

To encourage production of RE by small power generators (10MW) and allow the sale of generated electricity to utilities

Status of SREP Projects (as at 2010)

No	Status	Mini Hydro		Biomass		Biogas		Total	
		Project	MW	Project	MW	Project	MW	Project	MW
1	Operating	6	17.8	9	79.5	2	3.7	17	101
2	Under construction/Approved	7	43.5	12	125	7	17.15	26	185.65
	Total	13	61.3	21	204.5	9	20.85	43	286.65

Source – Energy Commission, Malaysia

- **Malaysia Building Integrated Photovoltaic (MBIPV) systems, also known as Suria 1000 Programme**

The National Suria 1000 is the anchor programme for the MBIPV project. Targeting the residential and commercial sector, it provides direct opportunities to the public and industry to be involved in photovoltaic initiative.

- **PTM-UNDP BioGen Project**

To demonstrate biomass and biogas grid-connected power generation projects. To gather and share experience in the construction and operation of RE grid-connected projects using palm oil wastes

- **Off Grid RE Projects**

License issued by Energy Commission to industries to generate own electricity for internal consumption or supply to others (not to utilities). Type of fuels used including POM residue (fiber and shell), wood and sawmill dust, rice husk, hydro and baggase

Source – Pusat Tenaga Malaysia, PTM (Malaysia Energy Centre)

PROJECT INVESTMENTS

According to the Malaysian Industrial Development Authority (MIDA), Malaysia attracted investments totaling RM752 million (Euro 158.3 million) in the sector of **renewable energy** and **energy conservation** in 2009.

Investments in Renewable Energy	
In 2009	Up To Date
Total – RM376.6 million (Euro 79.3 million) Number of projects – 18 <ul style="list-style-type: none"> ▪ 9 projects (using solar) ▪ 7 projects (using biomass) ▪ 1 project (using hydro) ▪ 1 project (using biogas) Domestic investments – RM193.3 million (Euro 41 million) : (51.3%) Foreign investments – RM183.3 million (Euro 38.6 million) : (48.7%)	Total – RM2.8 billion (Euro 0.6 billion) Number of projects - 90 Projects in operation – 42 (27 located in Peninsular Malaysia, 15 in Sabah)

Investments in Energy Efficiency/Conservation	
In 2009	Up To Date
Total – RM375.0 million (Euro 79 million) Number of projects – 5 Domestic investments – RM198.4 million (Euro 42 million) : (52.9%) Foreign investments – RM176.6 million (Euro 37.2 million) : (47.1%)	Total – RM4.7 billion (Euro 0.99 billion) Number of projects - 19 Projects in operation – 18 (located in Peninsular Malaysia)

Source – Malaysian Industrial Development Authority (MIDA)

One of the project which will strengthen the solar industry cluster is a new foreign-owned project with investments of RM5.5 billion (Euro 1.1 billion) for the production of polycrystalline silicon, fumed silica and trichlorosilane (these are significant components for the solar industry).

The **Tokyo-based polysilicon maker** had agreed to invest RM5.5 billion (Euro 1.1 billion) in 10 years to produce silicon for solar cells at a 100ha site in Samalaju Industrial Park which is within the Sarawak Corridor of Renewable Energy (SCORE), a designated economic development area in the State.

Source – New Straits Times, December 2009

Related Market Information

1. INVESTMENT CORRIDOR: SARAWAK CORRIDOR OF RENEWABLE ENERGY (SCORE)

The Sarawak Corridor of Renewable Energy or simply known as SCORE is one of the five regional development corridors being developed throughout the country. Sarawak has abundant natural resources. The economic opportunities from Sarawak's resources and advantages include its immense hydro power potential, abundant coal reserves and rich silica deposits, its vast potential in the palm oil and timber sectors, as well as the great potential in new resource-based industries, such as aquaculture and livestock.

So far, quite a few RE related projects have been established in this area.

INCENTIVES

Companies generating energy from renewable sources (not exceeding 10 megawatts) are eligible for :

- **Pioneer Status (PS)**

Tax exemption of 100% of statutory income for 10 years

- **Investment Tax Allowance (ITA)**

ITA of 100% on qualifying expenditure incurred within a period of 5 years to be off set against 100% of statutory income for each year of assessment

- **Import duty and sales tax exemption**

On equipment used in such activities provided that the equipment are not produced locally. For locally produced equipment, sales tax exemptions are given

Source – Ministry of Energy, Green Technology and Water, Malaysia

2. GREEN TECHNOLOGY FINANCIAL SCHEME (GTFS)

To promote green technology, the government has established a fund amounting to RM1.5 billion (Euro 0.3 billion). This fund will provide soft loans to companies that supply and utilise green technology. For suppliers, the maximum financing is RM50 million (Euro 10.5 million) and for consumer companies RM10 million (Euro 2.1 million).

The Government will bear 2% of the total interest rate. In addition, the Government will provide a guarantee of 60% on the financing amount, with the remaining 40% by banking institutions. Loan application can be made through the National Green Technology Centre. This scheme will commence on 1st January 2010.

Source – Ministry of Energy, Green Technology and Water, Malaysia

3. POTENTIAL OF SOLAR PV INDUSTRY

Malaysia is keen to develop “solar valleys” to enable small-and-medium-sized businesses and other vendors to support the solar energy industry.

The country has so far attracted RM10 billion (Euro 2.1 billion) in investments in the fast growing photovoltaic (pv) or solar energy industry, from big players such as **First Solar and Sunpower from the US and Q-Cells from Germany**. With the valleys, there will be spin-offs for supporting industries and create clusters. The companies can also source some of the raw materials locally such as silica and glass.

So far, Q-Cells has invested RM1.5 billion (Euro 0.3 billion) in the plant and has expressed plans to invest more than RM5 billion in Malaysia to cope with the increasing demand in the next few years.

Q-Cells was the result of approval process by the high impact committee under the Cabinet where ‘customised incentives’ are extended to significant investments.

First Solar has invested RM2.5 billion (Euro 0.52 billion), with another RM1.1 (Euro 0.2 billion) billion expansion plan.

Sunpower in Malacca has invested RM2.2 billion (Euro 0.46 billion).

Source – New Straits Times, January 2010

4. POTENTIAL OF BIOFUEL

Current status of Malaysian Biodiesel Industry

- 92 licenses have been approved for biodiesel production
- total approved capacity : 10.5 million TPA (tones per annum)

Capacity of Biodiesel Plants Established in Malaysia (as at July 2009)		
Biodiesel Plants Established	No.	Biodiesel Capacity (Tonnes / Year)

In operation	14	1,972,000
Completed construction (plants completed but yet to commence production and also undertaking production trials)	5	250,000
Total	19	2,222,000

Source – Malaysia Palm Oil Board , Presentation on National Biofuel Policy, Deployment and Plans, September 2009

BIODIESEL PRODUCTION CHALLENGES

- fluctuation in palm oil prices
- margins have thinned
- palm biodiesel is not economically viable with today's RBD (refined, bleached and deodorized) palm oil price

ITALIAN PARTICIPATION IN MALAYSIA (IN BIOFUEL)

Success Nexus Sdn Bhd
 K-2-9 Jalan PJU 1/43
 Aman Suria Damansara
 47301 Petaling Jaya, Selangor, Malaysia
 Tel: (+603) 7804 0226
 Fax: (+603) 7804 0246
 E-mail: Karen.yip@successbiofuel.com
 Contact: Ms. Karen Yip – Secretary
 Nature of Company:
 Field of Activity: Bio-refinery facilities for bio-fuel and glycerin / dichlorohydrin plant in Malaysia

Lereno Sdn Bhd
 Plot C3 (A/EAST), Lumut Port
 Industrial Park, Mukim Lumut,
 Jalan KG.Acheh 32000 Sitiawan,
 Perak Darul Ridzuan, Malaysia
 Tel: +605 692 6333
 Fax: +605 692 1113
 E-mail : lereno@lereno.com
 Web : <http://lereno.com>
 Field of Activity : Production of biodiesel

5. CDM POTENTIAL IN MALAYSIA

The CDM can give a financial contribution to projects reducing GHG emissions. Projects that have the potential to reduce GHG in Malaysia include amongst others:

- Agriculture (Composting)
- Energy Efficiency
- Landfill Gas to Electricity
- Landfill Gas Flaring Reduction
- Renewable Energy (Biomass) Renewable Energy (Biogas), Renewable Energy (Hydropower) and Animal Waste.

EXPECTED POTENTIAL OF CER (CARBON CREDITS) REVENUE

The table below provides an overview of the expected potential of CER revenues for different types of projects in Malaysia and the corresponding amount of megawatt (MW) that can be installed from renewable energy. It should be stressed that the results are based on an assessment of the potential in the energy sector only and that the results are still preliminary.

Project type	CERs per year in 2010	MW electricity
Biogas POME + animal manure	5,900,000	190 MW
Landfill gas	3,700,000	45 MW
Reduction of gas flaring from oil production	4,600,000	N/A
Mini hydro	70,000	25 MW
Biomass CHP	380,000	90 MW
Other projects*	3,150,000	N/A
Total	17,800,000	350 MW

Source – <http://cdm.eib.org.my>

POTENTIAL MEGA PROJECT IN CDM - MALAYSIA'S 1MDB TO EXPLORE DEVELOPMENT POTENTIAL OF CARBON NEUTRAL CITY WITH MASDAR

Masdar, a wholly-owned subsidiary of the Mubadala Development Company (Abu-Dhabi based) focused on renewable energy and sustainability, and 1Malaysia Development Berhad (“1MDB”) have signed a cooperation agreement earlier this year to explore clean technology projects and investments, including the possibility of building Malaysia’s first carbon-neutral city. Masdar and 1MDB also intend to cooperate and invest in carbon reduction projects, under the Kyoto Protocol’s Clean Development Mechanism (“CDM”) and clean technology venture capital. If fully implemented the cooperation agreement would lead to the

development of new catalytic projects, with an estimated value of USD100 million.

Source – *The Star*, January 2010

BARRIERS TO RENEWABLE ENERGY DEVELOPMENT

- **Lack of comprehensive and cohesive policy** on RE, including institutional framework (the National Green Technology Policy was only launched in 2009)

- **Pricing**

RE developers are not so keen to invest in the RE power projects due to the sales price of RE electricity. In Malaysia, to determine the sales price for RE generated electricity involves a bargain between potential investors in RE power plants, who are looking for acceptable level of profit, and the national utility that is concerned with the magnitude of subsidy it has to burden in order to support the Government's fuel diversification policy.

- **Lack of advanced technology**

- **Awareness**

- **REPPA (Renewable Energy Power Purchase Agreement) negotiations and process**

RE project developers face hindrance to their initiative due to the difficulty in getting financing, as REPPA does not provide a robust cash flow for Bankers to be comfortable with. Some of the conditions imposed do not provide the confidence for Bankers to make a needed investment. Another barrier is the long negotiation period before the sign-up of the agreement. The developers of the RE projects are generally from small companies with limited resources. The enthusiasm for the projects is based on the capability to fund the development at the minimal cost compared to the gigantic IPP (Independent Power Producers) projects. Nonetheless, the transaction of an RE project is not any different from the IPPs with the similar processes involved to arrive at a 'bankable' project. Therefore, the longer the transaction takes place the more cost the development will occur. If such company does not have the staying power, it will simply abandon their initiative.

- **Fuel-supply contracts and availability (especially EFB and biomass)**

Reliability of fuel supply is an issue since the fuel suppliers are not committed to have long term agreement with the RE projects developers. There are uncertainties in the actual volume and quality of the waste/EFBs from the mills. There is also competition with non-energy uses of the palm oil residues. At the moment, there is a competitive use of biomass for the products and processes

such as pulp and paper, medium-density fibreboard, composting for fertilizer and mulching, etc.

Source – *Pusat Tenaga Malaysia, PTM (Malaysia Energy Centre)*

Malaysia's Commitment to Kyoto Protocol

Since the ratification of the Kyoto Protocol, Malaysia has worked towards implementation of the CDM (Clean Development Mechanism). The entire institutional setup for evaluating CDM project applications at the national level is in place since 2003.

Following actions have been taken :

- The **Ministry of Natural Resources and Environment** has been appointed as the '**Designated National Authority**' (**DNA**). The DNA is officially the focal point for CDM and the main task is to evaluate CDM projects.

- Malaysia has put in place institutions to process CDM applications. In 2002, the National Steering Committee on Climate Change agreed on the establishment of a two-tiered organisation for CDM implementation in Malaysia, thus establishing the national institutional arrangement for the CDM. The two-tiered institutional CDM set up comprises of:

The National Committee on CDM (NCCDM), and

Two Technical Committees :

The Technical Committee on Energy; and

The Technical Committee on Forestry.

- The **Technical Committee on Energy** had its first meeting on 12 September 2002 and at this meeting **Pusat Tenaga Malaysia (PTM)** or known as **Malaysia Energy Centre** was appointed as the Secretariat to the Committee. The **Forest Research Institute Malaysia (FRIM)** has been appointed as the **Secretariat to the Technical Committee on Forestry**.

The main roles of PTM and FRIM as the CDM Secretariats are to assist the Technical Committees in evaluating CDM proposals, to provide policy inputs on CDM to the Government, to conduct CDM outreach activities, and to provide guidelines and advisory services to potential local and foreign CDM investors in the respective sectors.

Source – *Ministry of Natural Resources and Environment, Malaysia*
Malaysia Energy Centre
Ministry of Energy, Green Technology and Water, Malaysia

Point of Contact :

Designated National Authority (DNA)

Conservation and Environment Management Division
Ministry of Natural Resources and Environment
Level 6, Tower Block 4G3, Precinct 4
Federal Government Administrative Centre
62574 PUTRAJAYA
Contact person: En. Azhar Noraini
Tel: 603-8886 1129
E-mail: azhar@nre.gov.my

Contact person: Mr. Shahril Faizal Abdul Jani
Tel: 603-8886 1137
E-mail: faizal@nre.gov.my

Fax: 603-8888 4473
Website: www.nre.gov.my

CDM Energy Secretariat

Pusat Tenaga Malaysia (Malaysia Energy Centre)
No 2, Jalan 9/10
Persiaran Usahawan, Seksyen 9
43650 Bandar Baru Bangi
Selangor Darul Ehsan
Contact person: Ms. Yuzlina Mohd Yusop
Tel: 603-8921 0842
E-mail: yuz@ptm.org.my

Contact person: Ms. Radin Diana Radin Ahmad
Tel: 603-8921 0858
E-mail: diana@ptm.org.my

Fax: 603-8921 0801
Website: www.ptm.org.my
Email: cdm@ptm.org.my

Conclusion

Malaysia's Renewable Energy atmosphere is entering new phase as the Renewable Energy Act was passed in 2011 with FiT and quota mechanisms. With the implementation of FiT System, by 2015, Malaysia hopes renewables will make up 7% of the fuel mix, rising to 17% by 2020.

The Renewable Energy is a new market in Malaysia. Both local and international companies are looking for commercially viable technologies which aiming for adoption and application among the local RE industries and the public. This is an opportunity for those Italian firms in RE sector.