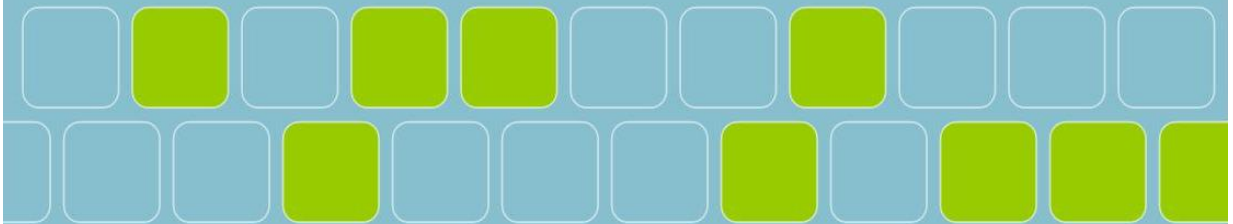




MINISTRY OF ENERGY, GREEN TECHNOLOGY AND WATER

# NATIONAL RENEWABLE ENERGY POLICY AND ACTION PLAN



April 2010

## EXECUTIVE SUMMARY

Since 2001 Malaysia has experimented with a Renewable Energy (RE) policy that is focused on market forces to deliver the intended outcomes for electricity generation. The result of the last 8 years provides valuable lessons in identifying the issues from such an approach and the key lesson is that a 'business-as-usual' approach is not sustainable, appropriate nor productive.

Renewable energy policy must be recognised as a convergence of energy, industrial and environmental policies; and through such recognition a more effective policy can be designed.

The reasons for the introduction of a new convergent and forward-looking RE policy are:

- (1) Address market failure. The evidence shows that the market has failed to produce the desired outcome, particularly because of the lack of a proper and effective regulatory framework;
- (2) Provision of long-term sustainability by avoiding stop-start strategies, having sufficiency of the outcomes and securing the commitment of all stakeholders;
- (3) Provision of a new growth industry in Malaysia;
- (4) Recognising that the environment is an economic growth contributor, which can be leveraged to spur innovation (as compared to invention);
- (5) Effectively diffuse RE technology, thereby improving on human capital and utilisation; and
- (6) Avoidance of the incoherence of existing RE policy and the sending of mixed signals that affect business decisions.

The evidences gleaned from the last 8 years of the SREP programme, the Biogen and the MBIPV projects establish the existence of 8 issues which if not addressed would perpetuate the problems indefinitely, namely:

*Table (i): RE Implementation Issues*

Issues	Drawing Lessons
<p><b>(1) Market failure exists:</b></p> <p>The RE market “fails” due to misuse of monopsony power and information asymmetries; the RE market is also constrained by financial and technological factors.</p>	<p>Market failure will be perpetuated unless the causes of such failure, viz. unequal bargaining position of the utility and RE project proponents, significant transaction costs in terms of the time needed to conclude a REPPA, and the monopsony power of the utility to agree to the requests of the RE project proponent, are properly addressed.</p>

Issues	Drawing Lessons
<p><b>(2) Constraints:</b></p> <p>Inherent factors that constrain the performance of the market.</p>	<p>The market should not be relied upon solely to achieve the intended outcome as steps should be taken to ameliorate the economic, financial and technological constraints that are impeding market performance.</p>
<p><b>(3) Arbitrary price setting:</b></p> <p>RE prices set arbitrarily.</p>	<p>RE prices must be based on sound economic principles and allow for full cost recovery. Anything less will affect the viability of the RE project.</p>
<p><b>(4) Tensions and trade-offs:</b></p> <p>The predicament of expecting that the utility will bear the higher costs of RE power (due to the higher RE price).</p>	<p>The predicament can be addressed by the introduction of a mechanism for sharing the cost of RE amongst all members of society, as environmental improvement is a non-excludable public good.</p>
<p><b>(5) Absence of Regulatory Framework:</b></p> <p>Market failure compounded by absence of a proper regulatory framework, which prevents proper and legal action from being taken.</p>	<p>Regulatory frameworks provide the necessary foundation for achieving the desired outcome, and it sends a strong signal to the market of the government's commitment. The existing ESA is inadequate, inappropriate and insufficient to be used as the legal basis to support RE businesses growth.</p>
<p><b>(6) Poor governance:</b></p> <p>Poor governance affects the participation of stakeholders and legitimacy of the action.</p>	<p>Governance can be strengthened and improved through the introduction of the regulatory framework where governance principles are embedded.</p>
<p><b>(7) Limited Oversight:</b></p> <p>No concerted oversight of implementation problems.</p>	<p>Oversight and implemented function need to be in separate organisations for improved accountability.</p>
<p><b>(8) Lack of institutional measures:</b></p> <p>Lack of proper institutional measures to meet informational and technological needs.</p>	<p>Information asymmetry needs to be overcome through proper information dissemination, advocacy and awareness actions.</p> <p>Access to and the type of information should be made available expeditiously in order to assist in the private firm's decision making process with regards to investing in RE.</p>

## Renewable Energy (RE) Policy

Therefore the proposed forward-looking RE Policy comprises:

- (1) **A Policy Vision** that provides for the long-term goals that all stakeholders should strive towards realisation.

*Enhancing the utilisation of indigenous renewable energy resources to contribute towards National electricity supply security and sustainable socio-economic development.*

- (2) **5 Policy Objectives:** The forward looking RE Policy has five objectives that embody elements of energy, industry and environmental policies, making it convergent in nature.

(1) *To increase RE contribution in the national power generation mix;*

(2) *To facilitate the growth of the RE industry;*

(3) *To ensure reasonable RE generation costs;*

(4) *To conserve the environment for future generation; and*

(5) *To enhance awareness on the role and importance of RE.*

- (3) **Policy Mission:** To achieve these five policy objectives, a policy mission comprising five strategic thrusts have been identified; namely:

**Thrust 1: Introduce appropriate regulatory framework**

This requires that an appropriate, robust and efficient regulatory framework that addresses market failures and provides incentives for firms to enter into the RE generation market, be introduced.

The regulatory framework should provide for the introduction of a *feed-in-tariff* (FiT) which will act as a catalyst for the entry of RE power generation businesses, RE industries and R&D in RE.

Furthermore with the reduction of environmental pollution, society benefits; and this means that society must play its part by contributing to a fund to be used to pay for the RE power (particularly as the retail tariffs contain subsidies and have today been reduced, and exclude the external costs).

Payment of this contribution, which can be embedded into the electricity tariff structure, must be made to a specific RE Fund and not part of the receipts by Government (as such receipts must be paid into the Consolidated Fund).

There are consequently direct spill-over effects as such a regulatory framework would act as a catalyst for the emergence of RE industries, undertaking of R&D in RE technology and innovation (e.g. via improved boiler technologies etc.). The measurable outcomes of this thrust include the rate of increase in use of RE, the decreasing (or constant) rate of fossil fuel consumption for conventional power generation and reduction of the CO<sub>2</sub> emissions.

***Thrust 2: Provide Conducive Environments for RE businesses***

The 2<sup>nd</sup> Policy Objective identifies the growth of the RE industry. A definition of the “RE industry” provides clarity of the ambit of this industrial sector. Since the 1<sup>st</sup> Policy Objective refers to RE generation, which would cover generation, distribution and sale of energy, it is proposed that the term “RE industry” refers to the manufacturing of RE components or RE finished products (e.g. boilers, turbines, PV modules, etc.), support industries to the RE manufacturing sector, and RE service providers (e.g. technicians, consultants, engineers, builders) who support RE power generation. The focus of this thrust is on RE industry and RE power generation (which collectively are referred to as RE businesses).

The conducive environment package would encompass the provision of fiscal incentives, and indirect assistance in the form of reducing the transaction costs for financing, using GLCs and MNCs to lead the charge, and providing assistance to SMEs to participate in the RE business. These are in addition to the feed-in tariff that of itself provides a stimulus for people to enter the RE power generation sector.

***Thrust 3: Intensify human capital development***

RE is a new technology in Malaysia and there is a need for human capital to be developed in order to support the emerging RE Industries. Yet there is a need for a short-term (stop-gap) measure to fill the human capital void in Malaysia by encouraging knowledge workers to relocate to Malaysia.

***Thrust 4: Enhance RE research and development***

The focus of the R&D is not on invention<sup>1</sup> but on innovation<sup>2</sup>. For example, the improvements in the microchip were due to innovation (i.e. the idea of “standing on the shoulders of giants”).

Therefore the implementation of a systemic R&D programme that leads to innovative products and services is preferable as this can accelerate the growth of the RE Industry. Innovation also enhances the diffusion of RE technology by making the technology cheaper and easier to use. This can strengthen businesses competitive edge.

Thus, it is necessary to develop an R&D implementation plan that articulates the demand, identifies the use of regulation to spur innovation and provides appropriate support for R&D activities.

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<sup>1</sup> Invention is defined as the creation of a new product or process.

<sup>2</sup> Innovation is defined as the making of changes in existing products or services by introducing new methods, ideas or products.

### ***Thrust 5: Design and implement an RE advocacy programme***

Advocacy programmes that are tailored with specific messages for specific audiences should be implemented. For example an advocacy programme targeted at investors and RE market entrants will need to convey a message that is subtly different from that of a general public advocacy programme designed to secure buy-in to the idea of societal payments for clean environment. The common aim of all advocacy programmes is to increase the awareness of all stakeholders of the benefits and advantages of utilising RE and participation in RE businesses.

Thrust 1 is the foundation for the five policy objectives, whilst Thrusts 2, 3 and 4 provide the stimulus for businesses to enter this market, the necessary knowledge workers and the competitive advantage.

Since the RE Policy is a forward-looking policy with new approaches it is important for its success that buy-in by relevant stakeholders and society at large is secured. Hence the advocacy programme in Thrust 5.

### **RE Action Plan**

The specific actions that provide the most effective results should take one of two forms which are:

- (i) Direct actions to create or establish the necessary institutional arrangements; and
- (ii) Supporting measures to encourage and nurture the growth and development of the RE businesses.

The detailed report provides for the prioritisation of the main actions. The full scope of the action plan should be implemented within 2 months after the RE Law is passed. The estimated direct cost of implementing the RE Action Plan over a 5 year period using available data is RM 1.5 billion (this does not include the amount to be contributed to the RE Fund and the cost of indirect incentives).

### **RE Targets and Success Indicators**

As the RE Policy is a new and forward looking policy, it is important and necessary that evaluation be done periodically, to empirically ascertain whether these actions are bearing fruit or require change mid-stream, and by which the outcomes of the Policy Objectives be monitored and realised. Accordingly evaluation criteria have been drawn up for each Thrust, and planned base line assessments are to be undertaken to provide the basis for future evaluation. Details of the criteria are set out in Chapter 8.

Table (ii): RE Policy Planned Outcome

Year Ending	Cum. Total RE (MW)	Share of RE Capacity	Annual RE Generation (GWh)	RE Mix	Annual CO2 Avoidance (tonne)
2011	219	1%	1,230	1%	848,493
2015	985	6%	5,385	5%	3,715,415
2020	2,080	11%	11,246	9%	7,759,474
2030	4,000	17%	17,232	12%	11,889,887
2050	21,370	73%	44,208	24%	30,503,589

In conclusion this RE Policy is necessary for the development and growth of the RE businesses in Malaysia whilst at the same time reducing our environmental damage by the continued burning of fossil fuels in electricity generation. The old ways of doing things no longer applies, and the country must move in a direction which is more progressive. The Action Plan shows that the policy objectives can be achieved provided that the RE Law and Feed-in Tariff (FiT) which is supported by the RE Fund are introduced as these are the foundations on which the actions for the other thrusts are based or rely on.

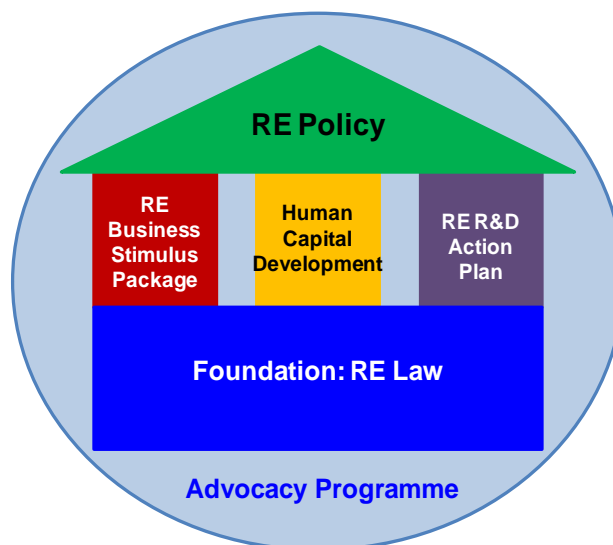


Figure (i): Synergies of RE Action Plan (Strategic Thrusts) leading towards a successful RE Policy