



---

HANDBOOK  
ON THE MALAYSIAN  
FEED-IN TARIFF  
FOR THE PROMOTION  
OF RENEWABLE  
ENERGY

---

2<sup>nd</sup> Publication



## F O R E W O R D

**S**alam 1 Malaysia. As a commitment towards the growth of renewable energy in the country, the Ministry of Energy, Green Technology and Water had presented before the Parliament for the first reading of the Renewable Energy (RE) Bill in December 2010. At the time of printing of this handbook, the Bill is ready for the second and third reading. Once the Bill is passed in Parliament, the new Act will enable the implementation of the Feed-in Tariff (FiT) in Malaysia, starting from the middle of 2011. Through this Renewable Energy Act, the total renewable energy capacity in the country is expected to increase significantly from 61.2 MW today to at least 985 MW by 2015, and 2,080 MW by 2020.

This handbook on the Malaysian Feed-in Tariff (FiT) is published to address the influx of enquiries that my Ministry had received over the past six months. The objective of the handbook is to provide official information on the FiT which my Ministry will implement via the Sustainable Energy Development Authority Malaysia (SEDA Malaysia). SEDA Malaysia is anticipated to be legally established as a statutory body by April 2011, once the SEDA Bill is passed.

The Renewable Energy Bill which I hope will be openly discussed and subsequently passed by Parliament this year, will catalyse Malaysia's aspiration to become a leader in green technology, and meet our target of 40% carbon emissions intensity reduction by 2020. Renewable Energy is also a key component in the Economic Transformation Programme (ETP), in realizing our vision for Malaysia to become a high income nation.

A handwritten signature in black ink, appearing to be 'Peter Chin'.

**YB Dato' Sri Peter Chin**  
**Minister of Energy, Green Technology and Water**

**March 2011**



## P R E F A C E

**T**his handbook has been prepared to disseminate information on the Feed-in Tariff (FiT) mechanism and its application to promote the use of Renewable Energy in Malaysia. The earlier part of the handbook comprises of the vision and objectives of the Renewable Energy Policy and Action Plan followed by information on the FiT mechanism. The FiT rates, targets and application for the FiT are on the later part of this handbook. Efforts have been made to ensure that the contents in this handbook are relevant to local situations and practices.

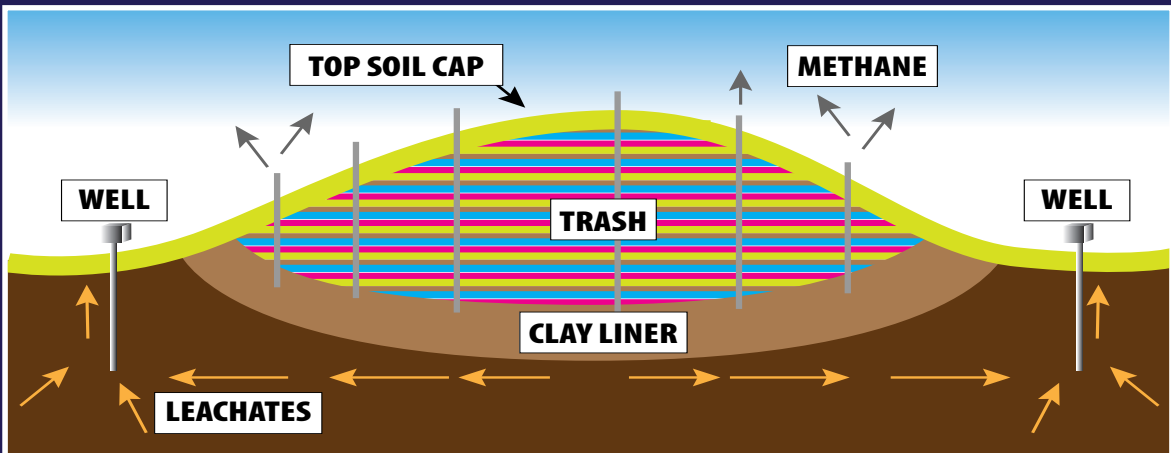
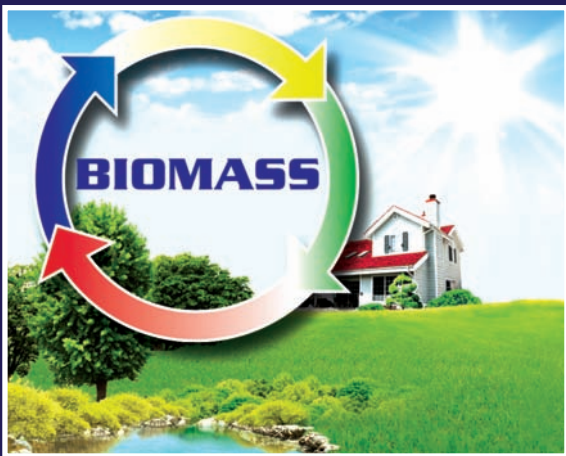
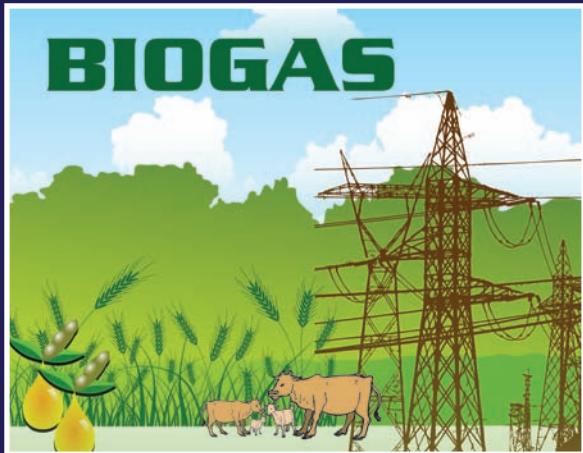
The information in this handbook had been crafted to be practical and simple to follow. Whilst every attempt has been made to ensure the accuracy and relevance of the facts and figures given in the handbook, users are advised to check and verify the application of any information, data, and Renewable Energy installation contained herein with respect to their particular situation and environment.

The Ministry of Energy, Green Technology and Water wishes to express our gratitude and appreciation to the following for their direct contribution in the preparation of the RE Bill and the subsidiary legislations: Attorney General's Chamber (AGC), Ministry of Finance (MOF), Central & States Economic Planning Units, Ministry of Science, Technology and Innovation (MOSTI), Ministry of Natural Resources and Environment (MNRE), Ministry of Plantation, Industries and Commodities (KPPK), Ministry of Housing and Local Government (KPKT), Energy Commission (ST), the Performance Management & Delivery Unit (PEMANDU), Malaysian Investment Development Authority (MIDA), Malaysian Palm Oil Board (MPOB), Tenaga Nasional Berhad (TNB), Sabah Electricity Sdn Bhd (SESB), Akademi Sains Malaysia (ASM), RE industry players and associations, building industry and professional associations, financial institutes, institution of higher learning/research institutes, consumer associations, non-Government organizations (NGOs), members of the media and the rakyat at large.

A handwritten signature in black ink, appearing to read 'Loo Took Gee'.

**Datuk Loo Took Gee**  
**Secretary General, Ministry of Energy, Green Technology and Water**

**March 2011**



# Handbook on the Malaysian Feed-in Tariff for the Promotion of Renewable Energy

---

## TABLE OF CONTENTS

---

Foreword	2
Preface	3
Table of Contents	5
Important Notice	6
National Renewable Energy Policy and Action Plan	7
The Concept of Feed-in Tariff	9
Rationale for Feed-in Tariff	10
Positive Impact of Feed-in Tariff	12
Verification of Feed-in Tariff Effectiveness	13
Critical Success Factors for Feed-in Tariff	14
Funding for Feed-in Tariff	15
Features of Feed-in Tariff	18
RE Capacity Targets under Feed-in Tariff	20
Application for Feed-in Tariff	21
Administration of Feed-in Tariff	22
Impact on Existing RE Generators	23
The Projected Socio-Economic Impact of Feed-in Tariff on Malaysia by 2020	24
References	25
APPENDICES: Feed-in Tariff Rates	26

---

## Important Notice

---

The information provided in this handbook is set within the context of renewable energy. While the Ministry of Energy, Green Technology and Water has compiled information in good faith, the information in this handbook may change without prior notice due to the on-going legislative process of renewable energy laws in Malaysia. The information provided in this handbook is indicative of our renewable energy policies to be implemented and it should not be used as the sole basis for any commercial decision on renewable energy investments.

Renewable energy (RE), in the context of the Renewable Energy Act 2011, refers to electricity generated from recurring and non-depleting indigenous resources.

The Ministry of Energy, Green Technology and Water is responsible for formulating policies and strategies, as well as undertaking planning for the supply of electricity in the country. The development of the electricity supply industry is guided by the National Energy Policy (1979), the Four Fuel Diversification Policy (1981), and the Fifth Fuel Policy (2001). On 2<sup>nd</sup> April 2010, the Cabinet approved the National Renewable Energy Policy and Action Plan that would be the cornerstone for a more aggressive deployment of RE in the country. The policy and objectives of the National Renewable Energy Policy and Action Plan are:

### **The Policy Vision**

Enhancing the utilisation of indigenous RE resources to contribute towards national electricity supply security and sustainable socioeconomic development.

### **The Objectives**

- i. To increase the contribution of RE in the national power generation mix;
- ii. To facilitate the growth of the RE industry;
- iii. To ensure reasonable RE generation costs;
- iv. To conserve the environment for future generations; and
- v. To enhance awareness on the role and importance of RE.

Under the National Renewable Energy Policy and Action Plan, five strategic thrusts have been identified to achieve the five objectives. The strategic thrusts which are represented in Figure 1, are as follows:

- i. Thrust 1: Introduce an appropriate regulatory framework;
- ii. Thrust 2: Provide a conducive environment for RE businesses;
- iii. Thrust 3: Intensify human capital development;
- iv. Thrust 4: Enhance RE research and development; and
- v. Thrust 5: Design and implement an RE advocacy programme.

## National RE Policy and Action Plan

---

Thrust 1 forms the foundation upon which the other remaining strategic thrusts are built upon. Strategic Thrust 1 involves the enactment of the Renewable Energy Act which mandates the implementation of the feed-in tariff (FiT) mechanism. While the FiT is instrumental in increasing energy security in the country, the remaining strategic thrusts are vital to ensure a holistic approach towards a sustainable RE socioeconomic development.

*Figure 1: Action Plan & Strategic Thrusts*





The Feed-in tariff (FiT) system/mechanism obliges Distribution Licensees to buy RE from *feed-in approval holders* (FIAHs) and sets the rate to be paid for such RE (*FiT Rate*). For a specific duration (Effective Period), Distribution Licensees would pay for each unit of RE supplied to their respective electricity grids.

By guaranteeing access to the grid and setting a favourable price per unit of RE, the FiT mechanism would ensure that RE becomes a viable and sound long-term investment for companies, industries, and also for individuals. The key concepts under the FiT mechanism are as follows:

*Distribution Licensees:* Companies holding a licence to distribute electricity (e.g. Tenaga Nasional Berhad, Sabah Electricity Sdn. Bhd., Northern Utilities Resources Sdn. Bhd.).

*Feed-in Approval Holders:* Individuals or entities holding feed-in approvals issued by SEDA Malaysia, allowing them to sell RE to Distribution Licensees.

*FiT Rate:* The fixed premium rate payable for each unit of RE sold to a Distribution Licensee. The FiT Rate differs for different RE technologies and installed capacities. Bonus FiT Rates also apply when bonus conditions are met.

*Indigenous:* Renewable resources obtained from within Malaysia and are not imported from neighbouring countries.

*Effective Period:* The duration in which RE can be sold to Distribution Licensees at the FiT Rate. The Effective Period is 16 years for biomass and biogas, and 21 years for small hydro and solar PV. The Effective Period is decided based on characteristics of renewable resources and technologies.

---

## Rationale for Feed-in Tariff

---

In designing an effective policy mechanism to drive RE deployment in Malaysia, the following criteria need to be considered carefully:

- A simple approach which does not depend on a combination of many support mechanisms;
- Promotes maintenance and continued operation of the systems;
- Offers long term support, allowing for a secured environment to promote domestic and foreign investments;
- An approach that is effective and efficient.

The Ministry of Energy, Green Technology and Water has conducted a thorough study on the effectiveness of major RE policy instruments practised globally. The findings of the study show that FiT is the most effective RE policy mechanism in promoting and sustaining RE growth. The findings were drawn from past experiences learnt from other countries and studies from international energy policy experts. These renowned experts have studied and concluded that FiTs have been proven to be the best support mechanisms to rapidly increase the share of RE production and use (Mendonca, Jacobs & Sovacool 2010; World Future Council 2011).

*Success Story:* Germany leads as a role model in the nationwide implementation of the FiT policy. The FiT has generated over 300,000 jobs in the RE industry in Germany and the trend indicates that the number of jobs are expected to increase to 400,000 by 2020 (REN21, 2010). The German RE industry has a turnover of over € 30 billion of which a large share is due to RE technology exports.

*Advantages of FiT:* FiT addresses two primary economic issues faced by many countries: employment and gross national income via RE industry growth. The two secondary issues addressed by FiT are: energy security and climate change mitigation. The FiT also provides solutions to tertiary issues concerning social health, empowering and providing fairer wealth distribution to citizens and the community, and environment conservation. All these are achieved without putting a strain on the Government's budget and spending. Table 1 shows some of the economic, political, social and environmental advantages of FiT.

**Table 1: Advantages of FiT**

Economic	<ul style="list-style-type: none"> <li>i. Creates green jobs</li> <li>ii. Creates FDIs and DDIs for manufacturing and export</li> <li>iii. Hedges against conventional fuel price volatility</li> <li>iv. Provides RE investor security</li> <li>v. Drives economic development</li> <li>vi. Creates stable conditions for market growth</li> <li>vii. Simple, transparent policy structure helps encourage new start-ups and innovators</li> </ul>
Political	<ul style="list-style-type: none"> <li>i. Demonstrates commitment to RE deployment</li> <li>ii. Increases energy security and autonomy</li> <li>iii. Promotes a more decentralized and democratized form of electricity system</li> <li>iv. Creates mechanism for achieving RE and emissions-reduction targets</li> <li>v. Increases the stakeholder base supporting RE policies</li> </ul>
Social	<ul style="list-style-type: none"> <li>i. Fairer wealth distribution and empowers citizens and communities</li> <li>ii. Increases public support for renewables through direct stake and increased exposure to renewables</li> <li>iii. Encourages citizen and community engagement in activities protecting climate and environment</li> <li>iv. Makes RE a common part of the landscape and cityscape</li> </ul>
Environmental	<ul style="list-style-type: none"> <li>i. Reduces carbon emission and pollutions</li> <li>ii. Encourages energy efficiency measures</li> <li>iii. Reduces dependency on fossil fuels</li> </ul>

(Source: Mendonca et al 2010)

---

## Positive Impact of Feed-in Tariff

---

Compared to other RE policies, the FiT mechanism has the highest number of countries adopting it. By early 2010, there were at least 50 countries and 25 states/provinces adopting the FiT policy instrument. In contrast, only 50 states/provinces/countries implement the renewable portfolio standard (RPS), and even much less ascribe to other policies such as capital subsidies, investment tax credits, tradeable certificates, and others (REN21 2010).

Previous studies on RE policies have also concluded that FiTs are more effective compared to other RE policy mechanisms (see the following section on Verification of FiT's Effectiveness). Mendonca and his colleagues (2010) cited the four main reasons for FiT superiority as follows:-

- i. FiT is able to drive down capital costs and achieve RE technology price reduction much faster compared to other RE policies.
- ii. FiT promotes a diversified portfolio of technologies and industrial sectors. Unlike some other RE policies which instigate price competition among RE technologies, FiT encourages harmonious growth of a variety of RE technologies which are in congruence with the country's indigenous RE resources.
- iii. FiT minimizes electricity costs in two ways: the guaranteed tariff lowers the risk of RE investment and, therefore reduces the cost of capital investment. In addition, the degression feature of the FiT reduces opportunistic windfall profits and encourages efficiency, as well as lowers manufacturing costs over time.
- iv. FiT encourages market competition among manufacturers in lowering RE technology pricing, leading to better market conditions for RE investors to build and deploy RE projects.

**1) *Stern, N. (2007): The Economics of Climate Change - Stern Review, Part IV: Policy Responses for Mitigation***

The Stern Report on the financial costs of global climate change was published by the former chief economist of the World Bank, Nicholas Stern. Part IV of the report (Policy Responses for Mitigation) gives a short overview of the existing incentives for RE projects and differentiates between price-based (e.g. FiT Laws) and quantity-based (e.g. Tradable Green Certificates) support mechanisms. It argues that both have proven to be effective in the past “but existing experience favours price-based support mechanisms” (p. 366) and a comparison of tradable quotas and feed-in tariffs reveals that the latter achieves “larger deployment at lower costs” (p. 366).

**2) *Federal Environmental Agency (2006): Monitoring and evaluation of policy instruments to support renewable electricity in EU Member States - Final Report***

The report compares feed-in tariffs and quota systems (Tradable Green Certificates (TGCs) / Renewable Portfolio Standards (RPS)). In this respect, the report concludes that “feed-in tariffs (FiTs) have been successful in triggering a considerable increase of RE technologies in almost all the countries in which they have been introduced and where their effectiveness was not significantly hampered by major barriers (administrative barriers, grid access, etc.)” (p. 88). In addition, the report states that “the risk premium required by investors can be minimised by the high level of price security given by feed-in tariffs, thus lowering the overall costs for consumers and assuring relatively homogenous premium costs for society over time” (p. 88).

**3) *United Nations Development Programme (2008): Promotion of Wind Energy – Lessons Learned From International Experience And UNDP-GEF Projects, Chapter 1: Public Policies***

The report states that “feed-In tariff policies have been very effective in Germany, Spain and Denmark, leading to the world’s first, second and fifth installed wind energy capacities. France and Portugal have also used Feed-in Tariffs to become fast growing wind energy countries with 810MW and 695MW respectively, installed in 2006. This resulted in them occupying 10th and 9th place in terms of installed capacity” (p. 16).

---

## Critical Success Factors for Feed-in Tariff

---

FiT is considered a successful RE policy instrument as it is the only policy that maintains minimal transaction costs, promotes RE diversification and the manageability of electricity prices in the long run. However, the success of FiT in any country depends on several critical factors:

- i. Access to the grid is **guaranteed** –Distribution Licensees are legally obliged to accept all RE generated by RE producers.
- ii. Local approval procedures are **streamlined and clear**.
- iii. FiT rates must be **high enough** to produce a return on investment, plus reasonable profit (not excessive) to act as an incentive.
- iv. FiT rates should be **fixed for a period** (typically 20 years) to give certainty and provide business with a clear investment environment.
- v. Adequate "**degression**" for the FiT rates to promote cost reduction to achieve "grid parity".
- vi. Adequate **funds** should be created to pay for the FiT costs and guarantee payment for the whole FiT contract period.
- vii. The design of the FiT must be **customized** to suit contextual conditions of the country.
- viii. Implementation by a competent body in a professional manner that includes constant **monitoring, progress reporting and transparency**.

*Capping of the FiT:* In many countries where the FiT is enacted, caps on RE installed capacities are highly discouraged as these caps limit RE growth and constrain its impact (Hans-Josef 2009). The avoidance of such caps is possible in countries where electricity tariff is deregulated. However, in a regulated electricity market such as in Malaysia, the funding source for FiT is limited to a fixed percentage imposed on the Distribution Licensee's total electricity tariff invoices. Therefore, caps are essential to ensure that there would be adequate funds to pay for the FiT costs. If the electricity market in Malaysia becomes deregulated, or when FiT has been operating for a considerable period of time, the removal of caps would be more conceivable.

The question that is often posed is “who will pay for the FiT”? The most common method for funding the FiT involves sharing the costs amongst end-users of electricity (electricity consumers). This method would result in a very small increase in the price of electricity paid by electricity consumers, but at the same time the consumers may benefit from revenues derived from RE generation. In this respect, FiT is not a subsidy but a cost pass-through mechanism for renewable power generation.

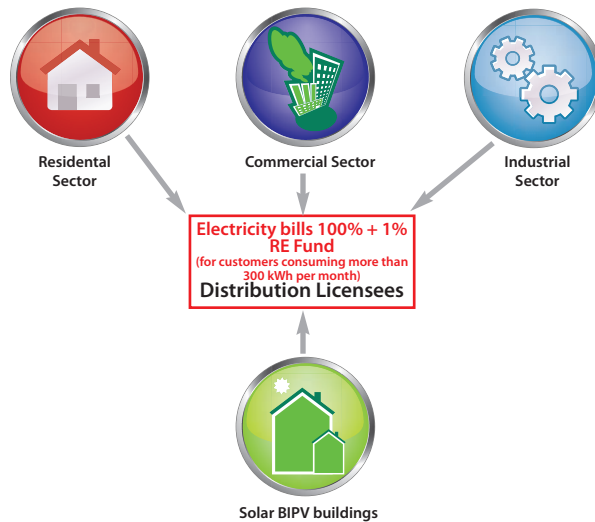
The FiT in Malaysia is not financed from tax revenue. Instead, the FiT will be financed by a RE Fund which is derived by passing the FiT cost to final electricity consumers. However, the passing of this cost is limited to only 1 % of the total electricity tariff invoices issued by the Distribution Licensees (e.g. Tenaga Nasional Berhad). Nonetheless, 67% of the Distribution Licensee’s customers who consume less than 300 kWh per month will be exempted from contributing to this RE fund. Therefore, heavy consumers of electricity would contribute more to the RE fund. This is essentially a polluter’s pay concept – the ones who pollute the most, pays the most to the RE Fund. This form of fund collection has been proven to be an effective tool in overcoming current economic and financial crises as it does not utilise public funds. The spin-off from this RE Fund mechanism is a greater acceptance for consumers to adopt energy efficiency measures to reduce their electricity consumption.

*Financial Governance of the RE Fund:* The management of the RE Fund will be under the supervision of SEDA Malaysia. The RE Fund can only be used for the purpose of disbursing FiT payment claims made by Distribution Licensees, and to cover any administrative expenses relating to the implementation of FiT. The FiT claim by Distribution Licensees is depicted in Step 4 of Figure 2, which shows the steps in the RE Fund process flow. Measures on financial governance of the RE fund include transparency in disclosing and publishing of financial reports on funding receipts, funding disbursement to Distribution Licensees, and the administrative fees payable to the Distribution Licensees and SEDA Malaysia. The accounts of the RE Fund will be presented to Parliament on an annual basis, as mandated under the Renewable Energy Act.

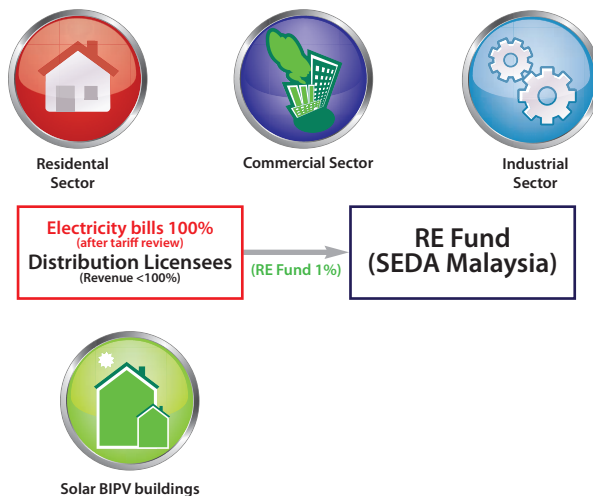
## Funding for Feed-in Tariff

Figure 2: RE Funding Flow for FIT

Step 1: Electricity consumers pay electricity bills to Distribution Licensees (e.g. Tenaga Nasional Berhad)

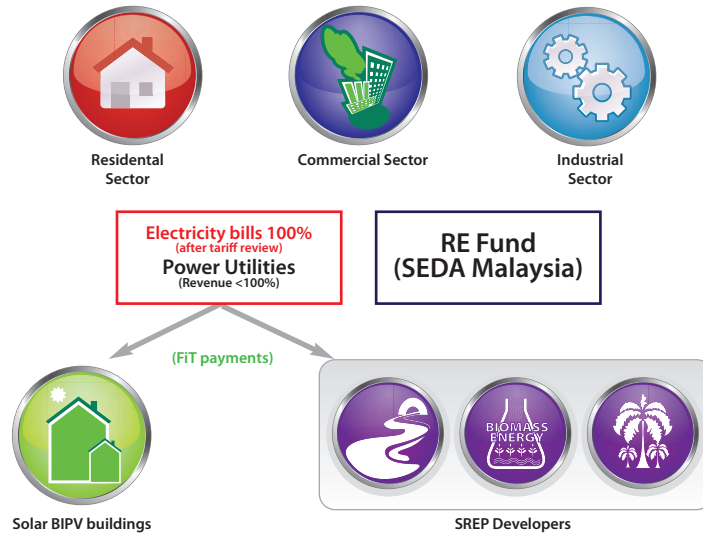


Step 2: One percent of electricity revenue is channelled from distribution licensees to RE Fund which is managed by SEDA Malaysia

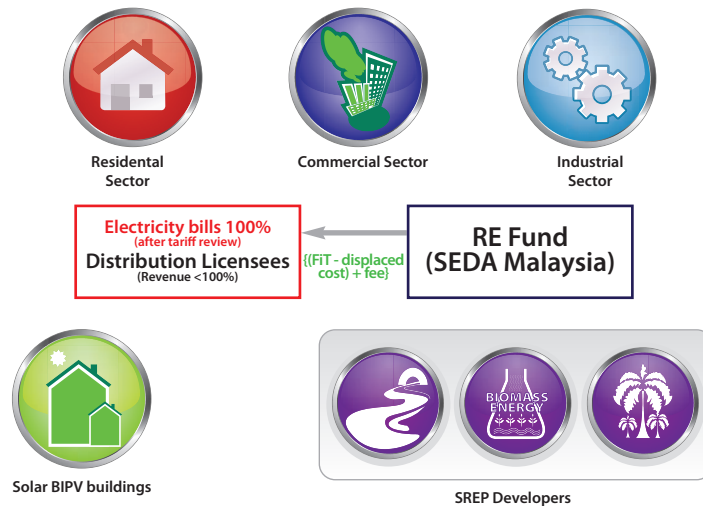




Step 3: Distribution Licensees make FiT payment to FiAHs



Step 4: Distribution Licensees claim from RE Fund, the positive sum of the differential between FIT payments and the prevailing displaced cost, including an administrative fee.



---

## Features of Feed-in Tariff

---

The FiT rates are categorized according to *RE technology*, installed capacity and *bonus FiT rates*. The FiT Rates for some RE technologies will decline each year according to their respective degression rates. The FiT Rate for each RE installation/plant is determined by their respective *Commencement Date*. The Effective Period of the FiT Rate is effective once the commencement date has been achieved.

The key features of the FiT are as follows:

*RE technologies*: biomass (inclusive of municipal solid waste), biogas (inclusive of landfill/sewage), small hydro and solar photovoltaic. These RE technologies have been selected based on proven technologies and technical potential under the local environment.

*Degression Rates*: The level of the FiT rate applicable to RE installations/plants installed in the future will decrease with time, according to annual degression rates. The degression occurs at the start of each new calendar year. Thus, RE installations/plants that are commissioned in later years will have lower FiT rates. However, the FiT rate within the Effective Period of the REPPA will not degress. The basis of degression rate is that the cost of RE technologies, just like any other technology, is expected to drop as the technologies matures. The degression rate therefore reflects the maturity and the existing cost reduction potential of each RE technology.

*REPPA*: REPPA stands for the Renewable Energy Power Purchase Agreement which is a legal contract between the FiAHs (as an RE installation/plant developer) and Distribution Licensees (eg. TNB, SESB, etc). The REPPA to be entered into will depend on the RE technology and installed capacity of the RE installation/plant.

*Installed capacity*: For all RE technologies, the maximum installed capacity is 30 MW. The FiT rate for any RE technology will decline as installed capacities increase due to projected cost optimisation from economies of scale.

*Bonus FiT Rates:* Rates over and above FiT Rates will be given to RE installations/plants that satisfy the bonus criteria.

*Commencement Date:* The date when the RE system is officially connected to the electricity grid.

The FiT Rates for the different RE technologies are shown in the Appendix. The quota for FiT is shown in Table 2 .

*Other RE technologies:* Initially, solar thermal, wind, and geothermal, will not be offered under the FiT, as the technical potential of these resources have yet to be ascertained empirically. However, the Minister is empowered to change the Schedule of the RE Act and include other RE technologies under the FiT system. The basis of inclusion of other RE technologies in the Act rests with the suitability of the resources and technical potential, as well as the economic viability of the RE projects under local conditions.

*FiT Rate designed to facilitate Grid Parity:* The FiT in Malaysia is designed with the objective of achieving grid parity, which will happen when the subsidy for fossil fuel is gradually removed, or when all external costs of fossil fuel power generation are taken into consideration, or when RE technologies become cheaper. Grid parity occurs when the cost of generating RE is equivalent (or lower) than the cost of generating electricity from conventional fossil fuel or nuclear energy. Once grid parity is achieved, FiAHs would be paid based on the prevailing displaced cost for the duration of the respective REPPAs.

The Renewable Energy Act 2011 accommodates for changes in the future and can include new RE technologies under FiT and revise depreciation rates for FiT.

## RE Capacity Targets under Feed-in Tariff

---

*Table 2: Cumulative RE Capacity Targets (MW)*

Year	Biogas	Biomass	Solid Waste	Small Hydro	Solar PV	TOTAL
2011	20	110	20	60	9	219
2012	35	150	50	110	20	365
2013	50	200	90	170	33	543
2014	75	260	140	230	48	753
2015	100	330	200	290	65	985
2016	125	410	240	350	84	1,209
2017	155	500	280	400	105	1,440
2018	185	600	310	440	129	1,664
2019	215	700	340	470	157	1,882
2020	240	800	360	490	190	2,080
2025	350	1,190	380	490	455	2,865
2030	410	1,340	390	490	1,370	4,000

*Application form:* Applications for FiT can be done both manually and online via SEDA Malaysia's official website. Soft copies of application forms will be made available on the authority's website and printed copies will be made available at SEDA Malaysia's office.

*Jumping the FiT queue:* No preferential treatment will be given to any FiT application. All FiT applications will be treated fairly and equally through a transparent application process. An online FiT application system is expected to be available from December 2011.

*Monopolizing of RE Quota:* During the application for a FiT approval, an eligible producer will be required to submit the work plan for his RE installation/plant. Once the Feed-in-Approval is granted, SEDA Malaysia will closely monitor each RE installation/plant until commencement date is achieved. This close monitoring is required in order to prevent FIAH from monopolizing the RE quota. This monitoring is important as once a FiT application has been approved, a portion of the RE fund will automatically be allocated to the approved FiT applicant (FIAH). The RE quota is accordingly revised to take into account the the reduced RE Fund availability.

In order to avoid any monopolisation of the RE quota, SEDA Malaysia's online system will track the RE installation/plant's milestones via the submitted work plan. If any delays are detected, a notice will be sent to the FIAH to request for an explanation for the delay. If the FIAH fails to respond satisfactorily, then the FiA will be revoked. When that happens, the fund committed to the FIAH will be released, and this will return the allocated quota to the system. This is to prevent any abuse of the FiT system and to allow other interested parties to apply for the FiT.

*Existing Fiscal and Financial Incentives:* FIAHs are entitled to fiscal incentives based on their respective merits in addition to the FiT.

*Offence and Penalty:* Any falsification of information, failure to comply, attempts to contravene or obstruct renewable energy laws by the FIAH or Distribution Licensee is considered an offence and upon conviction, such FIAH or Distribution Licensee shall be liable to a penalty.

## Administration of Feed-in Tariff

---

The FiT will be administered and managed by the Sustainable Energy Development Authority Malaysia (SEDA Malaysia) formed under the Sustainable Energy and Development Act 2011.

The official website of SEDA Malaysia will be <http://www.seda.gov.my> and to be available by September 2011. Until then, all FiT communications will be carried out under the website of MBIPV Project, <http://www.mbipv.net.my>.

The SEDA Malaysia office will be located at:

Level 9, No. 29, Lot 4C11  
Jalan P4B, Persiaran Perdana  
62570 Presint 4  
Putrajaya, MALAYSIA

SREP refers to the Small Renewable Energy Power Programme started in May 2001 by the (then) Ministry of Energy, Communications and Multimedia (now known as Ministry of Energy, Green Technology and Water).

*Conversion of SREP to FiT:* SREP holders are eligible to convert their SREP to FiT once the latter has been implemented. But each existing SREP holder will need to apply for the FiT and sign a new REPPA. Thus, they are required to terminate their existing REPPA signed under the SREP programme. However, the conversion of SREP to FiT is not compulsory. Any SREP developer who wishes to remain under SREP is free to do so.

*Consequences on Effective Period:* The Effective Period for the FiT system upon conversion from the SREP will be adjusted. For example, biomass plants are eligible for a FiT duration of 16 years. If a biomass plant has previously been operating under the SREP programme for 5 years from the commencement date, the duration for the REPPA under FiT upon conversion will be 11 years.

*Consequences on Energy Payment Rate:* The FiT rate applicable to the former SREP holder will be based on the original commencement date and not the date of conversion from SREP to FiT. The FiT rates will be reduced according to the depression rates as shown in the FiT Rates tables in the Appendix. However, the FiT rate within the Effective Period of the REPPA will not be subject to depression.

## The Projected Socio-Economic Impact of Feed-in Tariff on Malaysia by 2020

*Impact on Green Employment:* A minimum of 52,000 jobs are expected to be created to construct, operate and maintain RE power plants.

*Impact on Business Revenue:* A minimum of RM70 billion of RE business revenues is projected to be generated from RE power plants operation, which will generate tax income of a minimum of RM1.75 billion to the Government. In short, the revenue from FiT is considered a taxable income.

*Impact on Loan Value:* A minimum of RM19 billion worth of loans is estimated to be generated for RE projects, which will provide banks with new sources of revenue.

*Impact on CO<sub>2</sub> avoidance:* The FiT can, on a cumulative basis, avoid 42 million and 145 million tonnes of CO<sub>2</sub> from the power generation sector by 2020 and 2030, respectively. This can be achieved when the country generates at least 2,080 MW and 4,000 MW (see Table 2) of RE capacities by such years, respectively, through the FiT.

*Impact on Externality Cost on CO<sub>2</sub> avoidance:* A minimum of RM2.1 billion in savings in external costs are expected to be generated to mitigate CO<sub>2</sub> emissions (total 42 million tonnes avoided from 2011 to 2020, on the basis of RM50 per tonne of external cost).

*Impact on Country's Image:* Malaysia would be perceived as a country with a global social responsibility and bears its share to mitigate climate change. In addition, the Government would be perceived as being responsible to ensure energy security and autonomy, so the country's economy is resilient and sustainable in the long run.



- Hans-Josef Fell. 2009. *Feed-in Tariffs for Renewable Energies*.  
<http://www.mbipv.net.my/dload/FIT.pdf>
- Interim website for Malaysian FiT information.  
<http://www.mbipv.net.my/content.asp?higherID=0&zoneid=6&categoryid=34> (until April 2011)
- Klein, A., Held, A., Ragwitz, M. Resch, G. & Faber, T. 2008. Evaluation of Different FiT design Options, best practice for the international Feed-in Cooperation.  
[http://www.futurepolicy.org/fileadmin/user\\_upload/PACT/Learn\\_more/Klein\\_et\\_al.\\_2006\\_.pdf](http://www.futurepolicy.org/fileadmin/user_upload/PACT/Learn_more/Klein_et_al._2006_.pdf).
- Miguel Mendonca, David Jacobs, Benjamin Sovacool. 2010. *Powering the Green Economy: The Feed-in Tariff handbook*. Earthscan: UK & USA.
- Ministry of Energy, Green Technology and Water Malaysia. 2010. FAQ on Malaysian FiT. <http://www.mbipv.net.my/FAQs%20on%20FiT.pdf>
- Ministry of Energy, Green Technology and Water Malaysia. 2010. *National RE Policy*.  
<http://www.mbipv.net.my/dload/National%20RE%20Policy%202010%20-%20ExecSum.pdf>
- Official website for Sustainable Energy Development Authority (SEDA) Malaysia.  
<http://www.seda.gov.my/> (effective April 2011)
- Official website for World Future Council on Feed-in Tariffs: a policy solution for renewable energy. [http://www.futurepolicy.org/renewable energy.html](http://www.futurepolicy.org/renewable%20energy.html)
- REN21. 2010. Renewables 2010. Global Status Report.  
[http://www.ren21.net/Portals/97/documents/GSR/REN21\\_GSR\\_2010\\_full\\_revised%20Sept2010.pdf](http://www.ren21.net/Portals/97/documents/GSR/REN21_GSR_2010_full_revised%20Sept2010.pdf)
- Renewable Energy Bill 2010.  
<http://www.parlimen.gov.my/files/billindex/pdf/2010/DR472010E.pdf>.
- Sustainable Energy Development Authority Bill 2010.  
<http://www.parlimen.gov.my/files/billindex/pdf/2010/DR432010E.pdf>.

## APPENDICES: Feed-in Tariff Rates

---

*Table 3: FiT rates for Biogas*

Capacity of RE installation	FiT rate (RM per kWh)	Effective period	Annual degression rate
Installed capacity up to and including 4 MW	0.32	16 years	0.50%
Installed capacity above 4 MW, and up to and including 10 MW	0.30	16 years	0.50%
Installed capacity above 10 MW, and up to and including 30 MW	0.28	16 years	0.50%
Additional for use of gas engine technology with electrical efficiency of above 40%	+0.02	16 years	0.50%
Additional for use of locally manufactured or assembled gas engine technology	+0.01	16 years	0.50%
Additional for use of landfill or sewage gas as fuel source	+0.08	16 years	1.80%

**Table 4: FiT rates for Biomass**

Capacity of RE installation	FiT rate (RM per kWh)	Effective period	Annual degression rate
Installed capacity up to and including 10 MW	0.31	16 years	0.50%
Installed capacity above 10 MW, and up to and including 20 MW	0.29	16 years	0.50%
Installed capacity above 20 MW, and up to and including 30 MW	0.27	16 years	0.50%
Additional for use of gasification technology	+0.02	16 years	0.50%
Additional for use of steam-based electricity generating systems with overall efficiency of above 14%	+0.01	16 years	0.50%
Additional for use of locally manufactured or assembled gasification technology	+0.01	16 years	0.50%
Additional for use of municipal solid waste as fuel source	+0.10	16 years	1.80%

**Table 5: FiT rates for Small Hydro**

Capacity of RE installation	FiT rate (RM per kWh)	Effective period	Annual degression rate
Installed capacity up to and including 10 MW	0.24	21 years	0%
Installed capacity above 10 MW, and up to and including 30 MW	0.23	21 years	0%

## APPENDICES: Feed-in Tariff Rates

**Table 6: FiT Rates for Solar Photovoltaic**

Capacity of RE installation	FiT rate (RM per kWh)	Effective period	Annual degression rate
Installed capacity up to and including 4 kWp	1.23	21 years	8%
Installed capacity above 4 kWp, and up to and including 24 kWp	1.20	21 years	8%
Installed capacity above 24 kWp, and up to and including 72 kWp	1.18	21 years	8%
Installed capacity above 72 kWp, and up to and including 1 MWp	1.14	21 years	8%
Installed capacity above 1 MWp, and up to and including 10 MWp	0.95	21 years	8%
Installed capacity above 10 MWp, and up to and including 30 MWp	0.85	21 years	8%
Additional for installation in buildings or building structures	+0.26	21 years	8%
Additional for use as building materials	+0.25	21 years	8%
Additional for use of locally manufactured or assembled solar photovoltaic modules	+0.03	21 years	8%
Additional for use of locally manufactured or assembled solar inverters	+0.01	21 years	8%