

FEED-IN TARIFF (FiT) IN MALAYSIA

www.seda.gov.my



Introduction to Feed-in Tariff Mechanism

Feed-in Tariff mechanism obliges energy utilities to buy renewable energy from producers, at a mandated price. By guaranteeing access to the grid and setting a favourable price per unit of power, it ensures that renewable energy is a sound long-term investment, for companies, for industry, and for individuals, thereby creating a strong economic incentive for investing in renewable energy.

Among of the benefits of FIT Mechanism are as follows:

- Reduce CO₂ emissions by replacing fossil fuel-based power production with clean, renewable sources of energy.
- Create jobs, for example in 2006 the German renewables industry employs around 234,000 people. Almost 60% of which were employed as a direct result of the German FIT Law.
- Help secure domestic energy supply, enabling countries to reduce their reliance on imported fossil fuels.
- Guarantee investment security for renewable energy investors.
- Drive technological innovation.
- Provide fair market conditions for renewables, which without this renewables would be unable to fairly compete with heavily subsidised conventional energy.
- It is cost-effective for the public to generate their own clean electricity.
- It returns the control to generate electricity to the people.

The implementation of FIT in Malaysia will enable new businesses to emerge, new jobs to be created and new growth areas to be developed, which will pave the path for us to become the leading country in this region for green technologies and low carbon economic growth.



What is the Feed-in Tariff (FIT)?

The FIT is Malaysia's new mechanism under the Renewable Energy Policy and Action Plan to catalyse generation of RE, up to 30 MW in size. This mechanism allows electricity produced from indigenous renewable energy resources to be sold to power utilities at a fixed premium price for a specific duration. For more information on Feed-in Tariff please visit www.seda.gov.my.

How does it work?

The basic concept of feed-in tariff is that the Distribution Licensee pays the Feed-in Approval Holder a premium tariff for clean energy that is generated. This allows owners to sell their clean energy to the distribution licensee for a fixed number of years; the duration is dictated by the type of renewable energy used for power generation. The incentive provides a fixed payment from the electricity supplier for every kilowatt hour (kWh) of electricity generated and a guaranteed minimum payment for every kWh exported to the grid.



Criteria for renewable resource

| | |
|---------------------------|--|
| Biogas | a gas produced by the anaerobic digestion or fermentation of indigenous organic matter under anaerobic conditions including but not limited to manure, sewage sludge, municipal solid waste and biodegradable waste originating from Malaysia |
| Biomass | non-fossilised and biodegradable organic material originating from indigenous plants, animals and micro-organisms including but not limited to products, by-products, residues and waste from agriculture, industrial and municipal wastes originating from Malaysia |
| Small Hydro | the production of electricity by harnessing the power of flowing water |
| Solar Photovoltaic | a technology involving the direct conversion of sunlight energy into electrical energy via a photoelectric process |

Key Interpretation

- “Renewable Energy” means electricity generated or produced from renewable resources;
- “Renewable Resources” means the recurring and non-depleting indigenous resources or technology as set out in the first column of the Schedule of the RE Bill;
- “Renewable Energy Installation” means an installation which generates renewable energy and includes any technical facility of that installation which converts mechanical, chemical, thermal or electromagnetic energy directly into electricity;
- “Feed-in Approval Holder” (FIAH) means a person who holds a feed-in approval;
- “Distribution Licensee” (DL) means the holder of a license to distribute issued by the Commission under section 9 of the Electricity Supply Act 1990.

How to Apply FIT for Individuals (Solar PV installation \leq 12 kW)?

If you are thinking of having your own Solar PV system, Feed-in Tariff (FiT) is the way to go. It gives everyone the chance to produce their own energy, generate income and help to conserve the environment. Not only that, you are also reducing your own carbon footprint which is good for the environment and all of us.

What to do:

1. Check for Eligibility
(Refer to RE (Feed-in Approval and Feed-in Tariff Rate) Rules 2011)
2. Contact any of the PV service provider
(You can use the RE industry Directory at www.seda.gov.my as reference)



How much energy can I generate and my monthly income based on energy generation per month?

How much you can generate and FiT payment will depend largely upon the type and size of the solar PV technology you use in your home.

FiT payment is calculated based on actual kWh reading by the revenue meter [(new kWh reading 'minus' last kWh reading) \times FiT rate]:

| | |
|--|-------------------|
| RE Installed Capacity [A] 4 kWp | 4 kWp |
| RE Generation per month [B]* | 400 kWh per month |
| FiT Rate [C]** | RM1.49 per kWh |
| FiT Duration [D] | 21 years |
| FiT Payment by the DL to FiAH per month [B] \times [C] | RM596 per month |
| Capital Investment (assuming RM13,000 per kWp) | RM52,000 |
| Simple Payback Period | 7.2 years |

* Assume 1,200 kWh/kWp/year

** Assume FiT rate + Bonus FiT rate (use as installation in building) for 2012 quota

I am interested! What now?

Please go through the steps as shown in the process flow chart:

Step 1

- Interested party to check / comply with (check at www.seda.gov.my):
- Renewable Energy (Feed-in Approval and Feed-in Tariff Rate) Rules 2011
 - Renewable Energy (Criteria for Renewable Resources) Regulations 2011
 - Renewable Energy (Renewable Energy Power Purchase Agreement) Rules 2011
 - SEDA Malaysia: RE quota (application based on scheduled FIT Commencement Date)

Step 2

- Secure legal rights to the site of the RE installation / letter of intent from the site owner (if you do not own the property)
- Design RE installation (capacity, technical details, etc)
- Check relevant local authority and other governmental requirements
- Contact potential financier & obtain financing offer letters/term sheet
- Prepare work plan & major milestones

Step 3

- Apply for FiA either through online (efit.seda.gov.my) or manual submission



Approved

Step 4

- Sign Renewable Energy Power Purchase Agreement (REPPA) with relevant Distribution Licensee (DL)
- Register the signed REPPA with SEDA Malaysia

Step 5

- Sign financing agreement(s) and fulfill all conditions to first drawdown (if any)

Step 6

- Service provider/ contractor to commence & complete PV system

Step 7

- FiT meter installation

Step 8

- Carry out Acceptance Test (to be verified & certified by Qualified Person)

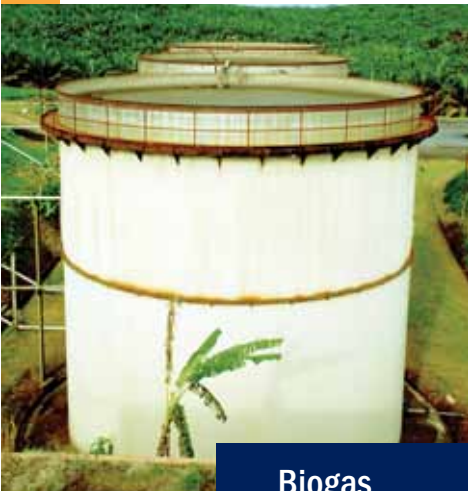
Step 9

- FiT Commencement Date:
 - ◆ Give notice of FiT Commencement Date to SEDA Malaysia & DL before and after FiT Commencement Date
 - ◆ Start of FiT duration

Step 10

- Monthly meter readings
- DL will issue monthly payment advice to FiA holder after meter is read
- FiT payment to be paid by DL within 30 days after issuance of payment advice

How do I Apply FIT for Other RE Installations?



Biogas



Biomass



Small Hydro



Solar PV

Who are eligible to apply for a feed-in approval for other RE installations?

Companies (ROC)

- All legally registered
- Direct ownership
- Shareholding limitation:
 - ◆ DL: $\leq 49\%$ within its distribution area
 - ◆ Foreign companies: $\leq 49\%$

Other entities:

- Local authority
- Body corporate
- Registered Society
- Partnership
- Co-operative

Power Systems Study (PSS)

For RE installation > 180 kW (grid-connected), a power systems studies (PSS) are necessary to assess the potential impact of the distributed generation on the planning and operation of the DL's distribution system. PSS shall be conducted by the distribution licensee.

Connection confirmation check (CCC) is required for RE installation > 72kw up to and including 180 kW

Fees and Time Frame for PSS

| RE Installation Capacity (MW) | Fee Amount | Time Frame |
|---|------------|------------|
| ≤ 1 MW | RM20,000 | 30 days |
| > 1 MW ≤ 10 MW | RM40,000 | 30 days |
| > 10 MW ≤ 30 MW | RM60,000 | 42 days |
| Additional For Insulation Coordination Studies If Required | RM20,000 | 10 days |
| Additional for Solar PV – Dynamic Study (Voltage Fluctuations) If Required | RM10,000 | - |

I am interested! What now?

Please go through the steps as shown in the process flow chart:

Step 1

- Interested party to check / comply with (check at www.seda.gov.my):
 - Renewable Energy (Feed-in Approval and Feed-in Tariff Rate) Rules 2011
 - Renewable Energy (Criteria for Renewable Resources) Regulations 2011
 - Renewable Energy (Technical & Operational Requirements) Rules 2011
 - Renewable Energy (Renewable Energy Power Purchase Agreement) Rules 2011
 - SEDA Malaysia: RE quota (application based on scheduled FIT Commencement Date)

Step 2

- Secure legal rights to the site of the RE installation / letter of intent from the site owner
- Design RE installation (capacity, technical details, etc)
- Conduct power system study (PSS) for RE installations >180 kW (to be conducted by the relevant Distribution Licensee) or connection confirmation Check (CCC) for RE Installations > 72 kW up to and including 180kW
- Check relevant local authority and other governmental requirements
- Contact potential financier & obtain financing offer letters/term sheet
- Prepare work plan & major milestones

Step 3

- Apply for FiA either through online (efit.seda.gov.my) or manual submission



Approved

Step 4

- Sign Renewable Energy Power Purchase Agreement (REPPA) with relevant Distribution Licensee (DL)
 - Register the signed REPPA with SEDA Malaysia
- Apply for public generation license (provisional) from the Energy Commission

Step 5

- Sign financing agreement(s) and fulfill all conditions to first drawdown

Step 6

- Issue notice to proceed to service provider/contractor to commence work
- Design, install and construct RE installation and interconnection facilities
- Apply for public generation license (permanent) from the Energy Commission (minimum 3 months is required prior to connection to DL's network)

Step 7

- FIT meter installation

Step 8

- For all RE Installations, carry out Acceptance Test (to be verified & certified by Qualified Person)
- For RE Installations connected through medium or high voltage connections, fulfill conditions to Initial Operation Date & conduct reliability run (to be verified and certified by Qualified Person)

Step 9

- FIT Commencement Date:
 - Give notice of FIT Commencement Date to SEDA Malaysia & DL before and after FIT Commencement Date
 - Start of FIT duration

Step 10

- Monthly meter readings
- DL will issue monthly payment advice to FiA holder after meter is read
- FIT payment to be paid by DL within 30 days after issuance of payment advice



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