



GOVERNMENT OF
MALAYSIA

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Government of Malaysia Roadmap for Renewable Energy Development

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Presentation Outline



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- Renewable Energy Development in Malaysia

2. The National RE Policy & Action Plan

- Feed-In Tariff Concept

3. Renewable Energy Act 2010

4. Sustainable Energy Development Authority Act 2010

5. Conclusion





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Background





Renewable Energy Development in Malaysia

8TH Malaysia Plan (2001 - 2005)

- RE as the 5th Fuel
- Implied 5% RE in energy mix

9th Malaysia Plan (2006 – 2010)

- **Targeted RE capacity to be connected to power utility grid:**
 - ✓ 300 MW – Peninsular Malaysia; 50 MW - Sabah
- **Targeted power generation mix:**
 - ✓ 56% natural gas, 36% coal, 6% hydro, 0.2% oil,
 - ✓ 1.8% Renewable Energy
- Carbon intensity reduction target: 40% lower than 2005 levels by 2020

RE as of 31st December 2010

- Connected to the utility grid: **61.2 MW (17.5% from 9th MP target)**
- Off-grid: >430MW (private palm oil millers and solar hybrid)





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National RE Policy & Action Plan



Malaysian National RE Policy



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Policy Statement:

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

Objectives:

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



Strategic Thrusts of Malaysian National RE Policy



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Strategic Thrust 2: Provide
Conducive Business
Environment for RE

Strategic Thrust 3:
Intensify Human Capital
Development

Strategic Thrust 1:
Introduce Legal and
Regulatory Framework

Strategic Thrust 5: Create
Public Awareness & RE
Policy Advocacy
Programmes

Strategic Thrust 4:
Enhance RE Research and
Development



Malaysian National RE Targets



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Year	Cumulative RE Capacity	RE Power Mix (vs Peak Demand)	Cumulative CO ₂ avoided
2010	73 MW	0.5 %	0.3 mt
2015	985 MW	6%	11.1 mt
2020	2,080 MW	11%	42.2 mt
2030	4,000 MW	17%	145.1 mt

Notes: RE capacity achievements are dependent on the size of RE fund

■ Assumptions:

- Feed-in Tariff (FiT) implemented
- 15.6% compound annual growth rate (CAGR) of RE power capacity from 2011 - 2030



Fiscal Incentives to Promote RE



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- **Pioneer Status (PS)** - Exemption from income tax on 100% of statutory income for 10 years (Until 2015)
- **Investment Tax Allowance (ITA)** - 100% of qualifying capital expenditure incurred within a period of 5 years can be utilised against 100% of the statutory income for each year of assessment (Until 2015)
- **Import Duty** - imported machinery, equipment, materials, spare parts and consumables (Until 2015)
- **Sales Tax Exemption** - locally purchased machinery, equipment, materials, spare parts and consumables (Until 2015)
- **Exemption of import duty and/or sales tax to “Third Party Distributors (TPD)”** - for Solar PV systems equipments (Until 2012)





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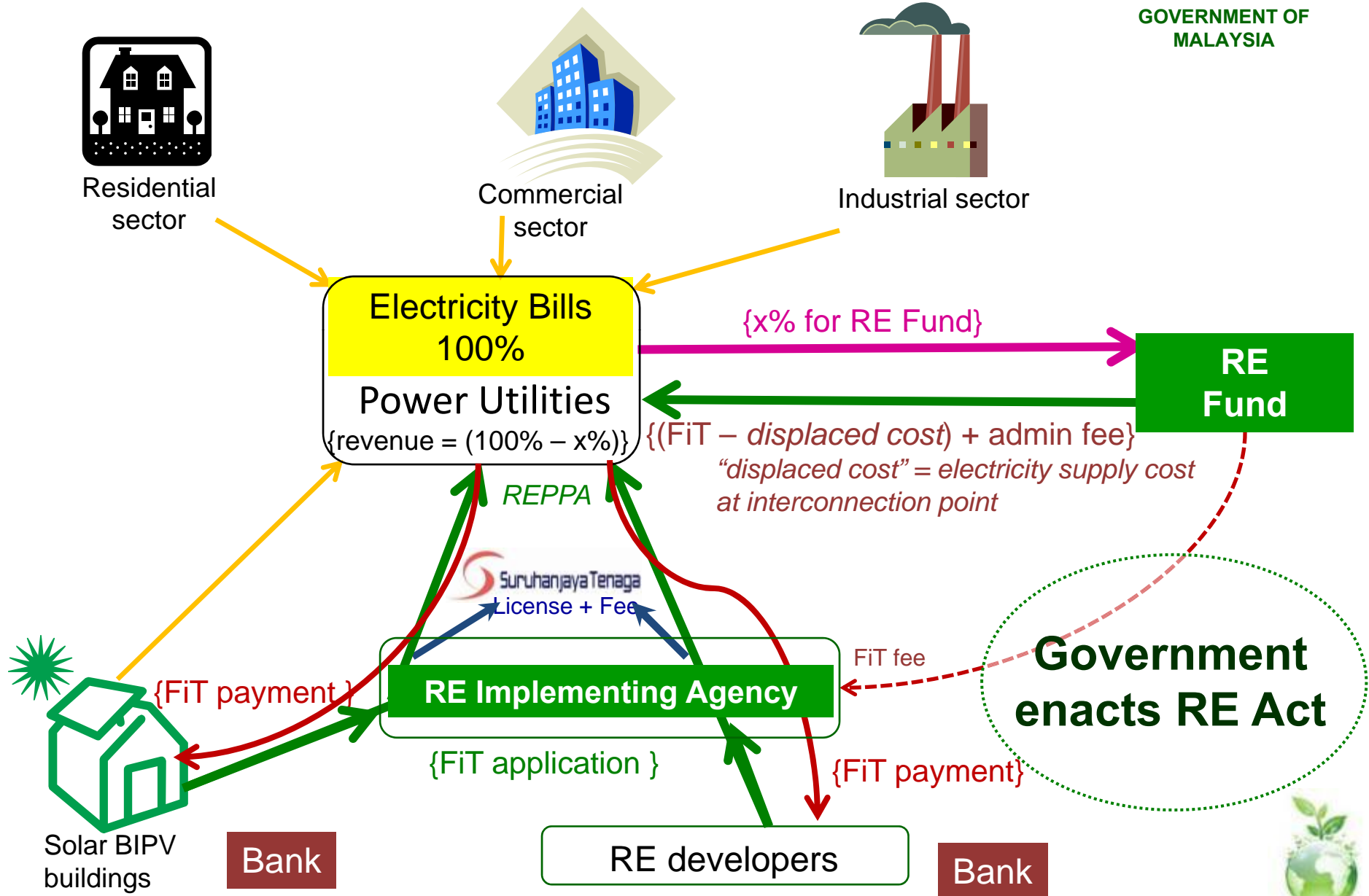
Feed-In Tariff Concept



FiT Mechanism for Malaysia



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Key Success Factors for Malaysian National RE Policy



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The success of the National RE Policy and goals can be achieved when the following factors are put in place:

- **RE Act** which implements the **Feed-in Tariff** mechanism
- **RE Fund** to cover the cost of Feed-in Tariff (FiT) mechanism
- Establishment of a dedicated **Implementation Agency**



Potential Impact of National RE Policy by Year 2020



- Minimum **RM 2.1 billion savings of external cost** to mitigate CO2 emissions;
- Minimum **RM 19 billion of loan values** for RE projects, which will provide local banks with new sources of revenues (at 80% debt financing for RE projects);
- Minimum **RM 70 billion of RE business revenues** generated from RE power plants operation, which can generate **tax income of minimum RM 1.75 billion to Government;**
- **> 50,000 jobs created** to construct, operate and maintain RE power plants (on the basis of 15-30 job per MW)



Current Status



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- Government of Malaysia has drafted:
 - ✓ Sustainable Energy Development Authority Malaysia (SEDA Malaysia) Bill 2010
 - ✓ Renewable Energy Bill 2010

- Both Bills has been passed by House of Representative on 4th & 5th April 2011 respectively
- Passed by House of Senate on 27th & 28th April 2011 respectively
 - ✓ target enforcement date – Q3 2011 (subject to GOM approval)

- Preparation for:
 - ✓ Appointment of Interim SEDA Malaysia team
 - ✓ Development of the Feed-in Tariff Online System
 - ✓ Establishment of the SEDA Malaysia office





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Renewable Energy Act 2010



Renewable Energy Act 2010



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- To provide for the establishment and implementation of a special tariff system which is Feed-in Tariff System (FiT)
- To catalyse the generation of renewable energy and to provide for related matters
- Outlines provisions for:
 - ✓ FiT mechanism's implementation
 - ✓ Establishment of RE Fund
 - ✓ SEDA Malaysia as implementing agency for FiT mechanism
- Comprises of 9 Parts and 65 Clauses



Part II - FEED-IN TARIFF SYSTEM



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▶ Section 3: Establishment of feed-in tariff system

- ✓ the connection to supply line connection points for the distribution of renewable energy generated by renewable energy installations owned by feed-in approval holders;
- ✓ the priority of purchase and distribution by distribution licensees for renewable energy generated and sold by feed-in approval holders; and
- ✓ the feed-in tariff to be paid by distribution licensees to feed-in approval holders for such renewable energy



Part II - FEED-IN TARIFF SYSTEM (cont)



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▶ Section 4: Eligibility for participation in feed-in-tariff system

- ✓ proposes to generate renewable energy from a renewable energy installation $\leq 30\text{MW}$ (or such higher installed capacity as may be approved by the Minister)
- ✓ meets such other criteria as may be prescribed by the Authority



Part III – Connection, purchase and distribution of RE (cont)



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► Section 14: Priority of purchase and distribution

When a RE installation has been connected to a supply line connection point, a distribution licensee shall:

- ✓ as priority over the electricity generated from resources other than renewable resources
- ✓ purchase and distribute through the supply line the entire available quantity of renewable energy generated by a RE installation owned by a feed-in approval holder (unless exempted by Authority with having regards to public and private safety).
- ✓ **Any contravention is an offence and is liable to a penalty (fine < RM 1million)**




Part IV – FEED-IN TARIFF



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▶ Section 16: Payment of feed-in tariff

- ✓ feed-in approval holder shall be paid the feed-in tariff by DL via a renewable energy power purchase agreement
- ✓ FiT rates as in **Schedule RE Act** 

▶ Section 17: Degression of feed-in tariff

- ✓ FiT rate shall be reduced progressively each year based (applicable degression rate in Schedule)



Part V – RE Fund



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▶ Section 23: RE Fund

- ✓ A fund to be known as the “Renewable Energy Fund” is established and shall be administered and controlled by the Authority
- ✓ The Fund shall consist of—
 - such sums as may be provided by the Parliament for the purposes of the Fund from time to time;
 - such sums paid to the Authority under subsections 22(4), 24(1) and 24(5);





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Sustainable Energy Development Authority Malaysia (SEDA Malaysia) Act 2010





Sustainable Energy Development Authority Malaysia (SEDA Malaysia) Act 2010

- **To provide for the establishment of the Sustainable Energy Development Authority Malaysia (SEDA Malaysia)**
- **To provide for its functions and powers and for related matters.**
- **Comprises of 6 Parts and 49 Clauses**



Part III – Functions & Powers of SEDA Malaysia



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► Section 15: Functions of SEDA Malaysia includes to:

- advise the Minister & Government Entities on all matters relating to sustainable energy
- to promote & implement national policy objectives for RE
- to promote, facilitate & develop sustainable energy
- implement, manage, monitor & review the Feed-In Tariff system
- implement sustainable energy laws including the Renewable Energy Act & recommend reforms
- promote private sector investment in sustainable energy sector
- measures to improve public awareness
- act as focal point on matters relating to sustainable energy & climate change matters relating to energy





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Conclusion



Role of the Government vs Private Sector



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- Government to establish a conducive environment for RE to grow:
 - ✓ Comprehensive and clear policies
 - ✓ Effective mechanism and regulatory framework
 - ✓ Fiscal incentives

- Private sector to support and participate:
 - ✓ Serious players
 - ✓ Technology localization
 - ✓ Local capacity building



Challenges Ahead



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- Initial FiT implementation problems – procedures, co-ordination with related agencies, distribution licensee's role, FiT online system
- Expectations:
 - ✓ high amount of application – overwhelming
 - ✓ market excitement
 - ✓ government facilitation role
- Limitations:
 - ✓ manpower & capacity building
 - ✓ RE Fund
 - ✓ awareness of RE industry, financial institutions and the public at large





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Thank You





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RE Policy: Projected RE Growth

Year	Cum Biomass (MW)	Cum Biogas (MW)	Cum Mini-Hydro (MW)	Cum Solar PV (MW)	Cum SW (MW)	Cum Total RE, Grid-Connected (MW)
2011	110	20	60	9	20	219
2015	330	100	290	65	200	985
2020	800	240	490	190	360	2,080
2025	1,190	350	490	455	380	2,865
2030	1,340	410	490	1,370	390	4,000
2035	1,340	410	490	3,700	400	6,340
2040	1,340	410	490	7,450	410	10,100
2045	1,340	410	490	12,450	420	15,110
2050	1,340	410	490	18,700	430	21,370

Assumptions:

1. [RE Technical potential:](#)

Biomass (EFB, agriculture): **1,340 MW** will be reached by 2028.

Biogas (POME, agriculture, farm): **410 MW** will be reached by 2028.

Mini-hydro (not exceeding 30 MW): **490 MW** will be reached by 2020.

Solar PV (grid-connected): **unlimited**.

Solid waste (RDF, incineration, sanitary landfill): projection of 30,000 tonne/day of Solid Waste as projected by KPKT, followed by 3% annual growth post 2024





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EPP 10 – Solar Power Capacity Initiative

- MEGTW – identified to implement Entry Point Project (EPP) 10: Solar Power Capacity Initiative under the *National Key Economic Area (NKEA)*
- EPP 10 Target - 1.25GW solar power capacity connected to the grid by 2020

Year	Solar Power Capacity (Cumulative)	RE Capacity (Cumulative)	RE Capacity Mix
2011	20MW	219 MW	1%
2015	295MW	1,275 MW	7%
2020	1,250MW	3,140 MW	14%
2030	3,100MW	7,088MW	25%





Feed-in Tariff Rates

Technology / Source	FiT Duration	Range of FiT Rates (RM/kWh)	Annual Degression
Biomass (palm oil waste, agro based)	16	0.27 – 0.35	0.5%
Biogas (palm oil waste, agro based, farming)	16	0.28 – 0.35	0.5%
Mini Hydro	21	0.23 – 0.24	0%
Solar PV & PP	21	0.85 – 1.78	8%
Solid waste & Sewage	16	0.37 – 0.45	1.8%

