Knowledge Partnership Dialogue
Centre of Excellence for Clean Energy
Jakarta 8 Oct 2015

Sharing Malaysia's experience in development of Renewable Energy

- SEDA – Sustainable Energy Development Authority
- Set up under the SEDA Act in 2011 to encourage the growth of RE
- Main function to implement the Feed in Tariff (FiT) and other mechanisms for implementation of RE projects
- Reports to Ministry of Energy Green Technology & Water

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Renewable Energy Development in Malaysia

8TH Malaysia Plan (2001 - 2005)

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

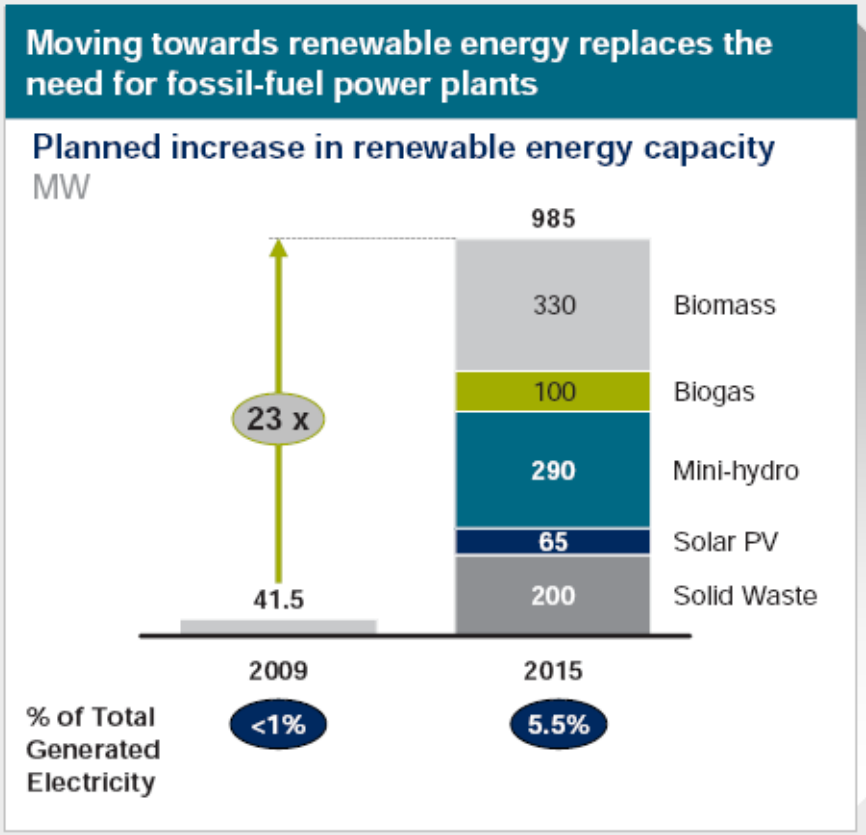
9th Malaysia Plan (2006 – 2010)

- **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 2011

- Connected to the utility grid (as of 2011): **68.45 MW (20%** from 9th MP target)
- Off-grid**:** >430MW (private palm oil millers and solar hybrid)

Renewable energy will increase from <1% in 2009 to 5.5% of Malaysia's total electricity generated by 2015



RE investments will receive a huge push through FiT

- **Introduction of Feed-in Tariff (FiT) of 1%** to be incorporated into the electricity tariffs of consumers
- **Establishment of a Renewable Energy Fund** from the FiT to be administered by a special agency under KeTTHA
- This provides an **annual CO_2 avoidance** of 3.2 million tonnes

According to National RE Policy set in 2009, PV only supposed to get 65 MW by 2015, and about 200 MW by 2020

Increased to 1.6 % on Jan 2014

REPAP Targets	Year	Cumulative RE Capacity	RE Power Mix (vs Peak Demand)
	2015	985 MW	5.5%-6%
	2020	2,080 MW	11%
	2030	4,000 MW	17%

RE Act gazetted in June 2011

FiT introduced in Dec 2011

Cumulative Approved FiT Applications (30 September 2015)

No	RE Sources	No. of Application	Capacity (MW)	Percentage (%)
1	Biogas	90	158.18	13.90%
2	Biomass	37	348.79	30.65%
3	Small Hydro	36	279.64	24.58%
4	Geothermal	1	30.00	2.64%
5	Solar PV	7116	321.29	28.24%
6	Solar PV (Individual)	6536	60.55	5.32%
7	Solar PV (Community)	132	2.78	0.24%
8	Solar PV Non-Individual (<500 kW)	338	61.01	5.36%
9	Solar PV Non-Individual (>500kW)	110	196.94	17.31%
	Total	7280	1137.89	100.00%

Cumulative Applications Achieving Commercial Operations (30 September 2015)

No	RE Resources	No of Application	Capacity (MW)
1	Biogas	9	17.23
2	Biomass	7	74.90
3	Small Hydro	5	18.30
4	Solar PV (Individual)	4180	41.05
5	Solar PV (Community)	51	0.80
6	Solar PV Non-Individual (<500 kW)	206	31.91
7	Solar PV Non-Individual (>500kW)	64	135.35
	Total Solar PV	**4501**	**209.11**
	Total	4522	319.55

Role of SEDA

- Determine base FiT rate and bonus rates (given for local content, efficiency, etc.) and annual degression in rates
- Release quota for PV and other technologies on an annual or twice a year basis
  - Application is through an online portal called e-FiT
- Ensure quota is distributed in a transparent manner to qualified applicants
  - Applicants need to do a Grid Impact Assessment (or Power System Study, PSS) before they can apply
  - Applicants also need to show proof of ownership of site, financial capability, etc.
  - Aspiring applicants must be at least 51 % Malaysian owned

Role of SEDA

- Ensure installations are designed, constructed and maintained by qualified personnel
  - SEDA conducts a two-week course on Design & Installation of Grid-Connected PV (GCPV) in collaboration with UiTM and other local universities
    - Minimum qualification to enter the course is degree or diploma in engineering
  - There is also another one week course on Off-Grid PV
  - Original Train the Trainer courses were conducted by experts from Germany for the trainers in Malaysia
  - Only PV contractors registered with SEDA Malaysia are allowed to submit applications for their clients, and do the design and installation

Role of SEDA (continued)

- These contractors must have a minimum of one personnel with Seda GCPV certificate
- PV contractors must be local, i.e. Malaysian
- Contractors flouting any rules can be suspended or even deregistered

- Ensure installations are designed and constructed according to established international standards
  - Seda publishes the relevant IEC or equivalent standards that must be met for modules and inverters
  - Testing & Commissioning must follow procedures set by Seda to ensure minimum quality and safety standards
  - Testing & Commissioning is witnessed by Seda or its reps from UiTM

Other technologies

- SEDA also regularly conducts training for engineers and developers involved in small hydro, biomass, biogas
- There are also specific Guidelines for the T&C of small hydro, biogas and biomass plants.
- SEDA determines the national or international standards that must be met for each technology
- T&C of all plants is witnessed by SEDA or its representatives

Proposal for Centre of Excellence

- It can play many of the roles played by SEDA
  - Determine FiT rates according to year of commissioning, geographical location, etc.
  - Determine the eligibility criteria for FiT applicants
  - Supervise the Grid Impact Assessment Studies
  - Carry out training and certification in PV technology to ensure PV installations are designed and constructed by qualified people
  - Register PV service providers to ensure only contractors with qualified personnel are allowed to participate
  - Determine the international standards to be followed for the components as well as the design and installation, and ensure compliance to the standards
  - Establish Indonesian standards for PV installation
  - Establish T & C Procedures for the commissioning of new plants based on the installed capacity
  - Carry out all the above in other technologies apart from PV

THANK YOU