SUSTAINABLE ENERGY DEVELOPMENT AUTHORITY MALAYSIA

Sesi Penerangan Penetapan Tarif Elektrik di Semenanjung Malaysia

Briefing on RE Funding Mechanism for the Feed-in Tariff

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Rationale for Moving towards Renewable Energy

▪ Energy **Security** ▪ Energy **Autonomy** ▪ Climate Change **Mitigation**

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:**
  - 51 % natural gas, 26 % coal, 9 % hydro, 8 % oil, diesel 5 %, biomass 1 % (2010)
- Carbon intensity reduction target: 40% lower than 2005 levels by 2020

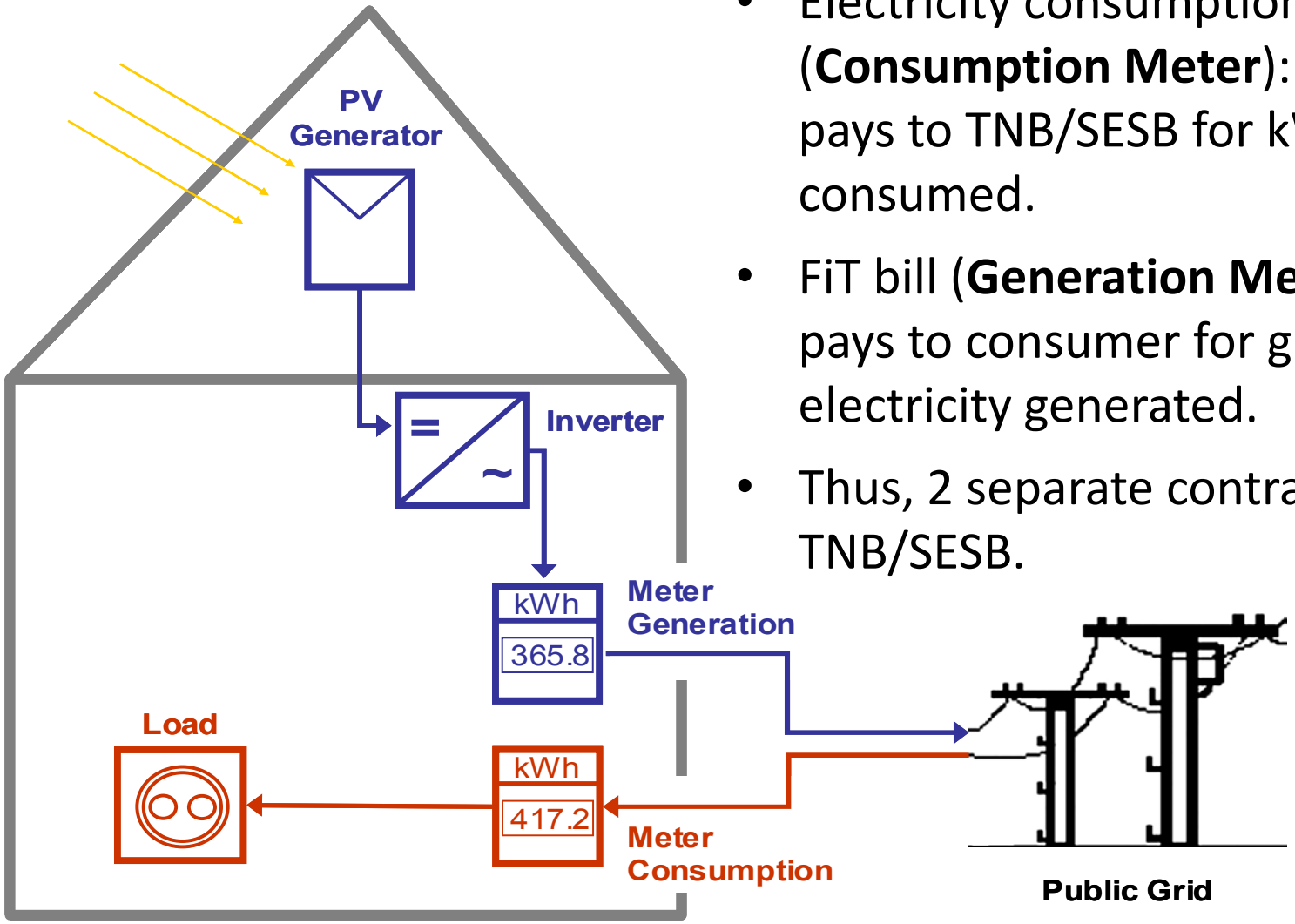
RE as of 31st December 2010

- Connected to the utility grid: 61.2MW (17% from 9th MP target through Small Renewable Energy Programme (SREP)
- Off-grid: >1GW (private palm oil millers and solar hybrid)

FiT Implementation: Accounts & Payments

2 separate accounts with TNB/SESB:

- Electricity consumption bill (**Consumption Meter**): consumer pays to TNB/SESB for kWh electricity consumed.
- FiT bill (**Generation Meter**): TNB/SESB pays to consumer for gross kWh electricity generated.
- Thus, 2 separate contracts with TNB/SESB.



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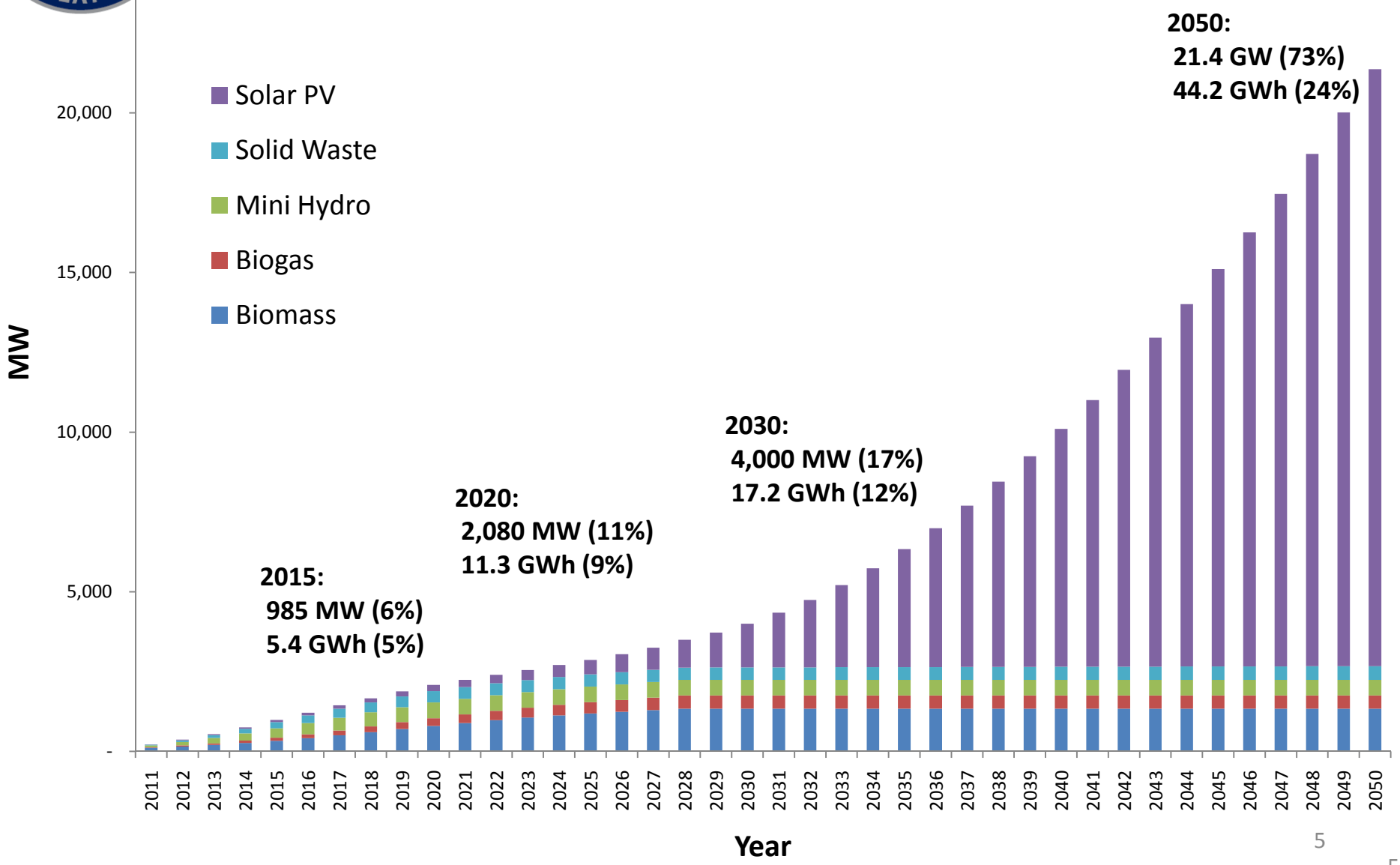
National RE Goals (excl EPP-10)



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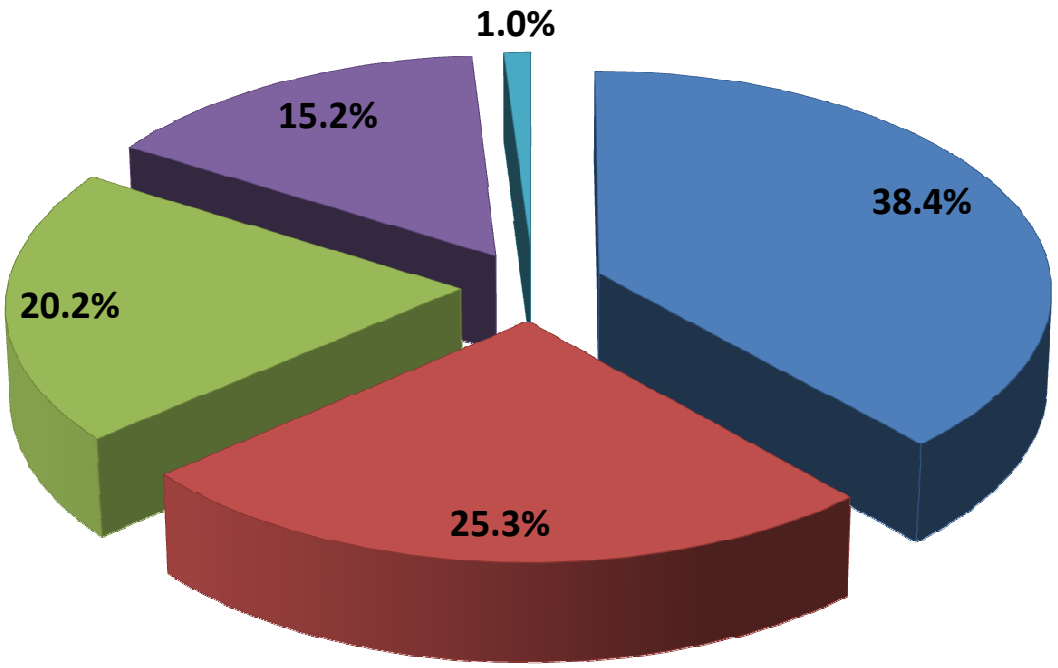
Source of Fund for FiT



Source of Funding - additional tariffs collection from electricity bills

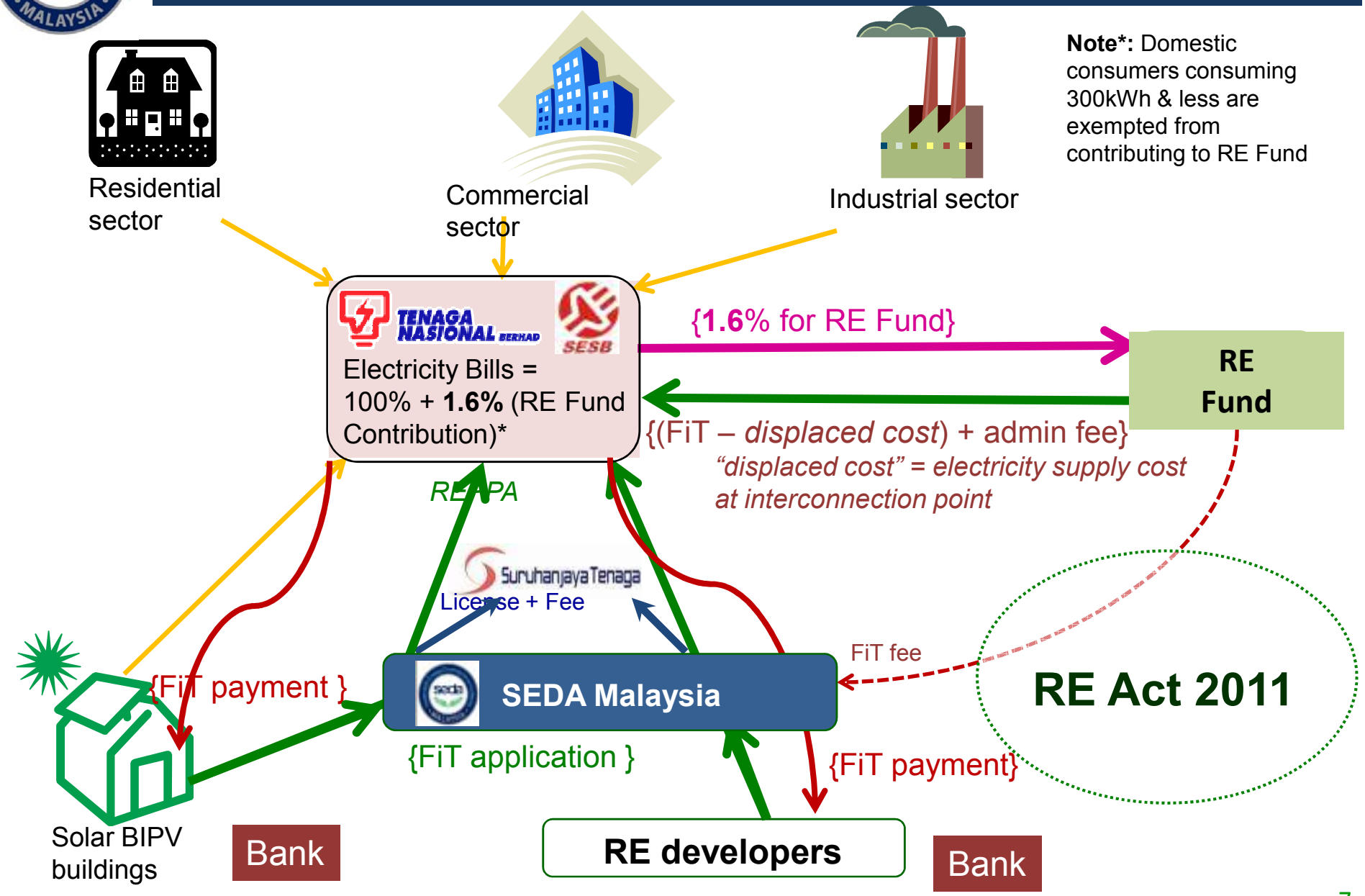
Cabinet in 2011 principally approved **2%** surcharge on electricity bills

- 1st December 2011- **1.0%**
- 1st January 2014 – **1.6 %**
- The size of the RE fund will determine the RE target for Malaysia

Benefits

- polluters pay concept
- will not affect 70.67% of domestic electricity consumers of TNB & 62% of SESB (≤ 300 kWh/mth)
- encourages EE and DSM

Conceptual Framework for FiT

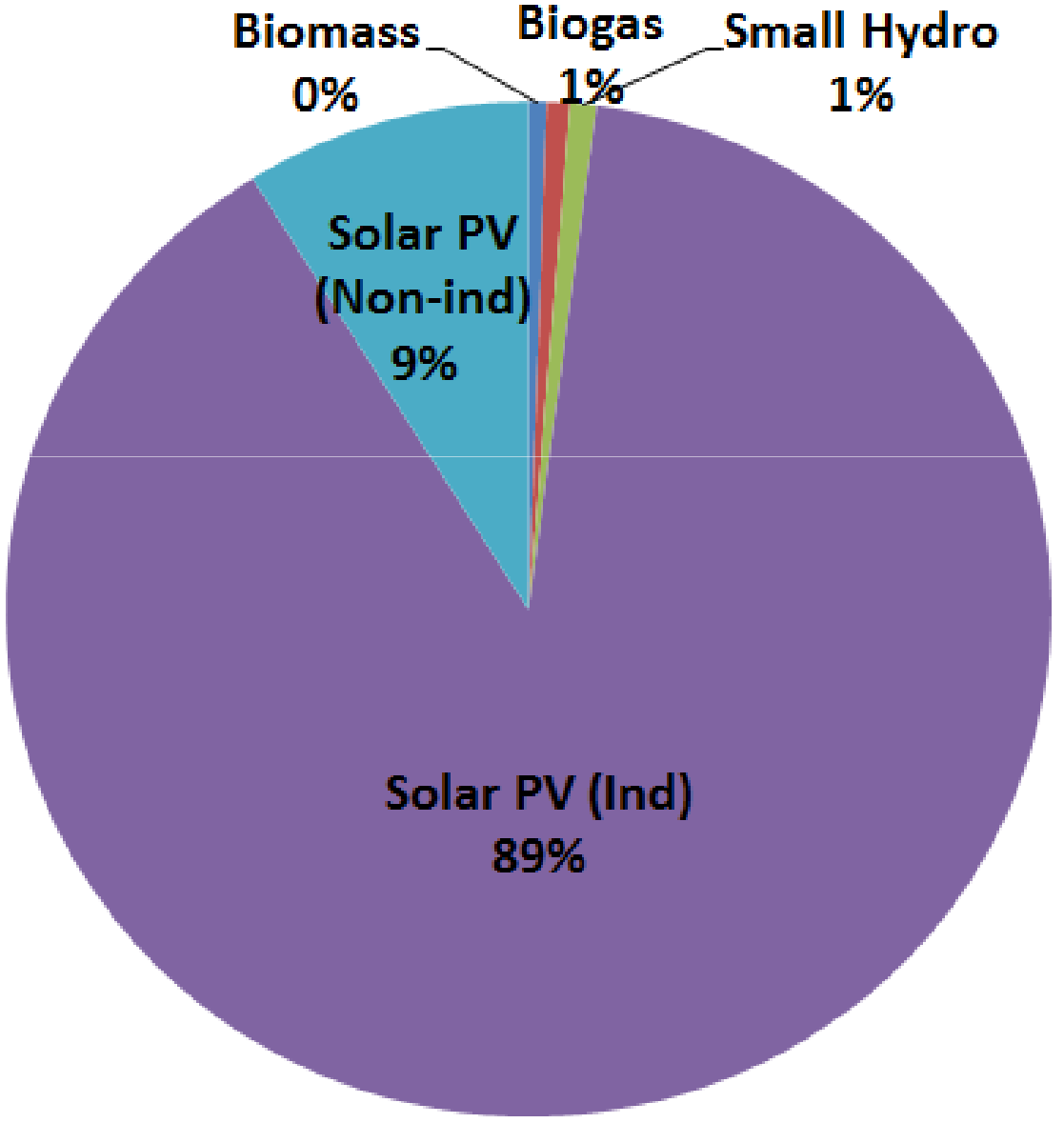


ANNUAL QUOTA RE RELEASED (2012- H1 2014)

Year	Biogas	Biogas - Sewage	Biomass	Solid-Waste	Small Hydro	Solar PV < 1MW	Solar PV > 1MW	Total (MW)
	MW	MW	MW	MW	MW	MW	MW	
2011/ 2012	20	10	60	20	30	10	40	**190**
2013	20	10	50	30	30	10	40	**190**
H1 2014	10	5	25	15	45	5	20	**125**

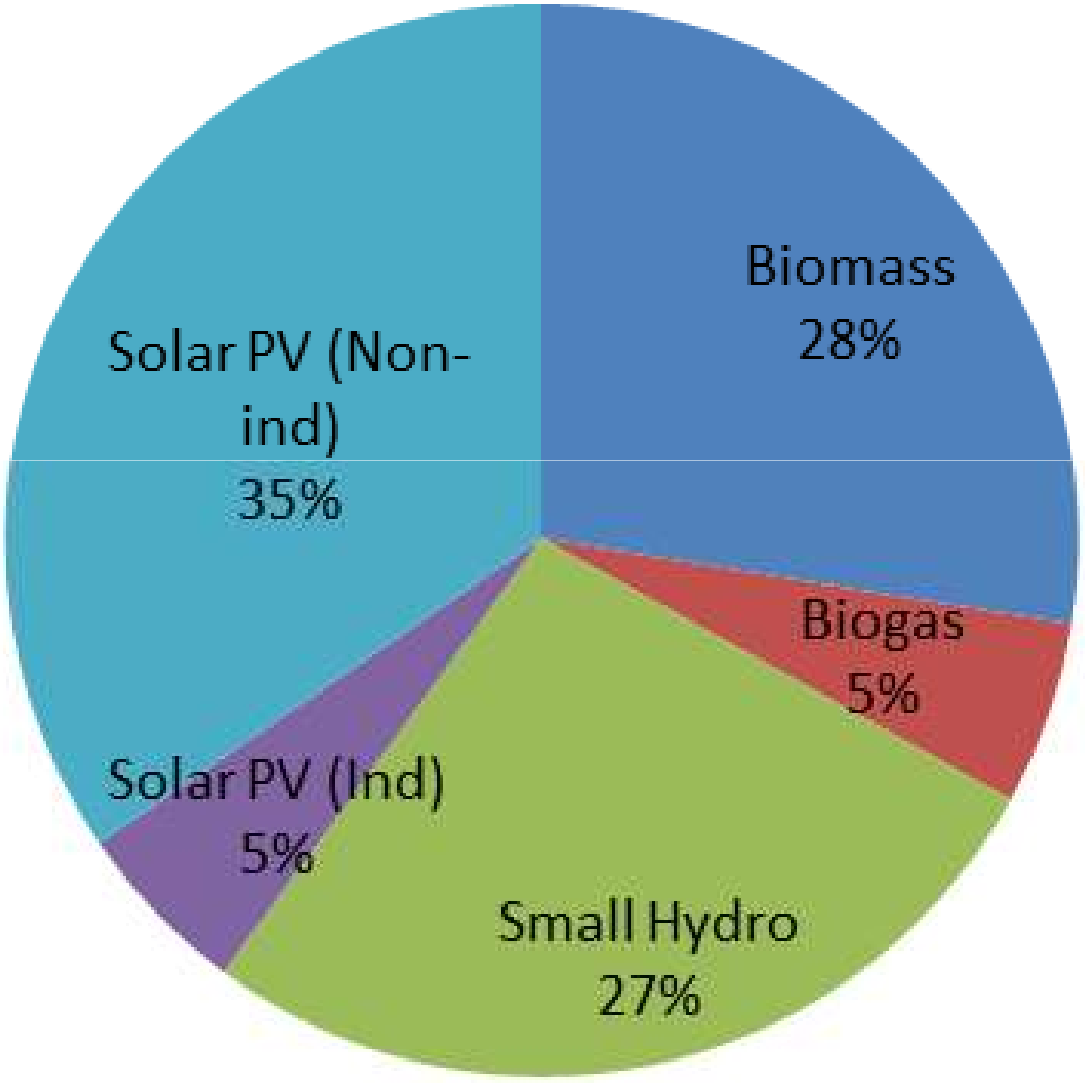
Number of Approved Applications 2012-2015 (30th November 2013)

RE sources	No.
Biomass	15
Biogas	19
Small Hydro	22
Solar PV (Ind)	2,393
Solar PV (Non-ind)	238
Total approved	**2,687**
Total received	3,501
Total Revoked/ Withdrawn	797



Approved Capacities (MW) 2012-2015 (30th November 2013)

RE sources	Capacity (MW)
Biomass	133.49
Biogas	26.73
Small Hydro	130.99
Solar PV (Ind)	25.83
Solar PV (Non-ind)	167.55
Total	**484.60**
Total Received	757.10
Total Revoked/ Withdrawn	272.32



Installed Capacity (MW) (30th November 2013)

No.	Renewable Resource	No. of Applications	Capacity (MW)
1	Biogas	5	50.40
2	Biomass	5	8.53
3	Small hydro	5	15.70
4	Solar PV (Individua)	913	12.27
5	Solar PV (Non-individual)	63	42.19
Total		**991**	**129.09**

Analysis on Impact of FiT

- The SREP which spanned over a decade achieved 61.2 MW as at end of 2010.
- FiT achieved 484.6 MW (fully operational by 2015) in 2 years of implementation of which 129.09 MW is now fully operational
- 484.6 MW constitutes 1.8% of total electricity generating capacity (2010)
- Total capital investment for the approved projects ~ RM4.3 billion
- Estimated employment created ~ 11,412
- Estimated cumulative CO2 emission avoidance ~ 4.1 million tonnes (up to 2015)

RE FUND STATUS 30TH NOVEMBER 2013 (unaudited)

Items	Amount	Sub-total
Initial grant	300,000,000.00	
1% collection from TNB	510,418,656.56	
Interest earned	16,855,608.99	827,274,265.55
Deduct	-	
Bank charges	121.10	
Recovery of Moneys:	66,819,616.84	
Administration Fee:	3,340,970.92	
RE Act 2011 Seksyen 25(b)	5,469,485.00	75,630,193.86
Balance	**-**	**751,644,071.69**

- Estimated committed RE fund for entire tenure of REPPA is between RM 8.95 billion to RM 9.59 billion.

ANALYSIS OF APPLICATION STATUS

- The RE Targets outlined in the National RE Policy and Action Plan will not be achievable because assumptions used to derive the targets have changed.

Year	RE Targets under REPAP
2015	985
2020	2,080
2025	2,865

- Changes to key assumptions:
  - 2% surcharge supposed to start by 1st January 2011 but instead 1% started 1st December 2011 and additional 0.6% will only be imposed on 1st January 2014
  - Use of higher displaced cost to derive the initial targets

COLLECTION 1.6% TO THE RE FUND

- The 1.6% surcharge will result in RM625 million collection per annum from TNB & SESB
- Sabah and Labuan will be able to participate in the FiT from 1st January 2014
- SEDA is in the midst of rationalizing the RE quota under the new approved 1.6% surcharge. The rationalizing exercise will be completed once key parameters such as the displaced costs and the degression rates in the Schedule of the RE Act 2011 are approved and gazetted.

Surcharge Imposed in Other countries

- Australia – 2.4%, China – 3%, Germany – 19%, Italy – 8%, Japan – 3%, Portugal – 5.6% (industrial), 6.2% (residential), UK – 2 to 3%, Thailand - 2% (2013) and estimated 8 - 10% once the 7 GW of RE projects are operational in a few years time.
- Malaysia's 1.6% surcharge is well below the surcharge implemented in all other countries.
- In most of the above countries, the electricity tariff is unsubsidized and therefore a 1.6% surcharge imposed on a subsidized electricity tariff is a small financial responsibility imposed on polluter-pay basis.

Benefits of implementing the FiT

- Economic
  - Creates a more resilient economy that relies less on fossil fuel as energy source
  - Creates green jobs
- Social
  - Encourages the public to engage in activities protecting climate and environment
  - Fairer form of wealth distribution and empowerment
- Environmental
  - Reduces carbon emission and pollutions
  - Reduces dependency on fossil fuels which are depleting resources
- Political
  - Increases energy security & autonomy
  - Promotes a democratized form of electricity generation

Challenges faced in FiT implementation

- Electricity tariff in Malaysia is highly subsidized and the low electricity tariff is one of the biggest barriers towards RE & EE implementation (Sovacool 2012, IRENA 2013).
- RE quota is limited by availability of RE fund, currently only 1% contribution by electricity consumers (TNB - 1st December 2011) and 1.6% (TNB & SESB - 1st January 2014).
- The urgency for implementing RE is not well understood and appreciated by some sectors.
- In order for RE to achieve significance in the country's energy mix, it has a long gestation period for market and industry to reach maturity.
  - Bankers acceptance, RE developers has implementation challenges, DLs need time to resolve interconnectivity & FiT payments

Concluding Words

The first rule of holes is simple: When you're in one, stop digging.

We are in a huge hole when it comes to the climate and yet we continue digging our way to climate catastrophe

(Stephen Kretzmann, Executive Director of Oil Change International)

Thank you

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