



# **UPDATE ON FEED-IN TARIFF IN MALAYSIA**

**43rd IEA-PVPS Task 1 (Golden, USA)**

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# Cumulative Approved FiT Applications (31 March 2015)

Renewable Resource	No of Applications	% of total	Capacity (MW)	% of total
Biogas	80	1.2%	137.79	13.30%
Biomass	33	0.5%	314.79	30.38%
Small Hydro	36	0.6%	284.84	27.49%
<b>Solar PV</b>	<b>6,382</b>	<b>97.7%</b>	<b>298.88</b>	<b>28.84%</b>
Individuals	5,878	90.0%	55.18	5.32%
Community	91	1.4%	1.71	0.17%
Non-individuals	413	6.3%	241.98	23.35%
<b>Total</b>	<b>6,531</b>	<b>100%</b>	<b>1,036.29</b>	<b>100%</b>



# Cumulative FiT Applications Achieving Commercial Operations (31 March 2015)

Renewable Resource	No of Applications	% of total	Capacity (MW)	% of total
Biogas	7	0.2%	12.83	4.7%
Biomass	5	0.1%	55.90	20.5%
Small Hydro	5	0.1%	15.70	5.7%
<b>Solar PV</b>				
Individuals	3,429	92.5%	34.58	12.7%
Community	20	0.5%	0.29	0.1%
Non-individuals	242	6.5%	154	56.4%
<b>Total</b>	<b>3,708</b>	<b>100.0%</b>	<b>273.33</b>	<b>100.0%</b>



# PV FiT (Basic) & Depreciation Rates (2015)

## (US\$1 = RM3,6550)

Renewable energy installation having an installed capacity of	Basic rate (RM/kWh)	Depreciation rate Effective 1 January 2015
1. up to and including 4 kilowatts	0,9166	10%
2. above 4 kilowatts, and up to and including 24 kilowatts	0,8942	10%
3. above 24 kilowatts, and up to and including 72 kilowatts	0,7222	10%
4. above 72 kilowatts, and up to and including 1 megawatts	0,6977	<b>15% (10%)</b>
5. above 1 megawatts kilowatts, and up to and including 10 megawatts	0,5472	<b>15% (10%)</b>
6. above 10 megawatts kilowatts, and up to and including 30 megawatts	0,4896	<b>20% (10%)</b>



# PV FiT (Bonus) & Depreciation Rates (2015)

Renewable energy installation having any one or more of the following criteria in addition to basic rate	Bonus rate (RM/kWh)	Depreciation rate effective 1 January 2015
1. use as installation in building or building structures	+ 0,1722	<b>20% (10%)</b>
2. use as building materials	+ 0,1656	<b>20% (10%)</b>
3. use as locally manufactured or assembled solar photovoltaic module	+ 0,0500	0%
4. use of locally manufactured or assembled solar inverters	+ 0,0500	0%



# PV Manufacturing Statistics (2014)

No.	Company Name	Capacity	Employment
<b>Metallurgical Grade Silicon / Polysilicon</b>			
1	Elpion Silicon	33,4 kilo tonne	160
2	Tokuyama	20 kilo tonne	680
<b>Total</b>		53,4 kilo tonne	840
<b>Wafer &amp; Solar Cells</b>			
1	AUO-SunPower	700 MW	2 145
2	MEMC	1 000 MW	676
3	Panasonic Energy	300 MW	969
4	Hanwha Q-Cells	1 000 MW	860
5	TS Solartech	400 MW	123
<b>Total</b>		3 400 MW	4 773



# PV Manufacturing Statistics (2014).. cont

PV Modules		Capacity (MW)	Employment
<b>1</b>	First Solar	1 690*	3 700
<b>2</b>	Flextronics	577	800
<b>3</b>	Panasonic Energy	300	1 207
<b>4</b>	Malaysian Solar Resource	200	120
<b>5</b>	SolarTIF	5	40
<b>6</b>	PV Hi-Tech Solar	5	15
<b>Total</b>		<b>2 777</b>	<b>5 882</b>

\* Target 2 000 MW in 2015



# PV Manufacturing Statistics (in the pipeline)

No.	Company Name	Capacity (MW)	Employment
<b>Wafer &amp; Solar Cells</b>			
1	Comtec Solar International	1 000	139
2	Tetrasun (First Solar)	100	135
3	JingkoSolar	450	-
<b>Total</b>		<b>1 550</b>	<b>274</b>
<b>PV Modules</b>			
1	JingkoSolar	500	-
2	Endau XT	75	40
<b>Total</b>		<b>575</b>	<b>40</b>





# PV Market

- FiT is funded by 1,6 % contribution of additional charge imposed on electricity bills (annual collection ~ € 160 mio, US\$171m);
- If FiT design remains status quo, then PV will stop post 2017;
- PV under the FiT can only be extended beyond 2017 if:
  - Increase 1,6 % imposed on electricity bills;
  - Reduce PPA tenure for PV from 21 years to (say) 10 – 15 years;
- Post 2017, PV promoted via **net energy metering** (NEM, self-consumption) and **utility solar scale** (USS via reverse bidding);
- NEM and USS frameworks currently being developed;
- Key issue faces by utility is on the **recovery of stranded asset costs** should sales of electricity dropped severely.



# PV Industry

- Since the rise of anti dumping & countervailing duties imposed on China & Taiwan, Malaysia by US and Europe, Malaysia has become one of the hot spots for Chinese to circumvent these issues;
- In order to prevent Malaysia being exploited as a circumventing measure, Malaysia is considering imposing PV FDI such that any PV module assembly must include at least solar cell fabrication (the more the higher value chain activities e.g. ingots, wafer, the better).



# Topics of Interest for Discussion

- The % contribution from electricity bills to support renewable energy programme in your country
- Lessons learnt from your country on:
  - Net energy metering (restrictions on caps, penalties)
  - Utility solar scale (sample PPA contracts)
- Strategies for utilities to recover stranded asset costs
- Anti dumping/ countervailing duties: is Malaysia on the right track on anti-circumvention measures?



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