

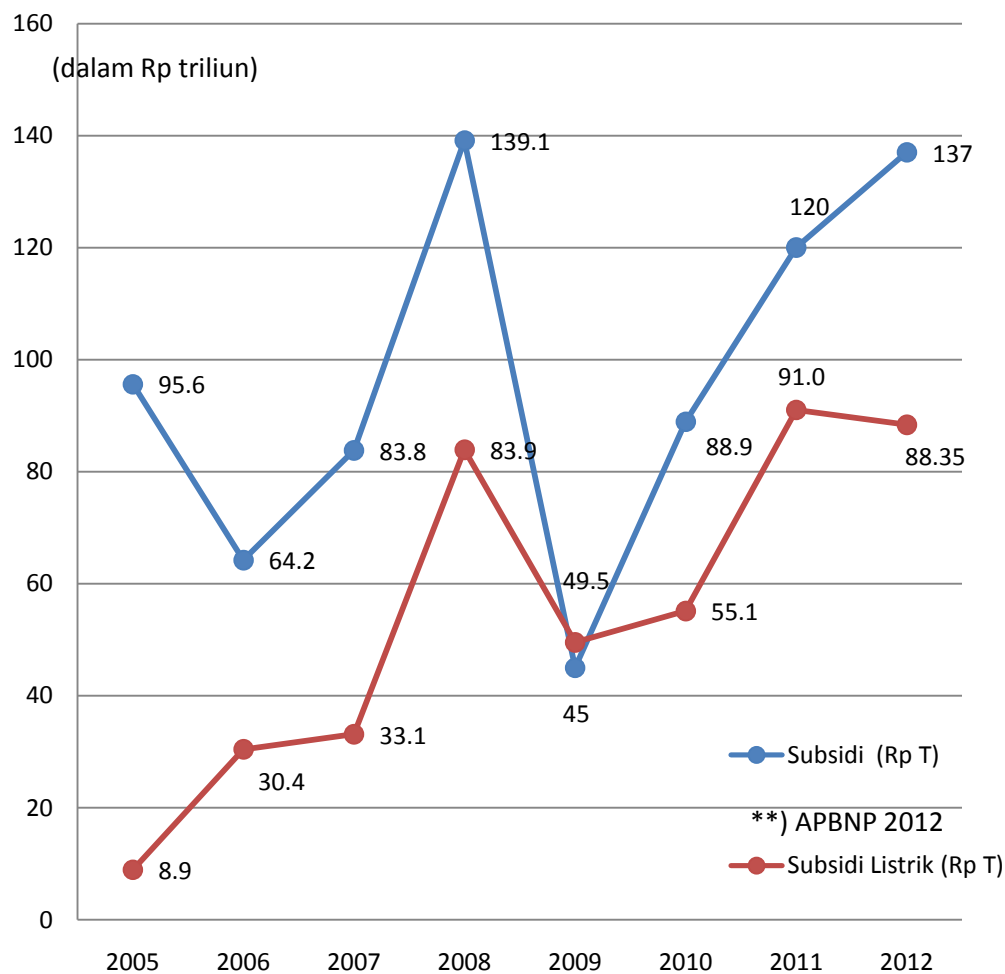
Business Opportunity in Indonesian Renewable Energy

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SUBSIDI BBM DAN LISTRIK **

* Kelistrikan Nasional 2012:	
- BPP	: Rp 1.166 per kWh
- Penjualan listrik	: 172,17 TWh
- Pelanggan baru	: 2.540.000 pelanggan
- Penggunaan BBM	: 7,49 juta kilo liter
- Penggunaan Batubara	: 39,60 juta ton
- Penggunaan Gas	: 356,36 juta mmbtu
- BBM bersubsidi 2012 APBN	: 37,50 juta KL
- BBM bersubsidi 2011 APBNP	: 40,37 juta KL
Realisasi 2011	: 41,67 juta KL
terdiri dari	
Premium	: 25,49 juta KL
Solar	: 14,49 juta KL
Minyak tanah	: 1,69 juta KL



Indonesian Electricity 2012

- Prod.cos		: \$ 12 cents per kWh	
- Penjualan listrik		: 172,17 TWh	
- Pelanggan baru		: 2.540.000 Consmr	
- Fuel Oil used		: 7,49 mio.Ton	
- Penggunaan Batubara		: 39,60 mio.ton	
- Penggunaan Gas		: 356,36 mio. mmbtu	
- Install Capacity		: 36 GW	
- Electricity growth		: 9 %	
- APBNP 2012 subsidi LPG 3 kg : Rp 29,126 triliun, volume: 3,606 juta metrik ton (MT)			
- APBN 2013 subsidi LPG 3 kg : Rp 26,451 triliun, volume : 3,859 juta MT.			
-Tahun 2013 konsumsi LPG subsidi 3 kilogram: 4,4 juta MT, 12kg: 0,92 juta MT			
Total menjadi 5,32 juta Metrik Ton , sedangkan Produksi Dalam Negri 2 juta M-Ton			

CADANGAN DAN PRODUKSI ENERGI INDONESIA (2008)

ENERGI FOSIL	SUMBER DAYA	CADANGAN	PRODUKSI	RASIO CAD/PROD (TAHUN)*
Minyak Bumi	56,6 miliar barel	8,2 miliar barel**)	357 juta barel	23
Gas Bumi	334,5 TSCF	170 TSCF	2,9 TSCF	59
Batubara	104,8 miliar ton	18.8 miliar ton	229,2 juta ton	82
Coal Bed Methane (CBM)	453 TSCF	-	-	-

*) Dengan asumsi tidak ada penemuan cadangan baru

**) Termasuk Blok Cepu

ENERGI NON FOSIL	SUMBER DAYA	KAPASITAS TERPASANG
Tenaga Air	75.670 MW (e.q. 845 juta SBM)	4.200 MW
Panas Bumi	27.510 MW (e.q. 220 juta SBM)	1.052 MW
Mini/Micro Hydro	500 MW	86,1 MW
Biomass	49.810 MW	445 MW
Tenaga Surya	4,80 kWh/m ² /hari	12,1 MW
Tenaga Angin	9.290 MW	1,1 MW
Uranium	3.000 MW (e.q. 24,112 ton) untuk 11 tahun*)	30 MW

*) Hanya di Kalan – Kalimantan Barat

Asean country – Electricity Tariff

NO	Country	Electricity Tariff USD Cent / kWh	
1	Brunei	8.2	
2	Cambodia	13.33	
3	Indonesia	8.15	
4	Lao PDR	5.89	(Data 2005)
5	Malaysia	11.8	
6	Myanmar	6.67	(Data 2005)
7	Philipines	17.3	
8	Singapore	11.07	
9	Thailand	7.53	
10	Vietnam	9.6	
*	South Korea	9.9	

Renewable Energy Resource in Indonesia

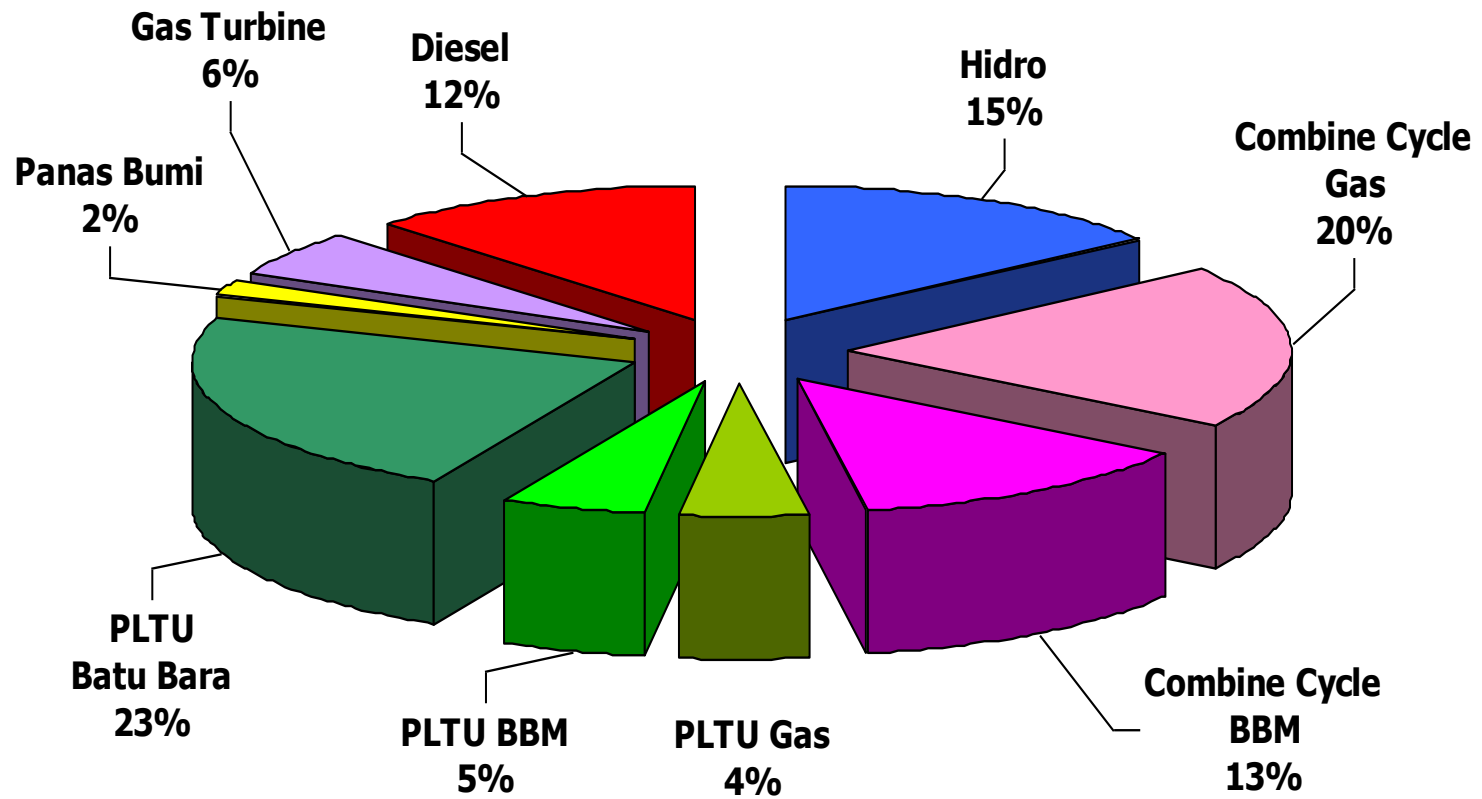
Non Fossil Energy	Resources	Capacity in Operation
Hydro	75.670 MW	4.200 MW
Geothermal	27.710 MW	1.189 MW
Mini / Mikro Hydro	500 MW	86,1 MW
Biomass	49.810 MW	445 MW
Solar Energy	4,80 kWh/m ² /hari	12,1 MW
Wind Energy	9.290 MW	1,1 MW
Biogas	10.000.000 kWh/day	**

Fossil Energy Reserve (2009)

ENERGIY	Potential Reserve	Reserve (2009)			Yearly Production	Reserve / PROD Ratio
		Proven				
		(P1)	(P2)	(P1+P2)		(years)*
Oil (Billion barrel)	56,600	4,303	3,695	7.998*)	0,357	22
Natural Gas (TSCF)	334,500	10,734	5,229	159.63	2,885	55
Coal (Billion Ton)	104,757	20,99		20,99	0,229	92
Coal Bed Methane (CBM) (TSCF)	453					

INDONESIA ENERGY MIXED 2010

Installed Capacity by Fuel



Indonesian Geothermal Energy

- To-date geothermal resources contribute only around 1,220 MW of the total Indonesia power generation capacity of approximately 36 GWe.
- As Government of Indonesia launched the second accelerated 10,000 MW projects to be commercially operational by 2012-2018, 48% of which are geothermals.
- The 2012-2020 Projects : Sumatera 15 PPs ,2,440 mW ; Jawa-Bali 10 PPs 1,995 mW and other 6 PPs 865 mW
- Those Geothermal power development are to replace fossil fuel for electricity in some regions.
- The Program is to meet National Energy Policy that has been targeted as much as 25% in the Indonesia's energy mix by 2025

Geothermal Power Plant Development

- Government gives Geothermal field concession to developer by open tender
- The fields are varied from small size; less than 30 mw capacity, Medium 30 to 60 mW, and large more than 60 mW
- Turbine unit size 5 mWe, 2 mWe , 55-60 mWe and 100 mWe
- Govt Impose FIT for electric Generation price , 12 to 15 USD cents perkWh

KEY INDICATORS OF ASEAN ELECTRICITY 2010

	Country	Installed Cap. [MW]	Peak Load [MW]	Energy Sales (TWh)	No Customers
1	Brunei	803.5	454.7	2.9	112 163
2	Cambodia	479	291	1.2	286 660
3	Indonesia	26 015	19 263	111.3	34 559 253
4	Lao PDR	271.6	350	1.4	523 285
5	Malaysia	17 622	12 990	75.4	6 447 281
6	Myanmar	1 761	1 140	4.3	1 269 004
7	Philippines	38 318	8 766	45.6	21 000 000
8	Singapore	8 919	5 711	31.8	1 250 000
9	Thailand	34 335	22 586	134	13 000 000
10	Vietnam	15 716	9 255	45.1	8 000 000