

Study

MARKET INFO INDONESIA – PHOTOVOLTAICS

dena-Market Information System

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on the basis of a decision
by the German Bundestag

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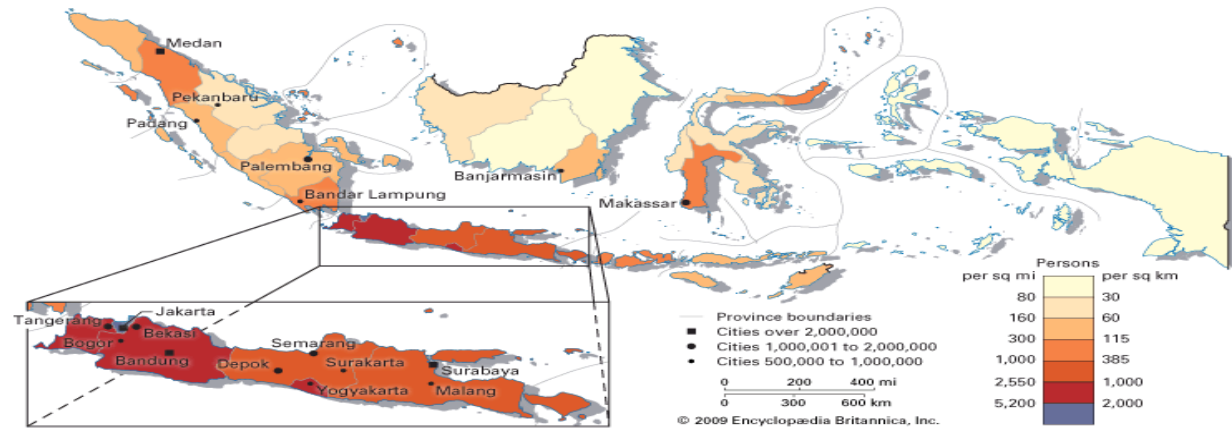


Federal Ministry
for Economic Affairs
and Energy

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SOLAR IRRADIATION & POPULATION DENSITY

Population density



Source: Encyclopædia Britannica (2012)

Daily global solar irradiation



Source: The Sietch Blog (2011)

BASIC DATA

General basic data (2014)			
Area	1,904,569 km ²	GDP	10,137,311 bn Rp (~643.51 bn €*)
Population (est.)	251.5 m	GDP per capita (est.)	40,308,988 Rp (~2,559 €*)
Language	Bahasa Indonesia	GDP growth	5.5 %
Government type	Unitary presidential constitutional republic	Inflation	7.5 %
Administrative division	29 provinces, special status region Yogyakarta, three provinces Aceh, West-Papua and Papua with special status, capital region Jakarta	Unemployment rate (est.)	5.8 %
Basic energy market data (2012)			
Electricity consumption (total/per capita)	173.9 TWh / 692.7 kWh		
Electricity export	-		
Electricity generation	200.2 TWh		
Electricity prices in 2013 (2014**)	Industrial (< 200 kVA): 1,361 Rp / kWh (8.6 € ct / kWh*)		
	Industrial (> 200 kVA): 1.124 (1,562**) Rp / kWh (~ 7.1 (~ 9.9**) € ct / kWh*)		
	Industrial (> 30,000 kVA): 1,012 (1,667**) Rp / kWh (~ 7.9 (~ 10.6**) € ct / kWh*)		
	Commercial (6.6 ≤ 200 kVA): 1,352 Rp / kWh (~ 8.6 € ct / kWh*)		
	Commercial (> 200 kVA): 1,418 Rp / kWh (~ 9.0 € ct / kWh*)		
	Luxury households (> 6.6 kVA): 1,352 Rp / kWh (~ 8.6 € ct / kWh*)		
Share of renewables (electricity consumption)	13.3 %		
Increase of electricity consumption (2010 – 2030)	+9 % p. a.		
Annual average global solar irradiation	1,642 kWh / m ² a		

* Exchange rate March 2014: 1 € = 15,753.14 Rp

PHOTOVOLTAIC MARKET INDICATORS

Indicators					
Market size (annual installed capacity)	2010: ca. 1 MWp	2011: ca. 1 MWp	2012: 8.7 MWp	2013: 42.8 MWp	2014e: 74.5 MWp
National PV target 2025	2025: 990 MWp (390 MW off-grid, 600 MW on-grid), 15 % share in total generation				
Main market drivers 2014	<ul style="list-style-type: none"> The development of rural areas is a priority of the government, which targets an electrification rate of 90% by 2020 (65 %, status: February 2012). Due to high diesel prices and the structure of the archipelago there is a big market potential for PV (stand-alone- and hybrid-systems) for electrification of grid remote areas (in particular the east of Indonesia). “1,000-Islands program”, coordinated by state-owned utility PLN (details see next slide). Since May 2014, adjustments of electricity tariffs for medium-scale industrial customers and large industrial customers as well as for large-scale household customers, medium-scale businesses, large-scale businesses and medium-sized government offices in combination with a net metering rule of PLN. 				
PV support 2014	<ul style="list-style-type: none"> Since 2009 a FIT exists for PV and other renewables. The tariff for PV varies between 5.36 -8.2 € ct / kWh (duration: 20-30 years; details see next slide). Large-scale PV projects supported by the government will be tendered by the state-owned utility PLN . Since November 2013, a net metering regulation for rooftop installations for customers of PLN has been in force. 				
Recent changes in PV support	<ul style="list-style-type: none"> Rural electrification: It is planned to install 2.2 MWp of decentralized PV systems by 2014. The target is the electrification of grid remote areas. Renewable investments: 15.7 bn US Dollars shall be allocated for development of renewable energies by 2025. Implementation of IPP-Program “1,000 Islands” and “One Solar Watt per Person” have started in 2013 (see next slide for details). July 2013: Indonesia’s Finance Minister stated that a PV FIT of 0.25 US-Dollar/ kWh guaranteed for 20 years is planned. It is expected that up to 172.5 MW of PV capacity at 72 sites will be tendered. At the end of 2013 the Department of Energy (ESDM) introduced Regulation 17 to award PV capacity through a public bidding process. Details see slide 7. 				

OVERVIEW OF PV SUPPORT SCHEMES

Support Scheme	Details	
Net metering for rooftop PV (PLN internal regulation)	<ul style="list-style-type: none"> PLN Regulation (0733.K/DIR/2013) has enabled grid access and operation of rooftop PV for customers of PLN since November 2013. PLN installs necessary meters. Received and delivered electricity will be offset by PLN. If the amount of fed-in PV electricity is more than the energy delivered by PLN, the difference become deposits which will be taken into account in subsequent months thereafter. Customers have to pay a minimum charge according to installed PV capacity, which is connected with PLN. 	
IPPs defined in Energy-Law Nr. 30/2009	<ul style="list-style-type: none"> The energy law Nr. 30/2009 opened the electricity market for Independent Power Producers (IPPs). It defines the provisions for power purchase agreements (PPA) between IPPs and PLN. <ul style="list-style-type: none"> Regions that are not yet covered by the service area of PLN and are not included in the current electrification plan of PLN can be supplied by private owned generation companies. IPPs who generate electricity in the service area of PLN have to sell directly to PLN via PPAs. 	
1,000 Islands Program (2013 - 2016)	<ul style="list-style-type: none"> PLN runs the “1,000-Islands-Program” and coordinates the awarding process of developers through tenders. At the same time the PLN will also be investor and operator of all installed systems. 	
	PV systems (50 up to 1,000 kWp)	Large scale PV power plants (>1 up to 30 MWp)
	<ul style="list-style-type: none"> 674 sites with cumulated capacity of 119 MWp. Expected system price is: 2.69 up to 3.83 € /Wp. 	<ul style="list-style-type: none"> 71 sites with cumulated capacity of 302 MWp, system capacity between 1 up to 30 MWp each. Expected system price is: 2.56 € / Wp.



Tenders of “1,000-Island-Program” were issued in 2014 and are available at the website of PLN: www.pln.co.id
 It must be taken into consideration that for public tenders in Indonesia a local content of 40 % is mandatory.

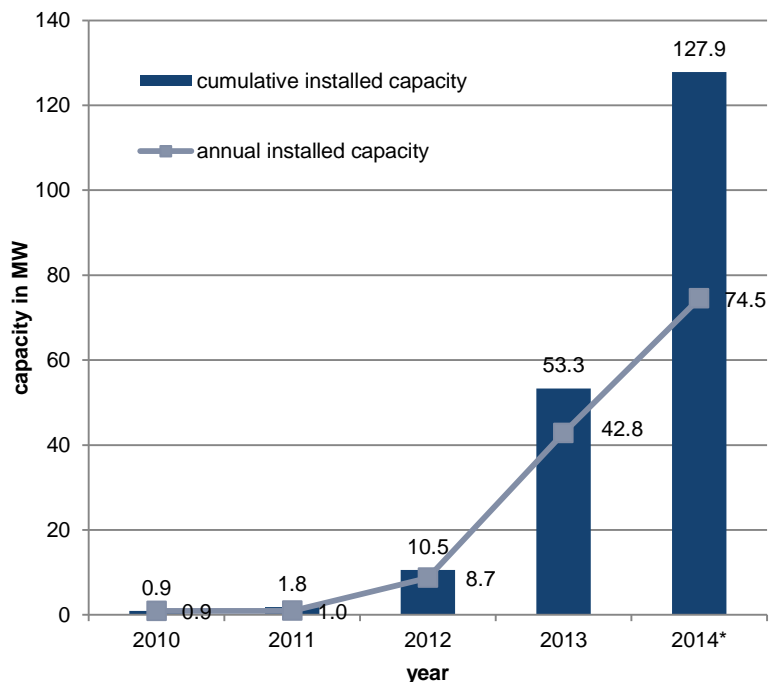
PUBLIC TENDER

Category	Details
Public bidding process for PV (Ministerial decree 17/2013)	<p>In November 2013, the Department of Energy (ESDM) introduced Regulation 17 on tendering PV capacity through a public bidding process. 80 PV projects with a total capacity of 140 MW have already been defined to be tendered for the period 2013-2014. Power purchase for these PV projects is guaranteed by the state energy company PLN. Price caps are set for these PPAs.</p>
	<p>Scope</p> <ul style="list-style-type: none"> ▪ PV power plant projects that will be tendered are determined by the Department of Energy Directorate-General for new renewable energy and energy efficiency (NRE & EC). The location and capacity of each installation is predetermined. ▪ By the end of 2014, the tendering of 80 projects throughout Indonesia with a total capacity of 140 MW is planned. ▪ Foreign companies can only participate in the bidding process if a holding company is established and the share of the foreign company must not exceed 95 %. ▪ The exact terms are defined in the Investment Law 25/2007.
	<p>Remuneration</p> <ul style="list-style-type: none"> ▪ 20-year PPAs at the awarded price through the reverse auction.
<p>Process</p> <ul style="list-style-type: none"> ▪ The ESDM sets a maximum price on how much is paid for a megawatt hour generated. Currently the price is 0.25 US-Dollar/kWh for a local content ratio of less than 40 % and 0.30 US-Dollar / kWh for a local content ratio of more than 40 %. ▪ The bidding mechanism is a reverse auction. For bidders whose projects have a local content ratio of more than 40 %, 0.05 US-Dollar / kWh will be deducted from the bidding price. However, if their projects are successful the remuneration will be the amount of the original bid. ▪ The power plant projects with the cheapest purchase prices in the reverse auction will be awarded with a PPA. 	

For detailed information visit the website of ESDM: www.esdm.go.id

MARKET DEVELOPMENT AND BARRIERS

Development of installed PV capacity (on-grid)



* Forecast

Sources: PLN (/2012), IHS Solar (2013) in PV-Magazine (2014)



The main barriers in the Indonesian PV market

Insufficient liberalization and focus on establishing coal power plants:

- Major companies, such as energy suppliers and network operators (PLN), are state-owned.
- Government plans to install 35 GW of coal-fired power plants.

Financing barriers:

- Although there are several well-established private banks, few are ready to provide funds for technologies.
- The "Negative Investment List" of the country limits foreign investments to power plants < 10 MW.

Lack of spare parts / local acceptance

- Access to spare parts and to on-site specialists is currently difficult. So the local population is often not willing to accept projects that could fail in the long-run.

Competition from Asia:

- Strong economic links with ASEAN region along with the People's Republic of China involves a high level of competition.
- The companies, which do not originate from ASEAN countries and China, complain about a lack of transparency in procurement procedures, in particular in public tenders.

Infrastructural barriers:

- Lack of power grids make the implementation of grid-connected renewable energy projects difficult.

MARKET NEWS (1/3)

Date	Topic	Source
07/11/2014	<p>Mega power plant planned</p> <p>Indonesia will build a 5,000-megawatt power plant in Cilacap, Central Java, as part of the new government's ambitious program to have at least an additional 35,000 MW of power within five years. Coordinating Maritime Affairs Minister Indroyono Soesilo said Thursday that development of the first stage of the huge power plant complex, which would be among the largest in the world, was expected to begin next year so that it could begin commercial operation by 2018.</p>	Jakarta Post
19/06/2014	<p>Indonesia restarts solar auction</p> <p>The government has relisted solar projects for a new renewable energy auction that has some \$43 million slated for solar projects on the country's outer islands. Indonesia's Energy and Mineral Resources Ministry will restart its tender process for solar development projects on the country's outermost islands after bidders failed to submit the correct information in recent auctions, according to The Jakarta Post. "The repeat tenders are due to administrative matters. Bidders failed to submit proper data in the previous tenders," the newspaper quoted Alihuddin Sitompul, director for diverse new energy at the ministry's renewable energy directorate general. The new auction, which covers projects for 25 outer islands in the country, is scheduled to be completed by the middle of July, with winning bidders expected to complete the projects by December.</p>	PV-Magazine

MARKET NEWS (2/3)

Date	Topic	Source
29/04/2014	<p>Government Adjusts Electricity Tariff For Certain Customers Minister of Energy and Mineral Resources has enacted Ministerial Regulation Number 09/2004 on Electricity Tariff. The regulation contains of tariff adjustment for medium-scale industrial customers and large industrial costumers as well as for large-scale household customers, medium-scale business customers, large-scale business customers and medium-sized government offices. The adjustment will be implemented on a gradual basis starting 1st May 2014 to December 2014.</p>	Ministry of Energy (ESDM)
07/11/2013	<p>Indonesia presents new bidding process The maximum purchase price will be US\$0.25 per kilowatt hour or US\$0.30 per kilowatt hour if local components in a solar photovoltaic power plant amount to at least 40 %. The bids from project developers that meet a local content of 40 % will be reduced by 0,05 US\$/kWh in the bidding process. When their bid was successful, the originally offered tariff will be applied. Foreign companies can not participate in the tender procedure.</p>	PV-Magazine
11/07/2013	<p>Indonesia is planning auctions for further expansion of PV (in German) The Director for Renewable Energy of the Ministry of Energy has announced that auctions are planned for already allocated electricity generating capacities in order to promote the expansion of PV. The auctions are aimed at project developers that can offer prices lower than 0.25 US Dollar per kWh. It is expected that up to 172.5 MW of PV capacity at 72 sites will be tendered.</p>	Exportinitiative Erneuerbare Energien

MARKET NEWS (3/3)

Date	Topic	Source
17/05/2013	<p>SGI-Mitabu agrees megawatt-scale solar deal in Indonesia SGI-Mitabu, a company formed by two Australian firms The Solar Guys International and Mitabu Australia, has entered into a partnership with the government of South Sumatra, Indonesia to develop megawatt-scale solar power projects. The partnership was sealed with the signatures of SGI-Mitabu directors Dane Muldoon and Dr. M. Rusydi, and the Governor of South Sumatra, Alex Noerdin.</p>	PV-Tech
29/04/2013	<p>Indonesia: 36 new solar plants planned for 2013 Director of Renewable Energy and Energy Conservation at the Ministry of Energy and Mineral Resources, Alihudin Sitompul, has stated that the Indonesian government was planning on increasing the number of solar plants in the country this year. With the 36 new solar plants that are in the pipeline for 2013, this goal can be achieved.</p>	PV-Magazine
03/04/2013	<p>Indonesia plans tender for PV projects with a total capacity of 150 MW (in German) Wie im März bekannt wurde plant die indonesische Regierung im Mai 2013 die Veröffentlichung einer Ausschreibung für PV-Projekte mit einer Gesamtkapazität von bis zu 150 MW. Interessierte Unternehmen werden dann vorrausichtlich zwei Monate Zeit haben, um entsprechende Angebote zu unterbreiten.</p>	Exportinitiative
23/03/2010	<p>Government expects to remove electricity subsidy by 2014 “We hope we can fully implement the economic tariffs for electricity by between 2014 and 2015,” Energy and Mineral Resources Minister Darwin Zahedy Saleh said in Jakarta on Monday. Darwin said that this had been part of the government’s plan. “But ,we will keep protecting the low income people,” Darwin said. Currently, all types of customers pay for electricity at far lower than its market price. The current average electricity tariff is at about Rp 655 (7.19 US cents) per kilowatt hour (kWh), while the market price is about Rp 1,030 per kWh, Murtaqi Syamsuddin, a director at state power utility PT PLN, said.</p>	Jakarta Post

CONTACT INFORMATION

Category	Name	Website
Ministry of Energy	Ministry of Energy and Mineral Resources (ESDM)	www.esdm.go.id/index-en.html
Ministry of Environment	Kementrian Negara Lingkungan Hidup (MENLH)	www.menlh.go.id
German-Indonesian Chamber of Industry and Commerce	Perkumpulan Ekonomi Indonesia-Jerman (EKONID)	www.indonesien.ahk.de
Solar Energy Association	Solar Power Indonesia	www.solarpowerindonesia.com
Renewable Energy Society	Indonesian Renewable Energy Society (METI)	www.meti.or.id
Secretary for Alternative Energy	Secretary for Alternative Energy	www.energialternatif.ekon.go.id
State Utility and Network Operator	Perusahaan Listrik Negara (PLN)	www.pln.co.id
State Financing Institution for Renewable or Solar Projects	Badan Koordinasi Penanaman Modal (BKPM)	www.bkpm.go.id

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