

Emerging markets 2015: reason for optimism in Indonesia

The election of Joko Widodo to Indonesia's presidency in July was met by Indonesians with optimism that his government will direct funds towards health care, education and infrastructure investments. President Widodo's decision in November to slash the fuel subsidies in particular provided the energy industry with optimism that a new era may be dawning for renewables including solar PV in the populous nation.

pv magazine is beginning the new year with a look to emerging solar markets. In the first of the series, Ilias Tsagas looks at why the stage may be set for solar to take off.

Solid reasons for Indonesia to turn to solar PV

Indonesia is a populous country whose economy is amongst the brighter performers in Asia. Yet, according to the International Energy Agency (IEA), of its population of 250 million, 82 million people (around a 33% share of population) do not have access to electricity and 124 million (around a 50% share of population) rely on the traditional use of biomass for cooking.

The country's transition into a manufacturing and services based economy has increased its energy needs. Given its economic growth, a growing middle-class is increasing also driving the country's electricity needs to unprecedented highs.

Indonesia's thirst for electricity means the country has had to reduce oil and gas exports and direct its home grown oil and gas to its domestic market. This move is not economically beneficial since Indonesia's oil and gas sectors contribute significantly to the its GDP.

Good solar irradiation (Indonesia is an equatorial country) and continuously falling photovoltaic technology prices mean solar PV can plug Indonesia's energy gap. Indonesia's solar radiation stands at 4.8 kWh per m² per day, however only a few MW of solar PV has been installed, according to IEA figures.

Off grid solar PV particularly presents many opportunities. Indonesia consists of more than 17,508 islands of which 6,000 are inhabited and 1,000 are permanently settled. The dispersed, mountainous and seismically active geography of the Indonesian archipelago is an obstacle to the development of cost effective grid-connected electricity systems and off grid systems can provide solutions.

Wind energy potential on the contrary is not great because of the low wind speeds ranging from 3-6 m/sec, however hydropower and biomass potentials are very significant. Rather amazingly, the country sits on the "ring of fire" volcano belt, therefore geothermal potential is vast, around 40% of global geothermal reserves.

Reasons why foreign investment lags behind

One of the reasons foreign energy investment in Indonesia has been inadequate, the IEA argues, is its investment laws that presents difficulties in negotiating and enforcing contracts, and often treats domestic and foreign companies differently. Nevertheless, IEA argues,

"most laws in Indonesia are written in general terms, leaving many matters to be regulated by its implementing regulations."

Further to this, there is an explicit problem inherent in the Indonesian electricity sector that result in insufficient investment. This is the heavy state electricity generation subsidies that keep the electricity prices artificially low and discourages investment, particularly when it comes to independent power producers (IPPs).

According to the Indonesian law, the state controls electricity supply and the electric utility - PT Perusahaan Listrik Negara (PT PLN) - is the sole electricity supplier. PLN almost always presents obstacles to IPPs entering the market.

Jokowi's election: a turning point?

The turning point to Indonesia's power investment gridlock might be Joko Widodo's, who is generally known as Jokowi, election onto the country's presidency in July. Widodo won 53.15% of the vote promising among other to slash Indonesia's fuel subsidies and provide a better social welfare for the poor.

To much international attention, Widodo kept his fuel policy promise, announcing in November that petrol and diesel prices would rise by 2,000 rupiah (\$0.16) per liter. Perhaps this move can be a turning point for Indonesia's energy policy as a whole.

Indonesia's fuel subsidies are wasteful, expensive and poorly targeted because they help the country's middle and upper classes, rather than the poor who rarely own cars. Between 2009 and 2013, Indonesia spent more on fuel subsidies than it did on infrastructure and social-welfare programs combined. The price rise, although modest, is expected to save the government around 120 trillion rupiah in 2015. It is not exactly precise where this money will be directed, however Widodo has promised education, healthcare and infrastructure programs.

Will Widodo include infrastructure for renewable energy in his program for 2015 and if yes, which types of renewable energy systems will be prioritised? Most significantly, will Widodo's government decide to improve the unpredictable legal environment and heavy protectionism of national companies encouraging foreigners to invest? The first signs have been good but nothing is certain and the outlook for the Indonesian solar PV sector in 2015 remains uncertain.

Ilias Tsagas wrote the chapter "Indonesia's Energy Sector: The Need to 'Green' the Energy Mix and Attract Investment in Renewable Energies" in the recent book *The Greening of Indonesia*. The *Greening of Indonesia* was edited by Dr D. Irawati, Dr S. Onggo, M. Kennet and S. Marcelino and was firstly published by the Green Economics Institute in 2013. Please, contact Ilias for more info.

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