WEBINAR

" ENERGI SURYA SEBAGAI ALTERNATIF ENERGI DI MASA PANDEMI "

Oleh:
Setyawan Wahyu Pratomo , S.T.,M.T

Jurusan Teknik Elektro
Fakultas Teknologi Industri, Universitas Islam Indonesia

Pembangkit Listrik Tenaga Surya

Pembangkit Listrik Tenaga Surya adalah

Suatu pembangkit listrik yang memanfaatkan energi yang dimiliki oleh matahari (intensitas radiasi matahari) dimana intensitas radiasi matahari itu akan mengenai sebuah papan *semiconductor Photovoltaic* yang menghasilkan listrik DC, sehingga apabila ingin diubah menjadi AC perlu digunakan inverter daya .


E
F


American


WAR
PEACE


REME
EADED
4
2
1
9
10

Why Solar Energy?

- The lack of the access to electricity in Indonesia has enormous effect on the economy and the well-being of the people and the country.
- Residents depend on burning oil and gas with all its negative affects and steadily increasing prices.
- Solar energy is the only energy that is available everywhere in Indonesia. It is clean, unlimited, safe, environment-friendly and cost-effective.
- Sun energy is free – it can be used by everyone.
- Once you install a solar panel it will deliver more than 30 years of energy at few maintenance costs and without any increase of price.

Why Solar Energy?

- Today's fossil/ nuclear energy system has lead to separate rooms for energy production and energy consumption. Consumption is everywhere, coal, oil, natural gas, uranium occurs is in only a few countries. The dependencies are increasing.
- More than 40 countries in the world who pay more for the import of Energy than they earn from their exports.
- Income from these Countries are per head only 2-8% of the German. But they have to pay the same amount for electricity.
- That means they have no chance with this Energy-System!!!
- Energy trusts earn 1,5 Million Euro per day from one Atomic power plant!
- This Energy-System can not create a hopeful future - is over, even it is represents 80% of the world energy supply.
- We have perhaps 30 years for the change.

Why Solar Energy?

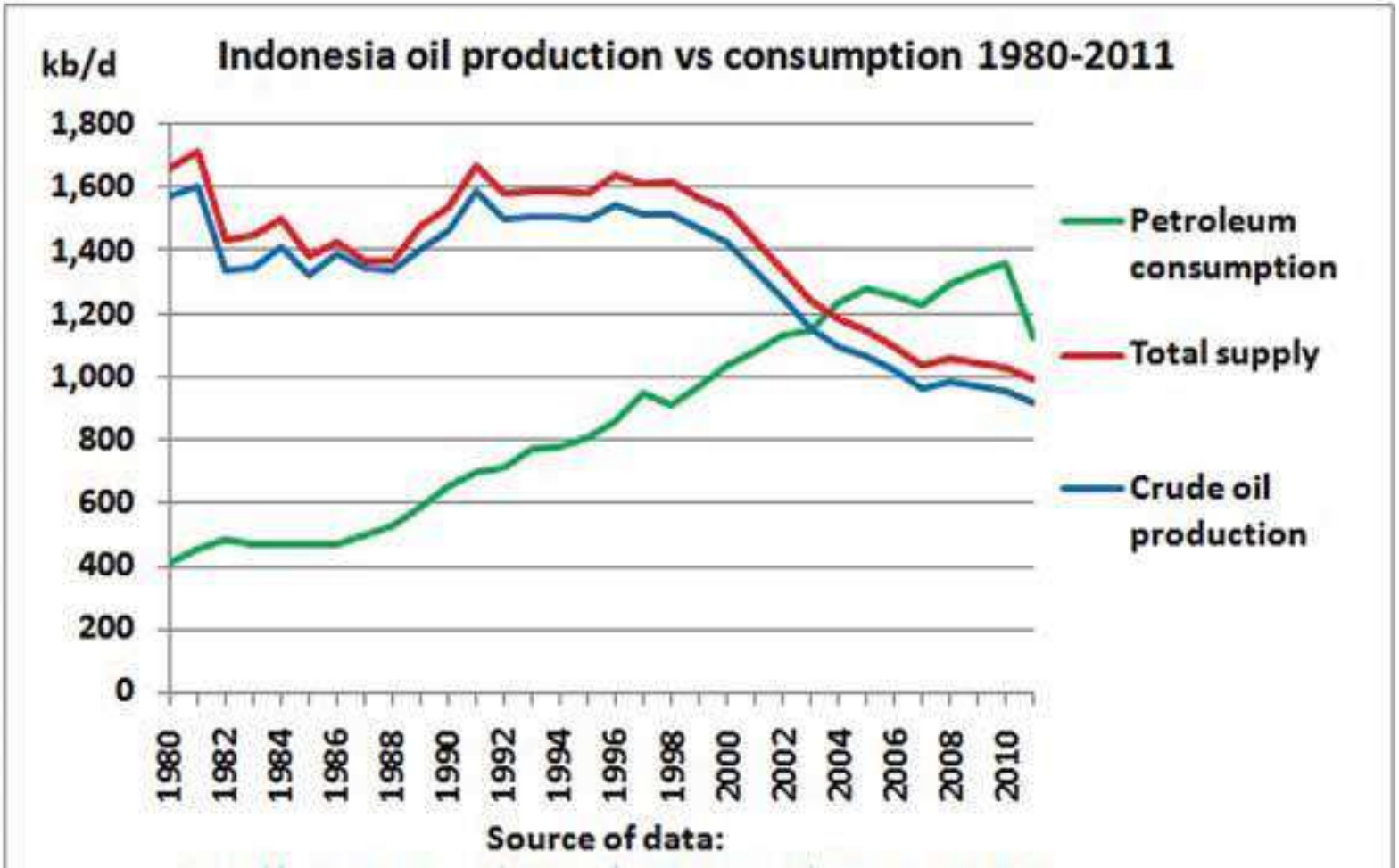
Feed-in Tariff (FiT)

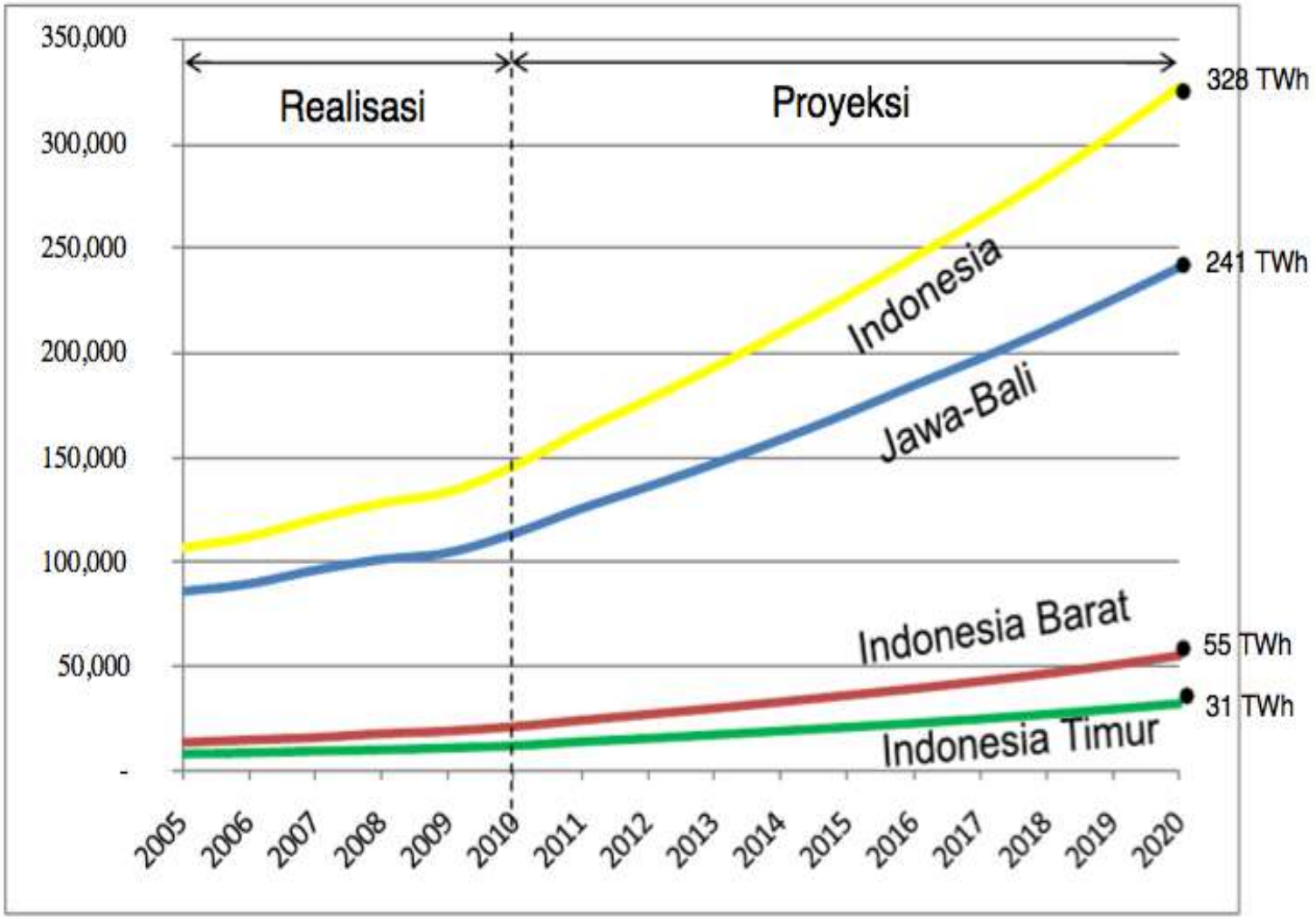
- The costs for electricity from photovoltaic power plants in Germany varies between € 0.30 / kWh and 0.20 € / kWh
- Solar power ensure and create employment and also prepare the way for energy supply which is independent from fossil energy sources
- In many cases an investment activity without subsidy (from the Government) is made possible through a cost-oriented Feed In Tariff.

Features of Solar PV System

- **Clean**
  - No exhaust gas.
- **No mechanical moving part**
  - Quiet.
  - Less maintenance work.
- **Fuel supply is not necessary**
  - Very low running cost.
- **Last resort to supply electricity**
  - Can be installed where no other energy sources are available.
- **Expensive and limited power supply**
  - Small appliance's use only.

Why solar energy (in Indonesia) ?

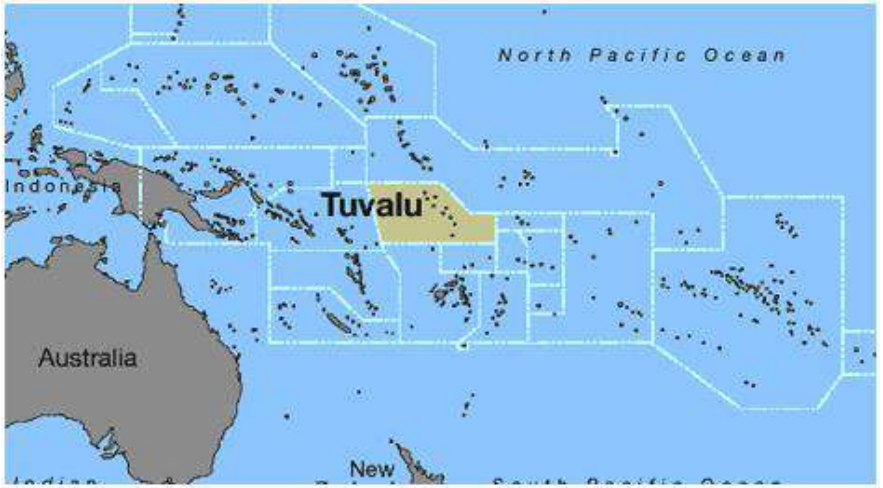




Kebutuhan listrik Indonesia diperkirakan tumbuh rata-rata 8,46% per tahun (Jawa-Bali 7.9%, Indonesia Barat 10,2% dan Indonesia Timur 10,8%)

STRIP OF LAND: Capital Funafuti

PARADISE LOST: What's left of the Island of Tuvalu



Home to some 10,000 people, 1989 U.N. report predicted that, at the current rate the ocean is rising, Tuvalu could vanish in the next 30 to 50 years.

Energy & GHG Emissions in Indonesia

- Indonesia's greenhouse gas emissions reached 2.1 billion tons of carbon dioxide in 2005, making it the world's third largest emitter of greenhouse gases, would reach 2.5 billion tons of CO2 by 2020 and 3.3 billion tons by 2030 under current growth rates

- In G-20 Forum in Pittsburgh,USA (2009), President of Republic Indonesia stated that Indonesia can reduce emission 26% (domestic efforts) and can further reduce as much as 41% (international support in 2020)

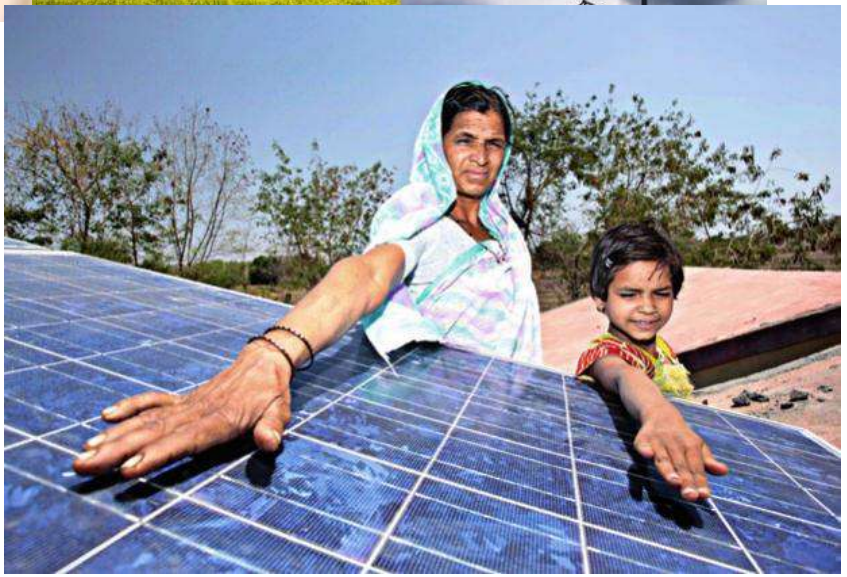
- President on the Retreat in Bali (2010) issued the Policy Directives to achieve the energy security and Green Economy

Energy & GHG Emissions in Indonesia

- To overcome GHG Emission in Indonesia, “green growth” has been proposed as a new way of pursuing economic growth and development,one of the key is acceleration of innovation and diffusion of green technologies, such as using renewable energy

- President Susilo Bambang Yudhoyono stated the fact that 36% of Indonesians have no electricity. Indonesia receives sunlight on average 250-300 W/m2 per year, and 14 hours / day, this potential should be exploited for the use of alternative energy


Paradise



TERIMA KASIH