Indonesia Solar PV Market Prospect & Outlook

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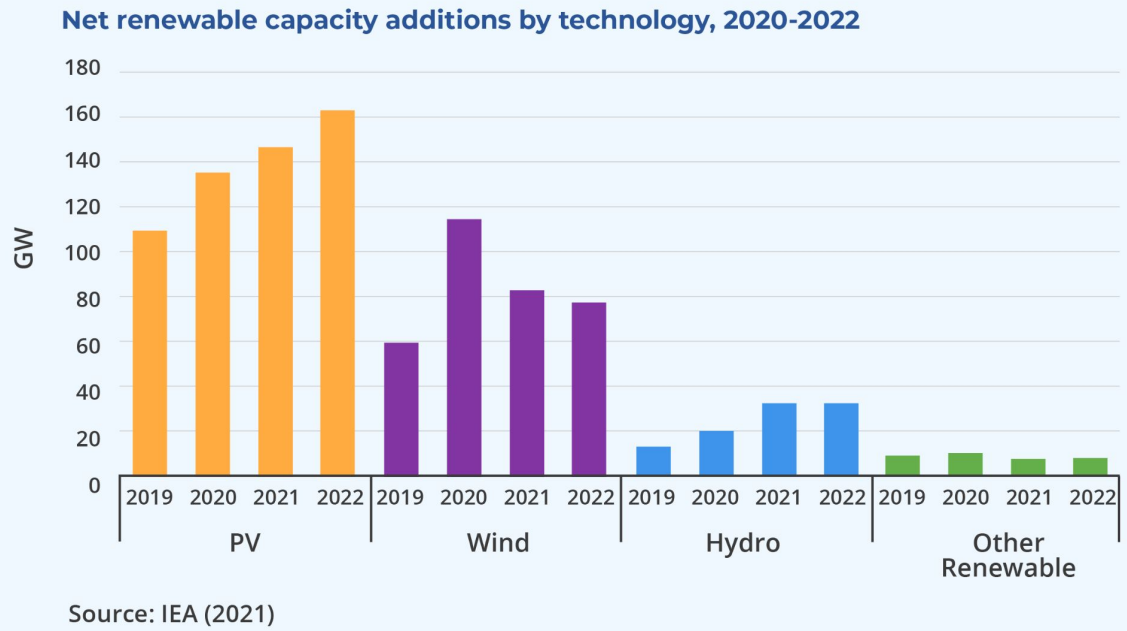
China RE Invest, 25th May 2021

Global solar PV capacity will reach 140 -160 GW in 2021 and 2022



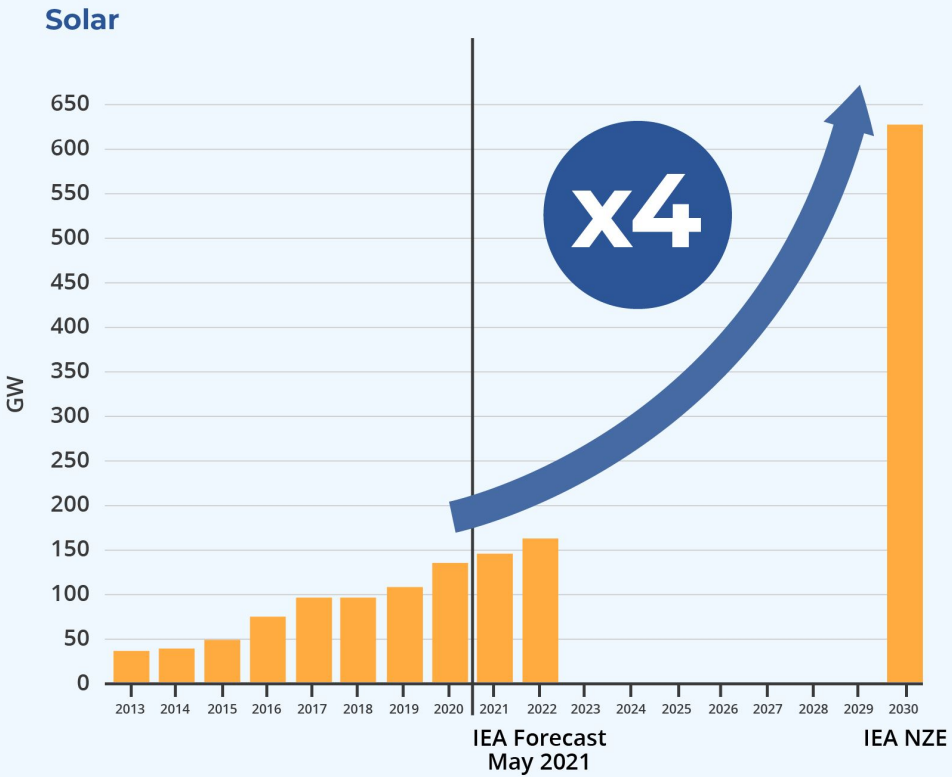
Source: IEA (2021)

- Demand for PV are seen **increase** in all market.
- PV has become the **low-cost energy** in many countries.
- Solar PV development will continue to break record, reach annual addition **162 GW in 2022** (IEA, 2021).

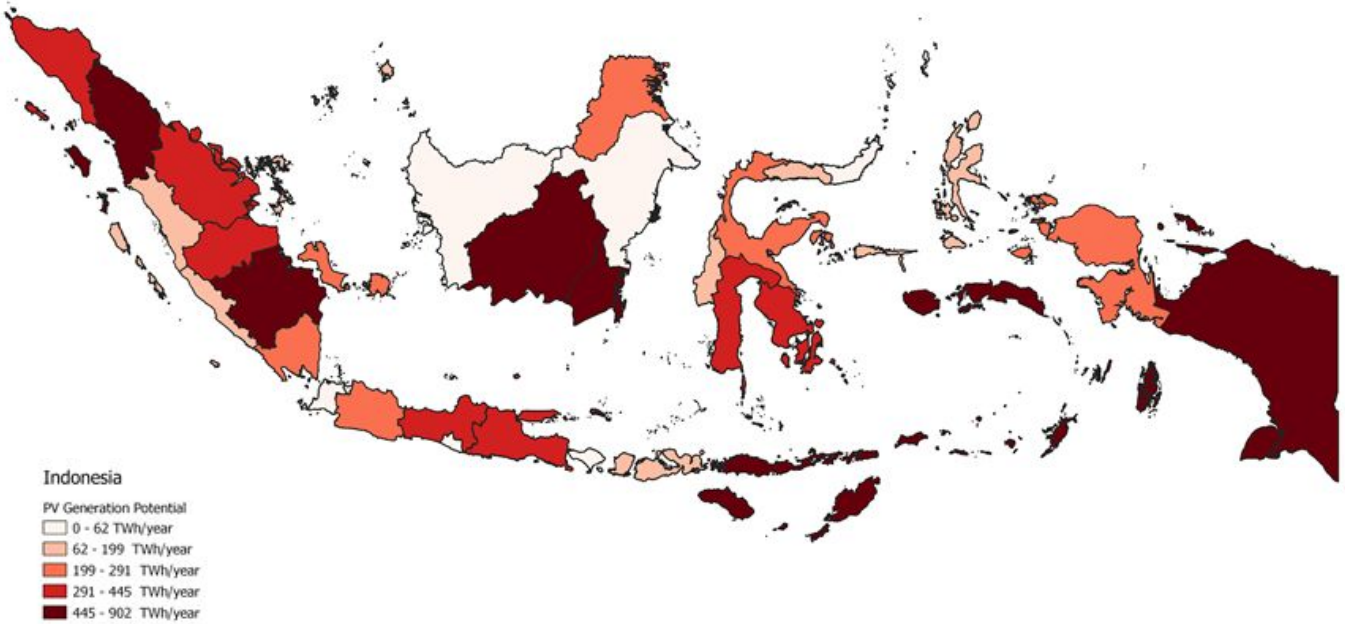
To reach net-zero emission by 2050 renewable must be deployed faster in this decade

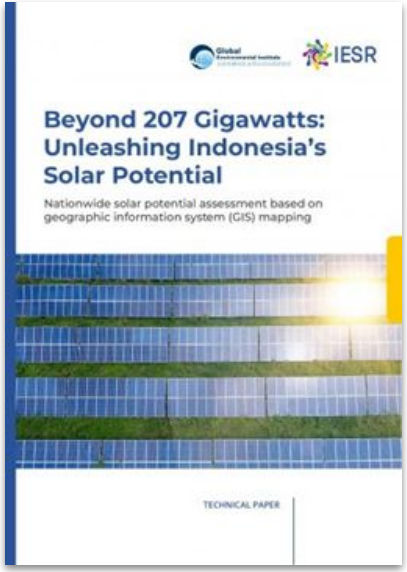
Globally annual capacity of solar PV **must increase 4x in 2030** from today annual capacity addition.

To reach NZE by 2050, Indonesia must install >100 GW of solar PV by 2030



Technical potential of solar PV in Indonesia is as high as 20 TWp with generation up to 26,972 TWh/year.





Source: IESR (2021)

Installed capacity is still very low compared to the huge potential, market is still untapped, more room to grow.

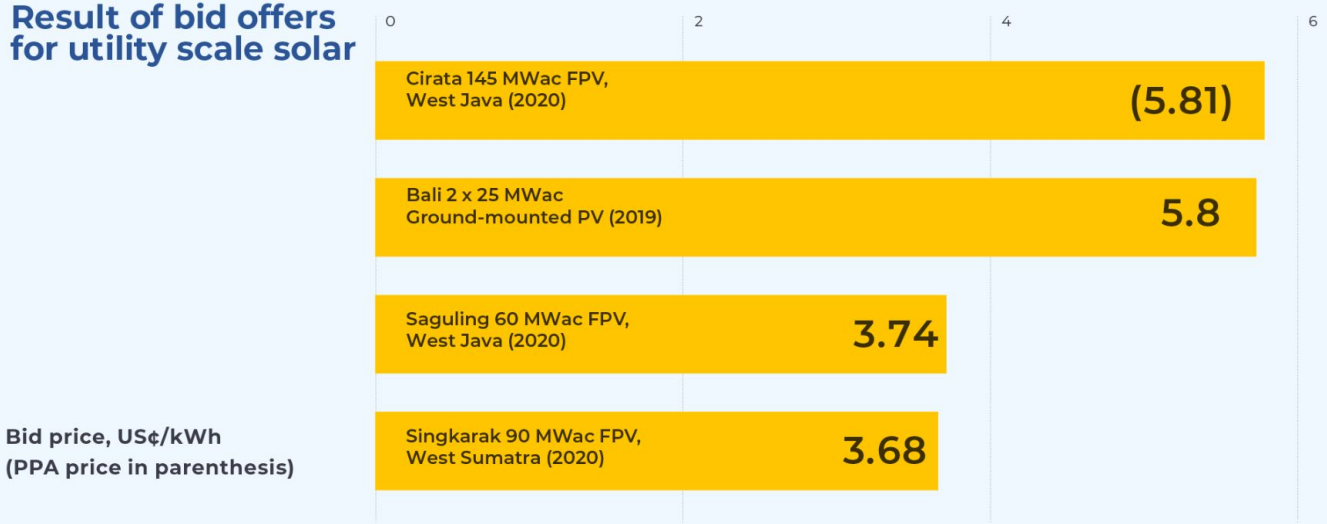
- Rooftop solar only started to grow after 2018.
- Ministerial regulation on rooftop solar gives a boost.
- C&I rooftop solar slowly grow in 2019.
- PLN has more confident in solar technologies.
- Utility remains concern on intermittency of solar and its impact to the power system.

Indonesia's solar installed capacity 2015-2020

Source: **MEMR, PLN; IESR analysis**

Notes: Note: Until Q3 2020; Installed capacity for solar power in MWp (megawatt-peak) except for utility-scale solar (in MWac)

Recent bids on utility scale solar projects have shown declining prices, shown solar energy competitiveness over thermal generation.

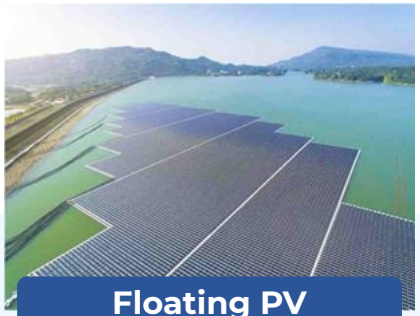


Government aspires to increase the deployment of Solar PV to reach 23% renewable energy mix target by 2025

Solar PV rooftop

2.14 GW from 2021 to 2030

- Building & facilities of SOEs
- Government's building
- Commercial & industrial building
- Household consumers



Floating PV

Total potential: 28.2 GW

- Java – Bali: 1.9 GW in 13 locations
- Sumatra: 7.15 GW in 3 locations
- Sulawesi: 2.9 GW in 6 location
- Kalimantan: 26.7 MW in 1 location
- Maluku, Papua & Nusa Tenggara: 39.4 in 5 locations

Utility scale solar

5.34 GW

Remaining challenges for utility scale solar project could eclipse the huge Indonesia's solar potential

- PLN as single off-taker is facing oversupply in Java-Bali & Sumatra system.
- PLN's priority to assign project to its own generation subsidiaries.
- The absence of power-wheeling and direct PPA regulations and standardize PPA.
- The absence of competitive procurement system (e.g., auction).
- Fossil fuel subsidy & subsidized electricity tariff.
- In some area, land availability remaining issues (esp. in Java-Bali).

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