Powering Indonesia's Clean Energy Future through Solar PV Growth amid Global Trade Challenges

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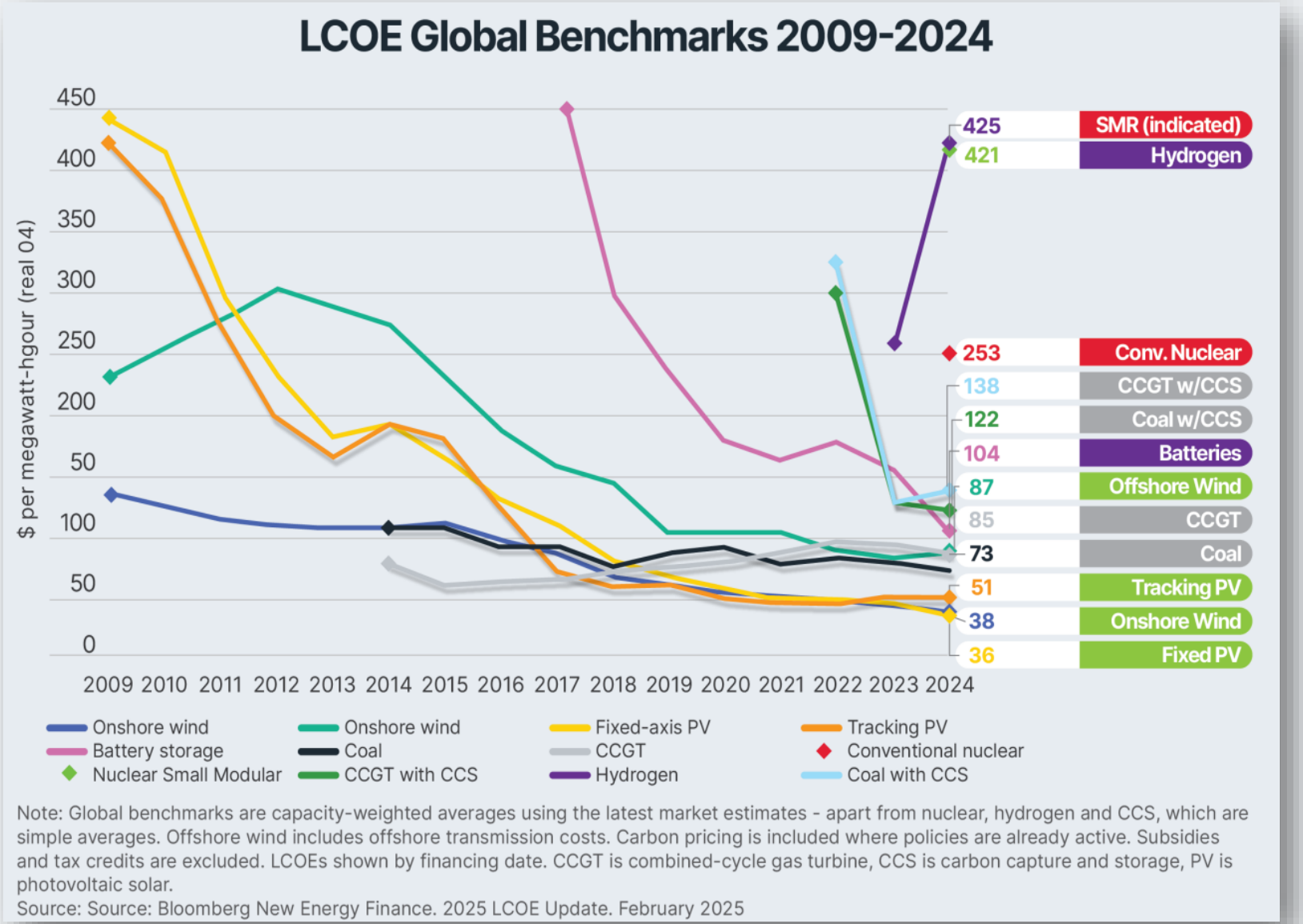
Why renewables?

Basic renewable energy – solar and wind – are globally the cheapest source of electricity.

Batteries are dropping faster than solar or wind

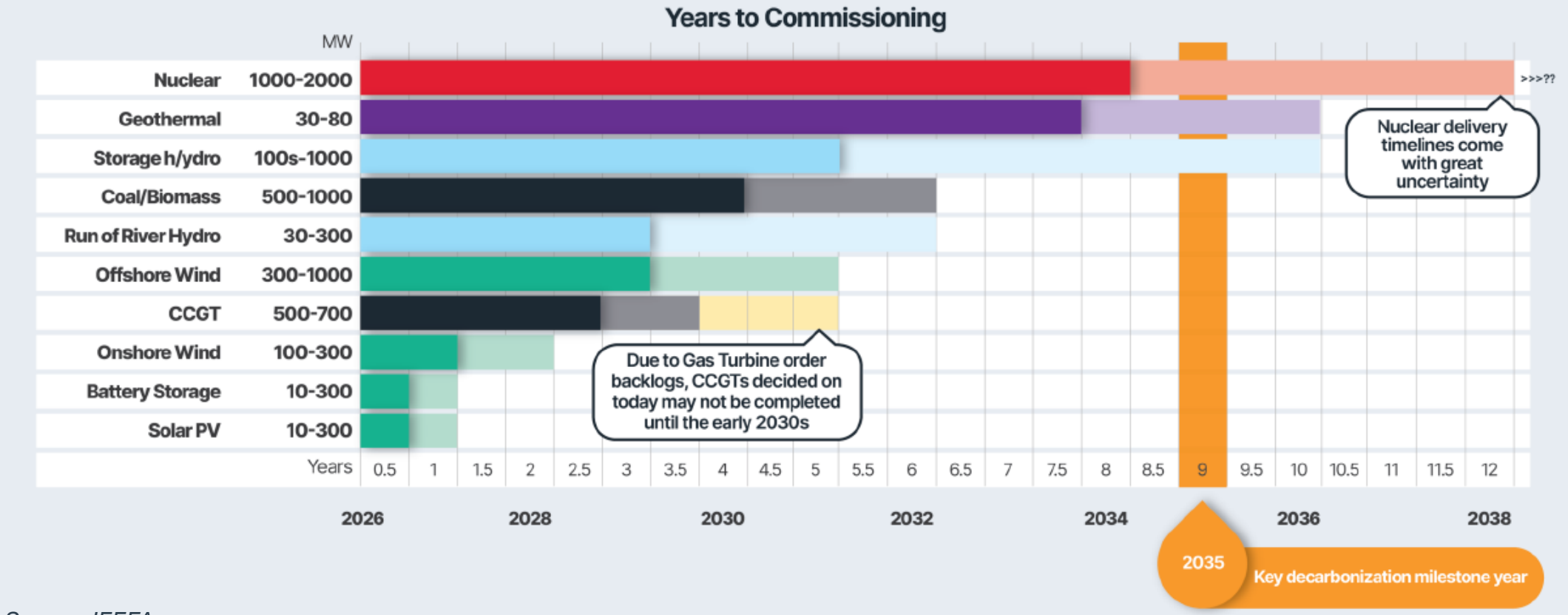


Note: Global benchmarks are capacity-weighted averages using the latest market estimates - apart from nuclear, hydrogen and CCS, which are simple averages. Offshore wind includes offshore transmission costs. Carbon pricing is included where policies are already active. Subsidies and tax credits are excluded. LCOEs shown by financing date. CCGT is combined-cycle gas turbine, CCS is carbon capture and storage, PV is photovoltaic solar.

Source: Source: Bloomberg New Energy Finance. 2025 LCOE Update. February 2025

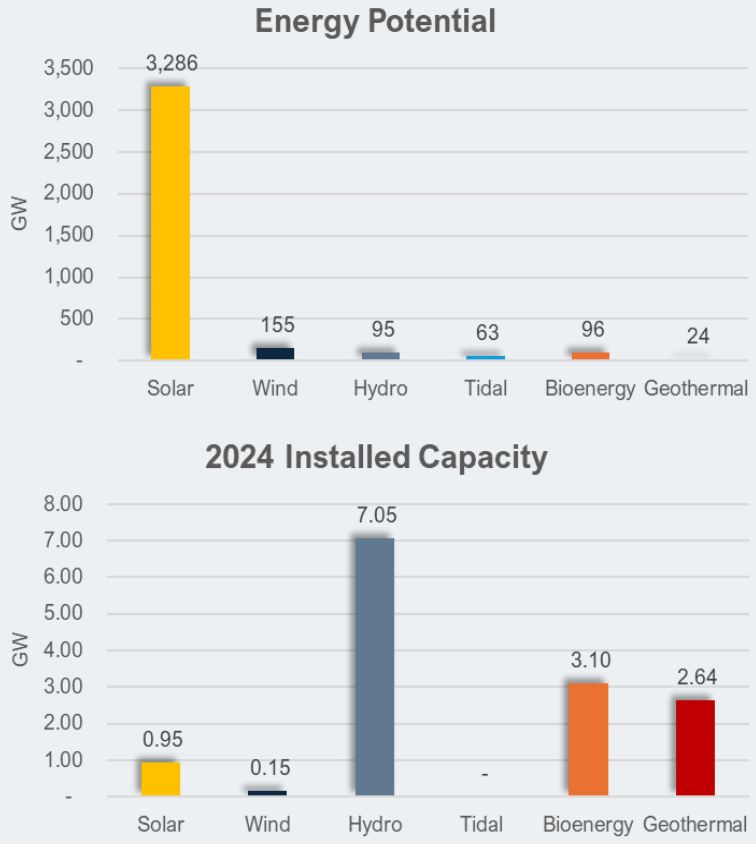
kWhs delivered today are worth more than tomorrow

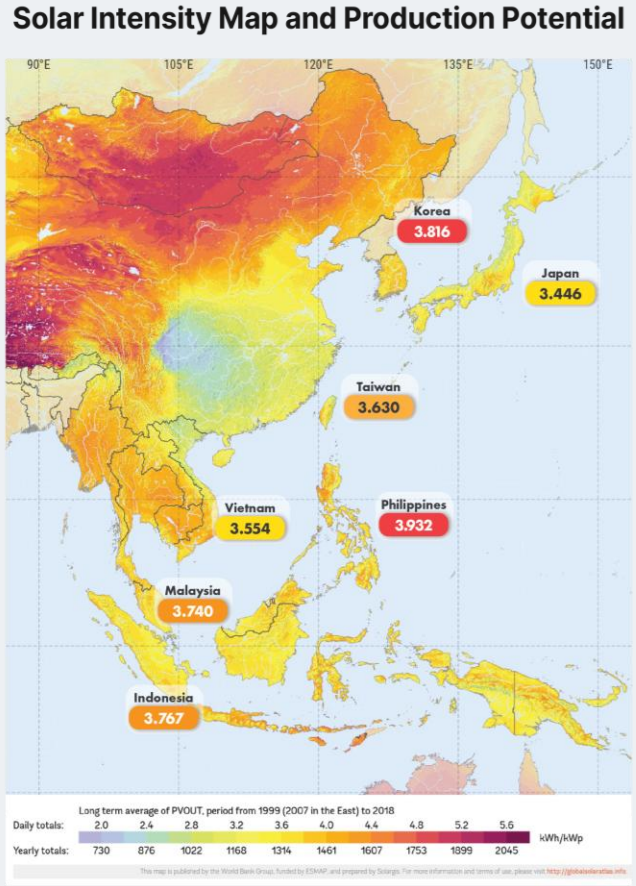
Solar, storage and wind can be added faster than any other energy source.



Source: IEEFA

Indonesia's Vast Untapped Solar and Wind Potential





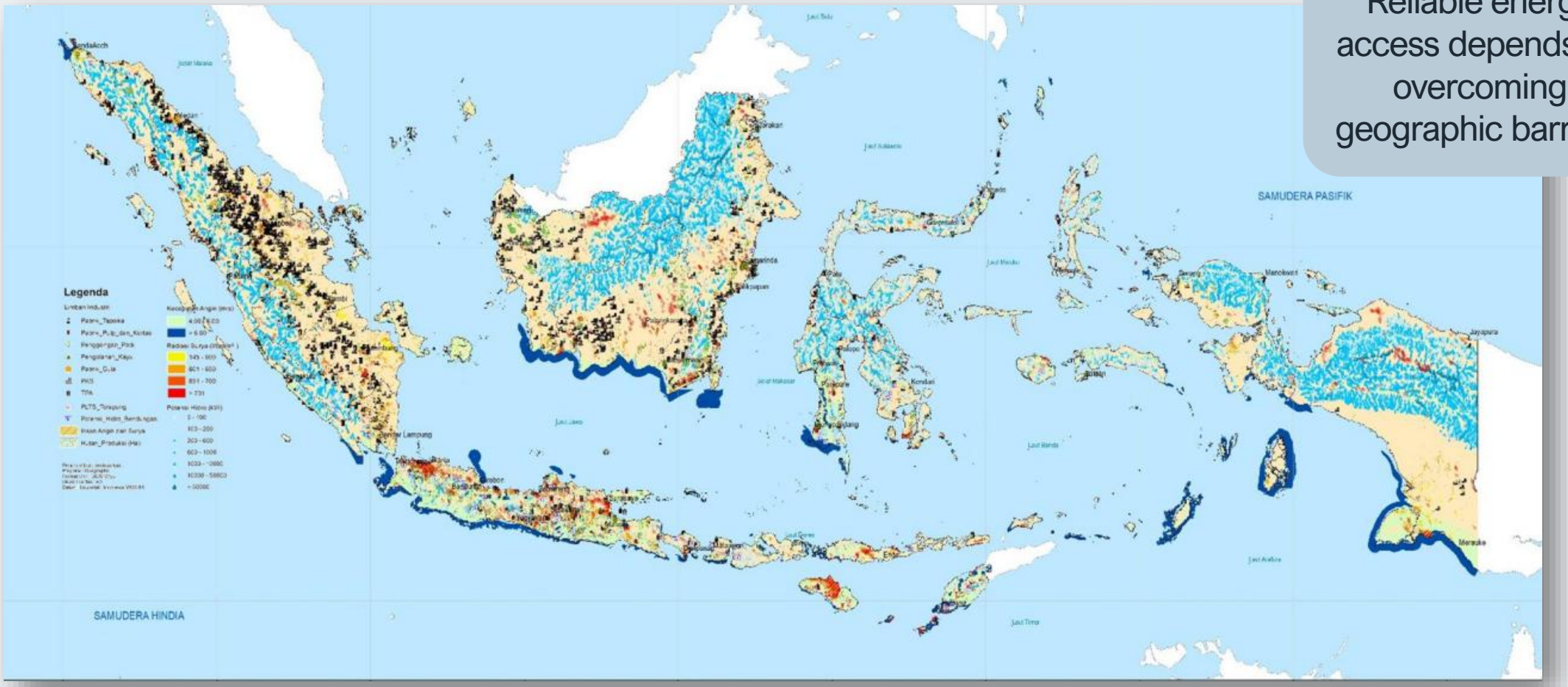
- Indonesia, ranked third in the region for solar potential, has only added 947MW solar capacity from **3,286GW of solar potential** *(0.017% of total potential).*
- Indonesia has also only developed 154MW of wind power from **155GW of wind power potential** *(0.10% of total potential).*

Indonesia's untapped renewable energy potential offers a promising landscape for investors

Source: Ministry of Energy and Mineral Resources; IEEFA.

Indonesia’s geography makes solar PV uniquely suited to power its clean energy future

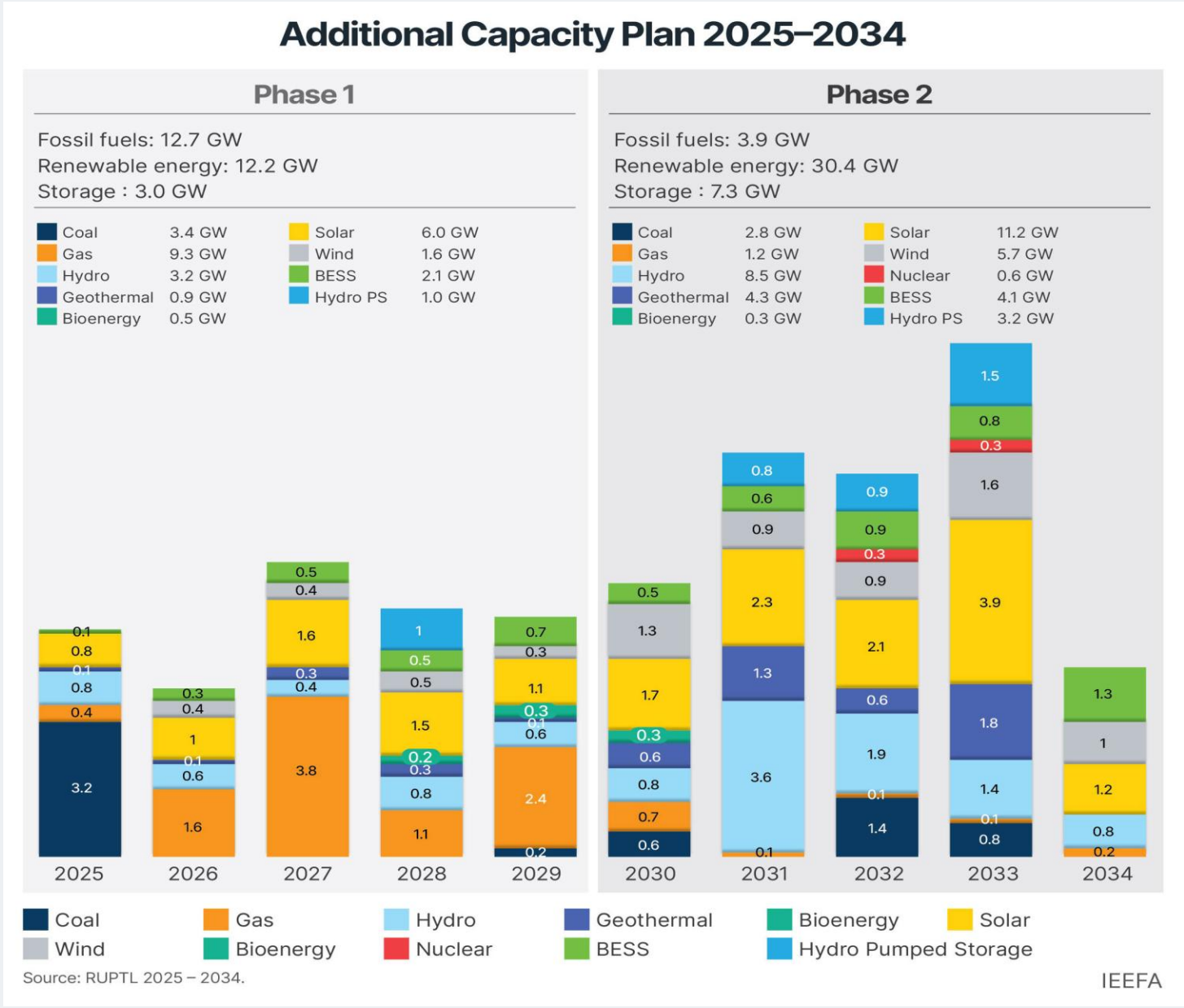
Reliable energy access depends on overcoming geographic barriers



Source: Electricity Supply Business Plan 2025 - 2034

Indonesia's Electricity Supply Business Plan (RUPTL) 2025 - 2034

17.2 GW Solar PV + 6.2 GW of Battery Energy Storage Systems (BESS) within the next 10 years (2025–2035)



Source: Electricity Supply Business Plan 2025 - 2034

Note: Local content rules have been relaxed from 40% to 20% to attract investment and accelerate deployment.

Accelerating Solar PV and BESS Deployment - Indonesia's Three Strategic Programs

JagatBisnis.com

Menuju Net Zero 2060, PLN Genjot Co-Firing dan Dedieselisasi Tanpa Korbankan Kesehatan Finansial

JagatBisnis.com - Dalam upaya mewujudkan target Net Zero Emission (NZE) pada 2060, PT PLN (Persero) terus melakukan transisi energi melalui...

De-dieselization Program

100GW Solar PV + 320GWh BESS

Energy-Storage.News

Indonesian government targets 320GWh BESS in new scheme

The government of Indonesia has launched a programme that aims to build 100GW of solar PV and 320GWh of BESS in the coming years.

1 month ago

VOI.ID

Indonesia Signs MoU For Green Electricity Exports With Singapore

"We send electricity to our brothers in Singapore, now in the results of negotiations, the Singapore government will work together with...

13 Jun 2025

Green Electricity Export to Singapore

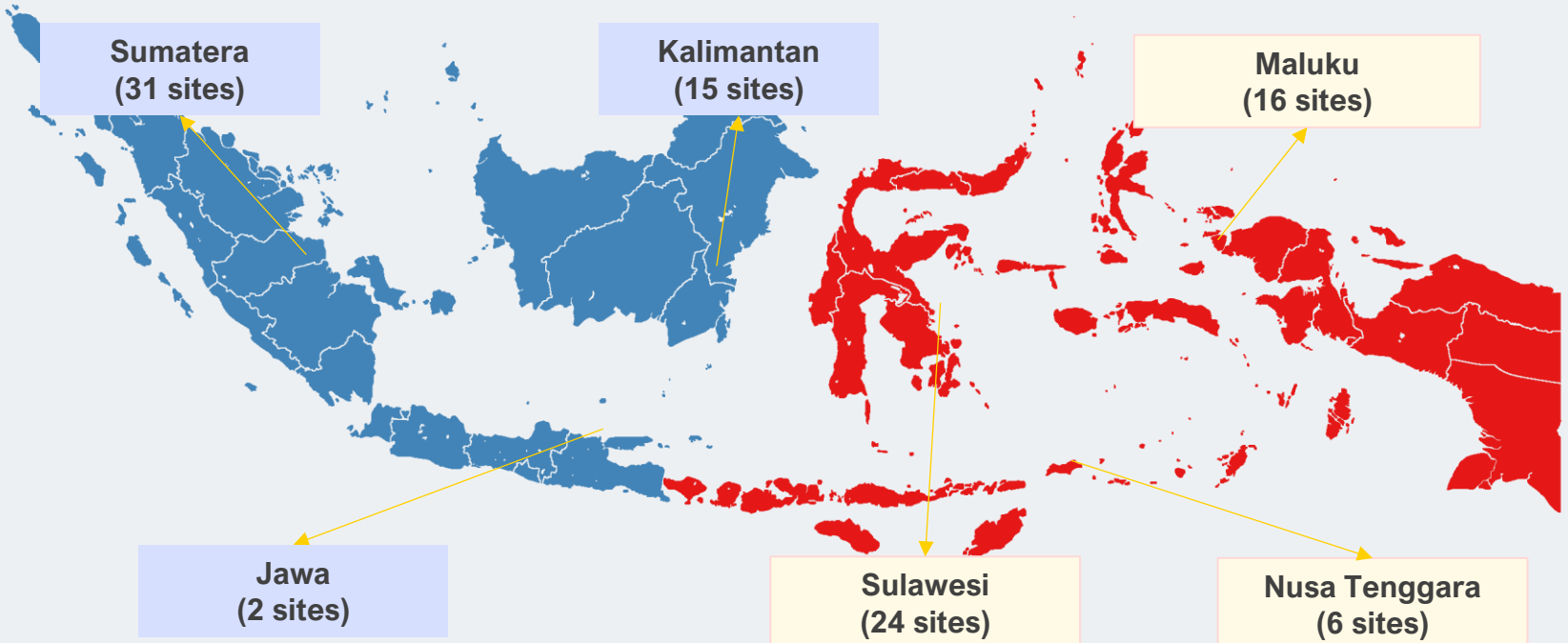
1

De-dieselization Program

Replacing diesel generators with solar and batteries to deliver clean, reliable power across Indonesia's islands.

- PLN currently operates 5,270 diesel generators with a total capacity of 3.48 GW, spread across 1,234 locations. These generators will be gradually converted into renewable energy (EBT) and hybrid systems, through a phased implementation strategy.
- Phase 1 will convert approximately 116 MW of diesel capacity into solar PV and battery energy storage systems (BESS).

Phase 1 de-dieselization program



Note

: Cluster 1 (PV 55 MWp, BESS 100 MWh, 48 sites)

: Cluster 2 (PV 73 MWp, BESS 150 MWh, 46 sites)

Source: Electricity Supply Business Plan 2025 - 2034

2

100GW Solar PV + 320GWh BESS

Indonesia plans 100 GW of solar, focusing on rural and remote area electrification

20 GW of Grid-Connected Centralized Solar Projects

80 GW Solar PV + 320 GWh BESS

Distributed across 80,000 villages

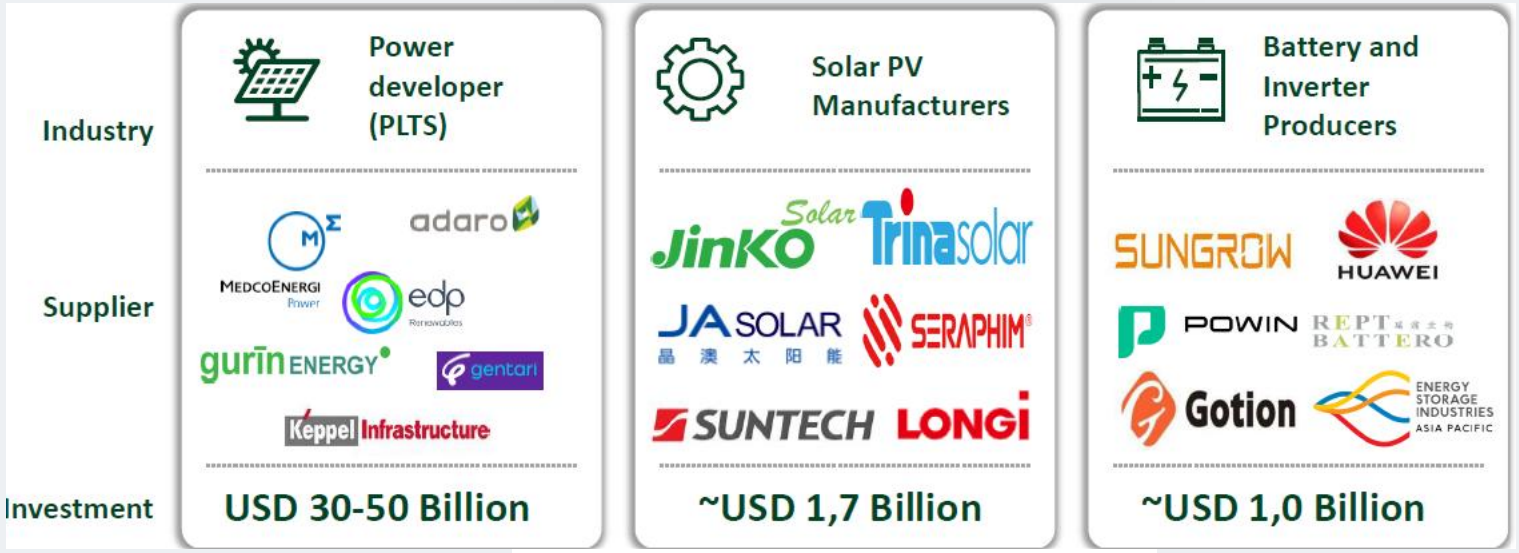
Managed by the Merah Putih Village Cooperative (KDMP) to ensure reliable and affordable electricity to promote economic activities in rural areas

3

Green Electricity Export to Singapore

Indonesia plans to export clean solar power to Singapore using battery-backed projects

On 05 September 2024, EMA had granted conditional licenses for five Indonesia-based projects to import 2GW of green electricity to Singapore. On June 13, 2025, MoU was signed by Indonesia's Minister of Energy and Mineral Resources and Singapore's Minister for Energy, Science & Technology.



The capacity that will be built by 2035
2 GW = 11 GWp Solar PV + 21 GWh BESS

Source: Ministry of Maritime and Investment

Indonesian export electricity to Singapore hinges on several critical factors:

- ❑ **PLN's Approval & Involvement**: As the state-owned utility, PLN must endorse and operationalize any export scheme.
- ❑ **Domestic Supply Priority**: Exports are only allowed once national electricity needs are fully met, per Law No. 30/2009 and MEMR Regulation No. 5/2021.
- ❑ **Transmission Infrastructure Access**: PLN controls the grid and cross-border transmission, making its technical support essential.
- ❑ **Regulatory Alignment**: Cross-border energy deals must align with Indonesia's energy security and policy frameworks, with PLN as a key regulator.

Latest Developments in Indonesia's Solar PV Industry

Institute for Energy Economics and Financial Analysis

Indonesia’s Solar Industry Scales Up with Global Partnerships

Domestic solar manufacturing is expanding

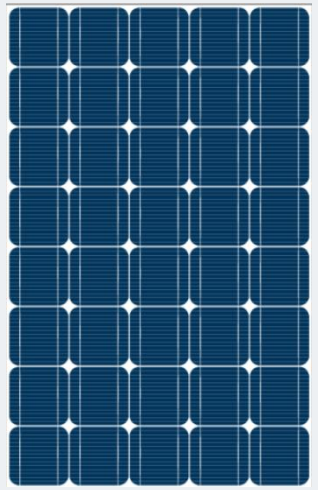
- **PT Nusa Solar–DMEGC**: A 3 GW cell plant in Batam, operational since 2024, backed by DMEGC’s extensive China-based capacity.
- **Thornova Solar Indonesia**: Operating 2.5 GW module and cell plants in Batam since 2024, with $800M invested and 325 employees. The company is currently focused on exports to the US.
- **PLN–Trina Solar JV**: A 1 GW module and cell plant in Central Java, inaugurated in June 2025, with over IDR 1.5 trillion invested and 300+ jobs created.
- **SEG Solar**: A 2 GW facility in Batang, Central Java, launched Phase 1 in Q3 2025 with $100M invested, part of a $500M commitment.
- **Longi–Pertamina JV**: Construction of a 1.6 GW solar panel plant began in West Java in late Q2 2025.

Source: Draft of JETP Indonesia’s CIPP – Progress Report 2025

Annual Production Capacity

Solar Cells

± 18.2 GW

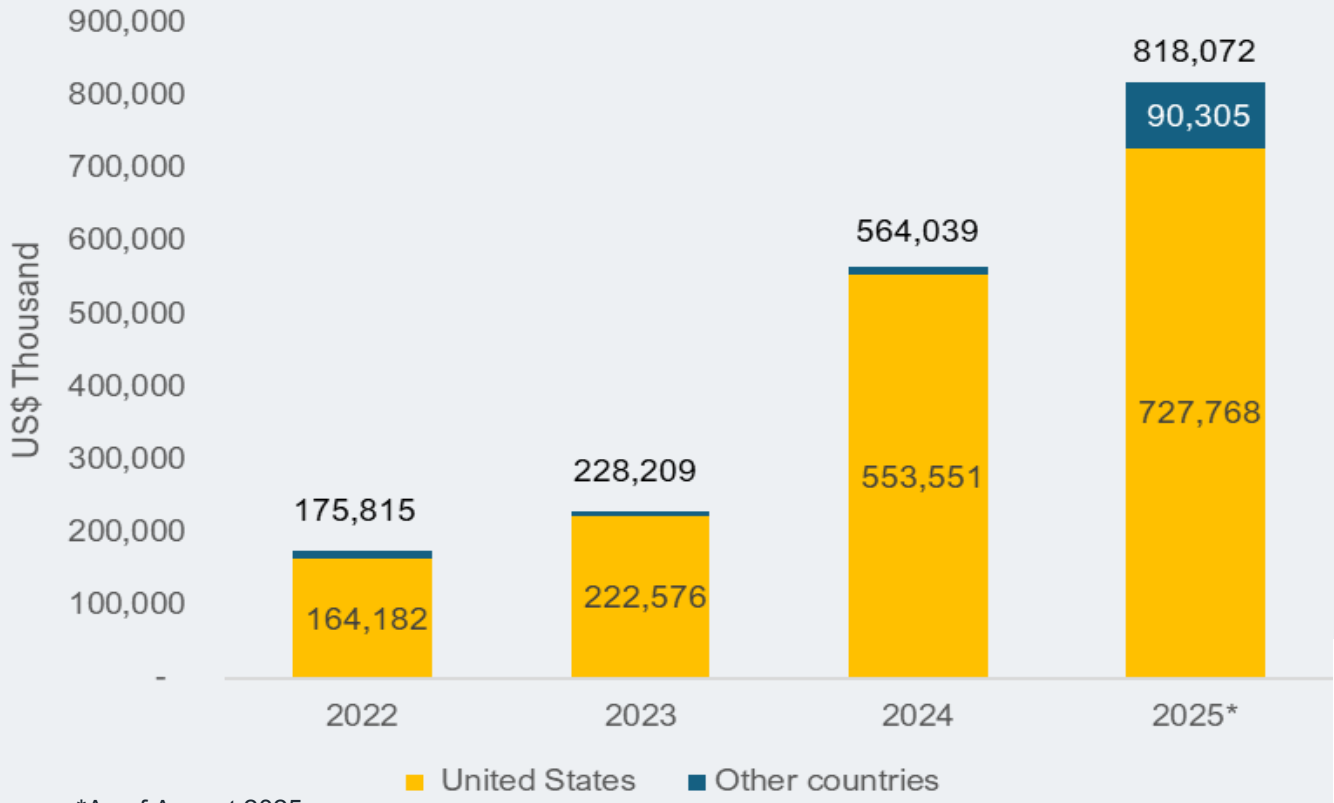


Solar Modules

± 19.5 GW

Solar Surge Meets Strategic Shift: Navigates US Tariff Risk

Indonesia's Export Value for Solar cells assembled into panels



*As of August 2025

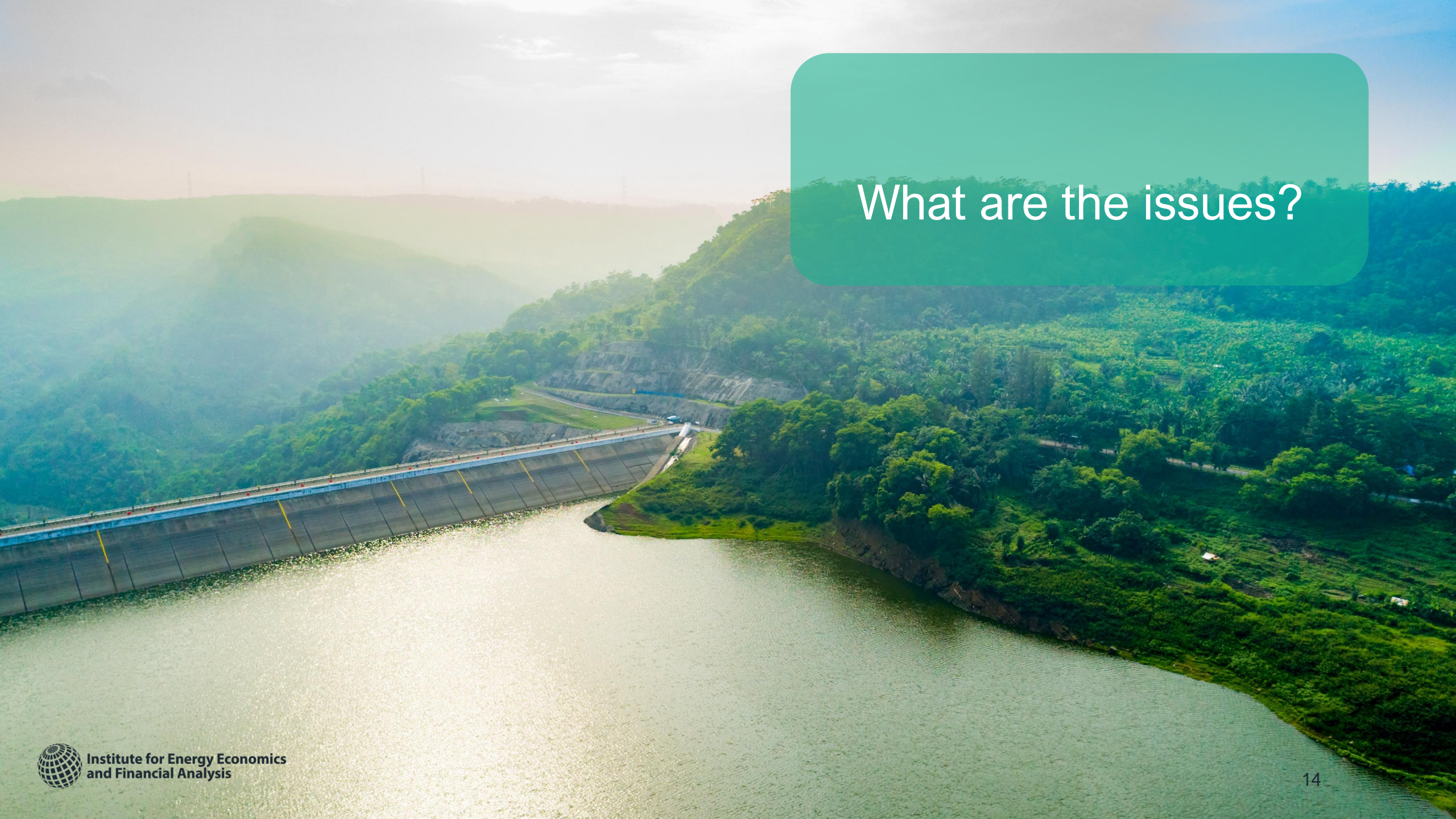
Source: BPS, October 2025

- Indonesia's solar exports to the United States skyrocketed from US$164 million in 2022 to US$ 728 million in 2025 fueled by rapid expansion of supply chain manufacturing in Batam and Java.
- Manufacturers are pivoting toward domestic demand to hedge against potential US tariffs.
- Some firms are exploring non-US export markets (e.g., Europe, Middle East) and local EPC partnerships to boost resilience.

IDNFinancials.com
https://www.idnfinancials.com › news › us-now-grants-...

US now grants 0% tariff to Thailand, Malaysia, and Cambodia

19 hours ago — **US now grants 0% tariff to Thailand, Malaysia, and Cambodia**. ZH ... Indonesia, on the other hand, is currently negotiating a similar deal.



What are the issues?

Key Barriers to Solar PV and BESS Expansion in Indonesia

Regulatory and Policy Uncertainty

Underdeveloped Ecosystem

Lack of Bankable Model

Local content requirements

High Upfront Cost

Institute for Energy Economics and Financial Analysis

THANK YOU

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