



# Mempercepat transisi energi bersih dengan data dan kebijakan

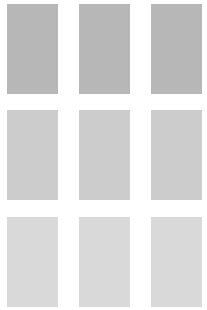
Dr Dinita Setyawati

13 Juni 2024

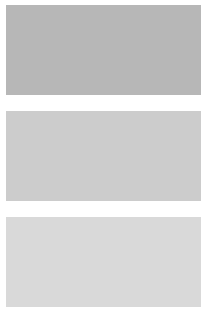


**EMBEER**

# Kampanye perubahan menjadi aksi



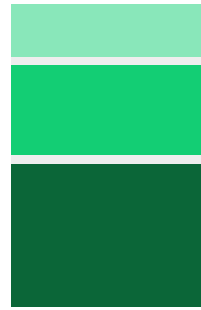
Gather



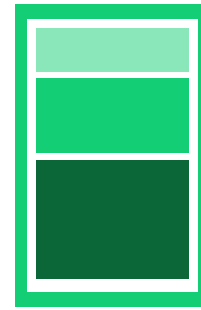
Curate



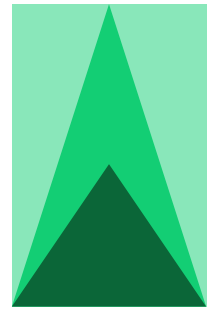
Analyse



Change  
policy



Shift  
narratives



Empower  
campaigns

# Open electricity data

- 2023 data for 87 countries making up 92% of global electricity demand
- Tracking 90% of global power sector emissions and a third of total global CO2 emissions



Explore all of our electricity data for yourself in our data explorer.

[ember-climate.org/data/tools/data-explorer](https://ember-climate.org/data/tools/data-explorer)



# Asia Data Transparency Report 2023

## Evaluation of data transparency by economy

Indonesia



Overall score:

Annual reports are released with long time lags and are difficult to analyse due to pdf formatting. Annual reports has good fuel breakdown with additional capacity, demand, and consumption by sector data available. It appears that monthly data is collected but not released to the public for access.

Source: Asia Data Transparency Report 2023 (Ember, Subek)

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Indonesia(ESDM)

## Evaluation of data transparency by economy

Thailand



Overall score: **Acceptable**

Monthly, national level generation data available with 2-3 month time lag. Complete fuel breakdown can only be obtained by combing multiple sources. Fuel breakdown for renewables is not accessible from abroad. Some data is reported as text without archived datasets.

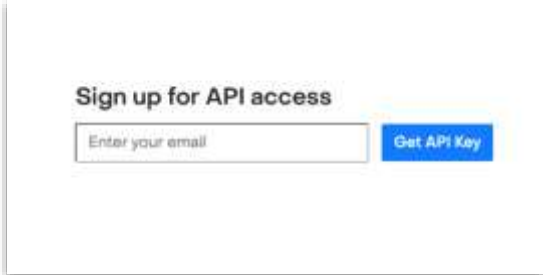
Source: Asia Data Transparency Report 2023 (Ember, Subek)

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Thailand(EPP, DEDE, EGAT)

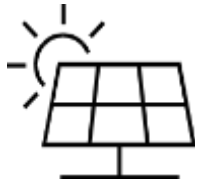
# Ember's API

- Sign up <https://ember-dinoteam.org/cta/api>
- Documentation <https://api.ember-dinoteam.org/docs>
- License <https://creativecommons.org/licenses/by/4.0/deed.en>



A screenshot of a web form titled "Sign up for API access". The form contains a text input field with the placeholder text "Enter your email" and a blue button labeled "Get API Key".

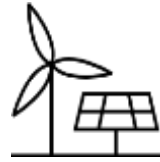
# Temuan dari Global Electricity Review 2024



EBT capai rekor 30% listrik  
global - dipindep  
tenaga surya



Emisi sektor  
ketenaglistrikan tahun 2023  
meningkat akibat  
menurunya tenaga air



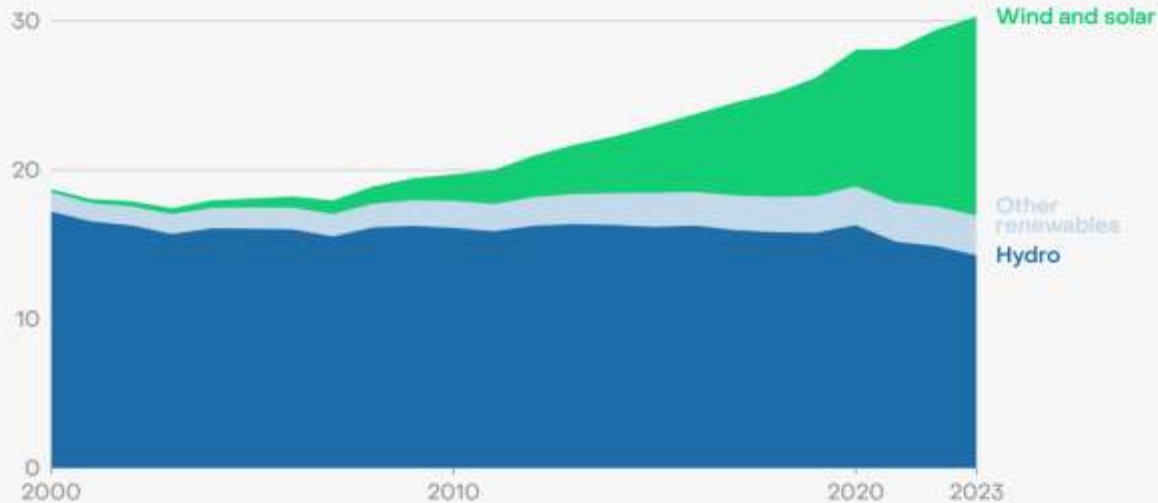
EBT terus meningkat -  
begitu juga permintaan  
listrik



2024 berpotensi menjadi  
tahun dimulainya era baru  
penurunan emisi sektor  
ketenaglistrikan

## Global growth in wind and solar pushed renewables to make up more than 30% of the global electricity mix in 2023

Share of global electricity generation from renewable sources (%)



Source: Annual electricity data, Ember

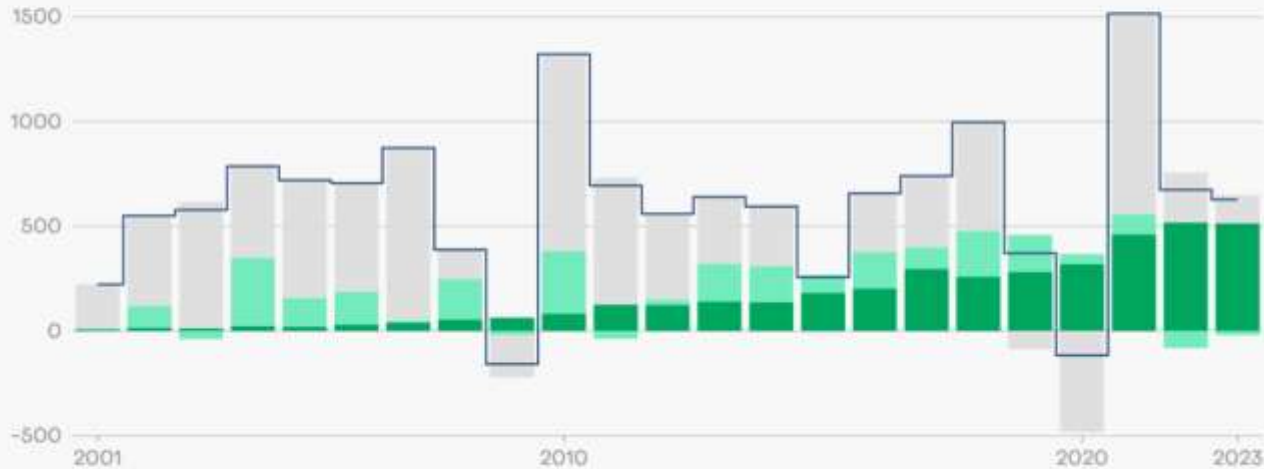
EMBER

Parsi kauran teragasi yacbn  
bayunak cbr 1% d 2000 n erjad  
134% d 2023

## Growth in wind and solar met 82% of the global electricity demand rise in 2023

Annual change in electricity generation (TWh)

Wind and solar Other clean Fossil Demand



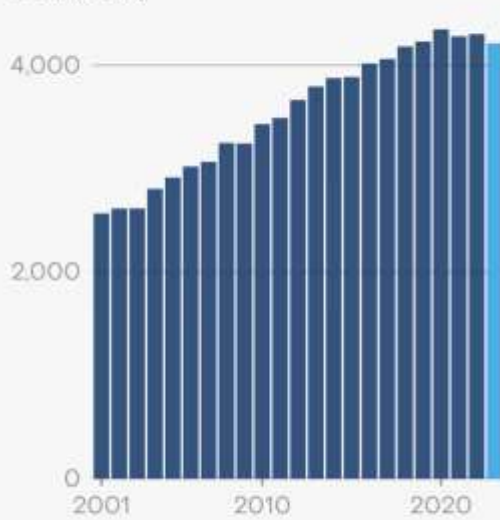
Source: Annual electricity data, Ember

EMBER

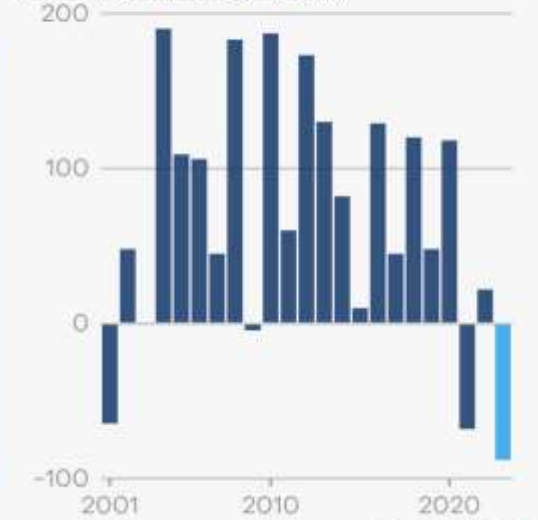
Pertumbuhan tenaga surya dan bayu mendongkrak rata-rata mencapai 30% listrik baru untuk pemenuhan permintaan 2023

## Hydro: Global generation in 2023 compared to the historical trend

Total (TWh)



Year-on-year change (TWh)



Source: Annual electricity data, Ember



Perencanaan tenaga air di 2023  
walaupun perencana kuantitas sebesar  
7GW2023

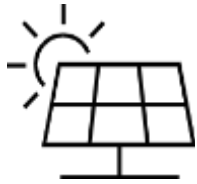
## Five fast-growing technologies are already noticeably contributing to electricity demand growth

Share of global electricity demand growth attributed (percentage points)



Source: Ember calculations (see Methodology)

# Temuan dari ASEAN



Pertumbuhan produksi listrik tenaga surya di negara-negara ASEAN mencapai 43% secara rata-rata selama 2015-2022



Agar sejalan dengan skenario IEA NZE 2050, EBT di ASEAN perlu meningkat 3 kali lipat



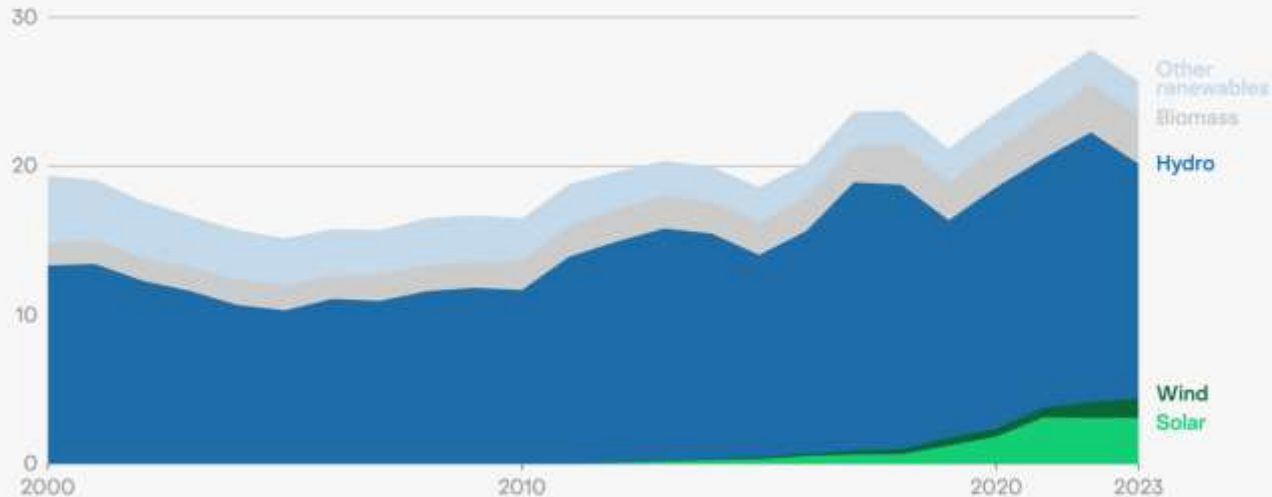
Pertumbuhan produksi listrik tenaga angin di negara-negara ASEAN melambat tahun 2022 dibandingkan 2021



Lebih dari 99% potensi tenaga angin di negara-negara ASEAN belum dimanfaatkan

## Hydro dominates Southeast Asia renewables mix in 2023

Share of global electricity generation from renewable sources (%)



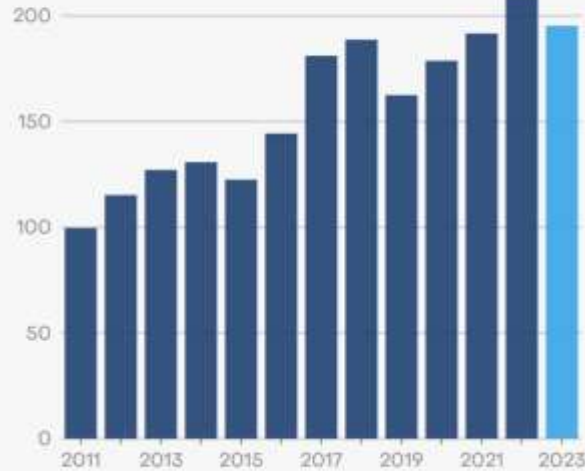
Source: Annual electricity data, Ember

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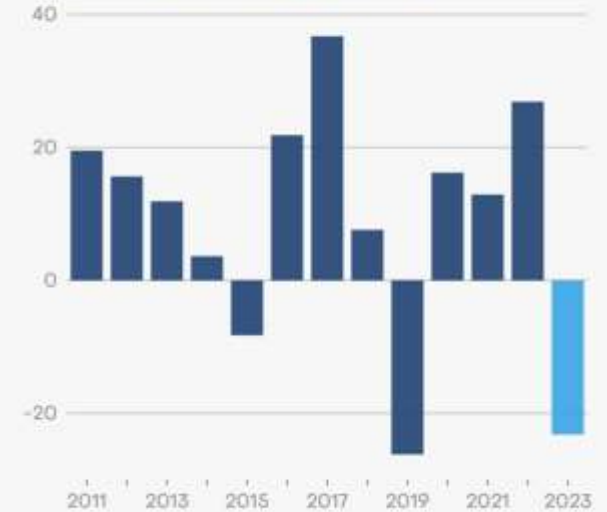
Porsi bahan energi terbarukan sebesar 28% suryabatuayu mencapai 37% di 2023

## ASEAN's hydro generation declined in 2023

Hydro generation (TWh)



Year on year change (TWh)



Source: Annual electricity data, Ember

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Tenaga air mengalami penurunan di 2023 walaupun adanya penambahan kapasitas 0.5GW

# Viet Nam drove up ASEAN wind power growth in 2022, while solar's progress slows

Electricity generation by source (TWh)

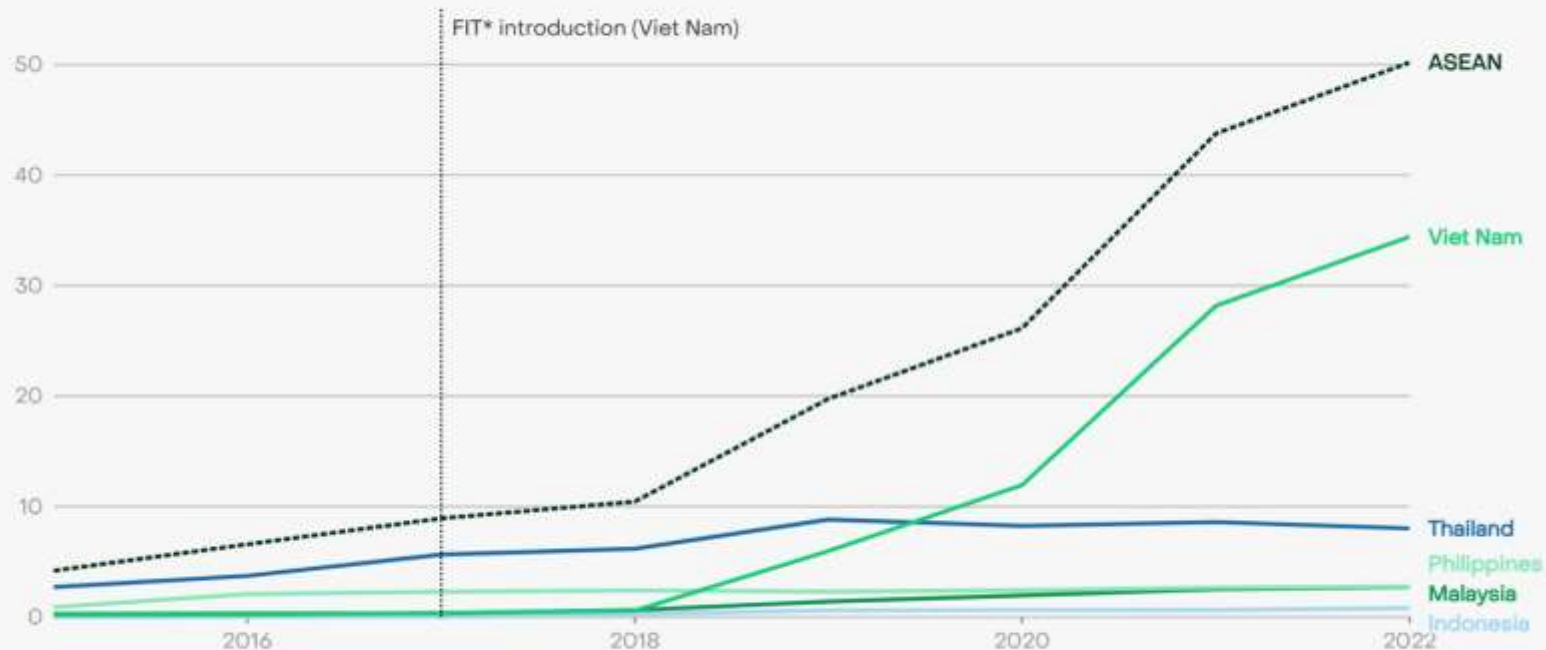
Solar Wind



Source: Annual electricity data, Ember  
The 2022 data for Cambodia, Lao People's Democratic Republic and Myanmar is unavailable. According to Ember's electricity data, Brunei Darussalam has reported zero generation for both wind and solar sources.

## Viet Nam clean power generation was boosted by Feed-in Tariff

Wind and solar generation (Twh)



Source: Annual electricity data, Ember

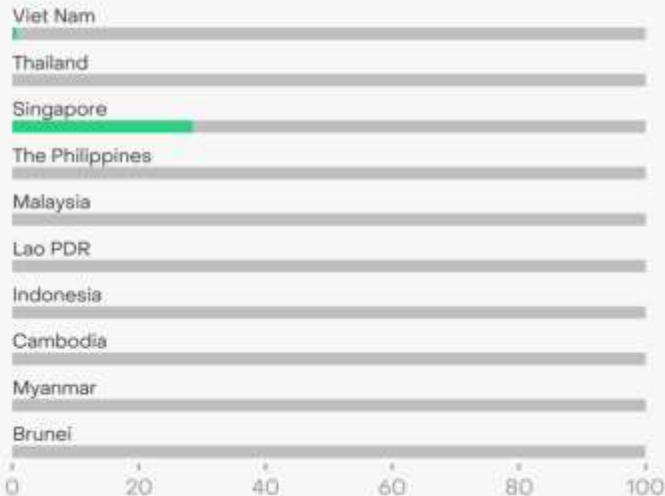
\* In Feed-in Tariff, the government offers a guaranteed purchasing price for electricity produced from renewable energy sources for fixed periods of time, typically for 20 years.

## Over 99% of the wind and solar potential in ASEAN remains untapped, demonstrating significant growth opportunities

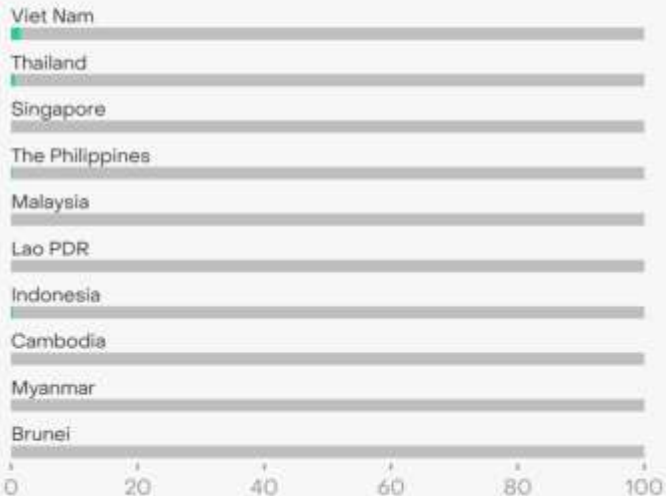
Unutilised GW potential (% in 2022 or latest year\*)

Actualised power    Untapped potential

### Solar PV



### Wind



Source: Renewable Capacity Statistics, IRENA (2023), NREL (2020)

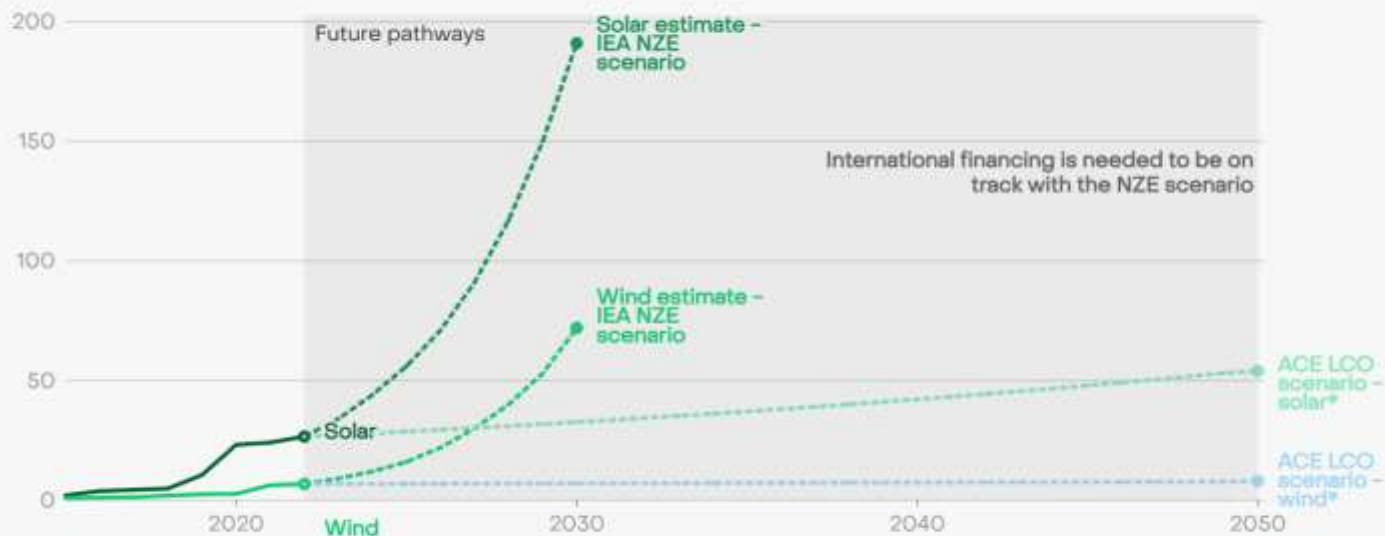
## More solar, less wind. Key ASEAN countries are banking on solar projects to accelerate transition

Solar and wind targets (in gigawatt)

Country	Target year	Solar	Wind	Source
Indonesia	2030	4.8	0.7	PLN's Electricity Business Plan (RUPTL) 2021-2030
Malaysia	2030	6.9	0	National Energy Transition Roadmap
The Philippines	2030	21.6	1.5	Power Development Plan (PDP) 2020 - 2040
Thailand	2037	14.1	3.05	Power development plan (PDP2018 Rev.1)
Viet Nam	2030	22.6	27.9	National Power Development Plan (PDP) VIII for the period of 2021-2030

## ASEAN will need to more than triple solar and wind by 2030 to align with the IEA's NZE scenario

Solar and wind capacity: historical, IEA and ACE LCO\* estimates (GW)



Source: Ember electricity data explorer, ASEAN Centre for Energy (ACE) 7th ASEAN Energy Outlook, IEA Net Zero by 2050 (2023). The solar and wind estimates for IEA's Net Zero Emission (NZE) scenario are calculated based on Ember's calculation of solar and wind percentage share by 2030 in IEA net-zero pathway and assuming capacity factors of 16% and 28% for solar and wind respectively.

\*Least Cost Optimisation (LCO) scenario (see methodology for detail)

Diskusi

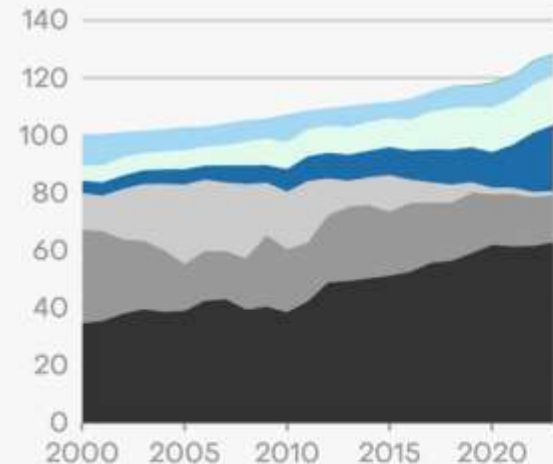
# Bagaimana dengan Indonesia?



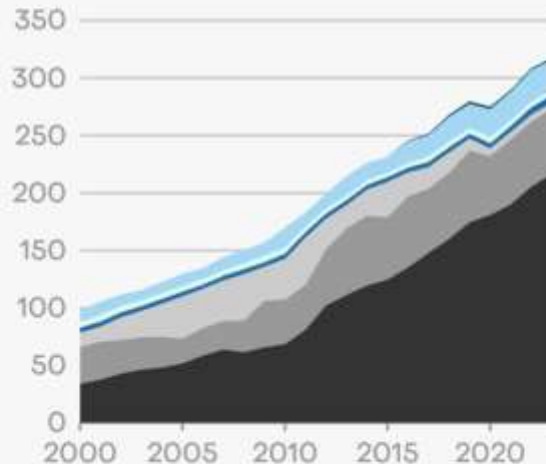
# Indonesia's power sector emissions tripled over two decades with rising fossil fuel use

Solar Wind Other renewables Hydro Bioenergy Other fossil Gas Coal Net imports

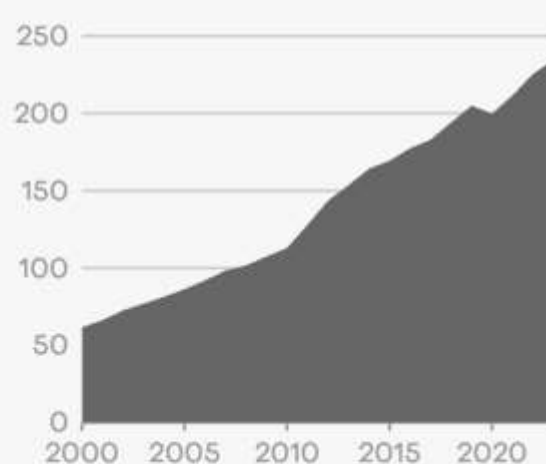
Share of generation (%)



Generation (TWh)



Emissions (MtCO2)



Source: Annual electricity data, Ember



# Refleksi omisi transisi sektor ketenagalistrikan

- Target bauran energi bersih di Kebijakan Energi Nasional yang baru perlunya mempertimbangkan potensi energi terbarukan
- Fleksibilitas di Tingkat Komponen Dalam Negeri (TKDN) di infrastruktur pembangkit listrik terbarukan
- Pemanfaatan energi surya untuk pembangunan infrastruktur listrik di daerah terpencil, i.e. percepatan program obrolselisasi
- Insentif untuk pengguna tenaga surya
- Penyesuaian antara demand listrik dan kapasitas pembangkit listrik terbarukan, dan prioritas dalam dispatch

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# Thank you!

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Email: [info@ember-dimonte.org](mailto:info@ember-dimonte.org)

Socials @emberdimonte

A network diagram consisting of light blue dots connected by thin lines, forming a complex web-like structure. The dots are arranged in a roughly triangular shape, with the top dot connected to two others, which are then connected to a row of four dots below them, and so on, creating a dense network of connections.

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A background network diagram consisting of light blue nodes connected by thin lines, forming a complex web of connections. The nodes are distributed across the frame, with a higher density on the right side.

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DATA INTO ACTION

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A network diagram consisting of light blue dots connected by thin lines, forming a complex web of connections. The dots are arranged in a roughly triangular shape, with the top dot connected to two others, which are then connected to a larger group of dots below.

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A background network diagram consisting of light blue nodes connected by thin lines, forming a complex web of connections. The nodes are scattered across the frame, with a higher density in the lower half.

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