

# Updates on energy transition in Indonesia

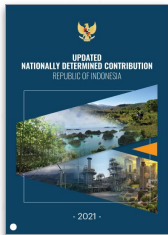
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Webinar on The State of Southeast Asia Energy Transition  
29 July 2022

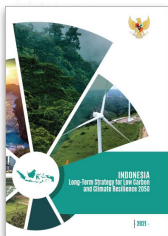
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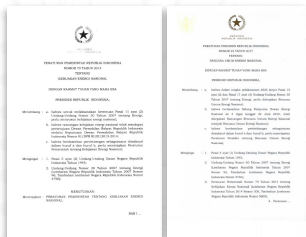
## Indonesia's main energy policies have **insufficient** targets



Updated NDC has targets that are similar as the previous one: GHG emissions are lower by 29% (voluntarily) or 41% (with international support) than business-as-usual scenario by 2030. **If worldwide follows this target, global temperature rise will exceed 4°C by 2100** based on Climate Action Tracker.



LTS document has a net-zero emission target in 2060 or sooner, but **the share of CFPP is still 38% in the primary energy mix, which 78% of them is equipped by CCS that may cause more investment needed**



The main energy policies (KEN and RUEN) states the target of new and renewable energy share is 23% in 2025 and 31% in 2030. **With the current slow renewable energy growth, this target will be achieved only 15% in 2025 and 23% in 2030** based on IESR's study.

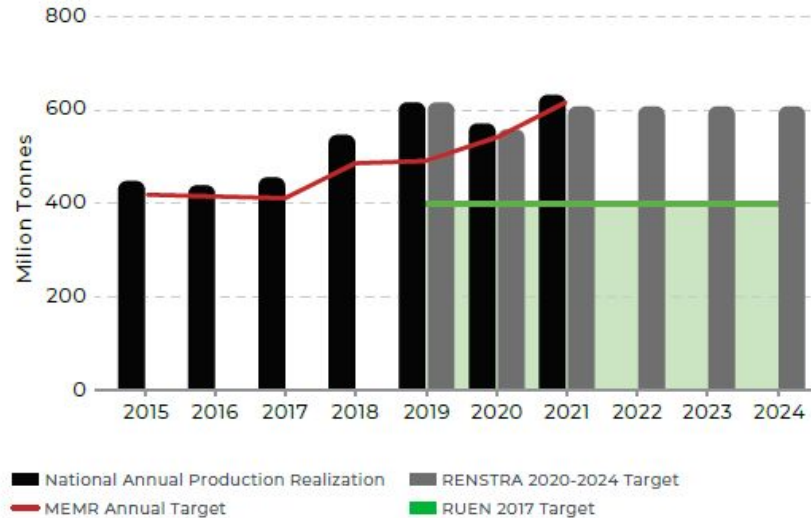
## More policies, regulations, and commitments supporting energy transition in Indonesia are launched in 2021

To boost energy transition, Indonesia's government has:

- Established National Electricity Supply Business Plan (RUPTL) 2021-2030, which **there will be an additional 21 GW renewables (4.7 GW solar PV) and RE share 25% in 2030**, but there are still 14 GW of committed CFPP projects to be added in the next 10 years
- Commit an **early retire 9.2 GW 'young' CFPPs by 2030 (< 20 y.o) and retire the old ones (> 30 y.o) in 2030**, but current RUPTL also states that old CFPPs may have longer lifetime if they still can be refurbished, retrofitted, and extended until 10-20 years more
- Announce **carbon tax minimum \$2.1/tCO<sub>2</sub>e** but it is still not enough because the suggested carbon tax is below IPCC's suggestion (\$40–80/tCO<sub>2</sub> in 2020 and 50–100/tCO<sub>2</sub> in 2030)
- Started piloting the voluntary Emission Trading System (ETS) at the CFPP nationwide and **32 CFPPs applied Emission Trading System** in 2021 with the total transaction of 42.455 tCO<sub>2</sub>
- Launched **net-metering PV scheme 1:1**
- Launched a **new Minimum Energy Performance Standards (MEPS) and energy labelling** for e-appliances following international best practices, but they're only for AC, fans, refrigerators, rice cookers

# Indonesia still cannot turn away from coal

Annual coal production in 2015-2024



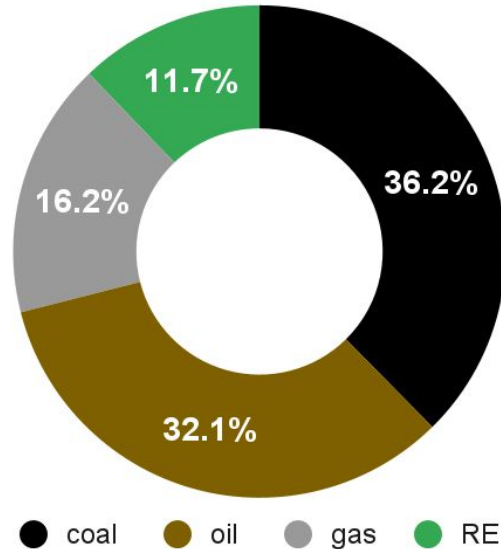
As coal production from January to June 2022 has already been **294.37 tonnes**, coal production is projected to **keep increasing** in the near future

Source: MEMR (2017), MEMR (2021), IESR analysis

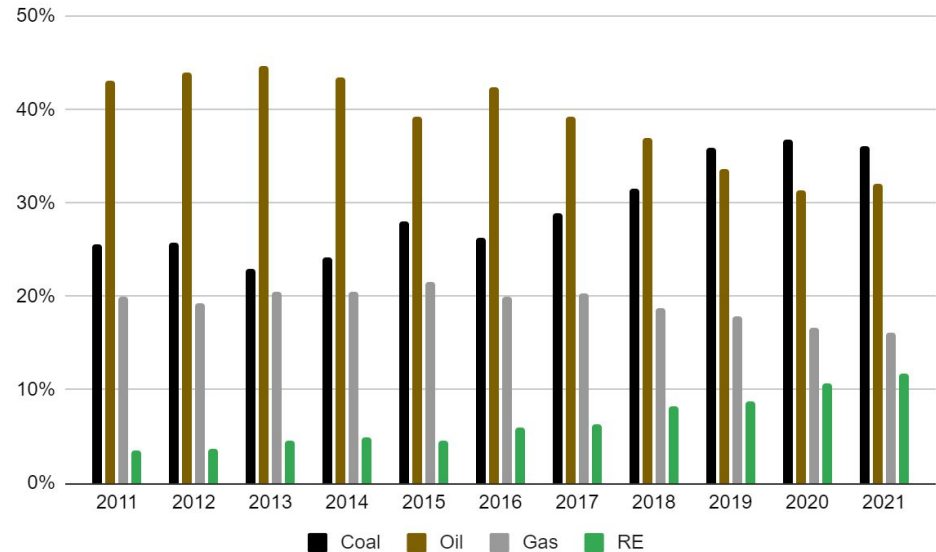
\*production in 2021 is projected based on monthly realization trend

## Fossil fuel still dominates Indonesia's primary energy mix

Primary energy mix in 2021



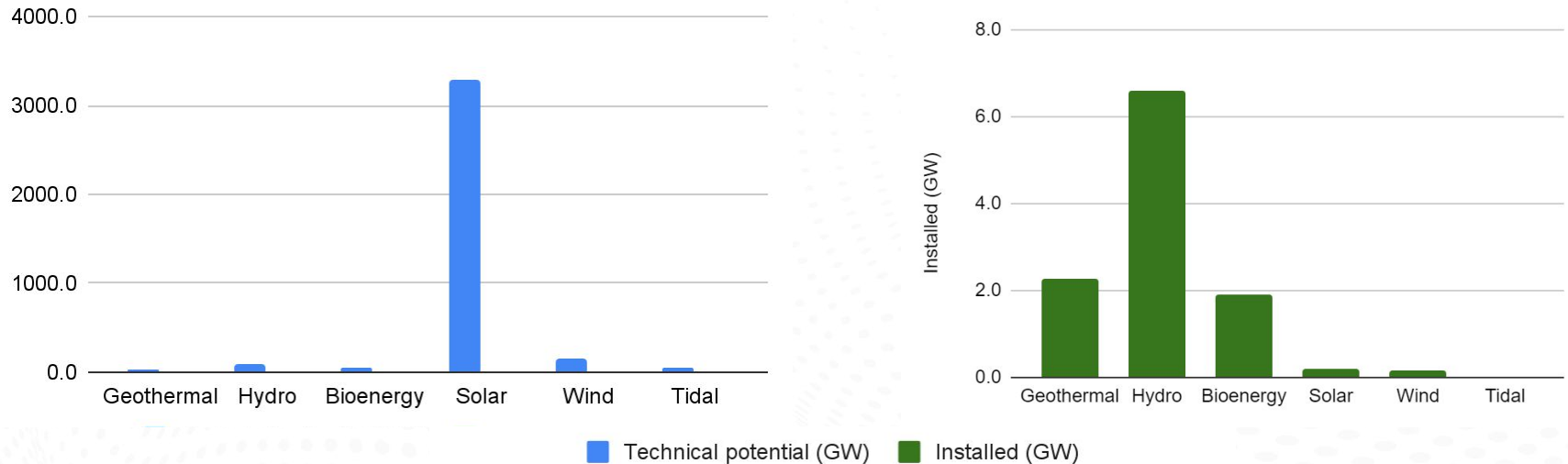
Coal, oil, gas and RE share in Indonesia's energy mix from 2011 to 2021



Source: MEMR(2021)



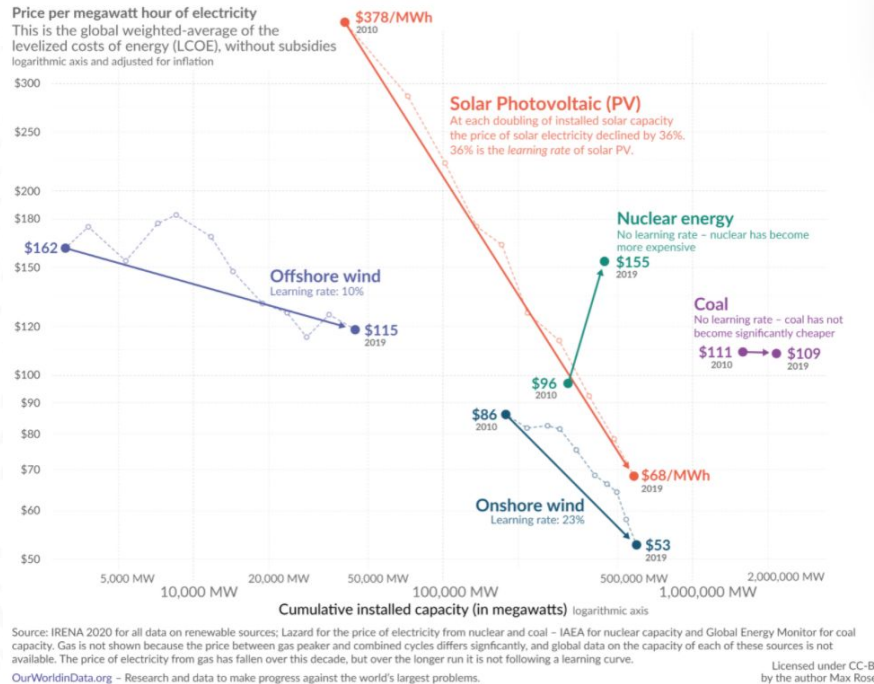
## A huge potential of renewable energy **has not been used optimally yet**



Total technical potential of renewable energy in Indonesia is **more than 3,000 GW**, but **only 11.2 GW has been utilized**

Source: MEMR (2022) and HEESI 2021

# Renewable energy becomes more competitive every year



As global RE technologies cost keeps decreasing, RE generation cost in Indonesia is also decreasing. The recent lowest PV project bidding offered **USD 0.04/kWh** compared to the coal average generation cost for around **USD 0.05-0.07/kWh**

Source: OurWorldinData (2021)

## Public fund allocated for clean energy is less than for fossil fuels

Updated: 27 July 2022



At least

**\$6.54 billion**

Supporting fossil fuel energy

**\$24.16**

Per capita



At least

**\$240.02**

**million**

Supporting clean energy

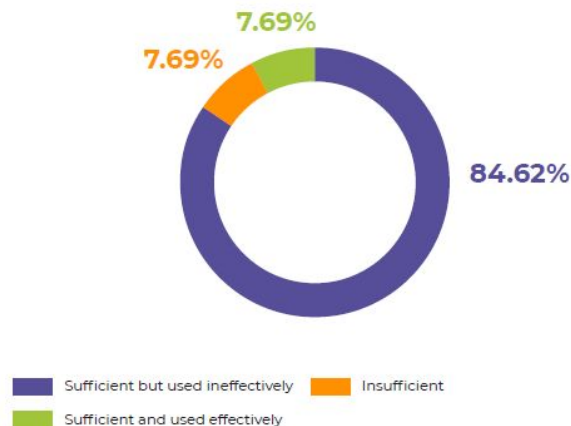
**\$0.89**

Per capita

The allocation of public fund for fossil fuel is **27 times higher** than the one for clean energy

Source: Energy Policy Tracker (2021)

Do you think the government provides sufficient financial and fiscal support for power system transition/decarbonization?



**84% of developers** stated that public fund for supporting power system transition is **insufficient**

Source: IESR's survey to developers (2021)

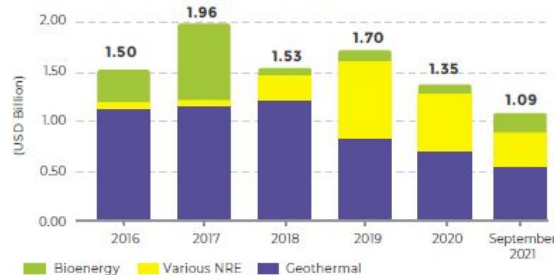


# Existing regulations **become hassles** to the renewables investment

Fossil and renewable energy investments



Renewable energy investments



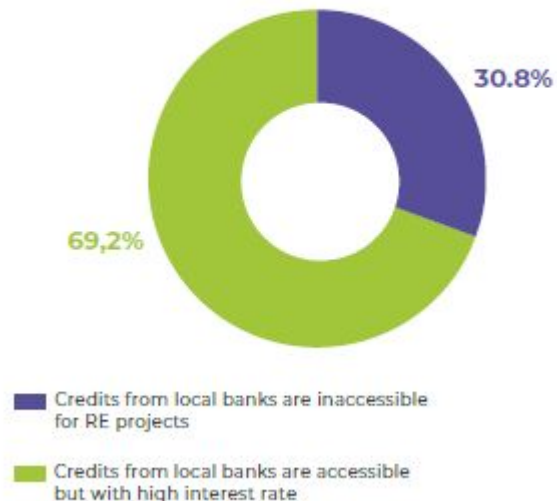
Source: DGE Press Conference Oct 2021, 2020 DGE Performance Report, 2020 DGNRECE Performance Report, Kontan

- **20-25 billion of annual investment required**, financial instruments needed to decarbonize energy system in 2050
- Investment for renewables is still lower than for fossil fuel because:
  - **Renewable energy are seen as unattractive sector** due to the implementation of existing regulations and the long-awaited renewable energy law
  - **Time consuming process to get permit**, affecting an increase in transaction process, and **complex procurement mechanism**

## Many fund sources is actually **available** to leverage investment low carbon technologies

- **Various potential fund sources available, but underutilized:**
  - International financing
  - Non-conventional financing: green bond/sukuk, islamic finance, blended finance, municipal bonds
  - Carbon tax could provide additional fund
- **Local banks must start to support highly renewables projects**

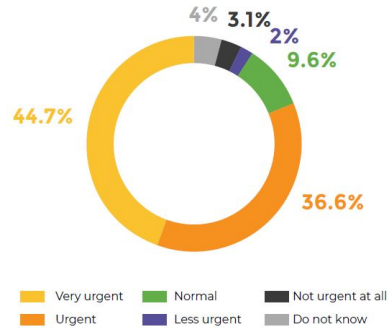
Stakeholders perspective on accessibility of credits from local banks



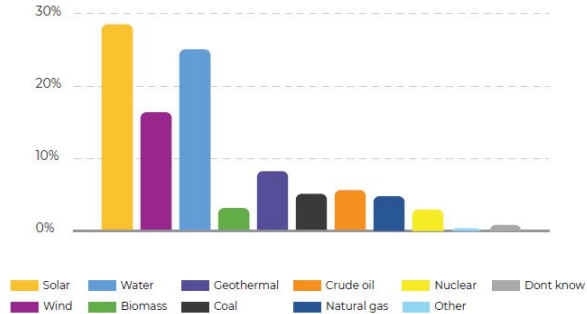
Source: IESR's survey to developers (2021)

# Public is actually **ready** to give their full support on energy transition

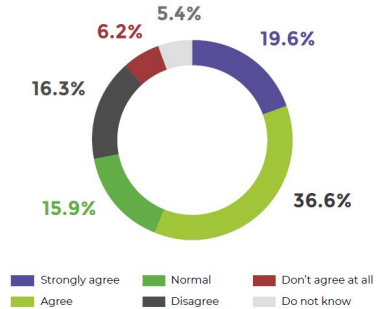
In your opinion, is climate change/global warming an urgent problem to solve?



In your opinion, what energy sources should be prioritized in electricity generation in Indonesia?

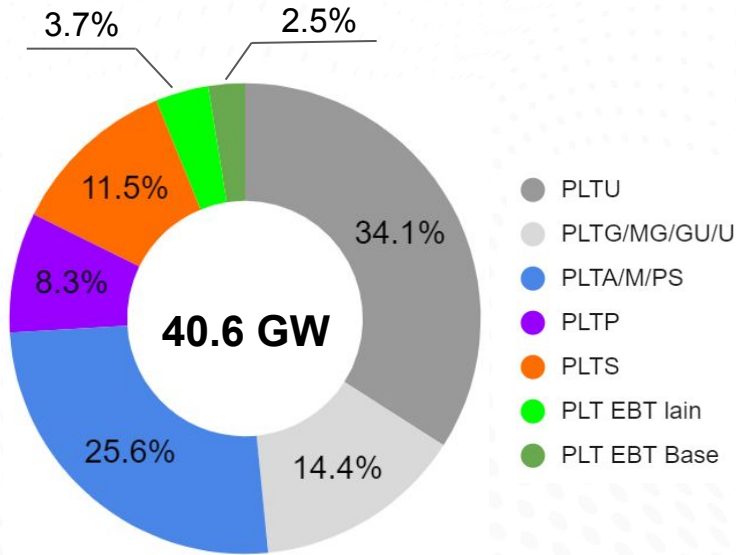


Do you agree that Indonesia will stop using coal for electricity generation?

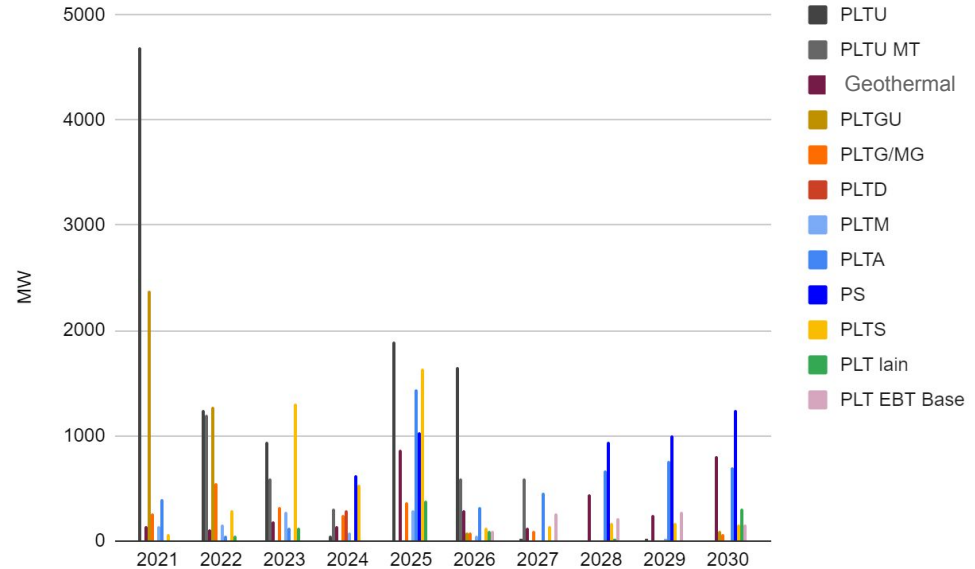


Source: IESR's survey to public (2021)

## RUPTL 2021-2030 shows the eagerness of government to increase the penetration of renewable energy in electricity system of Indonesia



RE share is planned to reach **20.9 GW or 51.6%** of the total mix



Construction of new RE power plants will be **expanded massively after 2025**

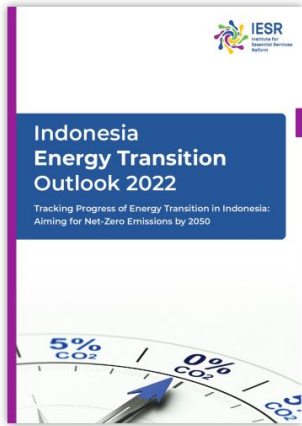
Source: RUPTL PLN 2021-2030

# There is an improvement of renewable energy environment, but it is not enough

Dimension	Political and Regulatory					Techno-Economic	
Variable	Political Will & Commitment			Regulatory Framework Quality		Power System Planning	Economic of Energy Transition
Indicator	Climate and energy policy alignment with Paris Agreement	Public finance allocation	Implementation of policy targets	The regulatory framework stability and attractiveness	Regulatory consistency between government bodies	Power system planning suitability with high RE	Cost competitiveness of renewable technology
Rating in 2021	Low	Low	Low	Medium	Medium	Medium	Medium
Rating in 2020	Low	Low	Low	Low	Low	Low	Low

Dimension	Investment and Finance				Social	
Variable	Investment Climate for Renewable Energy Power Plant			Power Sector Investment Trend	Public awareness & acceptance	Human capital
Indicator	Investment risk	Ease of entry	Access to capital	Investment trend and sufficiency	Public awareness and support for renewables and coal phase-out	Integration of energy transition and employment policy
Rating in 2021	Medium	Low	Medium	Low	High	Medium
Rating in 2020	Medium	Low	Medium	Low	N/A	Low





<https://iesr.or.id/en/pustaka/indonesia-energy-transition-outlook-ieto-2022>

# Thank you



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