PYC International Energy Conference 2025

Towards Visi Indonesia Emas 2045: *Aligning Energy Security, Economic Growth, and Environmental Sustainability*

Indonesia's Net Zero Target: Embedding Climate Goals in Development Planning

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Law no. 59/2024: National Long Term Development Planning (RPJPN) 2025-2045

Indonesia Vision 2045:

A United, Sovereign, Developed and Sustainable Republic of Indonesia

17	8	45
Goals	Development Agendas	Indicators

5 Main Objectives

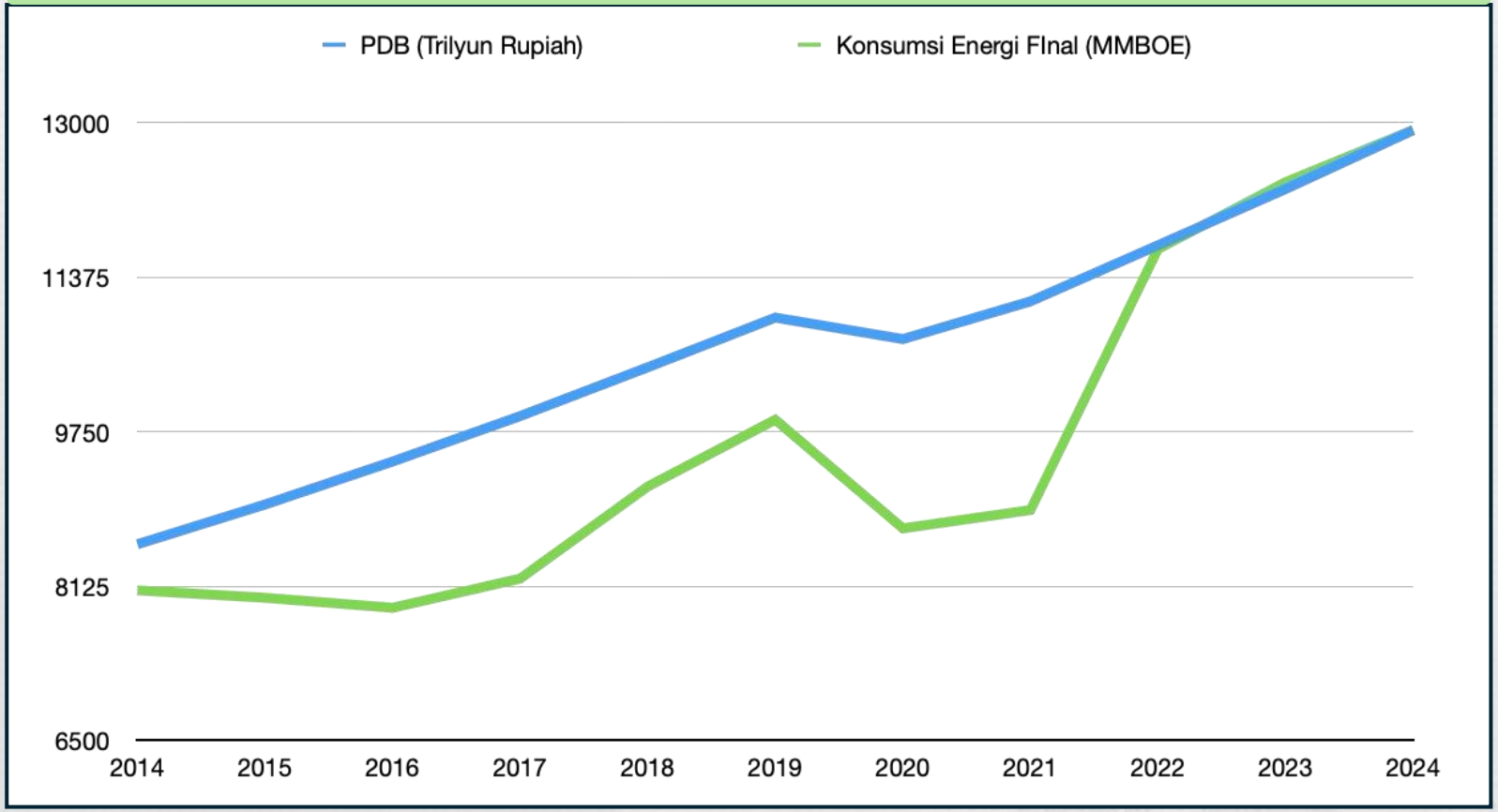
1. Per capita income is equivalent to developed countries
2. Poverty becomes 0 percent and inequality decreases
3. International leadership and influence increased
4. The nation's competitiveness increases
5. GHG emission intensity decreases towards net zero emissions

To achieve the vision that has been set, Indonesia must change its development path and approach which is strengthened by comprehensive transformation through the 8 Development Agenda:

Transforming Indonesia		Social Transformation		Economic Transformation		Governance Transformation	
Foundation of Transformation		Rule of Law, Stability and Toughness of Diplomacy				Sociocultural and Ecological Resilience	
Transformation Implementation Framework		Realizing Equitable and Quality Regional Development		Creating Quality and Environmentally Friendly Infrastructure		Realizing Sustainable Development	

The Challenge of Meeting Energy Demand in Indonesia's Economic Expansion towards Indonesia Emas 2045

Indonesia's economic growth is expected to be closely followed by a proportional rise in energy consumption, reflecting the structural link between economic activity and energy demand



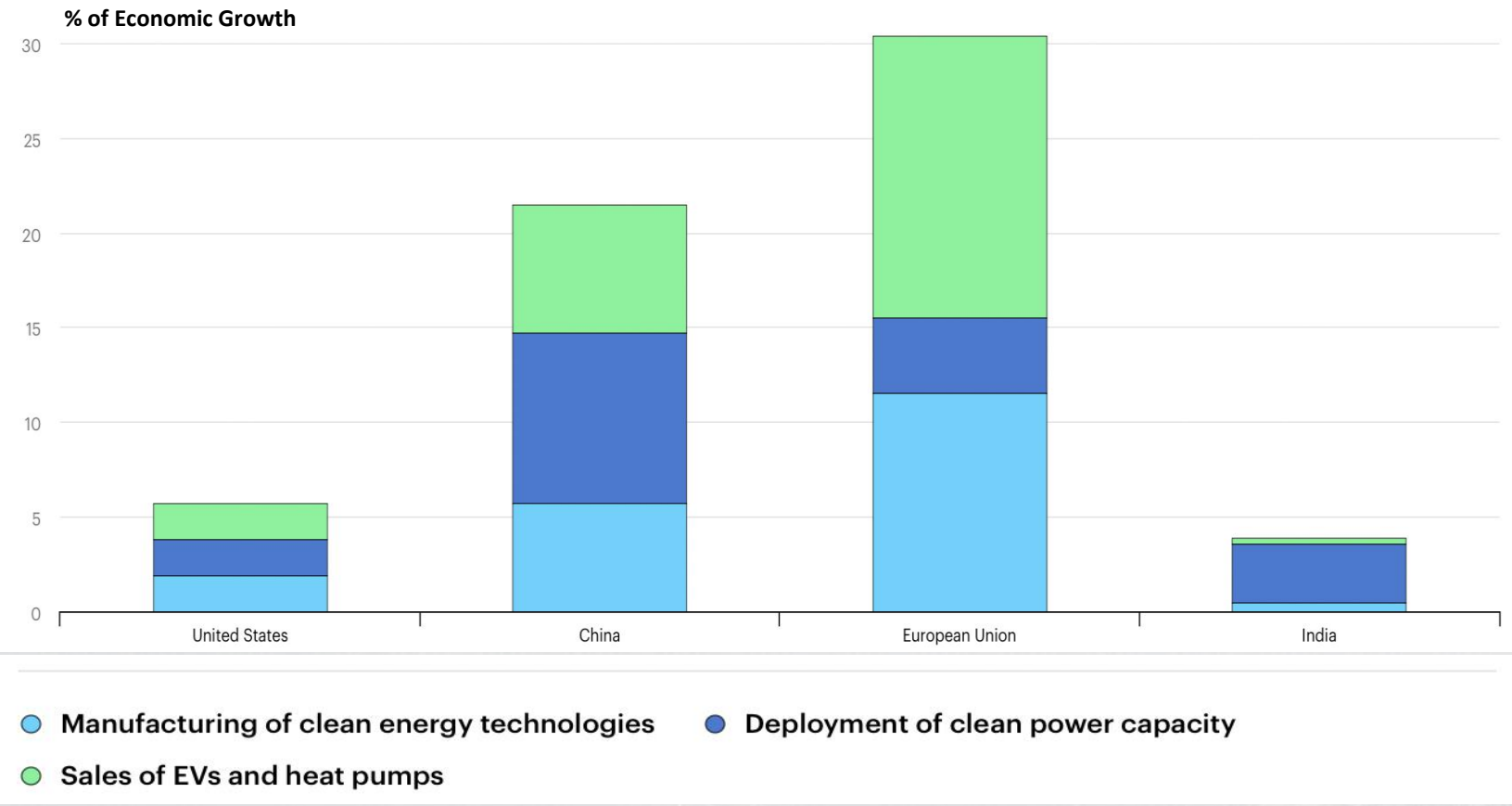
Source: HEESI MoEMR, 2025

ENERGY- ECONOMIC NEXUS

- **Energy consumption and economic growth are interrelated**
  Increased economic activity usually drives higher energy demand for industry, transportation, and households.
- **Energy as a production input**
  Sufficient and affordable energy availability is an important factor in improving productivity and economic competitiveness.
- **Economic growth drives energy diversification**
  As income and development increase, countries tend to invest in more efficient and environmentally friendly energy infrastructure.
- **A Long-term reciprocal relationship**
  Inefficient energy consumption can hinder economic growth due to high costs and environmental impacts, while sustainable energy use can support long-term growth.

Expanding Renewables for Meeting Indonesia's Energy Needs and Achieving Sustainable Economic Growth

In 2023, clean energy investment and sales accounted for between 1% and 4% of total GDP in four major regions of the world, a substantial shares in the context of these large and diversified economies.



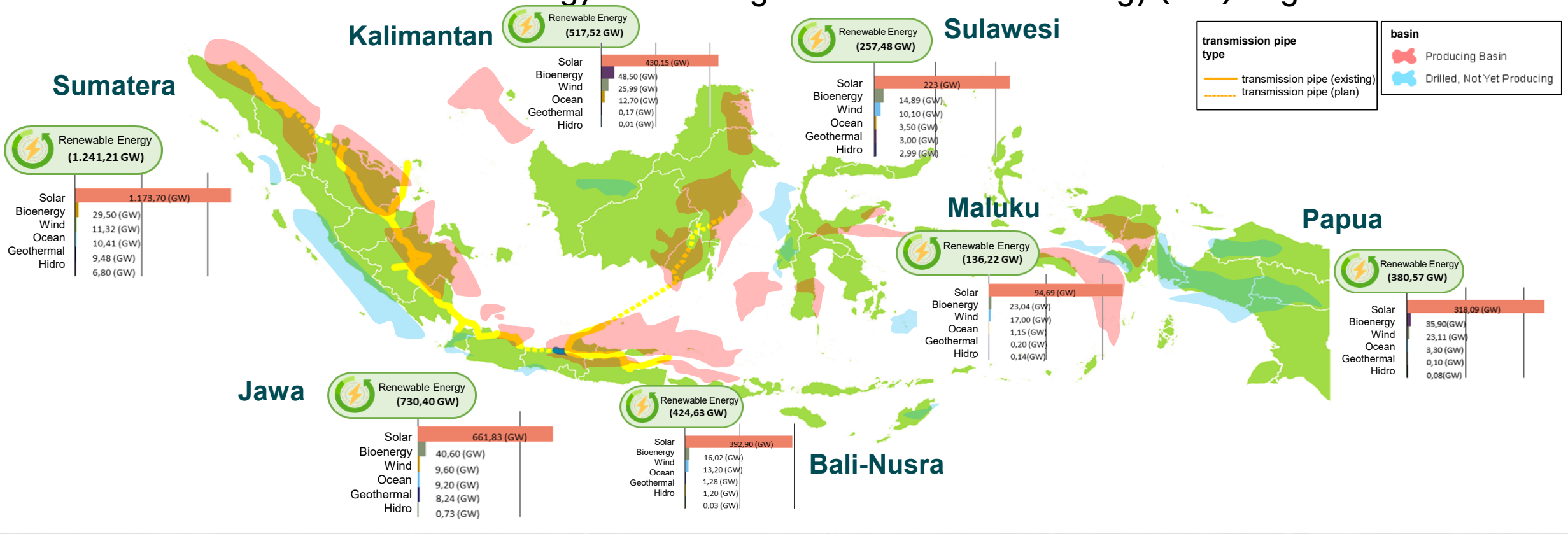
Source: IEA, 2024

GREEN GROWTH

- **Creating a new basis for growth through innovation and investment in clean energy technologies**
  The intensification of renewable energy drives the development of domestic research and industry. This opens opportunities for Indonesia to become a regional player in the green technology supply chain, while also attracting foreign direct investment.
- **Reducing dependence on fossil fuels and strengthening national energy security**
  Indonesia can mitigate economic risks from global oil and gas price fluctuations and reduce the burden of energy imports by increasing the share of renewable energy.

Opportunity of Energy Transition as a New Economic Growth Potential

Energy in Indonesia is very diverse and varies significantly across its regions. Energy transition acceleration could offer great **opportunity as a new major potential economy through investment entire value chains**, from good mining practice, green mineral processed industries, green super grid and value chain enhancement. These will also minimize the disparity between domestic low-carbon technology supply chain capacity and the need of massive technology in achieving Variable Renewable Energy (VRE) targets.



Energy Sector in Medium-term Planning, Presidential Regulation no. 12/2025: National Mid-Term Development Planning (RPJMN) 2025-2029

ISSUES/CHALLENGES

1. Declining fossil energy Reserve to Production
Oil 10.92 years, natural gas 14.57 years and coal 41.32 years (Lakin ESDM, 2023)

2. Oil and gas imports have been increasing over the last 5 years
8 percent/year (HEESI)

3. Low access to Natural Gas Network for Households
<5% of households

4. Energy Buffer Reserve (CPE) not yet available
Oil Fuel 9.64 Million Barrel, LPG 525.78 Thousand Metric Ton, Natural Oil 10.17 MIllion Barrel (Perpres 96/2024)

5. Renewable energy utilization is still very low compared to the available potential
12.6 GW from 3,687 GW potential

6. Abundant Bioethanol raw material
Sugarcane 75 ton/ha/year, cassava 30 ton/ha/year, corn 8 ton/ha/year

7. Low capacity of Bioethanol industry compare to market demand
63,000 kL/year from 119,748 kL/year (2023)

8. The energy sector remains the largest contributor to emissions 43%

MAIN GOALS

Improved **energy security** through increased **energy supply**, expanded **access and coverage**, and utilization of **clean energy.**

Energy Security Index	6.77 (2025)	6.95 (2029)
Primary Energy Demand	280 MTOE (2025)	356 MTOE (2029)
Final Energy Consumption per Capita	0.545 TOE/capita (2025)	0.798 TOE/capita (2029)
Renewable Energy Mix	20% (2025)	23% (2029)
Primary Energy Intensity	133,1 SMB/ B Rp (2025)	130 SMB/ B Rp (2029)

INTERVENTION HIGHLIGHT/ PRIORITY ACTIVITIES

- Increasing **Energy Supply**
- Expanding **Access and Coverage of Energy Services**
- Strengthening the Implementation of **Just Energy Transition**

SUPPORTING ACTIVITIES

1. Development of supporting infrastructure: roads, ports, airports
2. Mobilization of green financing for renewable energy development
3. Streamlining of project permitting
4. Human resource capacity building
5. Strengthening of domestic component industries

Direction of Energy Transition in Medium Term National Development Planning 2025-2029: Clean Energy

Direction of Energy Transition in Medium Term National Development Planning

The energy transition as part of the economic transformation (green economy – *Indonesia Emas* 5), is being implemented with strengthening energy security (*Indonesia Emas* 16) as one of the transformation foundation.

Policy direction: Acceleration of the utilization of new and renewable energy, including nuclear energy, industrial decarbonization through the use of renewable energy, and the intensification of biofuel utilization.

Energy Transition Priority in Med-term National Development Plan

Clean Energy Diversification

Geothermal direct-use, ocean, carbon capture and storage, nuclear power plant

Biofuel Expansion

Development of ecosystems and enhancement of biofuel utilization

Increase RE Powerplant

Solar, micro and mini hydro, biomass, geothermal power plant

Clean Energy Ecosystem

Local industry, human resource, investment

Energy Efficiency & Conservation

Energy management, minimum energy performance standards, electricity supply efficiency

Strategic Project Indications Related to New and Renewable Energy

RPJMN 2025 - 2029

PLTA Kayan 9 GW Terintegrasi

Bioethanol (Sugarcane based)

Biorefinery Sumatera

Biorefinery Cilacap

Biofuel Development from Methanol and ethanol in Bojonegoro Regency

Permenko Ekon 12/2024

Biofuel Development from Methanol and ethanol in Bojonegoro Regency

Large-scale Solar Power Plant

New Proposals

CCS/CCUS

Overview National Strategic Projects (PSN): Ministerial Regulation of Bappenas no. 4/2025

National Strategic Projects

Based on Presidential Regulation No. 12 of 2025 concerning the 2025–2029 National Medium-Term Development Plan (RPJMN)

National Strategic Projects are designed as projects or programs (a set of projects) that are strategic in nature, measurable, and have a significant impact on achieving the targets of the 2025–2029 RPJMN, particularly the President's Priority Programs, including Quick Wins programs, especially to improve the quality of human resources, reduce poverty, promote quality and sustainable economic growth, and encourage equitable development.

PRESIDENTIAL DIRECTIVES REGARDING PSN

Based on Presidential Regulation No. 195 of 2024, Bappenas has the following duties and functions (Article 4):

- ***Policy Formulation***
- ***Planning & Determination***
- ***Evaluation & Control***

Integration with Development Goals and Agendas

Development Goals

- Boost Economic Growth
- Reduce Poverty
- Improve Human Resource Quality

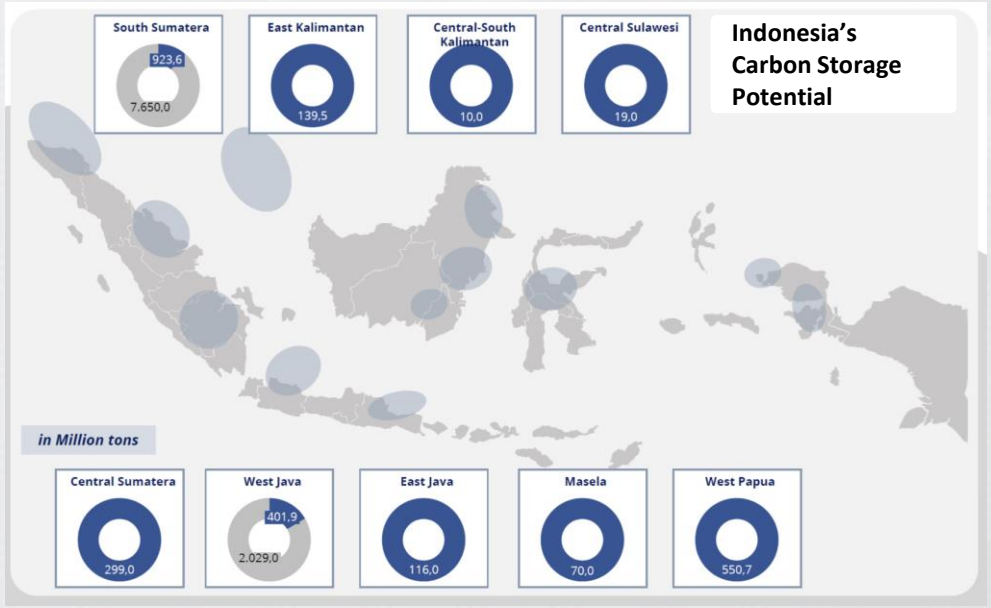
Presidential Focus

01 Food Self-Sufficiency

02 Water Self-Sufficiency

03 Energy Self-Sufficiency

04 Downstreaming of Commodities and Industries



- Indonesia holds vast potential for Carbon Capture and Storage (CCS), with significant geological storage capacity in depleted oil and gas reservoirs and deep saline aquifers, alongside its status as a major regional emitter.
- This unique position allows Indonesia not only to decarbonize its own hard-to-abate sectors such as cement, steel, and refining, but also to become a hub for cross-border CO_2 storage services, attracting international investment and strengthening its role in the global low-carbon economy.
- Bappenas is actively working with ministries, agencies and development partners to support the development of a regulatory framework that supports CCS investment & deployment.

Sumber: Kedeputian Bidang Infrastruktur, Kementerian PPN/Bappenas

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THANK YOU

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