
Indonesia Energy Transition Outlook 2026

Rhetoric or Reality:
Aligning Economic Growth with Energy Transition



ECONOMIC GROWTH AMBITIONS

RPJMN 2025-2029 projects **8% economic growth rate by 2029**, with industrial downstreaming as one of main drivers

This will significantly increase energy demand projection in the future

Prabowo Optimistic Indonesia Can Achieve 100 Percent Renewable Energy in the Next 10 Years

Reporter
Annisa Febiola

July 10, 2025 | 01:06 pm



TEMPO.CO, Jakarta - President **Prabowo** Subianto is optimistic that Indonesia can achieve 100 percent renewable energy in the next 10 years. He is also confident that 100 percent **renewable energy** can be achieved sooner than the initial projection of 2040.

This was conveyed by Prabowo in a joint statement with Brazilian President Luiz Inacio Lula da Silva on Wednesday, July 9, 2025 at Planalto Palace, Brasilia. "The target is of course 2040, but my experts say that we can achieve it much sooner," he said, as quoted from the official statement.

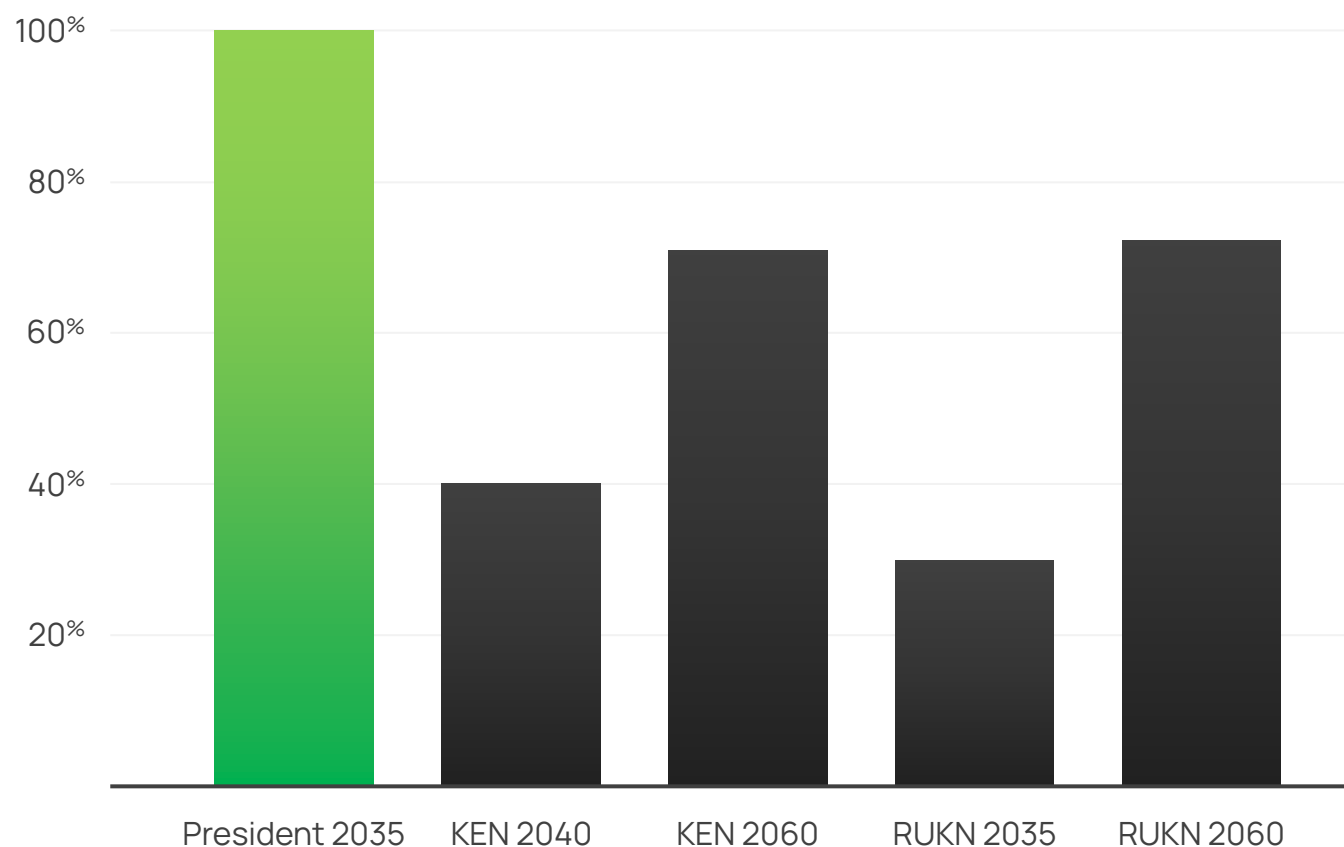
RPJMN 2025-2029 also includes **"energy independence"** as one of the priorities of Asta Cita

SNDC commitment and KEN 2025:

- ☐ NZE 2060
- ☐ Decreasing emissions to **129 MtCO₂e** in the energy sector
- ☐ Peaking energy sector emissions by 2035

Balancing the economic growth ambition and climate mitigation?

NRE Mix Target Comparison



Prabowo's statement of 100% RE in 2035 is not reflected in any formal planning documents

1.5°C
carbon budget
as early as
2038

2.0°C
carbon budget
as early as
2044

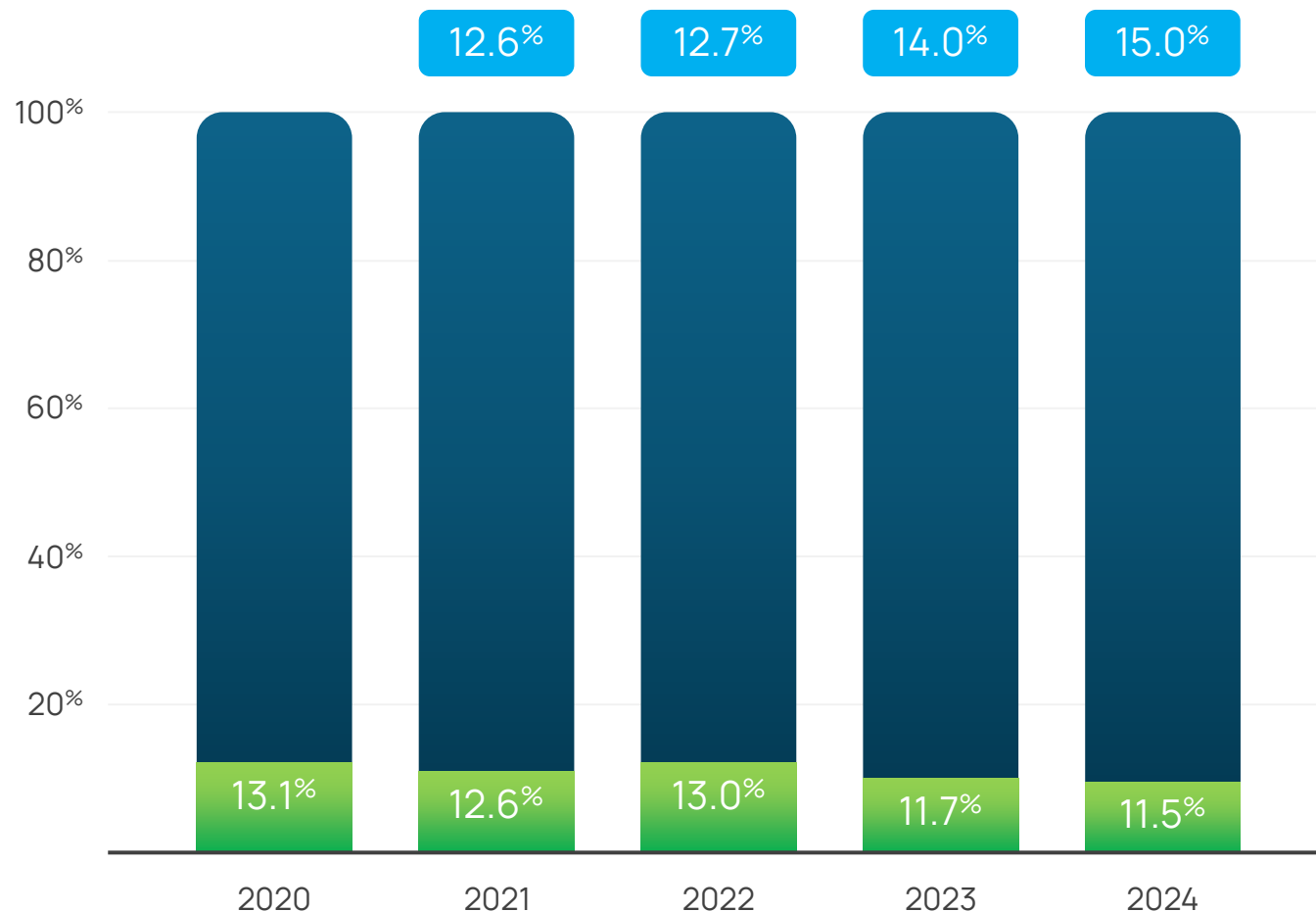
based on the energy emissions projection in the latest SNDC

Energy System Transition by Sector

Abraham Octama Halim

Power Sector: Current Condition

On-grid Electricity Generation in Indonesia



Indonesia's power system is still **dominated by fossil fuels**, particularly coal

Share of RE in the on-grid generation mix has actually declined in the past 5 years, from 13.1% to 11.5%, **missing the target set in the RUPTL 2021-2030**

The gap between resource potential, system planning, and actual deployment highlights **persistent challenges in turning policy ambition into projects**

-  RUPTL 2021-2030 RE Mix Target
-  Fossil Fuels
-  Renewable Energy

Power Sector: Uncertain & Weak Coal Retirement Strategy

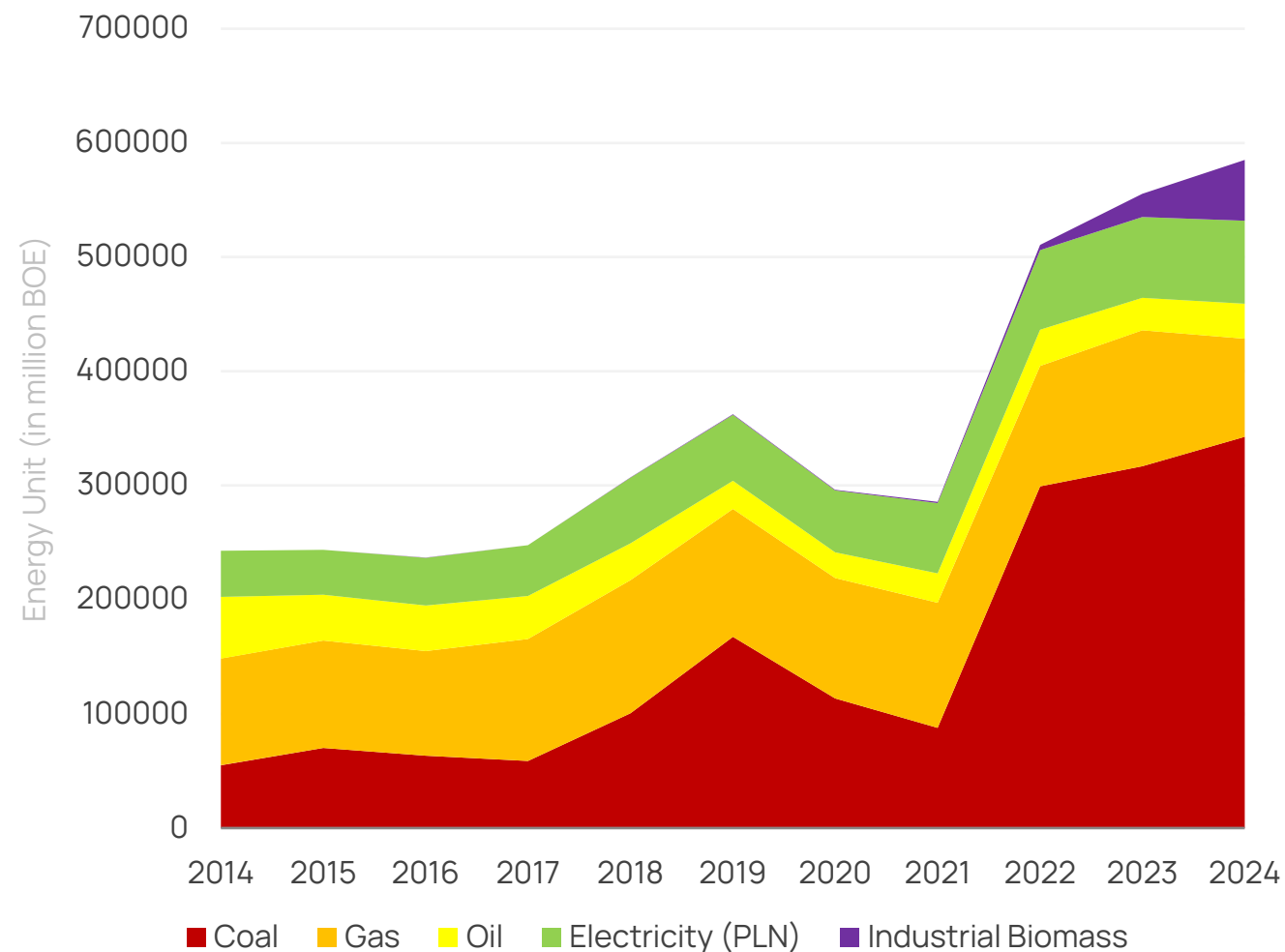
MEMR Regulation No. 10/2025 is a **weak & inconsistent regulatory follow up** to Presidential Regulation No. 112/2022 coal early retirement mandate

Main Issues

It does not explicitly outline a roadmap for coal early retirement. Instead, it focuses on a **broader energy transition roadmap in the power sector**

It positions coal early retirement as the last option, under cofiring and retrofitting, **indicating the desire to extend the life of coal assets** (Article 2 Section 2)

Industrial Sector: Industrial Electrification



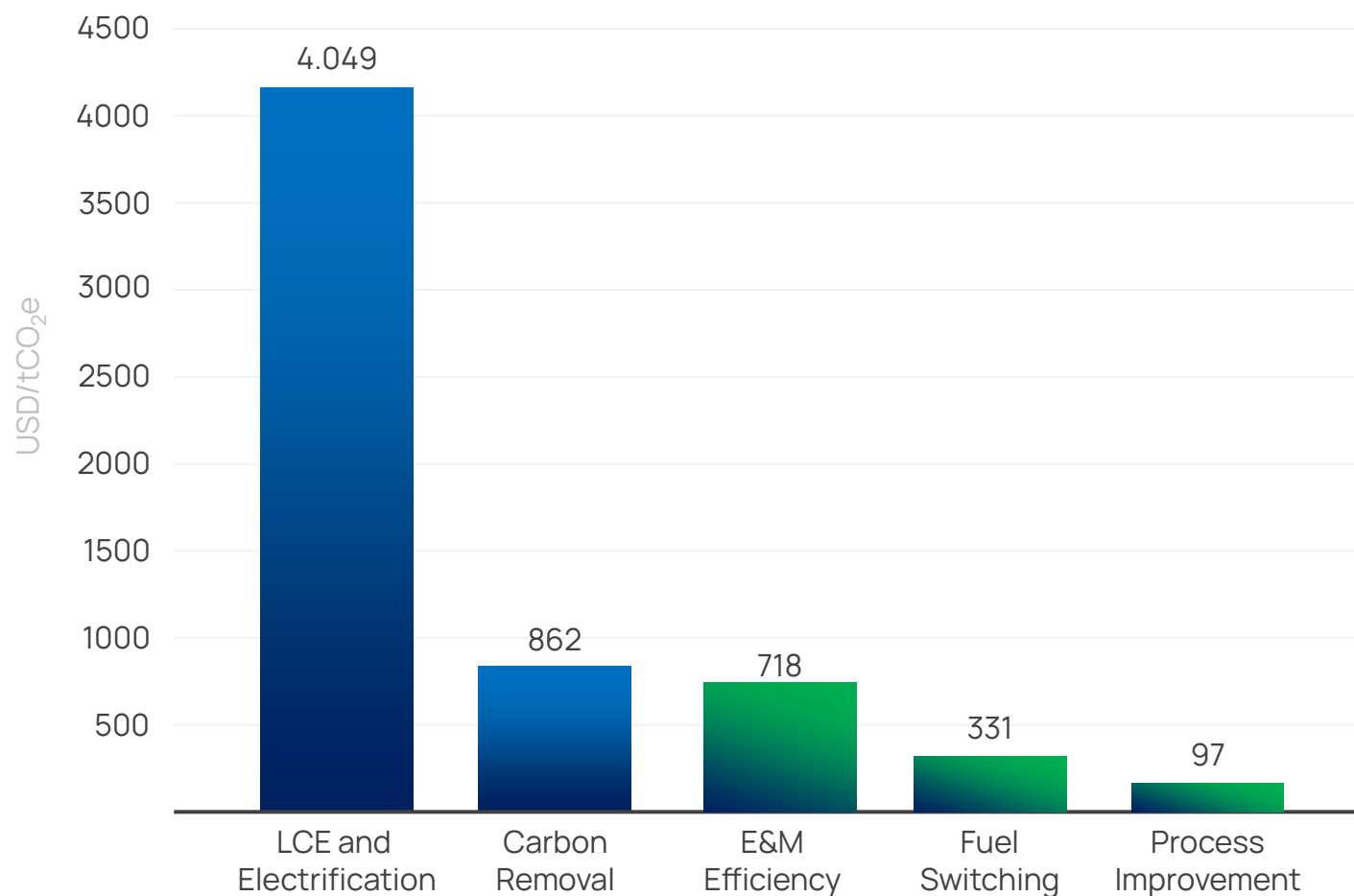
Industrial downstreaming is the backbone of economic growth, increasing industrial energy demand, **yet is still majorly supplied by fossil fuels, especially coal**

The energy share of electricity (12.42%) in 2024 is at **its lowest in the past decade**

The DMO and market price caps supported coal demand in industry to reach **340 MBOE**, or **59%** of 2024 total energy demand, with a **20%** CAGR since 2014

Industrial Sector: Mitigation Measures

Mitigation Costs Comparison of Industrial Decarbonization Measures



The Mol's Industrial Decarbonization Roadmap estimates that total emissions to be mitigated across nine priority sectors between 2025 and 2050 amount to **316.1 MtCO₂e**

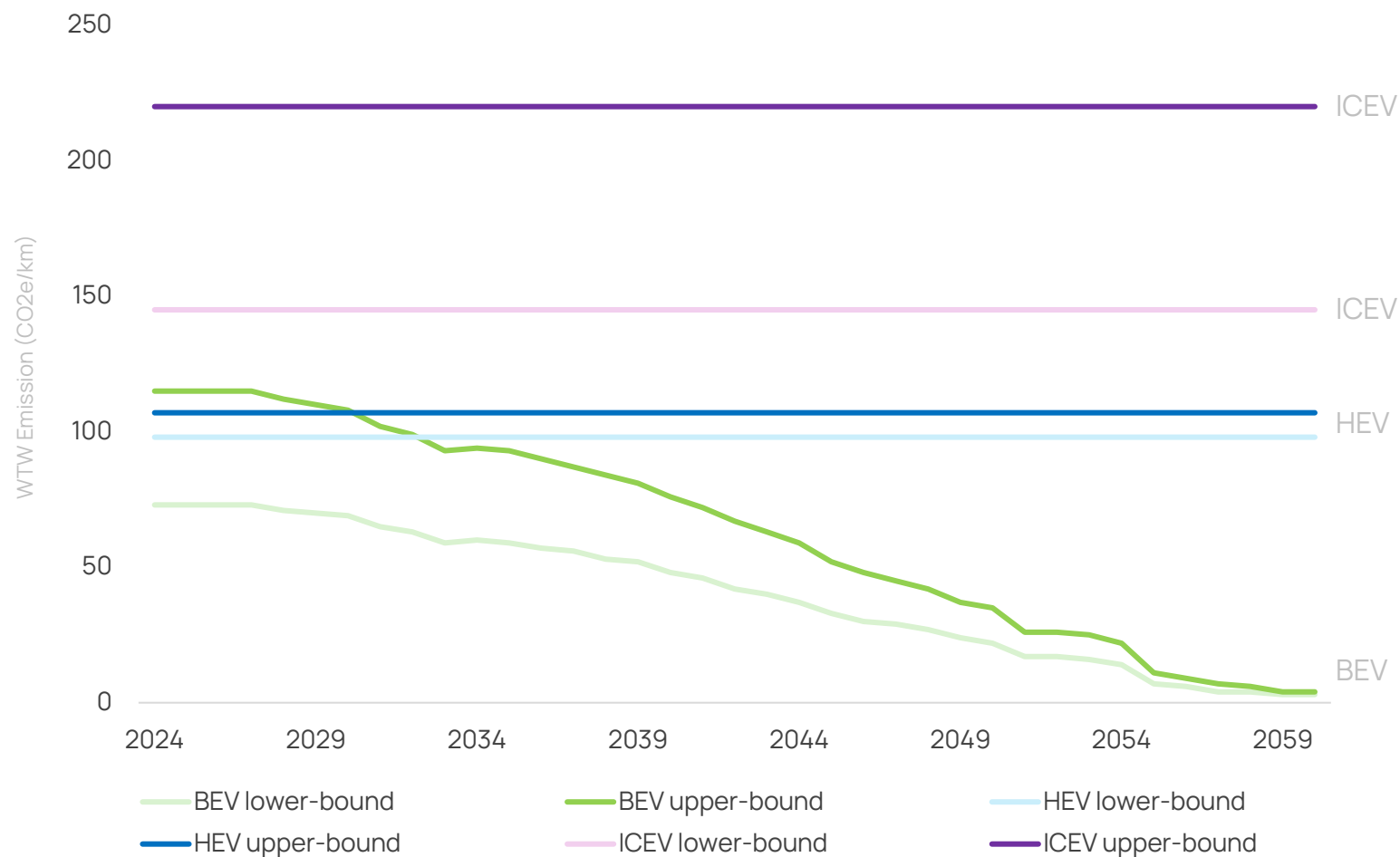
To support this transition, total investment needs between 2025 and 2050 are estimated at approximately **USD 260 billion**

From a **cost-effectiveness perspective**, Fuel Switching, E&M Efficiency, and Process Improvement provide the lowest mitigation costs per tCO₂e



Transport Sector: BEV vs HEV for Transport Decarbonization

WTW Emission Comparison of ICEV, BEV, HEV



BEV (Battery Electric Vehicle) WTW (well to wheel) emissions falls with increased RE penetration in the power system

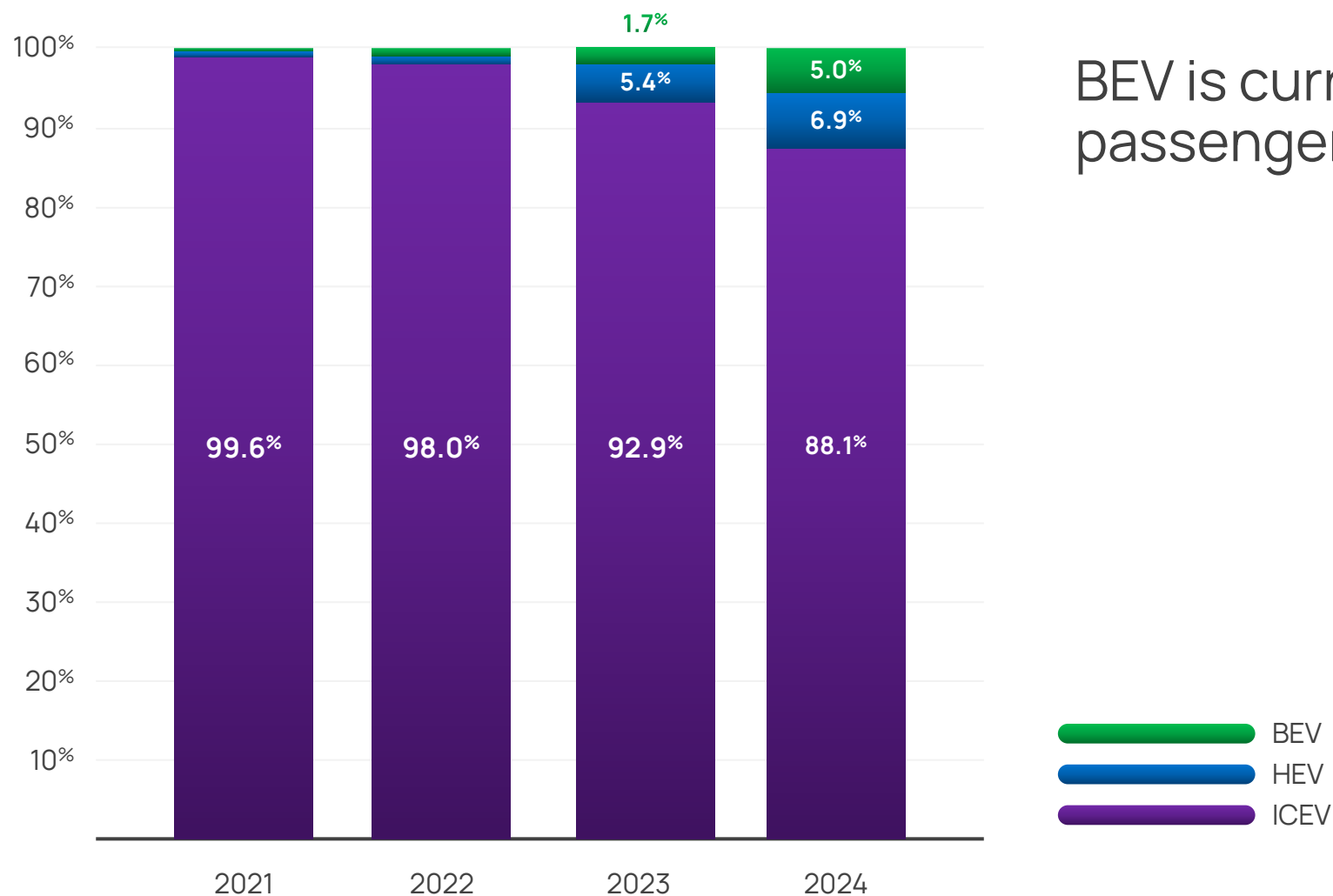
HEV, although lower-carbon than ICEV, still depends on fossil fuel and the WTW emissions therefore does not decline with a greener grid

BEV is the best long-term decarbonization option, especially when in 2032 its emissions are below **even the HEV lower bound emissions**



Transport Sector: ICEV Sales Ban and Vehicle Stock Turnover

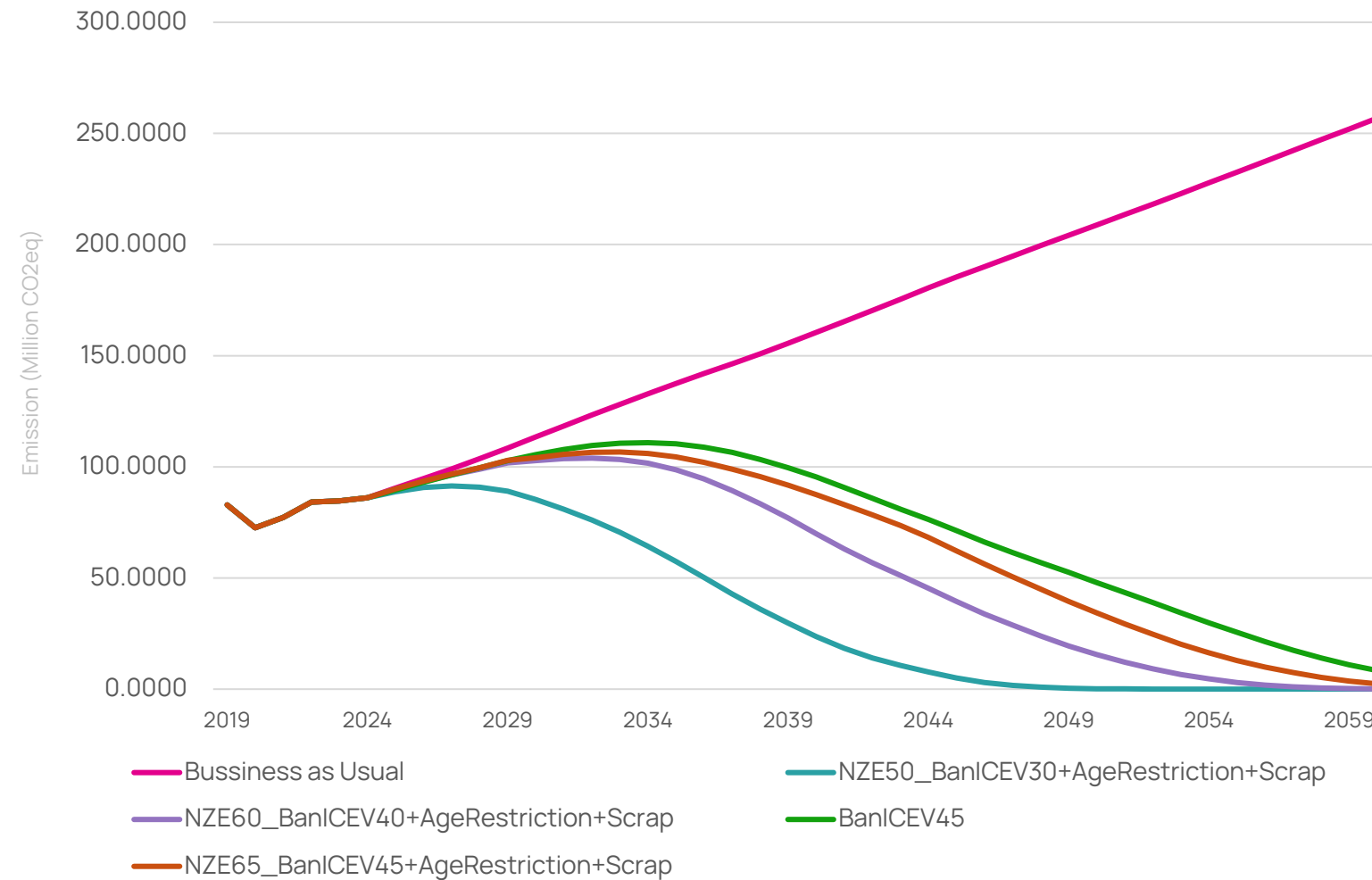
Indonesia 4-Wheeler Passenger Market



BEV is currently only **5%** of passenger cars in Indonesia



Transport Sector: ICEV Sales Ban and Vehicle Stock Turnover



IESR modelling shows government's ICEV sales ban in 2045 can reduce emission to 8 MtCO₂e by 2060, but will delay NZE to 2067

Achieving NZE by 2060 would require accelerating the sales ban to 2040 and applying age restriction of 25 year to cars and 20 year to motorcycles

Quicker NZE by 2050 would require 2030 sales ban, age restriction and scrappage scheme

Building Sector: Energy Management

Compliance to Energy Management Reporting Portal (POME)

TOTAL BUILDING



ENERGY SAVING (GWH)



EMISSION REDUCTION (TCO₂e)

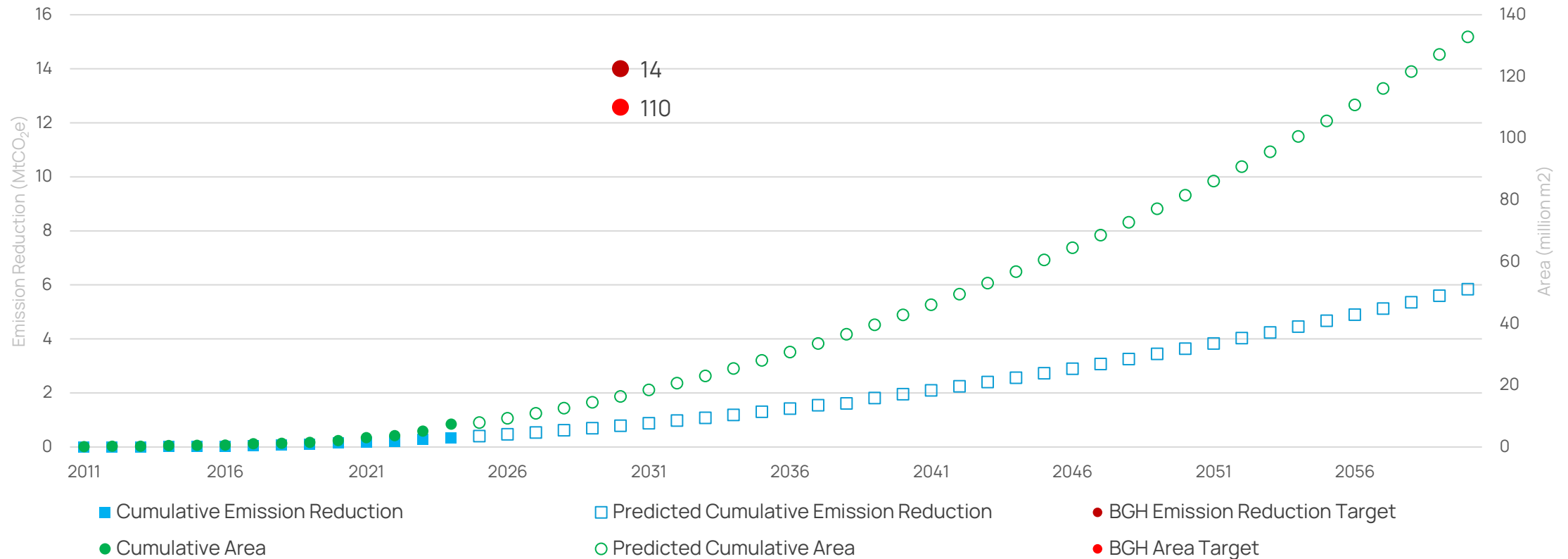


 Actual POME
  Target POME

Compliance with Government Regulation No. 33/2023 on energy management remain slow due to limited awareness, concerns over upfront investment, and a lack of enforcement

This very low compliance has resulted in only 1.5% of the emission reduction target being achieved

Cumulative Area and Emission Reduction



The Green Building Roadmap targets 100 million m² floor area of green building by 2030, avoiding 14 MtCO₂e.

However, total area of green buildings in Indonesia are only 7.5 million m² in 2024, and extrapolated to 2030 at the current growth rate, it will only grow to 16.5 million m² by (only 15% of the roadmap target) and matching the target only by 2056.

Enabling Environments for the Energy Transition

Putra Maswan

POLITICAL COMMITMENT & GOVERNANCE

Despite President Prabowo's strong political commitment and ambitious vision for a sustainable, governance at institutional level remain an obstacle for energy transition, and institutional fragmentation exacerbated the condition

Energy Transition Coordination Redistributed Roles under Prabowo

Previously

Kemenko Marves

Now

Coordinating Ministry
for Economic Affairs

Coordinating Ministry
for Food Affairs

Ministry of Energy &
Mineral Resources

Ministry of
Environment

Ministry of Finance

Ministry of National
Development Planning
(Bappenas)

INVESTMENT & FINANCE

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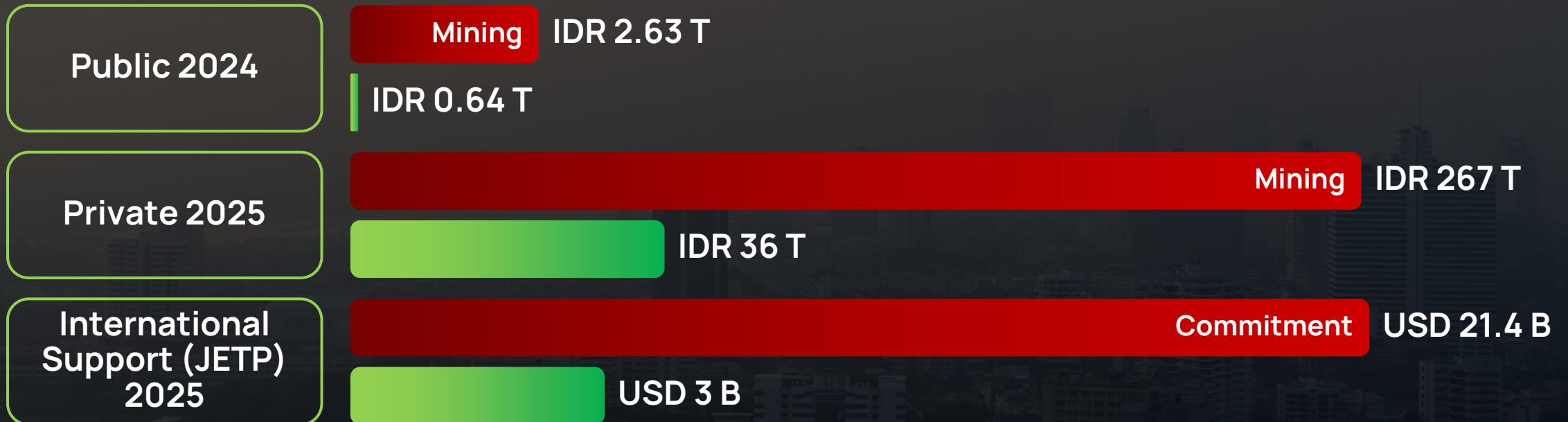
Energy Subsidy 2022-2026

**Subsidy is a growing burden on the state budget and
continue to reinforce dependence on fossil fuels**

Without comparable incentives for renewables, scaling up
renewable energy will remain challenging in a market that favors
fossil fuels, making renewables **less attractive for investment**

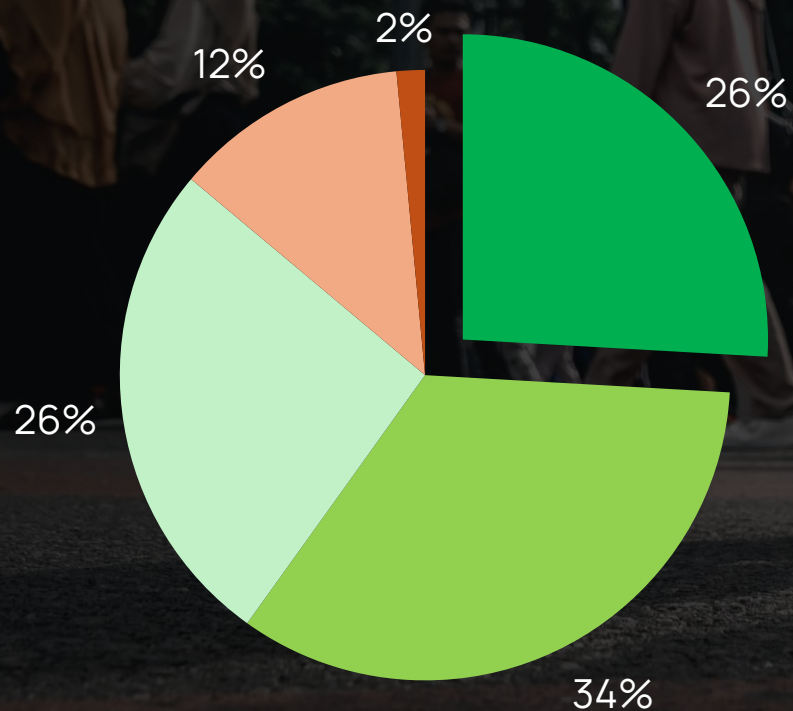
INVESTMENT & FINANCE

Limited Financial Support for Renewable Energy



Bar length is for visualization purposes only and does not represent the actual comparison value

PUBLIC PARTICIPATION



- Very knowledgeable, applying knowledge about the energy transition in daily work/activities
- Knowledgeable, following news, trends, and issues about the energy transition
- Aware, recognizing several issues related to the energy transition
- Slightly aware, have only heard about the energy transition
- Not aware, have never heard about it

Public participation is a cornerstone of just energy transition, ensuring both procedural and recognition justices

PUBLIC PARTICIPATION

Compared to international standards, public participation in Indonesia's regulatory mandates is mostly consultative with limited influence over final decisions



TECHNOLOGY ADVANCEMENT

Clean technology advancement has gone beyond climate commitments and has become a viable business opportunity

Technological advancements and project learning curves have made Indonesia's renewable energy cost-competitive

Solar Energy

Installation costs in Indonesia fell 57% over the past five years (IRENA, 2025)

Battery

Global battery cell prices dropped nearly 30% from 2023—the largest decline in a decade (Bloomberg NEF, 2024)

Technology Maturity Level	Power Sector Technology	Indonesia's Technology Progress Rating
Market Uptake (TRL 9-10)	Crystallin-silicon based solar photovoltaic technology	Medium
	Battery energy storage system	Medium
	Wind technology	Low
Demonstration (TRL 7-8)	Tidal energy	Low
	Carbon storage in depleted oil & gas reservoirs	Medium
	Ammonia co-firing in coal power plants	Medium
Concept and prototyping (TRL < 6)	Light-water small modular nuclear reactor	Medium

Stagnant Progress of ET Ecosystem

Despite strong political commitment, incoherent policies, limited financing support, and insufficient human capital capacity remain key factors behind the stagnant progress of Indonesia's energy transition

Assessment Rating

Low

Medium

High



TRANSITION READINESS FRAMEWORK (TRF) RATING

Dimensions	Variables	2024	2025
Political Commitment & Governance	Political Commitment	Low	Low
	Regulatory Framework	Low	Low
	Institutional & Governance	Low	Low
Investment & Finance	Investment for Energy Transition	Medium	Medium
	Finance	Low	Low
Public Participation & Community Acceptance	Human Resource	Medium	Medium
	Public Participation	Medium	Medium
	Media Narratives	N/A	Medium
Technology Advancement	Ecosystem Support	Medium	Medium
	Domestic Supply Chain	Low	Medium
	Cost Competitiveness	High	Medium

Outlook and Way Forward

Shahnaz Nur Firdausi

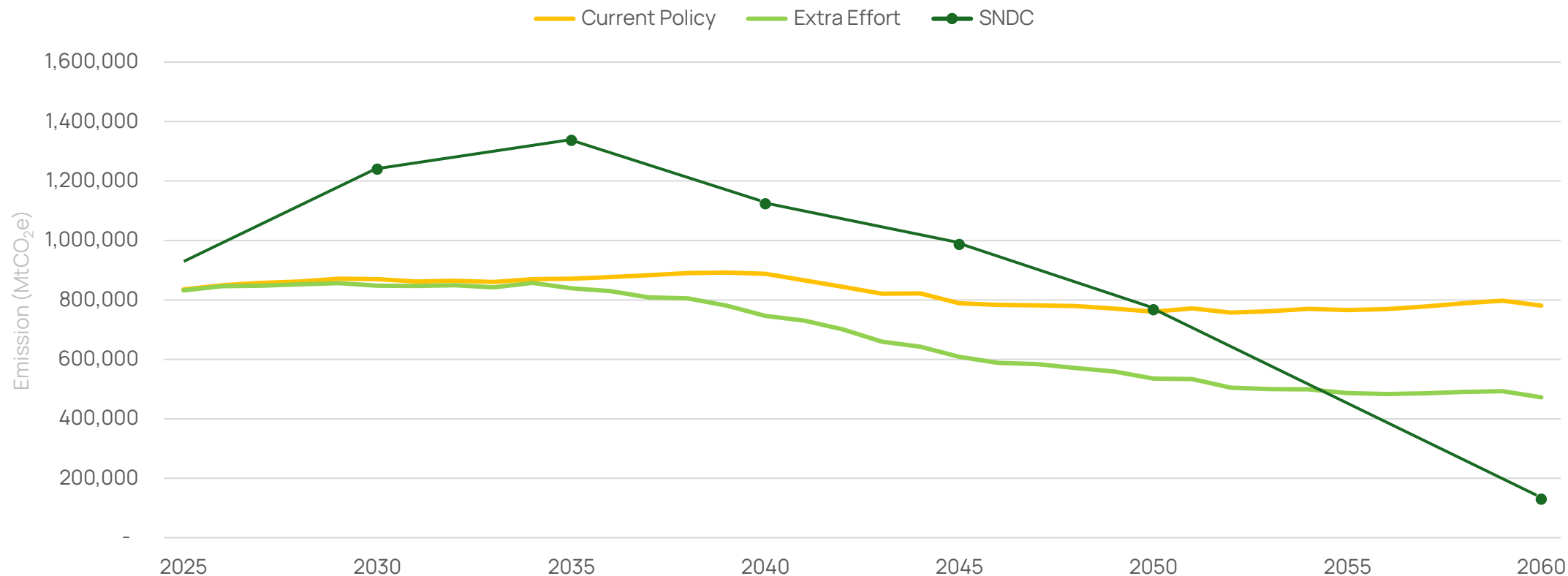
Beyond 2035: The Missing Policy Backbone



After 2035, Second Nationally Determined Contribution (SNDC) envisions a sharp emissions decline toward 2060. However, **there is no clear policy roadmap or cross-sectoral governance to deliver it.**

Beyond 2035: The Missing Policy Backbone

Emission Projection – Paris Agreement Compatibility



Under IESR’s “Current Policies” scenario, which includes ongoing measures—biofuel blending, Minimum Energy Performance Standards (MEPS), green building programs, and limited industrial decarbonization (9 sectors):
 → Emissions **reach 780 MtCO₂e by 2060, far above the SNDC target of 129MtCO₂e.**

“Extra Effort” Scenario

01

Adds stronger measures:

- Higher adoption of electric cooking;
- Deeper power sector decarbonization;
- Internal Combustion Engine (ICE) vehicle sales ban by 2040

02

These efforts lower emissions to **472 MtCO₂e** by 2060, still well above the SNDC target, 129 MtCO₂e

03

Remaining emissions come from unmitigated sectors:

Non-covered industries, freight transport, aviation, shipping, household cooking, and captive power

04

Even with a net-zero power grid, fossil dependence remains deeply embedded in everyday and industrial energy use

05

Mitigation efforts are too electricity-focused, not economy-wide

Governance & Policy Fragmentation



Balancing growth and emission reduction remains **Indonesia's core policy dilemma**



High ambition, but fragmented governance; overlapping mandates across ministries, weak enforcement, conflicting priorities between national and ministerial planning



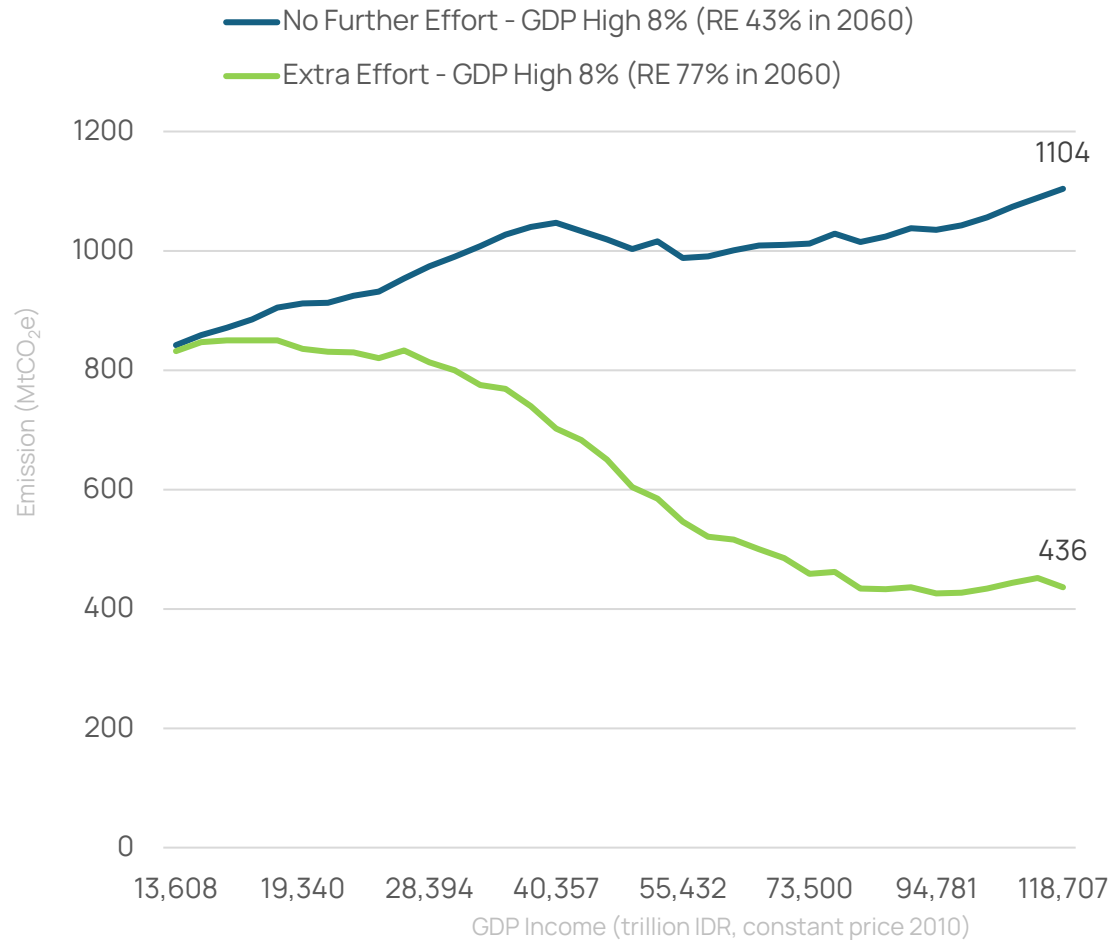
Political and fiscal incentives still favor rapid industrialization and resource downstreaming, **often at the expense of decarbonization**



True “green growth” demands **structural policy reform, energy efficiency, energy demand management**

Renewable Energy Scenarios

Indonesia's Projected GDP Income vs Emission Production



Increasing renewable share to **77%** can decouple GDP growth from emissions. SNDC targets could be more ambitious **if renewable energy share increases faster**. But this requires not only new renewable capacity, but also **systematic fossil retirement**.

Institutional & Technological Reforms

A genuine decarbonization pathway requires:

- Transparent coal retirement roadmap aligned with Presidential Regulation No. 112/2022
- Gradual oil reduction through transport electrification
- Comprehensive transition plans for industry and buildings
- Integrated planning among MEMR, PLN, and Bappenas
- Empowered decarbonization agencies (Pusat Industri Hijau (PIH), Transisi Energi dan Ekonomi Hijau (TEH) Task Force, Rumah PATEN)

Policy predictability and procurement consistency are key enablers



Industrial Strategy and Powershoring

Industrial policy should shift from fossil-intensive downstreaming to low-carbon value chains

Adopt a “powershoring” strategy:

- Leverage abundant renewables to attract energy-intensive clean industries
- Focus on battery materials, electrolyzers, and green hydrogen
- Use cheap, clean energy as a competitive advantage

Aligning industrial growth with the energy transition ensures long-term competitiveness and resilience



So the real question is: Is Indonesia ready and willing to drive economic growth while cutting emissions—on the path toward **Golden Indonesia 2045?**