



Ministry of Energy and Mineral Resources

Republic of Indonesia

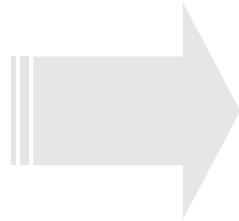
INDONESIA GAS DEVELOPMENT STRATEGY: AN ENERGY TRANSITION

The 40th International Symposium
By Head of HRD Agency EMR





UNFCCC - COP21, DECEMBER 2015



National Commitments 2016-2030:

- **Reducing GHG emissions by 29%** (self-effort) or **41%** (with international assistance) by 2030 according to NDC;
- **GHG reduction target (energy sector): 314–398 million tons of CO₂ in 2030**
- Indonesia efforts to achieve GHG reduction target in energy sector:
 - ✓ Energy transitions;
 - ✓ Implementation of energy efficiency;
 - ✓ Energy conservation;
 - ✓ Application of clean energy technology.

Roadmap Towards Net Zero Emission



2021: Pres. Reg. on NRE, Pres. Reg on *Coal Retirement, Steam PP co-firing*, CCT, Diesel to gas & NRE conversion

2022: Law on NRE, electric stoves 2 million households/annum

2024: Interconnection, *smart grid & smart meter*

2025: NRE 23% is dominated by Solar PP

- Electrification Ratio 100%,
- Electricity Demand 1.217 kWh/capita.
- Pumped Storage start COD
- Emission reduction 198 million ton CO₂

2031: First Stage Retirement for sub-critical CFPP, inter island interconnection start COD

- No more Diesel PP
- Start hydrogen use for electricity
- Increase Battery Usage

2035: NRE 57% is dominated by Solar PP, *hydro, geothermal energy*

- Electricity Demand 2.085 kWh/capita,
- Emission reduction 475 million ton CO₂

2048: Large Scale Ocean Current PP start COD

2049: First Nuclear PP starts COD

2050: NRE 93% is dominated by Solar, Hydro, and Bioenergy

- Reduce sales of conventional cars
- Electricity Demand 4.299 kWh/capita,
- Emission reduction 956 million ton CO₂



2027: Gradual reduction of imported LPG

2030: NRE 26,5% is dominated by Solar PP

- No new fossil PP after 2030
- EV 2 million of four-wheelers and 13 million of two-wheelers
- BBG 300 thousand
- City gas for 10 million houses,
- The utilization of DME
- Electricity Demand 1.548 kWh/capita,
- Emission reduction 314 million ton CO₂

2036: Second Stage Retirement sub-critical, critical, & partly super critical CFPP

2040: NRE 66%, dominated by Solar, Hydro & Biomass

- Reduce sales of conventional motorcycles
- LED Lamps 70%
- Electricity Demand 2.847 kWh/capita,
- Emission reduction 796 million ton CO₂

2051: Massive Utilization of Hydrogen

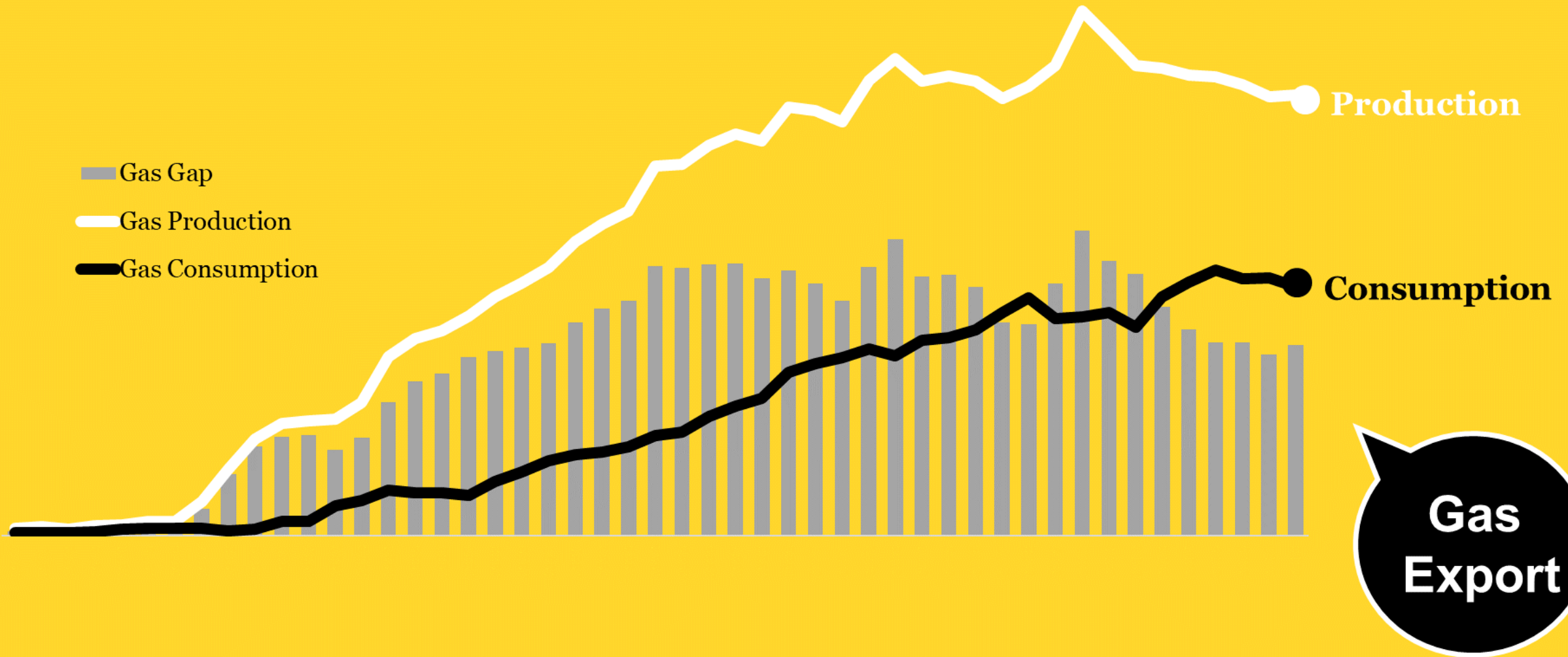
2054: Gas Fired PP cap. <1GW

2057: Coal Fired PP cap. <1GW

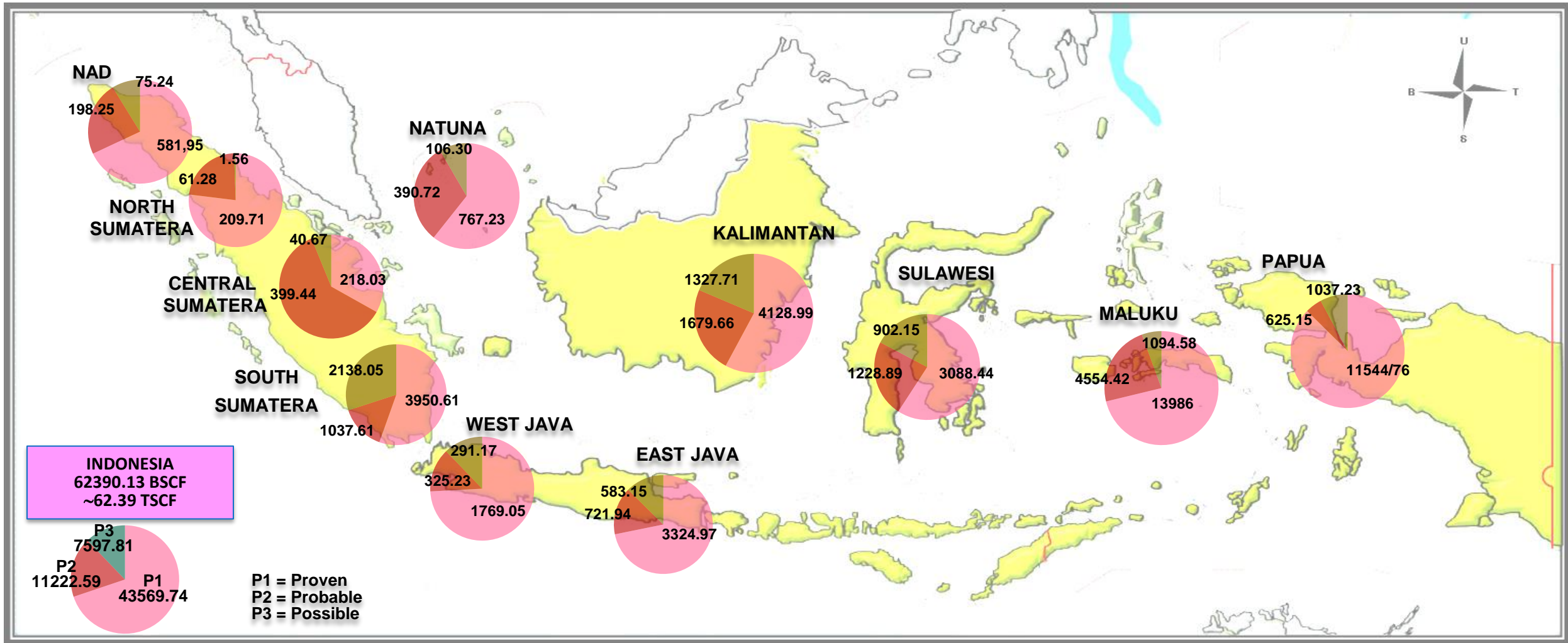
2060: NRE 100%, is dominated by Solar PP, hydro, and wind

- All two-wheelers are electric-based
- Electric stoves 52 million households,
- City gas for 23 million SR
- Electricity Demand 5.308 kWh/capita
- Emission reduction 1.526 million ton CO₂

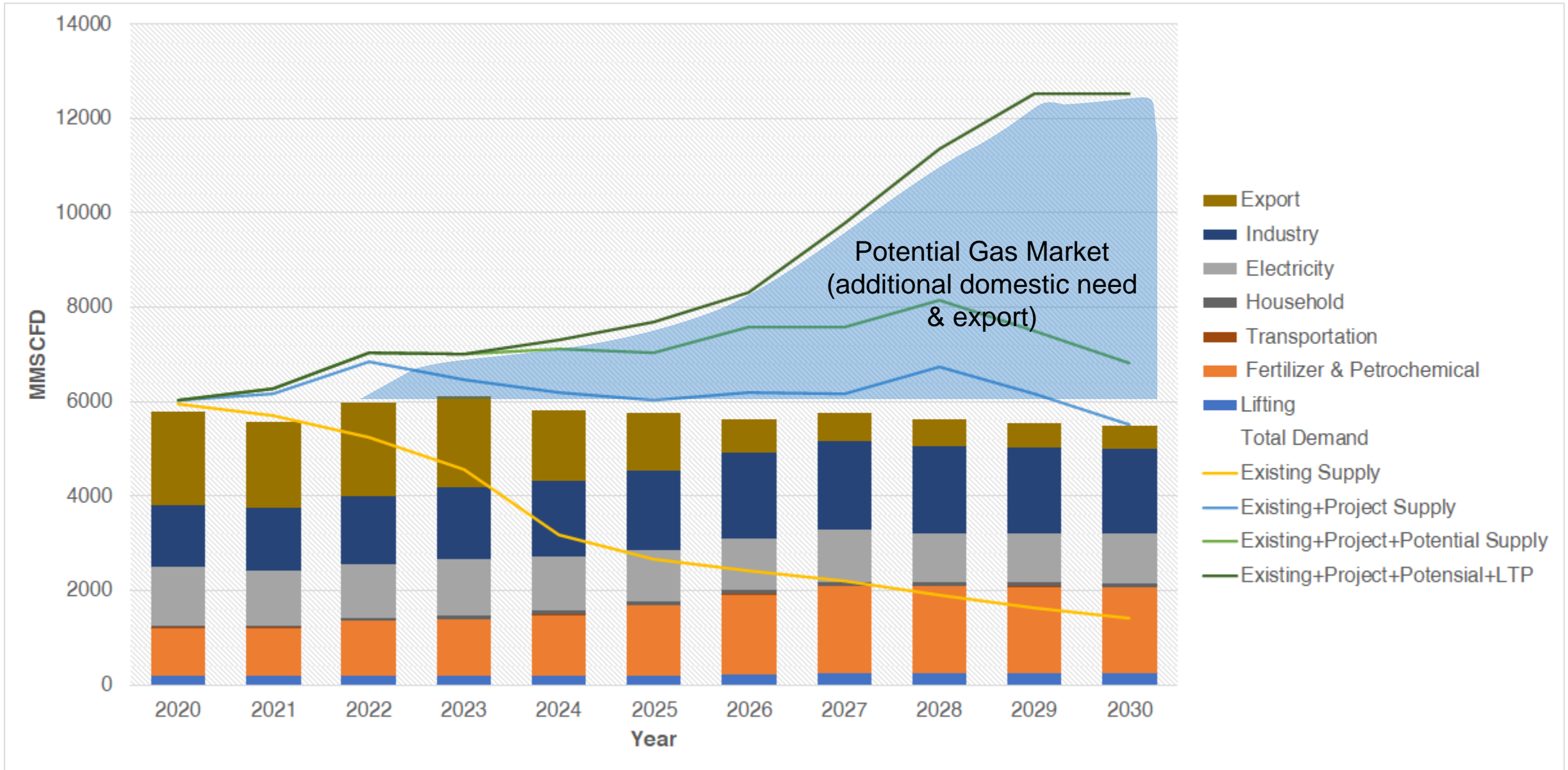
Gas is Better - Production Surplus And Higher Reserves



Indonesia's Gas Reserves



Gas Balance and Production Target



Gas Infrastructure Development



Legend:

-  Upstream Pipe (Existing)
-  Transmission Pipe (Existing)
-  Transmission Pipe (On Going)
-  Transmission Pipe (Planning)
-  Mini Regas LNG (Existing)
-  Mini Regas LNG (Planning PT PLN)
-  FSRU/FSU&FRU/FSRB (Existing)
-  Land Based LNG Terminal (Existing)
-  FSRU/FSU&FRU/FSRB (Planning PT PLN)
-  FSRU/FSU&FRU/FSRB (Planning Business entity)
-  Mini Regas LNG (Planning PT PLN)

A. TARGET:

1. Connection of gas transmission pipelines in Java and Sumatra.
2. Providing gas in the region (location according to the RUPTL plan).

B. ACCELERATION:

1. Build the Cirebon-Semarang gas pipeline +260 km.
2. Build of the Dumai-Sei Mangkei gas pipeline +360 km.
3. Build Mini Regas and FSRU/FSU&FRU.

C. UTILIZATION:

Increasing the domestic use of natural gas



Increasing oil and gas production to achieve production target in 2030 also has the potential to increase the volume of GHG Emission

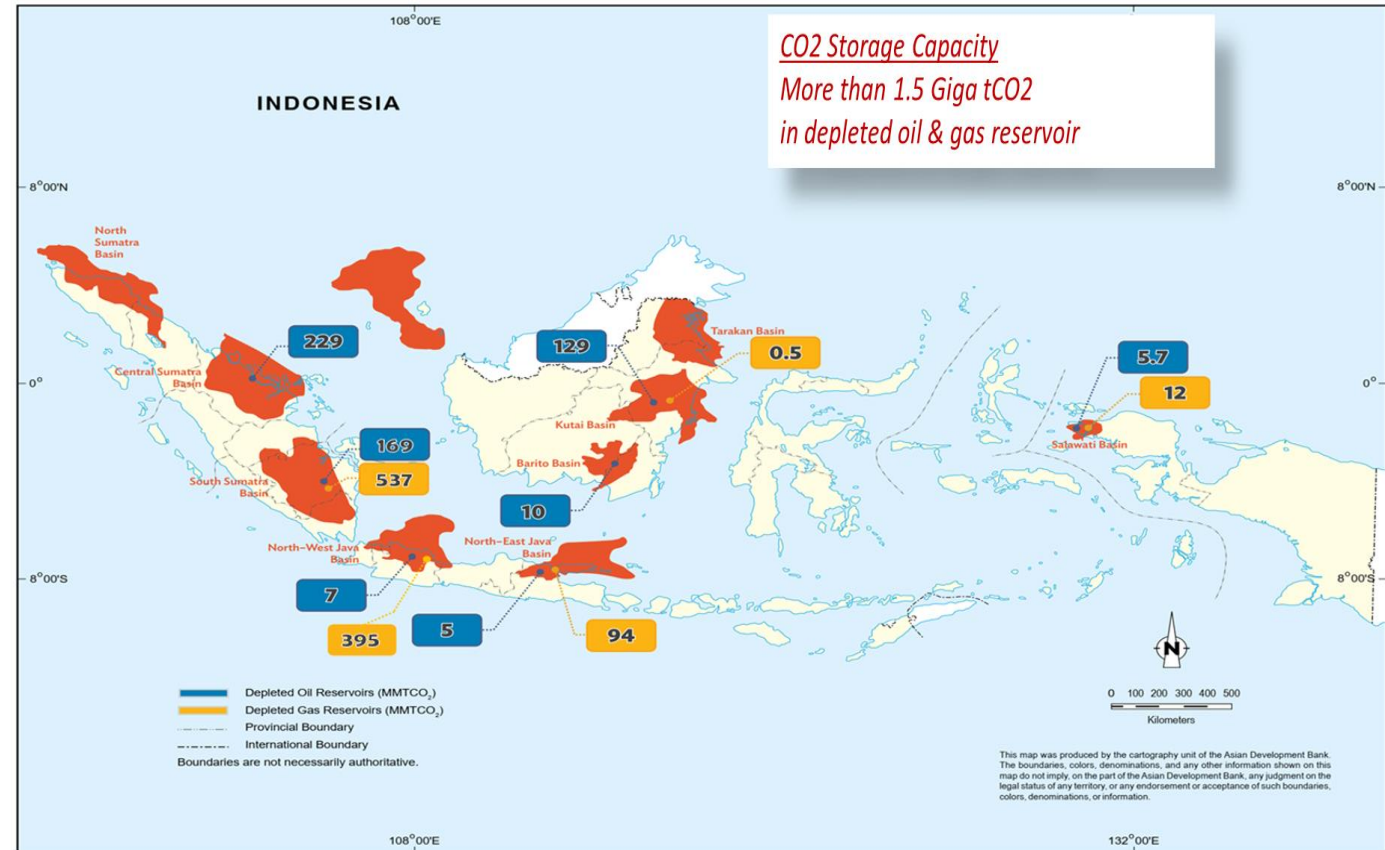
CO2 STORED POTENTIAL FROM CCUS

- Gundih CCUS/CO2-EGR: ±3 Million tCO2 for 10 yrs
Target Schedule: 2024/2025
Incremental production potential: ±36 BSCF gas and ±382.7 MSTB condensate
- Sukowati CCUS/CO2-EOR : ±15 Million tCO2 for 25 yrs
Target Pilot: 2022-2025
Target Full-Scale : 2030
Incremental production potential: ± 50.6 MMSTB
- Tangguh CCUS/CO2-EGR : ±25 Million tCO2 for 10 yrs
Target Start up : 2026
Incremental production potential: ±200 BSCF



CO₂ Stored Potential
±48 Million tCO2

CO2 Storage Capacity (LEMIGAS databased 2009 & 2015)



MMTCO₂ = million metric ton of carbon dioxide.



The efforts made by Indonesian Government to achieve ZRF 2030 are as follows:

- Currently Indonesia has new MEMR Regulation No. 17/2021 that replacing the last MEMR Regulation No. 31/2012 to provide more rigid flaring boundaries and classify flaring routines with the aim of obtaining comprehensive flaring routine data and mapping the potential for monetization of flaring.
- Coordinate with all oil and gas stakeholders in Indonesia to increase the reduction in flaring.
- Facilitate technology owners and processing business license owners to be able to take advantage of flaring

ETWG FRAMEWORK - G20 PRESIDENCY 2022

PRIORITY ISSUES – ENERGY TRANSITIONS FORUM



PRESIDENCY'S THEME: "RECOVER TOGETHER, RECOVER STRONGER"

(1) Global Health; (2) Digital Economic Transformation; (3) Energy Transitions

ET MAIN THEME: "Energy Transitions towards Sustainable Recovery and Productivity: Strengthen Global Cleaner Energy Systems and Just Transitions, done by

#1 Securing Energy Accessibility

- Pursuing the progress of **accessibility** ("leaving no one behind") towards **affordable, reliable, sustainable and modern** energy for all, in specific for **clean cooking & electrification**.
- **Thematic Regional Issues:** *Energy access & transitions in archipelagic states*

#2 Smart & Clean Energy Technologies Scaling Up

Rapidly scaling up widest variety of technologies; while anticipating future energy transitions challenges inc. people-centred energy transitions, growing demand for energy storage, low-emission energy systems, clean industrial development, transfer-of-technology, renewables integration, and energy efficiency.

#3 Advancing Energy Financing

Ensuring green financing ecosystem in energy transitions through exploring best practices, assessing growing challenges, and mitigating financing disparity

DELIVERABLES*

Energy Transitions Ministerial Communiqué

Lighthouse Deliverable:
Achieving global deal to accelerate energy transitions

Express bold commitment to achieve global target on energy access, escalate viable clean technologies, and intensify energy transitions' financing

*More detailed discussions will become attachments and/or side events



THANK YOU