



# NRE DEVELOPMENT TOWARD NET ZERO EMISSION (NZE)

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On  
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# INDONESIA'S NRE POTENTIAL, ELECTRICITY CONSUMPTION & NRE MIX

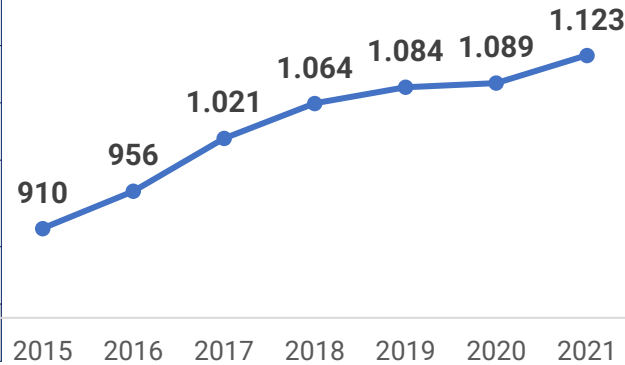
The increasing electricity consumption should be in line with increased NRE utilization

## NRE POTENTIAL

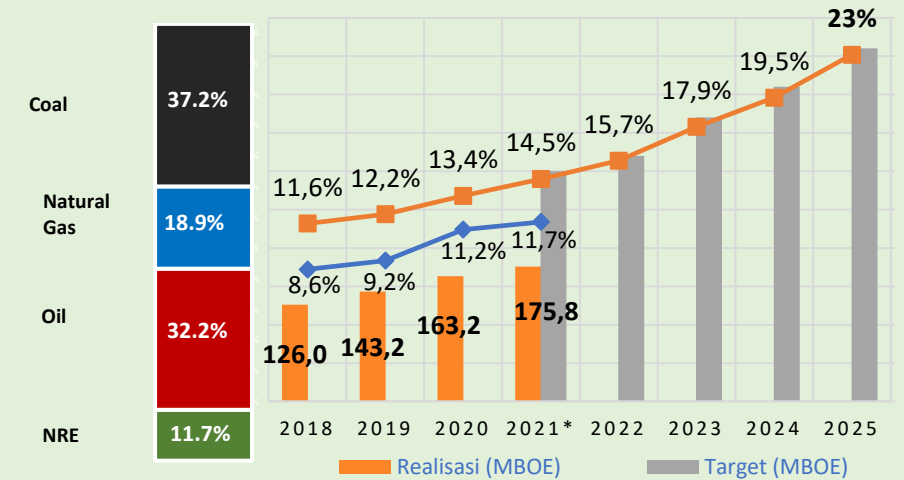
ENERGY	POTENTIAL (GW)	UTILIZATION (MW)
SOLAR	3.295	208
HYDRO	95	6,602
BIOENERGY	57	2,284
WIND	155	154
GEOTHERMAL	24	2,291
OCEAN	60	0
<b>TOTAL</b>	<b>3.686</b>	<b>11,539</b>

## ELECTRICITY CONSUMPTION

Unit: kWh/capita



## NRE MIX 2021



Indonesia has **abundant, various, and spreading** NRE resource, Currently, **only 0.3% of the total potential has been utilized. The potential of new renewable energy is distributed as follows:**

- **Hydro** potential spreads all over Indonesia's areas, particularly in North Kalimantan, NAD, North Sumatra and Papua.
- **Solar** potential spreads all over Indonesia's areas, particularly in East Nusa Tenggara, West Kalimantan and Riau which has higher radiation.
- **Wind** potential (>6 m/s) is particularly located in East Nusa Tenggara, South Kalimantan, West Java, NAD and Papua.
- **Ocean** energy potential spreads all over Indonesia's areas, particularly in Maluku, East Nusa Tenggara, West Nusa Tenggara and Bali.
- **Geothermal** potential spreads in ring of fire areas, including Sumatra, Java, Bali, Nusa Tenggara, Sulawesi, and Maluku.

### Acceleration Measures:

- 1 Completion of Pres. Reg. Draft on NRE Tariff
- 2 Implementation of Solar PV Rooftop
- 3 Mandatory Biofuel Utilization
- 4 Fiscal and Non-fiscal Incentives for NRE Projects
- 5 Ease of doing business
- 6 Stimulating demand towards electricity, namely electric vehicle, electric stove

# INDONESIA'S COMMITMENT TO REDUCE GHG

NRE utilization must be increased as mandated by the Energy Law

## PRESIDENT'S DIRECTIVE



**UNFCCC - COP21, DECEMBER 2015**  
 Reducing GHG emission for 29% or 41% (by international assistance) by 2030 based on NDC.



**COP 26, 2 NOVEMBER 2021**  
 Indonesia will be able to contribute faster to the global Net-Zero Emissions.



**G20 Presidency**  
 "Recover Together, Recover Stronger"

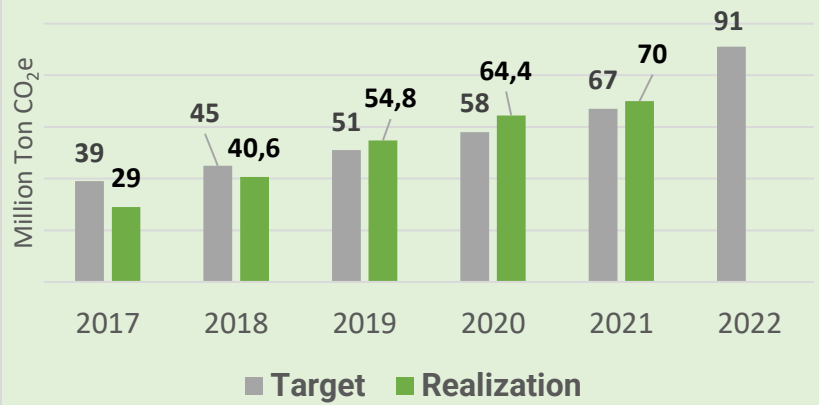
- The focus of Indonesia's G20 Presidency lies on 3 main issues:
1. Inclusive Global Health,
  2. Digital-Based Economic Transformation,
  3. Transition Towards Sustainable Energy.

## NDC TARGET & REALIZATION

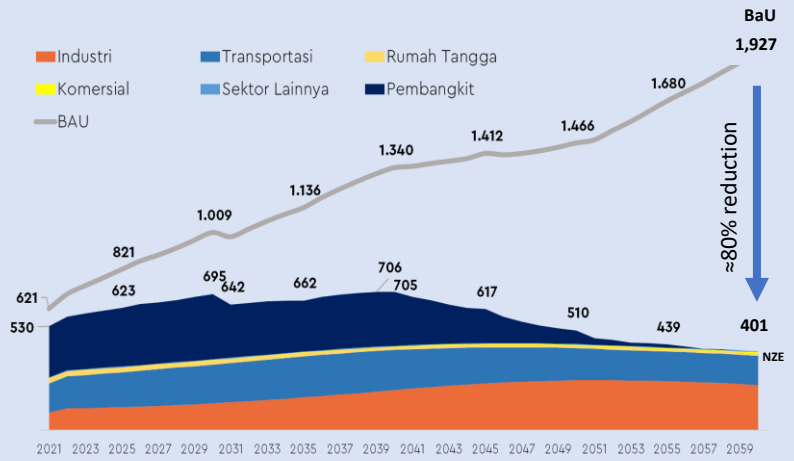
### 2030 NDC TARGET

No	Sector	2010 GHG Emission (Million Ton CO <sub>2</sub> e)	GHG Emission by 2030			Reduction	
			BaU	CM1	CM2	CM1	CM2
1.	Energy	453.2	1,669	1,355	1,223	314	446
2.	Waste	88	296	285	256	11	40
3.	IPPU	36	70	66.85	66	3	3.25
4.	Agriculture	111	120	110	116	9	4
5.	Forestry	647	714	217	22	497	692
<b>TOTAL</b>		<b>1,334</b>	<b>2,869</b>	<b>2,034</b>	<b>1,683</b>	<b>834</b>	<b>1,185</b>

### MITIGATION REALIZATION



## NZE 2060 OR SOONER



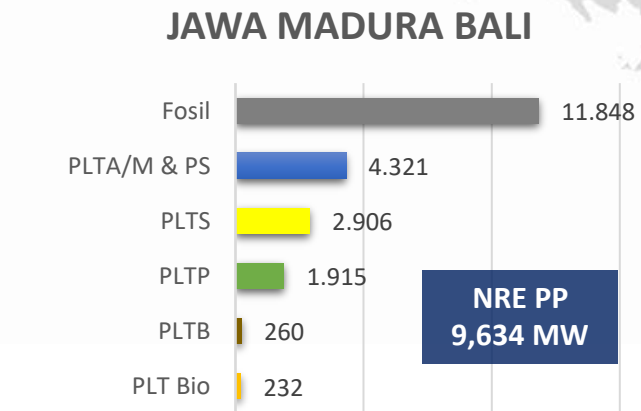
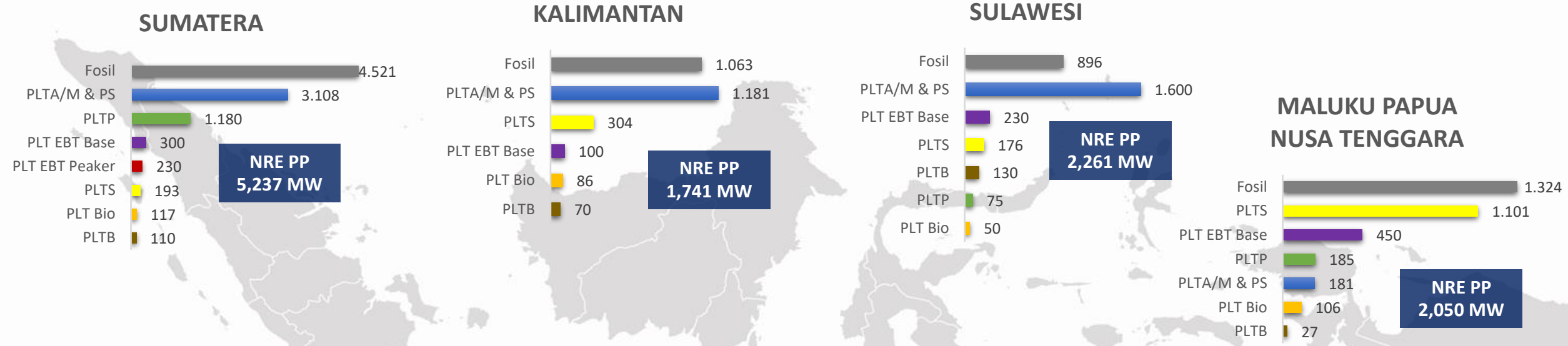
### NZE Strategies:

1. Gradual Retirement of CFPP
2. Acceleration of NRE development, especially solar and wind power plants
3. More efficient use of technology
4. Encouraging the use of EV and electric stoves.
5. Application of Smart Grid to overcome the intermittent of VRE (Variable Renewable Energy)

Scenario Note: CM: Counter Measure; CM1: by own effort; CM2: by international assistance; IPPU: industrial processes and production use

# NRE PP DEVELOPMENT PLAN YEAR 2021-2030 - GREEN RUPTL

- NRE additional capacity is targeted to reach 20,9 GW (51,6% of the power plant in RUPTL 2021-2030).
- NRE development has been carried out in accordance with the systems' electricity balance.



No	PP	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	Total
1	Geothermal (PLTP)	136	108	190	141	870	290	123	450	240	808	3,355
2	Large Hydro (PLTA)	400	53	132	87	2,478	327	456	1,611	1,778	1,950	9,272
3	Mini Hydro (PLTM)	144	154	277	289	189	43	-	2	13	6	1,118
4	Solar PV (PLTS)	60	287	1,308	624	1,631	127	148	165	172	157	4,680
5	Wind Turbine (PLTB)	-	2	33	337	155	70	-	-	-	-	597
6	Bioenergy (PLT Bio)	12	43	88	191	221	20	-	15	-	-	590
7	NRE PP - Base	-	-	-	-	-	100	265	215	280	150	1,010
8	NRE PP - Peaker	-	-	-	-	-	-	-	-	-	300	300
<b>Total</b>		<b>752</b>	<b>648</b>	<b>2,028</b>	<b>1,670</b>	<b>5,544</b>	<b>978</b>	<b>991</b>	<b>2,458</b>	<b>2,484</b>	<b>3,370</b>	<b>20,923</b>



# Thank you

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