

# Building Resilience & Robust Change: Pertamina's NZE Roadmap

As Indonesia's leading energy champion, Pertamina is on the forefront to create substantial change through its NZE aspirations and has identified two strategic pillars to support its Scope 1 & 2 disclosure to lead the Energy Transition.



From the following pillars, as stated in the previous Newsletter, below are the current progress for Pertamina's Low Carbon Business as follows:

## SPBKLU – EV Ecosystem

**92** units of Battery Swapping Stations (SPBKLU)



have been installed at Pertamina Gas Stations - from 160 units of total 2024' target. As the number of electric vehicles continues to grow, Pertamina is committed to enhancing its EV ecosystem. These installments are marking a significant ESG achievement for the year.

## Geothermal

**55** MW additional capacity



from 'on-progress Lumut Balai Unit 2' Geothermal project will contribute to the existing Lumut Balai Unit 1, which would bring total capacity of 110 MW from both units upon completion. As per June 2024, **Lumut Balai-Unit 2 Geothermal' construction is at 77.19% from completion** and is expected to reach Mechanical completion by December 2024.

### Pertamina Green

**97** distribution channels



of Pertamax Green 95 are available across East Java, Jakarta, Banten, and West Java. **Pertamax Green 95 is an environmentally friendly vehicle fuel with 5% bioethanol from renewable raw materials that equivalent with Euro 4 standards.** This channel expansion underscores our commitment to increase access and availability of sustainable fuel and to capture market share in key regions.

### Sustainable Aviation Fuel (SAF)

**1st** commercial flight



was achieved on October 27, 2023 using Pertamina Sustainable Aviation Fuel (SAF) in collaboration with Garuda Indonesia. On August 8th, 2024, Pertamina Patra Niaga became the first operator in Southeast Asia to offer ISCC CORSIA-certified SAF and in compliant with ISCC RED-EU standard - reinforcing our leadership in SAF production in the region.

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### Carbon Credit Sales

**566,361** tons of CO<sub>2</sub>e



of actual sales volume has been sold through IDX Carbon as of August 2024. Pertamina NRE's carbon credits is now dominating 92% of the carbon credit market in Indonesia.

### CCS/CCUS

**11** ongoing CCS/CCUS Project



including several CCS Hub development initiatives in Asri, Kutai & Central Sulawesi Basin and CCUS - EOR & EGR projects in Jatibarang, Gundih and Sukowati field. CCUS initiatives including 'CO2 to Methanol' project in Ulubelu & Balikpapan, 'CO2 to PCC' from Gas Subang & 'CO2 Reforming of Methane' in East Java. Following successful Phase 1 Huff & Puff CO2 Injection in 2023, Pertamina signed a JSA in August 2024 for Phase 2 Inter-Well CO2 Injection at Sukowati field. Injection test will commence in Q4 2024.

### LPG - Fueled Ships

**5** VLGC dual - fuel ships



each equipped with advanced Dual Fuel LPG technology with capacity of approximately ~ 88-89 m<sup>3</sup> are currently operated by Pertamina. One vessel (Amaryllis) was delivered in February 2023, and the remaining four vessels (Tulip, Bergenia, Caspia and Dahlia) were delivered in January, March and May 2024.

These vessels equipped with energy-saving devices and shaft generators & also Selective Catalytic Reduction (SCR) systems, enhancing fuel efficiency and reduce carbon emissions and acid rain pollution (Nox) pollutants.

### Solar

**51,65** MW of solar energy



is currently installed including one of the largest Solar PV Project in Upstream PLTS Rokan 26,7 MW. PNRE solar capacity is projected to increase to 53,2 MW by Desember 2024.

Pertamina is also advancing several ESG-related projects, reflecting our strong commitment to environmental, social, and governance principles. These initiatives are crafted to drive sustainable growth and deliver long-term value, aligning with global standards and investor expectations. Below are some examples of our ESG-related projects:

#### Blue Ammonia Bintuni

**833,000** tons/year of low-emission ammonia



is expected to be produced through the preliminary project in West Papua, Bintuni. It is anticipated to cut CO<sub>2</sub> emissions by 70%. Blue ammonia is produced from nitrogen and blue hydrogen, which is derived from natural gas feedstocks with CO<sub>2</sub> by-product captured and stored.

#### Jakarta Integrated Green Terminal

**6** million-barrel storage of capacity



of Jakarta Integrated Green Terminal (JIGT) in Tanjung Priok - Jakarta, is expected to handle various energy products, including fuels, LNG, and Hydrogen in near future. Boasting a 50 hectare-wide facility, JIGT incorporates ESG principles and carbon neutrality practices to align with global sustainability standards and future energy needs.

#### Green Refinery RU III

**20,000** barrels/day



capacity of the new biorefinery plant in Palembang, South Sumatra will enhance the supply of sustainable fuels, such as HVO and SAF.

#### Green Refinery RU IV

**6,000** barrels/day



capacity of the new biorefinery plant in Cilacap, Central Java is aiming to increase the supply of sustainable fuels, such as HVO and SAF.