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The Worldâ??s First Hybrid Green Ammonia fertilizer Project to be Built in Indonesia

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PT Pupuk Indonesia (Persero), one of the major **fertilizer producers in Asia** is reinforcing Indonesia's position in the global green energy transition through the GAIA Project (Green Ammonia Initiative from Aceh), to be the worldâ??s first hybrid green ammonia facility.

This groundbreaking project leverages the ammonia plant of Pupuk Iskandar Muda (PIM), a subsidiary of Pupuk Indonesia, located in Aceh. In addition to producing ammonia using natural gas, the plant will also generate green ammonia from hydrogen produced through water electrolysis.

Rahmad Pribadi, President Director of Pupuk Indonesia, stated, "The GAIA Project is not just an effort to enhance the efficiency of existing assets but is also an innovation aimed at creating sustainable solutions that positively impact the environment, the economy, and support food and energy security."

Rahmad further explained that if green ammonia could be produced consistently, Indonesia could position it as a strategic commodity with high economic value, especially given the increasing global demand. This effort also supports Indonesia's Net Zero Emission target by 2060.

To bring this project to life, Pupuk Indonesia collaborates with two Japanese firms, Toyo Engineering Corporation and ITOCHU Corporation, forming a joint venture that will support the production and distribution value chain of green ammonia. This partnership not only accelerates the implementation of low-carbon technology in Indonesia but also reflects Pupuk Indonesia's commitment to combating climate change through international collaboration. By integrating expertise from various countries, Project GAIA is expected to emerge as a global clean energy solution and strengthen Indonesiaâ??s

position in the global green energy transition landscape.

In the ecosystem of Project GAIA, electricity for producing green hydrogen will be sourced from renewable energy supplied by PLN, with engineering and construction technology from Toyo, and marine fuel supply chain support from ITOCHU. Persero is also a member of Indonesia's delegation at the 29th Conference of the Parties (COP) UN Climate Change Conference in Azerbaijan.Â

The GAIA Project also aims to accelerate the downstream chemical industry in Indonesia, promoting sustainability through renewable energy. This initiative will position Indonesia as a pioneer in hybrid green ammonia production, benefiting both domestic needs and creating a high-value export commodity. In the future, this business model could be replicated at other ammonia production facilities in Indonesia and internationally, supporting sustainable downstreaming through green energy.

Economic and Environmental Benefits of Project GAIA

The GAIA Project is projected to contribute positively to Indonesia's economy. In addition to attracting investment, the project is expected to create new job opportunities in the green energy sector. Moreover, in the long term, Project GAIA could be expanded to other ammonia production facilities across Indonesia and even abroad.

The extension of the GAIA Projectâ??s business model to Pupuk Indonesia Group's ammonia production facilities is anticipated to ensure a steady supply of eco-friendly fertilizer raw materials. This is crucial as fertilizers play a significant role in boosting agricultural productivity, thus supporting both domestic and regional food needs.

The Arun Special Economic Zone (SEZ) in Lhokseumawe, the site of Project GAIA, provides infrastructure that supports green investment and accelerates the economic potential of this project.

With over 50 years of experience in producing, storing, and distributing ammonia, Pupuk Indonesia is strategically positioned to make Indonesia a key player in the global green ammonia market. Beyond fertilizers and food security, the development of green ammonia could also bolster the global maritime sector, which is projected to adopt green ammonia as an eco-friendly fuel by 2050.

"Through Project GAIA, Pupuk Indonesia is at the forefront of low-carbon technology innovation. This initiative is not only a milestone for decarbonizing the national fertilizer industry but also has the potential to become a model for other countries looking to develop green ammonia," Rahmad concluded.