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Toshiba Energy Systems & Solutions Corporation

**Toshiba and PLN Nusantara Power to Explore Early Application of
CO₂ Capture Technology to Thermal Power Plants**

Kawasaki, Japan—Toshiba Energy Systems & Solutions Corporation (Toshiba) has signed a memorandum of understanding (MOU) with PLN Nusantara Power (PLN-NP), a subholding company of PT PLN, the Indonesian state electricity company, on bringing CO₂ capture technology to PLN-NP thermal power plants in Indonesia. As a first step, the two companies will discuss the application of small and large-scale CCS*¹ equipment for power plants over the medium to long term.

Thermal power plants generated over 80%*² of Indonesia's electricity in 2022, a level of dependence that makes measures to take on global warming and broaden the power mix an urgent priority. The Indonesian government shares the growing global environmental concerns and awareness of the need for action, and has committed to achieving carbon neutrality by 2060. One measure that will contribute to this target is the application of low-carbon technologies, particularly CCS, to thermal power plants that burn fossil fuels such as coal and LNG.

The collaboration will advance to potential adoption of CCS equipment at facilities directly owned and operated by PLN-NP, including Paiton Unit 1 and 2 Power Station, located in Indonesia's largest power plant complex, which operates with steam turbines and generators supplied by Toshiba.

While CCS equipment itself consumes energy during operation, Toshiba will minimize its impact with extensive know-how gained from long-term supply and maintenance of power generation equipment, plus expertise in CCS gained through extensive proving tests and demonstrations.

Using operational data from Paiton Unit 1 and 2, and other PLN-NP facilities if required, Toshiba will collaborate with PLN-NP engineers to study the feasibility of implementing and operating the CCS equipment and will also provide human resources development support.

Since 1981, Toshiba has delivered 32 steam turbines with a combined capacity of 8,263 MW to thermal and geothermal power plants in Indonesia, and 36 hydro turbines with a capacity of 2,332 MW to hydro power plants. Of these, nine steam turbines, with a capacity of 1,845 MW, are in operation at four thermal power plants owned by PLN-NP.

Takehiko Matsushita, Vice President of the Power Systems Division at Toshiba, said



“I’m delighted to have signed this MOU with PLN Nusantara Power. It allows us to make full use of Toshiba's knowledge of CCS technology and the network we have built up in Indonesia, and of the operational expertise that PLN-NP has cultivated in operating its fleet of thermal power plants. I am confident that our application of CCS technology to the plants will contribute to Indonesia's realization of its carbon neutrality goals.”

*Note 1: Carbon Dioxide Capture, and Storage: Technology to capture and store CO₂ emitted from thermal power plants, factories, etc.

*Note 2: Toshiba estimate based on Indonesian government statistics. See Table 3, pages 9 and 10 of URL.

https://gatrik.esdm.go.id/assets/uploads/download_index/files/72f25-web-publish-statistik-2022.pdf

Photo at the time of signing the MOU



Rachmanoe Indarto, Director of Coal Power Plant Operations of PLN Nusantara Power (Center right), Takehiko Matsushita, Vice President of the Power Systems Division at Toshiba Energy Systems & Solutions Corporation (Center left)

A CCS facility manufactured by Toshiba



Ministry of the Environment: Omuta Mikawa CO₂ Capture Demonstration Plant