

Implementation of Power Generation Asset Optimization Demonstration Project for Electricity Generating
Authority of Thailand

- Efficient operation of power plants using IoT, AI, and Big Data -

On February 5, 2020, Marubeni Corporation (Hereinafter, "Marubeni") and the Electricity Generating Authority of Thailand (Hereinafter, "EGAT") concluded an Implementation Agreement for the implementation of a demonstration project (Hereinafter, "This demonstration project") to optimize the generation assets of EGAT's Maemo Thermal Power Station Units 11 and 13 (300 MW each).

This demonstration project aims to improve power generation efficiency and reliability through AI/big data analysis based on operational data acquired using IoT. This project is a follow-up to the strategic project formulation study and pre-demonstration study conducted by the New Energy and Industrial Technology Development Organization (Hereinafter, "NEDO") since 2018 under the "Private sector-led promotion of low-carbon technology and market creation".

The Kingdom of Thailand has set a target of reducing greenhouse gas emissions by 20% to 25% by 2030 from the business-as-usual (Business as Usual) level in 2005, in accordance with the Paris Agreement.(*). In its Action Plan, the Kingdom of Thailand lists improvement of power generation efficiency in the energy sector as one of its main measures. On the other hand, in addition to contributing to the achievement of greenhouse gas reduction targets by 2030, EGAT is required to respond to the strong growth in demand for electricity, which supports economic growth. For this reason, in addition to developing renewable energy sources, EGAT has a policy to improve energy efficiency by introducing the latest technologies to thermal power stations that make the most of domestic limited resources.

Under these circumstances, the government of the Kingdom of Thailand and EGAT are paying attention to the optimization of existing power generation assets, which are currently in operation, through the use of digital solution technology that is being considered for introduction and diffusion in this demonstration project, as one of the measures to simultaneously solve the two problems of reducing greenhouse gas emissions and ensuring a stable supply of electricity.

As of the end of December 2019, as a global player in power generation business, Marubeni possesses approximately 39 GW of gross generating capacity and 11.5 GW of net generating capacity in total. In this demonstration project, in addition to knowledge and know-how related to asset management, including maintenance and operation of power plants, we will also employ our experience as a user of digital solution technology applied to our own assets and technology created in-house to develop and provide flexible solutions tailored to the issues faced by our customers. As a power generation company, we strive to contribute to the

resolution of environmental and social issues faced by in the countries and regions we operate in.

(*) Multilateral international agreement on climate change mitigation adopted in December 2015. The ratifying countries are obliged to submit their greenhouse gas reduction targets (Nationally Determined Contributions – NDCs, Country Contributions). The Kingdom of Thailand ratified the Paris Convention in 2016.