

October 4, 2022

Toshiba Energy Systems & Solutions Corporation
Mizuho-Toshiba Leasing Company, Limited

Largest Geothermal Energy Producer in the Philippines Orders Geoportable™ Geothermal Power
Generation System
Through a Joint Crediting Mechanism

Toshiba Energy Systems & Solutions Corporation (hereinafter “Toshiba ESS”) and Toshiba (Philippines) Inc. have partnered with Bac-Man Geothermal Inc., (hereinafter “BGI”) a subsidiary of Energy Development Corporation (hereinafter “EDC”), the largest 100% Renewable Energy Company in the Philippines to deliver the Tanawon 20MW Flash Geothermal Power Plant Project (“Tanawon Project”). Toshiba ESS will begin delivering the system in June 2023 with the start of operations scheduled for November 2024.

As a means to this end, the Tanawon Project is one of the Joint Crediting Mechanism (JCM) Model Projects* established by Japan’s Ministry of Environment (hereinafter “JCM Model Project”). Mizuho-Toshiba Leasing Company, Limited (hereinafter “Mizuho-Toshiba Leasing”) has stepped in to act as the Japanese representative participant for the JCM Model Project and will be responsible in the calculation and reporting requirements of the project to Japan’s Ministry of Environment.

The Tanawon Project is 20MW flash geothermal power plant located in Sorsogon City at the southern part of the Luzon Island. Toshiba ESS will supply Geoportable™ and other auxiliaries for the said geothermal power plant.

Geoportable™ is a geothermal power generation system developed by Toshiba ESS for small scale geothermal power generation with an up to 20 MW capacity. As a flash geothermal plant, this system is designed to be efficiently installed, even in a limited area where building a typical power generation system would be difficult. Toshiba ESS’ Geoportable™ technology became Toshiba’s advantage in order to deliver the Project for EDC and BGI.

The Philippines has been developing geothermal power since the 1970s and has the third highest geothermal power generation capacity after the U.S. and Indonesia. Geothermal power is thought to be an ideal method for power generation as a stable power source that does not impact the climate because it is able to generate a relatively large amount of power as renewable energy. In its plan to develop power resources by 2040*¹, the Philippine government is emphasizing renewable energy initiatives. This includes the aim to increase the ratio of renewable energy to 20% with more than 50% of all renewable power, or 52,830MW, generated from geothermal energy.

Toshiba ESS has already delivered a total of 13 geothermal power generation system units*² to the Philippines, which are contributing to a stable power supply throughout the nation. In the future, Toshiba ESS will continue to deliver not only equipment but also predictive diagnostic technologies for geothermal power generation plants using IoT and AI, performance monitoring services, and many other

optimal products and solutions that satisfy customer needs.

Mizuho-Toshiba Leasing is focusing efforts on services supporting greater energy conservation and use of renewable energy regardless of the type of lease in accordance with its materiality issue to contribute to the realization of a decarbonized society. This support goes beyond thermal power, micro-hydropower, solar power, and other renewable energy systems to help companies adopt standalone hydrogen energy supply systems, CO₂ separation and recovery technology, methanation devices, and a variety of utility equipment. Through the use of national subsidies as a means to this end, Mizuho-Toshiba Leasing supports its customers with decarbonization efforts that will contribute to a carbon-free world with the aim of creating a sustainable society for the future.

Toshiba ESS and Mizuho-Toshiba Leasing will continue to capitalize on each of their unique products and networks to help promote geothermal power generation as one clean energy essential to the realization of a sustainable society.

*1 : Department of Energy Philippines (DOE) *National Renewable Energy Programme (NREP) 2020-2040*

*2 : Including third-party replacements and generators supply; as of October 4, 2022

Project Overview

Plant name	Tanawon Geothermal Power Plant
Owner	Bac-Man Geothermal Inc.
Scope of contract with Toshiba ESS	1x20MW steam turbine and generator (GXP-X) including cooler, cooling tower, main transformer, and other auxiliaries for geothermal power generation equipment
Start of operations	November 2024 (planned)

***Financing Programme for JCM Model Projects**

Japan established the Joint Credit Mechanism (JCM) for projects using superior decarbonization and other technologies to not only reduce but also measure, report, and verify (MRV) greenhouse gas emissions in developing countries and other nations. In addition to reducing greenhouse gas emissions in developing and other nations, JCM operates with the goal of achieving the greenhouse gas emission reduction targets of Japan and partner countries. The subsidy provides support for up to half of the initial investment costs required to use superior decarbonization and other technologies. In this project, the Philippines and Japan have joined forces to realize the Tanawon Flash Geothermal Power Plant Project with an estimated reduction of approximately 38,000 tons of CO₂ every year.

Geoportable™ (Image of GXP-X Type Geothermal Steam Turbine)

