



NIPPON STEEL
ENGINEERING



News Release

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Nippon Steel Engineering Co., Ltd.

Osaka Gas Co., Ltd.

Efficiency Improvement Project at Cogeneration Facility in Thailand Selected for Financing Programme Based on Joint Crediting Mechanism

NS-OG Energy Solutions (Thailand) Ltd. (Managing Director: Go Takei; hereinafter "NSET"), a joint venture^{*1} of Nippon Steel Engineering Co., Ltd. (Representative Director and President: Shinichi Fujiwara; Head Office: Shinagawa-ku, Tokyo; hereinafter "NSE") and Osaka Gas Co., Ltd. (Representative Director and President: Takehiro Honjo; Head Office: Chuo-ku, Osaka City; hereinafter "OG"), has been selected for the Financing Programme for Joint Crediting Mechanism^{*2} Model Projects (hereinafter "the Programme") in FY2019 for its cogeneration facility efficiency improvement project (hereinafter "the Project") promoted with NSE.

The Project involves installing an extra exhaust gas heat exchanger for the on-site energy supply project at Mill No. 2 of Toray Textiles (Thailand) Public Company Limited^{*3}, which has been deployed by NSET since December 2016, and effectively utilizing the unused waste heat of exhaust gas to achieve higher efficiency at the cogeneration facility. The existing cogeneration facility operates at a total energy efficiency of 91% and is thus already near the maximum level, but this additional equipment will raise the total energy efficiency to 92% and enable a further annual CO₂ reduction of 359 tons.

This is the second time for NSET to be selected by the Programme, after the adoption of a cogeneration facility in an on-site energy supply project for Thai Honda Manufacturing, which manufactures motorcycles for the Honda Group in Thailand.

NSET operates four cogeneration facilities in Thailand and implements detailed management according to changes in the situation by operating cogeneration facilities with on-site staff at customer plants. This has enabled reduced energy consumption and CO₂ emissions via improvements to operation methods and equipment. The Project aims for even higher efficiency of the cogeneration facility. Programme selection was decided upon thanks to the engineering ability and operation management technology of NSET being well-received.

We will continue to contribute to sustainable development in Thailand by assisting the focus of resources on core business and supporting the efforts of our customers for achieving a low-carbon society, via the provision of optimal energy solutions based on the status of operation, both in the

planning stage and after operation has started.

***1: OG invests via a wholly owned subsidiary, Osaka Gas Singapore Pte. Ltd. (President: Tetsuji Yoneda)**

***2: The Joint Crediting Mechanism (JCM) is a system for providing excellent low-carbon technologies, products, systems, services, and infrastructure from Japan to a developing country in order to contribute to sustainable development that reduces greenhouse gas emissions in that developing country and enable both countries to reap the benefits. The JCM enables Japan's contribution to reducing greenhouse gas emissions to be quantitatively evaluated and that data utilized to achieve the emission reduction targets of Japan. The Global Environment Centre Foundation (GEC) has been put in charge of accepting proposals for projects from private Japanese companies by the Ministry of the Environment as an implementing organization for the Programme.**

***3: Established in July 2019 via a business merger between Luckytex (Thailand) Public Company Limited and Thai Toray Textile Mills Public Company Limited.**

Overview of cogeneration facility where exhaust gas heat exchanger will be added

7 MW capacity gas turbine cogeneration facility supplying on-site energy
to Mill No. 2 of Toray Textiles (Thailand) Public Company Limited

- Power output: 7 MW
- Steam supply capacity: 40 t/h