

Press Release

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New Energy and Industrial Technology
Development Organization

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Sewage Sludge Reduction and Recycling Project in China –Participants Selected for a Japan-China Joint Project–

The New Energy and Industrial Technology Development Organization (NEDO) has selected Tsukishima Kikai Corporation to participate in a sewage sludge reduction and recycling project in China as part of its international R&D and demonstration projects in the environment and medical fields. This project is designed to use Japan's advanced drying technologies to dry sewage sludge, and utilize the dry sludge in coal boilers as an alternative energy source in China, where large amounts of sludge are generated due to the growth of sewage treatment facilities.

To ensure the progress of the project, Tsukishima Kikai Corporation will work together in cooperation with Tsinghua University in China, to develop a sewage sludge reduction and recycling system that is suitable for the needs in China.

1. Project Overview

In China, sewage sludge treatment facilities are rapidly increasing along with continuing urbanization. There are already over 2,300 facilities with the number of facilities expected to increase to 4,300 facilities by 2015.

However, while sewage treatment is a top priority in China, the disposal of the large amounts of sludge generated by the sewage treatment facilities is significantly lagging behind. Most of the sewage sludge is placed in landfills after dehydration and cross-contamination occurs due to organic pollutants, pathogens and heavy metals contained in the sewage sludge. Moreover, sludge treatment facilities refuse to accept dehydrated sludge due to its high moisture content as well as many sludge treatment facilities have already exceeded their treatment capacities.

This project is scheduled to be carried out in Guangzhou city, Guangdong province, China. The project aims to achieve a reduction in coal consumption by supplying dehydrated sludge through the use of surplus steam generated by a steam supply company as a substitute fuel for the company's coal boiler. An indirect drying method will be implemented by using an inclined disc dryer.

Sewage sludge in China has fewer organic components than sludge in Japan. Therefore, an exhaust heat recovery verification will be carried out together with modifying dryer specifications by identifying the evaporation rate at the project demonstration plant.

Main project activities:

- (1) Investigate sludge properties and current state of sludge treatment in Guangdong province and Guangzhou city.
- (2) Verify and develop sludge treatment equipment for China.
- (3) Verify and develop waste heat recovery processes
- (4) Evaluate technology needs and possible applications
- (5) Examine business model system issues and evaluate economic potential

Duration: FY2011 to FY2013

Project budget (subject to funding availability): Approximately 600 million yen.

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