

Support Survey for Preparing the Technological Evaluation Resource for Research on Breakthrough by Dynamic Approach in Sewage High Technology (Sludge-to-Fuel Technology) for 2012

Year of Research

2012

Establishment of energy and resource recycling

(Purpose)

The Ministry of Land, Infrastructure, Transport and Tourism is conducting a project called the “Breakthrough by Dynamic Approach in Sewage High Technology Project” (B-DASH Project) in order to accelerate the research, development and implementation of new technologies in order to achieve sharp reductions in emissions of greenhouse effect gases and in the construction costs of sewage treatment systems as well as to support the domestic and overseas expansion of water businesses. A call for proposals for the introduction project of the sludge-to-fuel conversion technology was made, and two validation research projects were adopted as a result of a strict examination by the evaluation committee.

In this study, the information required for the evaluation was confirmed and documents used for the evaluation and report were prepared for the validation research projects that were adopted for the “Research on Breakthrough by Dynamic Approach in Sewage High Technology (Sludge-to-Fuel Technology) for 2012”.

(Results)

(1) Confirmation of data, etc. necessary for evaluating validation research

In order to properly conduct a technical evaluation of the costs of construction, operation and maintenance as well as the reduction efficiency of greenhouse gas emissions for two projects under the “Research on Breakthrough by Dynamic Approach in Sewage High Technology (Sludge-to-Fuel Technology)” project that is currently being carried out at the Tobu Sewage Treatment Plant in Nagasaki City and the Seibu Purification Center in Matsuyama City for the year of 2012, various data obtained from the research and calculation process were collected to check the validity.

The technology adopted in the validation research in Nagasaki City selectively leaves only persistent organic materials in sludge to convert them to solid fuel. On the other hand, the technology adopted in Matsuyama City dries sludge using waste heat from an existing incinerator and converts the sludge to solid fuel in order to reuse it as auxiliary fuel for incineration.

During the data collection process, collaborators checked their progress on research as needed and discussed the challenges they encountered in this process.

The sections and focuses of the evaluation are structured around the costs of construction, operation and maintenance for validation research and the reduction efficiency of greenhouse gas emissions as well as the comparison with conventional technologies.

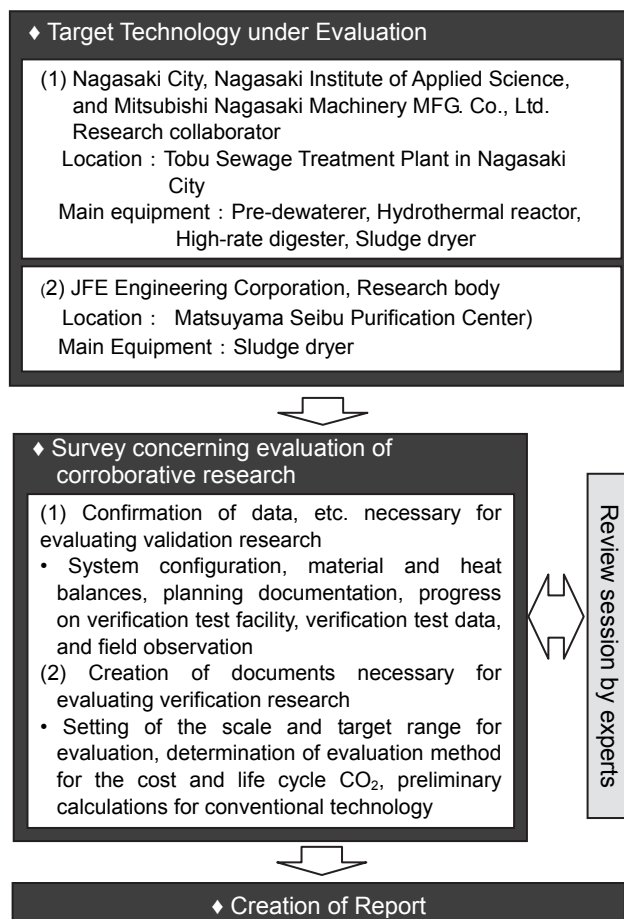


Figure 1. Flow Chart of This Study

(2) Creation of documents necessary for evaluating validation research

In order to perform an objective evaluation, resource documents that organize the data collected in (1) for the sections and focuses of the evaluation (including additional required items) were created based on draft project plans prepared by the research bodies. During the creation of the documents, we received advice from four experts in the review sessions four times according to the progress of research.

(3) Creation of report

The report was created for future reference for the dissemination and development of the technology, and includes challenges that may be encountered during such dissemination.

※ Policy support project from National Institute for Land and Infrastructure Management

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Key words

Breakthrough by Dynamic Approach in Sewage High Technology(B-DASH) Project,
sludge-to-fuel, hydrothermal process, dryer