

A Case of Utilizing Results

Technology Introduction Guidelines for the B-DASH Project (Biogas utilization technology)

YAMASHITA Hiromasa, Head; TAJIMA Atsushi, Senior Researcher; FUJII Tsuyako, Researcher

Wastewater and Sludge Management Division, Water Quality Control Department

Keywords: Breakthrough by Dynamic Approach in Sewage High Technology Project, biogas, guidelines

1. Introduction

The MLIT launched the "Breakthrough by Dynamic Approach in Sewage High Technology" (B-DASH) project in fiscal 2011, and the Water Quality Control Department of the NILIM serves as an executing agency of this project.

We have, therefore, drafted guidelines for sewerage service providers to consider the introduction of innovative technology based on the results of our empirical studies and the evaluation by the B-DASH Project Evaluation Committee with regard to two technologies adopted in fiscal 2011 for water treatment (solid-liquid separation) and biogas recovery / refining / electricity generation in sewage treatment facilities.

2. Outline of biogas utilization technology

(1) Energy management system using intensive solid-liquid separation technology

This technology represents a technical system that generates electric power via a hybrid fuel cell by fully using biogas obtained from the digestion of raw sludge, of which collection is increased by upgrading solid-liquid separation using a carrier.

(2) Effective renewable energy production system utilizing biogas

This technology represents a technical system for using renewable energy for automotive fuel, etc. This is done through a series of processes for increasing the collection of biogas from local sources such as food, increasing the effective usage of the biogas by heating a sludge digestion tank made of steel, and purifying the biogas to high degree of quality with a packaged biogas upgrading system.

3. Outline of the technology introduction guidelines

The Table shows the content of the guidelines (draft). Chapters 1 and 2 describe the objectives and outline the technology. Chapter 3 estimates the effect of the technology when introduced in a treatment facility. Based on the results of estimations, the possibility of introduction is discussed. Chapter 4 examines basic planning, equipment design, etc. for introducing the technology. Chapter 5 describes check items and frequency that will be required when the technology is introduced.

Table: Content of Guidelines (Draft)

Chapter 1 General Provisions	Objective, scope of application, definitions of terms
Chapter 2 Outline of the Technology	Outline and characteristics of the technology
Chapter 3 examination for Introduction	Effect of introduction and examination method
Chapter 4 Planning and Design	Basic planning and design
Chapter 5 Maintenance	Check items, frequency, etc.
Reference Data	Verification results, case studies, etc.

4. Utilization of findings and future development

In order to introduce these guidelines to the concerned persons in local governments and businesses, a presentation was held at the Tokyo Big Sight on August 2, (Fri.) 2013.

By holding similar presentations, we will continue to constructively introduce these guidelines to concerned persons and to disseminate the technology.



Photo: Guidelines Presentation

[Reference]

- 1) TECHNICAL NOTE of NILIM No.736
Guidelines for introducing an energy management system using intensive solid-liquid separation technology
- 2) TECHNICAL NOTE of NILIM No.737
Guidelines for introducing an Innovative Biogas Production System
<http://www.nilim.go.jp/lab/ecg/bdash/bdash.htm>