Demonstration of Low cost and energy saving type of high concentration anaerobic digestion technology for small scale sewage treatment plants

Project Operator

Consortium between Ohara Corporation, NISHIHARA Environment Co., Ltd, NJS CO., Ltd., Nagaoka University of Technology, Hokkaido University, Nagaoka city

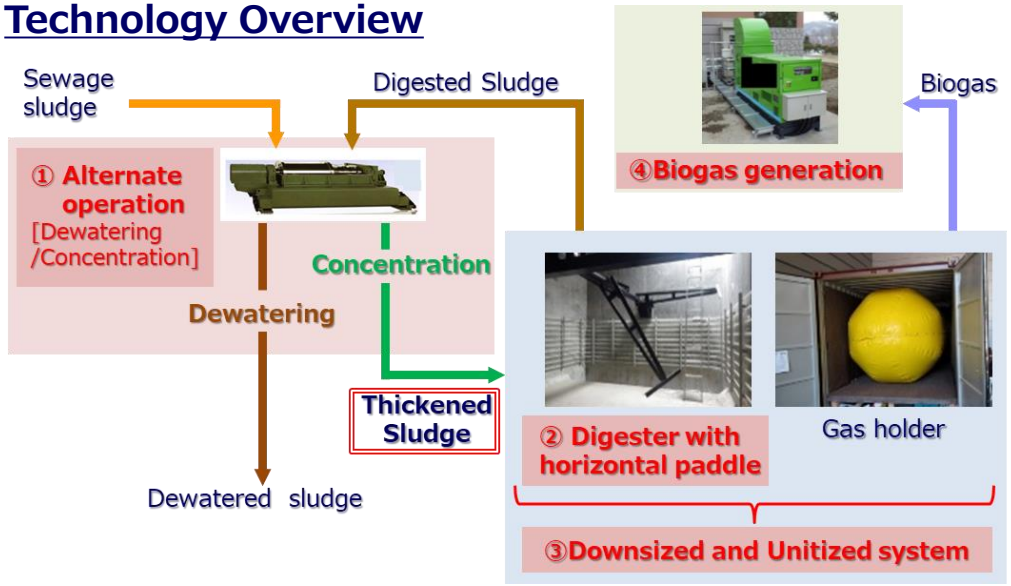
Demonstration Field

Nakanoshima Water Purification Center in Nagaoka-City, Niigata Prefecture

Project Overview

Demonstrate improvement of stability, digestion and economical efficiency in a system for reducing sludge volume and recovering gas by using unit-type compact horizontal sludge digester to digest highly concentrated thickened sludge obtained by using a dehydrator as a concentrator in two stages.

Technology Overview



Demonstration items

- Verify stability of dehydrator in two stage usage.
- Verify digestion efficiency on digester for high-concentration anaerobic digestion.
- Verify economical efficiency compared with conventional technology.

Technology features

【Innovative advantage】

Enable to introduce anaerobic digestion system to Small-Scale Sewage Treatment Plant

①High density concentration technology [alternate operation of dewatering / concentration]

Utilize a dehydrator as a concentrator in two stages. Concentration of thickened sludge is approx. 10%

②High-concentration anaerobic digestion technology [Digester with horizontal paddle]

Digester with high agitating efficiency horizontal paddle is enable to treat very high concentrated sludge.

③Downsizing and unitizing of equipment

Downsizing of a digester and unitizing ancillary facility including gasholder enables to reduce initial cost while increasing maintainability.

④Biogas generation

Reducing power consumption of entire facility by biogas generators to be operated with power control according to biogas production.