

7. 添付資料

ワークショップにおける発表資料（抜粋）

7.1 Nikka Maintenance, Housetec

Promotion Project for Decentralized Domestic Wastewater (including black water) treatment in Hungary

7.2 Office for Promotion of Johkasou, Waste Management Division, Environmental Regeneration and Material Cycles Bureau, Ministry of the Environment of Japan

Decentralized wastewater treatment system and its legal framework in Japan

7.3 Center for Material Cycles and Waste Management Research, National Institute for Environmental Studies

Certification of small-scale wastewater treatment plants –Introduction of the Japanese testing method and challenges in Southeast Asia-

7.4 Civil & Environment Engineering, Toyo University

Greenhouse gas emission reduction by small-scale wastewater treatment plants

7.5 Johkasou Navigator Certification Organization

Operational Management Scheme of Johkasou System

7.1 Nikka Maintenance, Husetec

Workshop on the Promotion Project
for Decentralized Domestic Wastewater Treatment
in Rural Areas of Central Europe

**Promotion Project for Decentralized Domestic
Wastewater (including black water) Treatment
in Hungary**

24th 25th January, 2018

Ministry of the Environment of Japan
Nikka Maintenance Co., Ltd.
Husetec Inc.
Century Technology Innovations

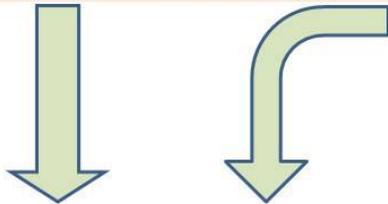
1. Background of the workshop

I Achieve the Sustainable Development Goals (SDGs)

1 of approach : Halving the prop

II Greenhouse gas emissions rec

1 of approach : Mitigating CO₂
coverage ratio



Study on feasibility of applying Japanese Johkasou package to
wastewater treatment in Central Europe



Implement the pilot project of treating domestic wastewater
in Hungary with johkasou

2. Objectives of the Workshop

1. Share the current situation and pending issues of wastewater treatment in Central Europe and Japan
2. Research the information of market and infrastructure in Central Europe
3. Introduce the potential contribution that Japan can make to the wastewater treatment development in Central Europe
 - ◆ Introduction of the policy in Japan
 - ◆ Support for promotion of wastewater treatment plants
 - ◆ Technological cooperation/support for johkasou
4. Consult about the precondition for wastewater treatment development
 - ◆ Policy-making for appropriate promotion
 - ◆ Construction of infrastructure for installation, maintenance
 - ◆ Environmental/technical education
 - ◆ Environmental management system construction

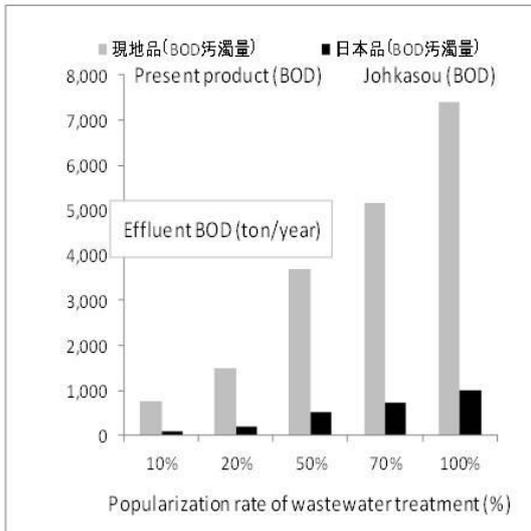
3. Summary of the pilot project

- Location: Szentkirály, Hungary
- Treatment object: Domestic wastewater including blackwater
- Scale of introduced plants (pilot project):
Treatment capacity: for detached households (0.75m³/day) × 3
- Contents:
 - ① Demonstrate the availability and reliability of johkasou through this pilot project in cooperation with Hungarian companies
 - ② Check the local infrastructure for maintenance, desludging
 - ③ Assess the feasibility of johkasou contributing to halving the proportion of untreated wastewater in Central Europe

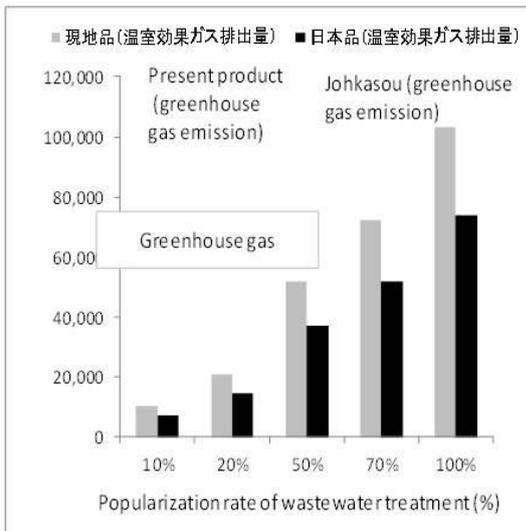
□ Goal

Example of estimation of settlements with P.E <2,000

Waste discharge reduction

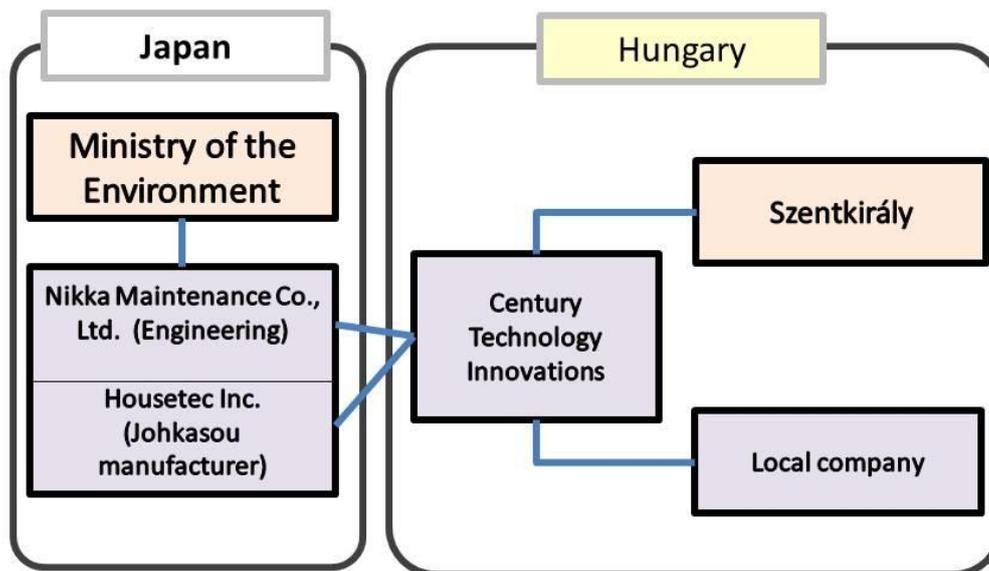


CO₂ emissions mitigation



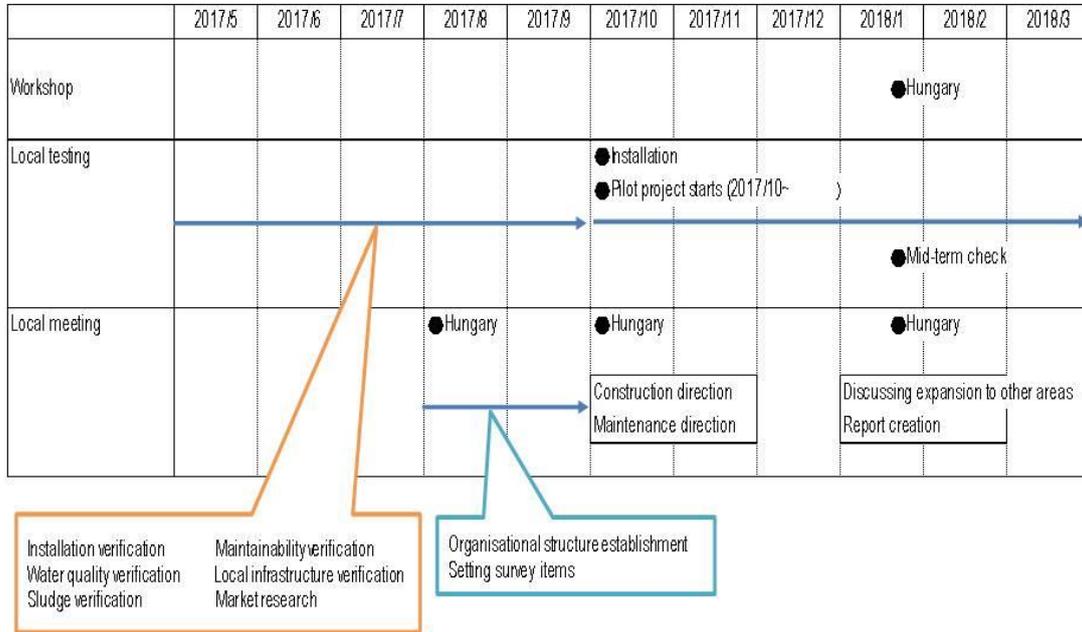
Popularization rate and estimated result in villages of under 2,000 people

4. Operating Organization



Husetec Group: product design, manufacture, installation, maintenance

5. Schedule (Feasibility study)

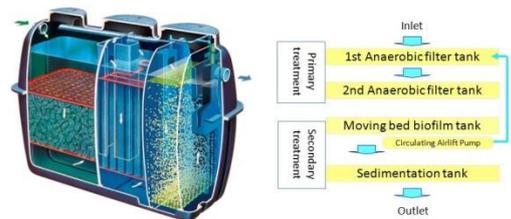


6. Pilot project in Szentkirály

JOHKASOU LOCATIONS

Johkasou Specifications

Elements	EU Standard
Capacity	2.87m ³
Size	Width:0.98m Length:2.775m Height:1.79m



EN12566 test result for 5 P.E

Performance test method		EN 12566-3+A2
Water volume		750L/day
BOD quantity		300g/day
Test conditions	Influent BODs	150mg/L ~ 500mg/L (Avg. 400mg/L)
	SS	200mg/L ~ 700mg/L
Maintenance interval		once/year
Desludging interval		once/1-3years depending on usage (BOD) condition

Elements	BOD (mg/L)		SS (mg/L)	
	Influent	Effluent	Influent	Effluent
EU standard	448	11	573	10



7. Progress and outcome of the pilot project

Research agenda	Progress
1. Current situation of target area	In progress • to be concluded in February
2. Characteristics, quality of domestic wastewater	Data collection in progress • to be concluded in February
3. Establishment of cooperation with local governments • companies	Searching for local partners • Construction/maintenance companies that comply with EN standards • Companies available for local production, local sale of johkasou
4. Feasibility assessment	Market research • Policies of Central European governments • Value chain for johkasou business



Will be reported to government of Japan and governments of relevant countries

Outline

- 1. History of Wastewater Treatment and Current Situation**
- 2. General Information on Johkasou and Its Pending Issues**
- 3. Legal Framework on On-site Wastewater Treatment**

Dr.Johkasou



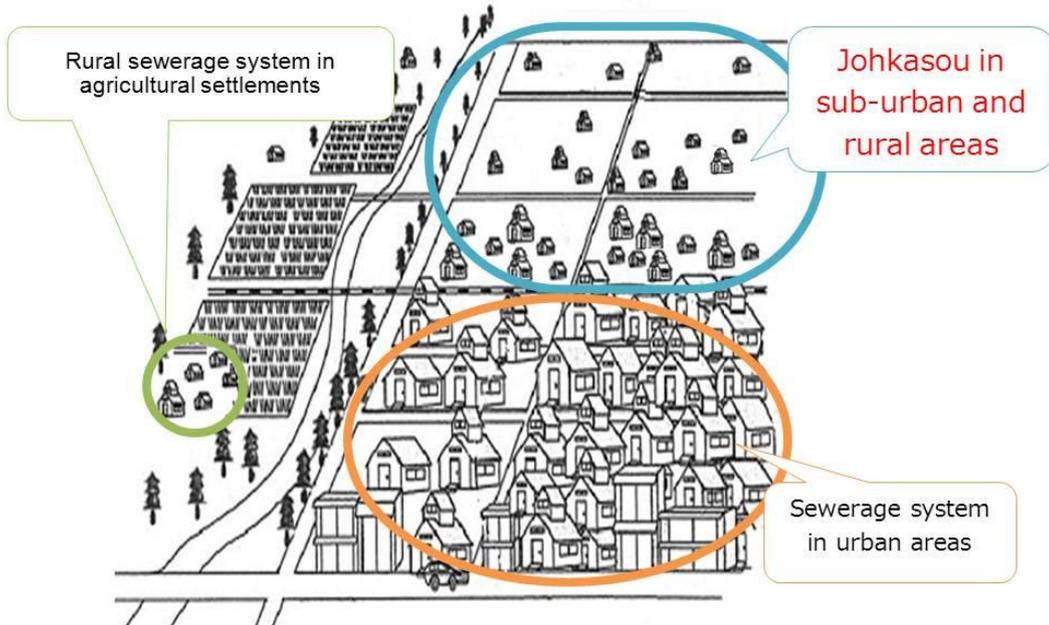
1. History of Wastewater Treatment and Current Situation

• Overall concept of water environment improvement



1. History of Wastewater Treatment and Current Situation

Demarcation of wastewater treatment systems

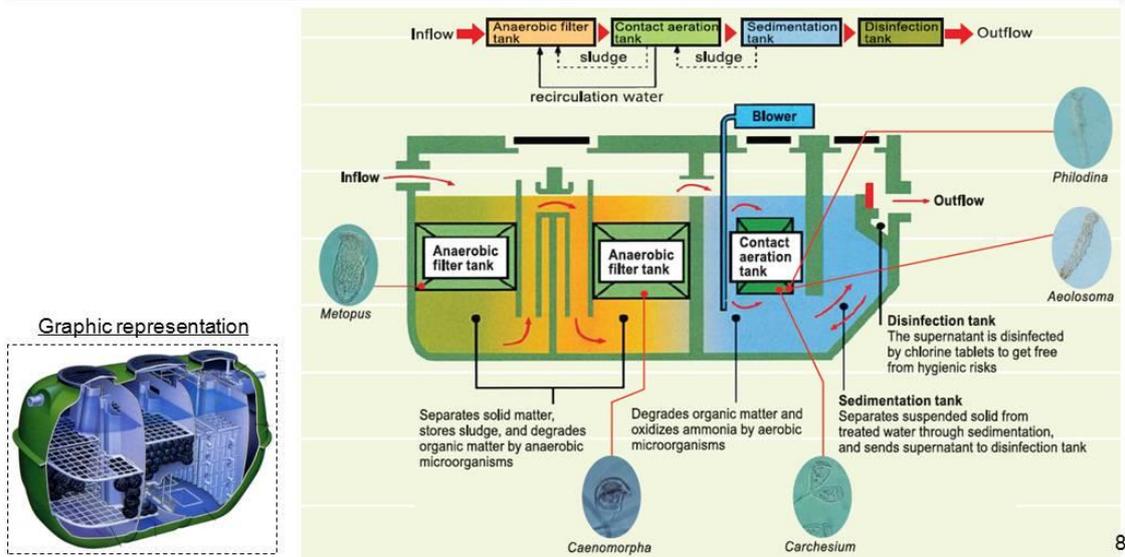


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2. General Information on Johkasou and Its Pending Issues

Structure and treatment principle of johkasou

- Jokasou tanks contain bacteria and other microorganisms, which are used to break down and purify the contaminants contained in wastewater
- They include a solid-liquid separation function, sludge storage function, and disinfection function in order to maximize purifying capabilities



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3. Legal Framework on On-Site Wastewater Treatment

· Purpose of Johkasou Act

Promotion of human waste and gray water treatment by johkasou for;

- Conservation of water quality in public water area,
- Preservation of the living environment and
- Improvement of public health

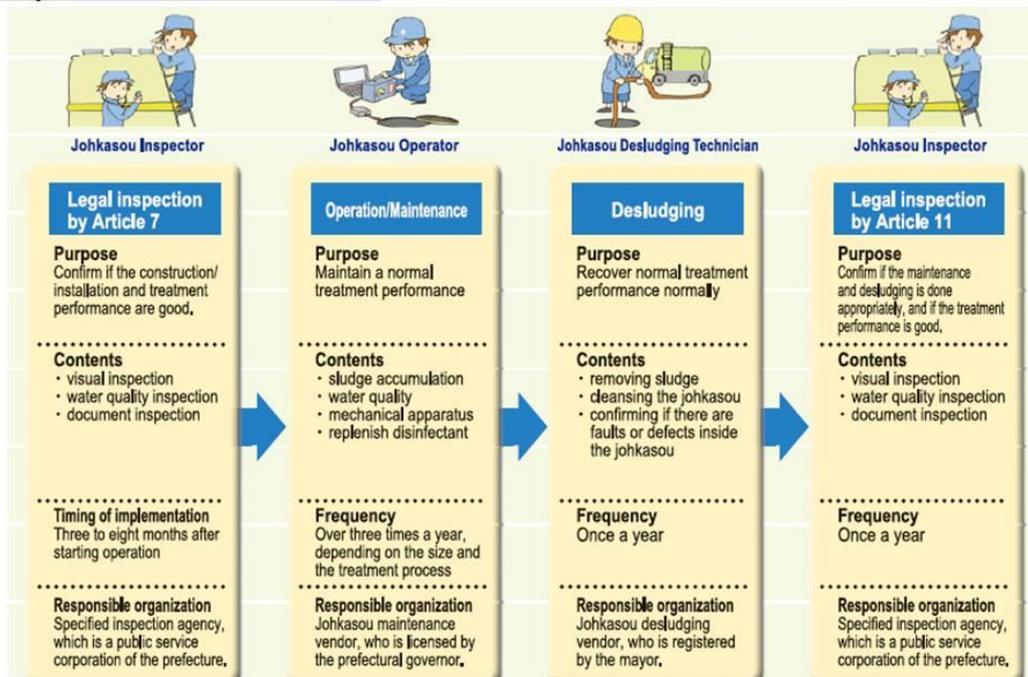
⇒ Articles in the Law

- ① Johkasou installation (※related to “Building Standard Law”)
- ② Operation/maintenance of johkasou
- ③ Approval of johkasou models
- ④ Johkasou business for Installation and Operation/Maintenance
- ⑤ Nationally qualified “Johkasou technicians”
- ⑥ Miscellaneous and penalties

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3. Legal Framework on On-Site Wastewater Treatment

· Inspections and Maintenance



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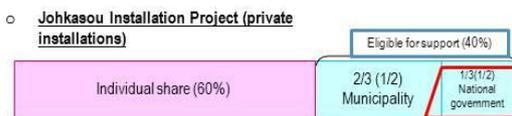
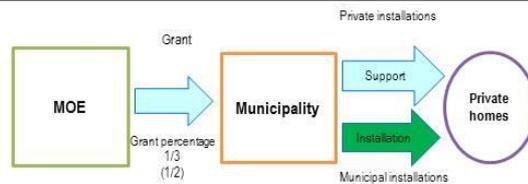
3. Legal Framework on On-Site Wastewater Treatment

Subsidies for Johkasou Installation

- There are still **some 1.3 million people who do not have wastewater treatment**, particularly in Japan's hilly rural areas, which have a low population density. **This issue requires urgent resolution.**
- Three Japanese ministries (MLIT, MAFF, and MOE) are working together to require municipalities to revise their wastewater treatment facility development plans with the aim of rapidly **setting up sustainable wastewater treatment facilities (generally within the next 10 years).**
- Johkasou have several advantages, including **(1) treatment capabilities on par with municipal sewage systems, (2) low-cost installation, and (3) seismic resistance.** These features become even more important in sparsely populated areas.
- There are still about **4.37 million tandoku-shori johkasou** in operation, though new installations are now prohibited. There is an **urgent need to convert them** to gappei-shori johkasou **as soon as possible.**
- The goal in promoting johkasou infrastructure development is to **conserve local water environments and build a society of independent, decentralized communities.**

Project overview

- Johkasou Installation Project (private installations)**
Subsidizes municipalities supporting their residents (private citizens) with johkasou installation
- Johkasou Municipal Installation Project (municipal installation)**
National subsidy program for municipalities taking the lead in installing johkasou systems. The municipality is responsible for operations and maintenance.



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3. Legal Framework on On-Site Wastewater Treatment

Human Resource Development

- Johkasou technicians should be equipped with extensive knowledge on not only wastewater treatment/johkasou, but also water environment conservation and public health.
- Curriculums for johkasou operator and johkasou installation worker are as shown below

Johkasou operator		Johkasou installation worker	
➢ Fundamental of johkasou	8 H	☐ Fundamental of johkasou	8 H
➢ Laws and regulations related with johkasou	4 H	☐ Laws and regulations related with johkasou	3 H
➢ Structure and function of johkasou	22 H	☐ Structure and function of johkasou	15 H
➢ Introduction to installation of johkasou	4 H	☐ Management of johkasou installation	8 H
➢ Operation and maintenance of johkasou	30 H	☐ Introduction to O&M and desludging of johkasou	3 H
➢ Water quality management of johkasou	10 H		
➢ Introduction to desludging of johkasou	2 H		
Total	80 Hours	Total	37 Hours



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3. Legal Framework on On-Site Wastewater Treatment

• Miscellaneous Provisions of Johkasou Act

Report collection and on-site inspections (Article 53)

- Government agencies may require the following parties to report on tasks associated with johkasou maintenance inspections, desludging, and the like.
 - 1) Johkasou managers
 - 2) Johkasou manufacturing companies
 - 3) Johkasou construction companies
 - 4) Johkasou desludging companies
 - 5) Designated inspection agencies
 - 6) Others (e.g. those who have taken the Johkasou Installer or Johkasou Operator exam)
- Government agencies may, with the approval of the tenant, enter the property or structure where a johkasou is located in order to inspect documents or any other items and ask questions of the persons involved.
 - The government may, when necessary in the enforcement of this act, demand the required reports to ensure that work is carried out properly.
 - On-site inspections are not intended as administrative punishment, but rather to provide broad-based instructions and supervision on johkasou-related matters.

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3. Legal Framework on On-Site Wastewater Treatment

• Penalties of Johkasou Act

The following penalties shall be assessed in cases of illegal action in order to ensure that the stipulations of the Johkasou Act are properly followed.

Penalties for unapproved companies (Article 59)

- E.g. unapproved johkasou desludging companies or those who have obtained approval through fraudulent means and perform johkasou desludging operations

Penalties for violations of provisions (articles 62, 66, and 66-2)

- E.g. those who do not follow improvement orders related to maintenance inspection, desludging, or method inspections

Penalties for violation of notification duties (Article 61)

- E.g. those who do not submit notifications or who submit false notifications for johkasou installation and the like

Penalties for refusal to cooperate with reporting or on-site inspection demands (Article 62)

- Those who are not registered in line with ministerial ordinances
- Those who misleadingly use the title "johkasou operator"
- Johkasou operators and other who do not submit the necessary reports or who submit false reports

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