

# Kanadevia IR Day

Environment Business Headquarters

19 December, 2024

Kanadevia Corporation

# Background

Takeshi Minemura

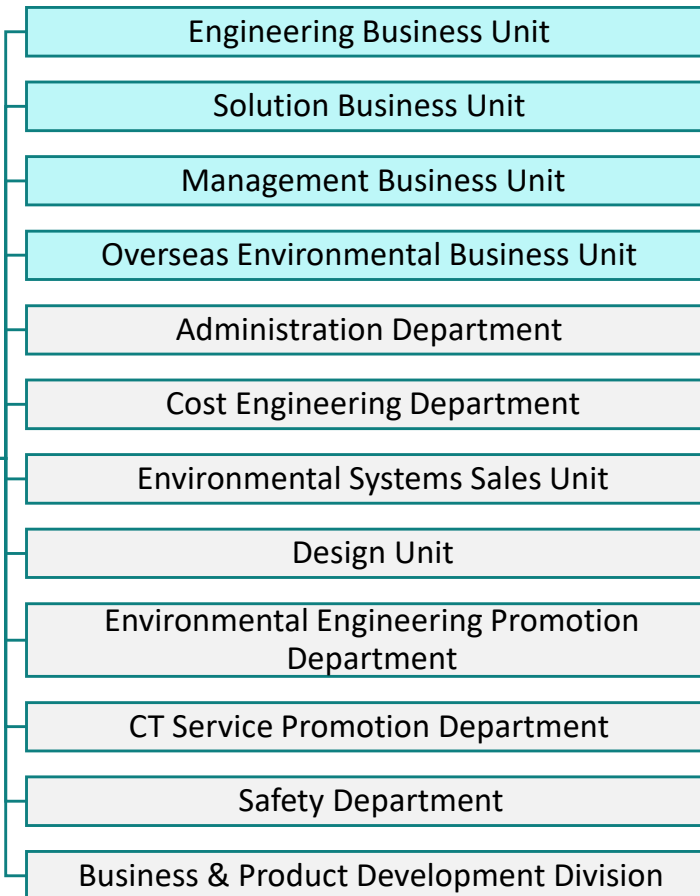
- 1992            Joined the Company
- 1993            Tokyo Environmental Systems Sales Department,  
Environmental Systems Sales Unit,  
Environment Business Headquarters
- 2016            General Manager of Fukuoka Office
- 2019            General Manager of Osaka Environmental Systems Sales Department,  
Environmental Systems Sales Unit,  
Environment Business Headquarters
- 2023            General Manager of Environmental Systems Sales Unit,  
Environment Business Headquarters
- 2024            General Manager of Environment Business Headquarters

# Business Overview

# Business Overview - Organisation



Environment Business HQ



Japan	Construction of various environmental facilities
Japan	After-sales service and maintenance of various environmental facilities
Japan	Long-term operation of environment-related facilities and power sale
Overseas	Sales, construction, after-sales service, and maintenance of various environmental facilities

## Major group companies

### Japan

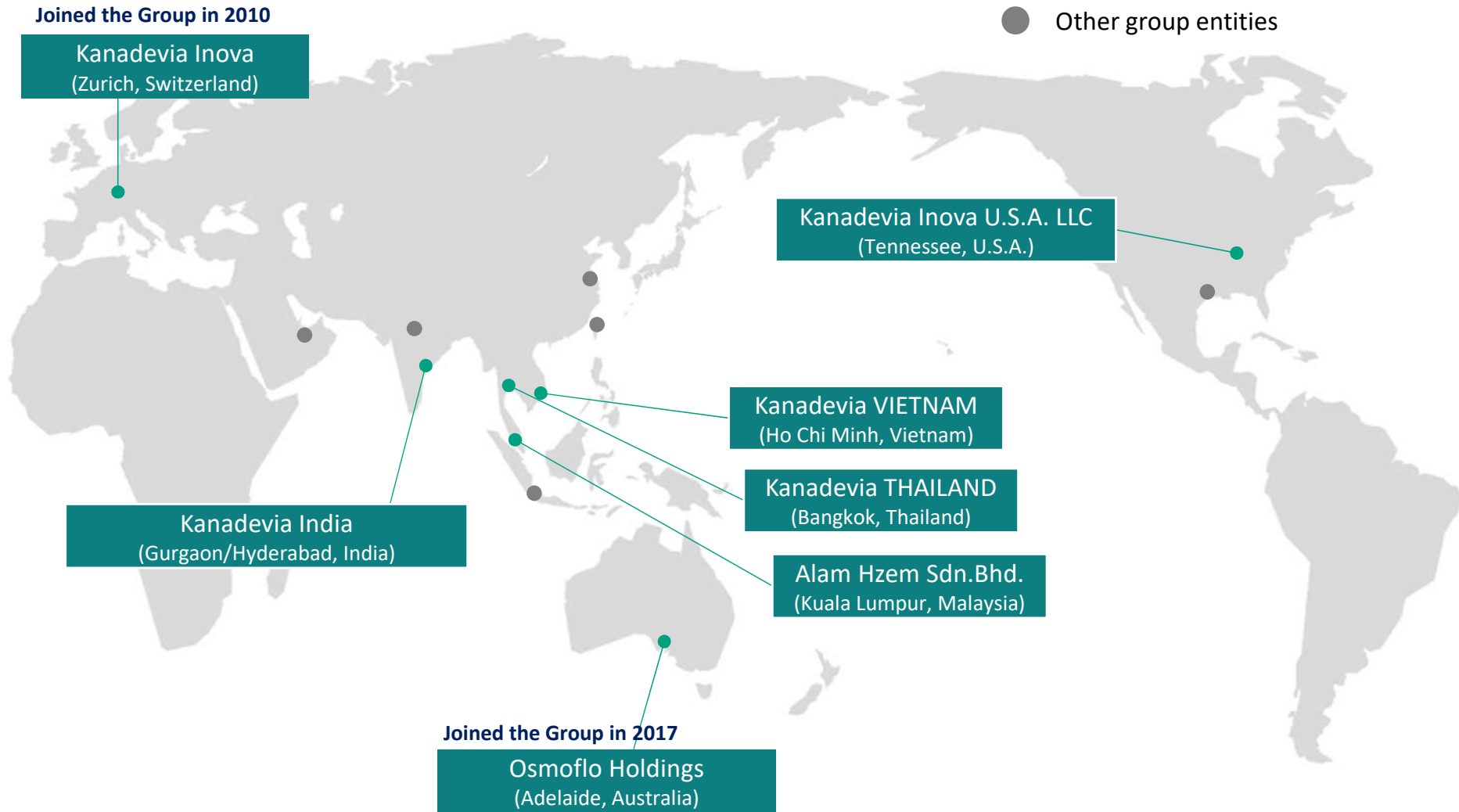
【WTE】	Kanadevia E&E Kanadevia Environment Service
【Waster】	Asano Ataka
【Plant】	Kanadevia Engineering

### Overseas

【WTE】	Kanadevia Inova AG (Switzerland) Kanadevia VIETNAM CO., LTD. (Vietnam) Kanadevia India Private Limited (India)
【Water】	Osmoflo Holdings Pty Ltd.(Australia)

# Business Overview – Global Network

- Overseas offices and affiliates related to environmental business
- Other group entities



# Business Overview - Products

## Waste to Energy

WTE plant



Kagoshima, Japan

WTE plant



Dubai, UAE

Operation & Maintenance



Kanadevia A.I/TEC

Renewable Gas



Jonkoping, Sweden

## Waster Treatment

Biomethanation



Dietikon, Switzerland

Sludge reclamation plant



Fukuoka, Japan

Mine waster treatment plant



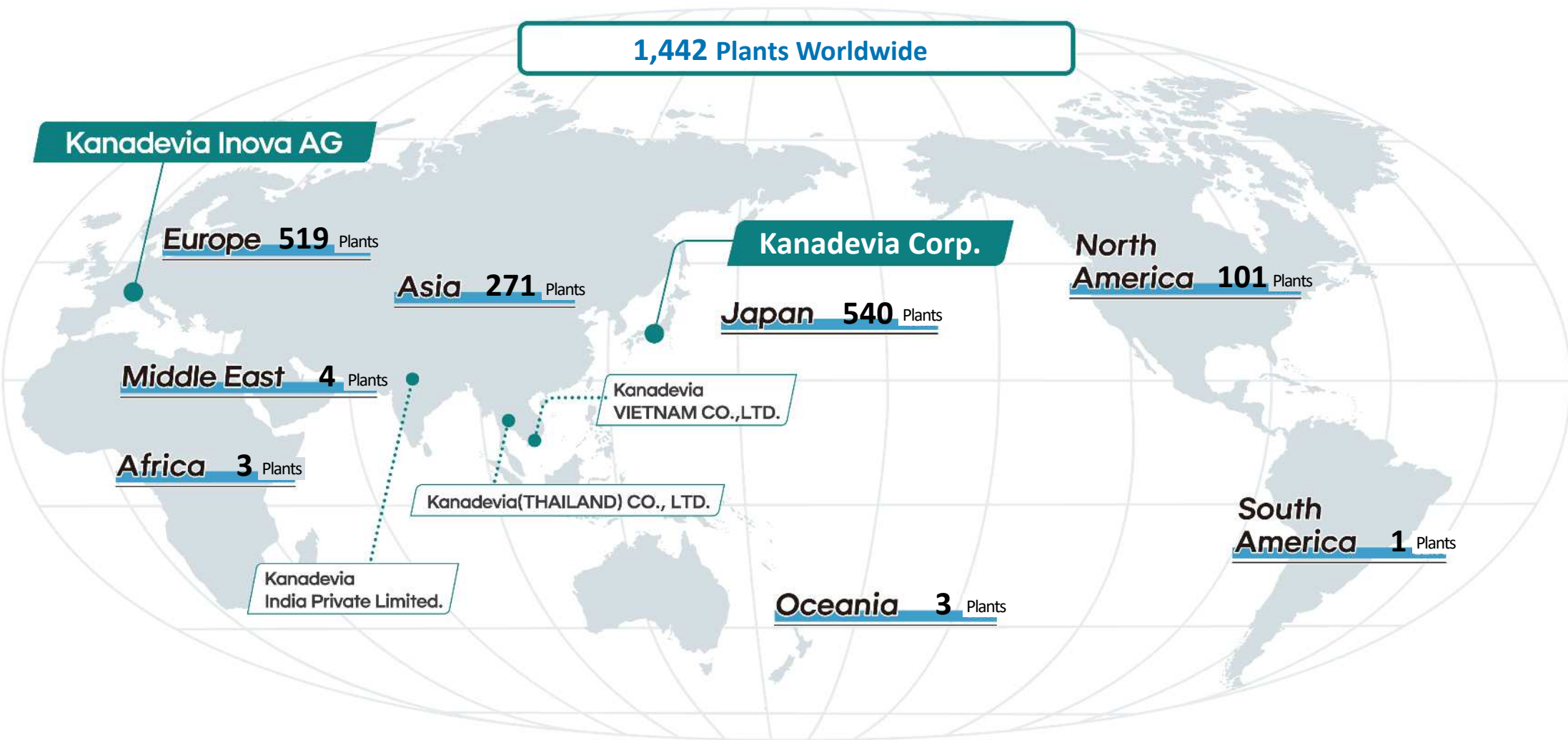
Roy Hill, Australia

## Power Sale

Retail power sale



# Waste Treatment Plant Engineering – Reference Plants



※As of Mar. 2024

# Divisional Policy

To be a driving force for realizing a recycling-oriented society on a global scale

- Using waste as a valuable resource and energy source.
- Expanding the scope of business into high value-added areas to enhance profitability

Sustainable growth  
of existing businesses

- Evolution from WtE to WtX
- Deepening CN technologies such as biomethanation and high CO2 combustion

Creation and expansion of  
growth businesses

- Alliance with industrial waste operators, promotion of M&As
- Establishment of sewage sludge utilisation technology

Promoting sustainable  
management

- Improve profitability of DBO (EPC+operation business) and ensure continuous profitability through after-sales service
- Cooperation between business units and with overseas Group companies



# Medium-term management plan 'Forward 25'

## Forward 25 Financial Goal

(Billions of JPY)

	FY2023 Results	FY2024 Forecast	FY2025 Goal(※)
Order	558.8	540.0	Sales JPY393.0
Sales	407.3	433.0	
Operating income (OI margin)	19.1 (4.7%)	24.0 (5.5%)	

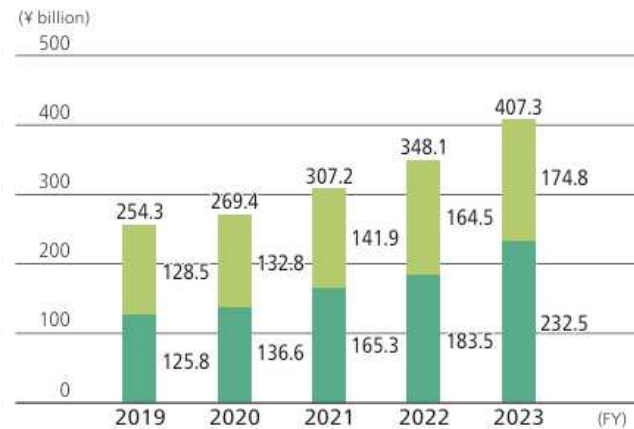
※Initial plan

■ EPC (new construction) ■ Operation & Maintenance —●— OI margin (Right axis)

### Order received



### Sales



### Operating income/margin



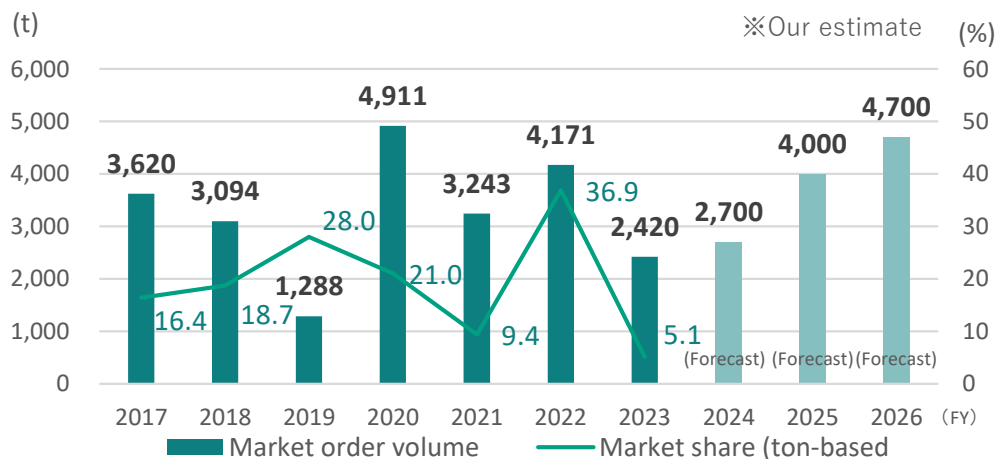
Business Strategy, Initiatives, etc.

# Business Environment

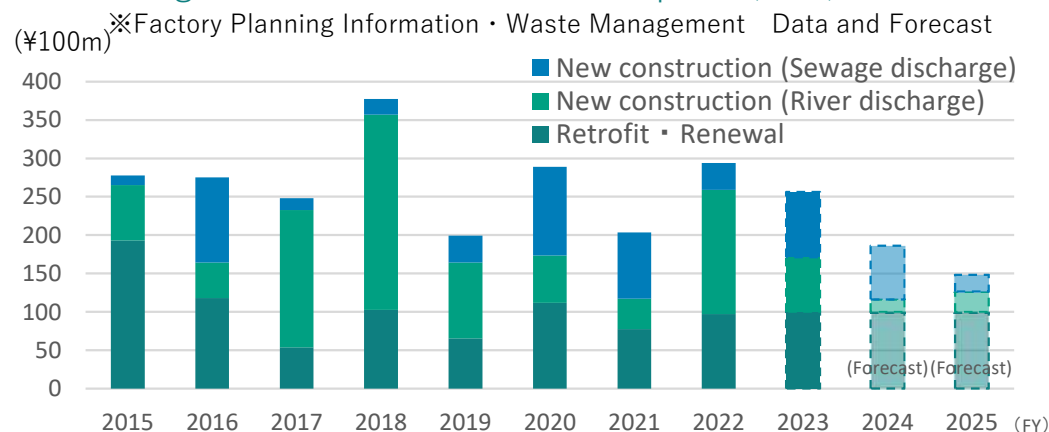
Main services and products: design, construction, after-sales services of Waste to Energy and water treatment facilities, etc.

<b>WTE market</b>	<ul style="list-style-type: none"> <li>New construction, mainly renewal, demand to remain flat.</li> <li>Market volume: approx. JPY400bn per year</li> <li>60-90% are DBOs, while O&amp;M target facilities to decrease for aging, consolidation, increasing long-term operations</li> <li>Future waste volume to decrease due to population decline</li> <li>Partially treated by private companies. Treatment in combination with industrial waste or water treatment will accelerate in the future.</li> </ul>	<b>Our strength</b>	<ul style="list-style-type: none"> <li>Waste combustion know-how backed by proven track record, foundation for maintenance service business</li> <li>Proposals combining technologies owned by other divisions and Group companies, such as CO2 capture and methanation</li> <li>Well-established operational structure and proven track record</li> <li>Our 2019-2023 market share in WtE (number basis) is 18.3% in EPC and 15.8% in O&amp;M. Both 1st in the industry. In operations, we are #2 in the industry with 14.0% share.</li> </ul>
<b>Water treat. market</b>	<ul style="list-style-type: none"> <li>JPY20-30 bn market orders for sludge reclamation plants (manure treatment plants) over the past five years.</li> <li>Many water and wastewater facilities are due for renewal, while amendments to the Water Act are expected to promote privatisation and increase O&amp;M.</li> <li>Accelerated CN system/technology introduction expected.</li> </ul>	<b>Our strength</b>	<ul style="list-style-type: none"> <li>Ranked first in the industry for sludge reclamation facilities with a 31% market share (value of orders) over the past five years</li> <li>Extensive experience and a wide variety of system configurations in sludge reclamation and leachate treatment facilities</li> <li>Sewage treatment with unique products (stoker-type sewage sludge incineration, high-speed filtration, phosphorus recovery)</li> </ul>

WTE in Japan: Market order volume and our share



Sludge reclamation and treatment plant (EPC) market



# Business Strategy

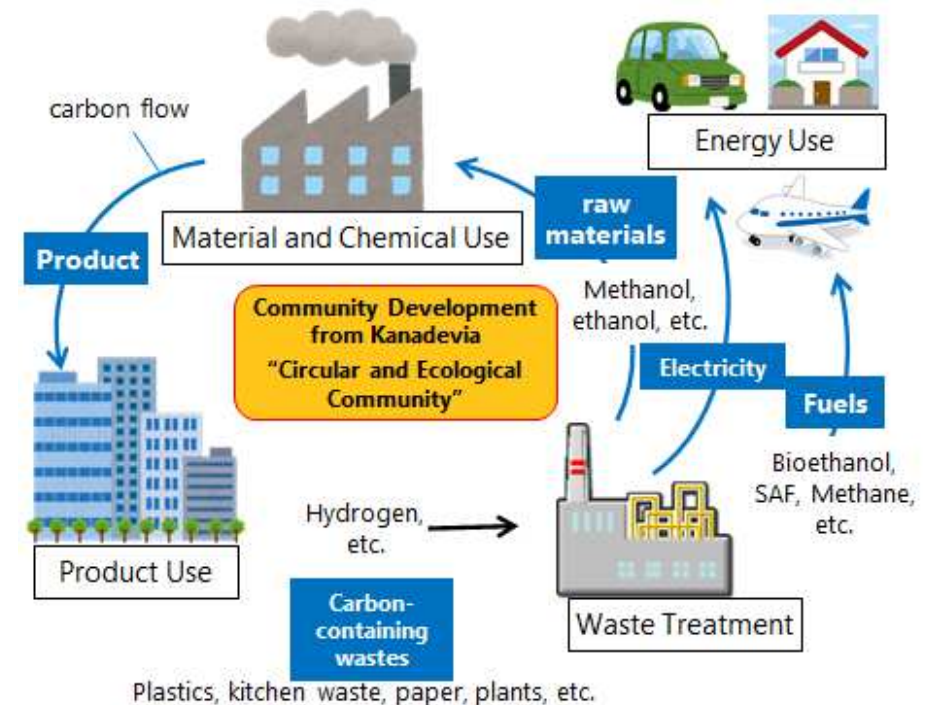
## Increase in profit from existing business

Strengthen safety and quality control and prevent worsening profitability due to construction problems. Increase profits from the increasing number of DBOs and ensure continued profitability in the after-sales service business (+ solution development).

## Promoting carbon neutrality

Establish a technology platform and business model to achieve carbon neutrality in 2050.

- Recycling (material and chemical recycling)
- Thermal recovery
- Recycling of ash from incineration and CO<sub>2</sub>
- Methane fermentation



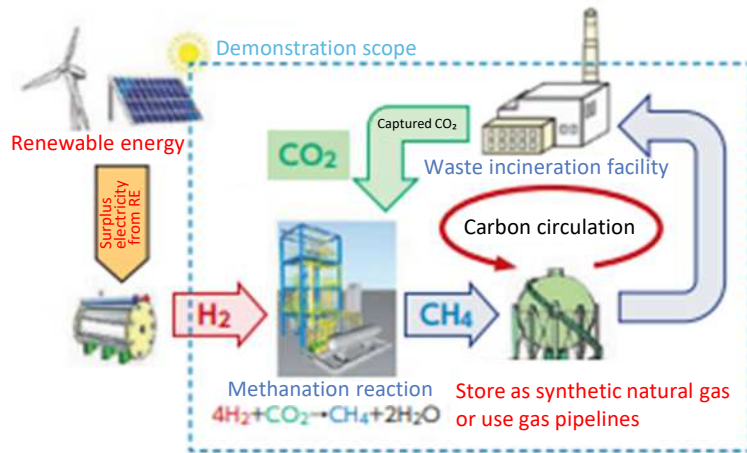
## Expansion of business areas

Transform the business domain to expand resource recycling, waste treatment beyond the realm of municipal waste (industrial waste, agricultural and fishery waste), and integrated treatment.

# Initiatives

## Carbon neutral promotion (WtE business)

Demonstration project recycling CO<sub>2</sub> collected from waste treatment (project commissioned by Ministry of Environment)



Carbon Circulation Society Model (Illustration)

- Demonstration of the use of CO<sub>2</sub> emitted from waste treatment facility through methanation. (Odawara City, Kanagawa Prefecture)
  - Aiming to establish an integrated technology for CO<sub>2</sub> capture, CH<sub>4</sub> production and utilisation on a commercial scale.
- ✓ Targets were achieved for both recovered CO<sub>2</sub> concentration and CH<sub>4</sub> production (CO<sub>2</sub> concentration 80% or more, CH<sub>4</sub> production 100 Nm<sup>3</sup>-CH<sub>4</sub>/h)
  - ✓ Generated CH<sub>4</sub> can be used to generate electricity in solid oxide fuel cells (CH<sub>4</sub> concentration about 80)

Development of waste combustion technology with high CO<sub>2</sub> concentration (Green Innovation Fund project)

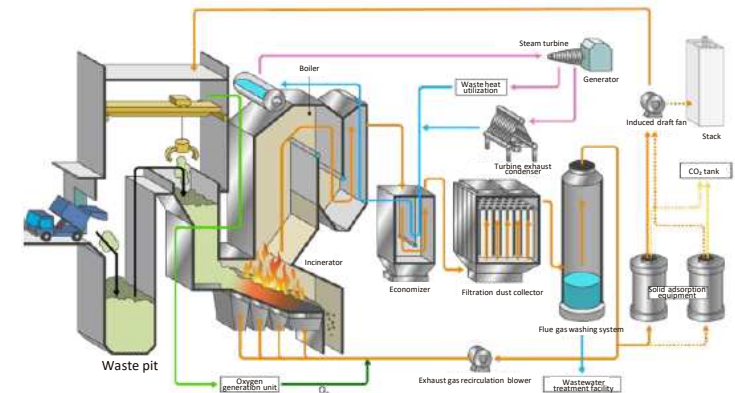
- Efficient recovery of CO<sub>2</sub> in waste incineration flue gases at higher concentrations.
- Aiming for a CO<sub>2</sub> separation and recovery rate of over 90%.

### NEDO Green Innovation Fund Project

Theme “Achieving Carbon Neutrality in the Waste and Resource Recycling Sector

Location: Shinagawa Incineration Plant, Tokyo

Schedule: FY2024-2030 (tentative)

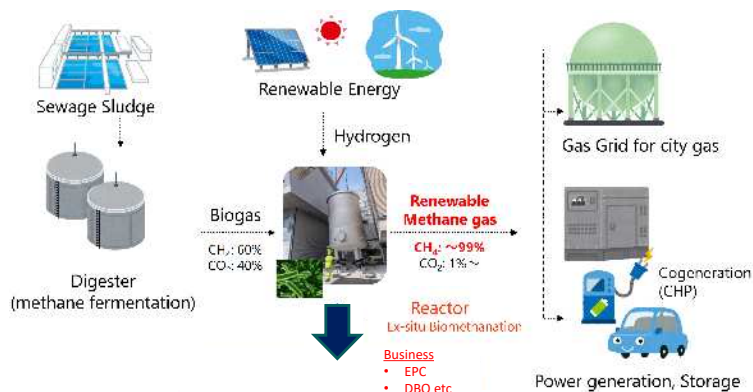


CO<sub>2</sub>-enhanced waste combustion technology Image

# Initiatives

## Carbon neutral promotion (water business)

Research project on Ex-situ biomethanation reaction technology for digested sewage sludge gas (Ministry of Land, Infrastructure, Transport and Tourism project)



- Demonstration test to reform CO<sub>2</sub> contained in sewage digestion gas using biomethanation technology to increase methane gas concentration (Tottori Prefecture)
- Domestic demonstration of Ex-situ biomethanation technology owned by Kanadevia Inova Schmack GmbH, our Group company
- Schmack has commercialized the technology and delivered it in Switzerland (see photo on page 6).

## Field Tests of Fuel Gasification of Sewage Sludge

- New type of gasification and reforming system converting sewage sludge into fuel gas, mainly hydrogen, by direct gasification without digestion treatment.
- Dewatered sludge samples and a sewage treatment plant field provided by Kagoshima City. Tests conducted at a rate of 2 t/d from October 2024.

Demonstration site : Kagoshima Prefecture

Schedule : October 2024 – March 2026 (Tentative)

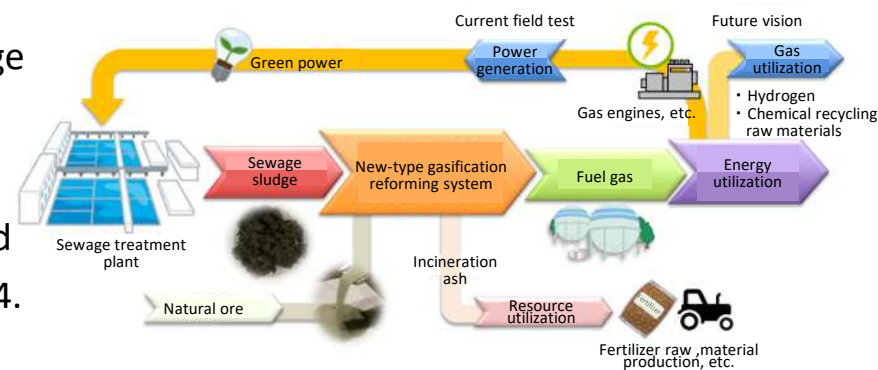


Image of greening energy with this technology



# Initiatives

Remote monitoring and operation, combustion prediction and automatic operation using AI technology.

## A.I/TEC

**Kanadevia A.I/TEC**  
Adjacent to head office (Osaka)  
Operation since 2018



- Remote monitoring and operational support services
- Development base for IoT/big data and AI

Remote monitoring  
operational support



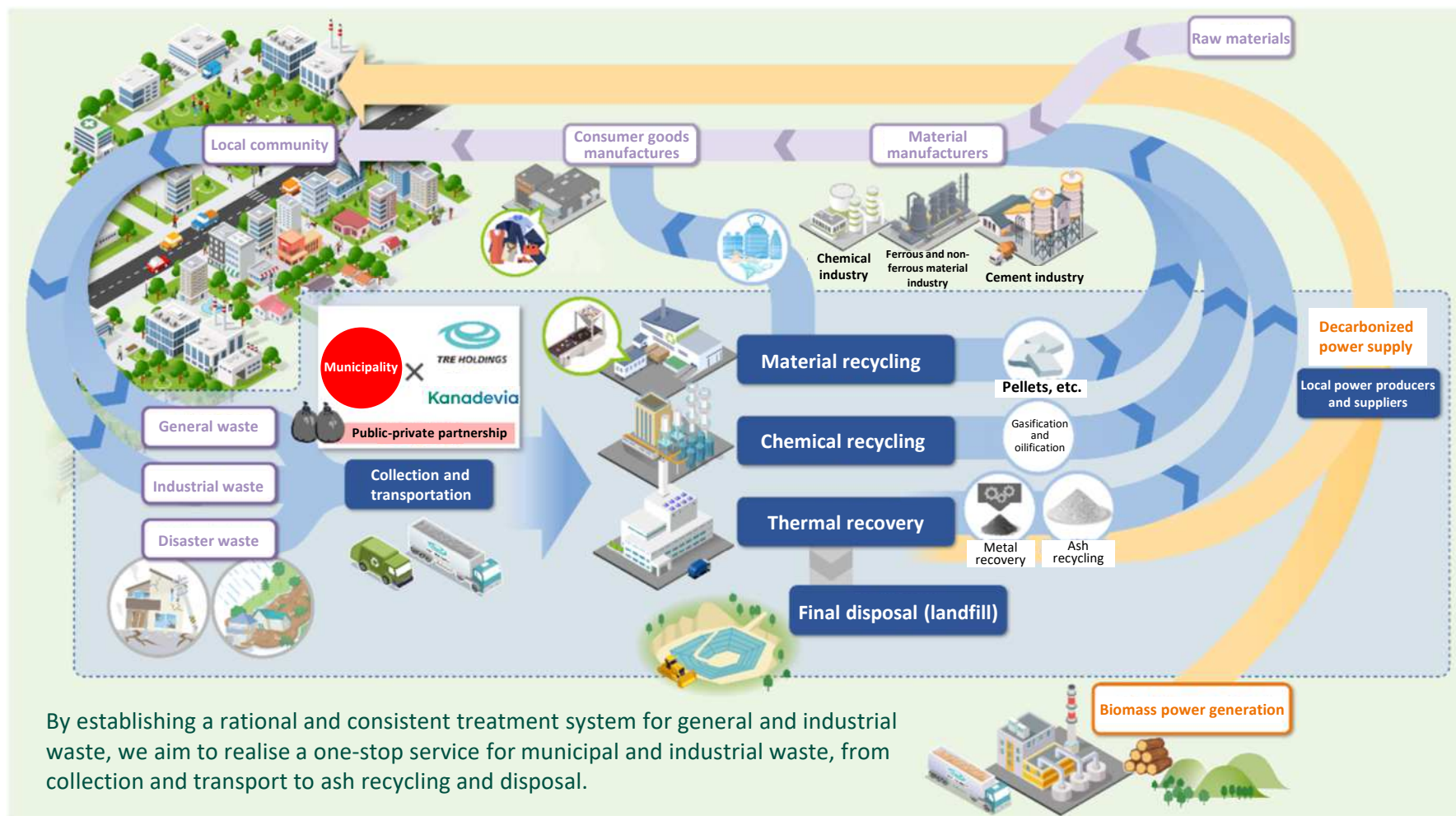
Big data



- Stabilization of plant operation through remote monitoring and data analysis
- Real-time support with 24-hour monitoring to predict abnormalities
- Data visualisation and analysis and AI-based driving support

# Initiatives

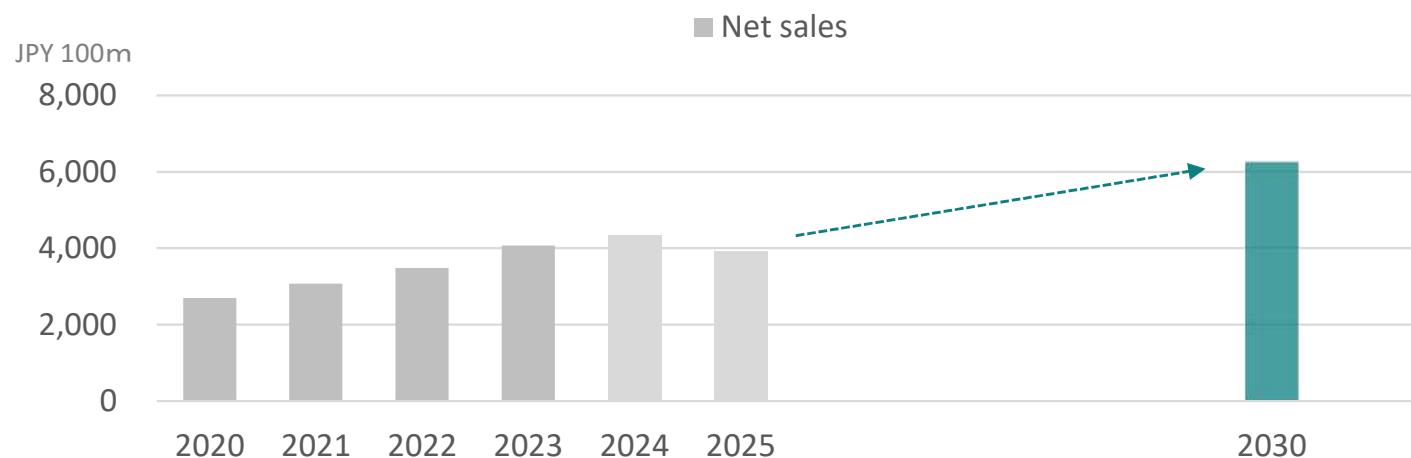
## Entry into industrial waste treatment business (business alliance with TRE Holdings)



- Industrial waste to energy project in Ichihara City, Chiba is planned through joint investment (currently licensing procedures).
- As of 1 April 2024, TRE Holdings established a new Department for the Promotion of Public-Private Partnerships. In collaboration with us, the above solutions and services are being promoted to municipalities.



# Growth View



	<b>Forward 25</b> (FY2023 – 2025)	<b>2030 Vision</b> ( - FY2030)
<b>Waste treatment (excl. Inova)</b>	<ul style="list-style-type: none"> <li>Improvement of EPC profitability (appropriate selection of projects, mitigation of problems)</li> <li>Business alliance to enter the industrial waste sector</li> </ul>	<ul style="list-style-type: none"> <li>Differentiation and competitiveness through DX and decarbonisation technologies (e.g. methanation, high CO<sub>2</sub> capture)</li> </ul>
<b>Water treatment</b>	<ul style="list-style-type: none"> <li>Promotion of technology development contributing to a recycling-oriented society and decarbonisation</li> </ul>	<ul style="list-style-type: none"> <li>Expansion of business areas using resource recovery technologies (e.g. sewage sludge gasification, biomethanation)</li> </ul>
<b>Inova group</b>	<ul style="list-style-type: none"> <li>Maintain competitive advantage in the EMEA markets</li> <li>Initiatives to grow O&amp;M, renewable gas business (strategic M&amp;A, business investment)</li> </ul>	<ul style="list-style-type: none"> <li>Profit contribution from the business of owning and operating biogas plants</li> <li>Diversification of revenue sources through expansion of the value chain</li> </ul>



**Cautionary Statement**

Forward-looking statements are based on information currently available to Kanadevia Corporation. Therefore, those forward looking statements include unknown risks and uncertainties. Accordingly, you should note that the actual results could differ materially from those forward-looking statements. Risks and uncertainties that could influence the ultimate outcome include, but are not limited to, the economic conditions surrounding Kanadevia Corporation and/or exchange rate fluctuation.