



**KOBELCO**

Keep the Earth Sky-blue

**CORPORATE PROFILE**

**KOBELCO ECO-SOLUTIONS CO.,LTD.**













# Waste Treatment Business

Turning waste into valuables for the earth.

Offering EPC and O&M solutions of Waste to Energy and recycling plant, we contribute to forming a sustainable society, with reducing negative environmental impacts.



01

Waste Treatment



02

PCB Detoxification

# 01. Waste Treatment



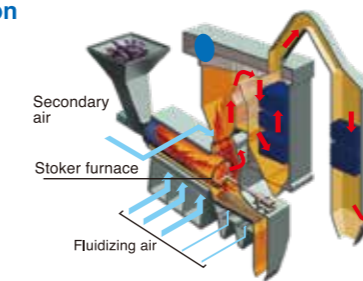
Developing environment-friendly waste treatment technology. Our incinerators are advanced in functionality, with being able to reduce environmental impacts.

## Incinerator

Responding to a wide range of waste

### Grate Type Incineration

The rotary combustor facilitates efficient mixing and agitation of waste. This allows for treating with a wide variety of waste. Heat is efficiently recovered through boiler water pipes constituting the furnace walls. This helps realize highly efficient waste-to-energy system. It is a robust system with less moving parts.

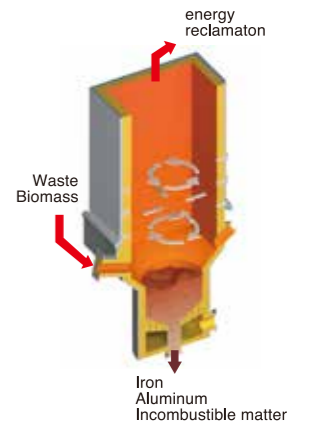


## Incinerator

High efficiency power generation is possible

### Fluidized-Bed Gasification & Combustion

Gasifying waste using fluidized sand. A vertical, compact furnace that burns waste efficiently. High-efficiency power generation with high-temperature, high-pressure boilers, and recovery of metals with high resource values from fluidized bed furnaces, such as high-quality iron and aluminum, is possible.



## Melting

Creating Vitrified Material (VM) through high temperature melting

### Fluidized-Bed Gasification and Melting Furnace

Melting is achieved using the energy possessed by waste, without using fossil fuels. By gasifying waste and reacting it with air, the ash is converted to Vitrified Material (VM) using high temperature melting. This also achieves a high resource recovery rate through the collection of highly recyclable iron, aluminum, VM, etc.

## Pretreatment equipment

High safety and processing performance

### Drum can crushing systems

Crush waste sealed in drums. After kneading with a mixer, it is pressure-fed to an incinerator using a piston pump. The waste can be processed safely without touching it, and automation of crushing, kneading, and pumping allows for efficient processing speed.

## Recycling facility

Sorting waste for recycling

### Recycling centers

Systems for crushing, sorting, and recycling bulky waste, non-combustible waste, PET bottles, bottles, cans, etc. In particular, our automatic bottle color sorter can automatically sort glass bottles into colorless, brown, and other colors, helping to reduce labor costs.

## After-sales services

Leveraging our experience cultivated through the operation and maintenance of numerous facilities, we provide services that minimize life cycle costs and ensure the stable operation, steady performance, and long useful lives of facilities. From inspections to repairs, improvements, and renovations, we provide highly specialized services through our nationwide network in order to meet customer needs.

# 02. Detoxification of PCB and Dioxin



Polychlorinated biphenyl: a colorless transparent chemical, chemical substance in an oily liquid form. They were used in a variety of applications, such as insulating oil for electrical equipment, but their production is now prohibited due to their adverse effects on the human body. For a long time, there were no effective methods for processing PCBs, but we developed a technology for detoxifying them. We will also continue to work toward eliminating negative legacies for future generations through the design, construction, and maintenance of facilities.



Plant for Toyota PCB Waste Treatment Facility, Japan Environmental Storage & Safety Corporation (JESCO)

Decomposing liquid PCBs

### Liquid PCB Decomposition Technology SP Process

A chemical reaction between sodium and the PCB removes chlorine from the PCB. Liquid PCBs extracted from transformers and capacitors are decomposed and detoxified.

Removing PCBs from electrical equipment surfaces

### PCB Wastes Decontamination Technology SED process

A technology for removing PCBs adhering to the surfaces of electrical equipment after removing the PCBs. PCBs are removed using solvent washes, vacuum heating and drying process.

Responding to a wide range of pollutants

### Responding to a wide range of pollutants Plasma melting technology

A wide variety of contaminants with different shapes and properties, such as fluorescent lamp ballasts, other waste with complex shapes, sludge containing PCBs, etc., are decomposed and rendered harmless in high temperature plasma and molten baths.



# Pharmaceutical and Fine Chemical Equipment Business

Our leading edge technology supports high-quality manufacturing.

Engineering and manufacturing of various equipment in broad range of industries, pharmaceutical, fine chemical, petrochemistry, foods etc..

As the top manufacturer of the glass-lining, offering the leading edge technology and products including reactor, agitator, filter/dryer, thin film evaporator etc..

Also providing extensive customer service like equipment maintenance.

**Fine chemical field**

Manufacturing facility for material for electronics field, resist material, emitting material etc.

**Pharmaceutical field**

Manufacturing facility for pharmaceutical intermediates and API, agrichemical etc.

**Petrochemical field**

Manufacturing facility for commodity and synthetic resins, plastic etc.

**Food and Beverage field**

Manufacturing facility for sake, wine, soy source etc.

Scan and Read More



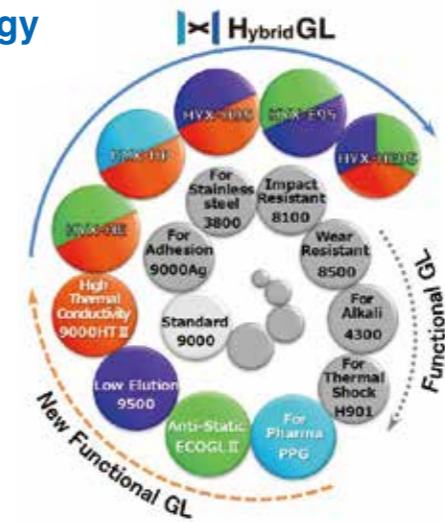
## Glass lining technology

Glass lining is composite material with steel surface coated by special glass. Glass lining has its advantageous characteristics with the function of glass as well as the strength of steel. As the top manufacturer, we always offer the leading edge technology and products.

First in the world

### Hybrid Glass Lining

"HybridGL™" is the brand name of our hybrid glass lining. The hybrid glass lining has been developed in 2017 as the world's first one.



## Reactor

Our reactor contributes to customer's manufacturing such as the high quality, high purity, safety and work saving in manufacturing in many industry fields.



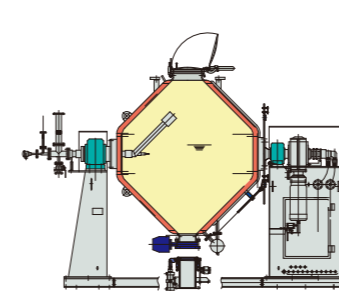
## Agitation technology

Our agitation technology is able to fulfil various customers' needs based on our R&Ds over the years and abundant manufacturing records. We can offer various type of agitators in response to various needs, including mixing, dispersion, heat transfer, etc., depending on the purpose of agitation and the requirements in manufacturing process.

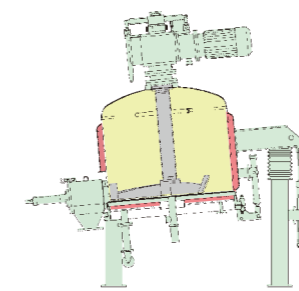


## Filter/Dryer

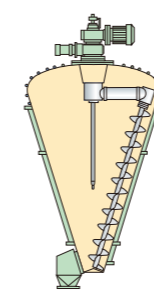
Various types of filter/dryers are available, including conical dryer blender, nutsche filter dryer, vertical conical mixer dryer etc..



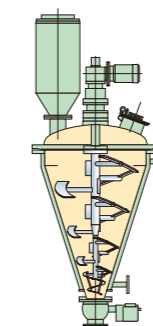
**Conical dryer CDB™**  
(rotary dryer/mixed type freeze dryer)



**Nutsche filter dryer FD™**  
(multi-function filter dryer)



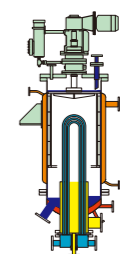
**Vertical conical mixer SV™**  
(vertical type mixer dryer)



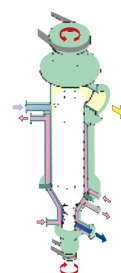
**Vertical conical mixer PV™**  
(high efficiency vertical type mixer dryer/mixed type freeze dryer)

## Thin film evaporator

Thin film evaporator is used in all chemical industries, including pharmaceuticals, fine chemicals, petrochemicals, foods etc.. Concerning heat-sensitive material, material with a high boiling point, suitable for operations such as purification, concentration, decolorization, and degassing. Recycling and volume reduction process is also suitable application.



**WIPRENE S™**  
(thin film evaporator)



**EXEVA™**  
(thin film evaporator for high viscosity material)

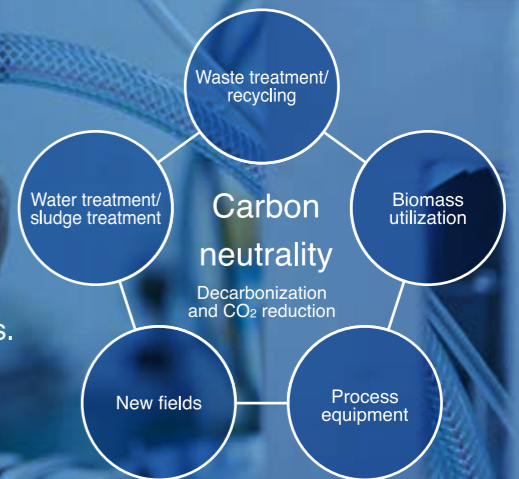
# New Business

Under the keywords of “decarbonization,” “sustainability,” and “healthy and comfortable lives,” we develop new businesses based on our research achievements and extensive experience. We continue to take on challenges toward realizing an eco-friendly future. We are currently focusing on hydrogen, algae, and wood biomass power generation. We will offer new technologies.



# Technology Development

People live comfortably and the rich natural environment is protected. Aiming for such future, we are developing unique new products and services using our cutting-edge technologies. Furthermore, to meet more complex needs, we carry out joint research programs with customers, experiments in full-scale plants and pilot plants, etc. We enjoy many fruitful results through these activities.



**HHOG™**  
High-purity Hydrogen Oxygen Generator

## Generate CO<sub>2</sub>-free hydrogen using renewable energy

The High-purity Hydrogen Oxygen Generator (HHOG™) generates high-purity hydrogen gas on-site by directly electrolyzing deionized water without using or producing toxic chemicals. With an increasing demand for hydrogen energy in the transition toward a decarbonized society, we have delivered more than 250 HHOG™ units, making up the largest share in the Japanese market.



**Algae**  
(Golden Euglena™)

## Developing proprietary functional ingredients for healthy and comfortable lives

Our original strain has been patented in more than 15 countries around the world. Golden Euglena (paramylon EOD-1) reaches the intestines alive and acts on the immune, nervous, and endocrine systems to help maintain and improve homeostasis, which form the foundation for health.



## Golden Euglena™ (EOD-1 strain)

Paramylon-rich Euglena EOD-1 is attracting attention as a healthy ingredient. Foods and supplements with our Paramylon added are on the rise.

**Wood biomass power generation**

## Contributing to preserving the global environment through renewable energy

Wood biomass power generation is carbon neutral, contributing to CO<sub>2</sub> reductions and curbing global warming. By using thinned wood as fuel, we contribute to the development and maintenance of forests as a whole.



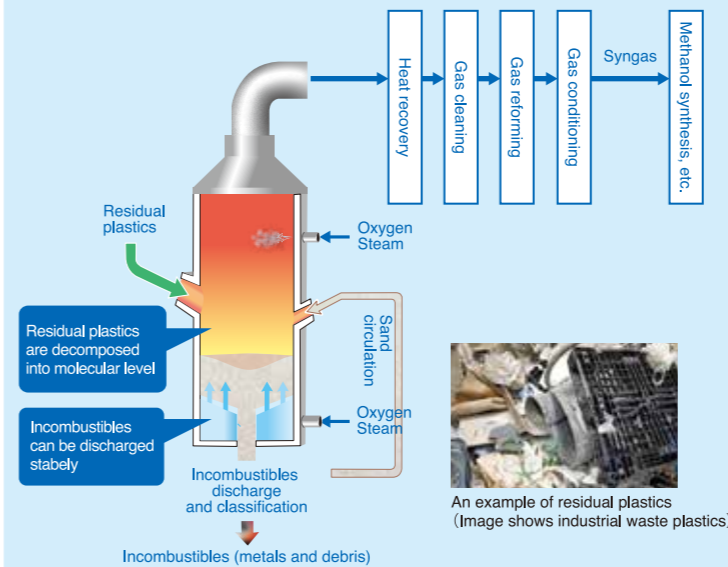
## Iitate Mirai Power Plant

Iitate Mirai Power Plant in the Warabidaira Ward of Iitate Village, Soma, Fukushima Prefecture, was placed in service in September 2024.

### TOPICS 01

## Innovative recycling technology under demonstration for gasification and chemical recycling of waste plastics

Mixed waste plastics containing different materials and impurities (hereinafter "mixed waste plastics") are usually used for waste-to-energy conversion or simply incinerated or landfilled as they are difficult to recycle. To contribute to the transition to a more sustainable recycling-oriented and decarbonized society, we are working to develop a chemical recycling technology for mixed waste plastics. We are now conducting a demonstration project using our fluidized bed gasification technology to produce gases for various applications, such as synthesis of methanol, which is one of the basic chemicals.



An example of residual plastics (Image shows industrial waste plastics)

### TOPICS 02

## Launched “ACT(Accelerated Carbonation Technology)” that makes APCr(Air Pollution Control residue) react with and immobilize CO<sub>2</sub> in exhaust gas.

A modular unit Carbonel™ has been launched.

Technology for reducing CO<sub>2</sub> emissions through carbon capture and utilization/storage (CCUS) is attracting attention with the aim of achieving carbon neutrality by 2050. We are focused on the carbonation reaction, which involves the absorption and immobilization of CO<sub>2</sub> by fly ash, and more specifically the property wherein heavy metals are adsorbed into the fly ash and become insoluble. Through this, we have developed the accelerated carbonation technology (hereinafter abbreviated as ACT) that allows the fly ash generated in municipal waste incineration facilities to react with and immobilize CO<sub>2</sub> generated in those same facilities. ACT has been adopted in a commercial project in favor of full-scale demonstration tests which proved (1) to accelerate CO<sub>2</sub> utilization and (2) to reduce the consumption of chemicals for heavy metal stabilization, and construction of a plant is underway. We are also applying it as a modular unit for other by-products.



The demonstration plant enables full scale trials using diverse samples provided from clients.

(\*)O.C.O Technology Ltd.

# PHILOSOPHY



Corporate Philosophy

Slogan

## Keep the Earth Sky-blue



### Core Values of KOBELCO

- 1 We provide technologies, products and services that win the trust and confidence of our customers we serve and the society in which we live.
- 2 We value, and support the growth of, each employee on an individual basis, while creating a cooperative and harmonious environment.
- 3 Through continuous and innovative changes, we create new values for the society of which we are a member.

Details of Core Values of KOBELCO & Six Pledges of KOBELCO



### Six Pledges of KOBELCO

- 1 Uphold the Highest Sense of Ethics and Professionalism
- 2 Contribute to the Society by Providing Superior Products and Services [Quality Charter](#)
- 3 Establish a Comfortable but Challenging Work Environment
- 4 Live in Harmony with the Local Community
- 5 Contribute to a Sustainable Environment
- 6 Respect Each Stakeholder



The KOBELCO Group will comply with all laws, public standards, and customer specifications, and make continuous efforts to improve quality, with the goal of providing Trusted Quality in our products and services.

### Corporate Profile

Company Name	Kobelco Eco-Solutions Co., Ltd.
Head Office	4-78, 1-chome, Wakino-hama-cho, Chuo-ku, Kobe 651-0072 Japan
Capital	¥6,020 million
Licenses and certificates	Minister's construction business license by the Ministry of Land, Infrastructure and Transport (Civil work business, building work business, electric work business, piping work business, machinery installation business, telecommunications business, water service engineering business, cleaning facility installation business, demolition business), first-class architect office registration, environmental measurement proof office registration ●ASME code "U stamp" ●ISO 9001 certification ●ISO 14001 Approved ●ISO55001-certified (For the organization name and scope of registration, please refer to the certificate of registration and annex to certificate on the Our Company website.)
Affiliated Companies	Kobelco Eco-Maintenance Co., Ltd. / E.R.C. Takajo Co., Ltd. / Toyota Environment Services Co., Ltd. Fukui Green Power Co., Ltd. / MICAREA Co., Ltd.

Office information

# GREETING

Message from President

**We will contribute to creating a livable environment and a healthy life through our innovative thinking.**

The COP28 (Conference of Parties) was held at the end of 2023 against the backdrop of climate change and global warming over the past years, and the Member States agreed on a "transition away from fossil fuels," and this trend toward decarbonization will accelerate from this time forward. Needs for further energy saving and energy creation as well as carbon neutrality have been growing significantly in our business fields including not only the water/wastewater and waste treatment businesses, but also the supply of cooling towers for local communities' heating and cooling, and the pharmaceutical and fine chemical equipment business for fine chemicals and semiconductor manufacturing. We consider the trend of the times as our huge business opportunities.

Under these circumstances, we, Kobelco Eco-Solutions Group, set our goal for future business to become a company leading the way in carbon neutrality in the three-year FY2024–2026 medium-term business plan and will make every endeavor to achieve the goal. To this end, we will enhance the competitiveness of our existing businesses and acquire carbon neutral technologies to establish a solid business ground in the coming three years.

As for the existing businesses, we will further strengthen competitiveness by such activities as: establishing and systematizing the core technologies including decarbonization, honing our craftspersonship for manufacturing capability ("monozukuri"), and labor-force saving through digital transformation. To achieve a hydrogen energy-based society, we will broaden the product lineup of high-purity hydrogen oxygen generators (HHOG™). We will also definitely develop and launch further sophisticated products contributing to carbon neutrality and provide new products and services that meet customer and social needs by developing and acquiring new technology.

Our corporate vision is "To Support a future society that lives in harmony with the earth." In order to achieve this vision, we will contribute to achieving the SDGs through our businesses and to creating a healthy environment and lifestyles through our innovative thinking.

June, 2025

President,  
Representative Director,  
Hideki Okumura

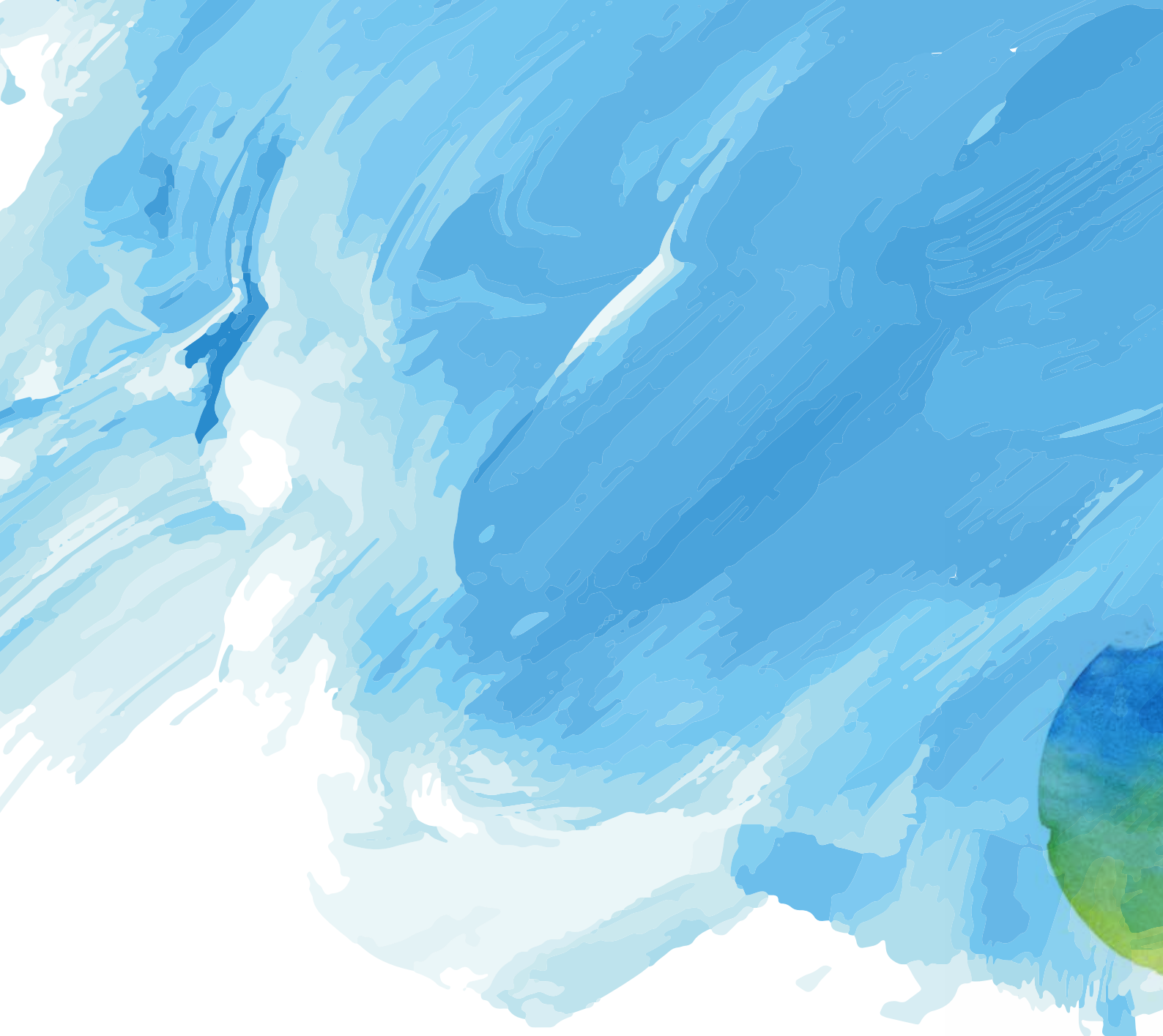


# HISTORY



Company History

- Nov. 1946 Our company started out as Glass-lined Product Department of Kobe Steel, Ltd. when a Glass-lined Plant was constructed on the premises of the Kobe Steel Yamanote Plant. Manufacturing of glass-lined product and sales for export were commenced from the following year.
- Jun. 1954 Kobe Steel, Ltd. made a technical tie-up with a US company Pfaudler, and spun off the Glass-lined Product Department and incorporated it as an independent company named "Shinko Pfaudler Co.,Ltd." with 90 million yen capital jointly invested by Kobe Steel and Pfaudler.
- Dec. 1957 Shinko Pfaudler broke into water treatment equipment business.
- Mar. 1962 Shinko Pfaudler broke into cooling tower business.
- Nov. 1962 Shinko Pfaudler broke into sewage and organic waste water treatment equipment business.
- Jul. 1976 Harima Factory was completed and commenced its operation. (Kobe Steel)
- Aug. 1978 First sewage sludge incineration plant was delivered. (Kobe Steel)
- Mar. 1982 First municipal waste incineration plant was delivered. Shinko Pfaudler Co.,Ltd. was renamed to Shinko Pantec Co.,Ltd.
- Oct. 1989 All manufacturing functions were put together into the Harima Factory, which then changed its name to Harima Manufacturing Plant. Technology Laboratory was set up in the Kobe Hightech Park. (Nishi Ward, Kobe City)
- Aug. 1994 Shinko Pantec was listed in the Second Section on the Osaka Securities Exchange. (Current Tokyo Stock Exchange)
- Jan. 1999 Shinko Pantec broke into PCB treatment business.
- Apr. 1999 Environment Analysis Center was set up, and started analytical services for specified chemical substances and microchemical substances.
- Feb. 2001 New headquarters was completed.
- Oct. 2003 The environmental business unit of Kobe Steel, Ltd. was consolidated into Shinko Pantec Co., Ltd, which was renamed to Kobelco Eco-Solutions Co., Ltd.
- Dec. 2005 Waste Management Final Disposal Site started its business.
- Nov. 2006 Kobe city placed an order with us for the first domestic "bio-gasification facilities" for refining biogas from sewage sludge with a high methane concentration.
- Apr. 2008 "Eco Station" at the Higashi-Nada Plant in Kobe City, a facility for supplying biogas started its operation.
- Apr. 2009 Vietnam Office was opened. (Ho Chi Minh city)
- Jan. 2010 Düsseldorf Office in Germany was opened. (Sep. 2019 It was merged into London Office)
- Oct. 2010 Injection of biogas from sewage into utility gas pipelines started at the Higashi-Nada Plant in Kobe City. (first case in Japan)
- Nov. 2010 Overseas affiliate, KOBELCO ECO-SOLUTIONS VIETNAM CO.,LTD. was established in Ho Chi Minh City, Vietnam.
- Jul. 2013 Kobelco Eco-Solutions was listed on the second section of Tokyo Stock Exchange.
- Jul. 2013 Vietnam overseas affiliate opened a Hanoi branch office.
- Oct. 2013 Vietnam overseas affiliate set up a factory for manufacturing glass-lined process equipment.
- Oct. 2014 Maintenance business was acquired from Kobelco Eco-Maintenance Co.,Ltd.
- Oct. 2015 Opened an office in Cambodia. (Phnom Penh city)
- Nov. 2015 "Notification of Commencement of Business" was filed in regard to production and sale of Euglena. (food ingredient)
- Apr. 2016 Wood biomass power generation plant started its operation at Ono City, Fukui Prefecture.
- Jan. 2017 Sales of Kobe Euglena started.
- Jul. 2018 MICAREA Co., Ltd. was established. (at Kobelco Eco-Solutions Head Office)
- Jun. 2019 The waste treatment facility business unit of IHI Enviro Corporation was merged into Kobelco Eco-Solutions Co., Ltd.
- Sep. 2019 Opened an office in the UK. (London)
- Oct. 2021 Kobelco Eco-Solutions Co., Ltd. was delisted from the second section of Tokyo Stock Exchange through the share exchange with Kobe Steel, Ltd.
- Nov. 2021 Kobelco Eco-Solutions Co., Ltd. became a wholly owned subsidiary of Kobe Steel, Ltd.
- Apr. 2024 Düsseldorf Office in Germany was reopened.



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