

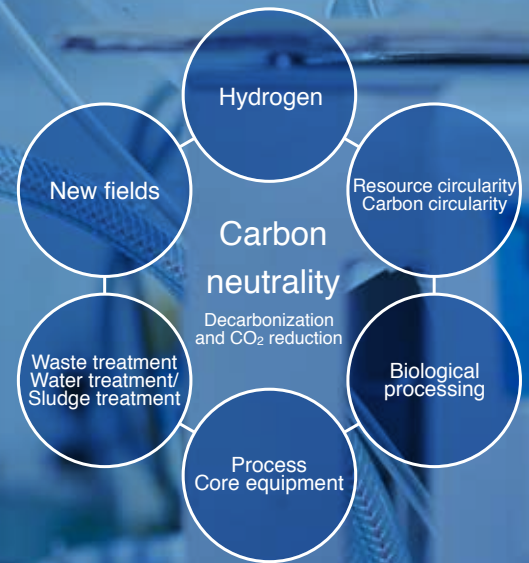
Technology Development

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.



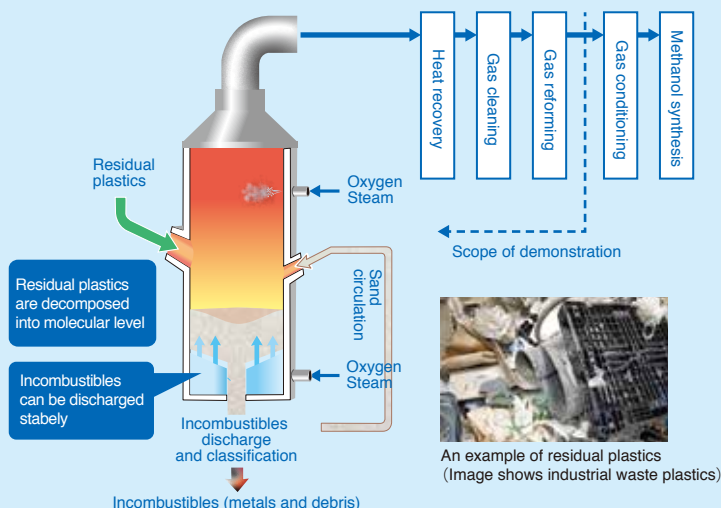
TOPICS 01

The Japanese first demonstration project for waste plastics gasification to methanol has now commenced.

- Selected for the Ministry of the Environment's "FY2022 Demonstration Project for a Plastic Resource Circulation System toward a Decarbonized Society" -

Residual waste plastics containing diverse impurities and materials are difficult to be recycled so that they have been generally incinerated with or without thermal recovery, or landfilled. To achieve sustainable circular and carbon neutral economy, chemical recycling of residual plastics is one of the solutions. Demonstration project for residual waste plastics gasification using fluidised bed gasifier, which is one of our core technologies, has been commenced in cooperation with front-end and back-end industries together with local authorities where the plant located. One of the objectives of this project are to demonstrate the generation of syngas suitable for methanol synthesis.

*[Representative] Kobelco Eco-Solutions [Partner company] DINS KANSAI Co., Ltd. [Cooperating companies] Daiel Kankyo Co., Ltd., Mitsubishi Gas Chemical Company, Inc., Mitsubishi Kakoki Kaisha, Ltd. [Cooperating local governments] Osaka Prefecture, Sakai City



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

TOPICS 02

Launched "ACT(Accerelated Carbonation Technology)" that makes APCr(Air Pollution Control residue) react with and immobilize CO₂ in exhaust gas.

The carbonation technology for APCr has been adopted in the Fukui City Waste Treatment Facility Development and O&M Project.

Technology for reducing CO₂ emissions through carbon capture and utilization / storage (CCUS) is attracting attention targeting carbon neutral by 2050. We are focused on the carbonation reaction, which involves the absorption and immobilization of CO₂ by APCr, and more specifically the property wherein heavy metals are adsorbed into the APCr and become insolubles. Through this, we have jointly developed with our partner(*) the ACT that allows APCr generated in municipal waste incineration facilities to react with and immobilize CO₂ generated in those same facilities. The ACT has been adopted in commercial project in favour of Full-scale demonstration tests which proved (1) to accerarate CO₂ utilisation (2) to reduce consumption of chemicals for heavy metal stabilisation. We are working on to deploy this technology to diverse waste feedstocks which can be carbonised.



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

(*)O.C.O Technology Ltd.