

December 13, 2021
Iwatani Corporation
Toyota Tsusho Corporation
JGC Holdings Corporation

**“Study toward the development of a regional low carbon hydrogen model
based on waste plastic gasification recycling in urban areas”
selected by NEDO as a commissioned project**
**— Targets the promotion of domestic hydrogen supply and plastic recycling
for decarbonization —**

A proposal titled “Study toward the development of a regional low carbon hydrogen model based on waste plastic gasification recycling in urban areas” (“Study” hereinafter) by three companies—Iwatani Corporation (“Iwatani” hereinafter, President: Hiroshi Majima), Toyota Tsusho Corporation (“Toyota Tsusho” hereinafter, President: Ichiro Kashitani), and JGC Holdings Corporation (“JGC Holdings” hereinafter, Chairman and CEO: Masayuki Sato)—has been selected for the Technology Development Project for Building a Hydrogen-based Society/Technology Development for Hydrogen Utilization in the Community/Study of Potential for Hydrogen Production and Utilization commissioned project of the New Energy and Industrial Technology Development Organization (NEDO).

Recognizing the importance of supplying domestically sourced hydrogen to achieve the Japanese government’s goal of carbon neutrality by 2050, this Study will consider the development of a supply chain of hydrogen produced by waste plastic gasification. There are growing demands to recycle plastics, as reflected by the passage of the Act on Promotion of Resource Circulation for Plastics in June 2021 (new law). The approach to chemical recycling by gasification to decompose plastics at the molecular level explored in this Study is expected to help raise recycling rates, thanks to its compatibility even with plastics comprising mixed materials or containing impurities that are typically ill-suited to material recycling*1 and monomer recovery by chemical recycling*2.

The proposed approach would rapidly establish a stable and low cost supply of low carbon hydrogen using waste plastics discharged from factories, households, and other sources in urban areas. The Study seeks to promote the use of hydrogen in areas such as power plants, which face a pressing need to reduce CO₂ emissions, various mobility services, and port facilities, and contribute to decarbonization and promotion of resource recycling across a wide range of fields through hydrogen supply.

■ Implementation period: FY2021-2022

■ Implementation structure: Lead contractor: Iwatani Corporation
Contractors: Toyota Tsusho Corporation
JGC Holdings Corporation

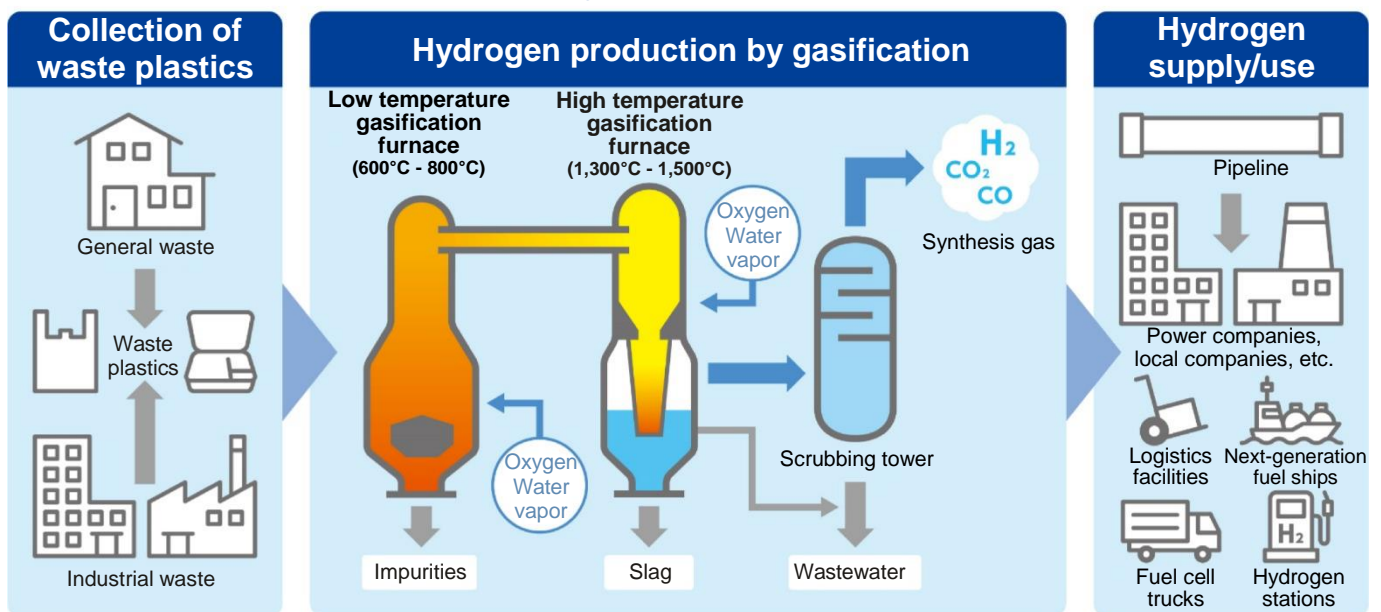
- Main roles:
 - Iwatani: Overall coordination, user research, study of transport methods, supply chain model assessments
 - Toyota Tsusho: Study of waste plastic recovery, user research, supply chain model assessments
 - JGC Holdings: Study of waste plastic recovery, study of hydrogen production through gasification of plastics, supply chain model assessments

■ Study specifics

Study of the potential for hydrogen production through gasification of waste plastics and models for community utilization in Aichi and Fukuoka prefectures

- Study of potential for hydrogen production
 - Study of potential for waste plastic recovery
 - Study of potential for hydrogen production through gasification of plastics
- Study of potential for hydrogen utilization
 - User research
 - Study of transport methods
- Study of comprehensive systems for hydrogen utilization
 - Supply chain model assessments

<Supply chain model>



We aim for early commercialization based on Study results.

*1 Method for recycling waste plastics though processing such as melting and molding while maintaining their molecular structures

*2 Method for recycling waste plastics by decomposing them into single molecular compounds (monomers), then polymerizing monomers thus obtained after removing impurities and refining