

# Hydrogen Leader City Project ~Demonstration of Hydrogen Generation from Sewage Biogas Source~

## Participants

Mitsubishi Kakoki Kaisha, Ltd., Fukuoka City, Kyusyu University, Toyota Tsusho Corporation Collaborative Research Body

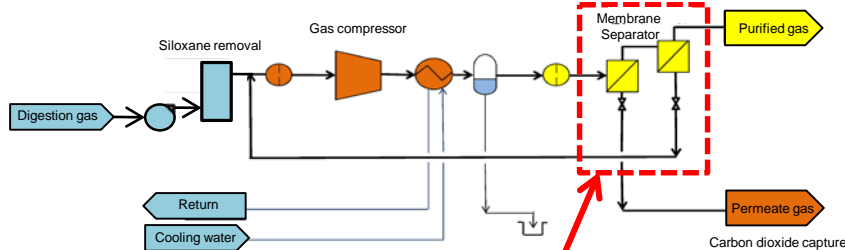
## Site of Demonstration

Fukuoka City Chubu Wastewater Treatment Center

## Outline of the project

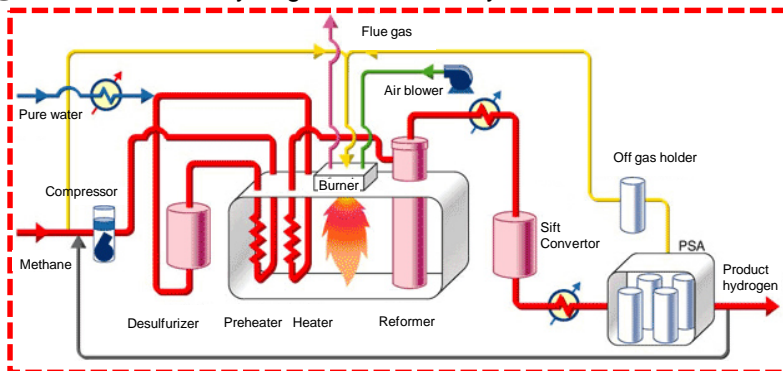
Demonstration plant consists mainly of digestion gas pretreatment facility, hydrogen production facility and hydrogen supply facility to produce pure hydrogen for Fuel Cell Vehicle (FCV for short) from digestion gas. Purpose of this project is to verify the quality of product hydrogen and overall production capacity and so on.

### ① Flow Sheet of Digestion gas Pretreatment system



Digestion gas is separated concentrated methane and CO2 by Membrane system

### ② Flow Sheet of Hydrogen Production system



The concentrated Methane is converted to pure hydrogen to supply the FCV

## ● Feature of Technologies

### ① Digestion Gas Pretreatment system

A membrane separator is installed as a pretreatment step to separate CH<sub>4</sub>/CO<sub>2</sub> and methane rich gas supply to hydrogen production system..

The effect is as follows

⇒ Improve the hydrogen production efficiency of hydrogen production system.

⇒ Improve stability of hydrogen production system.

### ② Hydrogen Production Technology

High purity hydrogen can be produce from digestion gas containing siloxane and high-boiling hydrocarbon.