

Challenges to Low Carbon Society

• Decarbonized Society

Towards future with Hydrogen, Liquefied Nitrogen and LNG

Future proposals from KITZ with hydrogen, liquefied hydrogen, and LNG.

Challenge 2021



Together with Future of Clean Energy

LNG (Liquefied Natural Gas), which has been in spotlight in recent years as safe and environment friendly energy source, contributes to control global warming since it produces less carbon dioxide compared with when combusting coal or oil. At KITZ, with our development of cryogenic valves (-196°C) for LNG plants, LNG carriers and LNG receiving terminals, and our experiences in supplying to receiving terminals in Japan, we will expand the scope of our contribution to supply LNG plants worldwide.

Scheduled to launch Large Size Ball Valves for Liquefied Hydrogen

-2023-

-2020-

Began development of International Standard Cryogenic Triple Offset Butterfly Valves

-2019-

Launched International Standard Cryogenic Globe Valves

-2018-

Began development of Large Size Ball Valves for Liquefied Hydrogen Service

-2017-

Began development of Ball Valves for Liquefied Hydrogen Service

-2016-

Began development of Globe Valves for Liquefied Hydrogen Service

Launched International Standard Top Entry Ball Valves for Cryogenic Service

Launched International Standard Trunnion Mounted Ball Valves for Cryogenic Service

Launched International Standard Gate Valves for Cryogenic Service

-2011-

Launched International Standard Two Piece Floating Ball Valves for Cryogenic Service

-2005-

Launched International Standard One Piece Floating Ball Valves for Cryogenic Service

-1995-

Launched Cryogenic Gate, Globe and Check Valves for Japan market



Natural Gas Mining Site

Refining and Liquefaction Facility

LNG Tank

Liquefied natural gas (LNG)

Offshore Natural Gas Mining Site

FLNG (Floating LNG)

LNG Terminal • Transportation Facility

Administration Building • Control Center

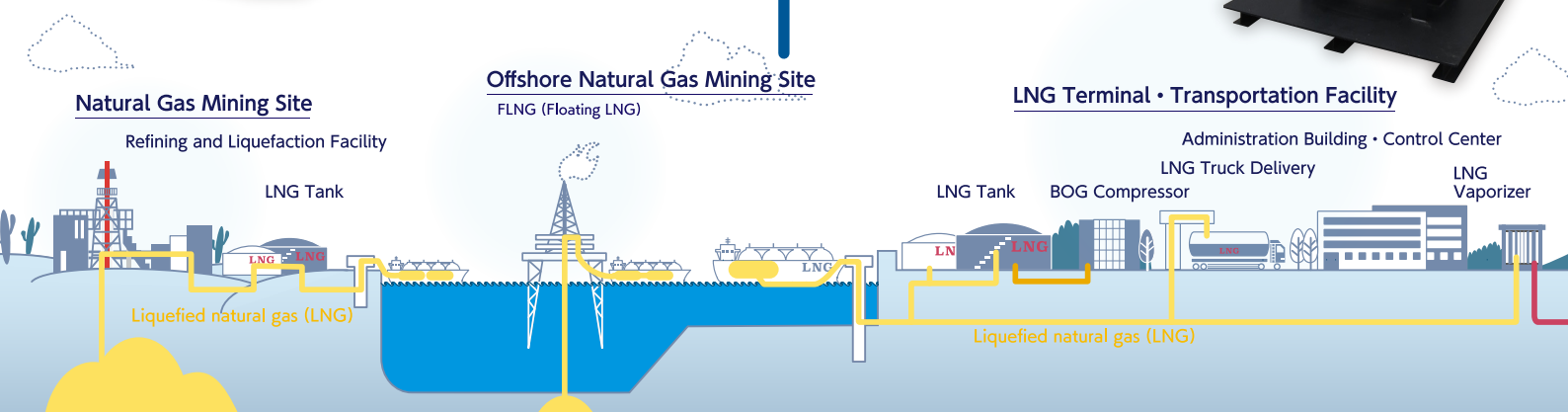
LNG Truck Delivery

LNG Tank

BOG Compressor

LNG Vaporizer

Liquefied natural gas (LNG)



Contributing to a society aiming Zero Emission

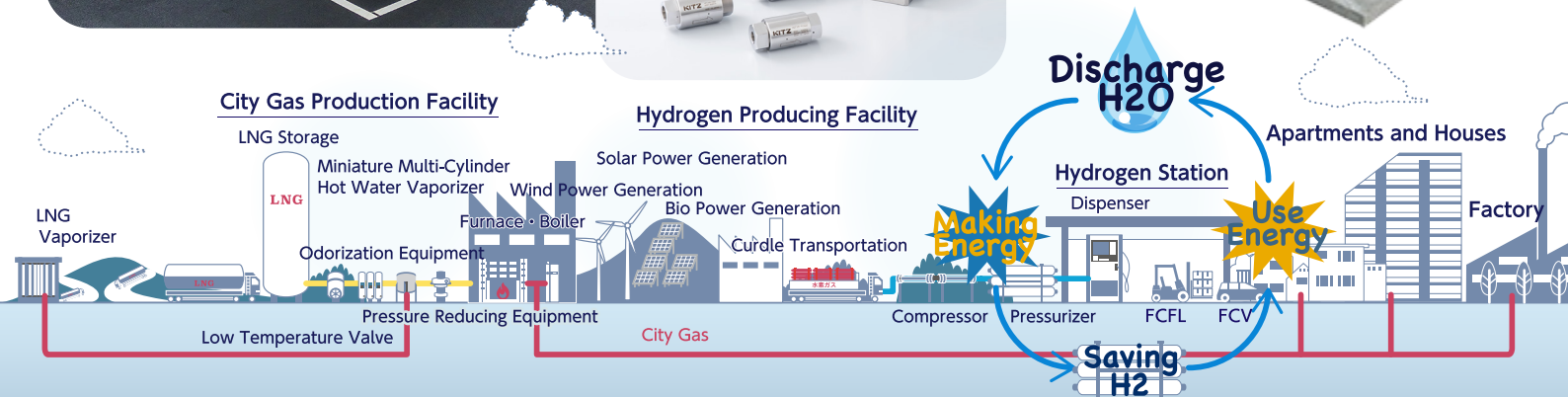
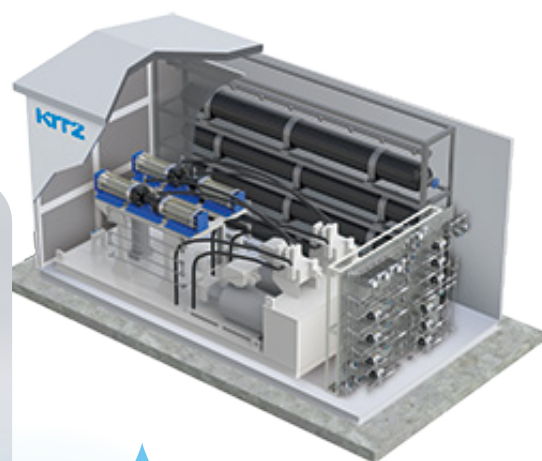
We are also challenging to contribute to realize decarbonized society by supplying valves to green hydrogen supply facilities produced by renewable energy.

We are taking on a challenge of developing cryogenic valves (-253°C) for liquefied hydrogen facilities used at hydrogen receiving terminals and carriers.

Moving now to the future.

We have developed and supplied high-pressure valves to hydrogen stations for Fuel Cell Vehicles, which will be the future of our transportation.

We are challenging to realize clean hydrogen energy society by having hydrogen test station in our company and actively participating in hydrogen station business.



Challenges to contributing in Low Carbon Society

•Decarbonized Society with Industry•Government

•Academic collaboration.

[Introduction of Participating Projects by Kitz Corporation]

●NEDO Projects

(New Energy and Industrial Technology Development Organization, National Research and Development Agency)

●HySUT

(The Association of Hydrogen Supply and Utilization Technology)

●FCCJ

(Fuel Cell Commercialization Conference of Japan)

●Fukuoka Strategy Conference for Hydrogen Energy

KITZ also participates five other projects besides above.

We have been participating in NEDO (New Energy and Industrial Technology Development Organization, National Research and Development Agency) projects since 2008 and have been developing technologies for NEDO projects.

In 2018, the company succeeded in developing ball valves for hydrogen stations that can encapsulate ultra-high pressure hydrogen gas of 98 MPa, and started its sales.

In addition, CLESTEC Series (Valve Series for Hydrogen Station) of check valves, needle valves and filters were launched.

Construction of hydrogen stations in Japan began in 2013, and as of December 2019, approximately 110 stations have been built. And at most of these hydrogen stations, KITZ CLESTEC Series (Valve Series for Hydrogen Station) have been installed.

In addition to supplying individual valves, from April 2020, we have entered hydrogen station package unit business, which integrates necessary equipment for hydrogen stations into a package using our CLESTEC Series, taking advantage of its features such as efficient piping and large flow control. We believe by supplying hydrogen station package unit will greatly contribute to cost reduction and shortening of construction period at the construction site, and will help promote the development of hydrogen supply infrastructure.

Furthermore, from 2019, in view of future transportation of hydrogen as an energy source, we are promoting our contribution to the hydrogen society as one of the themes to develop ball valves for liquefied hydrogen to be used at cryogenic temperature of -253℃.



The Ministry of Economy, Trade and Industry (METI) has selected us, KITZ, as one of the companies to take on the “Zero-Emission Challenge” , in recognition of our efforts through NEDO (New Energy and Industrial Technology Development Organization, National Research and Development Agency) projects, “Development of technologies for cost reduction of hydrogen stations in Research and Development Project for

Full-Scale Dissemination of Ultra-High-Pressure Hydrogen Infrastructure” and “Technical development of large size valves for liquefied hydrogen in the Development Project for Technology to Build a Hydrogen Society” .

“List Companies Taking on the Zero-Emission Challenge” is selected by the Ministry of Economy, Trade and Industry (METI) as companies which boldly takes on the challenge of innovation to realize carbon free society. Initial announcement includes 320 companies listed under the government's "Reformed Environmental Innovation Strategy" and 28 projects by METI and NEDO has been released.

