Valmax Technology Corporation

Head Office & Asan Factory
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Republic of Korea

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Company Profile

Valmax Technology Corporation

System Integration Expert for Energy Solution

ABOUT COMPANY

VALMAX Technology Corporation was founded in 2002 by a group of engineers with extensive experience in the development of custody transfer metering and process control systems related to natural gas, industrial gases and oil products.

Based on about 20 years experience, we will be your strong business partner when it comes to system integration for energy solutions in the field of power plant, petrochemical & refinery, hydrogen and LNG business.

In addition, as a member of the Hydrogen Energy Network (HyNet), we entered the hydrogen refueling station business and actively participated in the government's hydrogen economy plan, leading the era of low carbon green energy.

We are continuously pursuing innovation to maximize customer value by developing various energy solutions related to hydrogen and natural gas in line with the global eco-friendly low-carbon trend.

Also, we will continue to fulfill our social responsibility for the better future by providing customized management and eco-friendly energy solutions.
Valmax Technology Corporation is becoming the global leader, and please keep eyes on our journey with interest and affection.

Eco-friendly energy solutions

Customized management

Global leader

ASAN FACTORY

Located Asan city, VALMAX's factory have all facilities for the fabrication, inspection and test of control panels, analyzer systems, mechanical, piping and steelwork fabrication and system assembly.

A manufacturing operation involves several steps sourcing of raw materials, preliminary processing, production and assembly, quality control and testing, labeling and packaging, distribution/transportation.

And also, we have co-work with specialized companies for professional blast chemical cleaning, welding and coating.

VALMAX's factory has a No.1 workshop using for stainless shop and No.2 workshop using for carbon steel shop. And each workshop has a crane of 50 tons and 5 tons.

OFFICE
· 1st Floor : 381 ㎡
· 2nd Floor : 611 ㎡

NO.1 WORKSHOP
· Ceiling Crane (max. 50 Ton)
· Size : 16m (H) X 72m (L) X 27m (W)

NO.2 WORKSHOP
· Ceiling Crane (max. 5 Ton)
· Size : 11m (H) X 72m (L) X 27m (W)

About VALMAX

BUSINESS ITEMS

Great Value Creator for the future

Power Plant

- **Fuel Gas Conditioning System**
- Custody Metering System
- Analyzer System
- CEMS
- AQMS

Oil & Gas

- **Custody Metering System**
- **Analyzer System**
- CEMS
- AQMS

Hydrogen Solutions

- Hydrogen Refueling Station
- Hydrogen Dispenser
- **Water Electrolysis System**
- Hydrogen fuel cell system

(Hanwha Ocean's charging and discharging area description)

LNG Solutions for Shipbuilding & Offshore & Onshore

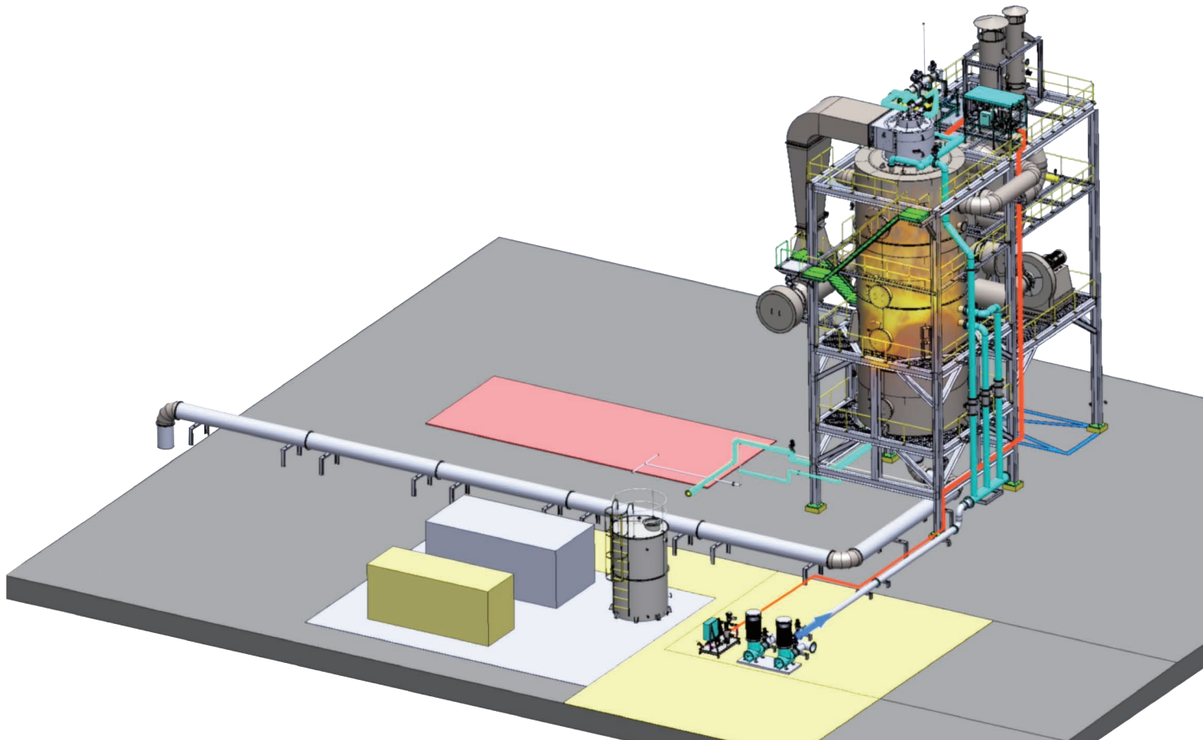
- **Combined IGG GCU**
- **Fuel Gas Supply System**
- **LNG Bunkering Station**
- BOG Re-Condenser
- LNG Fueling / Satellite Station
- LNG / H2 Fueling / Satellite Station

MARINE SOLUTIONS

LNG is a sustainable, widely available and cost-effective alternative fuel and an important driving force of modern shipping.

Using LNG as power source comes with a unique set of design and engineering challenges, requiring strict temperature and pressure control mechanisms to manage potential complications, such as boil-off-gas and methane slippage.

Based on more than 20 years of know-how and technology in the gas field, VALMAX is opening up new market in LNG solution for shipbuilding and offshore.

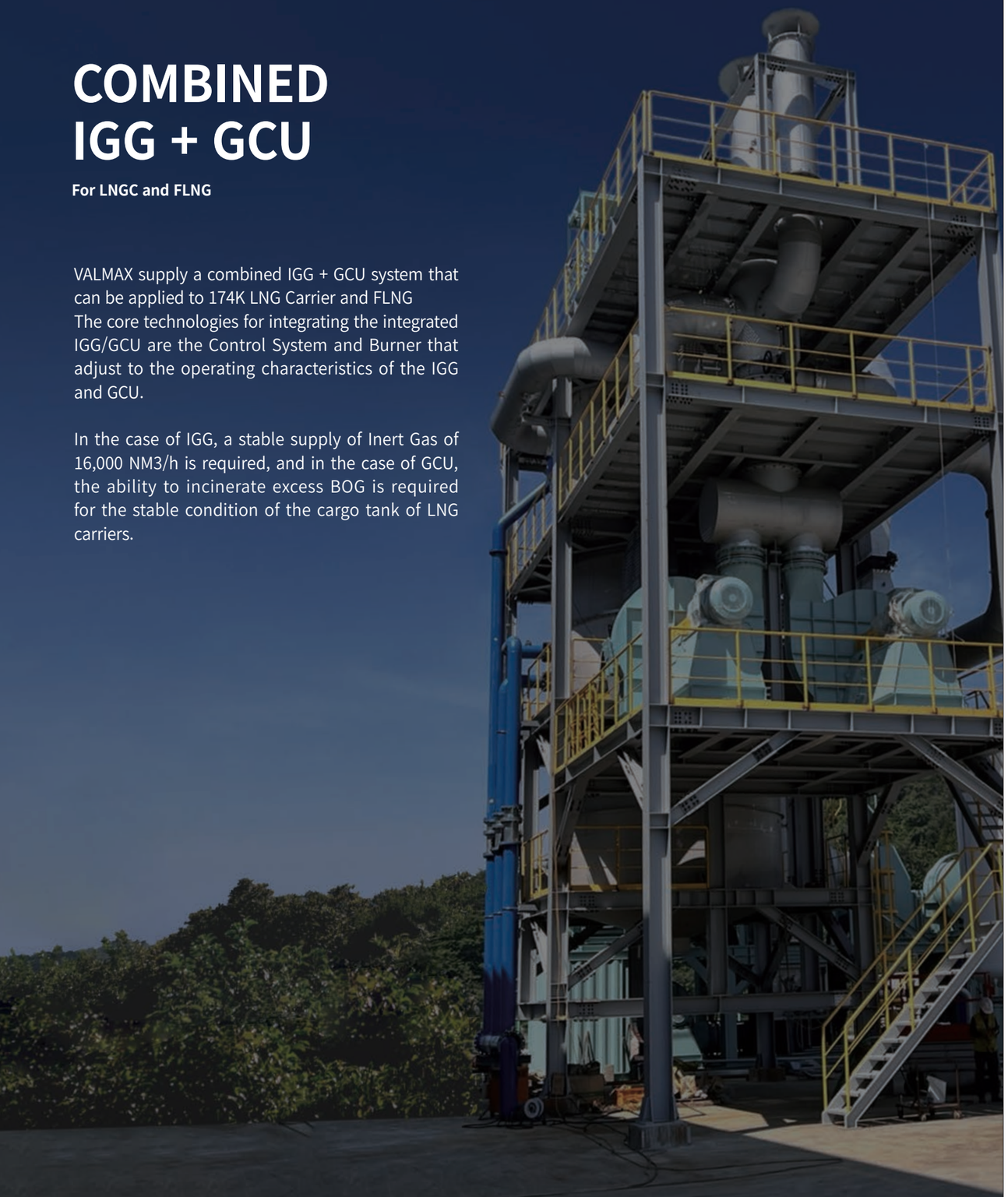


COMBINED IGG + GCU

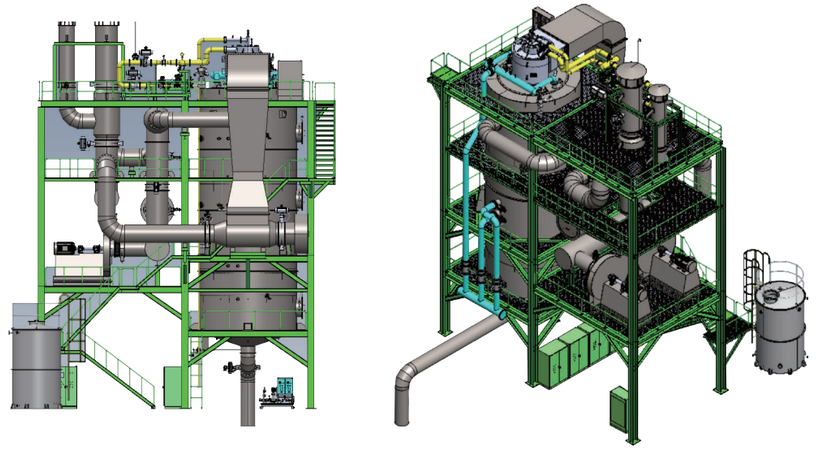
For LNGC and FLNG

VALMAX supply a combined IGG + GCU system that can be applied to 174K LNG Carrier and FLNG
The core technologies for integrating the integrated IGG/GCU are the Control System and Burner that adjust to the operating characteristics of the IGG and GCU.

In the case of IGG, a stable supply of Inert Gas of 16,000 NM3/h is required, and in the case of GCU, the ability to incinerate excess BOG is required for the stable condition of the cargo tank of LNG carriers.



	Performance IGG	Performance GCU
Capacity	Up to 27,000 Nm^3/h	Up to 5,500 kg/h BOG
Normal outlet Pressure	0.25 bar(g)	0.10 bar(g)
The Gas Composition when running the system at O_2 = 1~2 Vol%, based on Class DMA or DMB distillate fuel, is defined in the below	Carbon monoxide (CO) = Max. 100 ppm (114 mg/m^3) Nitrogen oxides (NOx) = Max. 100 ppm (126 mg/m^3) Sulphur dioxide (SO2) = Max. 10 ppm (26 mg/m^3) N2 + Ar + CO2 = Balance Paticles (Soot) = Bacharach 0	
Oxygen content adjustable	Down to 0.5 Vol%	Down to 3.0~8.0 Vol%
Gas outlet	Typical 10~15°C	Typical 10~40°C
Dew point at dryer unit outlet	Max. -45°C	
Fuel	Marine distillate according to ISO 8217 DMA or DMZ.	Marine distillate according to ISO 8217 DMA or DMZ.
Norminal fuel consumption	0.084 kg/Nm^3 gas	
Norminal sea water consumption	0.058 kg/Nm^3 gas	0.76 kg/h BOG (Seawater temp. max 32°C)
Norminal el.power consumption excluding seawater pumps	0.04 kW/Nm^3/h gas (0.06 kW/Nm^3/h gas if el.heater in operation)	0.26 kW/kg/h BOG

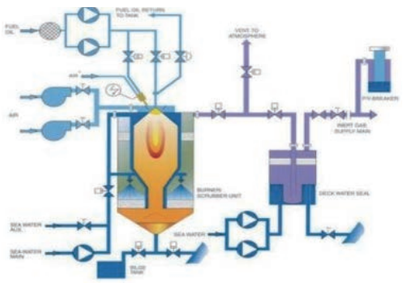


<Configuration of Cargo Combined IGG + GCU>

COMBINED IGG + GCU

For LNGC and FLNG

AS-IS

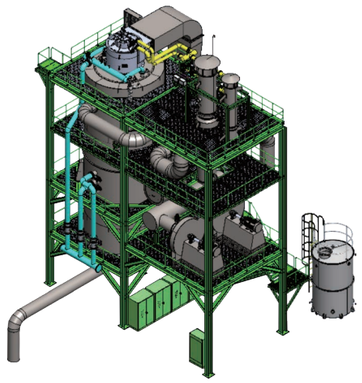


In LPG carriers, GCU and IGG
are essential core equipment.
Overseas advanced companies have
already developed integrated GCU/IGG
and are installing them on actual ships.

Korea ranks first in the market share
of large LPG carrier shipbuilding,
but relies on advanced overseas companies
for key equipment

LPG carriers are expected to expand
their market in the future,
but there are no domestic products

TO-BE



The integrated GCU/IGG is in the early stage of the
market, integrating the core process system
of proven element technology,
securing performance at the practical level

Development of competitive products
based on modularization technology,
optimal control technology,
and domestic application of core components
(gas burners)

BOG Fuel-Using Integrated Gas Combustion System/
Development of Non-Explosive Substituted Gas System
and Injection Nozzle

Development of a dual fuel burner that can burn
both MDO (Marine Diesel Oil) and BOG fuel

Development of an optimized control system for
integrated IGG/GCU BOG fuel supply

Development of HIL Simulator System
Reflecting Control Logic

Through demonstration tests,
complete combustion was verified by
maintaining an oxygen concentration of
1~2% in the exhaust gas

SCRUBBING SYSTEM

In the Combined IGG-GU system, seawater serves two key roles - as a cooling medium for boil-off gas combustion and as a scrubbing agent for exhaust gas treatment. The energy-saving scrubbing system adjusts seawater flow based on operating mode IGG or GCU reducing seawater pump power consumption and helping conserve generator fuel

DUAL FUEL BURNER

The dual-fuel burner, engineered for efficient combustion of both Marine Diesel Oil (MDO) and Boil-Off Gas (BOG), offers fuel flexibility and optimal performance, while fully complying.

COMBINED IGG GCU

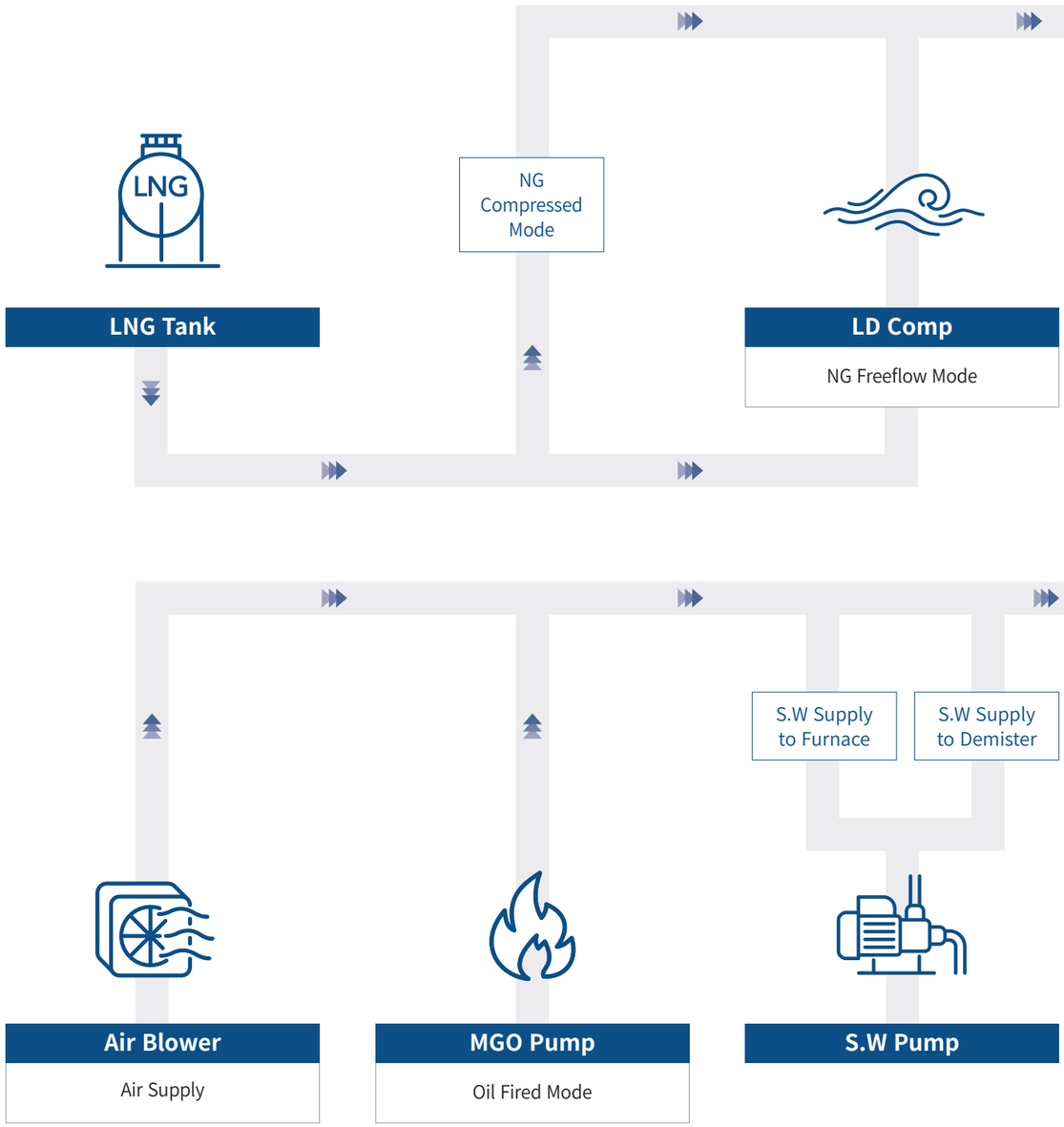
The IGG and GCU, key components of the LNG carrier cargo handling system, are integrated to offer two functions in one unit through different modes. This not only improves boil-off gas utilization efficiency but also simplifies maintenance and maximizes space efficiency within the limited space of the vessel.

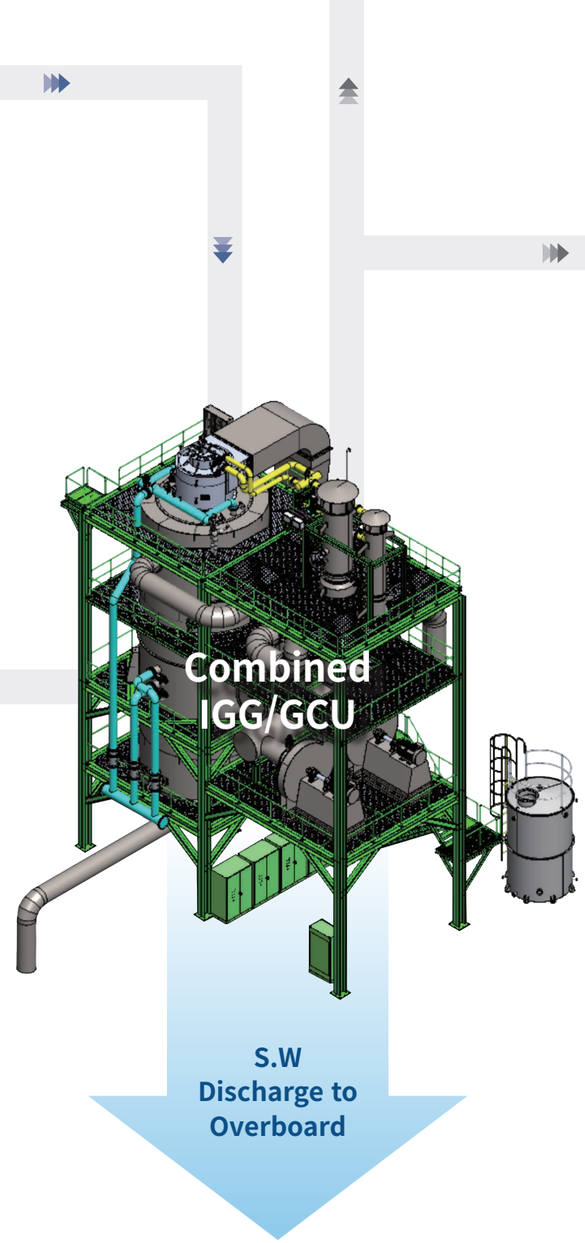
COMBINED IGG + GCU

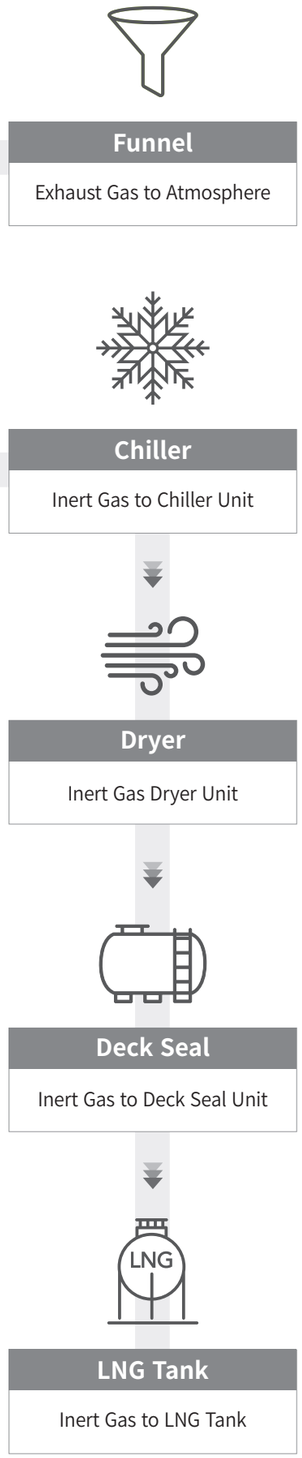
For LNGC and FLNG

Application of integrated IGG/GCU

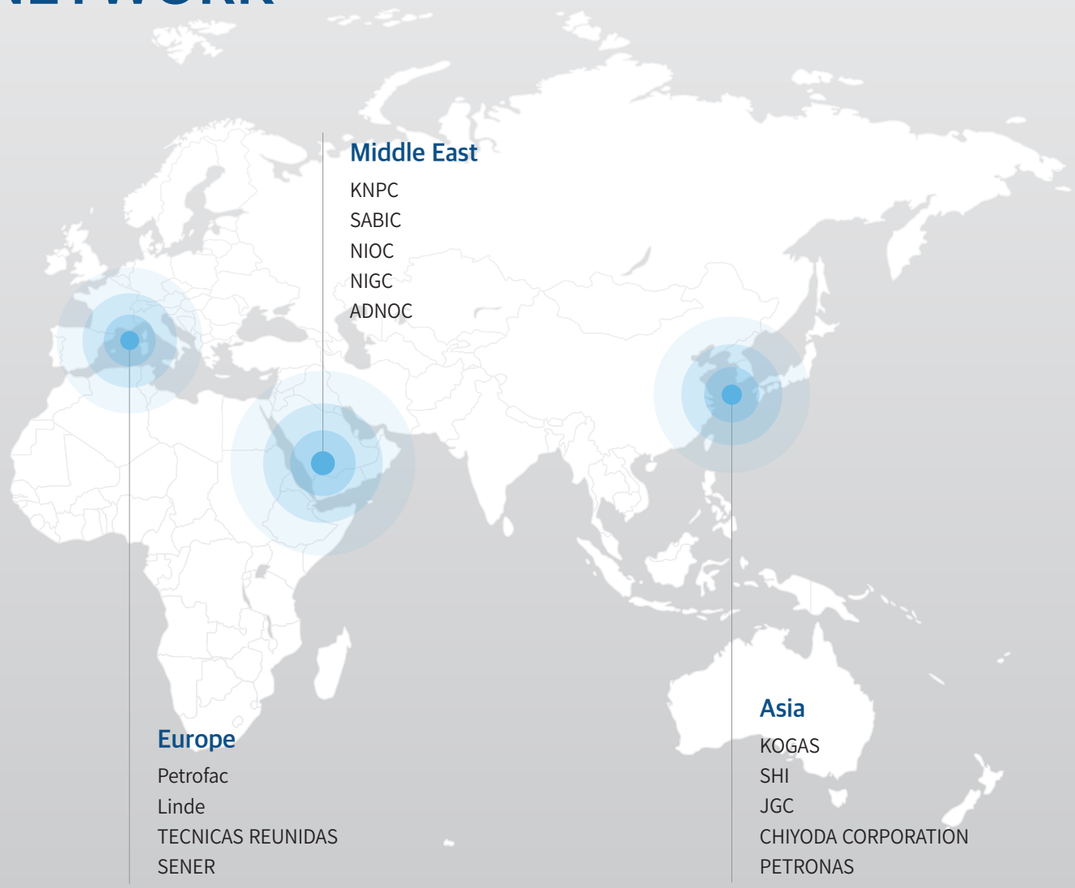
Integrated IGG/GCU: Integrated gas combustion system/non-explosive replacement gas system The IGG and GCU are integrated to share the combustion chamber of the two equipment, and the total number of equipment is reduced to secure additional space in the engine room.







NETWORK



Middle East
KNPC
SABIC
NIOC
NIGC
ADNOC

Europe
Petrofac
Linde
TECNICAS REUNIDAS
SENER

Asia
KOGAS
SHI
JGC
CHIYODA CORPORATION
PETRONAS

END USER & CUSTOMER

KOGAS · SAMSUNG HEAVY INDUSTRIES · sabic · PEMEX · KNPC · NIOC · NIGC · ADNOC · PETRONAS

GLOBAL EPC CONTRACTOR

Petrofac · TECNICAS REUNIDAS · CBI · JGC · CHIYODA CORPORATION · SENER · Linde

America
CB&I
PEMEX

A GLOBAL LEADER
IN SYSTEM INTEGRATION FOR ENERGY SOLUTIONS

GLOBAL
A company with the best technology

LEADERSHIP
A company that leads the energy market with challenge and passion

ENERGY SOLUTIONS
A company leading the low-carbon green energy market

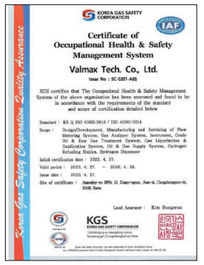
VENDOR REGISTRATION CERTIFICATE

ASME

CSEL

ISO 9001

ISO 14001 : 2015



ISO 45001 : 2018