www.valmax.co.kr

Valmax Technology Corporation

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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.

Asan Factory

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)

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

And also, we have co-work with specialized companies for professional blast 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.

Power Plant / Oil & Gas

- Fuel Gas Supply System / Governor Station
- Custody Metering System
- Analyzer System

Oil and gas industry operates through a global supply chain that includes domestic and international transport, trading, shipping, ordering, and inventory visibility and control.

Typically, the supply chain is divided into three segments. The upstream segment finds and produces crude oil and natural gas. The midstream segment handles the processing, storing and transporting of energy commodities. And the downstream segment encompasses oil refineries, retail outlets and natural gas distribution companies.

VALMAX is supplying a wide rage of products that span these oil and gas supply chains with high degree technology and over 20 years experience.

Fuel Gas Supply System Package / Governor Station

High efficiency and Single point responsibility

Fuel gas supply system is designed to purify natural gas and it can be more efficiently utilized by the gas turbine of power plants. This effective system is important because it prevents damage to the gas turbine and increases the overall efficiency of the system.

VALMAX has many world-wide references, very flexible and familiar with local regulation for certain countries.

Specialized Know-how

- Many reference for EPC Turnkey project
- Responds swiftly to dispatch engineers to site including overseas
- Saving opportunity cost
- Long term commitment by maintaining the contract without claim
- Over 95% market share in Korea for high pressure field

System Integration with

- ESDV / Filter Separator Station
- Suction Scrubber
- Electric / Water Bath Heater
- Pressure regulator
- Metering Station
- HMI Control

VALMAX is only one company which has many references for EPC Turnkey project in Korea.

According to complicate local regulation, in own personnel current performs that integrated environment permitting system (license), other permission, basic design, detailed design (process, piping, equipment, electric, instrumentation & control, civil, architecture, fire fighting, HVAC, electric corrosion), fabrication design, equipment production, commissioning & comprehensive start-up, erection and site service (Site Maintenance & Supervision).

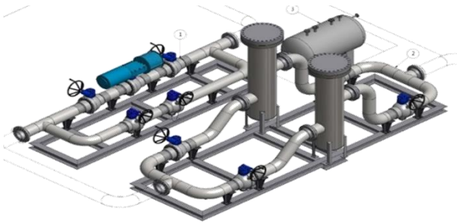
VALMAX is a specialist for Governor Station having outstanding performance and maintenance work for four (4) of the most extensive Combined Cycle Power Plant in Republic of Korea such as the Jangmoon(1,820MW), Yeoju(1,000MW), Wirye(450MW) and SK Hynix Smart Energy Center - Icheon/Cheongju(600MW) Combined Cycle Power Plant.

Configuration of Fuel Gas Supply System / Governor Station

① ESDV Station

② FILTER Station

③ HEATER Station



④ PRV Station

⑤ Metering Station (Flow Measurement)

Custody Metering System

Trusted and Sustainable Performance

Custody Metering System at the delivery point where oil or gas is changing hands forms the basis for invoicing. Every cubic meter of product has to be accurately accounted for its delivery conditions (such as pressure, temperature, contaminants and energy value) closely monitored and recorded.

Metering systems in oil & gas industry have rapidly evolved in terms of sophistication, accuracy and reliability; countless factors have to be taken into account in the design of a metering system, requiring multi-disciplinary specialists with very specific experience and knowledge.

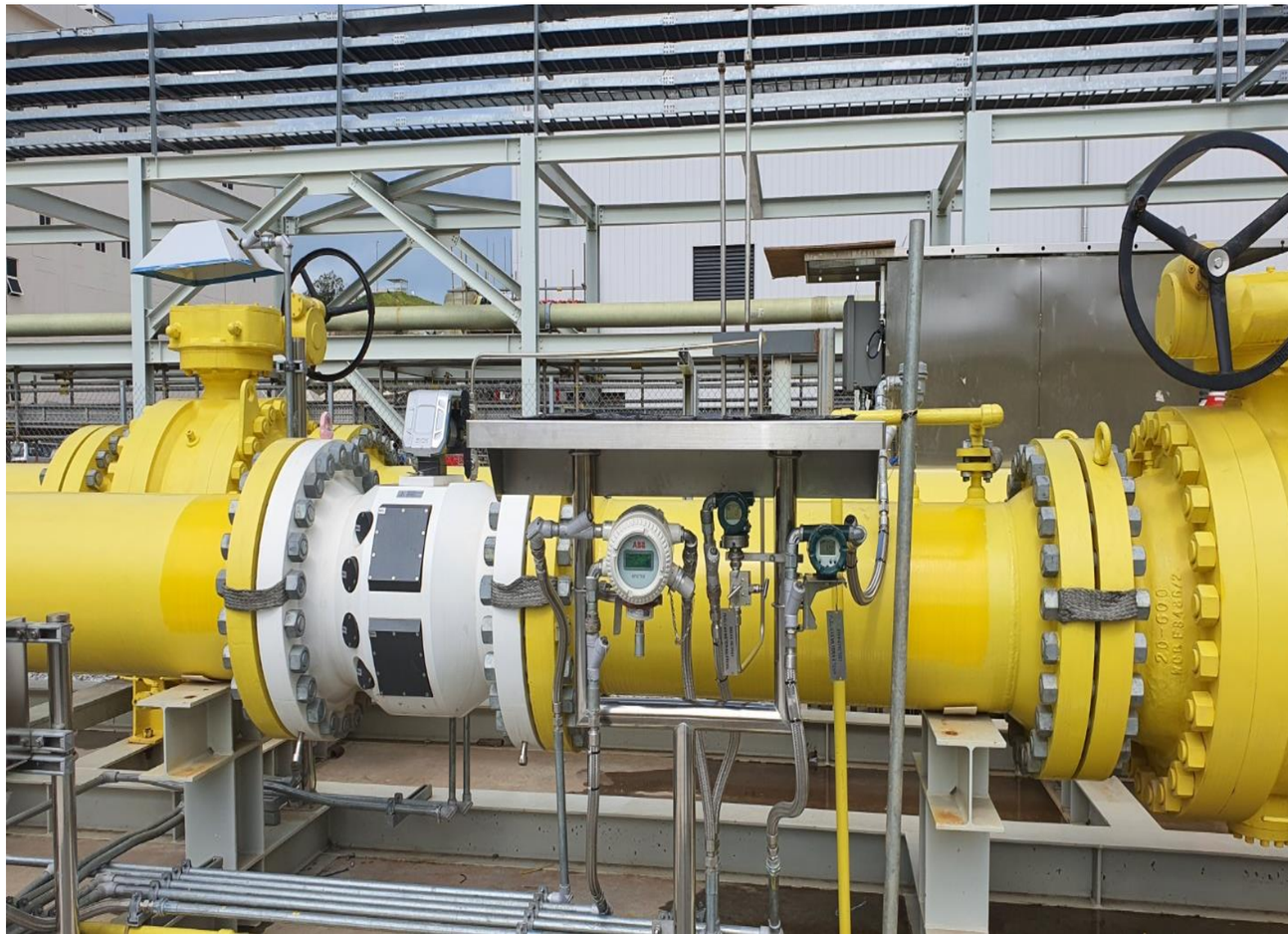
High Accuracy

- Highly accuracy and Real Time Monitoring with
  - Flow Meter, Flow Computer, Gas Chromatograph, Transmitter Motorized Valve, Prover and HMI

Various Application

- Gas, Oil and Liquid
- Truck and Rail Loading System
- FSRU, LNG Carrier
- Pipelines, Power plants, Heavy Industry
- Oil Refinery, Ship Loading & Unloading

This system can be supplied complete with flow computers, supervisory & HMI systems and PLC or DCS based control systems, packaged analyzer systems and any other ancillaries that may be required. We supply custody metering system with high accuracy in compliance with various customer requirement.



Analyzer Package System

Solution for measurement for Gas & Liquid

Analyzer Package System provides solutions for gas and liquid measurement for chemical composition, physical or chemical properties at the production site as well as it can also provide a significant economic return when incorporated into process optimization and advanced control loops or when used for product quality control.

High Production Capacity

- Korea's largest production facility compared to competitors
- High concurrent production capacity

Flexibility

- Optimal customized system supply
- Rich experiences & know-how in various measurement fields
- Easy to control, operating & monitoring system
- Certified systems for hazardous area application

System Integration With

- Process and Natural Gas Chromatograph (ABB or equivalent)
- Gases / Dew Point / Moisture Analyzer
- pH, Conductivity, TOC, Oil in Water, Wobbe Index Analyzer and etc.
- Analyzers for VOCs, PAHs, BTEX and Sulfur compounds
- Odorant (THT, TBM and etc) Analyzer for LNG Industry

Analyzer Package Systems can be supplied complete with sample take-off and conditioning, fully assembled, in pre-fabricated analyzer shelters with explosion-proof HVAC, fire and gas detection. Ready for installation on site with only minimum of field connection to be made.

Hydrogen Solutions

- Hydrogen Refueling Station
- Hydrogen Dispenser

Hydrogen is a zero-emission fuel burned with oxygen. It can be used in fuel cells or internal combustion engines.

It has begun to be used in commercial fuel cell vehicles, such as passenger cars, and has been used in fuel cell buses for many years. It is also used as a fuel for spacecraft propulsion.

The KOREA government announced that the roadmap for hydrogen economy in January 2019 so that KOREA can build the world's vest hydrogen economy.

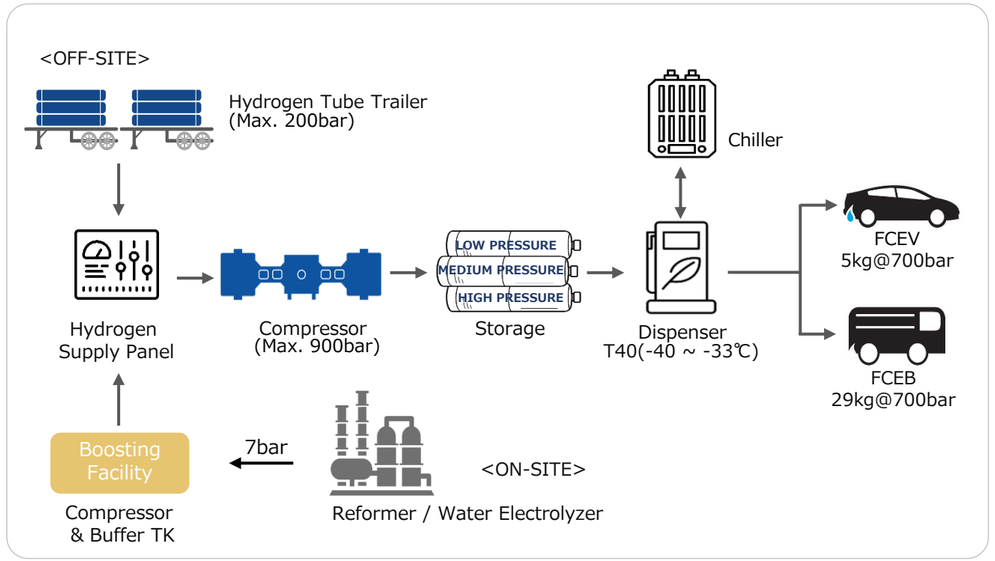
With regard this, VALMAX is focusing on building a hydrogen refueling station to activate and lead hydrogen industry.

Hydrogen Refueling Station (HRS)

Eco-friendly Energy : Hydrogen

Hydrogen energy is clean, pollution-free and an ideal energy source because it enables clean and highly efficient fuel cells that convert hydrogen into electricity.

We provide more efficient design, engineering, manufacturing, commissioning, training and service for hydrogen charging systems to meet customer requirements. Our Hydrogen Refueling Station (HRS) is manufactured as package module to minimize installation location and shorten construction period.

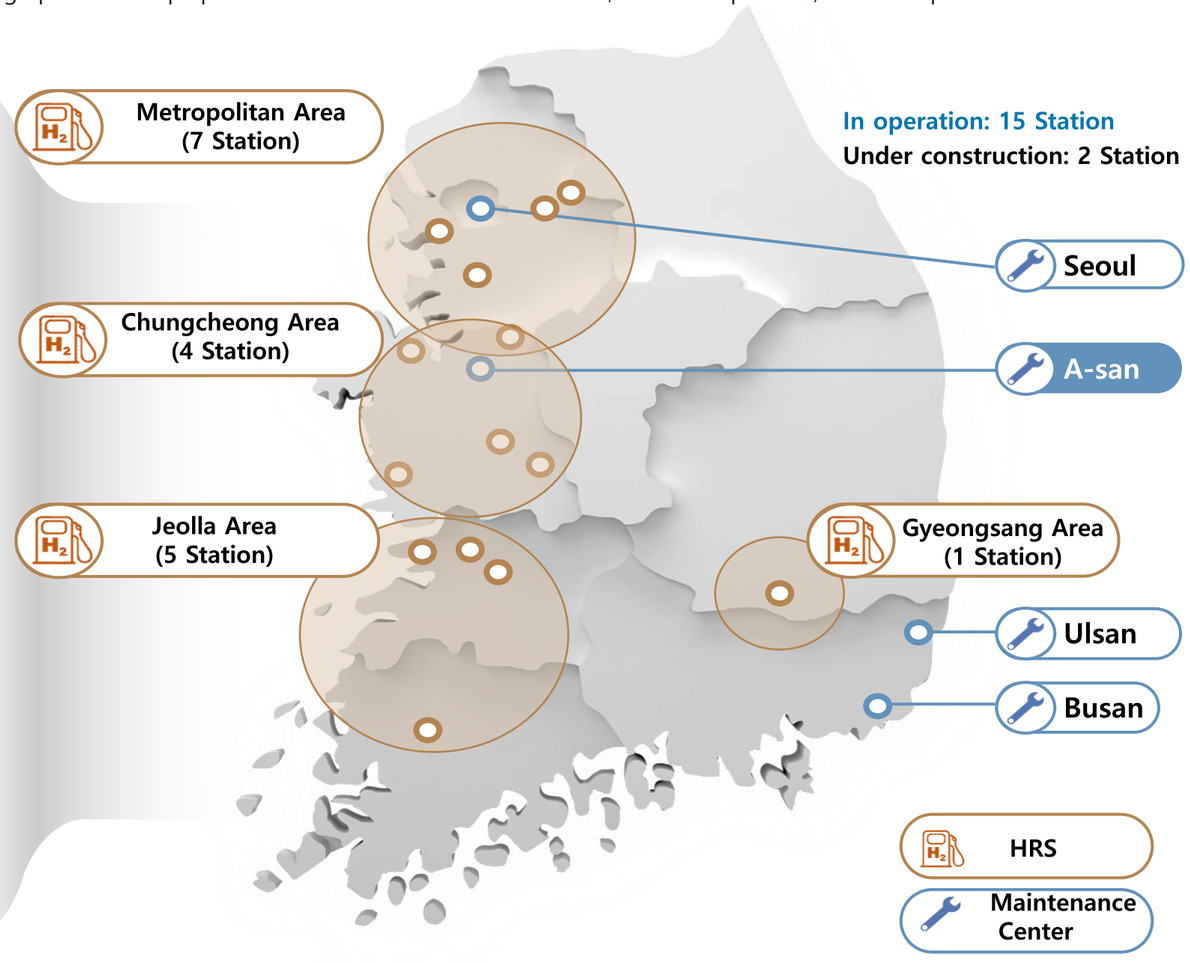


	Model	Capacity	No. of Charging Car / day
On- Site	Hygeia-100	170kg/day	34
	Hygeia-200	415kg/day	83
	Hygeia-300	500kg/day	100
Off- Site	VMX-250	250kg/day	50
	VMX-500	500kg/day	100
	VMX-750	750kg/day	150
	VMX-1000	1000kg/day	200

Hydrogen Refueling System

Eco-friendly Energy : Hydrogen

Valmax Technology's hydrogen charging station business is currently being operated and prepared in 16 locations. It is based on EPC, 13 are in operation, and 3 are planned to be built.



Water Electrolysis System

PEM Type

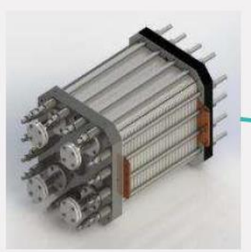
PEM is the best technology to produce hydrogen from renewable energy.

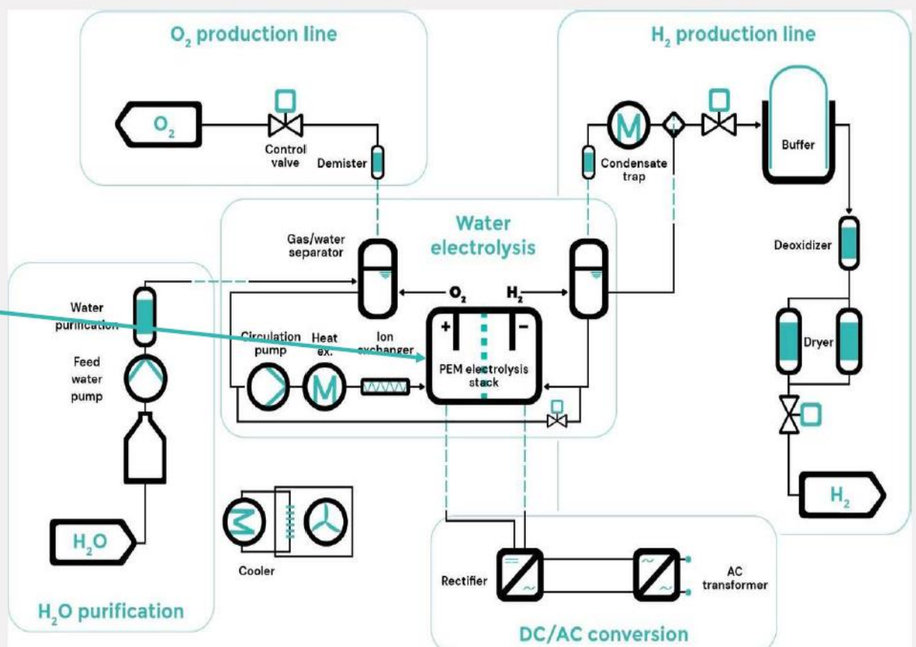
PEM means Proton Exchange Membrane.

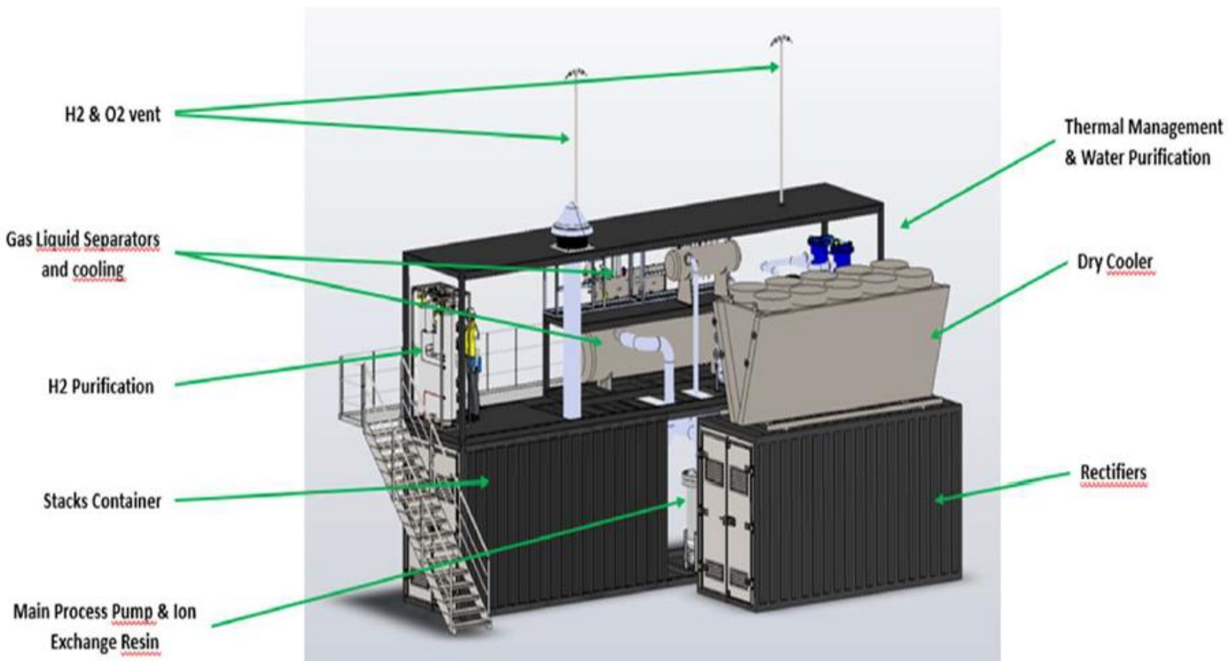
In the PEM electrolysis cell, direct current is used to separate water molecules into hydrogen and oxygen gas.

The electrolyte, which separates the electrodes, is a very thin proton-permeable membrane. PEM electrolyzer is very compact and respond quickly to change in power supply.

And Valmax is a leading installation and supplier of PEM electrolyzer in Korea.







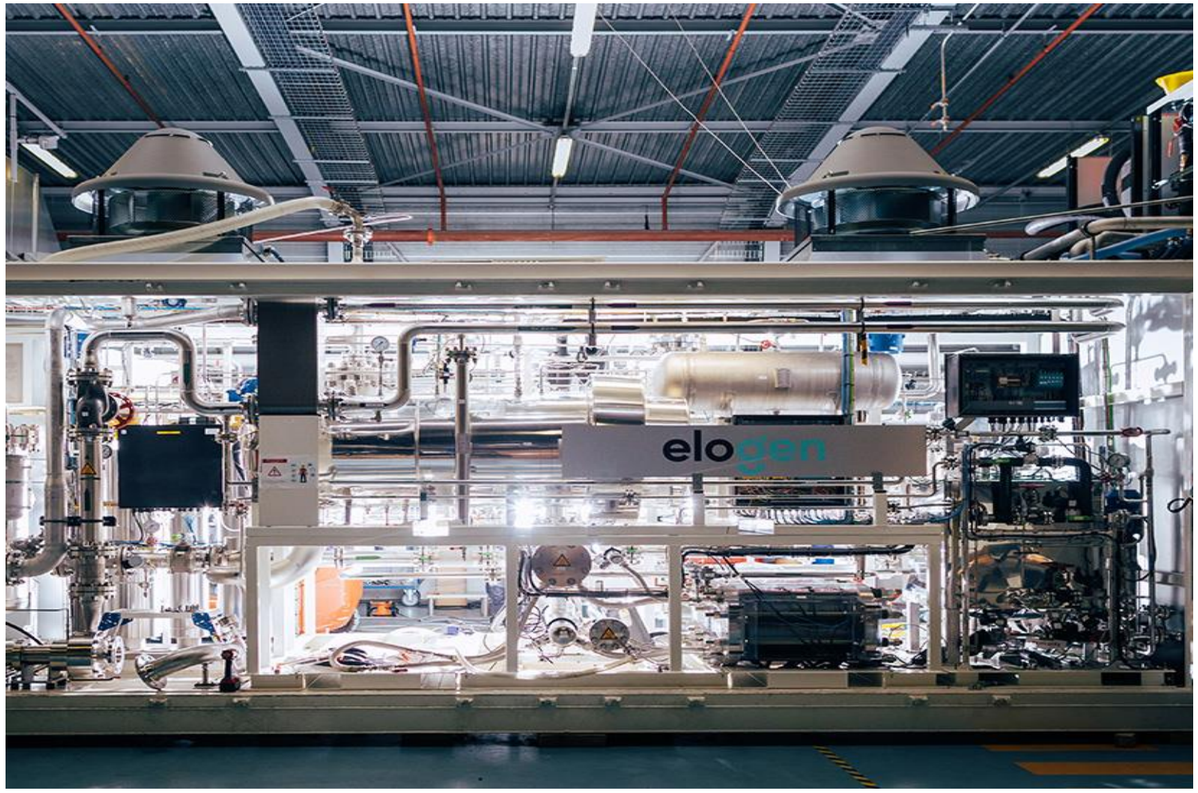
elogen | Empowering a sustainable world

Water Electrolysis System

Eco-friendly Energy : Hydrogen

The 2.5 MW water electrolysis system stack consists of a total of eight stacks, each of which is 350 kw.

Valmax, a technological expert at the service of green hydrogen, is developing technology to install and supply PEM (Proton Exchange Membrane) electrolytes from Elogen to meet new uses for hydrogen in mobility, industry and energy storage. We provide competitive and reliable systems tailored to your needs through rigorous processes.

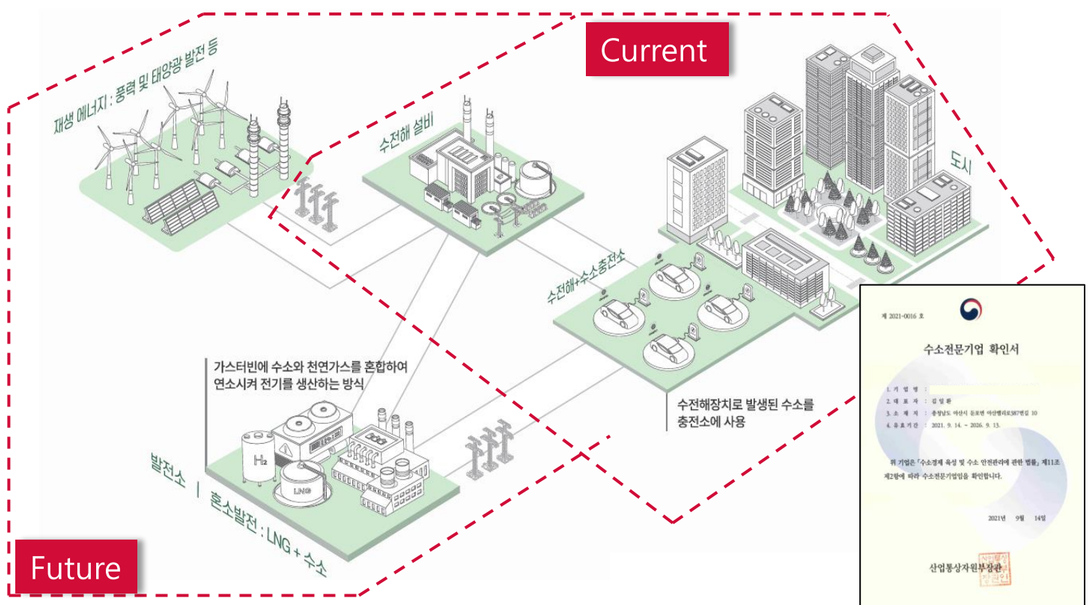


Hydrogen Business Status

Eco-friendly Energy : Hydrogen

We are listed as a representative hydrogen company in Chungnam, we are building a hydrogen charging station and delivering water electrolysis facilities.
In order to respond to climate change, we plan to conduct business using energy sources of the future.

Power electrolysis systems (tens or even hundreds of megawatts) are modular and extendable as desired. They can be used in large-scale green hydrogen production, for a climate friendly future. .



Marine Solutions

- LNG Fuel Gas Supply System for Ship
- LNG Bunkering Station / BOG Re-condenser pkg
- Combined IGG + GCU
- Mobile GCU

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.

Fuel Gas Supply System for Ship

New Generation of the Ship

VALMAX is supplying the smart FGSS package which is applicable to the various size of the ship using LNG / AMMONIA as their fuel.

Our FGSS package is fully flexible, with the various options available based engine type, tank type, pressure control system and ship type. And also, it can be tailored as necessary to fit individual ship.

VALMAX will be the best partner for total FGSS package of the designing, engineering, automation system for safe operation and commissioning for the LNG / AMMONIA fueled ship.

Flexible

- Available for all engine type and pressure types (Low and High Pressure)
- Application of various type of tanks (Type C)
- Experts installation and commissioning according to vessel type

Reliable

- Designing in compliance with IGF Code and Rule & Regulation
- Guidance and Support from first to last stage
- Experts having wide experience regarding the LNG fueled Ship

Smart

- Optimized design of FGSS configuration according to the ship type
- Integrated Control, Monitoring and Automation System

VALMAX SUPPLY

- FGSS Total Package
- LNG Fuel Tank (Type-C)
- LNG Fuel Pump (Submerged or Deep Well Type)
- Tank Connection Space (TCS) or Fuel Preparation Room (FPR) include
  : LNG Vaporizer, Pressure Buildup Unit (PBU), Super Heater, Buffer Tank
- LNG Bunkering Station
- FGSS Control System with HMI Interface
- Technical Support for LNG filling
- Gas Operation & Commissioning / Training on Office & Site

LNG Bunkering Station

Applicable to LNG Fueled Ship & LNG Bunkering Ship

LNG Bunkering Station provides connections to the vessel's fuel gas system and fuel tanks to allow loading of LNG fuel and , in some cases, return of displaced vapour from the fuel tanks.

Due to the additional hazards present with LNG, the requirements and capabilities of LNG Bunkering Stations on LNG fueled ships are more complex than for oil fueled ships and required safety and technology.

BOG Re-Condenser for LNG Re-liquefaction System

Applicable to LNGC, FSRU, LNG Fueled Ship and Onshore Gas Plant

LNG in storage tank will be evaporating and giving off natural gas constantly and also boil-off-gas is continuously generated due to heat leakage through the insulation of the fuel storage tank.

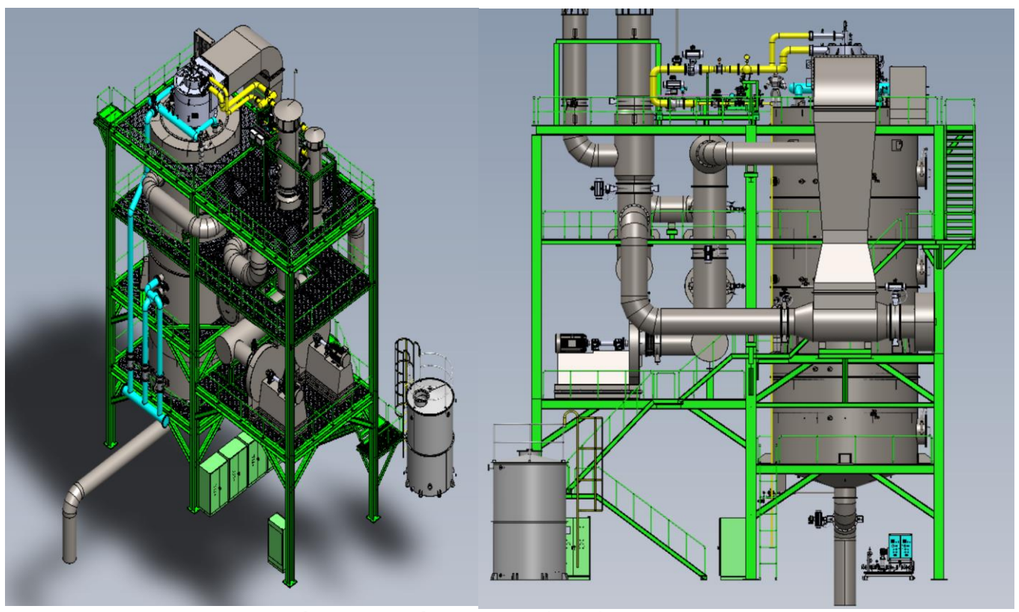
BOG Re-condenser is re-liquefying and re-storing remained BOG in fuel storage tank for consuming the boil-off gas efficiently in engines or boilers of the vessel.

Combined IGG + GCU

For 174K 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.



<Configuration of Cargo Combined IGG + GCU>

VALMAX SUPPLY

- GCU Chamber
- Oil Pump Skid
- Oil Air Skid
- Air Blower
- Burner
- Valves & Instrument
- HILS System
- Packing and Delivery
- Commissioning
- Training on Office & Site

<174K LNG Carrier>

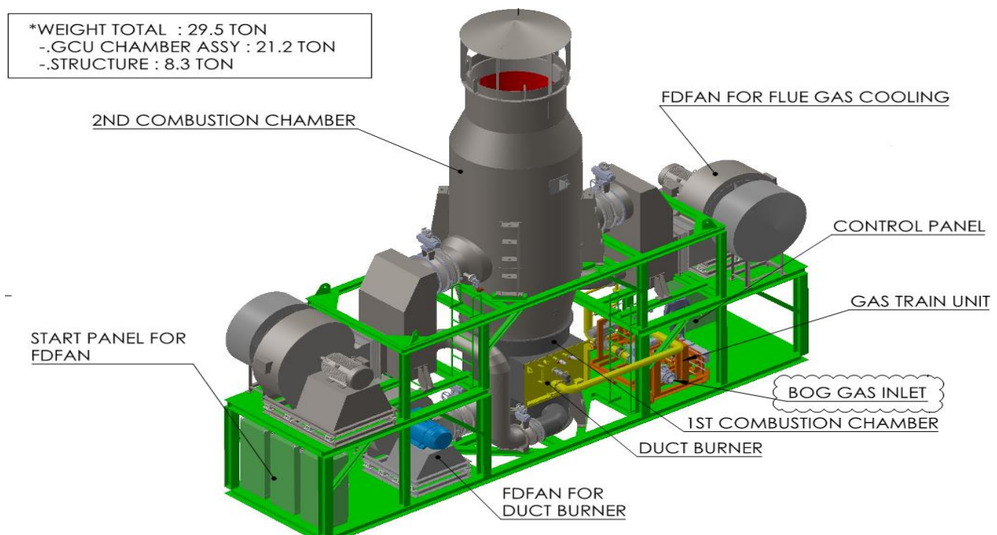
Mobile type GCU

For LNG Fuel Ship Commissioning

Due to the increase in LNG fuel propulsion and LNG carrier ship orders, Ship To Ship LNG bunkering requires 1~2 ton/h BOG processing during initial commissioning

LBV (LNG Bunkering Vessel) does not have a re-liquefaction facility, and even if the Ready LBV is equipped with a re-liquefaction facility, there are many problems such as space, weight, and cost to install a 2ton/h class re-liquefaction facility.

The GCU on the receiving vessel of LNGC or LFS cannot be operated before commissioning, so a separate combustion device must be provided.



<Configuration of Cargo Combined IGG + GCU>

VALMAX SUPPLY

- GCU Chamber
- Burner
- Start Panel
- Fan
- Gas Train Unit
- Packing and Delivery
- Commissioning

<3D Modeling of Mobile GCU>

LNG Solution for Onshore

- LNG Fueling Station
- LNG Satellite Station

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.

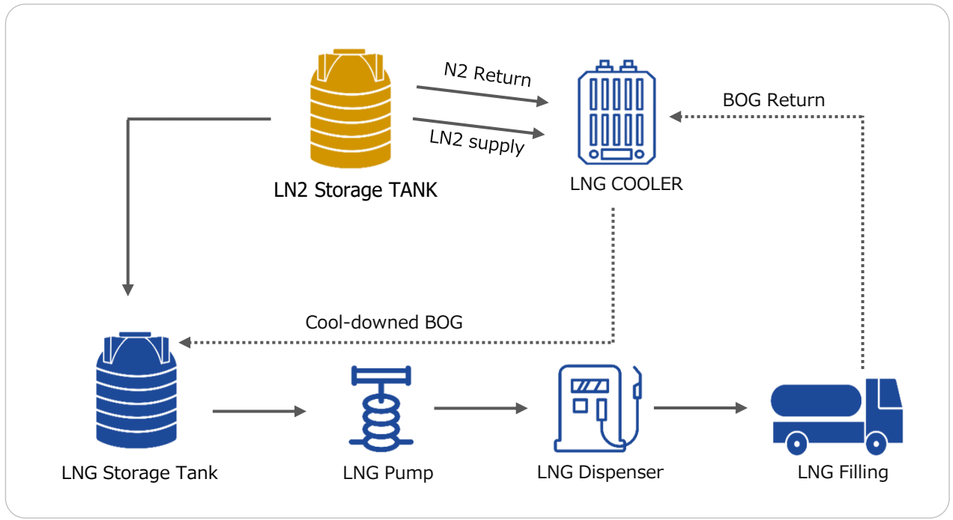
Based on more than 20 years of know-how and technology in the gas field, VALMAX is opening up new market in LNG solution for shipbuilding and offshore.

Mobile LNG Fueling Station

Innovated & Optimized System

LNG Fueling Station is a system that charges LNG fuel directly into the fuel container of the LNG vehicle.
The modular LNG pumps and dispensers can simplify & reduce installation time and cost comparted to conventional installation methods. And the vacuum insulation used in the LNG Fueling Station prevents the boil-off and provides environmental safety to the customers.

VALMAX supply system integration, LNG TYPE C tank & Pump Station, LNG Dispenser, LNG & BOG quick coupler & Break away, Measurement (Coriolis & Ultrasonic), System Installation and Commissioning & Operation.



<Configuration of LNG Fueling Station>

Simplification	· Modular type for easy installation and minimum space
Customized	· Flow Control System & User friendly HMI System
Various Application	· LNG Trailer & Truck, LNG Carrier, LNG Fueled Ships and LNG Filling Facility

Small Scale LNG Satellite Station

Best LNG Supply Solution for Remote Area

LNG Satellite Station is best solution for remote area to supply natural gas to end users at home, power plant and industry. LNG Satellite Station is designed to supply natural gas to areas that not supplied by pipeline network.

LNG is stored, vaporized and supplied after pressure is adjusted at the LNG receiving terminal by tank lorry. This system consists of LNG Storage tank, Vaporizer, Interconnecting piping, Control and Emergency system.

VALMAX SUPPLY

- System Integration
- LNG Type C Storage Tank & Pump Station
- LNG Bunkering Manifold
- LNG Ambient Vaporizer
- BOG Pre-heater, BOG Compressor
- LNG Quick Coupler with Break Away
- Control System with HMI Interface
- Site Operation & Commissioning
- Site Construction (Option)
- Jetty Foundation (Option)
- System Installation (Option)

Automation

- Fully automation with control and emergency system without operating personnel

Comfort

- Wireless Technology and Control System

Various Application

- LNG Refueling System, Liquefier Storage and Distribution System
- Re-Gasfication System