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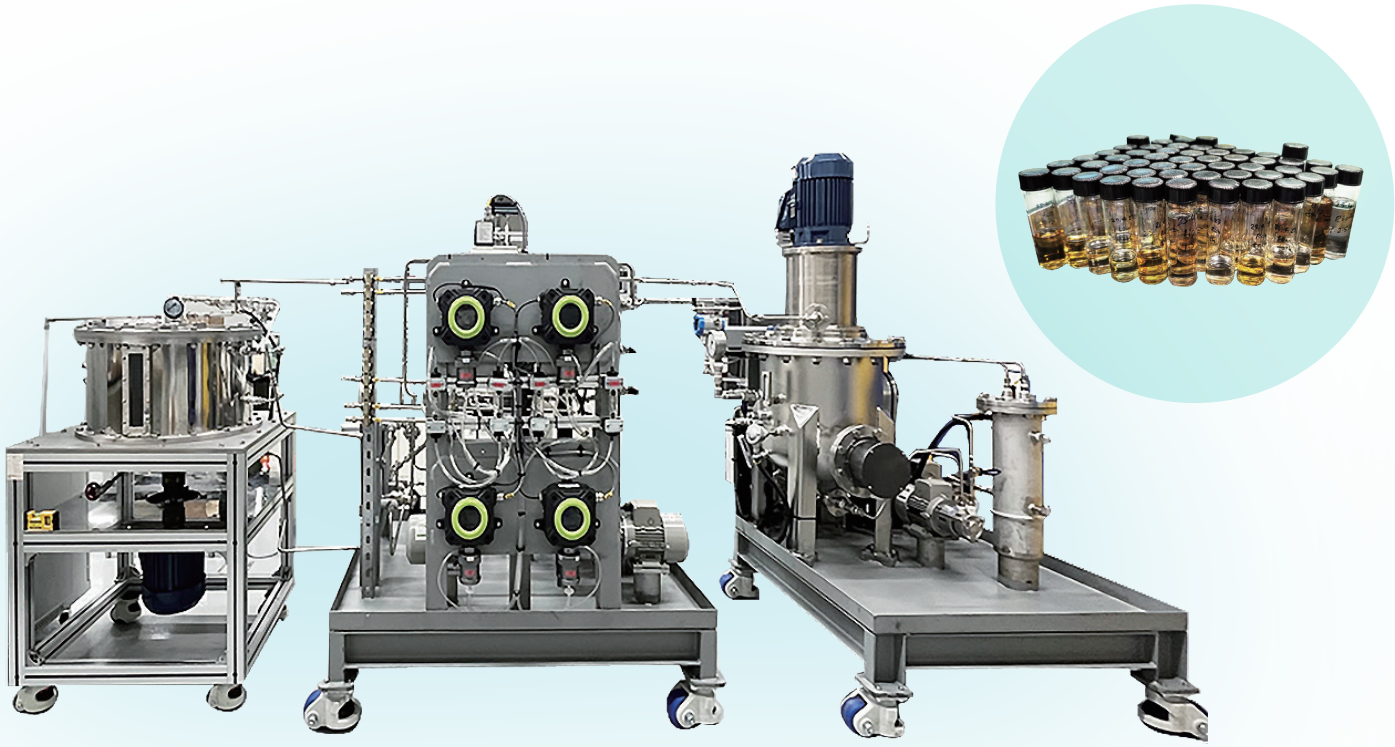
SUNBO

OCCS with RPB



- PLUG and PLAY design for OCCS
- System development in collaboration with UNIST (Ulsan National Institute of Science and Technology), CARBON VALUE and SUNBO.
- RPB use a rotational force to mix flue gases and solvent.
- It consumes less energy and has a smaller footprint than conventional wet type OCCS with columns and packs.
- New solvents must be developed to prevent system performance degradation caused by chemical reactions between oxygen in flue gases and solvent (MEA).
- System performance depends on chemical reactions.

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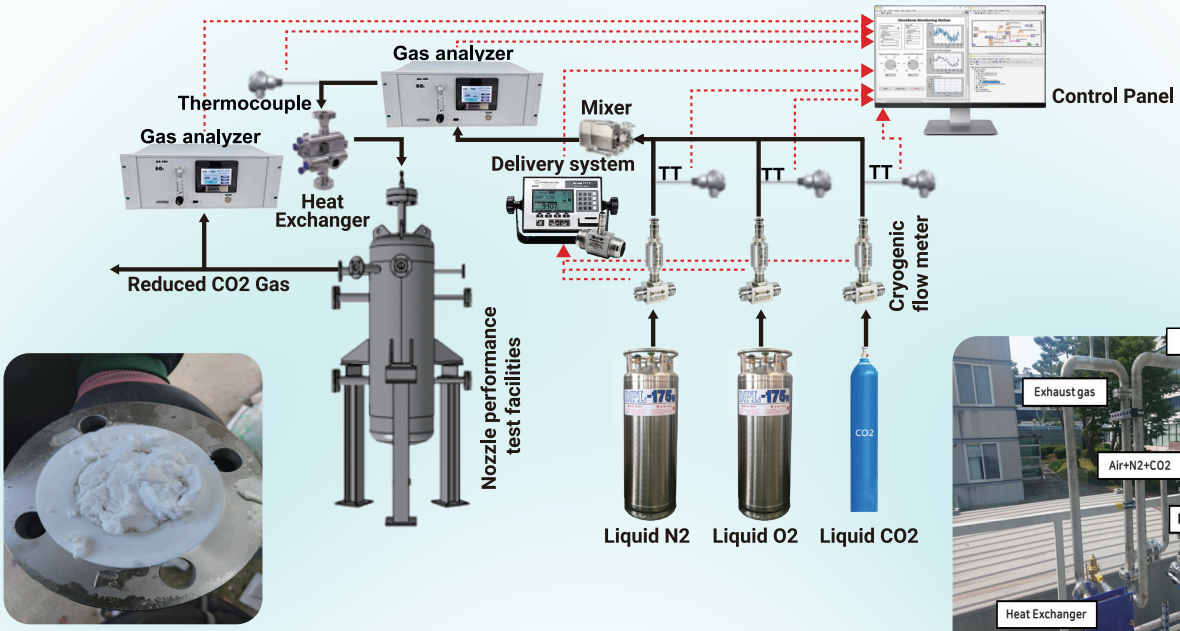
OCCS
with Cryogenic Carbon Capture



- PLUG and PLAY design for OCCS
- Cryogenic Carbon Capture including LCO_2 storage tank
- NO solvents required
- NO chemical reactions
- NO CO_2 gas liquefaction system
- NO column design required
- To replace the absorption tower and stripper of conventional wet type OCCS which are main process units of the solvent-based system with Cold Box
- 90% downsizing compared to the conventional wet type OCCS
- 70% reduction in energy consumption

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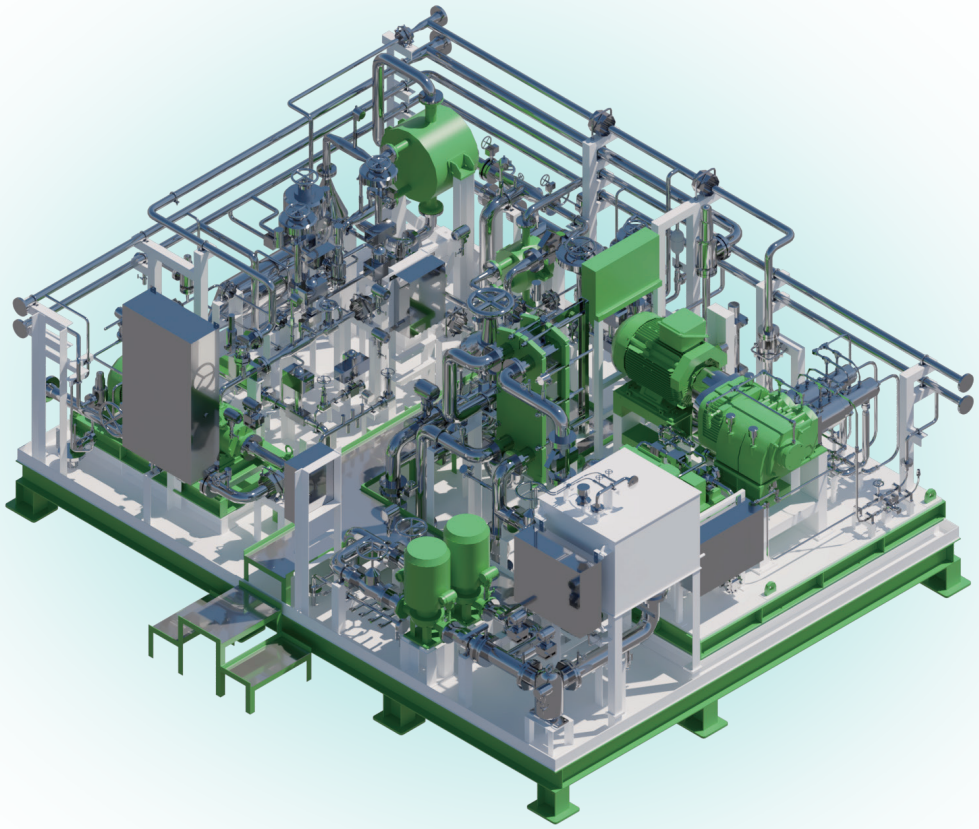
LPG & Ammonia FLSS



- PLUG and PLAY design for FLSS
- Commonly used for supplying ammonia without any modifications to ammonia fueled main engine.
- Recommend to install a service tank for settling the sand contained in LPG which is produced as a by-product of shale LNG.
- Liquefied LPG or NH_3 is directly sent to fuel service tanks for use of ME fuel at normal operational mode.
- Certified safety type motor (No separator motor and compressor room).

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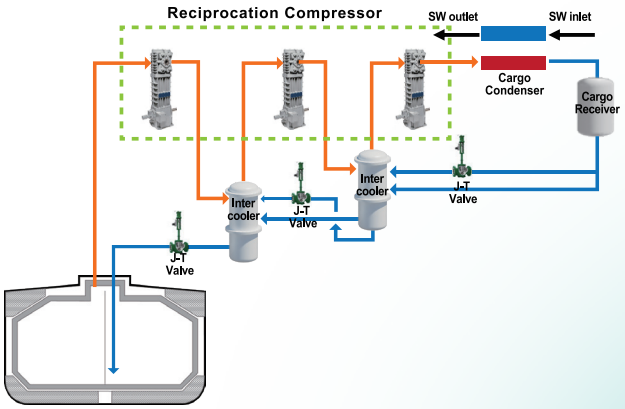
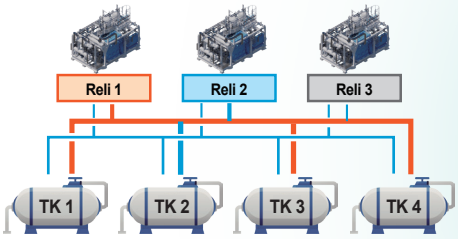
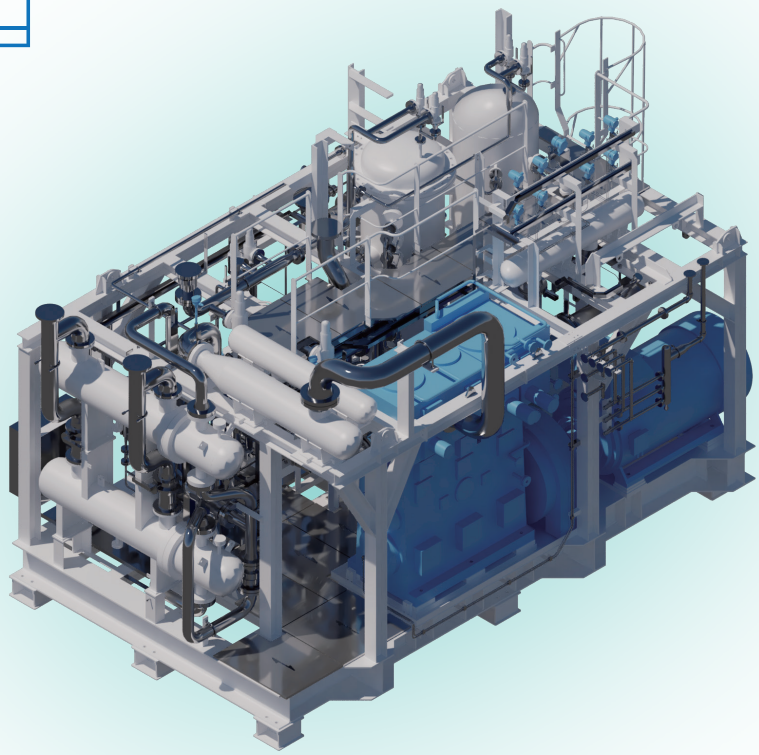
LPG & Ammonia Reliquefaction System







Loaded cargoes	Cooling capacity (kW) at 0.2 bar & SW temp of 32 °C
Propane with 8.0 mole% ethane	Approx. 370
Propane with 5.0 mole% ethane	Approx. 385
Pure propane	Approx. 440
I-Butane	Approx. 485
N-Butane	Approx. 575
Anhydrous ammonia	Approx. 575
Propylene	Approx. 405

- PLUG and PLAY design for Reliquefaction System
- Reduced size and weight compared to existing products
- Overall design support for Cargo Handling System for LPG reliquefaction and Ammonia reliquefaction system
- Ship : 91K VLGC & VLGA
- Size (mm) : (W) 6,800 x (D) 4,600 x (H) 4,400
- Weight : Around 28 tons

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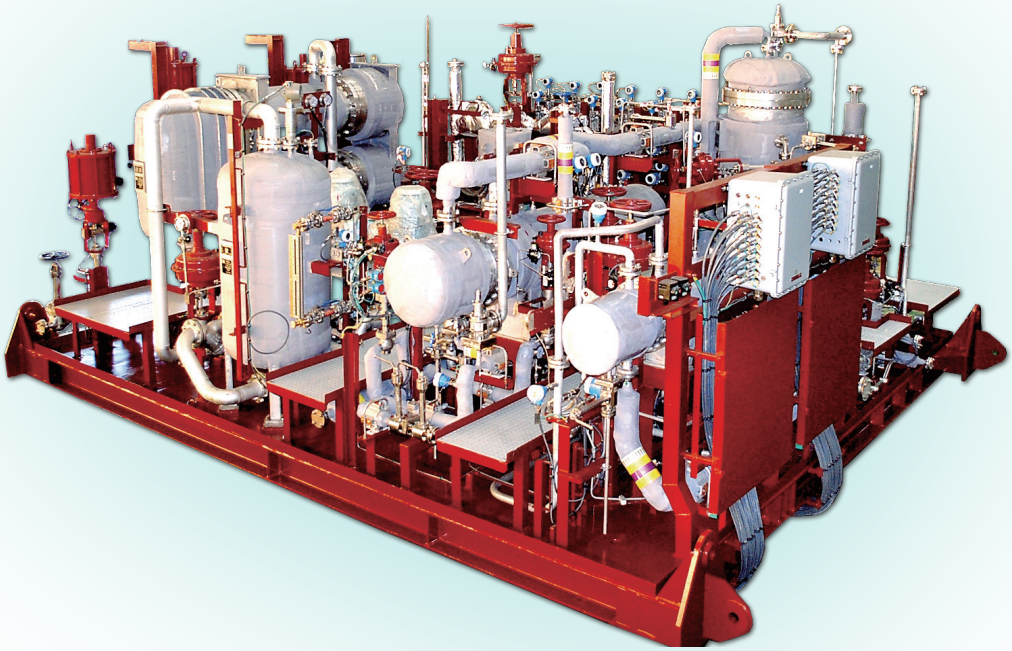
SUNBO

LNG FGSS



- PLUG and PLAY design for FGSS
  (For easy on-board installation of each module)
- Performed cryogenic test using SUNBO cryogenic test facilities before the skids delivery to shipyard
- Compact module design, Manufacturing/Assembling by SUNBO (Not outsourcing system fabrication) in the specialized clean factory (Dadae 2 Factory), not mixed works with carbon steel
- Stand-alone control system (Interface with ship's AMS and loading computer)
- Strong engineering capabilities to meet delivery date.
- Sufficient reference lists as EPCC
  (Engineering Procurement Construction and Commissioning)

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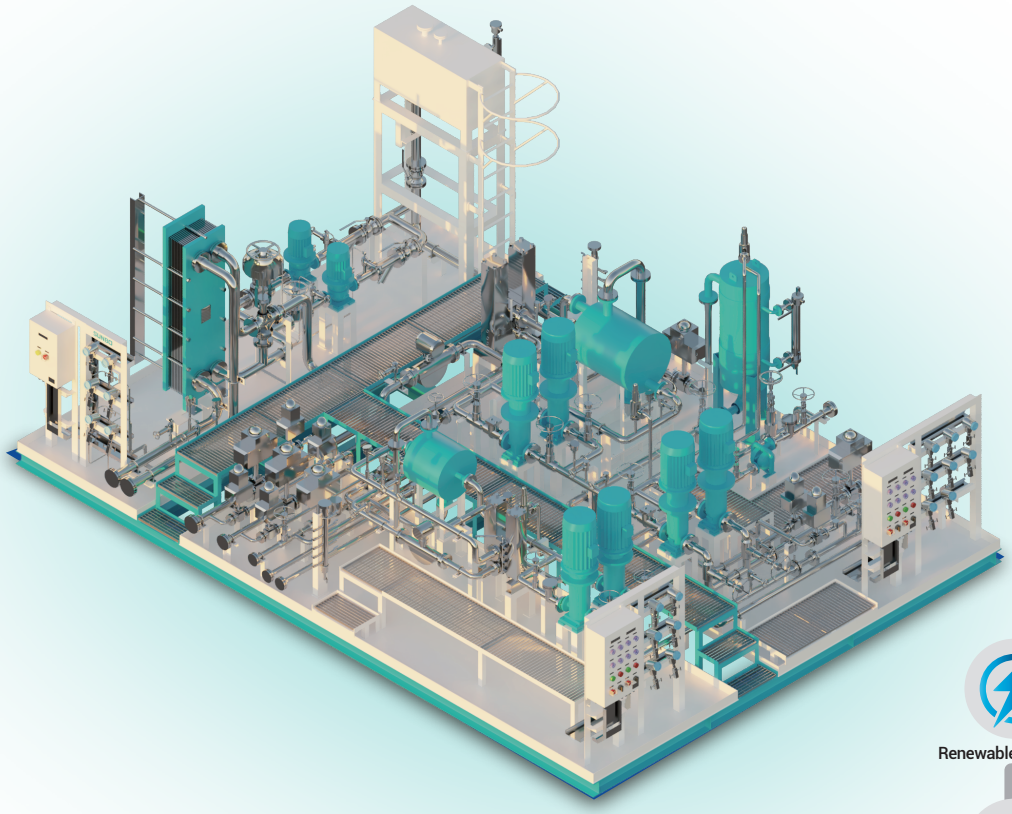
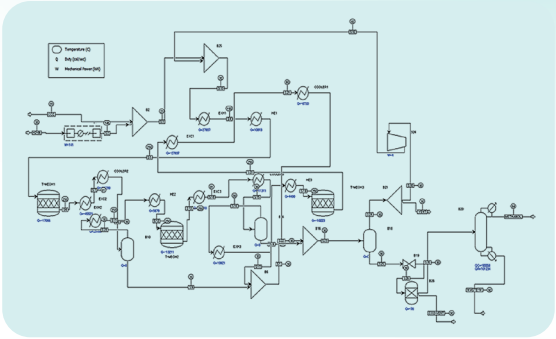
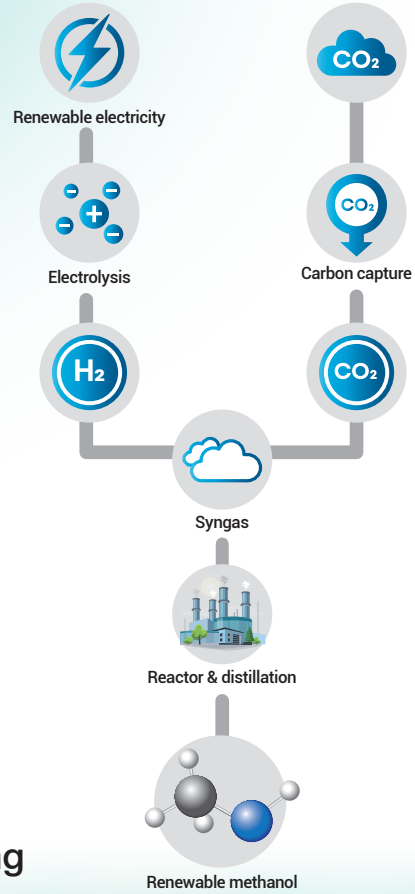
Methanol FLSS







- PLUG and PLAY design for Methanol FLSS
- Case 1 as supplier of Methanol FLSS only
- Case 2 as EPCC provider of Methanol FLSS (IMO MSC.1 / Circ 1621 & related to Class rules)
- Case 3 as EPCC provider (including future MeOH production facility utilizing captured CO_2 from OCCS and liquid hydrogen)

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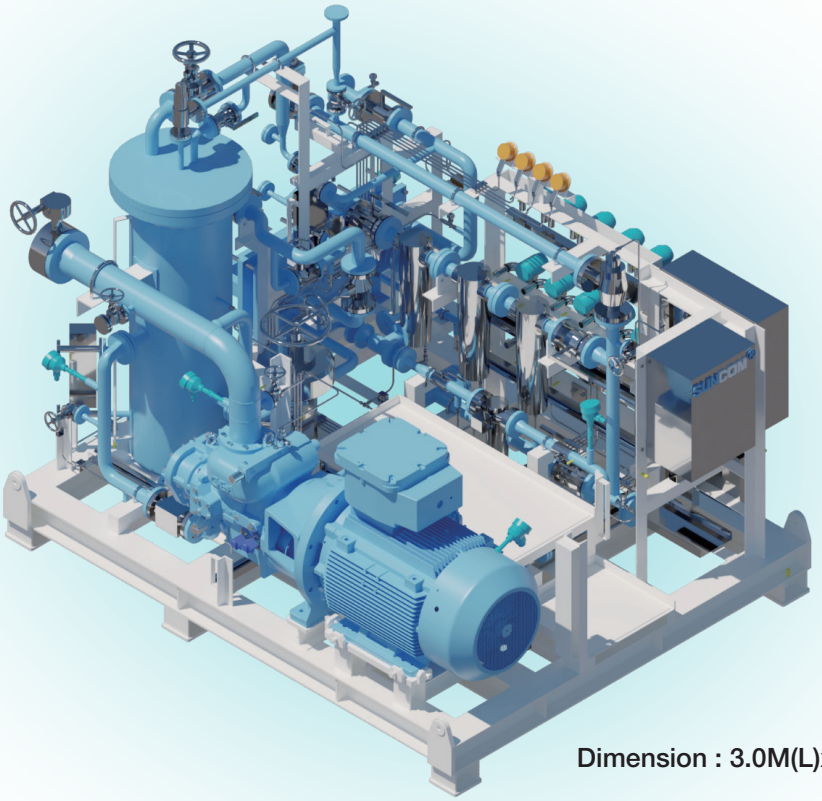
SUNCOM For BOG compressor



Dimension : 3.0M(L)x1.5M(W)x2.0M(H)

PROVEN TECHNOLOGY AND ADVANTAGE

- Energy-efficiency
  - High-efficiency rotors
  - Compact and stiff design
- Reliability and Safety
  - High-performance bearings and hydraulic axial force compensation for long product life time
  - Standardized and hermetically sealed slide position indicator
- Maintenance
  - Easy replacement of bearings & seal

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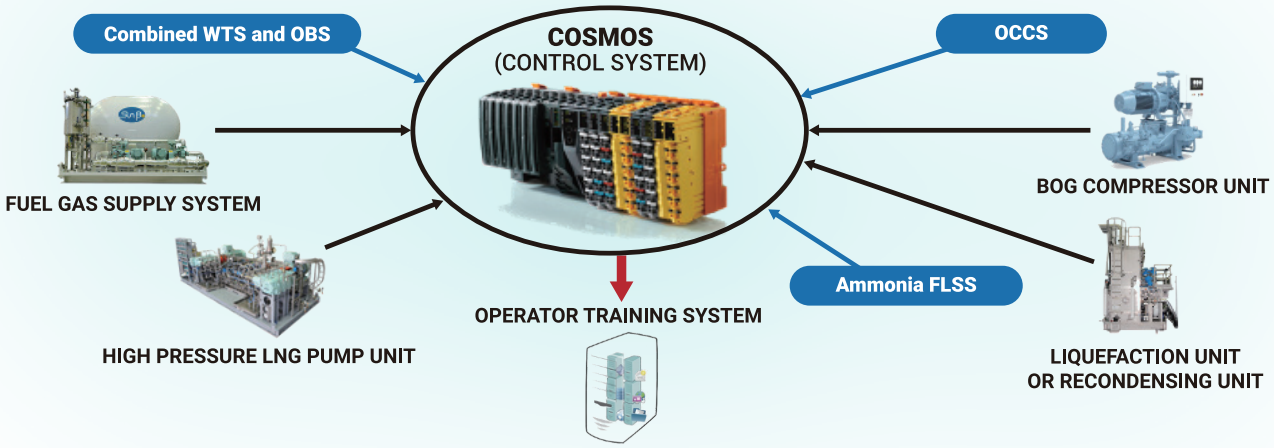
COSMOS

For LNG FGSS & NH_3 FLSS Control



- Smart management for major equipment
- Smart web diagnosis
- Interface with programming environment (AMS & LC)
- Remote program update
- Central data storage
- Real-time monitoring & fast CPU cycle time

OTS

For LNG FGSS, NH_3 FLSS & major equipment Control

- Crew training
- System verification for new contents