



Navigation System

ASIA	SAMSUNG HEAVY INDUSTRIES
KOREA	DONGBO ELECTRIC
KOREA	KUMHO TECH
KOREA	Hanshin Electronics
KOREA	TOKYO KEIKI
JAPAN	SHIN-EI ELECTRONIC CO.,LTD
SINGAPORE	JASON ASIA
SINGAPORE	SK SYSTEM ENGINEERS PTE LTD
PHILIPPINES	TECHSYS Corporation
CHINA	JASON ASIA
CHINA	COSCO GCNC
CHINA	HOSTMOST Engineering
CHINA	Seven Seas Electronic Co.,Ltd
INDIA	NAVICOM Technology
INDIA	ULTRA MARINE
TAIWAN	RESON Electronics
TAIWAN	EAGLES ELECTRONICS
HONGKONG	HOSTMOST Engineering
MALAYSIA	Jason, Johindah Malim Sdn Bhd.
INDONESIA	JASON ASIA
THAILAND	A&MARINE THAI
THAILAND	Jason Electronics (Thailand) Co. Ltd.
OCEANIA	
AUSTRALIA	NOVAMARINE
MIDDLE EAST	
U.A.E.	ELCOME INT.
U.A.E.	MARITRONICS
BAHRAIN	ELCOME INT.
EUROPE	
CYPRUS	RAYTECH
FRANCE	AVON Communications S.A
GERMANY	HOPPE
GREECE	MARVEL L.T.D
GREECE	D.C.S.I. International
GREECE	Automation Marine System Ltd.
GREECE	ITS

UKRAINER	D.C.S.I. UKRAINE
ITALY	MASTER CONTROL
ITALY	TELEMAR
NETHERLAND	RADIO HOLLAND
NETHERLAND	I&C Services B.V.
BELGIUM	SPERRY MARINE
U.K.	MJR Controls Ltd
RUSSIA	MT Electronics LLC
SPAIN	AAGE HEMPEL
Gibraltar	Sandvik Marine Electronics
EGYPT	PAN ARAB
PORTUGAL	Assistemar, Lda
AMERICA	
USA	Mackay Communications, Inc.
USA	SPERRY MARINE
CANADA	MARITECH NAVAL
CANADA	OASIS MARINE
CENTRAL AMERICA	
VENEZUELA	RADIO MARINA DE VENEZUELA
PANAMA	PASRAS S.A.
SOUTH AMERICA	
ARGENTINA	Everthron Marine Systems SRL
CHILE	NAVAL RADIO
BRAZIL	AVANTIA TECNOLOGIA
BRAZIL	Orion Shiprepairs Ltda
BRAZIL	METALOCK Brazil Ltda
AFRICA	
SOUTH AFRICA	SMD TELECOMM.

Automation System

ASIA	SAMSUNG HEAVY INDUSTRIES
KOREA	DONGBO ELECTRIC
KOREA	KUMHO TECH
KOREA	DEX
SINGAPORE	JASON ASIA

SINGAPORE	SK SYSTEM ENGINEERS PTE LTD
PHILIPPINES	TECHSYS Corporation
CHINA	JASON ASIA
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U.K.	MJR Controls Ltd
SPAIN	AAGE HEMPEL
AMERICA	
USA	Mackay Communications, Inc.
USA	SPERRY MARINE
CANADA	MARITECH NAVAL
CANADA	OASIS MARINE

Power System

CENTRAL AMERICA	
VENEZUELA	RADIO MARINA DE VENEZUELA
PANAMA	PASRAS S.A.
SOUTH AMERICA	
ARGENTINA	Everthron Marine Systems SRL
BRAZIL	AVANTIA TECNOLOGIA
BRAZIL	Orion Shiprepairs Ltda
BRAZIL	METALOCK Brazil Ltda
AFRICA	
SOUTH AFRICA	SMD TELECOMM.
ASIA	
KOREA	SAMSUNG HEAVY INDUSTRIES
SINGAPORE	CYCLECT
PHILIPPINE	WOJU INC.
INDIA	PENTA ELECTOMECH PVT. LTDD
OCEANIA	
AUSTRALIA	NOVAMARINE
MIDDLE EAST	
U.A.E.	MARITRONICS
EUROPE	
GREECE	NOVA ELECTRONICS S.A.
GREECE	Automation Marine System Ltd.
ITALY	A. Santamaria S.p.A
BELGIUM	Electro Partners N.V.
U.K.	MJR Controls Ltd
SPAIN	AAGE HEMPEL
AMERICA	
USA	SEABOARD CONTROLS
SOUTH AMERICA	
BRAZIL	AVANTIA TECNOLOGIA
BRAZIL	METALOCK Brazil Ltda

SAMSUNG HEAVY INDUSTRIES

Power & Control Systems Division	Sales Department	Service Department
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Marine & Offshore Solution | Regasification System





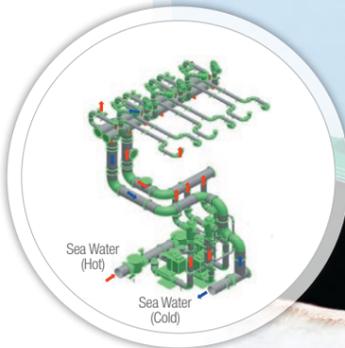
High Pressure Pump

- Boosting of LNG Pressure (100 bar)
- Cryogenic(-162°C) Design
- Submerged Centrifugal type



Recondenser

- Pressure Stabilization
- Feeding of continuous LNG
- Recondensing Boil off Gas



Sea Water System

- Heating Medium
- Sea Water Lift Pump
- Automatic Flushing Filter



Vaporizer (Heat Exchanger)

- Vaporizing of LNG to Natural Gas by Sea water
- Cryogenic / High Pressure / Anti-corrosion Material
- Shell & Tube Type



REGASIFICATION SYSTEM

The regasification system, which is installed in onshore LNG terminal or upper part of the offshore LNG FSRU, is a system that directly gasify liquefied natural gas and supply so that power plants or consumers can use it.

The main equipment for the regasification system includes recondenser, high pressure LNG booster pump, vaporizer and sea water system.

LNG, which is fed up to recondenser from cargo tank by feed pump inside the cargo tank, is pressurized to about 100bar by the high pressure booster pump, and sent to onshore after being gasified to natural gas through heat exchange with sea water in the vaporizer.

The regasification system is a system the core technologies of which are the design and analytics required for extremely low temperature down to -160°C and high pressure up to 100bar and stable control technology.

We have secured price competitiveness through localization of parts and our own technology on the basis of the reliability of the process engineering with various achievement experience, and we have secured good clients in the world and attained high customer satisfaction by supplying EPC turnkey-type packages which can be quickly counteracted if any problem occurs.

In the long term, SHI Power & Control Systems Division will carry on topside turnkey projects based on process engineering by establishing the system where the process facilities included in the offshore topside can be manufactured and supplied as a module type.

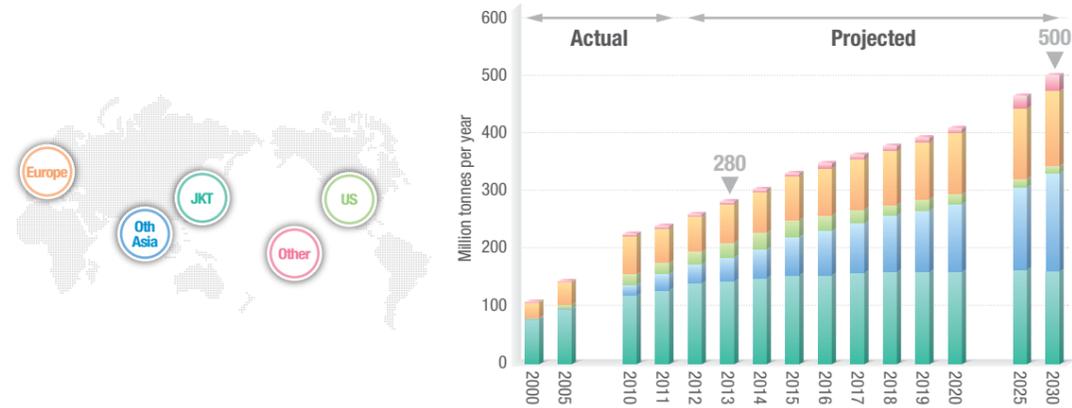
Why SHI S-REGAS Module?



INTRO

Increasing LNG Demand

- Annual demands of LNG
- * Source : Ernst & Young assessment from multiple sources



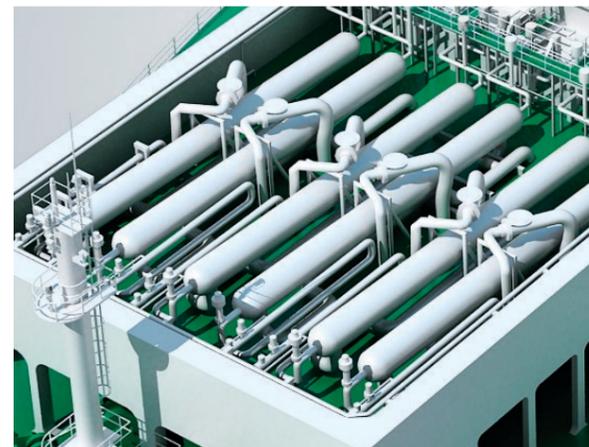
Outline

- Regasification system installed on LNG FSRU/ RV which supplies NG to consumer instead of onshore LNG terminal



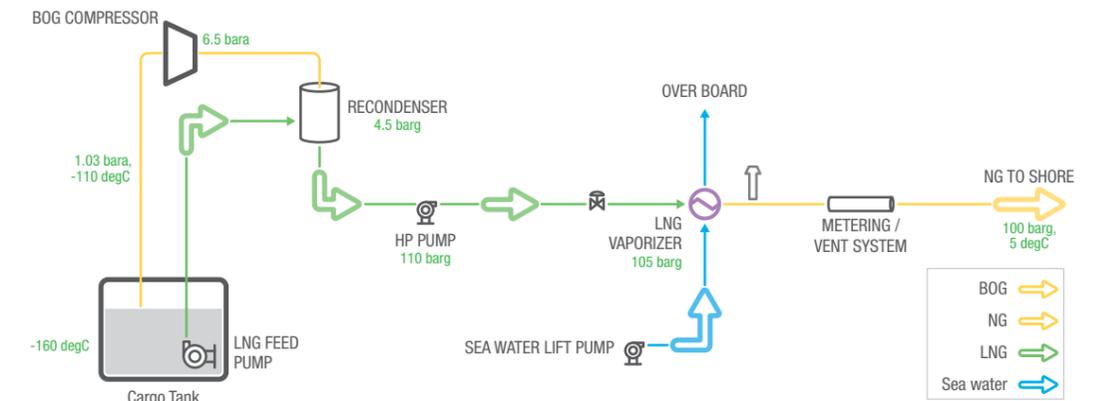
Main Features

- Experiences in LNG FSRU
- Self-developed regasification process
- Localization of equipment; cryogenic high pressure pump and vaporizer
- Unification for engineering, procurement and installation
- Cost-reduction (CAPEX, OPEX)



PROCESS

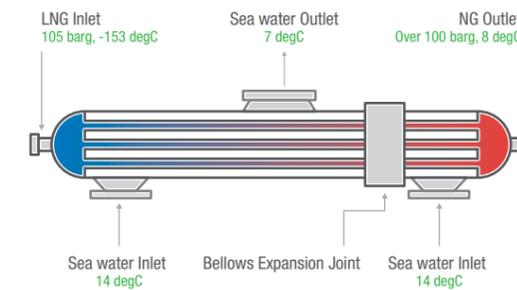
Process Configuration



EQUIPMENT

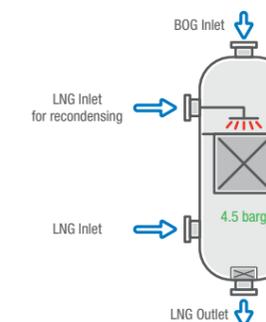
HP Vaporizer

- Shell & Tube type Vaporizer
- Optimum design for requirement



Recondenser

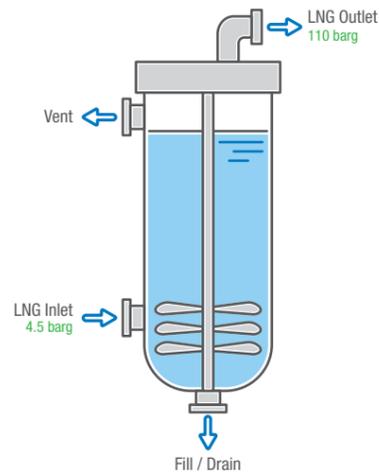
- Recondensing BOG from Cargo tank
- Buffer tank for HP pump



EQUIPMENT

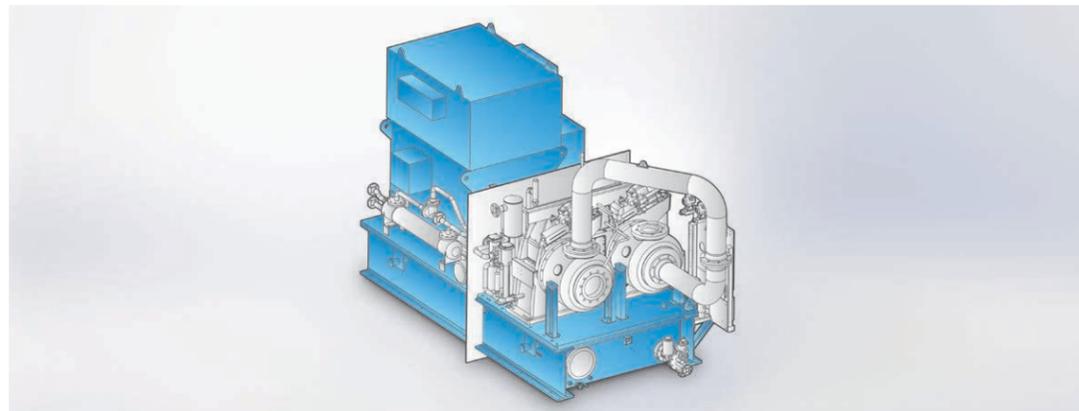
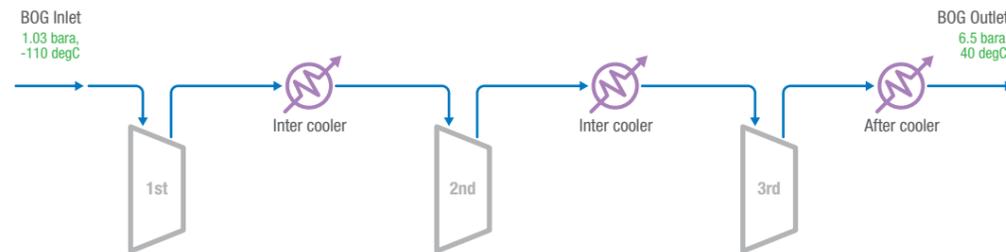
HP Pump

- Submergible multi-stage centrifugal pump
- Control logic materialization according to safety condition



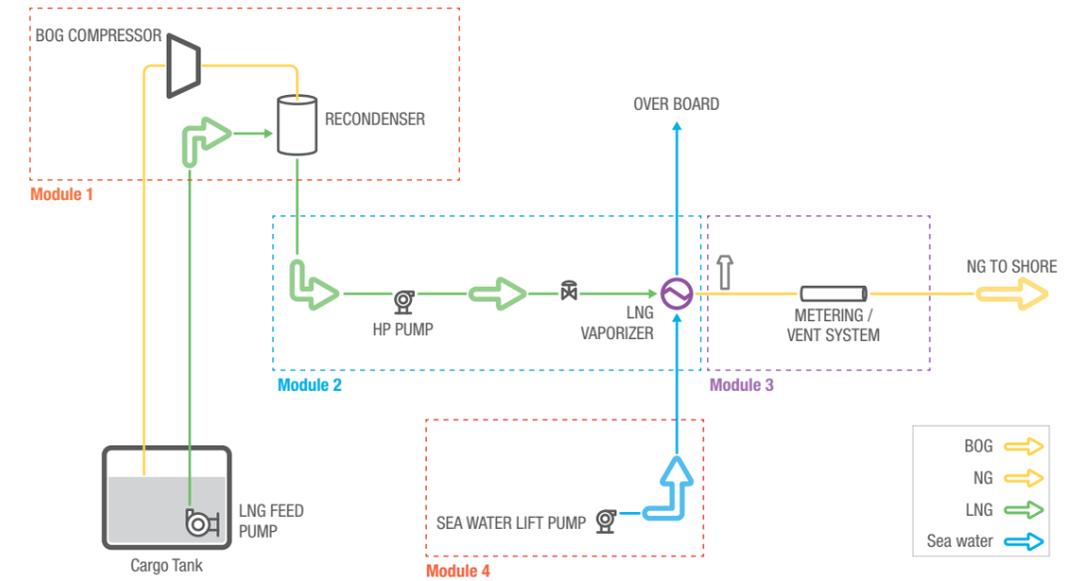
BOG Compressor

- Low pressure compressor shall be designed to transfer excessive boil-off gas to the recondenser during the regasification operation



PACKAGE

Module Package Configuration



Regasification Modules

