

Indonesia improves terms to boost oil and gas and LNG investment

Jakarta is committed to accelerating the development of its untapped oil and gas
LNG News Editor

Indonesia's Minister of Energy and Mineral Resources Arifin Tasrif said 68 of the country's 128 oil and gas basins remained entirely unexplored and that international energy companies would receive better terms for exploration and production in the country where the Abadi LNG project is advancing along with the Tangguh LNG expansion.

The Minister was speaking at the 4th International Convention of Upstream Oil and Gas in Indonesia held on the island of Bali. SKK Migas, the Indonesian Upstream regulator, was host to the three-day event.

Bigger stakes

Indonesia's improvements in its oil and gas terms would allow investors to have well over 50 percent of production sharing contracts.

"The Government is strongly committed to accelerating the development of these untapped oil and gas reserves," Arifin told the conference.

He said the new and better terms were being offered starting with the third E&P licence bidding round this year that was announced on September 20.

"The government is offering new working areas with more attractive terms and conditions, including improvements in the equity split between the government and contractors, enabling contractors to secure a share exceeding 50 percent," the Minister explained.

Under the previous Indonesian



Conference in Bali was hosted by Indonesia's energy regulator SKK Migas and strategy statements made

system oil and gas companies chose to either use a cost recovery or gross split-based production sharing contract (PSC) for projects.

In a cost recovery-based PSC, the government reimbursed companies for upstream related costs in exchange for a higher share, up to 85 percent, for each company's earnings from exploiting the nation's oil and gas blocks.

The Minister's plan will make contracts more flexible and give more incentives to international energy majors to invest.

Among LNG projects, Japanese company Inpex Corp. is the operator of the Masela natural gas block that will underpin the proposed Abadi LNG joint venture.

Inpex has finalised the development plan for the onshore liquefaction plant to be constructed on one of the Tanimbar Islands of Indonesia to further boost Asian LNG availability in Asia.

The investor line-up for Abadi LNG is also currently re-aligning with Malaysian energy company Petronas and Indonesia's state-owned Pertamina agreeing to take over the minority stake in the Masela block and LNG project previously held by Shell.

The Inpex-led project also has a carbon capture and storage (CCS) project attached as does the BP-led Tangguh LNG expansion project.

BP speaker

A BP executive speaker at the conference expressed optimism about the CCS project for Tangguh LNG.

The BP's speaker was Anja-Isabel Dotzenrath, Executive Vice President for gas and low-carbon energy, and she said that the Tangguh CCS project was under development in eastern Indonesia and would see 30 million tonnes of carbon dioxide re-injected into a reservoir.

Dotzenrath said the project would cut carbon emissions by half at the Tangguh LNG plant where feed gas comes from Indonesia's largest gas field currently under production.

The other shareholders in Tangguh with BP are Japan's Mitsubishi Corp. and Inpex as well as China National Offshore Oil Corp.

The high number of depleted oil and gas reservoirs and saline aquifers across the Indonesian archipelago makes the country a potential hub for CCS.

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Indian LNG imports rebound as demand gathers pace and domestic gas output rises

LNG News Editor

Indian liquefied natural gas imports jumped by 10 percent as lower prices helped encourage buyers while domestic gas output also increased along with the nation's gas demand.

LNG imports for the month of August 2023 was 1.65 million tonnes, or 24 cargoes, which was 10 percent higher than the 1.50MT, or 22 cargoes, reported in August 2022, according to provisional data from India's Ministry of Petroleum and Natural Gas.

Trends

LNG imports for the month of July had declined to 1.65MT, which was 10.8 percent lower than the 1.85MT received in July 2022.

The Ministry data showed that the cumulative imports for the first five months of the fiscal year from April to August increased by 3.5 percent to 9.03MT from 8.73MT in August 2022.

LNG cargo costs in August 2023 declined to 10,810 crore Indian rupees (\$1.3 billion) from the 12,482 crore rupees (\$1.5Bn) paid in August 2022.



India's seventh import terminal at Dhamra in Odisha state

India paid 49,931 crore rupees (\$6.0Bn) for five months of LNG imports, which was less than the 67,407 crore rupees (\$8.10Bn) paid in the prior-year fiscal period.

Deliveries of LNG to Indian terminals in 2023 have come from Qatar, which provides over one-third of volumes, as well as West Africa, the US, Asia-Pacific nations, the spot market and Russia.

The latest regional spot LNG indicator price, the West India Marker (WIM), was last at \$13.466 per million British thermal units for November 2023 deliveries compared with \$12.704 per MMBtu for October deliveries.

The WIM futures prices are for spot LNG cargoes delivered ex-

ship (DES) into West Asia and the Arabian Gulf states.

The August increase in Indian LNG imports came as more facilities were on line than a year ago after the start-up of the country's seventh LNG import terminal at Dhamra in the East Coast state of Odisha.

That facility is the second import terminal on the East Coast and is a joint venture owned by France's TotalEnergies and India's Adani group.

Domestic gas

The Ministry data showed that domestic natural gas production for August increased by 9.3 percent from gas fields such as those in

offshore areas of the Bay of Bengal to 3.166 billion cubic metres from 2.896 Bcm in August 2022.

Output of natural gas by India in the five months of the fiscal year rose by 3.6 percent to 14.852 Bcm from 14.332 Bcm in the same period last year.

Ministry data also gave average capacity utilization rates for the LNG terminals for the April-August 2023 period.

The total capacity of existing terminals has now risen to 47.7 MTPA from seven facilities with the TotalEnergies and Adani group's Dhamra LNG terminal in Odisha now listed by the Ministry.

Regasification

The largest Indian terminal at Dahej, located north of Mumbai and operated by Petronet LNG, has capacity of 17.5 MTPA and had a lower utilisation rate of 93.4 percent, down on the previous month's 95.7 percent utilization.

At the Hazira facility, operated by Shell India, the utilisation rate increased to 36.0 percent from 33.3 percent previously for 5.2 MTPA of capacity.

Japanese LNG imports drop even with lower prices and as more nuclear plans advance

Japanese liquefied natural gas imports dropped again last month as storage increased and North Asian prices declined with thermal coal deliveries also plunging while nuclear plant usage is increasing.

Cargo deliveries to the nation's regasification terminal network plunged by 9.6 percent in August 2023 to 5.67 million tonnes, or 84 cargoes, from the 6.27MT, or 92 shipments, received in August 2022.

Costs ease

Japan's shipments had dropped by 17.4 percent in July 2023 to 5.09MT from 6.16MT in July 2022.

The Finance Ministry figures also showed that LNG cargoes cost 43 percent less in August 2023 at 500.77Bn (\$3.39Bn) compared with 878.99Bn yen (\$5.95Bn) in August 2022.

Deliveries of thermal coal to Japanese ports tumbled by over 31 percent year-over-year to 8.38MT.

The Ministry data showed the imports of LNG in August from Asian nations like Malaysia, Indonesia and Brunei edged lower by just 0.1 percent to 1.25MT.

Middle East shipments from nations like Qatar came to 700,000 tonnes, down by 22.2 percent from the same month last year.

US imports of LNG cargoes almost doubled from a year ago to 648,000 tonnes.

Russian LNG deliveries to Japan declined by 12.8 percent to 392,000 tonnes.

The balance of deliveries to Japan in August 2023 came to 2.61MT from Australia and the spot market, which was lower than the 3.33MT imported in the same month last year.

Nuclear competition

Japan is also using more nuclear power and intends to bring other reactors on line over the next year or so as public opposition lessens

with energy security taking priority.

Almost a dozen reactors are now back in operation compared with the 54 that were online in 2011 before the Fukushima disaster and which had supplied around 30 percent of Japan's energy needs.

The latest nuclear restart was the Takahama-1 plant owned by LNG importing utility Kansai Electric Power Company and brings to 11 the number of plants in operation from the 33 that are capable of re-starting.

Kansai Electric said the plant was now the third of four to come online at the Takahama site.

Sempra completes stake sale in LNG plant

Sempra Infrastructure, the subsidiary of California-based utility and energy company Sempra and with stakes in LNG plants and projects in the US and Mexico, has completed the sale of a stake in the Port Arthur LNG project in Texas to US asset management firm Kohlberg Kravis Roberts (KKR), which is already a stakeholder in Sempra Infrastructure.

Sempra said the sale was complete to KKR on a 42 per cent indirect, non-controlling interest basis in the Port Arthur LNG Phase 1 project.

The transaction results in Sempra Infrastructure retaining a controlling 28 percent indirect interest in Phase 1 at the project level, and ConocoPhillips owning the remaining 30 per cent interest.

"The closing of this transaction continues the positive momentum of our world-class Port Arthur LNG facility and highlights Sempra Infrastructure's ability to access capital to support the growth of its infrastructure business," said Justin Bird, Chief Executive of Sempra Infrastructure.

"We remain committed to developing energy infrastructure projects with strong partners to continue growing our portfolio while advancing global decarbonization and energy security," Bird added.

James Cunningham, a Partner at KKR, said the firm was pleased to proceed with the investment.

"Port Arthur LNG Phase 1 has continued its strong momentum and is on track to meet its objectives of helping to deliver energy security, economic growth and a near-term supply of reliable and cleaner energy," added Cunningham.

NextDecade's Rio Grande project secures loan for first phase building

LNG News Editor

NextDecade Corp., the developer of the Rio Grande LNG export project in Brownsville in Texas, has entered into a credit agreement with a group of lenders for \$356 million of senior loans to finance a portion of the first three liquefaction Trains.

A final investment decision was taken on Rio Grande LNG in July 2023 with a budget of over \$11 billion and ultimate plans for a facility with 27 million tonnes per annum of output.

Financing

"The senior loans were disbursed in one advance for the full amount of \$356M which resulted in a reduction in the commitments outstanding under RGLNG's existing term loan facilities for Phase 1 from \$11.1Bln to under \$10.8Bln," NextDecade explained.

"These senior loans will mature in July 2033, will accrue interest at a fixed rate of 6.72 percent and rank 'pari passu' (on an equal footing) to RGLNG's existing term



The Rio Grande LNG export project site on ship channel

loan facilities, the \$500M working capital facility and the \$700M of 10-year senior notes issued at FID of Phase 1," the company added.

A statement said that an indirect subsidiary of NextDecade entered into a credit agreement as borrower and with Wilmington Trust National Association as the administrative agent and Japan's Mizuho Bank (USA) as the collateral agent.

NextDecade said that the financing transaction aligned with the company's long-term balance sheet strategy for Phase 1, which includes "extending and stagger-

ing debt maturities, diversifying sources of capital" and reducing bank capital over time to provide potential capacity for financing future LNG expansions.

The FID statement in July followed financial and volumes agreements announced in June 2023 for the first phase of the Rio Grande project signed with French oil and gas major TotalEnergies, which has taken an equity stake in NextDecade and bought 5.4 MTPA of volumes from the first three Trains, and the US equity fund Global Infrastructure Partners.

US shale gas producer EQT signs second LNG deal in Louisiana

EQT Corp., the leading US natural gas producer in the Appalachia Shale Basin of the northeast US, said it was seeking overseas LNG customers after signing a second accord with a US Gulf Coast project and this time with the proposed Commonwealth LNG venture in Louisiana.

EQT said the deal with Commonwealth was for 1 million tonnes per annum of LNG under a 15-year tolling agreement.

Gas volumes

The Pittsburgh, Pennsylvania-based exploration and production company said the Commonwealth venture anticipated a final investment decision on the project in

the first quarter of 2024, with first cargo deliveries expected in 2027.

Toby Z. Rice, President and Chief Executive of EQT, said the accord with Commonwealth represented another step forward in EQT's risk-adjusted LNG strategy, which seeks to diversify a portion of its production to international markets via arrangements that offer the best combination of upside exposure and downside risk mitigation.

"Our tolling capacity gives us the flexibility to sell our gas directly to end-users globally and we are currently pursuing long-term purchase agreements with prospective international buyers," Rice explained.

"EQT's scale, peer-leading inventory depth and environmental attributes uniquely position us to provide energy security while driving emissions reductions via coal displacement both domestically and abroad. We are excited to begin unleashing EQT's reliable, low emissions natural gas on the global stage," the CEO declared.

EQT, which has shale-gas operations in the Marcellus and Utica formations of western Pennsylvania, Ohio and West Virginia, said in its last earnings that quarterly production dropped to 471 billion cubic feet equivalent from 502 Bcfe in the second quarter of 2022.



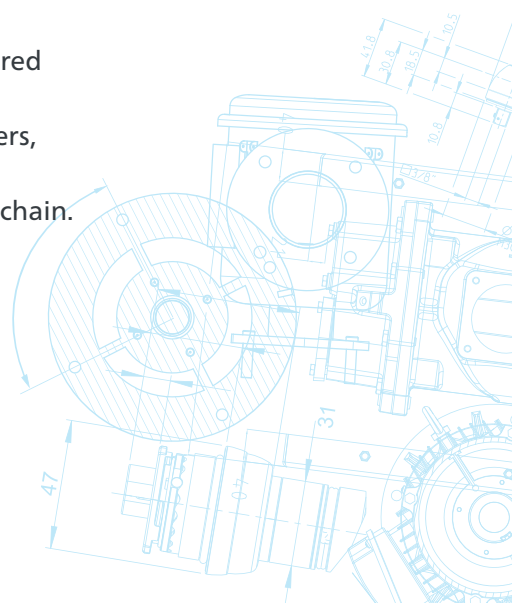
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NEWS BRIEFS

Australian strike ends

Australia's Offshore Alliance union agreed to the pay and conditions recommendation of the nation's labor disputes arbitration body, the Fair Work Commissioner, and called off the strike by around 500 members at the Gorgon and Wheatstone LNG export plants in Western Australia that had failed to disrupt cargo flows. "The Offshore Alliance will now work with Chevron to finalize the drafting of the agreements and members will soon cease current industrial action," the unions said in a statement.

Exmar takeover progress

Belgian shipping company Exmar, which chartered a regasification barge to the Netherlands and sold a floating LNG production vessel to Italy's Eni for deployment in Africa, is set to be taken over by Saverex NV, the holding company of the family of Exmar Executive Chairman Nicolas Saverys. Exmar, based in Antwerp, had reopened the acceptance period to September 15 for the voluntary public takeover bid launched by Saverex for all shares and share options not already controlled by the bidder.

Vopak agrees €407M sale

Royal Vopak, the Dutch global storage company and LNG sector participant, has reached agreement with Infracapital on the sale of Vopak chemical terminals in Rotterdam. Vopak, whose latest LNG investment was taking a 50 percent stake in the Dutch Eemshaven terminal in Groningen with utility Gasunie, said it reached an agreement with Infracapital on the sale of its three chemical terminals in Rotterdam, the Botlek, TTR and Chemiehaven facilities for a total price of €407 million (\$434M).

US LNG cargo and prices data shows more volumes were pointed at Asia as European deliveries begin to slow

LNG News Editor

The US Department of Energy has published its latest LNG export data showing more cargoes pointed at North Asia instead of mainly European nations after prices moderated after mid-year from 2023 highs.

The DoE's September 2023 report just issued gives the prices, numbers and trends for July 2023.

It showed that the total number of US cargoes delivered worldwide since March 2016 now amounted to 5,039 shipments, or 16,041.1 billion cubic feet of natural gas, at the end of July 2023.

ISO cargoes

A further 1,455 ISO containers of LNG have been shipped to nations in the Caribbean and Latin America from ports in Florida and from Puerto Rico.

The seven operating US LNG export plants dispatched 115 full LNG cargoes in July 2023 versus 108 in the previous month of June and 100 shipments in July 2022.

The Sabine Pass plant in Louisiana remained the volume leader in July 2023 supplying 35 cargoes followed by the now combined Cameron export point's 28 shipments (including split cargoes) from Louisiana.

These included 16 cargoes from Semptra's Cameron LNG facility in July and 12 from Venture Global's Calcasieu Pass plant, both now listed by the DoE under the same Cameron Parish export point.

Freeport LNG in Texas dispatched 22 cargoes, the Corpus Christi facility in Texas shipped 20 cargoes, Cove Point in Maryland sent out six shipments and Elba Island in Georgia had four departures.

In the DoE data, cargoes lifted from the Cameron facilities near Lake Charles cost an average of \$7.44 per million British thermal units in July 2023, which was much lower than the combined Cameron



The 'Maran Gas Andros' delivered a Calcasieu Pass cargo to Spain amid mixed supply destinations

price in the previous month of June of \$11.71 per MMBtu.

The Cameron and Calcasieu Pass plants like the other exporters supplied a varied array of customers.

Semptra's 16 shipments in July from the Cameron plant at Hackberry included on its list four cargoes for Japan, two for China, two for Italy, one for India as well as one each for Panama and Thailand.

The 12 liftings from Venture Global's Calcasieu Pass plant in July included two for Japan, one for China, two for Germany, two for the Netherlands, one for Spain, one for Kuwait and one for the Dominican Republic.

The combined average price in July for all the seven plants was \$6.37 per MMBtu, which was the lowest year-to-date price and down on June's average of \$7.05 per MMBtu.

The average prices for each of the five other plants (from the export point) from highest to lowest in July 2023 were: Corpus Christi in Texas \$6.35 per MMBtu (\$5.82 June); Cove Point (Maryland) \$6.18 per MMBtu (\$6.48, June); Freeport LNG (Texas) \$5.99 per MMBtu (\$5.38, June); Sabine Pass (Louisiana) \$5.87 per MMBtu (\$5.35, June); and Elba Island (Georgia) \$5.41 per MMBtu (\$4.77 June).

Leading buyers

The Top Five countries of destination, representing 53.4 percent of total US LNG exports in July 2023, were the Netherlands (53.3, 16 cargoes), Japan (40.2 Bcf 13 car-

goes), China 39.0 Bcf, 13 cargoes), Spain (34.1 Bcf, 12 cargoes) and France (20.6 Bcf, seven cargoes).

The list of the Top 10 countries of destination overall since 2016 through July 2023 showed two Asian nations, South Korea and Japan, leading and with the UK, Spain, France and the Netherlands in the next four places.

Most recently the Netherlands became the latest European country to overtake China in the overall list with the Chinese now dropping to seventh place.

The top 10 recipients of US LNG by overall numbers of cargoes at the end of July 2023 were: 1) South Korea 535 cargoes; 2) Japan 413; 3) the UK 390; 4) Spain 385; 5) France 384; 6) the Netherlands 323; 7) China 320; 8) India 211 9) Turkey 210; and 10) Brazil 226 - including many split cargoes.

Vessel-borne delivery prices are also given for the US territory of Puerto Rico.

Shipments to Puerto Rico in July 2023 had cost an average of \$7.65 per MMBtu, up from \$7.44 per MMBtu in June.

ISO shipments

US LNG had been received in vessels by 44 different countries through July 2023. This also comprises ISO containers carried by conventional cargo ships.

The US has sent ISO containers to Caribbean and Latin American nations for several years, mostly from ports in Florida.

French port of Le Havre again becomes LNG import point to maintain EU energy security

LNG News Editor

The French port of Le Havre has again become a liquefied natural gas importation point for the first time since the 1980s as commissioning activities were starting for the floating storage and regasification unit (FSRU) "Cape Ann" after its safe arrival in the face of protests.

The LNG import terminal project had been in the planning stages for more than a year before the 145,130 cubic metres "Cape Ann" FSRU arrived to begin a five-year contract.

Deployed

The French-flagged "Cape Ann" docked in Le Havre after leaving Gibraltar on September 12.

The "Cape Ann" is one of several vessels TotalEnergies has on charter from Norwegian shipping company Høegh LNG and had previously been deployed as an import terminal at the port of Tianjin in northeast China.



The 'Cape Ann' safely berthed at Le Havre September 18

The arrival of the FSRU on September 18 brought out large numbers of police to counter the extremist demonstrators who endangered lives by trying to board the FSRU in open water.

Until now, France has been supplied by four LNG import terminals, two at Fos-sur-Mer east of Marseilles, one at Montoir-de-Bretagne in Western France and another at the Channel port of Dunkirk.

The FSRU was eventually

moored after several delays at the Océan dock at the Bougainville quay in Le Havre.

TotalEnergies said it condemned some of the demonstrators who went beyond expressing free speech with "violence in the verbal, physical and material" forms.

Four tugboats from Le Havre went out to the Channel to guide the FSRU to the Bougainville quay and law enforcement officers were positioned in numbers in and

around the port, while the eco-extremists launched boats to try and hinder maritime operations.

Previous terminal

The northwest Normandy port had previously hosted an onshore facility that handled deliveries of LNG from Algeria.

The previous Le Havre LNG terminal was operational between 1965 and 1989 and was run by Gaz de France.

The terminal received cargoes from Algeria on the predecessor to today's modern LNG carriers, the "Jules Verne" gas tanker, though the onshore facility was eventually closed at the end of the 1980s.

The FSRU project in Le Havre will allow France to increase its regasification capacity by around 5 billion cubic metres per annum, which corresponds to the average annual gas consumption of more than 4 million households in France.

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Avenir LNG places three vessels with Wilhelmsen

Avenir LNG, the London-headquartered global energy supplier for small-scale projects and gas carriers, has awarded the management of three LNG bunker vessels to Wilhelmsen Ship Management of Norway.

The bunkering ships concerned are the “Avenir Achievement”, the “Avenir Ascension” and the “Avenir Aspiration”.

“We look forward to managing these state-of-the-art LNG bunker tankers, which hold a pivotal role in the industry’s ongoing energy transition,” said Carl Schou, Chief Executive and President of Wilhelmsen Ship Management.

“We are excited about the opportunities this collaboration will bring and the value it will deliver to both parties,” Schou added.

Avenir is a new customer to Wilhelmsen. The three vessels were previously managed by Hoegh LNG, one of three shareholders in Avenir LNG alongside London-based Stolt Nielsen Ltd and Golar LNG.

“Hoegh LNG have contributed enormously to the success of Avenir LNG since the company was established in 2018, paving a solid foundation for the future,” said Avenir LNG CEO Peter Mackey.

“We applaud all their hard work and Hoegh LNG will continue to be key part of our growth trajectory as a key shareholder,” Mackey added.

CEO Mackey explained that with “a new strategic vision and robust asset base” Avenir was well-placed to weather what can often be a volatile market.

The Oslo-stock listed company currently has a total fleet of five tankers in the water. The latest vessel to join the Avenir fleet was the “Avenir Achievement” with 20,000 cubic metres capacity in May 2022.

GTT reports orders for China LNG ships amid modular plans

LNG News Editor

Gaztransport and Technigaz (GTT), the French LNG storage technology company, has received another order from Dalian Shipbuilding Industry Co. in Northeast China for the tank designs for three LNG carrier newbuilds.

GTT said the latest order was received from its technology partner Dalian Shipbuilding on behalf of Chinese company China Energy.

Choice

The Paris-based company added that the tanks chosen for these three vessels, which will each offer a capacity of 175,000 cubic metres, will be the Mark III Flex membrane containment system.

GTT said that the delivery of the vessels was scheduled for the first half of 2027 and the first quarter of 2028.

The latest order is the second this month from the Dalian yard after a previous order for two ships from Sea Jade Investment, a joint venture comprising Hong Kong-based shipping company Wah Kwong as well as China Gas and



GTT’s Mark III Flex containment system is popular

China Ship Leasing.

Those two vessels will each have capacity of 175,000 cubic metres and will be fitted with the GTT Mark III Flex membrane containment system.

The delivery of the vessels for the Sea Jade consortium is scheduled between the first and the third quarters of 2027.

GTT has also noted in its most recent newsletter just published that the LNG sector had demonstrated more than 60 years of successful and safe operations.

The French firm said it had contributed to this success through continuous innovation in new solu-

tions, new design proposals and efficient assistance in the construction of well over 2,500 LNG storage tanks.

GTT is also advancing marketing propositions for its modular LNG storage tanks that can be delivered by ships or barges, for example, to areas isolated from on the ground engineering expertise.

“Amid rising global energy prices and higher demand, new greenfield onshore projects are running into inflationary headwinds and facing significant challenges to deploy cost-effective LNG storage solutions,” said GTT.

Korean class society gives approval to Hyundai LNG-powered VLGC

Korean Register, the classification society of the Republic of Korea, has awarded an Approval in Principle (AIP) for an LNG dual-fuel Very Large Gas Carrier (VLGC) jointly developed by KR and South Korean shipbuilder HD Hyundai Heavy Industries.

“Currently, the global maritime industry is grappling with the development of various countermeasures to meet strengthening greenhouse-gas regulations and there is more market interest in eco-friendly ships fueled with LNG in particular,” said KR.

The newly approved LNG dual-fuel VLGC, which has been developed in response to market needs,

utilizes both marine gas oil (MGO) and LNG as fuel and incorporates two LNG fuel tanks positioned on both sides of the open deck.

HHI executed the ship’s basic design, established the layout of fuel supply pipes and the gas detection system and designed the LNG fuel tank using their technical expertise.

KR verified the safety, suitability and the regulatory compliance of the design by reviewing national and international regulations, leading to the issuance of the AIP for the LNG dual-fuel VLGC.

“KR has been focusing on the development of eco-friendly tech-

nologies relevant to LNG for several years because LNG is considered a major alternative that can meet the international regulations,” said Kim Yeontae, Executive Vice President of KR’s Technical Division.

“We will further enhance our customer support to respond to decarbonization, based on our experience and technologies acquired from joint development projects with shipyards,” Kim added.

Jeon Seungho, HHI’s Senior Executive Vice President and Chief Technical Officer, said he was delighted with the award.

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Tank systems business Svanehøj France wins contracts at French and Indian LNG terminals

LNG News Editor

Svanehøj France, the tank control systems business, has been awarded contracts to update safety systems at the established Dabhol LNG import terminal on the West Coast of India and at the French Fos Cavaou LNG facility located east of Marseilles.

Svanehøj's tanks business has a long and distinguished track record since it was established at the French Channel port of Calais in 1961 under the banner of the UK engineering company Whessoe plc.

Safety and control

At the time the company equipped its first gas carriers in the 1970s and its first LNG storage tank in 1983.

It was also the first company to provide a level, temperature, and density (LTD) gauge for floating storage and it was part of Finland's Wärtsilä from 2006 until it was acquired by Denmark's Svanehøj in 2022.

Svanehøj France now develops technologies that enhance the



The French Fos Cavaou LNG facility receiving a cargo

safety of LNG, liquefied petroleum gas and cryogenic and refrigerated storage on sea and land.

"Svanehøj's instrumentation and software solutions are installed to ensure that all hazardous aspects related to liquified gas storage are known and controllable," the company said.

"The systems proactively measure possible development or creation of stratification by monitoring the tanks. The product range includes tank level and density gauges, temperature transmitters, and control systems that operate accurately under cryogenic conditions," the company added.

Svanehøj France noted that as time progresses, ageing machinery becomes obsolete, prompting the recognition of the importance of upgrading safety instrumentation.

In response, the Dabhol terminal owned by the Konkan LNG subsidiary of GAIL India and the Fos Cavaou terminal operated by France's Elengy, a unit of GRTgaz within the utility and energy group Engie, partnered with Svanehøj France to renew the safety instrumentation for a combined three LNG tanks.

"We are reconnecting with liquefied gas terminals worldwide and have learnt that some could be in better shape," said Simon

Dufour, an executive at Svanehøj France.

"Some only need spare parts, but some need new instrumentation installed. Without new instrumentation, it can result in dangerous situations and end up shutting down operations," Dufour explained.

Contract scopes

The company said that the Fos Cavaou LNG terminal has already successfully retrofitted one tank with a new densitometer, replacing previous systems and improving functionality and reliability.

"Encouraged by this accomplishment and the cooperation with Svanehøj, Fos Cavaou plans to simultaneously replace the densitometers in the remaining two tanks with delivery of instrumentation in October," said Svanehøj France.

Konkan LNG in India has embarked on a comprehensive plan to upgrade the Dabhol terminal with Svanehøj's valuable experience in safety instrumentation for LNG storage being leveraged.

UK and Dutch companies RenEco and Nordsol join forces for bio-LNG plant project in England

RenEco Ltd of the UK has joined with Dutch company Nordsol to establish a bio-liquefied natural gas plant to produce fuel from waste and targeting customers in the truck transportation sector.

The plant will be located near the town of Rushden in the Central English county of Northamptonshire and will be under the ownership of RenEco.

The facility will represent an expansion of their current organic waste processing operations that focuses on biogas production and electricity.

"Leveraging Nordsol's innovative technology, RenEco will convert biogas into bio-LNG (liquefied

biomethane) with production to commence in the first quarter of 2024," said a statement.

Pivotal role

Bio-LNG is positioned to play a pivotal and expanding role in the UK and the European Union in the transformation of waste to cleaner fuel for the long-haul road and maritime transport industries.

Its advantages over diesel mean significant reductions in carbon-dioxide and other harmful emissions.

"Bio-LNG is the best solution for decarbonizing the hard-to-abate long-haul transport sector today," said Léon van Bossum, Chief Executive of Nordsol, the Dutch company

that has a facility near Amsterdam.

"With this inaugural production plant in the UK we will demonstrate that onsite biogas liquefaction to bio-LNG is not only sustainable but also affordable and scalable," Van Bossum stated.

The small-scale bio-liquefaction facility will produce enough bio-LNG to fuel 100 heavy trucks operating 24 hours per day and 7 days per week.

"This investment is part of a combination of initiatives RenEco is undertaking designed to direct the biogas produced onsite away from renewable heat and power to instead produce products for customers that directly replace traditional fossil-derived products which

are typically more challenging to displace," RenEco explained.

RenEco's plant process involves the collection of organic waste from all parts of the food supply chain and its conversion into biogas and organic fertilizers via anaerobic digestion and the transformation of the biogas into the renewable products like bio-LNG.

"After extensive market research investigating how to decarbonize both our own heavy-goods vehicle fleet and our retail customers' fleets, Nordsol was chosen as a long-term partner to provide their liquefaction technology," explained William Wykes, director of RenEco.



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A handwritten signature in black ink, likely belonging to Jill Evanko.

JILL EVANKO / CEO / CHART INDUSTRIES

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