

LNG Unlimited

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Enagás signs LNG and pipelines deal for a secure northwest Spain

Spanish companies swap gas and LNG assets to underpin Biscay energy security
LNG News Editor

Enagás, the Spanish gas grid and LNG terminals operator, has acquired the Reganosa gas pipeline network in Northern Spain while Reganosa is becoming a 25 percent shareholder in the El Musel regasification and import terminal on the Bay of Biscay previously 100-percent owned by Enagás.

Enagás and Reganosa have signed an agreement whereby Enagás acquires Reganosa's 130-kilometres (81 miles) gas pipeline network for €54 million (\$57M) and Reganosa purchases 25 percent of the El Musel terminal in the Port of Gijón for €95M.

Transmission network

Under the terms of the agreement, Enagás acquires the entire transmission network that until now was owned by Reganosa and which consists of 130km of 80-bar pressure gas pipelines.

The Reganosa name comes from Regasificadora del Noroeste (Reganosa) and stands for north-west regasification.

"This network is included in the main network and is key to guaranteeing the security of supply and the proper functioning of the Iberian gas market," explained Enagás.

It connects with the Mugardos LNG terminal and with the Tui-Llanera gas pipeline in Guitiriz and Abegondo.

Gas-fired power

The transmission network delivers natural gas directly to the Pontes



El Musel terminal in the Port of Gijón on Bay of Biscay

(800 megawatts) and Sabón (400 MW) combined cycle gas-fired power plants, to the Coruña refinery (120,000 barrels/day) and to the towns of Pontes and Cerceda.

"This is a historic agreement that reinforces the strategy of the two companies and strengthens the Spanish Gas System," said Arturo Gonzalo, Chief Executive of Enagás.

"The agreement also contributes to reinforcing the potential of the El Musel terminal and favours our investment plan in Galicia," stated Gonzalo.

"We are two companies with many synergies and this operation makes us better prepared to face the challenges that lie ahead, such as continuing to guarantee the energy supply of Spain and Europe," stated the CEO.

The general director of Reganosa, Emilio Bruquetas, said the public-private collaboration and cooperation between companies are part of the Reganosa strategy.

Northwest Spain boost

"It is a source of pride for us to be able to contribute together with Enagás to the development of the northwest of the Peninsula to the strengthening of the Spanish energy system and to the increase in

security of supply as well as the achievement of the objectives of decarbonisation of the economy," declared Bruquetas.

In addition to operating Spain's gas grid, Enagás has capacity at six LNG regasification terminals in Spain.

It owns five terminals at Barcelona in the northeast, at Cartagena in the southeast, at Sagunto in the east of Spain, at Huelva in the southwest, while the El Musel terminal at the centre of the deal is being reactivated by Enagás for trans-shipments to the European Union.

As well as controlling the El Musel terminal - and now in partnership with Reganosa - Enagás is also overseeing the overhaul of the jetty at the Barcelona terminal to increase its ship handling capacity and to enable trans-shipments from Barcelona to other EU terminals.

Enagás is one of the EU's main Transmission System Operators and has more than 12,000 kilometres of gas pipelines, as well as three underground storage facilities.

The company also operates in six other countries including the United States, Mexico, Peru, Albania, Greece and Italy.

UNLIMITED AGENDA

DEVELOPMENTS

Sempra set for Port Arthur LNG FID as profit rise backed by Cameron exports

2

UPSTREAM

Shell gets \$2Bn for California assets and to now focus on LNG fuel

3

SHIPPING

LNG fleet owner CoolCo sees tight market and prepares listing on NYSE

5

SHIPPING



Keppel shipyard starts conversion of 'GasLog Chelsea' as new Balkan FSRU

6

CORPORATE

Technip Energies reports stronger LNG market and project advances

7

PROJECTS

Mauritania-Senegal FLNG developers confirm second phase project concept

9

Sempra plans Port Arthur LNG go-ahead as earnings rise backed by Cameron plant exports

LNG News Editor

US utility Sempra, whose assets include LNG projects on the US Gulf Coast and Mexico and natural gas and power businesses in California, reported full-year earnings of \$2.09 billion compared with \$1.25Bln in 2021 and was preparing an imminent final investment decision on the Port Arthur LNG project in Texas.

Sempra said that on an adjusted basis, fourth-quarter 2022 earnings were \$743 million compared with \$688M in the same three months of 2021.

Sempra said its Californian units, San Diego Gas & Electric Co. (SDG&E) and Southern California Gas Co. (SoCalGas), continued to enhance reliability and to support California's ambitious clean energy goals.

Liquefaction progress

The LNG unit, Sempra Infrastructure, was "competitively positioned on both the Gulf and



Cameron LNG boosted Sempra's earnings as prices rose

Pacific Coasts of North America" for natural gas exports to assist global energy security.

Sempra said that throughout 2022, Sempra Infrastructure had revenues boosted by the Cameron LNG plant exceeding original production expectations while unlocking efficiencies and achieving a strong safety record.

The company's Energía Costa Azul (ECA) LNG project on the Pacific Coast of Mexico made "substantial construction progress"

and the LNG subsidiary continued to advance marketing efforts for its various LNG development projects.

"The company recently completed the marketing phase for Phase 1 of the Port Arthur LNG development project and it is now fully subscribed at 10.5 million tonnes per annum of definitive, long-term contracts with top-tier counterparties," said Sempra.

"The company is targeting a final investment decision for Port

Arthur LNG Phase 1 before the end of the first quarter," it added.

"In addition, the Cameron LNG Phase 2 development project remains on track for completion of the competitive front-end engineering design process in the summer of this year," stated Sempra.

The San Diego-based company was also looking at future LNG investments include ECA LNG Phase 2 and Vista Pacífico LNG, another project on the Mexican Pacific coast.

Sempra noted that in December 2022 the US Department of Energy approved a plan for the company to export US-sourced natural gas in the form of LNG from Mexico to non-Free Trade Agreement countries.

In the California utility business San Diego Gas & Electric is advancing its wildfire mitigation and resiliency solutions to further reinforce community fire safety and electric system hardening efforts in the San Diego region.

New Fortress Energy posts jump in revenues from growing LNG import-export portfolio

New Fortress Energy Inc., the US developer of floating LNG production and import terminal projects, reported soaring annual revenues and net profits as its array of projects advanced.

The total annual revenues of NFE jumped almost 80 percent to \$2.36 billion, up from \$1.32Bln in 2021.

More integration

The revenue break-down included \$1.97Bln in operating revenues, \$357.15 million in vessel charter revenues and \$32.46M in other income.

The company reported annual net profits of \$185M compared with \$93M in 2021.

NFE said fourth-quarter and annual adjusted gross earnings came

to \$239M and \$1.1Bln respectively.

"Our business remains simple and clear. We seek to match gas demand to gas supply, providing an end-to-end, fully integrated solution to our customers across the globe," said NFE.

"While we have historically purchased (and continue to purchase) LNG supply from third parties, we are progressing our Fast LNG (FLNG) initiative to supply our terminals and other customers," it added.

"We believe these developments will allow us to control our own LNG supply and complete the value chain enabling full vertical integration of our business," stated NFE.

Developments after the fourth quarter included the sale of the NFE ownership stake in the "Hilli Episeyo" FLNG vessel deployed off

Cameroon in West Africa to Golar LNG in exchange for the return of 4.1 million NFE shares, \$100M in cash and the extinguishment of \$323M in Hilli-related debt.

NFE's interest in the "Hilli Episeyo" FLNG vessel come from its acquisition of the US affiliate of the Golar LNG company, Golar LNG Partners.

The company also completed the Barcarena import terminal in Brazil and expects to deliver first gas to the industrial customer, Norsk Hydro, later in 2023.

Also in Brazil, NFE closed the sale of CELSE, the owner of the Sergipe Power Plant and facility in northeast Brazil for pre-tax net proceeds to NFE of around \$550M and helping to fund the fast LNG program.

"Construction of our FLNG units is progressing rapidly with the first FLNG unit expected to achieve mechanical completion in the Spring of 2023 and commence operations by mid-2023, explained NFE.

"As we add liquefaction capacity and corresponding LNG supply to our portfolio, we intend to sign long-term customer offtake agreements that generate strong operating margins and sustainable cash flows," stated the New York-based firm.

NFE also closed a \$2Bln transaction to form a joint venture called Energos Infrastructure with US equity fund Apollo asset Management in which NFE holds long-term charters for 10 LNG vessels.

Subsea 7 wins key Angola contract

Subsea 7 SA, the Oslo-listed oil and gas field services company, was awarded a large contract by Azule Energy in the framework of the Agogo Integrated West Hub Development Project offshore Angola in southwest Africa.

The contract scope includes the transport and installation of around 98 kilometres of flexible pipes, 30km of umbilicals and associated subsea structures in water depths of around 1,700 metres.

UK major BP and Italian energy company Eni agreed to form the 50-50 joint venture company Azule Energy a year ago in early March 2022 in the LNG-producing African state.

Azule Energy was set up as the new holding entity for the Angolan assets of both BP and Eni.

"Project management and engineering have commenced and will be managed from Subsea 7's offices in Angola, France, UK and Portugal," said Subsea 7.

Fabrication will take place at the Sonamet yard in Lobito, Angola, and offshore operations are planned between the fourth quarter 2024 and the fourth quarter of 2025.

"We are pleased to have our first contract with Azule Energy and to continue supporting the development of the Angolan offshore energy industry," said Franck Louvety, Subsea 7 Vice President for Africa, the Middle East and Caspian regions.

The company also said it defined a "large contract" as being between \$300 million and US\$500M.

Since its formation Azule has become Angola's largest producer, holding stakes in 16 licences, as well as participating in the Angola LNG joint venture.

Shell gets \$2Bln for California assets, will focus on LNG fuel

LNG News Editor

Shell has pulled out of its last high-profile upstream operation in California by completing the sale of majority stake in Aera Energy, headquartered in Bakersfield, and with around 13,000 wells in the state's San Joaquin Valley producing oil and associated gas.

The divestment process involved Shell completing the sale of its 100 percent interest in Shell Onshore Ventures LLC which held a 51.8 percent interest in Aera Energy to two asset management firms for around \$2 billion in cash with additional contingent payments based on oil prices.

Joint venture

Aera Energy was created as a joint venture between Shell and Exxon-Mobil and is California's second-largest oil and gas producer, accounting for nearly 25 percent of the state's production.

"The sale is part of Shell's strategy to create a resilient and competitive Upstream portfolio by



Wells in San Joaquin Valley produce oil and associated gas

focusing on positions with high growth potential and a strong integrated value chain," said Shell.

The European major will still be active in California, though with a lower profile from its other activities including LNG fuelling stations, gas and power trading and electric vehicle charging.

Canada Pension Plan Investment Board (CPP Investments) is partnering with Hamburg, Germany-based international asset management group IKAV to acquire Aera Energy.

"CPP Investments and IKAV intend to help Aera balance its energy transition efforts with the need to continue meeting Califor-

nia's conventional energy demands by investing in a renewable energy portfolio that will power Aera's existing operations," they said.

"Over time, renewable power will be deployed across Aera's land holdings, while selected legacy oil and gas infrastructure will be repurposed to create carbon capture and storage capability," the buyers explained.

Constantin von Wasserschleben, Chairman of IKAV, said his firm was aligned with CPP Investments in its commitment to achieving a smooth and sustainable transition to renewable energy.

Saipem wins drilling contract for Côte d'Ivoire energy hub

Saipem, the Italian offshore energy and LNG feed-gas specialist, was awarded a new drilling contract worth €400 million (\$424M) in the Côte d'Ivoire in West Africa where the Baleine Phase 1 project for offshore oil and associated gas is currently moving forward to maintain the country's status as an African energy hub.

The contract was awarded by Italian oil and gas company Eni and the African nation's state energy company, Société Nationale d'Opérations Pétrolières de la Côte d'Ivoire (Petroci).

The value of the Saipem contract is to be considered gross of the leasing costs of the very high-tech "Deep Value Driller" vessel that will be used for the operations.

The seventh-generation "Deep Value Driller" is one of the most modern in the world for which Saipem has a charter agreement.

"The award of this contract represents an important consolidation of Saipem's presence in the Ivory Coast, a strategic area where the company is currently executing the project for the development of the Baleine oil and associated gas field," said Saipem.

Prospects

"This field was discovered in the recent past thanks to the drilling activities of the 'Saipem 10000' and 'Saipem 12000' vessels," added the Milan-based company.

The Baleine project referred to by Saipem is offshore block CI-101

which is forecast to hold up to 2.0 billion barrels of oil in place and 2.4 trillion cubic feet of associated gas located at water depth of 1,200 metres.

Baleine was discovered in 2021 as the largest commercial discovery in the country in the last 20 years and set to contribute substantially to energy production in Côte d'Ivoire.

The Côte d'Ivoire's mainly oil production has varied significantly over the past two decades as existing fields have become depleted, closed for maintenance or development works and as new discoveries have been made but have needed further investment and development.



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NEWS BRIEFS

Petrobras LNG cuts

Brazil's oil and gas producer Petrobras reported quarterly net income increased by almost 38 percent to the end of December to 43.34 billion reais (\$8.30Bln) compared with 31.50Bln reais (\$6.04Bln) in the same quarter of 2021. Annual net profits jumped by 76.6 percent to 188.32Bln reais (\$36.10Bln), well up on the 2021 total of 106.66Bln reais (\$20.44Bln). Petrobras was able to cut its pipeline natural gas imports from Bolivia and reported a plunge in the volumes of regasified LNG going through the system.

Dubai FSRU extended

Excelerate Energy, the leading US provider of floating LNG import terminals, has extended a time-charter agreement with the Dubai Supply Authority for a floating storage and regasification unit deployed in the United Arab Emirates. Excelerate said that prior to the deal the agreement for the FSRU "Explorer" had a remaining firm charter period of around three years. Under the terms of the new agreement, the charter period will be extended by an additional five years from the end of the existing contract in the fourth quarter of 2025.

NYK Line newbuild

NYK Line, the Japanese shipping company operating more LNG-powered vessels, said the car carrier "Jasmine Leader" had entered Hiroshima Port in Japan after being completed at China Merchants shipyard at Nanjing. "After completion, the vessel received LNG fuel from the 'Kaguya', an LNG bunkering vessel," said NYK. "In the future, the 'Jasmine Leader' will be engaged in the transportation of finished vehicles for Mazda Motor Corp," added NYK.

Growing LNG fleet owner CoolCo posts firm results and forecasts tight 2023 market and prepares listing on NYSE

LNG News Editor

Cool Company Ltd, the LNG shipping joint venture formed between Eastern Pacific Shipping and Golar LNG has issued a business and financial update as it builds a modern fleet and prepares for a listing on the New York Stock Exchange after last year's initial public offering.

CoolCo said the update for the fourth quarter and the 12 months to the end of December 2022 was complicated by the formation and funding of CoolCo and the phased acquisition of the company's initial eight tri-fuel, diesel-electric (TFDE) LNG carriers.

Phased takeover

It also takes account of the phased takeover of the shipping and floating storage and regasification unit (FSRU) management organization from Golar LNG Ltd that commenced in January 2022 and concluded at the end of June 2022.

There was also a subsequent asset acquisition of four LNG carriers on November 10, 2022, from an affiliate of Eastern Pacific Shipping.

The ownership structure prior to February 28 had CoolCo's 53.68 million shares split between 26.79M (49.9 percent) owned by Eastern Pacific, 22.43M (41.8 percent) publicly owned after the IPO and 4.46M shares (8.3 percent) held by Golar LNG Ltd.

Golar LNG then announced later on February 28 that it had sold 4.46M shares in CoolCo to Mi Hong Yoon, a member of the CoolCo board, at a price of 130 Norwegian crown (\$12.5) per share and a total of over \$55 million.

"Following the transaction, Golar LNG holds one share and vote in the company," said a statement to the Oslo exchange.

CoolCo also noted in its earnings that on February 14 it publicly filed a registration statement with the US Securities and Exchange Commission to list on the NYSE.



CoolCo CEO Richard Tyrrell and CFO John Boots



"The company's shares are expected to be listed for trading on the NYSE from around mid-March 2023 onwards under the 'CLCO' ticker," explained the company.

"The ticker on the Euronext Growth Oslo will therefore be changed from 'COOL' to 'CLCO'. No CoolCo securities will be issued in connection with the share listing on the NYSE," added CoolCo, headquartered in Hamilton, Bermuda.

CoolCo said it generated total operating revenues of \$90.3 million for the fourth quarter compared with \$65.8M for the third quarter of 2022. Fourth-quarter net income amounted to \$33.1M and earnings per share were \$0.68.

The company said it achieved average time-charter equivalent earnings of \$83,600 per day for the fourth quarter compared with \$73,200 per day for the third quarter of 2022.

CoolCo also entered into an option agreement expiring on June 30, 2023, to acquire two Hyundai Samho LNG carrier newbuild contracts with scheduled deliveries in the second half of 2024.

The company subsequently sold the "Golar Seal", the oldest vessel in its fleet built in 2013 and with 160,000 cubic metres of capacity, to Höegh LNG Holdings for \$184.3M with the buyer assuming all costs associated with the vessel's forthcoming scheduled dry-docking.

During the quarter, CoolCo completed the acquisition of four contracted LNG carriers. They are the 2021 built two-stroke "Kool

Orca" and the 2020 built two-stroke "Kool Finn", each with 174,100 cubic metres capacity, and the 2015-built TFDE vessels "Kool Boreas" and "Kool Baltic", each with 170,200 cubic metres capacity. The are former SCF vessels.

"The four LNG carriers collectively add revenue backlog of approximately \$370M excluding options and \$1.2Bln including options," stated CoolCo.

"At its IPO a year ago, CoolCo outlined its intention to target growth by consolidation and to focus on shareholder returns by allocating its free cash-flow to equity primarily to dividends," said Richard Tyrrell, Chief Executive.

"I am pleased to see us deliver on both as a result of steps taken during and subsequent to the fourth quarter. We acquired four high-spec, in-service vessels on attractive terms, placed two of our existing vessels on highly attractive charters, and on the back of a strong set of fourth-quarter results were able to declare our first quarterly dividend," stated the CEO.

"Through the sale of the 'Golar Seal', the earliest vessel in our fleet to be built, we are demonstrating our disciplined approach to locking in shareholder value," added Tyrrell.

The CEO explained that with the planned NYSE listing the company was delivering on its intention to provide expanded access to CoolCo for US investors, to broaden the investor base and to drive trading liquidity in the shares.

Keppel shipyard starts work on conversion of renamed 'GasLog Chelsea' as Balkan FSRU

LNG News Editor

Keppel Shipyard in Singapore has started work on the conventional LNG carrier "GasLog Chelsea" to convert the vessel to a floating storage and regasification unit to be deployment as a floating regasification in eastern Greece to supply the Balkans region.

The FSRU will be stationed in the north-eastern part of the Aegean Sea and about 17.6 kilometres (11 miles) from the coastal Greek town of Alexandroupolis.

Greek-flagged

The vessel is being renamed "FSRU Alexandroupoli" and will serve as an offshore storage and import facility.

The "FSRU Alexandroupoli" will be linked to a pipeline system of 28km connecting the floating unit to the Greek National Natural Gas Transmission System (NNGTS).

The ship of 155,000 cubic metres capacity was also recently reflagged to the Greek flag.

The project's owner, Gastrade,



'GasLog Chelsea' is being renamed 'FSRU Alexandroupoli'

is a consortium of key players in the wider region's energy market including Mrs Elmina Copelouzou, the shipping line GasLog, the Public Gas Corporation of Greece (DEPA), it affiliated DEPA Commercial, the Hellenic Natural Gas Transmission System Operator, and Bulgartransgaz, the Bulgarian natural gas transmission and storage system operator.

"GasLog believed in the 'FSRU Alexandroupoli' endeavor from the very beginning and at a time when energy security in Europe was taken for granted," said Kostas Karathanos GasLog's Chief Operating Officer.

"We worked patiently and dili-

gently to reach this stage and we are extremely proud to soon offer the first ever FSRU in Greek waters," added Karathanos.

"Through GasLog's renowned high standards of safety and reliability, the 'FSRU Alexandroupoli' will offer energy diversification and security to the wider region and establish GasLog as an integrated provider of natural gas solutions," he stated.

GasLog is being backed in the conversion process by the leading European classification society DNV.

Martin Cartwright, Business Director DNV Maritime's Gas Carriers and FSRUs division, said the pro-

ject was moving forward as a result of "an exceptional collaborative" effort.

"This will be our record 9th FSRU conversion project as a classification society, and we take great pride in being entrusted with supporting this initiative," explained Cartwright.

"By choosing DNV and our pioneering REGAS (ES) and ASP notations, the consortium demonstrates that they are focused on delivering an installation that meets the most innovative and rigorous standards in the industry," he stated.

The investors noted that the "FSRU Alexandroupoli" vessel and the project aim to add a new gateway for natural gas in the Greek and wider Balkan region, improving the region's energy mix and diversifying energy sources to enhance security.

It is expected to have a regasification capacity of around 8 billion cubic metres of natural gas and will be able to handle up to around 6 MTPA of LNG cargoes.

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Key developments in LNG markets



Gas to Power Journal
Peakload Power and Energy Storage



Woodside profits soar along with record taxes

Woodside Energy, the operator of the Northwest Shelf LNG plant and the Pluto LNG facility in Western Australia, posted soaring annual net profits because of higher prices and the benefits of the merger with commodities giant BHP's petroleum business.

Woodside reported 2022 net profits of US\$6.49 billion compared with US\$1.98Bln in 2021.

The company said production rose to 157.7 million barrels of oil equivalent and operating cash flow was US\$8.81Bln.

Woodside Chief Executive Meg O'Neill said Woodside's strategy delivered "exceptional results", reflecting the success of the merger with BHP Petroleum completed at the start of June 2022.

"Woodside is now a larger, geographically diverse energy company with the financial and operational strength to grow our portfolio of high-quality assets while continuing to deliver returns to shareholders," said O'Neill.

"In what was a momentous year for Woodside we achieved the goals we set ourselves ahead of the merger, implementing initiatives to deliver the targeted \$400 million in synergies ahead of our original schedule," she added.

"As a result of our increased profit, Woodside's Australian tax and royalty payments for the year more than tripled to A\$2.7Bln," O'Neill said.

"We are proud to be making this record contribution back to the local communities where we operate and our Australian tax payments are expected to again increase significantly in 2023," stated the CEO.

Technip Energies reports stronger LNG market and project advances

LNG News Editor

Technip Energies, the leading Europe-based energy and liquefied natural gas project engineering company, forecast a strong LNG market in 2023 and beyond and reported high annual net profits as it advanced projects in Qatar and Mozambique and also planned to seek more mid-scale LNG plant contracts.

Technip Energies posted net profits of €320.2 million (\$340.6M) for 2022 compared with €252.4M in 2021.

Annual revenues were lower at €6.42Bln versus €6.66Bln in 2021 as the company's contract backlog also dropped to €12.75Bln at the end of December 2022 from €16.38Bln in 2021.

Equipment deliveries

"While the significantly lower activity on Arctic LNG II (Russia) had an impact on the revenue trajectory in 2022, the underlying project delivery portfolio showed significant growth buoyed by the ramp-up of major LNG and downstream projects and continued to



Qatar NFE LNG joint venture is receiving key equipment

benefit from strong operational execution," said Technip Energies.

In the earnings highlights, the company mentioned the start-up in November 2022 of the Coral South floating LNG hull offshore Mozambique and the first steel structure erection in the process area for the QatarEnergy North Field Expansion for LNG.

The Qatar NFE venture also received major equipment and materials deliveries including gas turbines.

In other energy areas, Technip Energies noted that the ExxonMobil Beaumont refinery expansion project in the US state of Texas achieved mechanical completion.

"We expect the global gas and LNG markets to remain strong in 2023 and beyond, underpinned by

further demand growth in Europe and recovering demand from China," said Arnaud Pieton, Chief Executive.

"Our very active early engagement portfolio across geographies confirms our leading position, and the development of our new modularized mid-scale LNG solutions will enable accelerated time-to-market and decarbonized LNG production," stated Pieton.

On future mid-scale LNG projects, the Technip Energies CEO was referring to an accord with energy services and equipment company Baker Hughes of the US on the joint supply of modularized of LNG facilities with output between 1 million tonnes per annum and 2 MTPA for the onshore market.

Leading Japanese LNG buyer JERA overhauls senior management system

JERA Co. Inc, the largest buyer of liquefied natural gas for Japan, has overhauled its senior management structure and appointed co-Chief Executives and removed the positions of Chairman and President.

Under the changes Yukio Kani, currently a Vice President will become Global CEO while Hisahide Okuda, also a Vice President will be the other co-CEO.

Directorships

Current Chairman Toshihiro Sano will become a director and the current President Satoshi Onoda will also confine his activities to the board room.

JERA, which buys around 35

million tonnes per annum of LNG, is Japan's biggest fossil-fuel electricity generator being owned jointly by Tokyo Electric Power Co. (TEPCO) and Chubu Electric, the two largest power companies.

JERA currently oversees the operations and provides fuel for a total of 26 power plants in Japan and imports LNG into 11 of Japan's network of 37 terminals.

Outgoing Chairman Toshihiro Sano explained the changes which put Global CEO Yukio Kani, a former head of LNG at TEPCO, in a position of greater influence.

Kani is also a graduate of Columbia Business School in New York.

The changes will be effective from April when Toshihiro Sano will resign as Chairman and Satoshi Onoda will cease to be President.

"Since my appointment as Chairman in 2019, I have focused my energies, together with Mr Onoda, on the smooth post-merger integration of our existing thermal power businesses," explained outgoing Chairman Sano.

"The scale of this integration, bringing 26 thermal power plants and more than 3,000 employees together in a single organization, is unprecedented in the electric power industry," he said.

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Mauritania-Senegal floating LNG developers led by BP confirm second phase project concept

LNG News Editor

UK major BP and Kosmos Energy of the US along with the state energy companies of Mauritania and Senegal have confirmed the development expansion concept for the second phase of the Greater Tortue Ahmeyim (GTA) gas fields floating LNG project.

The partnership comprises BP as operator and Senegal's Petrosen, Mauritania's Société Mauritanienne des Hydrocarbures (SMH) as well as Kosmos, will evaluate a gravity-based structure (GBS) LNG venture as the basis for the venture with total capacity of between 2.5 million tonnes per annum and 3 MTPA.

Proven method

GBS LNG development have a static connection to the seabed with the structure providing LNG storage and a foundation for liquefaction facilities.

The earliest industry example



West African Greater Tortue Ahmeyim gas hub taking shape

was the Adriatic LNG import project on line since 2009. It is located offshore the East Coast of Italy and the facility is positioned on concrete caissons shipped to the location and fixed to the ocean floor.

The BP-led project concept design offshore West Africa will also include new wells and subsea equipment, integrating with and expanding on existing GTA infrastructure.

"The partnership will consider powering LNG liquefaction using electricity to help drive operational emissions lower," said a statement.

BP and its partners are now working with contractors to progress the concept towards the pre-front-end engineering stage.

"We aim to build on our strong collaboration with our partners, and the Governments of Mauritania and Senegal, to further de-

velop a long-term, successful energy hub in West Africa. GTA continues to underpin our strategy to develop the most resilient hydrocarbons to help provide energy security today," said Gordon Birrell, BP's executive vice president for operations and production.

The current Mauritania-Senegal FLNG project is located 120 kilometres offshore in water depth of 2,850 metres, one of the deepest subsea developments in Africa.

The Phase 1 of the project is currently under development and will export gas to an Floating Production and Storage and Offloading (FPSO) unit about 40km offshore.

The natural gas will be processed and liquids separated, before exporting gas onward to floating LNG facilities 10km offshore.

It is expected to produce around 2.3 MTPA of LNG per year when operations commence.

Equipment-maker Chart has record year as closure awaited on \$4.4Bln takeover of UK's Howden

Chart Industries, the US LNG equipment-maker and industrial gases and clean energy company, reported soaring sales and earnings as well as record orders and a vibrant LNG market as it prepared to close the \$4.4 billion take-over of UK engineering company Howden.

Chart achieved record full-year 2022 orders of \$2.77 billion and included its highest ever quarterly levels with the fourth-quarter total being \$525.9 million, an increase of over 14 percent from the same three months of 2021.

"Orders included three 'Big LNG' orders totaling \$620M as well as a total of 12 floating LNG (FLNG), small-scale LNG and hydrogen liquefaction systems and associated equipment," explained Atlanta, Georgia-based Chart in its fourth-quarter and full-year

earnings statement.

"Fourth-quarter orders included orders for our IPSMR® process technology and associated equipment for New Fortress Energy's Fast4 and Fast5 LNG projects," said the company.

"This was the first time in our history that we booked multiple 'Big LNG' projects in the same year, with three consecutive quarters. We anticipate 'Big LNG', small-scale LNG and FLNG demand to continue in 2023," added Chart.

China order

Chart said that to start 2023 it had received an order for \$115M for its IPSMR® liquefaction systems China's Wison Heavy Industry Co. as well as an order for brazed aluminum heat exchangers for a float-

ing LNG application for \$19.5M.

In its corporate expansion activities, Chart had agreed in the fourth quarter to acquire Howden, a leading UK-based global provider air and gas-handling products and services, for a purchase price of \$4.4Bln from affiliates of KPS Capital Partners LP.

"The Howden acquisition is anticipated to close in the next 45 days and is on-track to deliver our year-one synergy and financial commitments," stated Chart.

Howden manufactures a portfolio of rotating equipment products, including compressors, blowers, fans, rotary heaters and steam turbines.

The UK company is headquartered in Renfrew, Scotland, and employs more than 6,500 people globally in 35 countries, including

more than 750 engineers.

Howden demand up

"Howden, like Chart, continued to experience strong demand from numerous macro tailwinds in their end markets in the fourth quarter 2022 and into the first quarter of 2023 as well as very strong backlog heading into the year," Chart said in its earnings.

"We are reiterating our view for 12 months 'pro-forma' combined sales of \$4.25Bln and associated adjusted 2023 EBITDA of \$1Bln for the Chart and Howden combined business, inclusive of year-one cost synergies of \$175M," added the US company.

Chart's sales in 2022 had jumped by 23 percent to \$1.61Bln from \$1.31Bln in 2021.



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