

# BULLETIN

## Weekly News

### EXECUTIVE SUMMARY

#### The Commodity summary

- Steel HRC (North America) prices are up by 33% WTD
- Natural gas prices went up by 22% WTD
- Iron Ore prices are lower than a year ago prices
- Crude Oil Brent prices went up by 13% WTD and Crude Oil WTI prices went down by 7% MTD.

#### The Currency summary

- US Dollar to Euro is stronger by more than 6% YTD but Euro is gaining strength against US Dollar
- The US Dollar against CNY is stronger by more than 9% YTD.

#### The Rig count summary

- The Rig counts in Europe have gone down by 6% MTD and in UAE it has gone down by 2% MTD

#### Project summary

- Jindal Shadeed Plans to Set Up \$3bn Green Steel Project in Sezad
- Qatargas seeks North Field compression facilities in \$4 billion tender
- ONGC starts chase for \$600 million development offshore India's west coast
- PTTEP's \$30 billion spending spree
- Egypt's \$5.5 billion project to create over 10,000 construction jobs
- Saipem awarded \$1.2 billion new contracts

### COMMODITY UPDATES

| COMMODITY             | UOM     | LATEST PRICE | WTD %  | MTD %  | 3MTD % | 6MTD % | YTD %  |
|-----------------------|---------|--------------|--------|--------|--------|--------|--------|
| Chromium              | USD/MT  | 9,995.27     | 2.67   | 3.30   | 3.19   | -8.93  | -6.85  |
| Coal                  | USD/MT  | 446.44       | -0.93  | 16.02  | -7.76  | 2.39   | 146.12 |
| Cobalt                | USD/MT  | 43,651.53    | -5.03  | -10.14 | -21.42 | -44.65 | -39.20 |
| Copper                | USD/MT  | 8,497.00     | 0.87   | 5.56   | 10.79  | -6.15  | -10.81 |
| Crude Oil             | USD/BBL | 78.61        | 2.58   | -7.88  | -10.38 | -32.21 | 6.73   |
| Crude Oil Brent       | USD/BBL | 81.26        | 12.94  | -8.35  | -10.69 | -30.83 | 8.24   |
| Crude Oil WTI         | USD/BBL | 75.96        | -0.24  | -7.37  | -10.05 | -33.63 | 5.80   |
| Iron Ore              | USD/MT  | 109.23       | 1.44   | 21.13  | 10.76  | -20.01 | -1.53  |
| Molybdenum            | USD/MT  | 56,889.00    | 21.41  | 35.17  | 55.03  | 48.50  | 38.81  |
| Natural Gas           | USD/MCF | 6.82         | 21.53  | -2.04  | -16.85 | -13.61 | 70.36  |
| Nickel                | USD/MT  | 28,287.00    | -11.38 | 11.13  | 21.10  | 9.51   | 42.43  |
| Steel HRC (FOB China) | USD/MT  | 578.00       | 0.87   | 10.38  | 0.64   | -21.24 | -24.60 |

|                        |        |        |       |       |        |        |        |
|------------------------|--------|--------|-------|-------|--------|--------|--------|
| Steel HRC (N. America) | USD/MT | 727.03 | 32.93 | 1.21  | -17.75 | -42.31 | -59.44 |
| Steel Rebar            | USD/MT | 584.30 | 0.25  | 4.26  | -4.70  | -21.18 | -24.70 |
| Steel Scrap            | USD/MT | 389.00 | 1.97  | 10.81 | 7.87   | 1.68   | -14.31 |

Source: Investing.com / Trading Economics / London Metal Exchange / MarketIndex.com.au / OilPrice.com

#### CURRENCY EXCHANGE RATE

| Code   | Description  | Country   | Units | Latest Exchange Rates | WTD%  | MTD% | 3MTD% | 6MTD% | YTD%  |
|--------|--------------|-----------|-------|-----------------------|-------|------|-------|-------|-------|
| EURUSD | 1 EUR to USD | Euro Area | USD   | 1.0659                | 0.98  | 3.01 | 6.73  | 1.93  | -5.61 |
| USDCNY | 1 USD to CNY | China     | CNY   | 6.9611                | -0.01 | 1.21 | 0.74  | -4.40 | -9.21 |

Source- Trading Economics

#### CRUDE OIL STOCK

| Region                                      | Unit             | Latest Count | WTD % | MTD % | 3MTD % | 6MTD % | YTD % |
|---|------------------|--------------|-------|-------|--------|--------|-------|
| US Stocks of Crude Oil & Petroleum Products | Thousand Barrels | 16,13,439.00 | 0.58  | 0.81  | -1.46  | -3.88  | -9.78 |

Source: US Energy Information Authority

#### SELECTIVE COMMODITY TRADERS AND PIPE MANUFACTURERS STOCK PRICES

##### STOCK PRICES

| Name                      | Latest Value | Units | WTD%  | MTD%  | 3MTD% | 6MTD%  | YTD%   |
|---------------------------|--------------|-------|-------|-------|-------|--------|--------|
| ArcelorMittal SA          | 26.62        | USD   | -1.73 | -0.86 | 21.72 | -3.79  | -15.63 |
| Glencore PLC              | 542.10       | GBP   | -1.18 | 4.35  | 7.99  | 10.05  | 51.26  |
| NYSE American Steel Index | 1,752.36     | Index | -1.61 | 1.31  | 20.25 | 7.94   | 14.87  |
| Rio Tinto PLC             | 5,621.00     | GBP   | -2.75 | 2.97  | 17.84 | -0.25  | 18.46  |
| Tenaris SA                | 33.32        | USD   | 1.71  | -4.39 | 21.12 | 14.94  | 63.65  |
| Tubacex SA                | 2.02         | EUR   | 0.50  | -4.72 | -7.34 | -17.21 | 26.25  |

Source- Trading Economics / Wall Street Journal / CNBC

#### INTERNATIONAL RIG COUNTS

##### ACTIVE RIG COUNTS BY REGION

| Region               | Latest Count | WTD % | MTD % | 3MTD % | 6MTD % | YTD % |
|----------------------|--------------|-------|-------|--------|--------|-------|
| United Arab Emirates | 51           | *     | -1.92 | 2.00   | 6.25   | 18.60 |
| GCC                  | 223          | *     | 0.45  | 9.85   | 4.69   | 21.86 |
| Middle East          | 327          | *     | 0.93  | 6.86   | 4.47   | 18.48 |
| Africa               | 83           | *     | 7.79  | 16.90  | 18.57  | 6.41  |
| Asia-Pacific         | 188          | *     | -2.08 | 3.30   | 3.87   | 3.87  |
| Europe               | 95           | *     | -5.94 | -2.06  | 33.80  | -3.06 |
| Latin America        | 185          | *     | -1.07 | 8.19   | 20.92  | 20.13 |
| North America        | 980          | 0.31  | 0.41  | 0.41   | 8.29   | 44.97 |
| Total                | 1,858        | *     | 0.05  | 3.05   | 9.75   | 27.00 |

## NEWS OF THE WEEK

## GULF COOPERATION COUNCIL ( GCC)

UAE

- Dubai received 29 EOIs for 120MIGD Hassyan IWP**  
 Dubai Electricity and Water Authority (DEWA) announced that it has received 29 expressions of interest (EOIs) to implement the first phase of its 120 Million Gallons Per Day (MIGD) Hassyan Sea Water Reverse Osmosis Plant (SWRO) Project using the Independent Water Producer (IWP) model. This is the first project implemented by DEWA using the IWP model, which will run in phases during 2025 and 2026. Saeed Mohammed Al Tayer, MD and CEO of DEWA, highlighted that DEWA uses clean solar power to desalinate seawater using the latest Reverse Osmosis (RO) technologies, which consume less energy. This supports the UAE Water Security Strategy 2036. “We support the vision of His Highness Sheikh Mohammed bin Rashid Al Maktoum, Vice President, Prime Minister and Ruler of Dubai, to promote sustainable development in Dubai, in line with the integrated strategy for managing water resources in Dubai 2030, and using the latest technologies and innovative solutions.” “According to our plans, 100 percent of desalinated water will be produced by a mix of clean energy that uses both renewable energy and waste heat. **10<sup>th</sup> December 2022**
- Petrofac awarded EPC Contract in UAE**  
 Petrofac, a leading provider of services to the global energy industry, announced that it has been awarded a lump-sum engineering, procurement and construction (EPC) contract with ADNOC in the United Arab Emirates. Under the agreement, Petrofac’s Asset Solutions business will design and install facilities to optimise operations and reduce methane and greenhouse gas emissions at the Habshan Complex, located 150 kilometres South West of Abu Dhabi. This award follows the September 2022 announcement that Petrofac will continue to support ADNOC’s operations at the Haliba oil field, with a two-year Field Maintenance Services contract extension. Present in the UAE since in 1991, with operational centres in Abu Dhabi and Sharjah, Petrofac has developed a large workforce to deliver both regional and international projects, while supporting In-Country Value and Emiratisation. **12<sup>th</sup> December 2022**
- Firms Signed MOU for Middle East’s first Waste to Hydrogen Plant**  
 BEEAH Group, the Middle East’s sustainability pioneer, Chinook Sciences, UK’s innovator in waste to fuel technologies, and Air Water, a Japanese conglomerate with businesses relating to natural resources and industrial gas production, have signed a memorandum of understanding (MoU) to produce fuel cell grade hydrogen from waste wood and plastic. The MoU signed in Japan is a first step in forming a consortium that will advance progress on the Middle East’s first waste to hydrogen plant, located in Sharjah, and explore further opportunities across the region. Combining BEEAH’s expertise in waste management and material recovery, Chinook Sciences patented RODECS pyrolysis and gasification process, and Air Water’s Hydrogen Refinement technology, the Waste to Hydrogen plant in Sharjah will transform waste wood and plastic into fuel-cell grade green hydrogen. The Waste to Hydrogen plant in Sharjah was first announced by BEEAH Group and Chinook Sciences Green in May 2021 and was formalised later the same year with the commencement of development plans. The project will add to BEEAH Group’s diversifying portfolio of zero-waste, net-zero emissions solutions to power the sustainable, smart cities of tomorrow. At the same time, it will introduce cutting-edge technologies from UK’s Chinook Sciences and Japan’s Air Water to the UAE and the nation. By 2030, the global green hydrogen production market is expected to reach US\$1 trillion. As per its Hydrogen Leadership Roadmap, the UAE aims to be a hub for the export of green hydrogen and is targeting 25 percent of the global market. **13<sup>th</sup> December 2022**
- ADNOC to set up low carbon solutions biz**

The new vertical will focus on renewable energy, clean hydrogen and carbon capture and storage, gas, LNG and chemicals. Abu Dhabi National Oil Company (ADNOC) is establishing a new low-carbon solutions business that will focus on renewable energy, clean hydrogen and carbon capture and storage, gas, LNG and chemicals, it said on December 6. ADNOC said the business will play a role in advancing the company's ongoing transformation, which includes decarbonisation of its operations, energy efficiency and operational excellence, reductions in methane emissions, advancing CCUS to cut CO<sub>2</sub> emissions, and the use of renewable and other zero-carbon energy sources. "The Low Carbon Solutions & International Growth vertical will accelerate delivery of our decarbonisation roadmap and advance our net zero by 2050 ambition," ADNOC CEO Sultan Ahmed Al Jaber said. "As the UAE prepares to host COP28 next year, we will continue to focus on practical and positive solutions that drive progress for the climate and the economy. **7<sup>th</sup> December 2022**

- **UAE's ADNOC Drilling acquires two new jack-up rigs worth of \$200m**

ADNOC Drilling Company PJSC (ADNOC Drilling) announced that it has signed an agreement to acquire an additional two premium high-specification Gusto MSC CJ46-X100-D design offshore jack-up drilling units. The rigs have a combined cost of US\$200 million. ADNOC Drilling continues to demonstrate strong and resilient growth combined with a sustainable and progressive dividend policy. As of today, the Company has signed more than US\$13 billion of contracts since its IPO. From the IPO in October 2021 to the end of 3Q22, the Company has delivered a compelling Total Shareholder Return of 53.7 percent. In the first nine months of 2022, the Company delivered revenue of US\$1.94 billion, a 15 percent year-on-year increase, with US\$568 million in net profit, increasing 24 percent. **14<sup>th</sup> December 2022**

- **Adnoc, Petronas to Explore Unconventional Oil Block 1 in Abu Dhabi**

Abu Dhabi National Oil Company (Adnoc) and Petronas Abu Dhabi have agreed to explore an unconventional onshore block in Abu Dhabi. Under the deal, the two firms will explore and appraise Unconventional Onshore Block 1 in Abu Dhabi's Al Dhafra region. For a period of up to six years, Petronas will retain a 100% stake and operating rights to explore and appraise resources in the unconventional oil the block, which covers a 2,000km<sup>2</sup> concession. UAE Minister of Industry and Advanced Technology and Adnoc managing director and group CEO Dr Sultan Ahmed Al Jaber said: "As one of the least carbon intensive oil and gas producers, Adnoc will continue to responsibly unlock value from Abu Dhabi's vast hydrocarbon resources in a reliable and sustainable manner, to drive local economic growth and support global energy security, in line with the wise directives of the UAE's leadership. **14<sup>th</sup> December 2022**

BAHRAIN

- **Bahrain received Bidders Proposals for Askar Landfill Remediation Package - SaudiGulf Projects**

Bahrain's Electricity and Water Authority (EWA) received the bidders proposals to remediate a two square kilometre landfill site to prepare the plot for the development and implementation of a solar project with a minimum capacity of 100 MW. The landfill site is located at Askar, in the Southern Governorate of Bahrain. The scope of the project will involve the design and construction of a landfill gas extraction and treatment system to meet the requirements of environmental standards as per the Supreme Council of Environment requirements. The project will also include land remediation, the development of gas and leachate management systems, and a drainage system to ensure the site readiness for the construction and operation of the solar project. Earlier, EWA announced that, under a separate tender and in parallel to this project, EWA will be issuing a "Request for Proposal (RFP)" for developing a 100 MW solar plant located on the remediated landfill. With Bahrain's Economic Recovery Plan, the Kingdom plans to target investments worth US\$30 billion in strategic projects, creating new investment opportunities in infrastructure and priority sectors across the Kingdom, including renewable energy sectors such as blue and green hydrogen. **12<sup>th</sup> December 2022**

|              |  |
|--------------|--|
| <p>OMAN</p>  | <ul style="list-style-type: none"> <li> <p><b><u>Petrofac Wins Major EPS Contracts for Block-10 Development in Oman</u></b><br/> Petrofac, a leading provider of services to the global energy industry, said it has been selected by oil major Shell to undertake new engineering and procurement services (EPS) scopes in Oman. The first is a five-year EPS contract for Shell’s Block-10 Mabrouk Phase-2 Project, located in the Al Wusta Governate of Oman – around 400km from capital, Muscat. The contract was awarded following a competitive tender and the scope includes well-pads for multiple wells, remote manifold stations and connecting pipeline, including water infrastructure for well development and a Field Operations Base, said Petrofac in a statement. Two further contracts, to provide residual engineering and procurement services to complete Phase-1B of the Block-10 development, were secured under Petrofac’s global Enterprise Framework Agreement with Shell, it stated. On the contract win, Elie Lahoud, Chief Operating Officer (Engineering &amp; Construction) said: "Petrofac has been operating in Oman for over 30 years, delivering more than 15 major projects and \$3.7 billion of in-country value during that time. We are delighted to continue our support of the sultanate’s energy industry and its Vision 2040 priorities." The three newly awarded contracts will be delivered in-country utilizing Petrofac’s multi-discipline engineering and project execution office in Muscat, he stated. Shell Integrated Gas Oman BV, a subsidiary of Shell, along with its partners, OQ and Marsa Liquefied Natural Gas, had signed a concession agreement in December 2021 to develop and produce natural gas from Block-10 with Shell becoming the operator of the field. Petrofac said it has been supporting Oman’s energy industries since 1988 to design, build, operate and maintain facilities, as well as developing local workforce competence and generating in-country value. <b>12<sup>th</sup> December 2022</b></p> </li> <li> <p><b><u>Jindal Shadeed Plans to Set Up \$3bn Green Steel Project in Sezad</u></b><br/> Jindal Shadeed Group, a pioneer in the steel industry, has selected the Special Economic Zone at Duqm (Sezad) in Oman to set up \$3 billion mega green steel manufacturing facility to produce 5 million metric tonnes of green steel annually. Slated to be the largest of its kind within the zone to produce green steel, the factory will also utilize renewable energy sources in its manufacturing operations. The project will create over \$800 million per annum in country value addition. The plant will supply high quality steel products to automobile, wind energy and consumer durables sector amongst others. There is a booming demand for green steel from ESG conscious customers around the world especially in Europe and Asia, who have already committed significant reduction in Scope 3 emissions by 2030. This announcement was made at a ceremony that included the signing of a Memorandum of Understanding and a land allocation agreement. The Special Economic Zone at Duqm (Sezad) is the largest economic zone in the Middle East, with an area of 2,000 sq km. This strategic project is being built over an area estimated at approximately 2 sq km in the concession zone at the Port of Duqm. The MoU was signed by Eng Ahmed bin Hassan Al Dheeb, Deputy Chairman of the Public Authority for Special Economic Zones and Free Zones, and Harssha Shetty, CEO of Jindal Shadeed Group. The land reservation agreement was signed by the Jindal Shadeed Group and Reggy Vermeulen, Chief Executive Officer of Port of Duqm. Shetty said: “Jindal Shadeed Group is investing more than \$3 billion to develop this mega steel project in Duqm, and we have already obtained the necessary approvals to secure the land for our Green Hydrogen ready steel project.” <b>13<sup>th</sup> December 2022</b></p> </li> </ul> |
| <p>QATAR</p> | <ul style="list-style-type: none"> <li> <p><b><u>Qatargas seeks North Field compression facilities in \$4 billion tender</u></b><br/> Two giant-sized offshore platform complexes could involve up to 100,000 tonnes of fabrication. Qatargas has kicked off the chase for a massive engineering, procurement, construction and installation contract for compression facilities forming part of the further development of the major North Field Production Sustainability (NFPS) offshore project. Multiple people familiar with the bid process told Upstream that leading international contractors recently submitted formal expressions of interest for the offshore compression package, EPCI 4, responding to the Qatari company’s call. The contractual package requires two giant-sized offshore compression platform complexes that could together involve up to 100,000 tonnes of fabrication, one person said. <b>9<sup>th</sup> December 2022</b></p> </li> </ul>  |

- **Saudi Aramco and Shandong Energy collaborate on downstream projects in China**  
one of the world's leading integrated energy and chemicals companies, and Shandong Energy Group, are exploring collaboration on integrated refining and petrochemical opportunities in China. The companies have signed a Memorandum of Understanding (MoU) which includes a potential crude oil supply agreement and chemicals products offtake agreement, supporting Aramco's role in building a thriving downstream sector in Shandong Province. The signing ceremony, which was conducted with the participation of Shandong Provincial People's Government, underlined the importance of Aramco's collaboration with Chinese companies. The scope of the MoU extends to cooperation across technologies related to hydrogen, renewables and carbon capture and storage. Mohammed Y. Al Qahtani, Aramco Senior Vice President of Downstream, said: "Through collaborations such as this in China's energy heartland, we are creating new pathways for growth in a country that is driving the increased integration of refining and petrochemical processes. **9<sup>th</sup> December 2022**
- **Saudi Arabia announces expression of interest for Jubail 4 & 6 Independent Water Project**  
Saudi Water Partnership Company S.M.L.L.C (SWPC) invites the submission of expressions of interest (EOI) in respect of the potential development of an Independent Water Project to be designed using Reverse Osmosis seawater desalination technology. The desalination plant will be located 18 kms south of Jubail Industrial City at the Arabian Gulf Coast, adjacent to the existing plant units (Jubail Phase 1, Jubail Phase 2, Jubail 3A & 3B), in the Eastern Province of the Kingdom of Saudi Arabia. Power supply to the Project will be provided from the Saudi Electricity Company's high voltage network. The Project will be constructed with a 600,000 m<sup>3</sup>/day potable water capacity and will include the desalination plant and all associated infrastructure and facilities. SWPC intends to conduct a competitive tender process to select a private sector developer (which may be a developer consortium) for the development, financing, procurement, implementation, operation and maintenance of the Project. The successful bidder, through a project company to be incorporated, would develop the Project and sell the entire capacity and output to SWPC under a 25-year concession pursuant to a Water Purchase Agreement (WPA). SWPC's obligations under the WPA will be supported by a credit support agreement from the government of the Kingdom of Saudi Arabia. **8<sup>th</sup> December 2022**
- **Saudi Arabia's Advanced Petrochemical announces the financial close of SAR 6.1bn for PDH and PP Plant**  
Advanced Petrochemical Company, Saudi Arabia announces the financial close for the financing of SR 6.1 Billion Shari'ah Compliant Islamic Facilities by Advanced Polyolefins Industry Company (Advanced Polyolefins), a subsidiary company, to finance the construction of Propane Dehydrogenation, Polypropylene and Isopropanol plants in Jubail Industrial City, Kingdom of Saudi Arabia. This follows the signing of various Islamic Facility Agreements with a consortium of financial institutions announced on July 6, 2022. It is worthwhile to note that Advanced Polyolefins is a joint venture between Advanced Global Investment Company (a 100% owned subsidiary of ADVANCED) and SK Gas Petrochemical Pte. Ltd. (a subsidiary of SK Gas Co., Ltd.) to produce 843,000 tons per annum Propylene, 800,000 tons per annum Polypropylene and 70,000 tons per annum Isopropanol. Achieving the financial close constitutes a major milestone for the success of the Project which has already completed more than 45% of engineering, procurement and construction activities as of end of November 2022 and is scheduled to commence commercial operations in the 2nd half of 2024. Related: Saudi Arabia's Advanced Petrochemical and SK Gas to build \$1.8 billion PDH and PP Plant. **6<sup>th</sup> December 2022**
- **Saudi Arabia, Kuwait Sign MoU to Develop Al-Durra Gas Field**  
The Kuwait Gulf Oil Company (KGOC), a subsidiary of the Kuwait Petroleum Corporation (KPC), signed on Sunday a Memorandum of Understanding (MoU) with Saudi Aramco Gulf Operations Company to develop the joint Durra gas field. Kuwait's Deputy Prime Minister and Minister of Oil Dr. Badr Al-Mulla and Saudi Minister of Energy Prince Abdulaziz bin Salman attended the signing ceremony. In a press statement, Acting CEO of KGOC Khaled Al-Otaibi said the memo includes procedures to develop the field that are based on implementing the provisions mentioned in the minutes of the ministerial meeting. The MoU aims to re-assess and complete engineering studies of the field project as well as form a technical team to



carry out the scheme, he added. He indicated that the joint Durra field development program aims to produce one billion cubic feet of natural gas per day and 84,000 barrels of liquefied gas per day. **12<sup>th</sup> December 2022**

- **Saudi's SENDAN awarded new Contract from Saipem**

SENDAN, Saudi Arabia announced that, recently it has signed a sizable Civil Construction work package with Saipem for BERRI ABU ALI DEVELOPMENT PROJECT – Package 1 and 2 Packages. The purpose of this Project is increase the daily processing capacity of Arabian Light Crude by 250 MBCD in order to reach the Maximum Sustainable Capacity of the Berri field and SENDAN will mobilize approx. 1,000 manpower (Direct and Indirect) during 24 months of the contract period. This Project shall provide a Gas-Oil Separation Plant (GOSP) comprised of separation traps and wet crude-handling FACILITIES. Gas compression FACILITIES, gas dehydration & dew point control, a flare system, local stabilization, shipping pumps and hot oil system shall also be included. For the water injection plant, a heat recovery system will be added to the existing gas turbines. Associated utilities, including electrical, control / communication systems and infrastructure FACILITIES shall also be provided. **14<sup>th</sup> December 2022**

**ASIA EXCLUDING GULF COOPERATION COUNCIL (GCC)**

BRUNEI

- **Petronas revives on-off Brunei ultra-deepwater development**

Malaysia's national upstream company Petronas Carigali is offering the offshore industry a seasonal gift with the potential reboot of the Kelidang ultra-deepwater field development offshore Brunei Darussalam. After veering between stop and go for several years then enduring a two-year-plus hiatus due to the Covid-19 pandemic, the development of Kelidang is again back on the agenda. Petronas Carigali has approached several owners of floating production units that could be available for lease, Upstream was told. Sources said there are clear economic advantages in using an existing floater instead of opting for a new vessel. **9<sup>th</sup> December 2022**

CHINA

- **CNOOC Ltd kicks off first offshore CO<sub>2</sub>-EOR project in South China Sea**

Project is designed to reinject up to 30,000 tonnes of carbon dioxide per annum. Chinese offshore operator CNOOC Ltd has kicked off a carbon dioxide enhanced oil recovery (CO<sub>2</sub>-EOR) project at the Yinggehai basin of the South China Sea, the first such scheme offshore China. CNOOC Ltd is applying carbon capture and storage technology to the mature Ledong 15-1 gas field to optimise production while reducing CO<sub>2</sub> emissions in a move to help decarbonise offshore oil and gas production. The Ledong CO<sub>2</sub>-EOR project is one of the first CNOOC Ltd will be implementing to reduce carbon gas as it transitions toward decarbonisation. Xie Yuhong, CNOOC Ltd's chief scientist, said that the project is at the detailed engineering stage and construction is scheduled for completion in the first half next year. In August, China's Chongqing Gas Compressor Factory Company emerged as front runner to supply the CO<sub>2</sub> reciprocal compressor module for the Ledong 15-1 production and reinjection platform (Ledong 15-1 PRP) after offering a very competitive price of 2.85 million yuan (\$410,000). The module should weigh a maximum 30 tonnes. **9<sup>th</sup> December 2022**

INDIA

- **L&T bags order from AM/NS - Construction Week India**

Larsen & Toubro (L&T) has announced that its minerals and metals (M&M) business has secured a huge order. As per L&T classification, the value of the mega project is above Rs 7,000 crore. The EPC company said that the M&M business of L&T construction secured various orders in the iron & steel and beneficiation sectors from ArcelorMittal Nippon Steel India (AM/NS India), a joint venture between the two global steel giants, to carry-out their expansion plans in Gujarat and Odisha. The orders comprise installation of two blast furnaces of 3.5 million tonnes per annum (MTPA) capacity each on EPC basis at Hazira plant in Gujarat. The scope includes associated supplies, construction, installation of both units, blast furnaces 2 and 3 concurrently in a phased completion. In the same complex, M&M will carry out the installation of a steel melt shop of 6mtpa capacity with detailed

design and engineering for the entire plant, supply of identified items and complete construction. The scope includes plant layout, installation of steel making facility, secondary metallurgy, and slab casting units concurrently within the agreed schedule, L&T stated in the press release. Further the company added that M&M will build a 6mtpa ore beneficiation plant at Sagasahi in Odisha on EPC basis. The minerals & metals business offers complete EPC solutions for the mining, minerals & metals sectors across the globe. The business undertakes end-to-end engineering, procurement, manufacturing, supply, construction, erection, and commissioning of the projects covering the complete spectrum from mineral processing to finished metals. **10<sup>th</sup> December 2022**

- **India's Tata Projects to step up EPC solutions for green hydrogen**

Engineering company Tata Projects is stepping up its focus on the green hydrogen market, as the need for clean energy sources gathers pace in the country, Vinayak Pai, managing director of Tata Projects told Business Standard. Pai said that the company was building capabilities to provide engineering, procurement and construction (EPC) solutions for green hydrogen plants. Tata group is planning to venture in the green hydrogen market with the new project of building EPC solutions in partnership with the Indian Oil Corp. Green energy is witnesses historic investments from leading Indian energy companies including Adani and Reliance Industries. Tata Power Co. said it will invest more than 750 \$9.5 billion in renewables over the next five years, as it aims to almost double the share of clean energy in its portfolio. **13<sup>th</sup> December 2022**

- **Dalmia Bharat signs framework agreement with Jaiprakash Associates**

Dalmia Cement (Bharat) (DCBL), a wholly-owned subsidiary of Dalmia Bharat, has recently entered into a binding framework agreement for the acquisition of clinker, cement, and power plants from Jaiprakash Associates and its subsidiary and associate having a total cement capacity of 9.4 million metric tonnes (MnT) (along with clinker capacity of 6.7MnT and thermal power plants of 280MW) at an enterprise value of Rs 5,666 crore. These assets are situated in the states of Madhya Pradesh, Uttar Pradesh, and Chhattisgarh. The acquisition will enable Dalmia to expand its footprint into the central region and will represent a significant step towards the realization of its vision to emerge as a pan-India cement company with a capacity of 75 MnT by the financial year (FY) 2027 and 110-130 MnT by FY 2031. The transaction is subject to due diligence, and requisite approvals from lenders or joint-venture (JV) partners of Jaiprakash Associates. and regulatory authorities. **13<sup>th</sup> December 2022**

- **ONGC starts chase for \$600 million development offshore India's west coast**

Work being offered involves multiple offshore platforms and subsea pipeline segments in Mumbai offshore region. India's state-controlled Oil & Natural Gas Corporation (ONGC) has launched the tender process for a sizeable contract comprising additional offshore infrastructure required for a major west coast asset. Two people familiar with the bid process told Upstream that ONGC recently issued bid documents for the offshore engineering, procurement and construction (EPC) package on its DSF-II & MBOSN-2005/I blocks. The work involves multiple offshore platforms and subsea pipeline segments and could be worth potentially up to \$600 million, one person said. **14<sup>th</sup> December 2022**

IRAQ

- **Iraq PM Announces Addition of New Unit to Diwaniya Refinery**

Prime Minister Mohamed Shia Al-Sudani announced adding of a new production unit for the Diwaniya Refinery with a capacity of (70 thousand barrels) per day. It aims to increase the production of oil products, and provide job opportunities for the people of the province and neighbouring cities. H.E was received by the Under-Secretary for Refining and Distribution Affairs, Hamid Younis, and the Director General of Midland Refineries Company and a number of officials. The Deputy Prime Minister for Energy Affairs and Minister of Oil, Hayyan Abdul Ghanni, had earlier announced plans to develop the refining sector and increase production by adding new units to cover local needs. **15<sup>th</sup> December 2022**



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| INDONESIA   | <ul style="list-style-type: none"> <li> <b><u>Upgrade and improvement works at PT Pertamina’s Balikpapan refinery will increase production to 360 million barrels per day</u></b><br/>           The PT Pertamina (Persero) refinery in the Indonesian town of Balikpapan will increase its production of oil derivatives to 360 million barrels per day once its upgrading and improvement works are completed during 2024. These works are part of the Refinery Development Master Plans (RDMP) promoted by Indonesia’s state-owned oil and gas company to increase the production capacity and competitiveness of five of its plants in Cilacap, Balongan, Dumai and Balikpapan. The Balikpapan plant is currently the second largest refinery belonging to PT Pertamina, and is responsible, with approximately 260 million barrels per day produced, for 25% of Indonesia’s oil &amp; gas exploitation. Thanks to the upgrading works that are part of the company’s RDPMs, this plant will not only decisively increase its production, but will also increase the added value of its products, which will become cleaner and greener to align with the Indonesian government’s strategy to implement the Euro V standard in the country by 2027. <b>13<sup>th</sup> December 2022</b> </li> </ul>   |
| KAZAKHSTAN, | <ul style="list-style-type: none"> <li> <b><u>KMG and Chevron Phillips sign agreement to design polyethylene plant</u></b><br/>           The second polymerisation unit, with capacity of 625 thousand tonnes of polyethylene per year, is at the stage of final negotiations with another licensor. Magzum Mirzagaliyev, Chairman of the Management Board of JSC NC “KazMunayGas” recently met with Venka Chan New Developments, Chevron Phillips Chemical. The parties signed a license agreement and a design agreement for im gas chemical complex in Atyrau Region, Phase II (polyethylene)” project during the meeting. The agreement provides for development of design documentation for a polyethylene production unit using MarTECH A corresponding license for production of 625 thousand tonnes of polyethylene per year. Chevron Phillips Chemical’s technology will enable production of a wide range of products at the future Kazakh plant, in that is projected to maintain a long-term growth in global demand. The second polymerisation unit, with capacity of 625 thousand tonnes of polyethylene per year, is at the stage of final n agreement is expected before mid-December this year. Two process units will be combined into a single complex with a total capacity of 1 million 250 thousand tonnes. <b>13<sup>th</sup> December 2022</b> </li> </ul>  |
| SOUTH KOREA | <ul style="list-style-type: none"> <li> <b><u>Air Liquide strengthens relationship with KMCI in South Korea</u></b><br/>           This contract will enable Air Liquide to support KMCI’s additional expansion of 200,000 tons per year production of methyl diphenyl diisocyanate (MDI). Air Liquide has signed a long-term contract to supply Kumho Mitsui Chemical (KMCI), a world leader in the chemical in monoxide in South Korea’s Yeosu National Industrial Complex, where Air Liquide operates four production units. This contract will enable Air Liquide to support KMCI’s additional expansion of 200,000 tons per year production of met used in the manufacture of polyurethane for high-tech materials and insulation. Air Liquide will supply additional hydrogen and carbon monoxide to KMCI for its 50% expansion of methyl diphenyl diis commencing in 2024. To supply KMCI, Air Liquide will leverage its fourth hydrogen and carbon monoxide unit in the Ye recycling facility installed this year. With this new partnership, both Groups reinforce their long standing relationship. Air Liquide’s first agreement with KMC then, Air Liquide has significantly developed its industrial footprint in the Yeosu basin, culminating in the design and con efficient hydrogen and carbon monoxide plant. This unit is integrated with the three other plants with a 40 km pipeline s level of safety, reliability, efficiency, and flexibility to its customers. François Abrial, Member of the Air Liquide Group’s Executive Committee supervising Asia Pacific, said: “With this new term relationship with KMCI, a 20-year strategic collaboration that has enabled us to steadily build our footprint in Yeos accompany KMCI’s continued growth. <b>13<sup>th</sup> December 2022</b> </li> </ul> |
| MALAYSIA    | <ul style="list-style-type: none"> <li> <b><u>Muhibbah scoops EPCIC prize for Petronas' latest offshore project</u></b><br/>           Full steam ahead for Gansar field development offshore Malaysia. Malaysia’s national upstream company Petronas Carigali is moving forward on its latest field development to exploit Gansar, a gas         </li> </ul>  |

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|              | <p>condensate discovery made eight years ago offshore Peninsular Malaysia. Petronas Carigali has awarded a consortium led by Malaysian contractor Muhibbah Engineering the main 322 million ringgit (\$68 million) engineering, procurement, construction, installation and commissioning contract for Gansar, which the operator plans to develop as a tie-back to host facilities on its mature producing Duyong field. The EPCIC workscope covers a new lightweight structure (platform) dubbed GaDP-A that will be installed at Gansar and brownfield modifications at the Duyong central processing platform to enable the host tie-in. <b>11<sup>th</sup> December 2022</b></p> <ul style="list-style-type: none"> <li> <b><u>Eni, Euglena and PETRONAS to explore biorefinery opportunity in Malaysia</u></b><br/>           The biorefinery is also expected to have the capability to process about 650,000 tonnes per year of raw materials to produce up to 12,500 barrels per day of biofuels. Eni, Euglena and Petroliam Nasional Berhad (PETRONAS) announced that they are jointly studying the possibility of d Pengerang Integrated Complex (PIC), one of the largest integrated refinery and petrochemical developments in Southe The three parties are currently carrying out technical and economic feasibility assessments for the proposed project, w reached by 2023 and the plant targeted to be completed by 2025. To be located adjacent to PETRONAS' existing integrated refinery and petrochemical facilities, the biorefinery will be ab chain as well as existing utilities and facilities in PIC. The complex's strategic location with easy access to major interna planned refinery's ability to cater for the rising demand for sustainable solutions worldwide. <b>15<sup>th</sup> December 2022</b> </li> </ul>                                     |
| THAILAND     | <ul style="list-style-type: none"> <li> <b><u>PTTEP's \$30 billion spending spree</u></b><br/>           Thai powerhouse to boost sustainable oil and gas production amid energy transition to low-carbon future. Thailand's national upstream company PTTEP is gearing up to invest almost \$30 billion through 2027 as it looks to boost oil and gas production alongside the energy transition to a low-carbon future. PTTEP's investment plan for next year is based on three main pillars strengthening its exploration and production business, decarbonisation to reduce its greenhouse gas emissions and diversification The Thai player envisages spending \$5.481 billion in 2023, of which \$3.152 billion will be for capital expenditure with the remainder on opex. PTTEP plans to speed up exploration activities and produce greater volumes from existing projects such as Bongkot, Erawan and Arthit offshore its native Thailand to ensure energy security for the kingdom. Monies will also be invested on its producing assets in Malaysia. PTTEP has allocated \$322 million next year to accelerate projects under development such as the Lang Lebah gas and CCS project offshore Malaysia and the Mozambique Area 1 project. Of 2023's capex, \$193 million is earmarked for geological studies and the drilling of exploration and appraisal wells in Thailand, Malaysia and Oman. Five-year plan Looking ahead, PTTEP envisages capex of \$3.951 billion, \$4.231 billion, \$3.857 billion and \$2.932 billion respectively for the calendar years 2024 through 2027. These investments coupled with opex consistently north of \$2 billion per annum for those four years will help underpin its target production growth to 550,000 barrels of oil equivalent per day in 2027 from its existing projects. <b>9<sup>th</sup> December 2022</b> </li> </ul> |
| TURKMENISTAN | <ul style="list-style-type: none"> <li> <b><u>Hyundai Engineering Signs MOU for Fertilizer Plant Project in Turkmenistan</u></b><br/>           Hyun-seong (left), CEO of Hyundai Engineering, and Dovran Hudayberdyev, president of the Federation of Turkmenistan Industrial Entrepreneurs, pose for a photo after signing an MOU for a US\$1.4 billion ammonia urea fertilizer plant project in Turkmenistan. Hyundai Engineering has signed a memorandum of understanding (MOU) with the Federation of Turkmenistan Industrial Entrepreneurs for a US\$1.4 billion ammonia urea fertilizer plant project. A signing ceremony was held at a Korea-Turkmenistan business meeting held on Nov. 29 at the Lotte Hotel in Seoul with the attendance of Hong Hyun-seong, CEO of Hyundai Engineering, and Dovran Hudayberdyev, president of the Federation of Turkmenistan Industrial Entrepreneurs. The ammonia urea fertilizer plant will be built in the Balkan region in the west of Turkmenistan. When completed, the plant will produce 1,155,000 tons of urea fertilizers and 665,000 tons of synthetic ammonia annually, greatly contributing to improving agricultural production and job creation in Turkmenistan. Meanwhile, Hyundai Engineering started with a US\$1.4 billion Galkynysh gas desulfurization         </li> </ul>  |

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|               | <p>facility project in Turkmenistan in 2009, followed by a US\$530 million Turkmenbashi oil refinery in 2012 and the US\$240 million Kiyanlı project in 2014. It has carried out a number of mega projects, including a US\$240 million crude oil processing plant and an ethane cracker and a PE/PP production plant, both of which cost US\$3.44 billion. <b>1<sup>st</sup> December 2022</b></p>   |
| UZBEKISTAN    | <ul style="list-style-type: none"> <li> <p><b><u>Metso Outotec to deliver two sulfuric acid plants to Uzbekistan</u></b><br/>           The value of the order is approximately EUR 70 million, and it is booked in Metals' fourth-quarter orders received. Almalıy Mining and Metallurgical Company (AMMC) has awarded Metso Outotec an order for the delivery of two sulfur roasting facility in Almalıy, Uzbekistan. The value of the order is approximately EUR 70 million, and it is booked in Meta Metso Outotec's scope of delivery includes the design and delivery of Planet Positive equipment for two gas cleaning a off-gases from the zinc roasters into industrial-grade sulfuric acid. In addition, Metso Outotec will deliver utility facilities, common air compressor system. The two plants to be delivered by Metso Outotec will be identical and will replace AMMC's existing facilities for gas clea will improve operational efficiency and reliability and significantly reduce the facilities' environmental impact. The sulfuri the end of the second half of 2025. "We are extremely pleased that Almalıy has again selected us as the partner for providing gas cleaning and sulfuric ac Planet Positive gas cleaning and sulfuric acid plant solution will improve the environmental performance of AMMC's me Vice President, Metal and Chemical Processing at Metso Outotec <b>14<sup>th</sup> December 2022</b></p> </li> </ul>  |
| <b>AFRICA</b> |   |
| EGYPT         | <ul style="list-style-type: none"> <li> <p><b><u>Drilling of ASW-1X exploration well in Egypt begins</u></b><br/>           United Oil and Gas Plc (UOG) recent reported that drilling for the ASW-1X exploration well has begun as planned. The corporation and its partners had planned a total of five well. As part of the drilling campaign for 2022, with this one being the last. A total of four on-site reservoirs contain 8m barrels of potentially recoverable resources that are the focus of the well. A possibility whose likelihood of failure has been decreased in part as a result of this year's reprocessing of the seismic data available for Abu Sennan. ASW-1X exploration well should be connected to the current infrastructure and support the business' total output if a commercially viable finding is found. According to the most recent projections made by UOG and released at the end of November, this will be between 1,300 and 1,325 b/d net. However, no information regarding the planned schedule of activities has spread. The HF36-5X discovery discovered in a nearby block in 2020 as well as the outcomes of 2022 seismic reprocessing on the Abu Sennan license, which gave superior imaging and delineation of the ASW targets, helped to de-risk the ASW-1X potential. <b>11<sup>th</sup> December 2022</b></p> </li> <li> <p><b><u>BP to study potential for green hydrogen production facility in Egypt</u></b><br/> <u>BP</u> has signed an MoU with the Government of Egypt, to explore the possibility of building a new green hydrogen production facility in Egypt. According to a press release from BP, the MoU was signed by the General Authority for Suez Canal Economic Zone (SCZONE), the Egyptian Electricity Transmission Company (EETC). As well as the Egyptian New and Renewable Energy Authority (NREA) and the Sovereign Fund of Egypt for Investment and Development (TSFE). In accordance with the MoU, BP will conduct a number of studies. This is in a bit to assess the technical and financial viability of establishing an extensive, multi-phase green hydrogen production facility in Egypt. <b>13<sup>th</sup> December 2022</b></p> </li> <li> <p><b><u>Egypt's \$5.5 billion project to create over 10,000 construction jobs</u></b><br/>           Egypt granted a license on Wednesday to build a green ammonia project in Ain Sokhna industrial zone, with an annual production capacity of 1 million tons. The project, by Egypt's Green Ammonia Co, will cost around \$5.5 billion and offer around 10600 jobs during the construction and operation phases, the government noted in a statement. During COP 27 in November, Egypt signed eight framework agreements to develop green hydrogen and ammonia projects, saying it aimed to become a hub for</p> </li> </ul> |

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|         | <p>hydrogen production and win 5% of the global market by 2040. Green hydrogen is produced using electrolyzers powered by renewable energy to split water from oxygen. It is seen as a potential future power source that could reduce emissions, though to date it is largely limited to experimental projects. <b>15<sup>th</sup> December 2022</b></p>   |
| GUYANA  | <ul style="list-style-type: none"> <li> <p><b><u>Saipem awarded \$1.2 billion new contracts</u></b><br/>           Saipem has been awarded new contracts in Guyana and Egypt worth \$1.2 billion, the company announced today. The first contract has been awarded by US oil major Exxon Mobil, subject to government approvals for the Stabroek block offshore Guyana at a water depth of around 2,000 meters. The contract scope includes the design, fabrication and installation of subsea structures, risers, flowlines and umbilicals for a large subsea production facility. Saipem was also previously awarded other four subsea contracts by Exxon Mobil’s Guyana subsidiary for prior developments in Liza Phase 1 and 2, Payara, and Yellowtail. Subject to the necessary approvals and authorisation to proceed with the final phase, the award will allow Saipem to start some limited activities including detailed engineering and procurement. The second contract has been awarded by Petrobel for the transportation, installation and pre-commissioning of 170 km of umbilicals for the Zohr Field, to be transported and installed between the central control platform (70 m water depth) and the subsea field (1,500 m water depth), connecting to the existing subsea production systems. The offshore campaign is planned to start during Q3 2023. <b>15<sup>th</sup> December 2022</b></p> </li> </ul>   |
| KENYA   | <ul style="list-style-type: none"> <li> <p><b><u>Contractor appointed for construction of Sh36.9bn Kitui clinker plant, Kenya</u></b><br/>           Sinoma International Engineering, a Chinese company, has been contracted by Savannah Clinker Ltd. to build an Sh36.9bn Kitui clinker plant. Located in Kitui County, its construction will cost roughly Sh36.9 billion (\$300 million). The captive per plate heat recovery system of 25 megawatts (MM), as well as associated infrastructure and amenities, is installed at the 8, 000 tonne per day clinker plant with a 2,400 frind cement plant. The project will start immediately in Mwingi North and take two and a half years to complete. According to Savannah Clinker Ltd. Chairman Benson Ndeti, the Kitui clinker plant will crush locally sourced limestone to clinker. It will also include a 100 ton per hour cement grinding system, product packaging, and delivery systems. Within ten years of starting operation, the plant is designed to completely remove or greatly reduce its carbon footprint. The Kitui clinker plant is expected to use the right carbon capture technology. <b>11<sup>th</sup> December 2022</b></p> </li> </ul>   |
| MOROCCO | <ul style="list-style-type: none"> <li> <p><b><u>Anchois Gas Project: UK Company Chariot agrees on terms of Moroccan gas sales</u></b><br/>           Chariot’s Anchois project offshore Morocco has taken a big step forward after the UK oil and gas company and its Moroccan partner “Office National des Hydrocarbures et des Mines (ONHYM) agreed on Monday on key principles for long term gas sales from the Anchois Gas Project with the Office National de l’Electricité et de l’Eau Potable (ONEE). Anchois hosts about 1.5 trillion cubic feet of potential gas resources and is being developed via subsea wells tied back direct to an onshore gas processing plant. For his part, ONEE boss, Abderrahim El Hafidi, said :“The Anchois gas project will be an important source of domestic natural gas that will initially feed directly into ONEE’s power plants via the Maghreb-Europe Gas Pipeline. <b>12<sup>th</sup> December 2022</b></p> </li> <li> <p><b><u>Natural Gas Exploration: Israeli energy company seals offshore deal with Morocco</u></b><br/>           Israeli NewMed Energy firm announced on Tuesday it has signed a deal with Morocco’s hydrocarbon authority and Adarco Energy for offshore natural gas exploration and production in the north African kingdom. Under the terms of the agreements, NewMed and Adarco will each hold a 37.5 pc stake in the Boujdour Atlantique exploration license, located off the coast of Morocco in the Atlantic Ocean. Morocco’s National Office of Hydrocarbons and Mines (ONHYM ) will own the remaining 25%. The 8-year license for exploration in the Boujdour Atlantique includes prospects for natural gas and oil discoveries.The agreements must still be approved by Morocco’s ministry of energy transition and</p> </li> </ul> |

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|               | <p>sustainable development and ministry of finance. NewMed Energy is a leading company in the exploration, development, production and sale of natural gas and condensate. <b>7<sup>th</sup> December 2022</b></p>   |
| WEST AFRICA   | <ul style="list-style-type: none"> <li> <p><b><u>ADC Energy awarded six figure contract with major operator in West Africa</u></b><br/> Reflective of the recent upturn in international drilling activity, ADC Energy has secured a new contract in West Africa providing operational assurance and rig acceptance. The contract, which is worth \$250,000, is scheduled for the first quarter of 2023 and expected to take around a month to complete. ADC Energy will provide a focused approach to operational assurance, and acceptance services for rig equipment, dynamic positioning, marine and well control, and remotely operated vehicle (ROV) activity. The project benefits from ADC’s continuity with both the operator’s rig intake process and the drillship itself, allowing for previously identified observations to be revisited to ensure appropriate action has been taken to prevent reoccurrence. ADC has also developed a work scope in collaboration with the operator and drilling contractor that applies any lessons learned from recent operations, incorporating data analysis from onboard condition-based monitoring systems. ADC Energy will manage the project from its HQ in Aberdeen and assign a dedicated senior project engineer to act as the technical focal point for the duration of the contract. <b>12<sup>th</sup> December 2022</b></p> </li> </ul> |
| <b>EUROPE</b> |  |
| BELGIUM       | <ul style="list-style-type: none"> <li> <p><b><u>Air Liquide, Fluxys Belgium and Port of Antwerp-Bruges awarded €144.6 million EU funding for building the Antwerp@C CO2 Export Hub</u></b><br/> The project is the first phase of Antwerp@C, an initiative gathering Air Liquide, BASF, Borealis, ExxonMobil, INEOS, To with the ambition to halve the CO2 emissions in the Antwerp port area by 2030. The EU Commission announced it will grant Air Liquide, Fluxys Belgium and Port of Antwerp-Bruges €144.6 million und (CEF-E) funding program. The funding is earmarked for the construction of shared CO2 transport and export facilities o a major step towards the final investment decision, expected in 2023. The project, named “Antwerp@C CO2 Export Hub”, is set up as an open-access infrastructure to transport, liquefy and offshore storage. CO2 captured on industrial players sites on the Antwerp port platform will be collected and transporte network. <b>13<sup>th</sup> December 2022</b></p> </li> </ul>  |
| GERMANY       | <ul style="list-style-type: none"> <li> <p><b><u>Metso Outotec invests in pilot plant for a hydrogen-based direct reduction process</u></b><br/> The pilot plant can also be used for the reduction of high-grade iron fines concentrate and to confirm the design basis for an industrial-scale Circored plant. Metso Outotec will convert its existing 700 mm Circulating Fluidized Bed (CFB) pilot plant in Frankfurt, Germany, for hy applying the proven Planet Positive Circored technology. The pilot plant can also be used for the reduction of high-grade iron fines concentrate and to confirm the design basis f Commissioning of the plant is expected to take place by December 2023. “The investment enables us to pilot the reduction of low-grade iron concentrate fines in larger quantities than what we d downstream fines DRI electric smelting tests for hot metal production. <b>12<sup>th</sup> December 2022</b></p> </li> </ul>  |
| NORWAY        | <ul style="list-style-type: none"> <li> <p><b><u>Aker BP approves field development projects offshore Norway</u></b><br/> Aker BP will vote for the approval of the NOAKA field development project, the Valhall PWP-Fenris project and the Skarv Satellite project. Aker BP’s board of directors decided that the company will vote for the approval of, among others, the NOAKA field development project, the Valhall PWP-Fenris project and the Skarv Satellite project. Aker BP is the operator of these development projects, which are planned to be executed together with Aker BP’s partners. The final decisions to submit the plan for development and operation (PDO) to Norwegian authorities are scheduled to take place in the respective license partnerships during the first half of December. If the PDOs are approved by the respective license partnerships, the plan is to submit the PDOs to the authorities for approval before year-end. Subsea7 has, through the Aker BP Subsea Alliance (a partnership between Aker</p> </li> </ul>   |

BP, Subsea7 and Aker Solutions), executed the FEED work for these projects, under a single source supplier framework. Subsea7 expects that the above-mentioned projects could lead to the following contract awards, subject to the PDO submission in mid-December: A contract for NOAKA field development project worth more than \$750 million; A contract for Skarv Satellite project worth between \$300 million and \$500 million; and A contract for Valhall PWP-Fenris project worth between \$150 million and \$300 million. The contracts will be recorded in backlog upon signature by all parties, expected to occur in mid-December. **8<sup>th</sup> December 2022**

- **Wintershall Dea submits plan for development of the Dvalin North gas field**

Wintershall Dea, and partners Petoro and Sval Energi, are set to increase gas exports to Europe with the development of the Dvalin North field in the Norwegian Sea. The handing over of the plan for development and operation (PDO) on 13 December to the Norwegian Ministry of Petroleum and Energy, marks rapid progress from exploration to execution for the Dvalin North field, which was the largest discovery in Norway in 2021. Dvalin North is the latest in a line of Wintershall Dea operated, and partner operated, project sanctions on the Norwegian Continental Shelf this year. **14<sup>th</sup> December 2022**

- **Askeladd on stream bringing more gas to Hammerfest LNG**

Phase 1 of Askeladd will bring 18 billion cubic metres of gas and two million cubic metres of condensate to the market via the Hammerfest LNG plant on Melkøya. Askeladd is a satellite field of the Snøhvit Field and developed as a subsea tie-in to the Snøhvit facility and Hammerfest LNG. “Askeladd is now producing, the gas will help extend plateau production from Hammerfest LNG on Melkøya up to 3 years,” says Thor Johan Haave, Equinor’s vice president operations & maintenance, Hammerfest LNG. During normal production, Hammerfest LNG (HLNG) delivers 18.4 million standard cubic metres of gas per day, or 6.5 billion cubic metres per year. This corresponds to the needs of around 6.5 million European households, or 5% of all Norwegian gas exports. “HLNG delivers significant volumes to customers in Europe, and the gas from the Barents Sea reinforces our position as a predictable and reliable gas supplier. **12<sup>th</sup> December 2022**

NETHERLANDS

- **Project launched to create Hydrogen Highway from Scotland to Rotterdam**

The Net Zero Technology Centre and ERM have today (14 December 2022) announced the launch of the Liquid Organic Hydrogen Carrier (LOHC) for Hydrogen Transport from Scotland (LHyTS) project, which will play a key role in the export of hydrogen from Scotland to Rotterdam. The LHyTS project seeks to demonstrate that LOHC, in the form of methylcyclohexane (MCH), can be successfully transported at scale, providing an export route to the Port of Rotterdam and other European destinations. The project will be delivered by a diverse, international consortium, including Axens, Chiyoda, EnQuest, ERM, Koole Terminals, Port of Rotterdam, Scottish Government, Shetland Islands Council, Storegga and the Net Zero Technology Centre. The partners will work together undertaking engineering studies targeted at developing a pilot project as a precursor to large scale export. Hydrogen will facilitate various decarbonisation applications. The project aligns with Scottish Government’s Hydrogen Policy Statement, which aims to deliver 5GW of renewable and low-carbon hydrogen production by 2030 and 25GW by 2045. The global ambition has also been established, with The European Commission targeting 10 million tons of hydrogen to be imported by 2030. The Port of Rotterdam, as an established energy hub, already imports 13% of Europe’s energy and has ambitions to become the Hydrogen Hub of Europe. To achieve this, the port will draw on its extensive import, export and storage infrastructure, established energy industry supply chain and pipeline connections to other industrial clusters in Northwest Europe. **14<sup>th</sup> December 2022**

- **Pure Hydrogen Heating Pilot Launches in Netherlands, 100% Hydrogen Domestic Heating**

A Baxi’s parent company, BDR Thermea Group, is testing its 100% hydrogen boilers in 12 inhabited homes, with hydrogen supplied via an existing natural gas grid. Taking place in the eastern Dutch town of Lochem, the pilot is being conducted in detached listed houses, all built around 1900, which

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|         | <p>will each be equipped with one of the boilers burning pure hydrogen with zero carbon emissions. The hydrogen is fed into the existing gas grid at a nearby industrial zone. The houses were deliberately chosen as older residential housing stock, with restrictions to the changes that can be made to them due to their heritage status. Over the course of the three-year pilot, researchers will focus on extensive testing in wintertime, when demand peaks. “Decarbonising buildings is therefore an urgent imperative, and hydrogen is one of the key technologies to do this, alongside heat networks, all-electric heat pumps and hybrid solutions that twin heat pumps with gas boilers.” The landmark pilot builds on a raft of exploratory projects involving Baxi and the wider BDR Thermea Group. Baxi is currently participating in the Government-funded Hy4Heat programme, which sees the manufacturer showcase prototype hydrogen boilers at the UK’s first 100% hydrogen public demonstration in Low Thornley, near Gateshead. Meanwhile, its boilers are also being used for the world’s first green hydrogen-to-homes heating network pilot, involving 300 homes in Levenmouth, Fife, and are set to be used for the UK’s first ‘hydrogen village’ in Whitby, Ellesmere Port, in 2025. <b>9<sup>th</sup> December 2022</b></p>   |
| ROMANIA | <ul style="list-style-type: none"> <li> <p><b><u>Wabag secures industrial wastewater treatment order of Rs 260 Cr. in Romania</u></b><br/> The contract will be an engineering and procurement scope contract which includes design and engineering, equipment supply, installation, commissioning and start-up of the Purolite Victoria WWTP. The contract will be an engineering and procurement (EP) scope contract which includes design and engineering, equipment supply, installation, commissioning and start-up of the Purolite Victoria WWTP. The project is scheduled to be executed over a 24-month period. The upgrade will include additional pre-treatment, an extension of existing lamella clarifiers, and a new reverse osmosis stage, in order to treat the effluent up to national NTPA001 discharge criteria. The key features of the WWTP upgrade include influent pretreatment, cooling, neutralization, SO<sub>4</sub>, and calcium precipitation and solids separation, reverse osmosis treatment stage and brine evaporation crystallization. <b>13<sup>th</sup> December 2022</b></p> </li> <li> <p><b><u>OMV Petrom closer to developing Romania's Neptun Deep gas field</u></b><br/> OMV Petrom, a Romanian subsidiary of Austria's OMV Group, has filed for a declaration of commercial viability for the Neptun Deep discovery in the Romanian sector of the Black Sea. The application was submitted to Romania’s mineral resources agency Namr and is expected to lead to a final investment decision on the proposed development by mid-2023, according to a Reuters report citing OMV Petrom. Full scale development of Neptun Deep could trigger investments as high as €4 billion, the filing stated, although OMV Petrom has said it is awaiting government clarification on an offshore gas law. First gas production is expected by the beginning of 2027, OMV Petrom said. Neptun Deep holds recoverable gas reserves estimated to be between 42 billion and 84 billion cubic metres and sits in a licence area covering 7,500 square kilometres in water depths of up to 1700 metres. The development consists of 5 offshore production wells — subsea well at Doina field, four wellhead platforms on the Ana field, an unmanned production platform on the Ana field, a 126-kilometre gas pipeline linking the Ana platform to the shore and to a new onshore gas treatment plant. <b>14<sup>th</sup> December 2022</b></p> </li> </ul> |
| RUSSIA  | <ul style="list-style-type: none"> <li> <p><b><u>Novatek Discovers Gas Field for Arctic LNG 1</u></b><br/> Novatek has discovered a gas field on Gydan Peninsula, expanding the resource base of the proposed Arctic LNG 1 project, the Russian LNG developer said in a statement on Monday. Arctic LNG 1 is expected to be the next liquefaction project of Novatek in the Russian Arctic after the 19.8 million ton per year Arctic LNG 2, scheduled for late 2023, and 5 million ton/yr Obsky LNG where a final investment decision might be made in the first half of 2023. Novatek maintains its ambitious plans to expand LNG production in the Arctic to up to 70 million tons/yr by 2030 from around 21 million tons expected at the flagship Yamal LNG plant this year, However, those plans might be complicated by EU technology sanctions as well as withdrawal of key investor TotalEnergies, and western equipment suppliers, because of Russia’s war in Ukraine. <b>Girya Field</b> The new field, named after former Novatek</p> </li> </ul>  |



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|              | <p>deputy CEO Viktor Girya who died in 2017, harbors recoverable reserves of 52 billion cubic meters of natural gas (about 1.8 Tcf) and 2 million tons of liquids under the Russian classification, the company said. The field was discovered after drilling the first exploration well at the Bukharinsky license area adjacent to the Trekhbugorny block on Gydan Peninsula. <b>12<sup>th</sup> December 2022</b></p>   |
| <p>SPAIN</p> | <ul style="list-style-type: none"> <li> <p><b><u>Underwater hydrogen pipeline between Spain and France to cost \$2.6B</u></b><br/>           The underwater pipeline that will carry green hydrogen between Barcelona and Marseille will have a capacity of 2 MMtonnes per year and be ready by the end of the decade. An underwater pipeline to carry green hydrogen between Spain and France will cost about 2.5 billion euros (US\$2.6 billion), Spanish Prime Minister Pedro Sanchez said Dec. 9, adding he hoped the EU would partly fund the project. The pipeline between Barcelona and Marseille will have a capacity of 2 MMtonnes per year and be ready by the end of the decade, Sanchez said at a summit of Mediterranean European Union leaders in the southeastern Spanish port city of Alicante. The decision to pursue the project comes as an energy crisis caused by the war in Ukraine has accelerated European plans to bolster renewable energy as an alternative to Russian gas. The corridor will make Iberia "a major energy hub" and form part of a "European hydrogen backbone" allowing the block to pump hydrogen across the continent as it seeks to produce 10 MMtonnes of clean hydrogen per year and import a further 10 MMtonnes by 2030, European Commission President Ursula von der Leyen said. Reuters reported earlier that the undersea part of the 455-km (280-mile) pipeline would cost about 2 billion euros (US\$2.1 billion), rising to 3 billion euros (US\$3.1 billion) depending on its route. An additional pipeline connecting Spain and Portugal will cost 350 million euros (US\$369 million), according to a document provided by Spain. The submarine section will be known as BarMar, while the entire hydrogen corridor connecting Spain and Portugal to France will be called H2MED, Sanchez confirmed. <b>9<sup>th</sup> December 2022</b></p> </li> </ul>  |
| <p>UK</p>    | <ul style="list-style-type: none"> <li> <p><b><u>£102m government backing for nuclear and hydrogen innovation in the UK</u></b><br/>           Government further commits to the future of nuclear power by investing £77m to support nuclear fuel production and next generation advanced nuclear reactors in the UK. Further £25m funding announced for innovative new technologies that will generate clean hydrogen from biomass and waste. Government also seeks views on proposals to make domestic gas boilers more efficient and be hydrogen-ready from 2026, to prepare for any future transition to using low-carbon hydrogen for heating. The UK Government is today (13 December 2022) announcing new funding to support clean energy production in the UK, following Russia's illegal invasion of Ukraine and the subsequent impact on global energy prices. Today's funding includes £77 million to bolster nuclear fuel production and support the development of the next generation of advanced nuclear reactors, along with £25m for technologies that can produce hydrogen from sustainable biomass and waste, while removing carbon dioxide from the atmosphere. <b>Nuclear Investment</b> The government is today committing to new and innovative nuclear energy with the announcement of funding worth up to £60 million to kick start the next phase of research into the new cutting-edge High Temperature Gas Reactor (HTGR), a type of Advanced Modular Reactor (AMR), which could be up and running by the early 2030s. The funding, from the Advanced Modular Reactor R&amp;D programme, aims to get a demonstration project of the engineering design up and running by the end of the decade. <b>13<sup>th</sup> December 2022</b></p> </li> <li> <p><b><u>Noble seals new UK drilling contract for ultra-harsh environment jack-up</u></b><br/>           One-year contract has a one-year extension option. The offshore drilling giant Noble Corporation has been awarded a one-year contract in the UK worth a minimum of US\$50 million for an ultra-harsh environment jack-up. Noble said its client is BP, and the workscope for the rig Noble Innovator covers drilling and plugging and abandonment services in the UK North Sea. The contract is expected to begin in May 2023 with a firm duration of one year, worth \$50 million to Noble. There is a one-year extension option with a potential value of \$58 million. The Noble Innovator is currently operating in the UK North Sea and, following the completion of that contract, will undergo a special periodic survey before starting the new BP work. The Noble Innovator is an MSC CJ70-150MC design built in 2003 and</p> </li> </ul> |

rated for operations in water depths of up to 492 feet. Following its recent acquisition of Maersk Drilling, Noble has a fleet of 15 drillships, three semi-submersibles, five ultra-harsh environment jack-ups and eight harsh environment jack-ups. **15<sup>th</sup> December 2022**

**NORTH & SOUTH AMERICA**

BRAZIL

- Transocean Bags \$1B+ In Contract Awards for 2 Drillships**  
 The company revealed that the Deepwater Corcovado and Deepwater Orion had secured work offshore Brazil with a “national oil company”. Deepwater Corcovado was awarded a four-year deal, which Transocean outlined contributes an estimated \$583 million in backlog. This deal is expected to begin in the third quarter of 2023 in direct continuation of the rig’s current contract, Transocean revealed. The Deepwater Orion was awarded a three-year contract, which Transocean said contributes an estimated \$456 million in backlog. This deal is expected to start during the fourth quarter of next year, Transocean highlighted. In its latest quarterly fleet status report, which was released back in October, Transocean revealed that the Deepwater Conqueror had been awarded a two-year contract in the U.S. Gulf of Mexico at \$440,000 per day. The report also outlined that the Deepwater Asgard had been awarded a one-well contract in the U.S. Gulf of Mexico at \$395,000 per day, plus a one-well option, as well as a one-year contract in the U.S. Gulf of Mexico at \$440,000 per day. In addition, the report highlighted that the Petrobras 10000 had been awarded a 5.8-year contract in Brazil at \$399,000 per day, escalating annually to \$462,000 per day, the Development Driller III had been awarded a one-well contract in Suriname at \$345,000 per day, plus two one-well options, and that the Transocean Norge had been awarded a 17-well contract in Norway at dayrates between \$350,000 and \$430,000. **12<sup>th</sup> December 2022**

MEXICO

- Pemex targets five-well exploration drive in promising Mexican basin**  
 Company seeks to find more than 100 million barrels of oil equivalent in unrisks resources. Mexican state-owned oil company Pemex has lined up plans to spud five exploration wells in the Sureste basin, as it searches for hydrocarbons in the shallow-water portion of a promising play off the coast of Tabasco state. The country’s hydrocarbons regulator CNH has cleared Pemex to drill the Kukupkil-1EXP, Macuil-101EXP, Ek-301EXP, Sukuum-1EXP and Tentok-1EXP wells, which combined will target unrisks resources of up to 106.4 million barrels of oil equivalent. Pemex expects to start drilling this month the Sukuum-1EXP probe in about 27 metres of water with the independent-leg cantilever jack-up rig Campeche. **14<sup>th</sup> December 2022**

USA

- Murphy drills on 320 million barrel US Gulf prospect**  
 Oso-1 probe is under way as is Samurai-5 "career-best" development well. Murphy Oil is drilling ahead on two key wells in the US Gulf of Mexico, one targeting a major exploration prospect and the other aiming for a new play at an ongoing development. Transocean's Deepwater Aasgard drillship is currently on location in the Atwater Valley block 138, drilling the Oso-1 exploration probe, while Noble's Stanley LaFosse drillship has just spudded the Samurai-5 well in Green Canyon block 432, according to tracking data from marine intelligence provider VesselsValue. Oso-1 is targeting a prospect that could house resources between 155 million and 320 million barrels of oil equivalent, where Murphy’s partners are privately-owned Ridgewood and recent farminees Occidental, each with one third stakes. **9<sup>th</sup> December 2022**
- Cummins to provide 35-MW electrolyzer for Linde's green hydrogen plant in Niagara Falls**  
 Once commissioned, Cummins’ electrolyzer system will power Linde’s largest green hydrogen plant in the U.S. Cummins Inc. will supply a 35-megawatt (MW) proton exchange membrane (PEM) electrolyzer system for Linde’s new New York. Once commissioned, Cummins’ electrolyzer system will power Linde’s largest green hydrogen plant in the U green hydrogen economy forward. "This project is not only a milestone for Cummins, but also for the energy transition in the U.S.," said Amy Davis,

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|  | <p>Vice P Cummins. "Adding the 35MW of this Linde plant to our electrolyzer project footprint highlights our commitment to scaling to support large-scale renewable hydrogen production with market-leading innovation." Cummins is supplying Linde with a state-of-the-art electrolyzer system designed for easy on-site installation with the ab Cummins' electrolyzers will be powered by hydropower, making the end product completely "green," or carbon-free, by An electrolyzer splits water into oxygen and hydrogen. <b>13<sup>th</sup> December 2022</b></p> |
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