

GERAB

BULLETIN

Weekly News



EXECUTIVE SUMMARY

The Commodity summary

- Crude Oil Brent prices are trading lower by 8% WTD and Crude Oil WTI prices are trading higher by 8% WTD but they are trading lower by 30% than a year ago prices.
- Coal prices are trading lower by 52% YTD
- Iron ore prices in downtrend and trading lower by 9% WTD.
- Nickel prices are in uptrend and is trading higher by 4% WTD
- Natural Gas prices were up by 2% WTD but trading lower by 73% YTD

The Currency summary

- Euro has gained strength against USD and is stronger by 4% YTD
- The US Dollar to CNY is stronger by more than 4% YTD

The Rig count summary

- The Rig counts in Africa have gone up by 20% 6MTD and the rig counts in North America have gone down by 17% 3MTD.

Project summary

- Gulf Energy Secures \$100mn Multiple Contract Extensions in Oman
- Opaz Signs Deal with Mitsui, Kobe Steel to Set up 'Green' Metallics Plant in Oman
- Italy's De Nora awarded Jubail Desalination Plant upgrade Contract
- Yokogawa awarded Control Systems Contract for Jubail desalination plant
- Solvay to supply technology license for hydrogen peroxide mega-plant in China
- India's Essar plans \$244.39m investment in Raniganj CBM block
- Lootah Biofuels signs agreement to establish first biofuel plant outside UAE
- TechnipFMC targets two new Africa subsea contracts worth over \$1 billion
- Neptune starts up latest well at North Sea field
- Air Products to build Alberta's 'first' commercial-scale hydrogen station
- Wintershall Dea discovers up to 300 million barrels offshore Mexico

COMMODITY UPDATES

COMMODITY	UOM	LATEST PRICE	WTD %	MTD %	3MTD %	6MTD %	YTD %
Chromium	USD/MT	9930.38	-1.11	-3.99	-6.72	5.33	-14.19
Coal	USD/MT	206.74	-0.79	-2.17	-15.10	-46.27	-51.89
Cobalt	USD/MT	33289.80	-5.57	-6.97	-4.88	-31.47	-61.63

Copper	USD/MT	8494.50	-0.65	-3.88	-5.46	5.53	-9.24
Crude Oil	USD/BBL	73.48	-8.18	-9.65	-8.31	-13.88	-34.10
Crude Oil Brent	USD/BBL	75.34	-8.14	-9.72	-9.66	-15.02	-33.02
Crude Oil WTI	USD/BBL	71.63	-8.23	-9.88	-6.85	-12.65	-35.20
Iron Ore	USD/MT	106.01	-9.21	-11.06	-15.02	17.56	-21.16
Molybdenum	USD/MT	46040.40	2.96	0.94	-43.40	9.39	10.41
Natural Gas	USD/MCF	2.31	2.20	1.71	-98.31	-66.84	-73.06
Nickel	USD/MT	24875.00	3.62	3.52	-8.48	-2.28	-10.83
Steel HRC (FOB China)	USD/MT	571.50	-6.62	-8.56	-10.42	9.13	-24.42
Steel HRC (N. America)	USD/MT	1278.68	-1.08	-0.94	42.52	78.01	-15.25
Steel Rebar	USD/MT	580.04	-5.76	-13.87	-12.06	1.83	-33.33
Steel Scrap	USD/MT	389.00	0.78	-5.85	-11.52	10.81	-18.19

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	1.1084	0.52	1.21	2.70	11.31	4.46
USDCNY	1 USD to CNY	China	CNY	6.9022	0.41	-0.35	-1.41	3.80	-4.23

Source- Trading Economics

CRUDE OIL STOCK

Region	Unit	Latest Count	WTD %	MTD %	3MTD %	6MTD %	YTD %
US Stocks of Crude Oil & Petroleum Products	Thousand Barrels	1599194.00	-0.10	0.11	-0.50	-1.52	-5.73

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	28.11	USD	-0.60	-1.92	-7.62	19.82	-5.29
Glencore PLC	462.30	GBP	-2.30	0.49	-17.02	-13.10	-4.15
NYSE American Steel Index	1766.21	Index	-0.16	-3.41	-13.19	7.89	-5.55
Rio Tinto PLC	4954.50	GBP	-1.77	-6.73	-19.16	-1.50	-9.79
Tenaris SA	26.90	USD	-3.34	-6.27	-17.89	-18.66	-15.70
Tubacex SA	2.40	EUR	-7.34	-7.69	0.00	11.63	4.80

Woodside Energy Group	32.94	AUD	-2.14	-4.27	-7.55	-13.70	5.78
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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	52	*	-1.89	0.00	4.00	26.83
GCC	214	*	-1.38	-1.83	2.88	5.94
Middle East	318	*	-1.24	-0.93	3.58	4.95
Africa	89	*	3.49	5.95	20.27	9.88
Asia-Pacific	195	*	3.72	6.56	1.56	11.43
Europe	109	*	5.83	1.87	9.00	57.97
Latin America	183	*	1.10	5.78	2.23	15.09
North America	845	-1.17	-5.16	-16.83	-13.60	6.83
Total	1739	*	-1.81	-7.70	-4.97	10.20

Source- Baker Hughes

(*) No weekly data available for those particular regions

NEWS OF THE WEEK

GULF COOPERATION COUNCIL (GCC)

UAE

- **Arada to Develop R&D Facility for Water Treatment Project in Sharjah**

Arada is investing in a major new research and development (R&D) facility in Sharjah, bringing a new form of sustainable water treatment to the UAE, and the wider Middle East, for the first time. The joint venture agreement with Hungarian water tech firm Biopolus, Sharjah Research Technology and Innovation Park (SRTIP) and Metito, a leading global provider of water management solutions, is designed to develop and implement upgraded versions of the existing Biopolus technology, allowing them to be patented, tested and integrated within projects in Sharjah. The R&D facility is designed to be a living, learning laboratory that can serve as an inspiring and innovative space for students and researchers to study ecological engineering and circular economy principles in a practical and hands-on manner. The long-term goal for the facility will be to create an improved 'Biopolus 2.0' version of the technology, while also turning Sharjah into a global hub for the process. Construction on the first phase of the Sharjah plant is currently under way and is scheduled to be completed in April 2024, with US engineering giant Jacobs serving as lead consultant on the project. The first phase will have the capacity to recycle 5,500 cubic metres of water a day, with two further phases providing the capacity to recycle 16,500 cubic metres a day. Further plants are also planned to serve Arada's other projects. **28th April 2023**

OMAN

- **Singapore player eyes further exploration at flagship Middle East offshore asset**

Masirah Oil team will work on preparations for drilling and completing additional wells in Block 50. Masirah Oil, a subsidiary of Singapore-headquartered independent Rex International, is set to carry out further exploration this year at its flagship asset offshore Oman, with its sights set on a production boost from the block. Rex revealed in its recent annual report that the Masirah Oil team would this year work on preparations “for drilling and completing additional wells to capture the additional resource”, at the Block 50 asset. “In addition, a block-wide review of exploration potential will be performed,” it said, without indicating the number of wells being targeted. Rex noted that based on the results of an exploration review at Block 50, “planning of the acquisition of additional targeted seismic will be implemented”. It is aiming to boost production from Oman’s Block 50 and other key international assets. “The group’s long-term target to get to 20,000 barrels of oil equivalent per day remains, but this will be dependent on the availability of rigs and other equipment, particularly for Oman and Malaysia,” Rex said. **24th April 2023**

- **Gulf Energy Secures \$100mn Multiple Contract Extensions in Oman**

National Energy Services Reunited Corp. (NESR), an international, industry-leading provider of integrated energy services in the Middle East and North Africa (“MENA”) region, announced that its subsidiary, Gulf Energy, successfully completed negotiations with multiple clients in Oman to extend existing Well Intervention contracts for up to five (5) years. Based on the Company’s excellent service delivery and new technology introductions across various fields that have resulted in exceptional well productivity increases, the new contracts range in duration for different clients and reflect the strong, mutual trust with the client base in an improving oilfield services landscape. NESR CEO & Chairman Sherif Foda commented, “The success of Gulf Energy in its in-country value (“ICV”) and Omanization initiatives clearly reflects NESR’s broader localization ambition as National Champion of the MENA region. **28th April 2023**

- **Opaz Signs Deal with Mitsui, Kobe Steel to Set up 'Green' Metallics Plant in Oman**

Oman's Public Authority for Special Economic Zones and Free Zones (Opaz) has signed an agreement with Kobe Steel, a leading Japanese steel manufacturer, and Mitsui & Company, a global trading investment company, for setting up a low CO2 iron metallics project in the special economic zone at Duqm. As per the deal, the duo will commercialize the manufacture and sale of direct reduced iron (DRI) produced through Kobe Steel’s Midrex Process in co-ordination with Opaz. Under this Midrex Process, the iron oxide gets converted into DRI inside the shaft furnace using hydrogen-rich gas coming from natural gas or hydrogen as a reducing agent. Over 90 such Midrex plants are in operation across the globe. The deal comes at a time when the steel industry is working on reduction of CO2 emissions to address climate change. Kobe Steel Group (also known as Kobelco Group) set the vision for 2050 in May 2021, aiming to achieve carbon neutrality in its production process and contribute to over 100 million tonnes of CO2 emission reduction through its technologies, products, and services. Kobe Steel said it has, along with Mitsui, sealed a land reservation agreement with Port of Duqm Company (PODC), the entity that operates the Omani port. **26th April 2023**

<p style="text-align: center;">QATAR</p>	<ul style="list-style-type: none"> <p><u>Qatar Petroleum has entered into a 10-year LNG Sale and Purchase Agreement (SPA) with China Petroleum & Chemical Corporation (Sinopec) for the supply of 2 million tons per annum (MTPA) of liquefied natural gas (LNG) to China.</u></p> <p>The SPA was signed by Saad Sherida Al-Kaabi, the Minister of State for Energy Affairs, the President and CEO of Qatar Petroleum, and Zhang Yuzhuo, the Chairman of Sinopec Group, during a virtual ceremony attended by senior officials from both sides. Under the agreement, LNG deliveries will commence in January 2022, and will be delivered to Sinopec’s LNG terminals in China. This SPA further demonstrates the State of Qatar’s continued commitment to meeting the growing energy demand of its customers globally in the form of reliable long term LNG supplies. Al-Kaabi said: “In a step that will further solidify the excellent bilateral relations between the People’s Republic of China and the State of Qatar, we are delighted to enter into this historic long term LNG SPA. We are also proud of the fact that this agreement will be Sinopec’s first long term LNG SPA from Qatar, and we are hopeful that it will mark the start of a long and fruitful partnership with Sinopec. Our LNG relationship with China dates back to 2009, when we started supplying LNG through a host of LNG SPAs with a number of our valued Chinese partners. 26th April’ 2023</p>
<p style="text-align: center;">SAUDI ARABIA</p>	<ul style="list-style-type: none"> <p><u>Italy's De Nora awarded Jubail Desalination Plant upgrade Contract</u></p> <p>Industrie De Nora S.p.A. Italy announced in a statement that it has been awarded contracts in the Kingdom of Saudi Arabia (KSA) for the second phase of the Al Jubail Desalination Plant upgrade, a Saline Water Conversion Corporation (SWCC) initiative. The development will see the plant become the largest Seawater Reverse Osmosis (SWRO) desalination plant in the world, producing up to 1 million cubic meters of seawater per day with the help of key De Nora technologies. De Nora will provide an optimized scope offering of three proprietary technologies, including: a SEACLOR® system for biofouling control of seawater intake through electrochlorination; DE NORA TETRA® underdrain filters as a trouble-free solution for the pretreatment before reverse osmosis; and Capital Controls® Underwater Chlorine Dioxide Generators for the final disinfection of potable water, a safe patented technology ensuring premium water quality. 26th April 2023</p> <p><u>Yokogawa awarded Control Systems Contract for Jubail desalination plant</u></p> <p>Yokogawa Electric Corporation, Japan announces that its subsidiary, Yokogawa Saudi Arabia, has received an order from the Saline Water Conversion Corporation to supply control systems and other solutions for the Project, which will introduce seawater reverse osmosis (RO) technology at the Al Jubail desalination plant, a world-scale facility with a water production capacity of 1 million m3 per day. The construction contractor for this project is a consortium between Saudi Services for Electro Mechanic Works Company and Metito Saudi Arabia. The Al Jubail plant is located in Jubail, of a city on the Persian Gulf coast of Saudi Arabia. This project will replace the existing multi-stage flash distillation (MSF) facilities with RO facilities. Extending the life of the existing plant is seen to be a more environmentally friendly approach than constructing an all-new plant. In the Middle East, the use of fossil fuel-intensive desalination processes was once the mainstream. However, with the advances in membrane filtration techniques that have been achieved in recent years, more and more plants are now turning to the use of the RO technology, which emits less CO2 and produces water using less energy. This project is part of Saudi Arabia’s Net Zero Vision 2060 initiative, which aims to reduce carbon dioxide emissions and achieve net zero emissions by 2060. For this project, Yokogawa will provide control systems, safety instrumented systems, production management systems, operator training simulators, and</p>

cybersecurity solutions. Installation is set to be completed by January 2024, and the new facilities are expected to be fully operational by December 2024. **26th April 2023**

ASIA EXCLUDING GULF COOPERATION COUNCIL (GCC)

CYPRUS

- **Chevron consider high-productivity exploration offshore Cyprus, Egypt and Israel**
The company has issued a lease tender seeking a drilling vessel from potential companies for a period of one year. Energy major Chevron is looking to explore for natural gas offshore Cyprus, Egypt and Israel to meet surging demand in the region and Europe, reported Reuters, citing two sources. As part of this effort, the US company is seeking a drilling ship to support natural gas exploration work. According to the sources, the company has issued a lease tender seeking a drilling vessel from potential companies in 2024, for a period of one year with an option to extend for several years. A Chevron spokesperson said the company “remains committed to working together with the governments of Egypt, Israel and Cyprus and our partners in the region to support the growth of the east Mediterranean energy sector. The field produces 12 billion cubic metres (bcm) of gas per year, which is supplied to Egypt, Israel and Jordan. By 2027, Chevron and its Leviathan partners are planning to nearly double the production from the Leviathan field to 24bcm. **19th April 2023**

CHINA

- **Solvay to supply technology license for hydrogen peroxide mega-plant in China**
Solvay will provide GHCAC with high-productivity hydrogen peroxide technology, a comprehensive process design package and operating expertise. Solvay, a global market leader in specialty chemicals, has signed a license agreement with Guangxi Chlor-Alkali Chemical (GHCAC) which will enable the Chinese partner to build and operate a hydrogen peroxide megaplant at Qinzhou (Guangxi Zhuang Autonomous Region) designed to support its 300 kilotons propylene oxide (PO) production and other units on site. Under this license, Solvay will provide its proprietary hydrogen peroxide mega-scale, high productivity process technology to GHCAC, including a dedicated process design package, operating expertise and a range of services to ensure the optimized and reliable production of the new megaplant. In addition, the company will also supply GHCAC with proprietary 2-amylanthraquinone (AQ), the key chemical contributing to the high productivity and environmentally-friendly chemical processes of Solvay’s megaplant technology. **27th April 2023**

INDIA

- **India’s Essar plans \$244.39m investment in Raniganj CBM block**
India’s Essar Oil and Gas Exploration and Production (EOGEPL) is planning to invest \$244.39m (Rs20bn) to develop its coal bed methane (CBM) project in Raniganj Block in the state of West Bengal, reported the Press Trust of India (PTI) via the Economic Times (ET), citing an official. The new investment comes in addition to the company’s existing investment of \$610.98m for drilling 350 wells in the Raniganj block. Following the drilling of the 350 wells, the company is currently producing nearly 0.9 million cubic metres of gas per day (mcmd). Pankaj Kalra, CEO of EOGEPL,

a subsidiary of Essar Exploration & Production, told the PTI that the company plans to make another investment to drill additional 200 wells in the next 18–24 months. Kalra said: “We are employing the latest technology in the existing wells to ramp up production from 0.9mcmd to 1.3mcmd, which will be completed in a few months.” The company’s total CBM production from the Ranigunj block is expected to reach around 3mcmd following the commissioning of the additional wells, Kalra said. Upon drilling of the additional wells, the company’s contribution to India’s total CBM production is expected to increase to about 90% from nearly 65% currently. In this year, Essar is also planning to drill two shale gas wells at the Raniganj block, as a pilot project. Covering an area of 500km², the Raniganj CBM block is located in the prolific Damodar Valley Basin with thick Permo-Carboniferous Gondwana coal seams. Last year, Essar Group proposed plans to construct a petrochemical complex in the eastern state of Odisha, with an investment of \$4.92bn. The oil to petrochemical complex is expected to have an annual capacity of 7.5 million tonnes. **27th April 2023**

- **Advait Infratech Inks MoU with Jiangsu HuaDe Hydrogen Energy**

Advait Infratech (AIL), a Gujarat-based energy solutions provider, recently signed a memorandum of understanding (MoU) with Jiangsu HuaDe Hydrogen Energy Technology (HuaDe), a China-based company engaged in hydrogen fuel cell technology. The purpose of this MoU is to establish a fuel cell manufacturing facility in Gujarat based on the design proposed by HuaDe. Under this agreement, the technology will remain with HuaDe, and AIL will be the manufacturer of fuel cell systems in India. The new facility will manufacture pure hydrogen and city gas-based fuel cell systems. This partnership will benefit from both companies' expertise to drive the adoption of fuel cell technology in India, which is expected to play a major role in the country's transition to a sustainable energy future. The collaboration with HuaDe will allow AIL to access cutting-edge fuel cell technology and manufacturing. **26th April 2023**

IRAQ

- **KBR to advise for Iraq’s major state-led mega projects**

KBR will initially sign a three-year agreement with scope of extension. According to official sources, KBR, an engineering services firm headquartered in the US, has been selected to provide guidance to the Iraqi government on major state-led projects. Zawya Projects reported that Abdul Zahra Al-Hindawi, the spokesperson for the Ministry of Planning, that representatives from the ministry and KBR recently convened in the capital to finalize the agreement. The ministries of finance, electricity and oil participated in the previous meetings between KBR and the planning ministry, which was assigned the responsibility to negotiate the technical and contractual aspects of the planned agreement. Al-Hindawi said initially a three-year agreement will be signed with KBR with scope for extension. **28th April 2023**

MALDIVES

- **Lootah Biofuels signs agreement to establish first biofuel plant outside UAE**

The signing of the agreement underscores Lootah Biofuels’ commitment to expanding its reach beyond the UAE and its range of innovative sustainable solutions to meet long-term energy needs through clean alternatives. Lootah Biofuels has signed an agreement with Fenaka Corporation Limited, a state-owned utility company providing electricity, water, and sewerage to the island communities of the Maldives, to establish its first biofuel production plant from waste cooking oil outside the UAE. The signing of the agreement underscores Lootah Biofuels’ commitment to expanding its reach beyond the UAE and its range of innovative sustainable solutions to meet long-term energy needs through clean alternatives that are compatible with the pillars of circular economy and sustainable development. After signing the agreement at

	<p>Fenaka Maldives, Yousuf Saeed Lootah, CEO of Lootah Biofuels, said, “We are delighted to sign the MoU with Fenaka as this is an important step in our strategy to grow and expand our business globally, which is in line with the UAE’s goals spearhead global action to fight climate change and protect the planet. 26th April 2023</p>
PHILIPPINES	<ul style="list-style-type: none"> • <u>ADNOC L&S expands its global operations at Philippines LNG Import Terminal</u> Ish will be commissioned as a Floating Storage Unit (FSU) at PHLNG, the first LNG import terminal in the Philippines. ADNOC Logistics & Services (ADNOC L&S), the shipping and maritime logistics arm of ADNOC, announced today the successful berthing of LNG carrier, Ish, at the AG&P Philippines LNG (PHLNG) Import Terminal in Batangas Bay, as it continues expanding its operations globally. Following her arrival, Ish will be commissioned as a Floating Storage Unit (FSU) at PHLNG, the first LNG import terminal in the Philippines. AG&P subsidiary, GasEntec, converted the vessel, which has a capacity of 137,500 cubic meters, to an FSU in five months. Tcanions and maintenance of the FSU will be undertaken by ADNOC L&S. The agreement to charter Ish to AG&P, was signed in 2022 and spans 11 years with the option to extend a further four years. This arrangement bolsters ADNOC L&S' FSU revenue stream and extends the life of the vessel while securing PHLNG's resilience of LNG supply. The agreement builds on an existing long-term charter signed between ADNOC L&S and AG&P to provide another FSU in India. 27th April 2023
TURKEY	<ul style="list-style-type: none"> • <u>Veolia Wins contract for Europe's largest Waste-to-Energy plant in Istanbul, contributing to Turkey's carbon neutrality goal by 2053</u> The plant, which has a capacity to process approximately 1.1 million tonnes of non-recyclable household waste per year, will help save nearly 1.5 million tonnes of carbon emissions annually through the production of 560,000 MWh of electricity. Veolia, a global leader in resource management, has won the contract for the operation and maintenance of Turkey’s largest waste-to-energy plant in Istanbul. The plant, which has a capacity to process approximately 1.1 million tonnes of non-recyclable household waste per year, will help save nearly 1.5 million tonnes of carbon emissions annually through the production of 560,000 MWh of electricity. This is equivalent to the consumption of 1.4 million inhabitants of the metropolis. With this project, Turkey aims to decarbonise its waste sector through energy recovery and recycling to avoid the use of landfill, which emits more carbon. This aligns with the country’s objective of achieving carbon neutrality by 2053. As per the agreement, Veolia will be responsible for the entire operations and maintenance of the plant, ensuring compliance with the European Union’s environmental standards and reducing utility consumption. 27th April 2023
AFRICA	
EGYPT	<ul style="list-style-type: none"> • <u>Egypt and UK Discuss Petroleum Opportunities in Egypt and EastMed</u> Egypt’s Minister of Petroleum and Mineral Resources Tarek El Molla recently met with the UK’s Ambassador in Egypt Gareth Bayley to discuss and review the business activities of British companies active in the North African country’s oil and gas industry and explore future investment opportunities in the sector. El Molla noted the importance of the relationships with British companies and expressed his desire to continue and expand cooperation with an eye toward making additional natural gas discoveries. The Minister also tied the conversation to the Eastern Mediterranean Gas Forum, an international organization formed by Cyprus, Egypt, France, Greece, Israel, Italy, Jordan, and Palestine. The minister stated that international

companies have opportunities to see success with new discoveries given that gas liquefaction projects are plentiful with the existing infrastructure in the region. **11th April 2023**

- **TechnipFMC targets two new Africa subsea contracts worth over \$1 billion**

London-based TechnipFMC has added a duo of subsea contract opportunities in Africa worth potentially more than \$1 billion combined to its target list for the next two years which, in total, is estimated at nearly \$25 billion. The contractor also delivered another stable quarter, leaving its whole-year outlook unchanged and continuing to grow its subsea business backlog. According to TechnipFMC chief executive Doug Pferdehirt, new projects include the Azule Energy-operated Ndungu field in Block 15/06 offshore Angola and BP's Raven West Nile development offshore Egypt. The Ndungu subsea contract could be worth between \$500 million and \$1 billion, while the Raven subsea award has an estimated value at \$250 million to \$500 million. Brazil continues to represent the bulk of new subsea opportunities with 10 of the 34 potential contracts to be awarded over the next two years. Brazilian state-controlled player Petrobras alone will likely be responsible for signing seven new subsea contracts, followed by European majors Shell and TotalEnergies with four each, and Eni and Equinor with three each. "We continue to expect the EPCI to post record inbound orders in 2023 and to be a strong contributor to the more than \$8 billion of subsea orders we expect for the full year. **27th April 2023**

EUROPE

GERMANY

- **Nippon Gases to build new biogenic CO2 plant in Germany**

Nippon Gases Deutschland a European operating company in Nippon Sanso Holdings Corporation (NSHD) – has revealed that it will build a new plant for the purification and liquefaction of carbon dioxide (CO2). Having signed a strategic agreement with VERBIO Vereinigte BioEnergie AG (VERBIO), the company plans to construct the biogenic CO2 plant near to VERBIO's bioethanol production facility in Zorbig, Germany. An additional plant will be built in the 'immediate vicinity' for the further processing of the CO2 into dry ice. It's estimated that the short distance between liquefaction and further processing into dry ice could reduce CO2 emissions from road transport by up to 330 tonnes per year. Often used for freezing and chilling of food products, liquid CO2 is also used for the carbonation of beverages, water treatment, low temperature testing of aviation and electronic components, oil and gas well simulations and controlling chemical reactions. With a production capacity of around 660,000 tonnes of biodiesel, 300,000 tonnes of bioethanol and 1,300 gigawatt hours of biomethane per year, the company claims its biofuels achieve CO2 savings of up to 90% compared to gasoline or diesel. **19th April 2023**

- **Energy companies unite to form hydrogen value chain in Germany**

The companies BP, Gasunie, Nowega, NWO, Salzgitter, Thyssengas, and Uniper are connecting their hydrogen projects in north-west Germany to network Wilhelmshaven as a future location for hydrogen import and production with the industrial consumption centres in North Rhine-Westphalia and Lower Saxony. According to Uniper, in Wilhelmshaven, BP and Uniper are planning various projects to import or generate hydrogen, while Gasunie, Nowega, NWO, and Thyssengas are bringing existing transport lines and plans for new H2 pipelines to the overall project. In addition to the hydrogen consumption locations of bp and Salzgitter in the Rhine-Ruhr region and in Salzgitter, other companies are to be connected to the hydrogen infrastructure in the Rhine-Ruhr region or in Salzgitter. In regard to that, Uniper said that the companies involved have signed a letter of intent (LoI). Uniper pointed out that since the companies are participating in the alliance with various hydrogen projects, they thus represent the entire H2 value chain. **26th April 2023**

- **Yara and VNG plan close collaboration on clean ammonia in Germany**

Yara Clean Ammonia, a subsidiary of Norwegian fertiliser company Yara International, is joining forces with Leipzig-based gas company VNG in the field of clean ammonia that will actively support the implementation plans outlined in the German Hydrogen Strategy. To this end, the companies signed an official cooperation agreement at the Yara plant in Poppendorf, near Rostock, on 24 April. The agreement is seen as a first step towards a future supply agreement between both parties and can eventually enable further projects to facilitate clean ammonia as a hydrogen and energy carrier into the German market, with Rostock as a point of import. The parties said the clean ammonia can be supplied from YARA to VNG and the hydrogen and ammonia infrastructure in the German hanseatic city Rostock will be used and could be further developed. Furthermore, VNG and YARA expressed their wish to intensify and develop the collaboration with the city of Rostock and specifically Rostock port to turn the port into a hub for clean ammonia imports. **25th April 2023**

- **Norwegian partners with Norsk e-Fuel to build e-fuel plant**

Norwegian, the largest Norwegian airline and one of Europe's leading low-cost carriers, has announced a landmark partnership with Norsk e-Fuel to build the world's first full scale e-fuel plant in Mosjøen, Norway. The plant will produce sustainable aviation fuels (SAF), marking an important milestone towards Norwegian's target of 45% emissions reduction by 2030. Norwegian has signed a strategic partnership agreement with Norsk e-Fuel, with the ambition to secure long-term offtake of SAF and an equity stake in the company. The partnership will contribute to speeding up the production and availability of SAF in favour of a more sustainable aviation industry. The parties aim to finalise the detailed agreement within the next few months. "E-fuels can become a gamechanger for aviation. The partnership with Norsk e-Fuel is a landmark agreement for Norwegian, but also a milestone for aviation in Norway. It helps us move closer to the promise we have given our customers. We want to make it possible for everyone to fly sustainably," said Geir Karlsen, CEO of Norwegian. The goal is to start producing e-fuels in Mosjøen in Northern Norway as early as 2026. The partnership with Norsk e-Fuel is estimated to secure approximately 20% of Norwegian's total demand for SAF until 2030. In addition, Norwegian will invest more than NOK50 million (USD4.7 million) for a minority equity stake in the company. Norsk e-Fuel looks to accelerate the industrialisation of e-fuel production starting in Northern Norway. **26th April 2023**

- **Shelf Drilling secures work in Norway for recently acquired jack-up rig**

Shelf Drilling revealed on Friday, 28 April 2023, that a subsidiary of Shelf Drilling North Sea (SDNS) had secured a contract for the Shelf Drilling Barsk (former Noble Lloyd Noble) jack-up rig with Equinor for operations at the Sleipner Vest field offshore Norway. According to the company, the firm term of the contract for two wells is approximately 270 days and the value for the firm period, excluding certain integrated services, is approximately \$61 million. In addition, the deal entails options for two additional wells, and the planned start-up of operations is between May and July 2024. Located in the North Sea, the Sleipner area encompasses three gas and condensate fields – Sleipner Øst, Gungne and Sleipner Vest – and processes hydrocarbons from the tie-in fields: Sigyn, Volve, Gudrun and gas from Gina Krog. Shelf Drilling has got several new deals recently and the latest one was secured for another jack-up rig a few days ago with an undisclosed company for operations offshore Nigeria. **28th April 2023**

NORWAY

NETHERLAND	<ul style="list-style-type: none"> <u>OCI and Petrofac to deliver gasification-based green methanol programme</u> OCI Global, a producer and distributor of nitrogen, methan industrialization products, and Petrofac, a service provider to the energy industry, have entered a partnership to deliver OCI's programme of gasification-based green methanol projects. According to Petrofac, the programme will support the production of low-carbon feedstock for OCI's existing methanol facilities. The service provider informed that OCI will work with them, on an exclusive basis, on the design of a standardised gasification process and modular design for the delivery of new waste-fed facilities. In addition, Petrofac said it will deploy its engineering, procurement, and project management expertise to provide continued support to OCI for the delivery of the programme. 25th April 2023
SWEDEN	<ul style="list-style-type: none"> <u>Veolia Water's AnoxKaldnes to provide world's largest MBBR system for Käppalaverket WWTP upgrade in Sweden</u> The plant, which is owned by Käppalaförbundet, treats wastewater from over half a million people in 11 member municipalities north and east of Stockholm. Veolia Water Technologies subsidiary, AnoxKaldnes, has been selected to provide its moving bed biofilm reactor (MBBR) solution to support the upgrade of the Käppala wastewater treatment plant (WWTP) in Sweden. The plant, which is owned by Käppalaförbundet, treats wastewater from over half a million people in 11 member municipalities north and east of Stockholm. AnoxKaldnes has signed the contract with NCC, a leading construction company in the Nordic Region, to execute the construction and implementation of the new treatment works. The Käppala WWTP is facing an increased load from affiliated municipalities and stricter emission requirements. The Käppala Association plans to expand the capacity of the plant to cope with an incoming load corresponding to 900,000 population equivalent (p.e.) in 2050 and meet the new emission permit that will enter into force in 2026. The Käppala WWTP will become the largest MBBR system in the world when completed. Each line of the existing system is about 18,000 cubic metres in volume and will be divided into nine individual zones to meet the new requirements. The Käppala WWTP is built underground and the activated sludge lines are blasted from the bedrock, which means that the walls of each line are exposed raw bedrock. 25th April 2023
UK	<ul style="list-style-type: none"> <u>Neptune starts up latest well at North Sea field</u> Cygnus field's 10th and 11th wells were drilled by Borr Drilling's jack-up Prospector . Neptune Energy and partner Spirit Energy have brought on stream the 11th production well at the Cygnus natural gas field in the UK's southern North Sea, boosting output at the field by a further 4000 barrels of oil equivalent per day. Highlighting the field's contribution to the UK's energy security, Neptune Energy's UK country director Alan Muirhead noted that the field has capacity "to supply around 6% of the country's gas demand". We're taking steps to boost North Sea gas production, which reduces the UK's reliance on less secure and more carbon intensive supplies of imported energy, and also supports the government's aim of achieving energy independence by 2040," he added. Spirit Energy chief executive Neil McCulloch added: "Continuing to secure reliable and responsible supplies of energy from the UK continental shelf has never been more important. The 10th and 11th Cygnus wells were drilled by Borr Drilling's jack-up rig Prospector. 27th April 2023

<p>BRAZIL</p>	<ul style="list-style-type: none"> <p><u>Brazil tender for ultra-deep subsea pipeline serves as curtain-raiser to Equinor's next pre-salt project</u> Norwegian company expects production from the Pao de Acucar-Gavea-Seat area to begin in 2027. At least two companies have submitted proposals in an Equinor tender for constructing a major subsea pipeline in Brazil, as the Norwegian operator inches closer to a final investment decision on the gas-rich BM-C-33 pre-salt development. Norway’s oil giant is forging ahead with contracting arrangements for the ultra-deepwater development in Brazil’s Campos basin, looking to develop three offshore fields holding ore than 1 billion barrels of oil equivalent in recoverable resources. The BM-C-33 development is expected to enter operation in 2027 via a large floating production, storage and offloading vessel with planned processing capacity of 125,800 barrels per day of oil and 16 million cubic metres per day of natural gas. 26th April 2023</p>
<p>CANADA</p>	<ul style="list-style-type: none"> <p><u>Air Products to build Alberta’s ‘first’ commercial-scale hydrogen station</u> Air Products will build a multi-modal hydrogen refuelling station near to its C\$1.6bn Net Zero hydrogen energy complex under construction in Alberta, Edmonton. The station will be the industrial gas giant’s first in Canada and the first commercial-scale hydrogen refuelling station in the Canadian province. Set to open in early 2025, the station will have two refuelling lanes for heavy-duty vehicles and two additional positions for light-duty fuel cell electric vehicles. Air Products said the station will have a capacity of up to six tonnes of hydrogen per day and will offer a filling time on par with conventionally fuelled heavy-duty trucks. The station plans were announced at the Canadian Hydrogen Convention during a fireside chat with Eric Guter, Air Products’ Global Vice-President of Hydrogen for Mobility. Speaking at the event, Guter said the station will serve as a model that can be replicated throughout Canada to grow the hydrogen economy and achieve Net Zero by 2050. The hydrogen refuelling station is supported in part by C\$1m (CAD) in funding from Natural Resources Canada’s Zero Emission Vehicle Infrastructure Programme. Once complete, Air Products’ hydrogen energy complex aims to capture more than 90% of carbon emissions for permanent sequestration underground. 26th April 2023</p> <p><u>Dow selects Linde as clean hydrogen and nitrogen partner for its proposed net-zero carbon emissions ethylene and derivatives complex in Canada</u> Linde will complete the design and engineering for a Linde-owned and operated world-scale air separation and autothermal reformer complex. Dow announced it has selected Linde as its industrial gas partner for the supply of clean hydrogen and nitrogen for its proposed net-zero carbon emissions¹ integrated ethylene cracker and derivatives site in Fort Saskatchewan, Alberta, Canada. Final investment decisions for both the Dow and Linde projects are subject to approval by both companies' respective Board of Directors and various regulatory agencies. Final investment decisions are expected in fourth quarter this year for a potential startup of phase 1 in 2027. Under the parties' framework agreement, Linde will complete the design and engineering for a Linde-owned and operated world-scale air separation and autothermal reformer complex. This complex would be integrated with Linde's existing operations in Fort Saskatchewan. Dow's net-zero carbon emissions ethylene cracker and derivatives complex would decarbonize approximately 20 percent of its global ethylene capacity while growing its global polyethylene supply by about 15 percent and supporting approximately \$1 billion of EBITDA (earnings before interest, taxes, depreciation and amortization) growth across the value chain by 2030. 27th April 2023</p> <p><u>AltaGas, Vopak to develop gas export terminal in British Columbia</u></p>

The facility will assist in exporting LPG, methanol, and other bulk liquids. Canadian infrastructure company AltaGas and Dutch tank storage company Royal Vopak have formed a joint venture to develop the Ridley Island Energy Export Facility (REEF). Located on Ridley Island, British Columbia, REEF is an LPG and bulk liquids terminal with marine infrastructure. The facility will assist in exporting LPG, methanol, and other bulk liquids. REEF has secured key federal and provincial permissions to build storage tanks, a new dedicated dock, rail, and other ancillary infrastructure needed to run the facility. The export facility will be developed on a 190-acre site on lands managed by the Prince Rupert Port Authority. It will be close to the current Ridley Island propane export terminal operated by AltaGas and Vopak. Royal Vopak chairman of the executive board and CEO Dick Richelle said: “The strategic location of Prince Rupert, with the shortest shipping distances between North America and Asia, has the potential to increase the trade between Canada and the Asia Pacific region. REEF fits very well within Vopak’s strategic pillar to grow in gas and industrial infrastructure. **27th April 2023**

- **Dow selects Linde for its proposed net-zero carbon emissions ethylene and derivatives complex in Canada**

Linde will complete the design and engineering for a Linde-owned and operated world-scale air separation and autothermal reformer complex. Dow announced it has selected Linde as its industrial gas partner for the supply of clean hydrogen and nitrogen for its proposed net-zero carbon emissions¹ integrated ethylene cracker and derivatives site in Fort Saskatchewan, Alberta, Canada. Final investment decisions for both the Dow and Linde projects are subject to approval by both companies' respective Board of Directors and various regulatory agencies. Final investment decisions are expected in fourth quarter this year for a potential startup of phase 1 in 2027. Under the parties' framework agreement, Linde will complete the design and engineering for a Linde-owned and operated world-scale air separation and autothermal reformer complex. This complex would be integrated with Linde's existing operations in Fort Saskatchewan. Dow's net-zero carbon emissions ethylene cracker and derivatives complex would decarbonize approximately 20 percent of its global ethylene capacity while growing its global polyethylene supply by about 15 percent and supporting approximately \$1 billion of EBITDA (earnings before interest, taxes, depreciation and amortization) growth across the value chain by 2030. **27th April 2023**

GUYANA

- **ExxonMobil makes new oil discovery offshore Guyana**

Drilled using the Noble Don Taylor drillship, the Lancetfish-1 well intersected nearly 92ft of oil-bearing sandstone. ExxonMobil and its partners have made a new oil discovery in the Stabroek block offshore Guyana through the drilling of the Lancetfish-1 well. The Lancetfish discovery is located nearly 6.4km south-east of the Fangtooth discovery. Following drilling in a water depth of 5,843ft using the Noble Don Taylor drillship, the Lancetfish-1 well intersected almost 92ft of oil-bearing sandstone. ExxonMobil Guyana president Alistair Routledge said: “Initial results from the Lancetfish-1 well are encouraging and demonstrate the Stabroek block’s continued exploration potential. “We continue to increase our understanding of Guyana’s offshore resources with each new discovery.” The Lancetfish marks the ExxonMobil-led consortium’s second discovery this year after the oil find at the Fangtooth SE-1 well in the same concession. The Fangtooth SE-1 well, which is located nearly 13km south-east of the Fangtooth-1 well, encountered nearly 200ft of oil-bearing sandstone reservoirs. Spread over an area of 26,800km², the Stabroek block consists of multiple hydrocarbon discoveries. ExxonMobil, through its affiliate Esso Exploration and Production Guyana, holds an operatorship stake of 45% in the Stabroek block. Hess, through its subsidiary Hess Guyana Exploration, owns a 30% stake, while China’s

CNOOC, via its subsidiary CNOOC Petroleum Guyana, holds a 25% stake. Separately, ExxonMobil said that its Prosperity floating, production, storage and offloading (FPSO) vessel reached Guyanese waters earlier this month. Scheduled to begin production later this year, the Prosperity FPSO will join the Liza Destiny and Liza Unity FPSOs, which reported combined production of 375,000 barrels a day in Q1 2023. **27th April 2023**

USA

- **Tellurian gets US FERC authorisation for Driftwood pipeline project**

The 154km long pipeline project will feed the Driftwood LNG project in Louisiana, which will have a capacity of around 27.6Mtpa. Tellurian has been granted authorisation from the US Federal Energy Regulatory Commission (FERC) for Line 200 and Line 300 of its proposed Driftwood natural gas transmission project in Louisiana. Expected to involve an investment of around \$1.4bn, the Driftwood project is planned to be developed in Beauregard and Calcasieu Parishes. According to Tellurian, the pipelines, which have been issued FERC certificate, will be designed to transport up to five and one-half billion cubic feet of natural gas daily. The pipelines will have almost no emissions as they will implement Baker Hughes' electric-powered integrated compressor line (ICL) technology. Tellurian president and CEO Octávio Simões said: "Tellurian thanks the FERC for their thorough and collaborative review of our Driftwood Pipeline Project and we look forward to delivering natural gas in a cleaner and highly reliable way to Southwest Louisiana. **25th April 2023**

- **Wintershall Dea discovers up to 300 million barrels offshore Mexico**

Shallow water discovery in the Sureste basin provides a major boost for a company that took a major hit on the loss of Russian assets after Moscow's assault on Ukraine. Germany's Wintershall Dea has made a discovery offshore Mexico that may hold between 200 million and 300 million barrels of oil equivalent, providing a major boost to a company that is trying to pivot away from its former reliance on Russian assets. "This important discovery at Wintershall Dea's first own-operated exploration well offshore Mexico is a great success," said Wintershall Dea chief technology officer Hugo Dijkgraaf. Wintershall Dea originally saw a resource potential of 78.5 million barrels of oil equivalent at Kan-1EXP with a 40% probability of success. The well was drilled by the Borr Drilling jack-up rig Borr Ran and reached a total depth of 3317 metres. It found more than 170 metres net pay sandstones of Upper Miocene reservoirs in water depths of around 50 metres. **25th April 2023**

- **Glenfarne plans to make FID on Texas LNG export plant in 2023**

The Texas LNG export terminal will have a production capacity of around four million tonnes of LNG per annum. Liquefied natural gas (LNG) export plant, which it plans to build in the Port of Brownsville in 2023. The proposed project, which is expected to start LNG production in 2027, will use renewable energy to reduce carbon dioxide emissions. The latest move comes as Glenfarne received an Order on Remand from the US Federal Energy Regulatory Commission following the completion of an additional social cost of carbon and environmental justice analysis on the project. The Order on Remand covers two modified mitigation requirements pertaining to air monitoring and emergency response communications that will be incorporated into the project's execution plan. Texas LNG Brownsville, an affiliate of Glenfarne Energy Transition, owns the Texas LNG export terminal, which will have production capacity of around four million tonnes of LNG per annum. Glenfarne Energy Transition CEO and founder Brendan Duval said: "Environmental justice and the carbon footprint of our project are among the most important issues we regularly consider as we progress Texas LNG to a final investment decision this year. **25th April 2023**

- **Xcel Energy investigates hydrogen blends for US pipelines**

Utilities company Xcel Energy is looking to inject and blend hydrogen into its 36,000-mile distribution pipeline and 2,000 miles of transmission pipeline in the US. A detailed assessment carried out by industrial engineering solutions specialist Worley, along with its consulting business Advisian, will evaluate what percentage of injected hydrogen the system can accommodate and highlight any necessary upgrades. Once complete Xcel Energy will receive the data required to help proceed with any upgrades

and adaptations to the infrastructure. It is hoped the assessment will be complete in July. Worley Group's involvement will entail reviewing all assets, including compression stations, meters and facilities. The team will assess each system area and location to evaluate the maximum allowable hydrogen blending capability. These results will contribute to the recommendations developed by Worley to identify what the current system can accommodate and where upgrades are needed to enhance the system and increase the blend percentages. Oliver Morgan, Global Vice-President of Midstream at Worley, notes that the potential hydrogen that to support the energy transition will help Xcel Energy achieve its clean energy goal. Xcel Energy wants to provide affordable and clean energy to its 2.1 million customers. **27th April 2023**

- **Golden Triangle integrated polymers facility in Texas, the US (nsenergybusiness.com)**

Project type :	Integrated polymers facility
Location :	Texas, US
Units :	One 2,080 KTA ethane cracker unit; Two 1,000 KTA high-density polyethylene units
Investment :	\$8.5bn
Final Investment Decision :	November 2022
Expected start of operations :	2026
Owner :	Golden Triangle Polymers Company

The Golden Triangle is an integrated polymers facility being developed in Orange County, Texas in the US. The facility will be owned by Golden Triangle Polymers Company, a joint venture between QatarEnergy (49%) and Chevron Phillips Chemical Company (CPChem) (51%). The companies took the Final Investment Decision (FID) for the project in November 2022. It will entail an investment of \$8.5bn. In the US, Golden Triangle Polymers Plant represents the second largest investment by QatarEnergy after \$11bn (100% basis) investment in the Golden Pass LNG Production and Export Facility, which is slated to commence operation in late 2024. PROJECT GALLERY The Golden Triangle Polymers Plant is expected to commence operations in 2026. Once complete, it will become one of the largest integrated polymers facilities in the world. A joint venture of QatarEnergy and CPChem is also developing the Ras Laffan Petrochemical Complex in Qatar. **Contractors involved** ZDJV, a joint venture between Zachry Industrial (Zachry Group) and DL USA, was contracted for the engineering, procurement and construction (EPC) of the polyethylene units. In December 2022, Technip Energies secured the contract to supply cracking furnaces for the ethane cracker of the Golden Triangle Polymers project. **25th April 2023**

- **Touchstone discovers light crude oil at Royston-1X well in Trinidad and Tobago**

The initial production test at the Royston-1X well, which was the first among the planned five production tests, involved depths of 11,102ft to 11,168ft, and confirmed the presence of light crude oil, which did not flow to the surface during testing. Touchstone Exploration has discovered non-commercial rates of light crude oil at Royston-1X well, located in the Ortoire block, onshore Republic of Trinidad and Tobago. The initial production test at the Royston-1X well, which was the first among the planned five production tests, assessed the least prospective section of the subthrust sheet of the Herrera Formation. It involved depths of 11,102ft to 11,168ft, confirming the presence of light crude oil at the Royston-1X well, which did not flow oil to the surface during testing. A third-party entity analysed swabbed volumes and confirmed 40 degrees API gravity formation crude oil, which indicates the deepest oil encountered on the Ortoire block to date. The Canadian petroleum and natural gas company believes that this section of the formation is a low permeability reservoir, and further testing will not be conducted. **25th April 2023**

- **CF Industries and NextEra Energy Resources announce MoU for green hydrogen project**

CF Industries Holdings, Inc. and NextEra Energy Resources, LLC have announced a memorandum of understanding (MOU) for a joint venture to develop a zero-carbon-intensity hydrogen project at CF Industries' Verdigris Complex in Oklahoma. The proposed project was included in the funding application submitted to the U.S. Department of Energy (DOE) this month by the HALO Hydrogen Hub, a three-state effort established by Arkansas, Louisiana and Oklahoma to compete for funding from the DOE's regional

clean hydrogen hub program. CF Industries and NextEra Energy Resources anticipate that support for the project from the DOE program will be a key aspect of their evaluation process. A final investment decision has not been made for this project. The proposed project envisions a jointly owned 100-megawatt (MW) electrolysis plant at the Verdigris Complex that would be powered by a dedicated 450-MW renewable energy facility developed by NextEra Energy Resources. CF Industries would be the sole off-taker of 100% of the zero-carbon green hydrogen output from the site's electrolyzers. **25th April 2023**

- **Independent maps multimillion-barrel prospects offshore Uruguay**

Challenger Energy seeking partner to de-risk play potentially analogous to big discoveries in Namibia. Caribbean and Atlantic margin-focused oil junior Challenger Energy has identified three sizeable prospects offshore Uruguay that may hold a combined 1 billion to 2 billion barrels of recoverable resources. Uruguay has been experiencing a revival of interest by oil companies lately, as geological models suggest the Pelotas basin could have a common genesis to giant discoveries made in Namibia's Orange basin in recent years. In 2020, Challenger, headed by chief executive Eytan Uliel, acquired exploration rights for Block OFF-1 in the Pelotas basin, which spans about 15,000 square kilometres in water depths ranging from 50 to 1000 metres. **27th April 2023**

Mailing address is:

info@gerabgroup.com

Gerab National Enterprises L.L.C.

PO Box 17719, Jebel Ali Free Zone

Dubai, United Arab Emirates

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