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Orlen Unipetrol Expanding Steam Cracker To Boost Ethylene Capacity at Litvinov

Zaluzi—

Orlen Unipetrol has decided to increase capacity of its steam cracker in Zaluzi, near Litvinov, Russia, with the addition of an eleventh furnace.

The new furnace, requiring an investment of more than CZK 700-million, will boost ethylene capacity at the site to 585,000 t/y from 545,000 t/y currently. Commissioning is expected next year. The furnace will utilize Technip Energies' SMKTM technology.

"The petrochemical segment already represents a third of our production and more than half of our incomes," said Tomasz Wiatrak, chief executive of the Orlen Unipetrol Group. "Its importance will continue to grow in the coming decades, as global demand for petrochemical products grows, too.

"We want to increase the total petrochemical production from 0.9-million to 1.4-million tons a year by 2030. We need to remove the existing capacity limitations of the steam cracker's pyrolysis section, the heart of our petrochemical segment, to have sufficient space for the planned production increase."

EuroChem Selects KBR's Insite Services For Its Kingisepp Ammonia Operations

Moscow—

KBR has been awarded a three-year service contract by EuroChem to provide its KBR Insite digital advisory service for EuroChem's ammonia plant in Kingisepp, Russia.

KBR Insite provides remote monitoring and advisory service to customers to help drive their plant operations to top-quartile performance, noted KBR.

Under the contract, KBR will proactively analyze EuroChem's ammonia plant operations and leverage the domain knowledge of KBR experts to identify opportunities for achieving sustainable improvements in production, reliability, environmental impact, and energy efficiency, KBR explained.

Acme Awards KBR Technology Contract For Green Ammonia Project in Oman

*Muscat—*KBR

said it has been awarded a contract by Acme Group to supply its ammonia technology for a new "breakthrough" green ammonia project to be built in Oman.

The 300-t/d ammonia plant will be an integrated facility using solar and wind energy to produce the ammonia. No other details of the project were available.

Under the terms of the contract, KBR will provide technology license, engineering, proprietary equipment, catalyst, and commissioning services.

"This facility, aimed towards exporting green ammonia to Europe and Asia, will be the first project of this scale," noted Manoj K. Upadhyay, founder and chairman of Acme Group. "We selected KBR technology because of its high yields and lowest energy consumption and look forward to a successful project implementation."

Ceyhan Polipropilen JV Breaks Ground For Polypropylene Facility in Turkey

Adana—

Ceyhan Polipropilen Uretim AS, a joint venture of Sonatrach and Ronesas Holding, has broken ground for a new polypropylene (PP) production plant in Adana, Turkey (PCN, 9 Dec 2019, p 1).

The approximately \$1.7-billion PP facility, which will be based on technologies from UOP Honeywell and Lyondell-Basell, will have a production capacity of 450,000 t/y and is expected to triple Turkey's annual PP production capacity. Operations are expected to begin in 2025.

Sonatrach will provide 550,000 t/y of raw material to the plant by 2040, while Ronesas will supply most of the electricity demand from its hydroelectricity plants. "Thus, near 80% of the plant's total energy need will be supplied from renewable energy sources," Ronesas noted.

Ceyhan Polipropilen is expected to sign an engineering, procurement, construction and commissioning contract "in the coming weeks" with a partnership formed by Tecnicas Reunidas and Ronesas, stated Tecnicas Reunidas.

JSC Shchekinoazot Finalizes Construction On New M-500 Methanol Plant in Russia

Moscow—

JSC Shchekinoazot has concluded construction and launched operations of its new Methanol-500 (M-500) production facility in Shchekinoazot, Russia (PCN, 17 Sept 2018, p 2).

The 500,000-t/y methanol plant, based on technologies from Haldor Topsoe, is the company's third methanol unit at the site, bringing total methanol production capacity to 1.5-million t/y.

"The M-500 plant is a high-tech one," said Shchekinoazot President Boris Sokol. "It has a resource and energy efficient technology. The project is strategically important both for the company and our country."

With the commissioning of the third methanol unit, Shchekinoazot will become the "leader" in terms of methanol production in Russia and Europe, noted JSC NIIK, the designing company.

The project was financed by Gazprombank and state development corporation VEB.RF.

BP and Lanxess Forming Partnership For Renewable Raw Material Supply

*Cologne—*BP

and Lanxess are entering into a strategic partnership, in which BP will supply sustainably produced cyclohexane to Lanxess' Antwerp, Belgium, site, beginning this quarter.

The ISCC Plus certified cyclohexane will be used by Lanxess as a precursor in the production of polyamide 6. BP uses bio-based and bio-circular feedstocks for the production of "green" cyclohexane, which can be, for example, rapeseed oil or biomass.

With this partnership, both companies want to "significantly" advance the production of sustainable plastics, the partners noted.

Repsol and Portugal Formalize Investment In Expansion of Sines Industrial Complex

Sines—

Repsol and the Portuguese government have signed an investment contract for the expansion of Repsol's Sines industrial complex in Portugal (PCN, 27 Sept 2021, p 1).

The project, which will be the "largest" industrial investment made in Portugal in the last 10 years, involves construction of a new 300,000-t/y linear polyethylene plant and a 300,000-t/y polypropylene (PP) unit, Repsol noted. Operations are scheduled to begin in 2025.

Under the contract, Repsol will invest €657-million in the expansion of the complex, while the Portuguese government, which considers the project of Potential National Interest (PIN), has granted tax incentives for the investment of up to €63-million.

PIN is a qualification reserved for investments that make significant contribution to the country's economy, Repsol explained.

Repsol recently selected LyondellBasell's Spherizone PP technology for the new PP plant.

Hanwha Lets KBR Technology Contract For New Nitric Acid Plant in S. Korea

*Yeosu—*KBR

said it has been awarded a dual-pressure nitric acid technology contract by Hanwha Corp. for a new 1,200-t/d nitric acid facility to be built at Yeosu in South Korea.

Under the terms of the contract, KBR will provide license, basic engineering design, and technical support to Hanwha for the facility. No other details of the project were available.

"KBR is proud to be selected by Hanwha to deliver our leading dual-pressure nitric acid technology that offers tangible CAPEX and OPEX benefits, including reduced net energy consumption through efficient energy recovery," noted Doug Kelly, president of technology at KBR.

Monolith, SK Ink JV Agreement to Produce Clean Hydrogen & Carbon Black in Korea

Seoul—

Monolith and SK Inc. have signed a memorandum of understanding (MoU) to pursue a joint venture for the production of clean hydrogen and carbon black products in South Korea.

Monolith has developed a process technology that uses 100% renewable energy to convert natural gas into clean hydrogen and carbon black.

As part of the MoU, Monolith will share its production technology knowledge with SK for the production of clean hydrogen and carbon black, while SK will oversee the production, sales and distribution of these products.

Monolith is currently operating its first commercial-scale production facility in Hallam, Neb., for the production of clean hydrogen and carbon black.

Last December, Monolith announced plans to produce clean ammonia at a second phase production plant in Nebraska (PCN, 21-28 Dec 2020, p 4).

"Monolith believes that for a global challenge like decarbonization, global collaboration is needed," said Monolith Chief Executive Rob Hanson.

"We're eager to continue our collaboration with SK Inc. to ensure cleanly-produced hydrogen and carbon products are available around the world."

ExxonMobil Plans to Build New Large-Scale Plastic Waste Advanced Recycling Facility

Irving—

ExxonMobil announced its intention to build its first, large-scale plastic waste advanced recycling plant in Baytown, Texas, which will be among the "largest" in North America.

The company is already operating a smaller, temporary facility, where it is producing commercial volumes of certified circular polymers that will be marketed by the end of this year to meet growing demand.

The new facility will have an initial planned capacity to recycle 30,000 t/y of plastic waste, and follows validation of the company's initial trial of its proprietary process for converting plastic waste into raw materials.

To date, the trial has successfully recycled over 1,000 tons of plastic waste and has demonstrated the capability of processing 50 t/d.

ExxonMobil is also developing plans to build around 500,000 t/y of advanced recycling capacity globally over the next five years.

In France, it is working with Plastic Energy on an advanced recycling plant in Notre Dame de Gravenchon, which is expected to process 25,000 t/y of plastic waste when it starts up in 2023, with the potential for further expansion to 33,000 t/y (PCN, 29 Mar–5 Apr 2021, p 3).

ExxonMobil is also assessing site in the Netherlands, the U.S. Gulf Coast, Canada and Singapore.

Enterprise's Teague Named as Recipient Of '21 Petrochemical Heritage Award

San Antonio—

Jim Teague, chief executive of Enterprise Products, has been selected to receive the 2021 Petrochemical Heritage Award.

Teague began his career in sales at Dow Chemical, where he rose to become vice president of feedstocks. After retiring from Dow, he served as president of Mapco Trading and Marketing, and then as president of Shell Oil's midstream business.

In 1999, when Shell sold the midstream business to Enterprise Products, Teague joined Enterprise as executive vice president. He later became chief operating officer and chief commercial officer. In 2010, he was made a director and then in 2016 was named chief executive.

"Teague's role in the growth of Enterprise's value from less than \$1.5-billion in 1999 to more than \$90-billion today is the highlight of his career," noted the Science History Institute.

The award is scheduled to be presented during American Fuel and Petrochemical Manufacturer's International Petrochemical Conference being held 17-19 Oct. 2021 in San Antonio, Texas.

People on the Move

CF Industries Inc.—*Stephen J. Hagge*, independent director of CF and former president and chief executive of Aptar Group, has been elected incoming chair of the board of CF, effective 1 Jan. 2022. He will succeed *Stephen A. Furbacher*, who will retire at the annual meeting of shareholders in May 2022.

JGC Holdings—*Farhan Mujib* has been appointed president and representative director, effective 1 Jan. 2022. He will succeed *Yutaka Yamazaki*, who will continue to serve as a director of JGC Holdings and JGC Corp.

Air Products Touts Clean Energy Complex To Produce Blue Hydrogen in Louisiana

Gonzales—

Air Products and Louisiana Governor John Bel Edwards have announced a “landmark” \$4.5-billion blue hydrogen clean energy complex to be built in Ascension Parish, La.

The facility, to be built, owned and operated by Air Products, will have the capacity to produce over 750-million cu ft/d of blue hydrogen. The project will create 170 permanent jobs and over 2,000 construction jobs over three years.

A portion of the blue hydrogen will be compressed and supplied to customers via the company’s extensive U.S. Gulf Coast hydrogen pipeline network, which can supply customers with more than 1.6-billion cu ft/d of hydrogen from approximately 25 production plants, including blue hydrogen from Air Products’ Port Arthur, Texas, facility.

The remaining blue hydrogen from the Ascension Parish facility will be used to make blue ammonia that will be transported worldwide and converted back to blue hydrogen for transportation and other markets.

Around 95% of the carbon dioxide (CO₂) generated at the new complex will be captured, compressed and transported by pipeline to multiple inland sequestration sites, located along a pipeline corridor extending 35 miles east of the complex.

Over 5-million t/y of CO₂ will be permanently sequestered one mile beneath the surface in geological pore space secured from the state. Air Products has already received approval from Louisiana’s State Mineral and Energy Board for the permanent sequestration of the CO₂.

“This landmark mega project will not only create jobs, but make Louisiana and Ascension Parish leaders in the U.S. clean energy transition,” noted Air Products Chairman, President and Chief Executive Seifi Ghasemi.

“Air Products is fully invested in, and committed to projects that leverage our build-own-operate, technology, financial and sustainability capabilities, and this project brings all those core strengths together.”

Sibur Plans Potential Project to Reduce ZapSibNeftekhim’s Carbon Emissions

Moscow—

Nova Energies, a joint venture of Technip Energies and Nipigas, has been awarded a pre-FEED (front-end engineering and design) contract by Sibur to study potential carbon capture solutions for Sibur’s ZapSibNeftekhim petrochemical facility in Russia.

Nova Energies’ scope of work includes technology and optimal technical solutions development, along with a cost estimate for the process of capturing, transporting and utilizing carbon dioxide from the operating enterprises of ZapSibNeftekhim and the Tobolsk thermoelectric power station. Value of the contract was not disclosed.

“We are pleased to announce that Nipigas team, in partnership with Technip Energies, has begun the development of a project to reduce carbon emissions of the largest petrochemical enterprise in the country and the main production asset of Sibur,” said Nipigas General Director Dmitry Evstafiev.

“This project gives Nova Energies an opportunity to contribute to the development and to take a leading position in the market for energy transition in our country from the very beginning of the operation of the joint venture.”

Topsoe Begins Operation of Demo Unit For Its eSMR Methanol Technology

Copenhagen—

Haldor Topsoe has started up a plant to demonstrate its eSMR methanol technology for the production of sustainable methanol from biogas at Aarhus University’s research facility in Foulum, Denmark (PCN, 22 July 2019, p 2).

The new 10-kg/hr methanol plant, scheduled to be fully operational by the beginning of 2022, will validate Topsoe’s electrified technology for the cost-competitive production of carbon dioxide (CO₂)-neutral methanol.

The process utilizes half the CO₂ that makes up about 40% of biogas and typically is costly to separate and vent in the production of grid quality biogas.

Partners in the project include Aarhus University – Dept. of Biological and Chemical Engineering, Sintex A/S, Blue World Technology ApS, Technical University of Denmark, Energinet A/S, Aalborg University, and Plan Energi, with Topsoe leading the project.

“The climate benefits from using sustainable methanol [are] not limited to one single purpose,” Topsoe noted. Sustainable methanol can be used for marine fuel, blend in gasoline, and for the chemical industry, where methanol is mainly used today.

“Further, the main feature in the demonstration plant is Topsoe’s eSMR technology, which enables not only the production of sustainable methanol, but also other sustainable products like green hydrogen, green ammonia, eFuels, and more.”

CAP Inks MoU With Aramco Trading To Secure Feed for 2nd PC Complex

Cilegon—

Chandra Asri Petrochemical (CAP) and Aramco Trading Co. (ATC) have signed a memorandum of understanding (MoU) for the supply of feedstock for CAP’s proposed second world-scale integrated petrochemical complex in Cilegon, Indonesia (PCN, 2 Aug 2021, p 2).

Under the MoU, the parties will look at potential opportunities for ATC to supply feedstock to support CAP’s operation of the complex.

Estimated to cost around \$5-billion, the project would include, among others, a cracker unit, polymerized olefins and related facilities and utilities. It would double CAP’s production capacity to over 8-million t/y. Subject to a final investment decision planned in 2022, construction is expected to take four to five years.

Lukoil Starts Supplying Solar Energy To Stavrolen Petrochemical Facility

Moscow—

Lukoil announced it has begun supplying solar electricity to its Stavrolen petrochemical plant in Budennovsk, Russia, in order to reduce its carbon footprint.

The company is expected to supply approximately 11-million kWh annually from its own solar power plant located at its Volgograd refinery.

“The use of renewable power generation will enable Stavrolen to reduce [the] carbon footprint of its products with [an] expected reduction of indirect emissions by almost 5,000 tons of CO₂ [carbon dioxide] per year,” Lukoil noted.

The company plans to continue to implement such projects in accordance with its climate strategy.

OWPL Partners Studying Offshore Wind Use For Green Hydrogen Production in Scotland

Flotta— Offshore Wind Partners Ltd. (OWPL), a consortium of TotalEnergies, Macquarie's Green Investment Group and Renewable Infrastructure Development Group, is studying the use of offshore wind to power the production of green hydrogen on an industrial scale on the island of Flotta in Orkney, Scotland.

OWPL has submitted a proposal, called the West of Orkney Windfarm, to the Crown Estate Scotland's offshore wind leasing round to develop the N1 plan option area west of Orkney. If successful, the proposal could deliver renewable power to a green hydrogen production facility at the Flotta Terminal.

OWPL, in partnership with Flotta Terminal's owners Repsol Sinopec and Uniper, are developing plans to power the proposed Flotta Hydrogen Hub.

"TotalEnergies believes in the potential of renewable offshore wind power to produce green hydrogen, supporting our companies to meet their ambition in terms of carbon neutrality," said Julien Pouget, senior vice president of renewables at TotalEnergies.

"With our proposed West of Orkney windfarm, there is an opportunity to create one of the world's first green hydrogen plants in Orkney. It is an exciting plan, and we look forward to working on it with our partners and Orkney stakeholders," Pouget added.

"Flotta is an ideal location for green hydrogen production – it is surrounded by the best wind resource in Europe, it lies close to major shipping routes within the vast natural harbor of Scapa Flow," noted James Stockan, leader of Orkney Islands Council.

Worley Wins Services Contract from Aramco For Ras Tanura Residue Upgrade Project

Riyadh— Saudi Aramco has awarded a services contract to Worley for a residue upgrade project at Aramco's Ras Tanura refinery in Saudi Arabia.

The project will convert low-value refinery residue into higher-value products, including gasoline, jet fuel and ultra-low sulfur diesel. A schedule for the project was not given.

Under the contract, Worley will provide early front-end engineering design, front-end engineering design and project management services for the entire project.

Advisian, Worley's consulting business, completed the front-end conceptual studies for the project.

CF Enters Agreements Enabling Operation Of Billingham Through at Least Jan. '22

*London—*CF Industries Holdings said its UK subsidiary has reached carbon dioxide (CO₂) pricing and offtake agreements with its industrial customers in the country that will allow its Billingham, UK, complex to continue to operate through at least January 2022 (PCN, 27 Sept 2021, p 2).

The complex is capable of producing 750 t/d of CO₂ for commercial use as a byproduct of the ammonia production process.

During the period of the agreements, it is expected that the UK government and industrial gas customers will develop robust alternative sources of CO₂, as part of a long-term solution for meeting demand in the country.

CF recently restarted its ammonia unit at the complex that was suspended last month because of high natural gas prices, after reaching an interim agreement with the government to cover the costs to restart the plant and produce CO₂ for the UK market.

The company's Ince fertilizer complex in Chester, UK, was suspended at the same time as the Billingham facility; however, it remains offline. CF does not have an estimate for when production will resume there.

Dow Announces Agreement with Topsoe To Fast-Track MDU at Terneuzen Site

Terneuzen— Dow announced a first step agreement is in place with Haldor Topsoe to fast-track the design, engineering and construction of a new 10,000-t/y market development unit (MDU) at Dow's site in Terneuzen, the Netherlands (PCN, 11 Oct 2021, p 3).

The MDU will advance the technology for industrial-scale purification of pyrolysis oil feedstock derived from waste plastics, which will be used to meet strong market demand for new, circular polyethylene.

"Advancing the circular economy for plastics requires scale for feedstock recycling and clean up that does not yet exist broadly, so we are partnering to help accelerate it," said Diego Donoso, president of Dow's packaging and specialty plastics business.

"Leveraging Haldor Topsoe's technology and expertise will help us de-risk scale-up purification capabilities aligned with our efforts to stop the waste and close the loop."

LyondellBasell Extends Circulen Suite

Rotterdam— LyondellBasell said it has extended its Circulen suite of sustainable solutions to its Advanced Polymer Solutions (APS) segment.

The Circulen portfolio of compounds and solutions is derived from mechanical and advanced (molecular) recycled and renewable-based materials for its customers.

LyondellBasell's APS segment produces polypropylene compounds, engineered plastics, masterbatches, colors and powders, engineered composites and advanced polymers, including Catalloy and polybutene-1.



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