



Fortum intensifies calls for German state to bail out Uniper

Fortum, the Finnish energy company and majority shareholder of Uniper, has intensified calls for German state support to rescue the Düsseldorf-based utility but refused to pour any more cash into the indebted company. On July 8, Uniper formally filed for state support under Germany's newly adopted energy legislation though a decision by the cabinet is still pending.

“As Germany's biggest importer of pipeline natural gas, Uniper has been hit hardest by the Russian gas supply curtailments and as a result is under extreme financial pressure. Since mid-June, Uniper has received only 40% of the contracted gas volumes from Russia and has had to source the replacement volumes in the market at significantly higher prices,” Fortum said in a statement. The Finnish utility owns 77.98% of Uniper as of December 2021, while over 6% of Uniper shares are held by private investors, mostly based in Germany.

Energy and climate minister Robert Habeck told German state



radio that the coalition government is in intensive conversation with all of the country's oil and gas importers as well as power producers.

“The government is discussing this behind closed doors,” he said, suggesting a decision may be reached in the coming days. Fortum confirmed it is in constructive talks with the German government on

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TTF prices will soar if Nord Stream does not resume flows; Fitch warns

Fitch analyst have issued a stark warning that prices at the Dutch TTF gas trading hub will soar if Russia's Gazprom won't resume contractual gas deliveries to Germany after the 10-day maintenance of Nord Stream 1 ends on June 21. Next-hour TTF gas prices were last seen trading at around \$55 per million cubic feet (mcf), of €188 per MWh – a sharp contrast with \$20/mcf in early June.

At these levels, TTF next-hour prices are already significantly above Fitch's earlier assumptions for 2022 of a gas price at \$25/mcf and the rating agency's long-term price assumption of just \$5/mcf.

A triple whammy of political risk due to the ongoing war in Ukraine, shortages of pipeline gas deliveries from Russia to most European countries, and a tight LNG market have sent Europe's gas prices soaring.

Shipments of the super-chilled gas from the United States – the world's swing LNG supplier – are maxed out, analysts say, although there may still be some leeway at terminals like Freeport LNG, where operation was halted due to an accident in June. Freeport LNG is owned and operated by



Freeport LNG Investments (63.5 %) as well as the two Japanese companies JERA (25.7%) and Osaka Gas (10.8%).

Gas rationing on the cards in Germany

Germany is at particular risk of gas supply shortages, Fitch warns, given that the regulator Bun-

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how to stabilise Uniper – “both with regards to its business risks and financial position.”

Several alternatives are now being proposed and discussed with the government but Fortum stressed it wanted the German government to provide its own energy security. “The German security of supply businesses need to be owned by the federal state that has the required strong creditworthiness,” said Fortum CEO Markus Rauramo.

Uniper CEO warns of “massive losses”

Struggling to cover delivery obligations as falling Russian supplies sent gas prices spiralling, Uniper said it was seeking additional funding through an increase in a credit facility with the German Federal Government, through the state investment body Kredi-

tanstalt für Wiederaufbau (KfW). Uniper has asked KfW for a bailout and warned losses could be massive in 2022.

“If you look at the price disparities and the volumes that are missing, we could be piling up €10 billion (\$10.2bn) of losses this year,” CEO Klaus-Dieter Maubach said. During Uniper’s corporate crisis, Fortum has provided the utility with an €8 billion credit facility comprising both shareholder loans and parent company guarantees, which is almost now fully drawn.

Fortum wants to put Uniper under German gov’ ownership

Now, the Fortum CEO says the company’s strategy is to reorganise Uniper’s business portfolio and to ring-fence the system-critical German businesses under the ownership

of the German government.

“Fortum’s goal is to find a long-term solution together with the government that addresses the consequences of a potential prolonged or even expanded gas curtailment and further gas price hikes in a way that is sustainable for consumers and Uniper alike, and preserves Uniper’s credit rating,” said Fortum CEO Rauramo.

“We welcome that the Bundestag has now approved a ‘toolbox’ which will allow immediate relief to the effects of the gas supply crisis,” Fortum CEO Rauramo declared. “Next, we look forward to the government to start promptly implementing these tools to stabilise the situation in the energy industry and in particular at Uniper, as we continue talks on a long-term solution.” ■

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desnetzagentur (BNetzA) voiced concerns as to whether flows via Nord Stream 1 will be resumed after the maintenance is completed. Eager to pre-empt a gas crisis, the regulator is in discussion with Germany’s industries as to how energy consumption can be curtailed. A merit order, specifying which industry will be safeguarded from potential supply cuts has not been finalised yet, though the regulator stressed that household customers and critical infrastructure will be ringfenced.

“We estimate that the shortfall in natural gas will not exceed 10% of annual European consumption, although the actual amount will depend on factors such as weather that are difficult to predict,” Fitch analysts said in a market note today.

“While the logic of gas rationing is em-

bedded in local regulation, the details on the impact for specific issuers or the merit order for industries is more difficult to estimate. We also understand that certain EU countries are entering into bilateral agreements on gas supply in case of emergency in line with EU framework for security of gas supply,” they explained.

Industrial gas demand in Europe as a whole fell 6% year-on-year over the period from October 2021 through March 2022, according to the International Energy Agency (IEA) – largely in reacting to TTF prices rising more than fivefold to \$31.5/mcf from \$5.8/mcf. The IEA forecasts that European natural gas demand will shrink by 9% year-on-year in 2022.

Gas utilities face serious liquidity problems

Utilities exposed to the gas value chain, and particularly those involved in import and transit of Russian gas, are among companies that have taken the greatest hit so far from rising European natural gas prices. Still, the overall impact varies depending on operating model or geographic location.

Uniper SE, majority owned by the Finnish company Fortum, is in talks with the German government about a potential bailout due to losses on supply contracts when pur-

chases are realised at high spot prices.

“For integrated utilities, the impact is mitigated by business diversification and often better profitability in some other segments, such as electricity generation. Generators, especially clean ones, are benefitting from the current scenario, though this advantage is limited by increasing political risk, which could imply the clawback of extra profits deriving from extremely high market prices,” Fitch analysts commented.

Chemical industry passes on higher gas prices to consumers

On a positive note, analysts said the impact of high oil and gas prices on most industries in Europe has been limited to date. Refining, chemical, fertiliser and industrial companies have largely been able to pass on higher natural gas prices through product prices, but they may find it more challenging to increase prices further without causing reducing demand.

Fertilisers companies with high concentrations of assets in Europe face risks of reduced production and competitiveness compared with non-European competitors. In contrast, companies in ceramic and steel/aluminium industries would be mainly exposed to shortages of natural gas supplies, analysts concluded. ■

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– Fitch analysts

RWE eager to get to FLNG vessels shipped to Brunsbüttel before Q4

Germany's second largest utility RWE is rushing to get floating LNG import units installed off the northern town of Brunsbüttel by the fourth quarter of 2022. Two FLNG vessels were chartered from the Norwegian shipping company Dynagas – the 'Transgas Force' and the 'Transgas Power' – and our ship-tracking data shows they are currently being loaded in the US.

Ship-tracking data, compiled by our sister publication the *LNG Journal*, shows the first vessel is currently at Cheniere's Sabine Pass LNG while the second is anchored at Sempra's Cameron LNG, due to load a cargo later today. The destination for these shipments has not been disclosed, though it is likely that the vessels will be used frequently on other routes first before they will be headed to northern Germany in time to start operations in early October.

Diverging fortunes for Germany's rival LNG projects

RWE and its rival Uniper have been engaged in a race as to who will charter, deploy and commission the first FLNG terminal off the German coast. For long, RWE had remained bullish on its Brunsbüttel project – in the face of political adversaries and higher prices for LNG than for thermal coal, a competing fuel for power generation. The proposed Brunsbüttel FSRU, officially named German LNG Terminal, is being developed at a cost of some €450 million by a consortium of the Dutch TSO Gasunie and the infrastructure firms Vopak and Oiltanking. Once built, the 8 Bcm facility could meet about 10% of Germany's gas demand.

In contrast, Uniper had been forced to re-evaluate its Wilhelmshaven project that was initially meant to be developed in co-operation with Mitsui O.S.K. Lines (MOL) of Japan. An open season, held from mid-September until the end of October 30, 2020, resulted in no firm bookings so Uniper had to go back to the drawing board to reconsider its options. Direct imports of hy-

drogen were thought to be a viable long-term option.

But acute gas shortages as a result of the Kremlin's war in Ukraine have not only revived the LNG import project as well as the urgency to help indebted Uniper to whether and resolve its financial difficulties. Over the past few months, Uniper is receiving less than half of the usual gas volumes from Gazprom and has been forced to plug the gap from more expensive alternative sources, namely spot LNG. Russian pipeline gas arrives in Europe through long-term contracts with prices tied to formulae designed to protect from extreme price shifts.

The August 2022 gas futures contract at the Dutch TTF – Europe's most liquid gas trading hub – increased to €170.99 on July 6, its second highest point since the beginning of the year. By comparison, the TTF stood at just over EUR 34 this time last year.

RWE enters flexible SPA with Qatargas

Eager to expand its LNG business, RWE Sales & Trading has remained bullish through a long period of regulatory uncertainty and entered a flexible Sale and Purchase Agreement (SPA) with Qatargas for delivery of 1.1 mtpa of LNG from Qatar to northwest Europe. The accord comes as a "result of several years of close co-operation," Andree Stracke, Chief Commercial Officer at RWE Supply & Trading said, suggesting the contract terms "provide flexibility for both companies." All contracted LNG cargoes will be loaded at the Qatargas-3 liquefaction terminal and will be landed at various regas terminals throughout Europe,

reducing the continent's dependence on Russian pipeline gas.

Back in November 2018, RWE Sales & Trading already secured comparatively cheap US LNG through accord with Tokyo Gas. The two players agreed a framework for reducing costs through optimized shipping of US LNG, procured by Tokyo Gas. For RWE, the strategic cooperation with Tokyo Gas allows strengthening its ties with one of the most important LNG players in Asia. "As new [gas] production comes online in the next few years, especially from the US, Europe will undoubtedly play a larger role as a key demand hub and we will continue to take advantage of these opportunities," commented Andree Stracke, Chief Commercial Officer at RWE Supply & Trading.

Tokyo Gas, for its part, aims to expand its reach in Europe. "Through the collaboration with RWE with its diverse LNG portfolio both in the Atlantic and Asian markets, we aim to expand flexible LNG transactions bridging Asia, North America and Europe," said Takashi Higo, senior General Manager of Tokyo Gas's Gas Resources Department. The accord is meant to contribute to price competitiveness and stability of Tokyo Gas's LNG supply, Takashi explained. ■

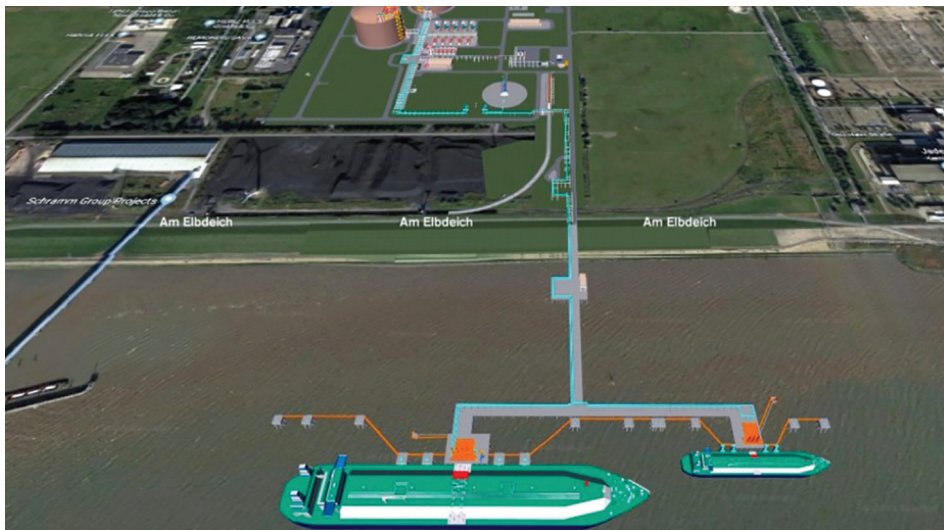
NEWS NUDGES

SNAM buys second FSRU

Italy's gas grid operator SNAM has bought a second floating storage and regasification unit (FSRU) from BW LNG to ensure stable and sufficient gas supply for power generation and industry. Operation of the floating regas unit is scheduled to start in the third quarter of 2024, SNAM said. The company struck a similar deal with Golar LNG in early June 2022, when buying the FSRU 'Golar Tundra' for \$350 million.

Ukraine war impacts fossil fuel investment

Immense pressure is building up to close down one of the main arteries of international energy trade: Russian oil, gas and coal deliveries to Europe, worth an estimated \$150 billion in 2021 and over \$500 million each day so far in 2022. The International Energy Agency (IEA) says the conflict in Ukraine and its aftermath will impact fossil fuel investment for years to come.



Render of FLNG moored off Brunsbüttel



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Shell's blue hydrogen process lowers production cost by 22%

Producing blue hydrogen from natural gas along with carbon capture, utilisation and storage (CCUS) can cost around 22% less when using a process designed by Shell Catalysts & Technologies. With CO₂ costing \$25 to \$35 per tonne, the cleaner, so-called blue hydrogen becomes competitive with grey, unabated one – despite its higher capital costs.

Today, nearly all hydrogen produced is “grey” meaning it is derived from natural gas without carbon abatement through CCUS. If hydrogen is to contribute to carbon neutrality the process needs to be shifted to “blue” and ultimately “green” hydrogen, derived from electrolysis using renewable energy sources.

“Blue hydrogen production can be relatively easily scaled up to meet demand,” Shell noted, and having abundant affordable blue hydrogen supply at hand would enable the decarbonisation of hard-to-abate industries, like steel and petrochemicals.

While “blue” already outcompetes “grey” hydrogen on costs at CO₂ prices over \$25/t, “green” hydrogen is still more than double as expensive to produce through 2030. Analysts do not expect “green” hydrogen to achieve cost parity until about 2045.

Counting the cost

Shell's novel blue hydrogen process integrates the company's proprietary gas partial oxidation (SGP) technology with ADIP ULTRA solvent solution. SGP tech, in contrast to traditional autothermal reforming (ATR), does not require steam. Instead, high-pressure steam is generated for use

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There is also no need for feed gas pre-treatment, which simplifies the process line-up ... SGP gives refiners “greater feed flexibility,” as it is more robust against feed contaminants and can thus accommodate a large range of natural gas qualities.

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– Shell

throughout the process and for some external consumers.

There is also no need for feed gas pre-treatment, which simplifies the process line-up. According to Shell, SGP gives refiners “greater feed flexibility,” as it is more robust against feed contaminants and can thus accommodate a large range of natural gas qualities.

Compared with ATR, the novel SGP tech reduces levelized cost of hydrogen by 22%. Capital expenditure is 17% lower as both the smaller hydrogen and CO₂ capture compressors achieve a higher operating pressure. Operating expenditure, excluding the price of gas feedstock, is 34% lower due to reduced compression duties and more steam generation.

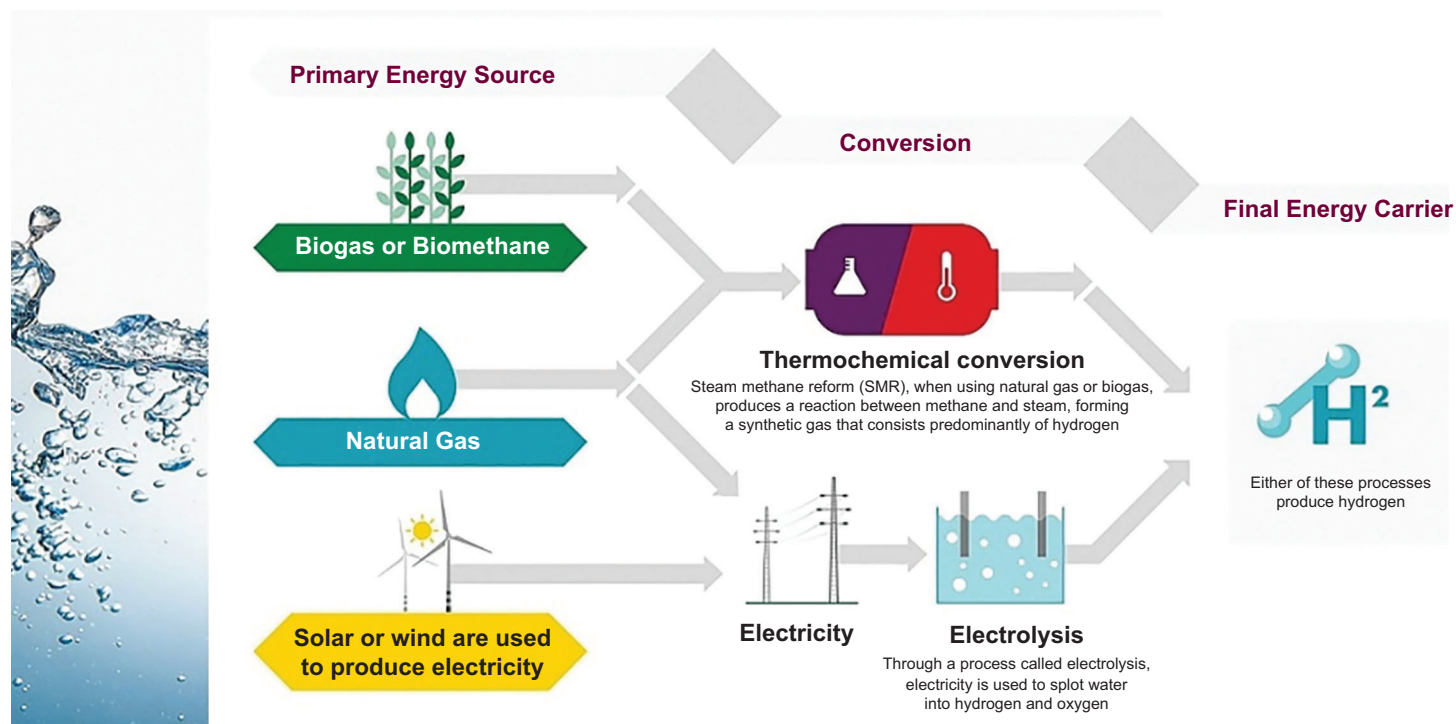
Modelling shows that – compared with an

ATR unit – a Shell Blue Hydrogen Process line-up producing 500 t/d of pure hydrogen would have: a \$30 million/y lower operating expenditure; more than 99% CO₂ capture; and a 10–25% lower levelized cost of hydrogen.

Maturing the process

Shell began research into SGP technology in the 1950s. Today, the technology has more than 30 active residue and gas gasification licensees, and there are more than 100 SGP gasifiers worldwide.

At the Pearl gas-to-liquids plant in Qatar, for example, 18 SGP trains, each with an equivalent pure hydrogen production capacity of 500 t/d, have been operating since 2011. Pernis refinery, the Netherlands, has been operating since 1997 at a 1-Mt/y CO₂ capture capacity using SGP technology. ■



Rolls-Royce commissions test bench for mtu hydrogen engines

Rolls-Royce has commissioned its first in-house test stand for mtu hydrogen engines at its Augsburg site. Andreas Schell, CEO of Rolls-Royce's Power Systems division which own mtu, called it a step on the "road to climate-neutral products for energy supply." Over the past 16 months, mtu spent some €10 million on modernising test benches and H₂ infrastructure.

MTU, short for Motoren- und Turbinen-Union Friedrichshafen, was first jointly owned by Daimler-Benz, MAN and MTU Aero engines, though Rolls-Royce entered the joint venture in 2011 and owns the entire company since August 2014 when it bought Daimler's remaining stake in the group.

As part of Rolls-Royce's 'Net Zero at Power Systems' sustainability program, first announced in 2021, the British company said it would realign its product portfolio so that by 2030, sustainable fuels and new mtu technologies can achieve a 35% greenhouse gas emissions reduction, compared to 2019-levels.

Based on MTU's fuel cell system, the company has launched gas gensets capable

of co-firing sustainable fuels like HVO (hydrotreated vegetable oils). It is also developing electrolyzers to produce green hydrogen, while the mtu gas engine portfolio is being prepared for hydrogen as a fuel.

"We see hydrogen as an essential energy carrier of the future, in conjunction with renewable, often decentralized, energy sources," said Dr. Otto Preiss, Rolls-Royce Power Systems chief technology officer (CTO) and chief operating officer (COO).

"That is why we are doing everything we can to gradually bring our mtu gensets and CHP units based on the Series 500 and 4000 gas engines to market for operation with a hydrogen blending of 25% by volume (H₂) and more and for operation with up to 100% by volume." ■



Launch event for the 1st in-house test bench for mtu hydrogen engines

Siemens Energy, Air Liquide to mass-produce H₂ electrolyzers in Europe

German chemical company BASF and MAN Energy Solutions will jointly develop and build an industrial-scale heat pump at BASF's Ludwigshafen site to reduce industrial gas consumption. The heat pump will produce steam using electricity from renewable energy, and tap waste heat from cooling water at BASF's chemical processes as a source of thermal energy.

Siemens Energy and Air Liquide have created a joint venture to mass-produce industrial scale renewable hydrogen electrolyzers in Europe. Production at a new factory in Berlin is due to start in the second half of 2023, and ramp-up to an annual output of 3 GW is envisaged by 2025.

Air Liquide will take 25.1%, and Siemens Energy will hold 74.9% of the joint venture, whose creation is still subject to regulatory approval. Headquarters of the JV as well as the multi-gigawatt factory that produces electrolysis modules, the so-called "stacks", would be also located in the German capital.

The factory will supply stacks to both companies, helping to meet rampant demand from their customers. The stacks will be based on proton exchange membrane (PEM) electrolysis, an efficient technology designed to harvest volatile

renewable energy.

"By scaling up the production of electrolyzers, we will be able to provide their customers with access to large amounts of competitive renewable hydrogen and to decarbonize their activities," said François Jackow, CEO of Air Liquide.

Targeting industrial-scale projects

The partnership builds on existing hydrogen projects, and Air Liquide and Siemens Energy target large industrial-scale hydrogen projects. Such order winds would create a solid basis for the required rapid ramp-up of electrolysis capacities which would make competitive renewable hydrogen available sooner.

One of the first large-scale projects is the Normand'Hy electrolyser, with 200 MW in the first phase and built by Air Liquide. ■

L&T-MHI Power Gen upgrades its Indian test bench with GE drive

L&T-MHI Power Turbine Generators has upgraded its test bench with GE Power Conversion's MV7000 drive which acts as the sensor to remotely monitor its manufacturing plant at Haizira, a suburb of Surat city in the Indian state of Gujarat. The solution includes GE's scalable RXi-142 controller and replaces an obsolete third-party controller.

Mumbai-headquartered L&T-MHI Power Turbine Generators Private Ltd – formerly known as L&T-MHPS Turbine Generators – was established in 2008 is a joint venture between Larsen & Toubro (L&T), Mitsubishi Power Ltd. (MPW) and Mitsubishi Electric Corp. (MELCO). They manufacture ultra-supercritical turbines and generators from 500-1000 MW range at their factory at Hazira, which GE is about to equip with a new drive.

This MV7000 will be used as the sensor for GE's Asset Performance Management (APM) digital solution and eliminates the need for a separate hardware sensor. Overall, the new solution helps L&T-MHI save energy and cost for managing operations and output of its Haizira plant.

The scalable RXi-142 controller has a flexible architecture, a future-proof HPCI platform and high reliability computing in order to address and solve customers' cyber security concerns. ■



Test stand at L&T MHI Haizira turbine factory

Dominion gets waiver to fly Skydio drones to inspect 40 power plants

The US Federal Aviation Administration has granted Dominion Energy an approval to fly Skydio drones to inspect power generation facilities in seven states. The waiver allows plant engineers to fly drones beyond their line of sight, so there is no longer a need to use an additional crew member when inspecting the plant, which substantially lowers the cost.

As a result, Dominion Energy may conduct scaled beyond visual line of sight (BVLOS) operations to inspect more than 40 power generation facilities in Connecticut, Georgia, Indiana, North Carolina, South Carolina, Virginia and West Virginia.

Drones were first employed by Dominion Energy in 2014 and at the time, the focus

was primarily on identifying electrical transmission line defects. Since then, Dominion has expanded its drone program to include approximately 50 drones and drone pilots serving multiple operational business segments.

When arrived at the actual power station, the drone takes volumetric measurements and can assess the progress of construction progress, survey and map critical services, if needed, and inspect related infrastructure like overhead power lines or substations.

A 20-minute inspection by a battery-powered drone will increase safety for our colleagues, who will no longer need to rappel down the side of a structure, as well as

save time during inspection-related preparations," said Nate Robie, Dominion Energy's manager of unmanned systems program. He underlined the use of drone has the potential of substantially lowering operations and maintenance costs, which ultimately benefits the customers.

The tool to conduct the monitoring is called Skydio X2, an intelligent aerial tool for enterprise applications. Skydio X2 pairs a rugged, foldable airframe with the AI-based autonomous flight engine Skydio Autonomy which enable the drones to safely navigate any environment, including areas without GPS, with 360° obstacle avoidance.

Designed, assembled, and supported in the United States, the Skydio X2 can not only be used for power generation facilities but also meets supply chain and cyber security requirements necessary for inspecting critical infrastructure like nuclear power reactors, or LNG import or export plants, among others. ■



Engineer flying a Skydio drone

BASF and MAN Energy Solutions team up to develop large heat pump

German chemical company BASF and MAN Energy Solutions will jointly develop and build an industrial-scale heat pump at BASF's Ludwigshafen site to reduce industrial gas consumption. The heat pump will produce steam using electricity from renewable energy, and tap waste heat from cooling water at BASF's chemical processes as a source of thermal energy.

The residual heat in the water will be processed using compression to produce steam that will be fed into the site's steam network. By integrating the planned heat pump into the site's production infrastructure, up to 150 metric tons of steam can be produced per hour, equivalent to a thermal output of 120 MW.

Steam is the most important source of energy in the chemical industry. In Ludwigshafen, BASF requires around 20 million metric tons of steam per year. The plants at the site use much of this as process steam in production, e.g. to dry products, heat up reactors or for distilling.

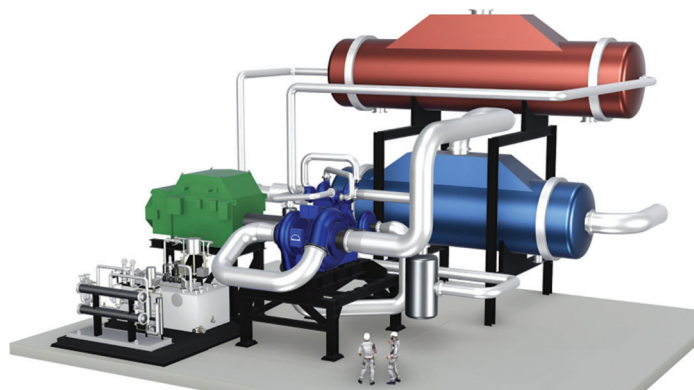
Around half of the steam required at the Ludwigshafen site is already produced by recovering heat from production facilities using a low-CO2 process. The remaining steam demand, approximately 50%, is met by gas and steam power plants, which emit CO2 during generation.

"In the medium term, we want to reduce our CO2 emissions by 25 percent by 2030. The use of technologies such as large heat

pumps, which already exist and can be scaled up to industrial size, brings us a lot closer to this goal. In our cooperation with MAN Energy Solutions, we combine the expertise of a chemical Verbund site with the know-how required for the technological implementation of a project like this,"

Dr. Martin Bruder Müller, Chairman of the Board of Executive Directors of BASF said, adding: "This technology also has the potential to pave the way for projects at other BASF sites."

Space heating and process heat account for around one-third of German greenhouse gas emissions. At its Ludwigshafen site, BASF is testing and developing several technologies and alternative processes to replace fossil fuels – this includes the electrical



3D model of the planned high-temperature heat pump by BASF and MAN

production of steam.

BASF aims to achieve net zero CO2 emissions by 2050. In addition to using renewable energies and increasing energy efficiency in production, it wants to electrify steam production to meeting this target. Scaling up such climate-friendly processes like heat pumps to an industrial level will decisively influence the transformation to low-CO2 chemical production, the company said. ■



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Indeck Niles Energy Center adds over 1 GW of power in Michigan

Indeck Niles Energy Center has just been commissioned and now adds over 1 GW of electricity to the grid in Michigan, US. For the project, GE delivered H-Class combined cycle plant equipment including 7HA.02 gas turbines while Kiewit carried out EPC works. All electricity from the CCGT is being fed into the PJM Interconnection market area.

First electricity was generated and supplied to the grid on July 1. That day, Indeck along with its Korean partner KOSPO and DL Energy officially notified the head of PJM Interconnection about Indeck Niles' start commercial operation. Start of operation was achieved "safely, with the highest standard of quality," the operator said and it now delivers approximately 1.1 gigawatt (GW) of electricity, the equivalent output needed to power approximately 635,000 US homes and businesses.

Built by Kiewit, the flexible combined-cycle gas power plant features two GE 7HA.02 turbines, two H65 generators, an STF-D600 steam turbine powering a H84 generator, and two Heat Recovery Steam Generators (HRSG) which are triple pressure reheat drum, along with a Mark* VIE Distributed Control System (DCS) software solution. Auxiliary equipment installed at the power plant includes dry low-NOx burners integrated with selective catalytic reduction technology for controlling the NOx emissions.

In 2020, natural gas generated the largest amount of Michigan's electricity for the first time, surpassing coal, which fell to third after nuclear power. Figures by the US



Drone photo of Niles Energy Center

Energy Information Administration (EIA) show that gas accounted for 33% of the state's net generation, while coal's share declined to 27%. Renewables provided about 11% of Michigan's electricity net generation in 2020, and wind energy accounted for three-fifths of that electricity supply.

"Gas power plays a critical role in facilitating coal-to gas transition, but it is also crucial to provide the necessary power to balance the variable nature of renewables and help ensure system reliability at all times" said Eric Gray, CEO of GE Gas Power Americas. "Our 7HA.02 gas turbines, can burn up to 20% hydrogen by volume in the gas stream currently [and we] plans to transition to 100% hydrogen over the next decade," he said, looking to unlock business as utilities in Europe and elsewhere need to accelerate their transition away from fossil fuels towards cleaner power sources. ■

NEWS NUDGES

TURBOFLO HTS46 launched

Petro-Canada Lubricants, part of HF Sinclair, has launched TURBOFLO HTS 46 as a new turbine fluid with exceptional thermal stability which helps improve equipment reliability. The fluid is approved for MAN Energy Solutions TED 10000494596 specification and meets the performance specifications of many other turbine and engine makers.

Cummins celebrates 10 years quiet power gen

US engine maker Cummins has been engaged in noise reduction for 10 years at its Acoustical Technology Center (ATC), built at the company's power system plant in Fridley, Minnesota. The ATC has a hemi-anechoic chamber that is 105 feet long, 80 feet wide, 36.5 feet high, where Cummins can test product noise levels and record precision-grade acoustical data from 20 Hz to 20,000 Hertz.

Chart intensify cooperation

Gas compression systems from Howden have been integrated into Chart's hydrogen offerings, as the two partners intensify their cooperation. The two US technology firms strive to develop cost-effective and green energy solutions and provide customers with tailored aftermarket support.

Twenty20 rolls out floating power islands across Papua New Guinea

Singapore-based Twenty20 Energy will rollout its Power Island Floating Storage Regasification & Power (FSRP) solution in 12 locations across Papua New Guinea on behalf of the regional utility PAWA PNG. The project will provide 283MW of less expensive electricity supply as it replaces aging diesel-based generation with high efficiency LNG-fuelled engines with heat recovery units.

The 12 power islands will be located just offshore outside 12 cities, with three of the more strategic locations – Daru, Lae and Lihir – to also host LNG bulk storage facilities. The nine other locations are Manus Island, Buka Town, Kimbe, Alotau, Madang, Rabaul, Wewak, Kiunga and Kikori.

Technically speaking, the Power Island FSRP consists of three components: FSRP power barges, holding gas-turbine based power generators and regas equipment. Fuel barges for LNG storage tanks large enough for 30 days of fuel supply; and floating piers which moor the barges in each of

the 12 locations. The power barges and fuel barges will be built and transported to the floating piers, where they will be moored. When in need of additional fuel, the fuel barges will travel to one of the three LNG bulk storage hubs for filling and then being transported back to the floating pier.

Twenty20's FSRP consist of two specific unit sizes – from 8.6 MW to 21.9 MW in output. Each power island can be modified so as a location grows, a larger unit can be brought in and the smaller unit would be moved to a new location.

Once operational, the decentralised project will support the government's goal of



Fuel Barge being delivered to the Power Island

electrifying 70% of the country's territory by 2030. Today, only about 13% of Papua New Guinea's population have access to power, predominantly in the major cities, while remote locations typically rely on high-polluting, costly, stand-alone diesel generators. ■



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Peakload Power and Energy Storage

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CARBON CAPTURE & REUSE

2 AUG 2022 15:30 BST LONDON TIME



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