



Weekly News

16 September 2022

EC proposes €180/MWh revenue cap on low-cost power generators

European Commission (EC) President Ursula von der Leyen wants to levy a temporary revenue cap of €180/MWh on low-cost power generators, notably renewables, lignite and nuclear. The aim is to mitigate the effect of skyrocketing fuel costs for gas on electricity prices due to a halt in Russian supplies, and the price cap is meant to be instated from December 1.

The measure, if introduced as planned, will be reviewed by the Commission by February 28, and could run through to March 31, 2023. Von der Leyen revealed the Commission expects total revenues of Europe's utilities above the cap could amount up to €117 billion.

Handing in a third of 'windfall profits'

Major oil, gas and coal companies listed within the European Union are asked to hand in one third of their so-called windfall profits to national governments. This "solidary contribution" would be taken from 2022 profits that were 20% or more above companies' average profits in the previous three years.

"Our proposal will raise more than €140 billion for Member States to cushion the blow directly," von der Leyen said in a statement.

continued on page 2



Ursula von der Leyen unveils plans for a revenue cap on utilities and mandatory electricity savings at peak hours

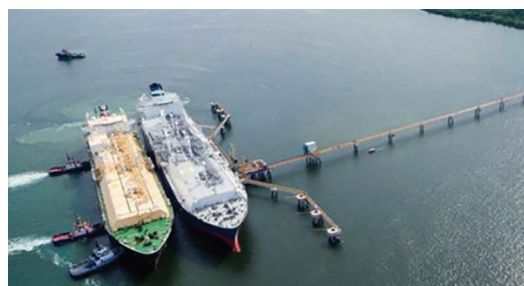
Demand destruction through 2023 helps balance EU gas market; Fitch

Fitch Rating anticipates EU gas market to stay "well-balanced," assuming low Russian gas flows at 20% of pipeline capacity from August 2022 and zero Russian gas deliveries from 2023. Record-high LNG imports and 15% demand destruction in 2023 can compensate for missing supplies, with LNG imports forecast to rise to about 120 billion cubic meters (bcm) in 2022 and further to 155 bcm in the following year.

The EU has a credible strategy to mitigate the worst effects on gas markets of a cut-off of Russian gas imports starting in 2023, analysts commented. However, swift adjustments to the supply and demand balance are needed to avert a supply crunch, combined with an adequate policy response.

Analysts at Fitch Ratings cautioned about the "high levels of uncertainty" in their projections which principally hinge on the evolution of the war in Ukraine, timely delivery of LNG volumes and coordinated efforts among the EU member states to overcome infrastructure bottlenecks.

"Exposures to Russian gas and responses to a cut-off vary substantially across countries. Countries with high gas consumption and limited existing



RWE and Uniper have leased floating LNG import units off the German coast

supply diversification, such as Germany, will have little room for error as they execute on the procurement of additional imports while paring back demand for Russian gas," analysts explained. ■

AGENDA

HYDROGEN

German Rail to transport large volumes of hydrogen **2**

COMPANIES

Uniper burns through cash reserves, edges closer to state bailout **3**

MARKETS

Gas markets stay tight as new fields won't come onstream before 2025 **5**

POLICY

Two German nuclear power plants stay on stand-by to avert energy crisis **7**

PROJECTS

Two HA-powered blocks at Bang Pakong add 1.4 GW in Thailand **8**

Continued from page 1, top story

Analysts, in contrast, expect this measure could raise about €25 billion in total across the European Union, available for national government to be redistributed to vulnerable end-customers. But it is still unclear who exactly stands to benefit from these excess earnings, once collected by the state, and critics warn some countries will benefit more than others or could use the proceeds to bail out large electric utilities or gasimporters.

Demand cuts during peak hours

During times of peak hours, when expensive gas-fired power generators tend to be fired up, the Commission President wants the citizens of Europe to adapt to what she calls a "new reality." Reducing demand during peak hours will make supply last longer, and it will bring prices down, she argues.

The Commission hence asks governments to identify the 10% of hours with the highest expected price each month and then reduce demand during these by 5%. These 'peak cuts' are hoped to lower EU gas demand by around 1.2 bcm over four months, as gas-fired peaking plants would be less needed. This volume of 'saved gas' equals about 4% of the EU's regular gas-burn for power generation during a normal winter.

Regulated gas prices could be below import costs for the first time ever, as utilities will get compensated by national governments through dedicated support schemes. These regulated gas prices might not only be offered to energy-intensive industries, but could also be extended to mid-scale companies – if enough supply of natural gas, potentially co-fired with hydrogen is available.

Decoupling gas and power prices

A revamp of Europe's energy markets is on the cards. "The current electricity market design – based on merit order – is not doing justice to consumers anymore. They should reap the benefits of low-cost renewables," von der Leyen said. She wants to through her political weight behind efforts decouple the dominant influence of gas on the price of electricity.

So far, the legislation proposed by the Commission President is based on emergency provisions, which means it only needs a qualified majority approval from EU energy ministers to become binding. In theory, this could happen quickly – the Czech EU presidency has said it wants energy ministers to finalise proposals at an emergency meeting on 30 September. ■

German Rail to transport large volumes of H₂ in absence of pipelines

Deutsche Bahn is taking steps to transport large volumes of green hydrogen on trains to industry and power generators. "DB Cargo will transport the urgently needed fuel on freight trains – an efficient alternative to H₂ pipelines which do not yet exist," the company said as Germany's hydrogen demand is estimated to rise to 100 Terawatt-hours per year (TWh/y) by 2030.

By comparison, Germany's total electricity consumption was last measured at around 580 Terawatt-hours per year. "Looking ahead, hydrogen will play a significant role in the future energy mix, and there are currently many initiatives to transport green hydrogen on the waterway to Germany," said Dr Sigrid Nikutta, head of DB Cargo and board member of DB Cargo, the freight subsidiary of the German national railway operator.

"Green hydrogen needs green logistics – and we can provide this already today," he underlined. The German national rail network covers a distance of more than 35,000 kilometres, and DB Cargo alone is



Mireo Plus H: Siemens-designed train for transporting hydrogen

serving over 2,100 interfaces, customer connections, terminals and river port.

Transporting H₂ bound in liquids

The type of hydrogen, imported to Germany, is usually does not come in a gaseous form but is bound in liquids. Hereby, H₂ is bound to an organic carrier molecule that can absorb and release it through a chemical reaction. In a liquid state, the hydrogen can be transported more easily and efficiently by tankers from remote places of production in Africa, the Middle East or South America.

Once arrived at a German port, the H₂ is kept in the liquid state for onward transport by rail. In fact, DB Cargo plans to use its normal tank wagons, currently used for transporting chemical liquids, also for transporting the imported green hydrogen.

Once the hydrogen has arrived where it

will be put to use as an energy source, the liquid will be cracked into its chemical substances of H₂ and the carrier liquid. So, the onus and cost of the cracking process lies with the end-user – either a petrochemical firm or an electric utility capable of co-firing parts of its gas-to-power generators with the green hydrogen.

The latter – H₂ as a source of CO₂-free energy – is the great hope of policy-makers in Germany, as well as in many EU member states, who seek to decarbonise their economies in the face of rising costs for carbon abatement certificates in the EU Emission Trading Scheme (EU-ETS). Germany is expected to import the lion's share of its future green hydrogen requirements because it doesn't have the space required to add sufficient wind and solar power installations to produce green H₂ through electrolysis at home. ■

Gas to Power Journal

Publisher
Stuart Fryer

Editor
Anja Karl
Tel: +44 (0)7733 684 682
anja@gastopowerjournal.com

New Business & Databases
Stephan Venter
Tel: +44 (0) 207 017 3407
venter@gastopowerjournal.com

Subscriptions
Margarita Tokere
Tel: +33 (0)7 67 62 58 77
margarita@gastopowerjournal.com

Layout & Production
Vivian Chee
Tel: +44 (0) 208 995 5540
chee@btconnect.com

Uniper burns through cash reserves, edges closer to state bailout

Germany's largest gas importer Uniper has nearly used up its cash reserves having to buy non-Russian gas on the expensive spot market. The proposed state bailout of €19 billion is no longer enough, with analysts at Bernstein estimating Uniper needs additional equity of €4.5 billion which would boost the government's stake 88%, up from 30% initially agreed.

Uniper CEO Klaus-Dieter Maubach cautioned already back in July that the size of the proposed state bailout will "not be enough." Berlin initially wanted to take a 30% stake in Uniper for injecting €15 billion into the ailing company. But Maubach said the government will likely end up owning way more than half of the company, a prediction now widely shared by analysts.

Striving to secure KfW loan

Shares in Uniper plunged on the news, falling nearly 18% down to €3.98 in late trading on Wednesday. Today, the company is intensifying efforts to secure yet another credit line from KfW bank, while majority shareholder Fortum has signalled it may free up another €2 billion as in bridge financing.

The long-awaited bailout will be one of the biggest ever agreed in German corporate history – and follows Uniper's plea for support on July 8. 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," the company said in a statement.

Fortum drags its feet

Finland parent company Fortum has shown little sign of supporting its ailing German affiliate. "The security of supply businesses needs to be owned by the German federal state that has the required strong creditworthiness," argued Fortum CEO Markus Rauramo. He refused to pour any more cash into the indebted company. "We want to find a long-term solution together with the German government that addresses the consequences of a potential prolonged or

even expanded gas curtailment and further price hikes in a way that is sustainable for consumers and Uniper alike," he argued, suggesting the main aim is to "preserve the company's credit rating."

During the Uniper's earlier corporate crisis, Fortum had provided the utility with an €8 billion credit facility comprising both shareholder loans and parent company guarantees, which is now almost fully drawn by Uniper – so a state bailout seems inevitable if the German government does not want a company to go bankrupt which used to import nearly 60% of the country's natural gas needs. ■



VNG applies for state aid to cushion losses from Russian supply cuts

Eastern German gas importer VNG has asked for state aid to balance substantial losses incurred due to "unfulfilled supply obligations by some upstream companies," notably Russia's Gazprom. These supply cuts made it necessary to buy "substantial gas quantities at considerably higher prices" on the spot market for sale to end-customers at pre-agreed lower prices.

VNG is the second German gas importer applying for so-called "stabilisation measures," granted by the German state under a hastily introduced new scheme by which Uniper was bailed out earlier this summer. These stabilisation payments go beyond the already agreed gas surcharge, a new levy of

2.4 cent/kWh payable by all end-customers from October 1.

VNG blames Ukraine war for its losses

Eager to avoid public criticism for taking state aid, VNG stressed it had been a "healthy corporate group" up until the start of the Russian invasion into Ukraine.

The war and Gazprom's subsequent reduction in contractual gas deliveries, however, have cast VNG into financial difficulties as it had to substitute comparatively cheap oil-indexed gas bought under long-term contracts with alternative gas bought on spot markets, often priced in line with imported LNG.

Selling gas under its procurement cost

VNG stressed it will aim to "shield customers from the impacts of the war." Meaning it wants to provide local utilities and industrial companies with natural gas at contractually agreed prices that lie far below VNG's current procurement costs. Hereby, the gas importer expected losses to amount to around €1 billion by the end of the year, which it would be able to cope with if aided with further stabilisation measures.

EnBW, the mother company of VNG, stressed the latter would be "systemically relevant" for energy supply in eastern Germany in particular, and in 2021 accounted for about one fifth of regional gas demand. ■





Your reliability shines

MAN Energy Solutions
Future in the making

Energy & Storage solutions expertise

Securing energy supplies

Ensuring a reliable power supply is one of the key factors for progress and prosperity around the world. Building on decades of MAN innovation, we can help secure clean and efficient energy supplies for your customers. Our expertise covers solutions for hybrid power, LNG to power, energy storage, power-to-X, thermal power plants, and CHP.

www.man-es.com

Experience our solutions expertise



Gas markets stay tight as new fields won't come onstream before 2025

Global gas markets will remain rather tight despite the increase in investment during the last year and a half, as major gas developments will only come on stream after 2025, says Mohamed Hamel, secretary general of the Gas Exporting Countries Forum (GECF). "Underinvestment can only lead to higher prices in the long run," he warned.

The GECF head was addressing delegates at the G20 Energy Transition Working Group, held in Bali, Indonesia, where industry leaders gathered to discuss the ramifications of the global health and economic crisis, as well as the war in Ukraine and its effect on global gas markets.

The gas supply crunch commenced in the second half of 2021, when demand sharply increased, caused by a strong post-pandemic economic recovery, combined with hot summers and colder-than-average winters in various parts of the world. The war in Ukraine and the Western sanction against Russia and state-owned Gazprom exacerbated the tightening of the global gas market. This reverberated on electricity markets at a time when supply from alternative fuel sources such as nuclear and thermal coal was lower than expected. The renewable build-out, though accelerating, has not been fast enough to compensate for the reduction and subsequent loss of gas-fired power generation which made electricity prices spiral to record highs.

Demand shifts from gas to oil and coal

Hub-based gas prices have reached record

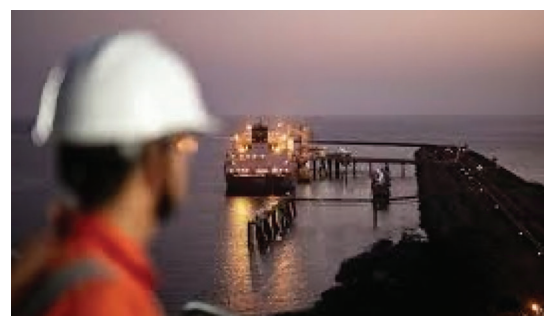
levels, while a demand shift from gas to oil and coal is underway in many regions and industries. Power generators are scrambling to source alternative fuel source ahead of the winter season, with limited success.

"Given the sheer size of Russian exports to Europe and the impossibility of fully redirecting the concerned gas volumes to other markets in the near term, the resulting supply-demand unbalance is huge, despite production increases in many regions," Hamal commented. Europe consequently shifted from being the 'market of last resort for LNG deliveries' to becoming the 'preferred destination' – while adverse effects of the gas supply crunch are being felt worldwide.

Price caps, subsidies, hoped to shield end-users

Various policy means, such as price caps and subsidies, are used to shield end-users from the effects of high prices.

Though this may help households and energy-intensive industry in Europe, developing countries, notably in South Asia, face "immense difficulties in acquiring LNG cargos," Hamel pointed out, stressing: "This situation is creating havoc on their economies



and affecting people's standard of living."

Risk of protracted global recession

The risks in the short-term are skewed to the downside. "Unless the world economy plunges into a protracted recession, it is likely that market tightness will continue in the near future," he forecast. The supply crunch may even worsen in case of colder than normal weather in the Northern hemisphere, which would require extremely high prices or even physical curtailments in gas supply to balance the market.

Governments in some European countries, including Germany, have already put in place regulation, to limit gas consumption certain industries as well as measures to reduce electricity consumption by reducing the room temperature in public buildings and by turning off street lamps and illuminations of historic places and statues. ■



Gas to Power Journal

Peakload Power and Energy Storage

WEBINARS

POWER-TO-X WEBINAR



JEFF BENOIT
THOMASSEN
ENERGY AND PSM



ERIC ZINDELL
SIEMENS
ENERGY



FLORIAN
GRUSCHWITZ
MAN ENERGY
SOLUTIONS



DR CARSTEN
BÜHRER
PNG AG



DR CHRISTOPH
WEBER
P2X EUROPE

SPONSOR



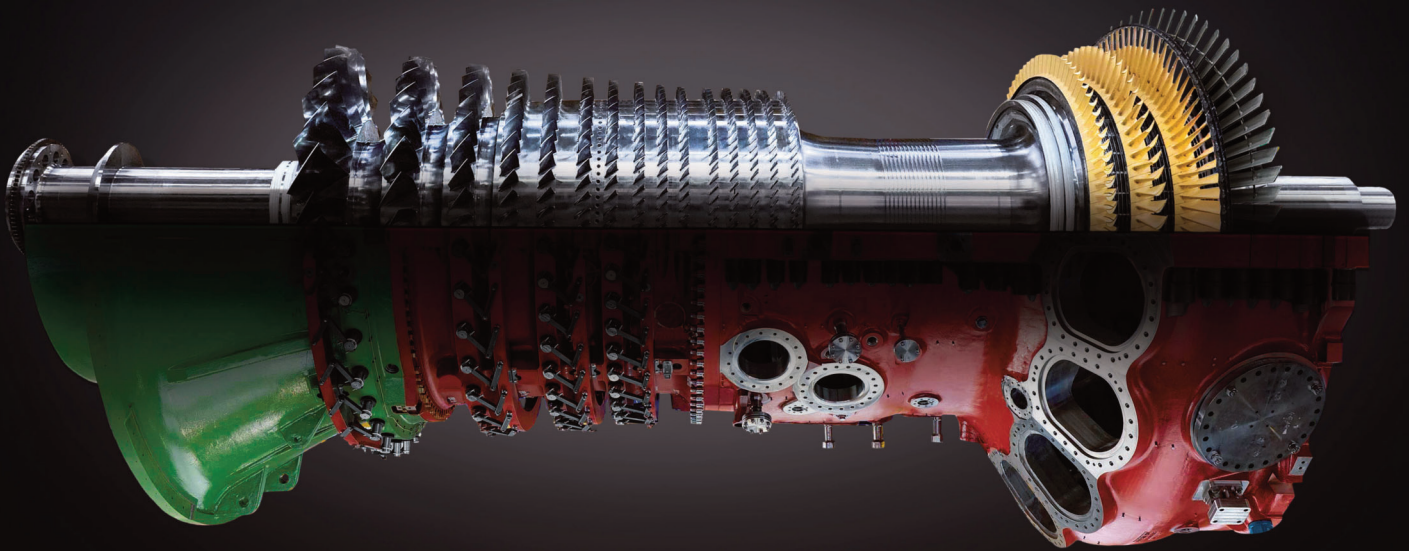
MAN Energy Solutions
Future in the making

WEBINARS.GASTOPOWERJOURNAL.COM

11 OCT 2022 15:30 BST LONDON TIME

— ITALIAN ENERGY —

BRIGHTER FUTURE



Ansaldo Energia's GT36 gas turbine is the top of the range for performance and power in our portfolio. With our products and solutions, from EPC to service, from digital twin to remote monitoring, Ansaldo Energia is ready to face the challenges of the energy transition towards a cleaner and more sustainable future.

**ANSALDO
ENERGIA**

Two German nuclear power plants stay on stand-by to avert energy crisis

Struggling to avert a gas and power crisis in the coming winter, the German economy minister Robert Habeck has proposed to keep two of Germany's last three remaining nuclear power plants on stand-by mode. But PreussenElektra, the operator of Isar-2 – one of the nukes meant to stay on stand-by – dismissed Habeck's plan, claiming it is not technically feasible.

In a letter, PreussenElektra addressed to the state secretary in the economy ministry, Patrick Graichen, E.ON wrote that a stress test of the German power system showed it would be necessary to keep all three remaining nuclear power plants operational this winter. While acknowledging the need for stable nuclear baseload power supply in the absence of gas-fired mid-merit power due to an acute fuel shortage, PreussenElektra already said back in August it will not be possible to flexibly increase or lower the capacity of its Isar-2 nuclear power plant given that the nuke is already in a state of wind-down, when electricity output is gradually being decreased before the plant's decommissioning.

Economy minister Habeck (Green Party), in contrast, wants to keep at least the two nuclear power stations in southern Germany – Isar-2 near Landshut and Neckarwestheim-2 near Heilbronn – in operation until April 2023. This would be four months longer than the planned phase-out date at the turn of the year 2022/23.

The plan is to activate the two nukes only in certain very unlikely emergency situations, meaning the plants should move into a reserve until April next year before they are permanently decommissioned, the minister said. Habeck sees nuclear energy as a vital backup to produce electricity if other instruments are not sufficient to avert a

supply crisis in Germany's industrial south.

Critics, notably from the market liberal Free Democrats (FDP), are calling for a nuclear runtime extension to also include the third plant in Emsland, northern Germany.

Calls for nuclear revival

The Green Party's unexpected proposal to extend the runtime of two nuclear power stations is water on the mills of the pro-nuclear Bavarian conservative coalition of CSU and Freie Wähler.

Calling for a nuclear revival, Hubert Aiwanger, the Bavarian economy minister, wants to reinstate operations of the 1,344 MW nuclear power station Gundremmingen-C, owned by RWE, and proposed a similar move for PreussenElektra's Grohnde and Brokdorf nuclear power stations, both with a capacity of 3,900 MW. If reinstated, these three nuclear blocks would add 9,144 MW of stable, baseload power generation capacity to the German grid. The three blocks have been taken offline at the turn of the year 2021/22 and are now in the first stages of being dismantled.



PreussenElektra's Isar-2 plant in Bavaria

Having spoken to RWE, the plant operator of Gundremmingen-C, Aiwanger is convinced that the block could be brought back into operation at a "reasonable cost" before the upcoming winter to help alleviate the risk of shortages in electricity supply, caused by reduced imports of pipeline gas and insufficient gas in storage.

Germany's remaining three nuclear power stations have a combined capacity of 4,060 MW, compared with 18,900 MW lignite-fired and 19,400 hard coal-fired as well as 32,090 MW gas-fired power generation capacity. However, the dispatch of gas power stations has been substantially reduced due to low supply and record high fuel prices. Renewables, on the other hand, contribute rising volumes of inherently intermittent electricity supply: some 56,930 MW of onshore wind, plus 7,700 MW offshore wind and 61,940 MW solar photo-

voltaic is backed up by flexible fossil plants as well as 4,940 MW run-off river hydro power, and 9,780 MW hydro storage and power plants, some 4,720 MW of ageing oil-fired power stations and just 2,500 MW of battery storage capacity. In total this makes 236,130 MW of minimum installed capacity, some of which can be ramped up further, if needs be. ■



Map with phase-out timelines of Germany's remaining nuclear power stations

Toho Gas orders 48 NAS sodium-sulfur batteries at former LNG site

Japan's Toho Gas has ordered 48 large sodium-sulfur (NAS) batteries, made by NGK, with an electricity output of 11.4 MW and a capacity of 69.6 MWh for installation at the former site of Toho Gas' Tsu LNG regasification plant. Construction is scheduled to start this month and the set of batteries is due operational in fiscal 2025.

Toho Gas is an integrated utility serving 54 cities in central Japan and intends to integrate more renewable energy sources, balanced by batteries. At the Tsu LNG station site, the batteries will be connected to the Japanese power grid, storing excess electricity generated during off-peak times and times of abundant wind and solar power generation, while discharging it to help the grid during peaks and times of supply shortage.

By installing the NAS battery energy storage system on its own real estate, Toho Gas can use it to adjust its own supply and demand. Looking ahead, the utility's president Tobuyuki Masuda said that Toho Gas also intends to use energy stored in the system for trading in "various electricity markets".

Investment and installation of the NAS batteries at the Tsu LNG site is supported by government funding. In fiscal 2021, the

government revised a budget designed to help the country achieve CO2 neutrality by 2025, essentially through renewables build-out, production of green hydrogen and use of the fuel to co-fire gas power stations.

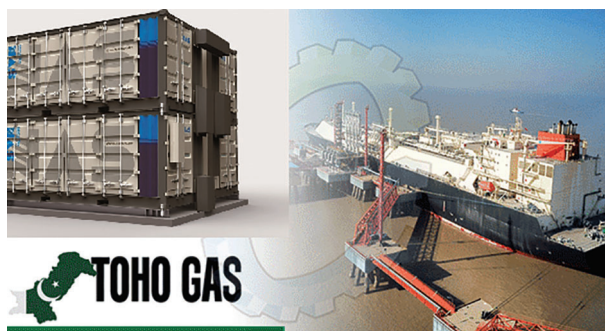
METI helps finance energy storage solutions

With an interim renewable energy target of 36%-38% across the grid by 2030, the Min-

istry for Economy, Trade and Industry (METI) sees energy storage as a "key technology" to reach its decarbonisation goals. To that end, METI is understood to have budgeted for a total pool of ¥13 billion (US\$91.18 million) to be paid out, mostly for renewables-build out and lithium-ion batteries.

Many Japanese citizens, however, hold the view that battery storage is too costly

and although thousands of residential battery systems are sold every month and commercial and industrial (C&I) entities are leasing or buying systems to lower their electricity bills through peak shaving, grid-scale batteries have not been able to find a mainstream role in the way they have in say the UK, the US or Australia. ■



Two HA-powered blocks at Bang Pakong add 1.4 GW in Thailand

GE has repowered two blocks of EGAT's Bang Pakong power plant blocks 1&2, situated 60 kilometres south of Bangkok. The plant's five power blocks, built in 1977, were burning natural gas and diesel and the two new combined-cycle gas turbine (CCGT) blocks replace two retired ones, adding 1,400 MW at an improved efficiency and with less emissions.

The upgrade project helps EGAT's improve its power gen efficiency and reliability, reduce CO2 and NOx emissions. It also lowers electricity costs for its overall assets by replacing them with highly efficient combined-cycle power generation equipment. The two new CCGT units are powered by two of GE's 9HA.02 gas turbines, the company's most efficient 50 Hz gas turbines, for the first time in Thailand, as well as two advanced STF-A650 steam turbines, and two W86 generators.

"This project is in response to the government's commitment to the retirement of less efficient and older plants, to be replaced with new gas-powered highly efficient combined-cycle capacity as a solution to reduce emissions and increase the reliability and flexibility of Thailand's power system," said Mr. Prasertsak Chergchawano, EGAT Deputy Governor - Power Plant Development and Renewable Energy.

Thailand's installed power gen capacity amounts to 51 GW, according to Enerdata, and the share of gas in the power mix has been growing up 5.1 GW to be making the largest contribution at 51% of total installed capacity. GE equipment is helping to gener-

ate up to 30% of Thailand's overall electricity needs, which generate up to 30% of the country's current power with a fleet of over one hundred gas turbines. As one Thailand's largest foreign infrastructure providers, GE active in energy, aviation, and healthcare.

Getting gas-fired plants hydrogen ready

Growth of gas power generation in Thailand is both an enabler of the energy transition as well as a destination technology, said Ramesh Singaram, President & CEO for GE Gas Power Asia. Today, there is increased interest in using hydrogen fuel to power plant emissions, and GE is actively working on decarbonizing both new and existing gas-fired power plants via a combination of pre and post combustion technologies.

"Advancements in hydrogen-based power generation and carbon capture and sequestration (CCS) solutions en-

able gas turbines to be a destination technology and not just a bridging short-term investment," Singaram underlined.

GE's H-Class gas turbines can already burn up to 50% hydrogen by volume, when blended with natural gas – facilitated by the DLN2.6e combustion system that is standard on current 9HA.01/9HA.02/7HA.03 gas turbines offerings. As for its H-Class heavy duty gas turbine fleet, GE has secured more than 50 customers and the US manufacturer said it expects the "rapid maturation of commercial operating HA gas turbines to continue in 2022." ■



EGAT's Bang Pakong power plant near Bangkok

LNG Journal Subscription Package

LNG Journal is a ten-in-one subscription product with end-to-end insight into liquefied natural gas. The LNG Journal platform includes:

LNG JOURNAL

Monthly Online + optional print magazine

LNG UNLIMITED

Online every Tuesday

GAS TO POWER JOURNAL

Online every Friday

LNG MARKET TRACKER

Online every Wednesday

LNG SHIPPING NEWS

Online every second Thursday

LNG MONTHLY MARKETS

Online Monthly

LNG CHINA

Online every second month

LNG NORTH AMERICA

Online every second month

LNG FUELLING

Online every quarter

DAILY UPDATES and Newsletters

Sign up now for an Online Subscription at only US\$1095; €835 or £755

Discount options are available for multi-users

Contact us for more information or to arrange a free trial



Subscription Contacts

For new subscriptions or general subscription queries please contact:
Stephan Venter
+44 207 017 3407
venter@lngjournal.com

To renew an existing subscription or to upgrade your package, please contact:
Gabi Weck
gabi@lngjournal.com