



Egypt to halt LNG exports in May, seeks to lease new import terminal

Though Egypt's petroleum minister Tarek El Molla is committed to exporting 80,000 tons of LNG to Europe in March and April, these are the last cargoes shipped abroad as Egypt will stop LNG exports as of May to meet domestic fuel needs for power gen. State-run Egyptian Natural Gas Holding (EGAS) is in talks to lease a FSRU to facilitate imports.

Leasing a floating LNG terminal would help Egypt help avert a repeat of crippling electricity shortages and blackouts during the summer season. But even during this spring, in the so-called shoulder season, Egypt is at risk of slipping into a gas deficit despite continued pipeline gas imports from neighbouring Israel.

Daily consumption of LNG is currently about 6 billion cubic feet (bcf) and likely to top 6.3 bcf during the summer, government sources told Al Arabia Business News. Daily production is between 5.2 and 5.4 billion cubic and fully committed to the domestic market while gas imports from Israel are understood to reach 1.1 bcf per day.

Importing LNG via Jordan

Additional LNG imports are off the essence if the government wants to meet rising fuel needs of gas power plants during the summer.



At least two cargoes were bought in April for immediate delivery via Jordan's Aqaba terminal and market observers reckon well over a dozen cargoes have to be secured this spring and summer.

The government hence strives to advance negotiations to charter a floating storage and regas unit (FSRU) which is meant to moor in the Gulf of Suez. Three LNG cargoes per month between July and October are deemed necessary to meet Egypt's fast-growing gas and electricity demand from a population of over 106 million.

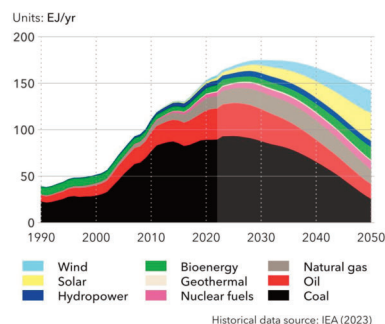
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China's energy use forecast to peak by 2030, fall by 20% through 2050

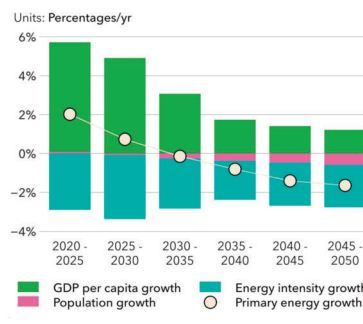
Decarbonisation is progressing fast in China, with renewables set to quintuple by 2050 while efficiency improvement could make the country's electricity use peak by 2030 and fall by 20% through to 2050, DNV analysts find. Electrification, falling energy intensity of industries and a shrinking population will contribute to the decline in energy use.

Already leading on renewable investments, the fast build-out of wind and solar power installation will shift China's energy mix from today's 30% renewables to a 55% share by 2035 – and possibly 88% by 2050. Nuclear installations will also double in absolute terms, but analyst underlined the share of nuclear power will remain small, at around 5% through the middle of this decade.

Primary energy supply by source



Primary energy growth as a function of population, GDP/capita, and energy intensity improvements



Supportive policies turbocharged the green energy sector, turning wind into the largest China's largest source of electricity after coal and hydro-

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The earlier chartered FSRU unit BW Singapore left Egypt's Ain Sukhna port in November 2023 after a charter agreement ended. Importing LNG via the Aqaba terminal in neighbouring Jordan has since been agreed an option, in case of emergency.

Yet, turning to imports will reverse

Egypt's position as an exporter of gas to both neighbouring Israel and further afield. Discovery of the large Zohr gas field in 2015 had been instrumental for Egypt to turn into a net exporter but there have been very few substantial discoveries since and gas production at existing field are in decline. In 2023, gas production fell

11.5% year on year to 59.29 billion cubic metres (bcm) – the lowest level since 2017. And with hotter weather arriving earlier this year, the government is hard pressed to source enough fuel for power generation to avoid rolling blackouts as the economy gathers pace after the Eid Al Fitr celebrations. ■

EPA considers scrapping H2 proposal from power plant pollution rules

The US Environmental Protection Agency (EPA) is considering eliminating a proposal that would mandate new gas-fired power plants to co-fire hydrogen. If adopted, the changes to the new power plant pollution rule mean new fossil power would primarily rely on carbon capture and storage (CCS) to curb emissions, rather than clean-burning fuels.

Market observers expect the new rules may well be finalised in early May. The latest contemplations about a change of plans come as the Biden admin-

istration faces fierce oppositions, with a conservative Supreme Court majority eager to reign in the EPA's authorities and questions whether utilities can adopt some of the proposed clean energy solutions as quickly as requested.

Hydrogen produces no emissions when burnt but the fuel is not yet available widely enough to co-fire all new-build gas power stations. Still, utilities have proposed to build more gas peaking plants to

balance the growing supply of intermittent renewable energy on the grid and to meet rising demand from data centres and electric vehicles.

The Supreme Court's 2022 ruling in the case 'West Virginia vs EPA' has affected how the agency crafted its current draft rules. At the time, the court cut short the EPA's powers to regulate how utilities reduce their emissions. In February, the EPA decided to push back most contentious elements of its novel regulation by exempting existing gas-fired power plants – at least for now – from requirements to capture 95% of CO2 emissions by 2035. But tough new rules will apply as planned for coal-fired power plants and new gas-fired ones that have not been commissioned yet. ■



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power, delivering 9.4% of the total electricity supply in 2023. By mid-century, the People's

Republic will "comfortably be the world's largest wind market," analysts noted, adding wind and solar power combined could contribute 38% of electricity production by 2050.

Strikingly, China's energy use is slated to peak over the next six years and then fall by nearly a fifth due to efficiency initiatives but especially because of a projected 100 million decrease in the country's population. Energy efficiency improvements are part of the Chinese policy and enshrined in the Energy Conservation Law which targets a 33% decline in energy intensity to 3.4 MJ/US\$ by 2035.

"There is much to admire about China's energy transition. There are visible signs of a vast decarbonization effort and clean technology development within renewable energy, storage, and transmission technologies," said Remi Eriksen, DNV chief executive. In his view, China could accelerate the transition to reduce its reliance on fossil fuels even further and faster. The country is

currently responsible for a third of the world's energy-related CO2 emission and to meet its 2050 climate goals, that share would have to be cut to a fifth.

Quest for energy independence

Energy independence is a key goal for Chinese policy makers but it can only be partly achieved, DNV analysis finds.

As renewables quickly replace coal power, domestically produced coal will largely be sufficient to fuel the remaining plants. However, oil and gas use will have to be met through imports.

Oil consumption is forecast to halve by 2050 from its 2027 peak, but its use in petrochemicals and heavy transport – notably aviation and shipping – will linger and 84% of oil use will be met through imports. Natural gas consumption will stay high with DNV anticipating 2050 consumption to be marginally below 2023 levels and 58% being imported. ■

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ACER anticipates Europe's contracted LNG to exceed demand by 2027

Long-term contracted LNG volumes will soon exceed the European Union's supply needs and could leave the bloc over-contracted as early as 2027, the EU agency of energy regulators (ACER) finds. Projections are based on the REPowerEU plan, aimed at reducing dependence on Russian gas by prioritising green energy which would cut gas demand by an additional 100 bcm by 2030.

"From 2023 and until 2026, the existing long-term contracts of about 49 billion cubic metres for delivery in Europe are assessed as insufficient to meet the total EU LNG demand. However, from 2027 to 2030, the impact of REPowerEU measures on EU gas demand reductions is expected to result in over-contracted LNG position, with surplus volumes ranging from 30 bcm in 2027 to 66 bcm in 2030," ACER's latest report reads.

EU member states imported 134 bcm of LNG, making up 42% of the bloc's gas imports with exposure to oil-indexed long-term contracted volumes estimated to amount for roughly 60% of total LNG needs through 2030.

Crucial for the above projection is that the current large take-or-pay contract for pipeline gas supply from Russia via the Ukraine will expire by the end of this year. If the contract is not renewed, it could lead to a loss of 13.6 bcm in gas supply compared

with 2023 flows. It is still unclear if LNG, or rather pipeline gas from Norway or Algeria will make up the missing supplies.

The EU is advised to gradually lower Russian LNG imports and end its reliance on Russian fuels altogether by 2027 by focussing on renewables gases and hydrogen instead. According to ACER data, Russia produced some 42 bcm of LNG last year of which 18 bcm were supplied to the EU, 11 bcm to China, 8 bcm to Japan and 2 bcm to South Korea.

Europe's rush to build additional regasification capacity of over 50 bcm since 2022, has helped ended the continent's dependence on Russian gas. Over 75% of the new



One of Novatek ice-breaking LNG carriers

import capacity comes from floating storage and regas units (FSRUs) and some of them could be deployed elsewhere, if no longer needed.

Over-contracted European buyers already resell part of their delivered cargoes, but due to incomplete data disclosure it is unclear how much Russian LNG has been re-exported. ACER estimates the volume to be at least 1 bcm, or more. ■

Record gas-burn of Texan power generators to extend into the summer

Gas-burn is expected reach a fresh record in Texas this summer as historically low gas prices already trigger coal-to-gas switching on large levels this spring. Month-to-date, gas burn in Texas averaged nearly 4.3 Bcf/d, outnumbering the three-year average of 3.6 Bcf/d, figures from S&P Global Commodity Insights show.

The rising contribution of wind and solar power makes it difficult to gauge the impact of low gas prices on fuel switching. EBW Analytics reckon low gas prices are currently driving about 5 Bcf/d of coal displacement at the US level.

In Texas, particularly in eastern parts, gas prices plunged to historic low levels: At Houston Ship Channel, the spot gas price averaged just under \$1.80/MMBtu in 2024. In April, prices have so far traded at less than \$1. Further east at Florida Gas Zone 1, prices are averaging under \$1.20, according to Platts assessments.

A hot summer could push up overall electricity demand to new records and make utilities turn to peaking gas power plants as households turn up air conditioning. The US National Weather Service

forecasts a 60% probability of warmer than normal temperatures in the Lone Star State this summer.

'Legitimizing' bitcoin propels up electricity costs

The US Securities and Exchange Commission (SEC)' recent legitimisation of bitcoin exchange-traded funds (ETFs) is likely to propel up electricity demand in Texas, where bitcoin miners have clustered. The

ERCOT grid already suffers from supply/demand imbalances and the pipeline of new crypto mining data centers seeking to connect to the state's grid was equivalent to 27% of Texas peak electricity demand as of early 2023.

Power demand from bitcoin mines push up the real-time cost of electricity in Texas nearly all hours of the year. According to WoodMac calculations, this raises electricity costs \$1.8 billion per year on homeowners and businesses in the state, a 4.7% increase on what they currently pay.

"Despite miners claims and popular belief, bitcoin mines often do not stop operating when electricity prices are high, raising costs even further, as well as challenging grid stability. And miners are skilful at avoiding transmission charges in Texas, shifting costs to other customers," Ben Hertz-Shargel, WoodMac's head of grid edge said, warning: "If a sizable fraction of the bitcoin mine pipeline does get built, it could cause consumer costs to skyrocket." ■



CPS's Rio Nogales gas peaking power plant

Brace for overstretched grids as electric car adoption gathers pace

One in three cars on the road in China by 2030 will be electric and almost one in five in both the United States and the European Union. The International Energy Agency (IEA) hence calls for careful planning to ensure that rising demand for electricity from charging will not overstretch the grid or cause serious load imbalances.

Substantial investment in the electric vehicle supply chain, ongoing policy support, and declines in the price of EVs and their batteries is bound to accelerate the uptake: Analysts reckon that under today's policy settings, every other car sold globally is set to be electric by 2035. This would avoid the need for around 12 million barrels of oil per day, on a par with current demand from road transport in China and Europe combined.

"Rather than tapering off, the global EV revolution appears to be gearing up for a new phase of growth. The wave of investment in battery manufacturing suggests the EV supply chain is advancing to meet automakers' ambitious plans for expansion," the IEA executive director Fatih Birol commented.

More and larger cars, however, require more power or longer charging times. This can put pressure on electricity grids and charging infrastructure by increasing occupancy, which could create issues during peak utilisation.

In regions where the voltage of the power grid is 220V or above, EV owners can charge their vehicle from a regular domestic socket overnight. This is the most com-



Share of electricity consumption from electric vehicles relative to final electricity consumption by region and scenario, 2023 and 2035

Country/region	2023	Stated Policies Scenario 2035	Announced Pledges Scenario 2035
China	0.7%	6.8%	6.9%
Europe	1.1%	13.7%	14.5%
United States	0.6%	14.2%	15.6%
Japan	0.1%	3.1%	5.5%
India	0.2%	6.0%	8.7%

Note: Non-road electricity consumption is taken from the [World Energy Outlook 2023](#).

mon case and holds true in Europe, Australia, large parts of Latin America, and most of Asia. In regions where the voltage is lower, typically 100-120V, recharging speeds from regular domestic sockets are much slower.

Deployment of EV chargers should be coordinated with power grid developments, the IEA said, warning: Charging can lead to a surge in peak demand and cause load imbalances, meaning that it is vital to ensure

that transmission and distribution grids are appropriately sized and equipped.

One way to avoid peak demand is through stationary storage batteries that are co-located with high-powered chargers. This solution would require significant capital expenditure (CAPEX) for the installation of large, stationary batteries, but it could also offer new revenue streams to charging station owners, such as through electricity price arbitrage or grid services provision. ■

Rise in US residential electricity bills outpaced by inflation

Residential electricity bills in the United States jumped by 2% each month last year compared with 2022-levels, but that growth rate was still slower than inflation, which was 4.1%. Higher electricity prices were offset by falling consumption in 2023, with monthly bills ranging from over \$213 for consumers in Hawaii down to \$87 for

households in Utah.

Electricity prices in Hawaii are high because the island is not connected to another electricity grid and largely relies on petroleum-fired electricity generation which is more expensive than other fuels.

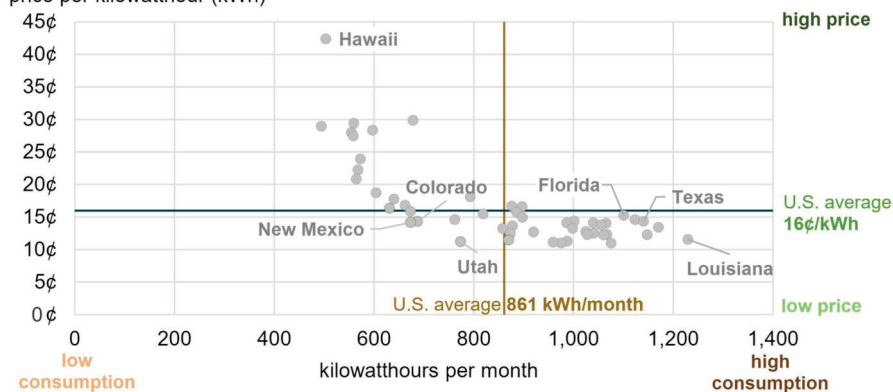
Utah, meanwhile, has more than 60 hydropower plants which can produce elec-

tricity at near zero operating costs and allow utilities to offer electricity at substantially cheaper rates.

Consumers in other southwestern states, including New Mexico and Colorado, also had bills well below the national average, US government figures show. These states tend to have lower-than-average residential electricity prices and consumption, and the delivered costs for coal and natural gas to power plants were lower than in 2022.

Residents in Louisiana used more than four times the electricity as those in Hawaii on average but because electricity prices are so much lower in Louisiana, residents paid \$142 per month, 33% less than those in Hawaii. Like other southern states, including Florida, Alabama, and Texas, Louisiana tends to have low electricity prices but more consumption because consumers typically use more air conditioning and are more likely to use electric space-heating during the winter. ■

Monthly average residential electricity prices and consumption in 2023
price per kilowatthour (kWh)



Data source: U.S. Energy Information Administration, [Electric Power Monthly](#)

Eliot 3 drone carries out safe UTM readings at marine and energy assets

Interocean Marine Services has demonstrated its Eliot 3 drone's ultrasonic thickness measurement (UTM) can provide accurate readings of marine, power generation and industrial assets ten times faster than traditional methods. Showcased at Valaris Viking jack-up rig, the use of the drone eliminated risks related with working-at-height and confined space entry which is equally suited for power plant inspections.

Now part of Interocean's unmanned autonomous vehicle fleet, the Elios 3 drone helps asset owners carry out inspections and measurements in a safer, more efficient and cheaper way than technicians having to climb scaffoldings or lower themselves into narrow spaces on a rope.

As a leading provider of Non-Destructive Testing (NDT) and inspections, Interocean stressed the UTM payload for the Elios 3

drone is a step change in integrity inspection. "Delivering precise location-tagged measurements in confined spaces, the probe arm of the Elios 3 UT is the smartest ever built on a drone," commented Flyability's area sales manager, Inga Khchoyan.

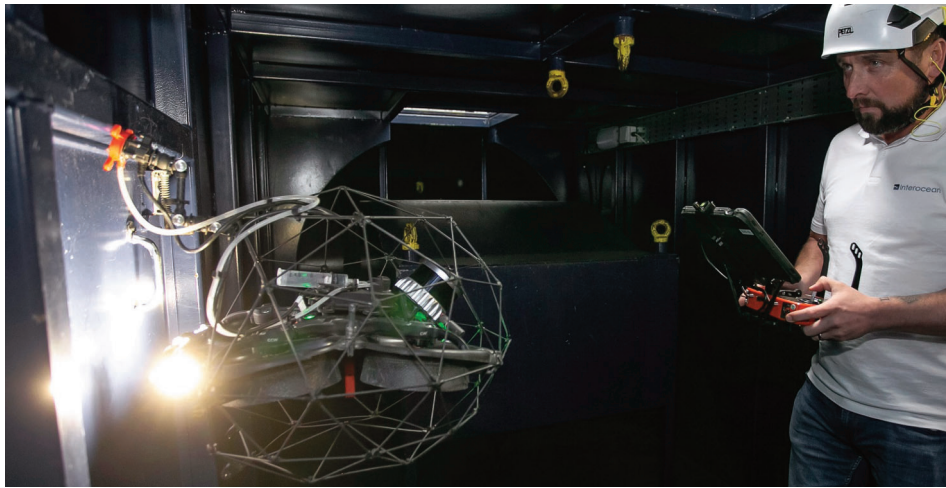
Dominion uses drones to inspect power plants

The American power producer Dominion has already used drones to inspect power

generation facilities in seven states. A regulatory 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.

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. The tool to conduct the monitoring is called Skydio X2, an intelligent aerial tool which enables the drones to safely navigate any environment, including areas without GPS, with 360° obstacle avoidance.

"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. ■



Demo of the Elios 3 UT drone

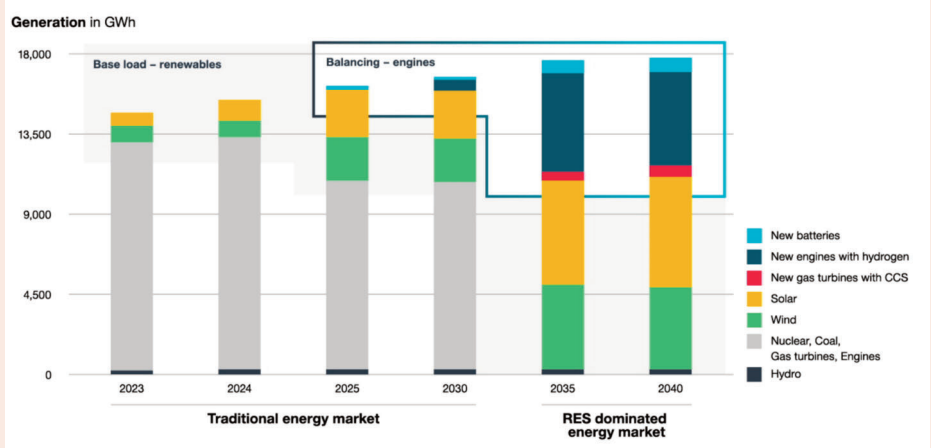
Baseload power from renewables boost need for flexible engines

As renewables are about to take over baseload power supply, grid operators need flexible and efficient balancing technologies. In the long term, MAN Energy Solutions expects hydrogen-ready gas engines to share of 31% in the power generation mix, while batteries and gas turbines can only participate with a lower share.

Power prices are set to become more volatile as the build-out of intermittent wind and solar energy sources progresses. Prices are highest during adverse weather conditions for renewables and flexible engines can provide balancing power during these times.

"Despite usually having a higher initial investment cost than gas turbines, operators benefit from lower operational cost due to the better efficiency of these engines," MAN analysis finds and the financial benefit increases with transition to more expensive green fuels.

Furthermore, the fast response time of



engines allows for participation in real-time electricity markets, providing the opportunity for higher revenues than turbines. With start-up times of less than 3 minutes and a wide operating range from 100% down to 10%, engines will reliably stabilize and balance your grid, with MAN noting turbines cannot match engines in this respect.

Batteries can stabilise the grid when there is no sun or wind but they can only provide energy for a limited time – typically 4-8 hours – and then need to be recharged. Internal combustion engines do not have this limitation, hence combining hydrogen-ready engines and batteries is often an attractive solution for stabilising the grid. ■

JERA and ReNew to produce ammonia in India, destined for Japan

Japan's largest power producer JERA and ReNew E-Fuels have agreed to produce ammonia in eastern India, based on about 500 MW of renewable energy. Hydrogen from electrolysis will be used as raw material to produce about 100,000 tons of green which will then be shipped to Japan for co-firing in JERA's thermal power plants, notably at Hekinan.

The government of India has launched various schemes to support the green hydrogen and ammonia production. The country has a high potential for wind and solar power and is poised to become one of Asia's largest exporters of green fuels.

The project is benefits on JERA's strong partnership with ReNew, dating back to 2017, and will help the Japanese utility meets its Zero CO2 Emissions by 2050 objective. To this end, JERA is working to establish hydrogen and ammonia supply chains from various countries overseas, including Australia and the US.

To import ammonia, IHI is looking into modifying LNG receiving terminals to be able to also handle the clean fuel, slashing import costs and ensuring effective land usage. The shipping firms MOL and NYK have agreed to transport ammonia directly to the Hekinan coal power station where JERA aims to achieve an ammonia co-firing rate of 20% this year.

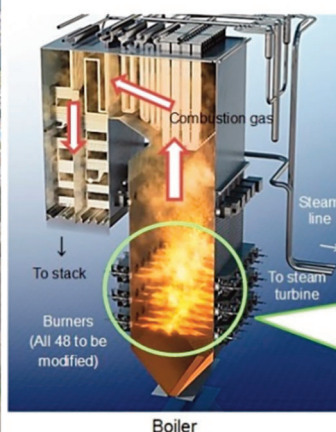
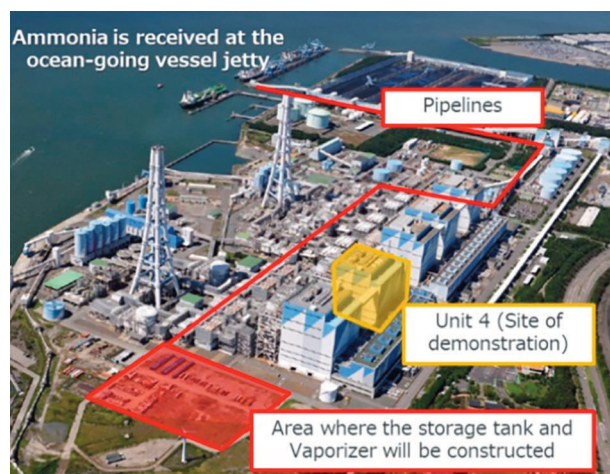
Tests and combustor conversions at Hekinan

With an installed capacity of 4,100 MW, Hekinan is the largest coal-fired power station in Japan, consisting of three 700 MW units and

two 1,000 MW units. Here, JERA and Mitsubishi Heavy Industries (MHI) want to verify co-firing with at least 50% ammonia at two different boiler types by 2028.

Co-firing tests focus on Unit 4, commissioned in 2001 and equipped with a turbine and generator from Toshiba and a boiler from IHI. To speed up the project, delivery and installations times for burners, the tank for storing ammonia, pipes, and other equipment necessary for upgrading Unit 4 have been substantially shortened, project partners confirmed.

Small-volume co-firing is already underway at Unit 5, where two of the 48 burners have been replaced with test burners through to March 2022 as IHI wants to examine the effects of different materials on hydrogen combustion. Research is also underway at Japan-made catalysts that will help enhance the use of ammonia in power generation, with the new synthesis process compete with Haber-Bosch based technologies by utilizing lower temperature and pressure synthesis catalysts. ■



JERA's ammonia co-firing test site at Hekinan power station

New gas power project in Belgium on track for start-up in late 2025

Construction for a gas-fired power plant in the Belgian city of Awirs, just outside Liège, continues at pace to get the 875 MW unit commissioned November 2025. The new CCGT will replace the former Les Awirs coal power unit and once in full swing, its yearly electricity output is estimated to be between 4.4 and 5.3 TWh.

Based on an investment of €500 million, the gas and steam turbine driven combined-cycle plant is projected to have an efficiency rate of over 63%. That would be some 5% to 10% more than existing plants in Belgium which

could help cut CO2 emissions by some 20%, explained ENGIE Electrabel's project manager Ralf Anné.

Some 500 engineers and skilled workers are currently employed at the power plant site near the Meuse riverfront. Works on the boiler are almost finished and the chimney is currently being put up. Once fully built, a team of 35 people will take over the plant's operation and help carry out routine maintenance.

Test runs on the gas turbine are scheduled for the first half of 2025, he specified, adding the CCGT is meant to start full commercial operations on the 1st of November 2025. ■



Former Les Awirs coal power plant

NFE aims for 1.6 GW power project in Brazil to start operations in 2026

Construction has just started for New Fortress Energy's 1.6 GW power plant adjacent to the Barcarena LNG terminal in Brazil. A consortium of Mitsubishi Power Americas and Andrade Gutierrez is carrying out EPC for the plant, targeted to start operation no later than August 2026 by when it is meant to generate electricity under a 15-year capacity reserve contract.

In the first quarter of this year, NFE completed construction and commissioning of both the Barcarena and Santa Catarina terminals. Along with the existing 630 MW power plant and 25-year agreement, the Barcarena LNG terminal is now supplying regasified LNG to more than 2,200 MWs of power capacity owned by NFE, as well as to Norsk Hydro's Alunorte alumina refinery.

NFE managing director Andrew Dete underline the company is keen for the MHI/AG consortium to "finalise the work over the next 24 months." ■

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