



China's economic rebound is fuelled by coal, not LNG

Focussing on self-sufficiency and energy price stability, the Chinese government strives to power the country's economic recovery from Covid-lockdowns with rising domestic coal production, rather than LNG imports. China's coal production increased 5.5% to 1.15 million in the first quarter, while imports soared 63.1% to 101.8 million as thermal coal has become the preferred fuel for power generation.

Robust but small domestic gas production and fast-rising pipeline gas imports from Russia have led to a 4.9% decline in LNG imports in the first quarter to 16.434 million tons, or 22.7 Bcm of natural gas, according to data from the Chinese customs administration. Still, a stark drop in spot LNG prices made Beijing Gas purchase a cargo in April while CNOOC is understood to have bought another two.

Six new regas terminals are scheduled to start up this year, including Beijing Gas Group's 5 mtpa Tianjin Nangang terminal, Guangzhou Gas's 1 mtpa Nansha terminal and the 6 mtpa Chaozhou terminal by Huaying Natural Gas. But the impact on spot markets is likely to be small.

"Large amounts of (long-term) contractual volumes are expected to meet most of China's LNG import demand. Therefore, not much



spot buying is required," said Rystad Energy analyst Wei Xiong.

With about 13 bcm of new LNG contracts starting delivery in 2023, China's contracted LNG volume is on course to reach nearly 110 bcm this year – substantially higher than projected demand. Analysts suggest China could ramp up its LNG imports back to the 2021-peak without having to buy expensive spot cargoes.

Coal-to-gas switching no longer in focus

Spiralling global gas and LNG prices in wake of Russia's invasion of Ukraine had made China rebalance its power generation mix, as thermal coal is being viewed as a less costly fuel. The central gov-

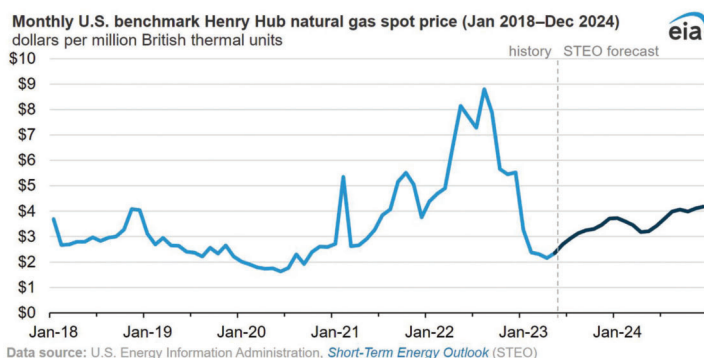
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Henry Hub gas spot price could nearly double by December

US government analysts anticipate the Henry Hub natural gas spot price will bounce back from recent lows and nearly double over the course of this year amid rising LNG exports and record gas-burn for power generation while dry gas production continues to decline. Come December, the monthly average Henry Hub price is forecast to reach at least \$3.71/MMBtu.

In its May Short-Term Energy Outlook (STEO), the US Energy Information Administration (EIA) forecasts a gradual increase in gas prices as LNG exports will rise from a first-quarter average of 11.6 Bcf/d to 12.2 Bcf/d this summer, while gas consumed for power generation will average 38 Bcf/d this summer – the second most on record behind last year.

Dry gas production, meanwhile, is anticipated to fall from recent highs to average 100.4 Bcf/d this summer. Tighter supply means that less gas is available for storage, so inventories are expected



to end the injection season (April 1–October 31) at 3,762 Bcf – still 4% higher than the five-year average.

Spot prices had dwindled throughout the past

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ernment in Beijing hence decided not to levy and import tariffs on coal until the end of 2023 and encouraged buyers to resume trading coal with Australia.

"The coal-to-gas policy, the key driver behind Chinese gas demand growth in recent years, is no longer a top priority given the higher cost of natural gas compared with alternatives," said Jenny Yang, senior director, greater China gas research at S&P Global Commodity Insights.

Locking in coal demand, China recently

approved the construction of 106 GW of new coal-fired power station – four times the number of permits issued in the previous year. Coal plant retirement also slowed, with analysts forecasting China's pivot to coal will have a long-lasting effect on global gas markets. During the recent gas-storage year in Europe from April 2022 to March 2023, China's coal imports soared by nearly a fifth to around 300 million tons while the country's LNG import fell by a fifth to 61.3 million as buyers were taken aback by

unprecedented high prices.

Though gas prices have retreated considerably from their peaks in August 2022, cautious Chinese buyers have not returned to the market in great numbers. Analysts see an upside risk as LNG shipments to China may rebound as the country's economy is likely to bounce back from lockdowns faster than expected. But if coal stays China's main fuel, European LNG buyers would have to worry less about supply security in the coming winter. ■

US gas prices notch up as rig count falls to one-year low

Drilling activity in the United States has fallen sharply as the number of gas rigs plunged by 16 to 141 – eight less than at the same time last year – prompting an uptick in prices. The Jun23 Henry Hub contract on NYMEX was last seen trading \$2.309/MMBtu, just above two-year lows, amid mild temperatures and high gas-burn for power generation.

The oil and gas rig count, an early indicator for future production, plunged by 17 to 731 over the past week, the biggest weekly drop since June 2020, according to Baker Hughes data. Repeated shut-ins of dry gas rigs were contrasted by a rise in offshore rigs by 4 units on a year-on-year basis. Oil rigs fell by 2 units to 586 as of May 12.

More shut-in needed as storage nearly full

Wildfires in the Canadian province of Alberta have reduced exports to the US by around 1.1. Bcf/d, though analysts expect the change in net imports will be largely confined to the period until early June. Lost supply from Canadian gas imports made US upstream companies eschew any significant response to limit production in the short term, though Energy Aspects warned

a greater decline in dry gas production would be needed to avert peak storage capacity. Weekly triple-digit injections into storage would otherwise dominate in May.

"Earnings calls suggest that a few dry gas producers, most notably Southwestern, are delaying some completion activity, but are not yet considering shutting in active wells with Henry Hub cash prices that remain above \$2/MMBtu," analysts commented.

Energy Aspects' forecast for the balance of summer at Dominion South of

\$0.79/MMBtu is tighter than current forwards by \$0.15/MMBtu, but this is partly because analysts are more bearish on Henry Hub prices. Appalachian production shut-ins are deemed unlikely unless in-basin cash pricing dips below \$1/MMBtu and neither are Haynesville shut-ins currently accounted for, though those would occur earlier.

Haynesville volumes face stiff competition, not just from Northeast dry gas production, but also from Permian and Eagle Ford flows to meet local demand from industry and electric utilities and fill the

little space left in storage. The region is still found to be "fundamentally oversupplied," despite a full summer of Freeport feedgas demand and increased for power generation, as over 4 bcf/d of y/y production growth lifts storage to unprecedented levels for this time of the year. ■



Dry gas drilling rig in the US Midwest

Continued from page 1

winter to below \$2.10/MMBtu as mild temperatures in much of the Lower 48 states reduced gas demand for heating, while dry gas production reached a monthly record of 101.5 billion cubic feet per day (Bcf/d) in February. Gas in storage was 19% above the five-year average at the end of April, at 2,114 billion cubic feet (Bcf), and is

expected to stay high through this year which has a bearish effect on prices.

Despite falling dry gas production and growing demand, the EIA expects prices to stay much lower than last year, hovering around \$2.91/MMBtu for the year – more than half of the 2022 average of \$6.42/MMBtu. ■

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PetroVietnam to import LNG for power gen via Thi Vai terminal in Q4

PetroVietnam Gas is preparing to launch its new Thi Vai LNG regas terminal in the fourth quarter of this year to source fuel for adjacent power stations. The Vietnamese major also contracted Samsung C&T to build two combined-cycle power units with a combined capacity of 1,500 MW nearby that will run on imported LNG.

Situated on the coast southeast of Ho Chi Minh City, the Thi Vai LNG import terminal is currently more than 95% complete. Developers said the LNG tank had reached mechanical completion in April, while the jetty and regas unit should be ready in July.

The terminal will be able to import 1 mtpa of LNG in its first project phase, but PetroVietnam intends to increase the capacity to 3 mtpa at a later stage to meet the country's growing gas demand for power generation. To that end, the company is building the Nhon Trach 3 and 4 gas power plants in close vicinity to the LNG regas terminal. The two power units, with 750 MW

each, are scheduled to start commercial operations in early 2024.

To ensure a steady stream of LNG shipments, PetroVietnam Gas said it has signed eight sales and purchase agreement with some larges supplies but it did not disclose the names of the companies.

Gas power growth slows Vietnam's energy transition

Vietnam is leading the build-out of gas-fired power generation in Southeast Asia, boosting the country's 56 GW installed capacity. Apart from the Nhon Trach units 3 & 4, PetroVietnam is also plans to build an on-shore LNG receiving terminal and 1.5 GW gas-fired power station in Quang Ninh province. The project will cost an estimated \$1.92 billion, with commercial operations slated to start in the second half of 2027.

Construction is already underway for a 3,200 MW combined-cycle power plant in Bac Lieu Province in Vietnam's Mekong Delta. Fuelled by LNG, the plant and is developed by Delta Offshore Energy and due operational in late 2023. ■



The Thi Vai LNG terminal is almost complete

Hong Kong LNG unloads commissioning cargo to fuel Black Point Power Station

Countdown for the start-up of Hong Kong's LNG first import terminal is underway as a commissioning cargo, provided by PetroChina, has been unloaded at the world's largest floating storage and regas unit, FSRU Bauhinia Spirit, to support cool-down operations. The regasified fuel is supplied via subsea pipelines to Black Point Power Station, a 3,125 MW combined-cycle unit.

Trials of the FSRU and the subsea pipeline links are part of the commissioning process before the project contractor, China Offshore Oil Engineering Company (COOEC), hands over the facility to Hong Kong Terminal Ltd., a joint venture of the local utilities Hong Kong Electric and Castle Peak Power (CLP). The latter two had proposed to charter the floating LNG terminal from Mitsui OSK Lines, opting for MOL's 'FSRU Challenger' which has been renamed to 'FSRU Bauhinia Spirit'.

The 4 mtpa import terminal, with gas storage capacity of 263,000 cubic meters, arrived offshore Hong Kong Port on April 13 and berthed at the South Cheung Chau Anchorage for final checks. Hong Kong Electric and CLP arranged the charter and also

signed a long-term LNG agreement with Shell Eastern Trading to deliver a steady stream of cargoes.

Accelerating coal-to-gas switch

With much of Hong Kong's coal-fired power plants are reaching the end of their lifetime before 2030, the city has been embarking on a massive shift to gas-fired power generation. CLP Power said it had boosted the share of gas in the city's power mix to nearly 50% since 2020, notably through the recent addition of a 600 MW unit at its Black Point Power Station which brings total capacity to 3,225 MW.

Hong Kong Electric, meanwhile, extended operations of the 3,736 MW Lamma Island power plant which consists of eight

Snam commissions FSRU to enhance Italy's gas supply security

Italy's gas grid operator Snam has started operations of its latest floating liquefied gas import terminal, as the FSRU Italia received its initial cargo via an Eni-controlled tanker from Damietta LNG in Egypt. Shipments add to those via the OLT Toscana terminal and enhance Italy's supply security though Eni CEO Claudio Descalzi does not expect any "big shocks" this year.

"European gas storages are full and, although the global economy has restarted, demand is not at its highest because China has not yet resumed full operations," Descalzi said in an interview with La Stampa newspaper. Imports of Russian gas to Italy have declined to near zero, backfilled by LNG shipments and new gas supply contracts with several African countries, Decalzi said without elaborating further. Before the Kremlin's invasion of Ukraine, Italy relied on Russia for 40% of its gas imports.

Shipments to FSRU Italia, purchased by Snam from Golar LNG for around \$350 million in mid-2022, will help Eni optimise its gas trading activities and source fuel for power generation. Snam expects to be able to cover up to 13% of Italy's annual gas demand via FSRUs Italia and OLT Toscana combined by end-2024. ■

coal- and seven gas-fired units, and the 300 MW Penny's Bay open-cycle plant on Lantau Island which serves as a backup facility. "The commissioning of the gas-fired unit L11 in 2022 at Lamma Power Station enabled us to generate over half of our electricity from natural gas," said HK Electric's managing director Wan Chi-Tin. ■



FSRU Bauhinia Spirit nears start-up



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KEPCO racks up debt amid gov' pressure to limit power bill increases

South Korea's state utility KEPCO has reported a loss of 6.2 trillion Won (\$4.68bn) in the first quarter as the government postponed a raise in electricity bills ahead of elections in April 2024. Electricity prices were meant to be increased in April, but they are up just 11% in 2022 – a far cry from the 64.5% jump in fuel cost for gas, oil and coal combined.

The ministry of trade, industry and energy decides to raise second quarter gas prices for consumers by 1.04 Won per megajoule, after leaving them unchanged in the first quarter. Electricity rates for consumers and industry will be increased by 8 won (US\$0.01) per kilowatt hour (kWh) for the second quarter, compared with a 13.1 won increase per kWh in the first quarter. The ministry said, these second-quarter rates would take effect on May 16 and would not be applied retroactively.

Cautious raise in power tariffs

Though the minister said he felt "heavy-hearted" about the burden placed on families he stresses rises in gas and power tariffs were necessary due to higher global commodity prices in the wake of the Russia-Ukraine war and its impact on KEPCO's operating cash flow. "The worsening finan-

cial plights of the public energy companies may disrupt stable supplies of electricity and gas and we cannot rule out a situation where their financial crisis could spread to the financial market and to the overall economy," the Minister said in a statement, adding "Their (KEPCO's) self-rescue measures alone are not enough to overcome the current crisis."

KEPCO's latest quarterly losses are the eight quarterly losses reported in a row and the state-run utility had reported record operating loss of 32.63 trillion won (\$23.3 billion) in 2022. As of end 2022, KEPCO amassed debt of 192 trillion won (\$143 billion) and is burdened by a debt-to-equity ratio of 459%. At the same time, South Korea's LNG imports have risen to an annual 47 million tonnes though KEPCO has been trying to burn more coal for power generation to meet peak winter demand.

To help stop losses and restore KEPCO's balance sheet by 2026, electricity tariffs would need to rise by 51.6 Won per kilowatt-hour this year, or nearly 43% from last year's average, the industry ministry told parliament in Seoul. But the government in December cautiously put up rates by just 13.1 Won per kWh for the first quarter. ■



Siemens Energy lowers profit outlook on wind sector woes

Despite strong sales, Siemens Energy expects its profit margin will come in at the lower end of its 1-3% target range due to a €374 million (\$412 million) loss at Siemens Gamesa. CEO Christian Bruch cited supply chain issues, slow off-shore activities and loss-making legacy contracts at the Spanish wind turbine maker as reasons for the ongoing troubles.

Losses in wind power were more than offset by a strong performance in the Gas Services and Grid Technologies divisions which helped Siemens Energy return to a profit before special items of €41 million in the second quarter, compared with a €49 million loss in the same quarter last year. The "Acceleration Impact" program brought a positive effect of €78 million, the CEO said as most measures of the program have been executed or contractually solved.

The order backlog of Siemens Energy reached a record of €102 billion and the energy equipment maker also raised its sales outlook due to faster-than-expected growth

in its markets, now forecasting revenues to increase by up to 12% in 2023.

With business is growing faster than previously hoped for, management now expects a comparable revenue growth of the Siemens Energy Group between 10% and 12%, revising upwards its previous target of 3-7%.

However, net loss of Siemens Energy Group is expected to exceed prior fiscal year's level by up to a low-triple-digit million Euro amount. "Our adjusted outlook reflects the strong demand, as well as the continuous challenging market environment in the wind industry," the CEO said, stressing: "The turnaround of the wind business re-

RWE's Q1 earnings more than quadruple on higher generation margins

German utility RWE has seen its operating profits (adjusted Ebitda) soar to €2.8 billion (\$3 billion) from just €613 million a year earlier, driven up by strong earnings from short-term optimisation of power plant dispatch and higher generation margins. RWE said it also gained proceeds from the sale of former power plant sites.

The trading segment of the Essen-based company also returned to profits at €289 million, compared to a loss of €55 million in the previous year. Sanctions on Russian coal deliveries incurred and impairment of around €850 million on contracts related to Russian hard coal purchases, which were booked in this business segment.

Coal and nuclear power plant dispatch reaped strong profits as the German government extended the runtime of the last three remaining nuclear power stations until April 15, 2023, to avert electricity shortages after Gazprom cut contractual gas deliveries. Some moth-balled coal power stations were also fired up to cover the country's electricity demand. The coal and nuclear segment reported a rise in earnings to €496 million, up from €207 million, as electricity could be sold forward at substantially higher prices than in the previous year.

Margins for hydro, biomass and also natural gas were "exceptionally high," RWE stressed, reporting a jump in related Ebitda to €1.18 billion compared to €263 million a year earlier. In contrast, earnings from onshore wind and solar power declined to €247 million from €318 million due to lower realised power prices "along with liabilities from statutory levies on electricity revenues", the company said.

Looking ahead, RWE kept its forecast for full-year adjusted Ebitda to reach €5.8 billion to €6.4 billion this year. ■

mains the cornerstone of becoming a profitable leader of the energy transition." ■

Mitsubishi, Consag carry out EPC for Brazil's largest gas peaking plant

A consortium of Mitsubishi Power America and Consag have agreed to carry out engineering, procurement and construction (EPC) of the Brazil's largest gas peaker, the 1.6 GW Portocem simple-cycle power plant. Situated in the Pecém industrial and port complex, the plant will be fuelled by regasified LNG sourced via a floating regas unit moored within the port.

Construction of the project started in early May, with Consag responsible for civil works, supplying the balance of plant, assembly and commissioning. The massive peaking plant will be powered by four air-cooled M501 JAC gas turbines, supplied by Mitsubishi.

The LNG-to-power project is designed to have generation capacity readily available to dispatch when the grid needs extra reinforcement to meet demand peaks. Portocem Geração de Energia, the plant operator, was the biggest winner of the first power capacity reserve auction in Brazil, held in December 2021, to contract electricity for

the national grid over a period of 15 years.

Once commissioned, Portocem will be one of the largest power plants ever built in Latin America. The fast-ramp open-cycle plant will be vital to back up the rising volumes of fluctuating electricity supply from renewable sources and helps power local industry at Pecém in the metropolitan region of Fortaleza.

"The Portocem power plant is a historic project for Brazil, allowing for an efficient energy transition and ensuring the reliability of the national electrical system," said Eric Shigetomi, VP sales for South America at Mitsubishi Power. For the Japanese manufacturer, it is its third advanced class gas turbine project in Brazil over the past six years. ■



Site where the FSRU for the Portocem gas peaker will be moored

INNIO to power Serbia's first H2-fuelled CHP

Serbian utility PAN-LEDI has selected a Jenbacher J420 engine for a combined heat and power project in the city of Nova Pazova, scheduled to be commissioned in the fourth quarter of this year. All electricity generated by the 1MW plant will be used for electric vehicle charging stations, while heat from the engines will be sold to nearby industry.

The Jenbacher engine-driven CHP plant will be fuelled with hydrogen from an electrolyser that runs on solar power from a photovoltaic plant near the town Cuprija. The electrolyser uses excess solar power to produce green hydrogen for interim storage before the green fuel is transported to Nova Pazova.

Most of hydrogen will be produced during the summer when the electricity output produced by solar PV plants is high. In times of low hydrogen supply the CHP plant will run on natural gas, to ensure the continuous provision of energy.

"Using hydrogen or natural gas to operate our combined heat and power plant is critical for our EV charging station strategy," said PAN-LEDI chief executive, Slobodan Vujovic. "INNIO's Jenbacher combined heat and power solution will provide our operation the flexibility required for a sustainable EV mobility and use hydrogen at high CHP utilization rates. ■

RWE starts up Biblis grid stability plant, powered by LM2500 turbine

The German utility RWE has inaugurated its 300 MW Biblis power plant in southern Hesse, which will only operate upon request of the regional TSO to help ensure continual grid stability. The 300 MW plant is driven by 11 units of GE's aeroderivative LM2500XPRESS gas turbines and aims to deliver full power within 30 minutes.

Grid flexibility and inertia is vital is the German government wants to realise its target of 80% renewables in the country's power generation mix before 2030, after exiting nuclear and ideally phasing out coal power. Dispatchable gas power – gradually decarbonised through hydrogen co-firing and carbon capture – is meant to cover the remaining 20%.

"With the plant in Biblis, we can feed in electricity quickly and flexibly at the request of the transmission grid operators and thus help to stabilize the grid in southern Hesse. Hereby we're adopting GE's flexible and mod-

ularly designed aeroderivative gas technology and advanced protection, control, monitoring, and diagnostic technologies and software to monitor the safe condition of the plant," said Roger Miesen, CEO of RWE Generation.

The flexible plant is connected to the grid via a 380-kV high-voltage substation at the Biblis site. The T168 gas-insulated-substation (GIS), the first outdoor GIS in Germany,

can be installed in networks up to 550 kV for all applications including power generation, transmission, and heavy industry. ■



Biblis gas peaking plant

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