



Chinese gov' still undecided on 2020 coal-to-gas switching target

Though China's economy gathers speed, the government has not yet decided if it wants to set specific targets for coal-to-gas switching this year. More coal-fired power plants are being approved, but analysts still expect LNG demand to grow by a "modest" 5 million tons in the coming winter 2020/21.

This summer, however, the Covid-19 pandemic is seen drive a global contraction in LNG deliveries compared to the previous year. Wood Mackenzie's Robert Sims said: "This will be the first seasonal contraction in eight years."

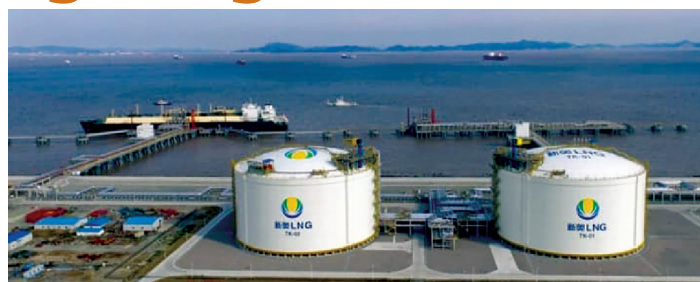
US LNG terminals 'underutilized'

The pricing dynamics this year are expected to be similar in summer and winter season, with US LNG acting as the price-setter for the cross-basin spread. Prices differentials between the U.S. bellwether Henry Hub and the Japan-Korea-Market (JKM) will determine how much hub-indexed US LNG will be shipped to Asia, in competition with largely oil-indexed supply from Qatar and Australia.

"In general, a return to stronger growth is not expected until mid-2021," Sims pointed out.

The fact that more than 20 US LNG cargoes had been 'cancelled'

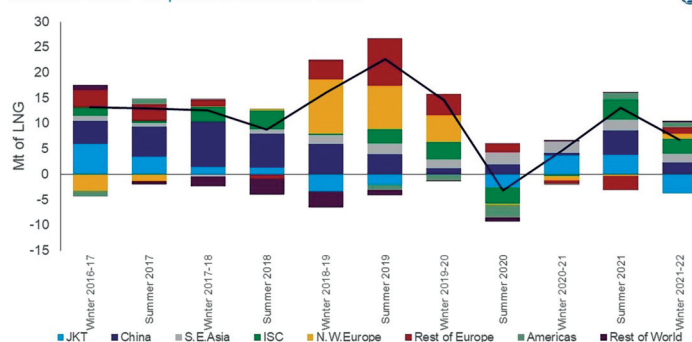
continued on page 2



Seasonal LNG demand year-on-year demand growth

Summer/ winter vs. previous summer/ winter

woodmac.com



Eni splits clean energy business from oil & gas segment

Italy's Eni is reorganizing its internal structure by effectively splitting its traditional oil & gas segment from its new clean energy business. Eni CEO Claudio Descalzi called the plan an "irreversible path" aimed at making the company a leader in the energy transition.

The revamp divides Eni's operations into two groups - Natural Resources and Energy Evolution. The latter focuses on power generation from natural gas, renewables and biomethane as well as retail gas & power, mobility marketing and Eni's refining and chemicals businesses.

CEO Descalzi pointed out the company's new Energy Evolution business unit will coordinate the bio and circular evolution of the Company's refining system and chemical business, and it will further develop Eni's retail portfolio, providing increasingly more decarbonized products for mobility, household consumption and small enterprises. By developing these activities in an integrated way, both geographically and by business line, Eni seeks to maximize results in terms of product development, customer service and profitability.



Eni CEO Claudio Descalzi at the company's investor day

The company's Natural Resources segment, meanwhile, incorporates Eni's oil & gas exploration, development and production as well as natural gas wholesale via pipeline and LNG. Hereby, the Eni wants to focus on technological development, and increased efficiency to maximise of cash generation, even in challenging scenarios.

continued on page 2

AGENDA

REGULATION

Berlin may extend EEG levy as power prices remain in the doldrums

2

MARKETS

Henry Hub gas spot prices seen bounce back to over \$3/MMBtu in 2021

3

ELECTRIFICATION

UK market for e-vehicle chargers set for 29% annual growth

4

CLEAN FUELS

Black & Veatch helps Intermountain Power Plant transition to hydrogen

5

LNG-TO-POWER GEN

CNTIC receives maiden cargo for Thanlyin LNG-to-Power project

6

PROJECTS

Maxim Power commissions gas peaking plant in Alberta, Canada

7

Continued from page 1, top story

by contract and tolling off-takers for June loadings is "significant for the market," he said, suggesting; "This could lead to feedgas going as low as 5 British cubic feet per day (Bcf/day)."

"We expect under-utilisation of US terminals to continue for several summer months as margins remain negative for many companies [and] some degree of under-utilisation will now also happen through summer 2021.

Low prices lead to a downward revision in LNG supply which is currently seen across all basins and regions. Only if there will be a "robust rebound in LNG demand from Japan, Korea or India," then a price correction could begin earlier than previously anticipated, Sims said, which would help "reduce the risk of further US supply reductions next year."

Chinese industry returns to growth

Fresh out of winter heating season, China is

shifting focus to industrial demand recovery. Although none of the force majeure notices were formally confirmed on LNG contracts, China reduced pipeline import growth in Q1-2020 to just 1% year-on-year.

Imports from China's largest supplier, Turkmenistan, plunged by 2%. Coupled with a low spot price environment, the temporary waiver of US LNG import tariffs and industrial recovery, China managed to increase LNG imports in the first three months of 2020.

Moving into summer, China is now faced with the daunting task of economic recovery. While the 'Blue Sky Defence' policy will continue, Wood Mackenzie says it is unclear whether the government will set specific targets for coal-to-gas switching in 2020.

"Any moderation could reduce gas demand during the heating season. Near-term gas-power demand is risked to the downside as power demand recovery faces macro uncertainty and more coal-fired power plants are being approved,"

Sims explained.

As a result, China's second quarter 2020 LNG consumption is expected to rise 12% to 15 million tons year-on-year.

Indian buyers take advantage of low spot prices

India, meanwhile, has seen LNG consumption jump 19% year-on-year as utility buyers are keen to snap up cargoes at the current low spot gas prices.

However, Wood Mackenzie says this trend is about to reverse as three months of lockdown materially reduces LNG consumption. India's demand for imported LNG hence is expected to decline 24% to 4 Mt in the second quarter 2020 compared to the same period last year.

In Europe, the impact of lockdowns on total gas demand will be proportionally less because industry over here uses less gas, while gas-burn in the power sector and from residential offtakers were seen "largely unaffected."

Berlin may extend EEG levy as power prices remain in the doldrums

Wholesale power prices in Germany have fallen to record lows in the wake of the coronavirus pandemic. About 5,000 onshore turbines with 3.7 Gigawatt combined capacity are at risk of being taken offline next year when support from Germany's renewable surcharge (EEG levy) runs out, prompting calls to extend the scheme.

"Due to the coronavirus-induced crash on electricity markets, the operation of installations is hardly economically viable even at the most ideal locations," green energy provider Naturstrom says.

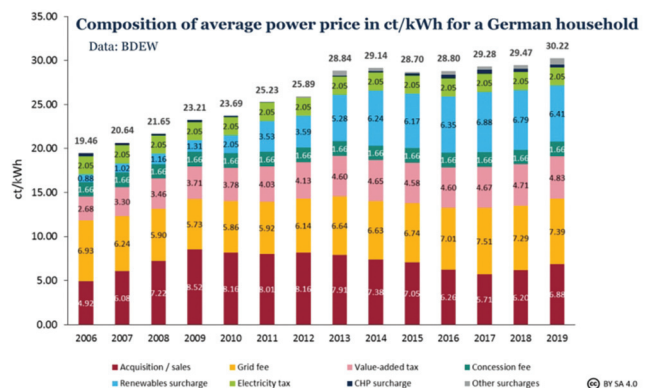
The company wants operators of wind farms to continue receive "a fraction" of the support payments they were entitled to so far, on average 3.2 cent per kilowatt-hour. It

claims such payments would be feasible at a total cost of about 15 million Euros.

Calls for 'safety net'

Lower Saxony, Germany's biggest wind power state, is hence calling for a "safety net" in the form of continued payments for wind turbines. These payments should be granted for turbines reaching the end of their 20-year support period to prevent these installations from halting operations which could significantly reduce Germany's overall green energy capacity.

In an open letter to the Bundesrat, Germany's federal legislative body, the government of Lower Saxony proposes a fixed remuneration for wind turbines of about 4.4 cents per kilowatt hour (kWh) for a maximum of seven years.



"Continued operation of fully functional old wind turbines is much cheaper than replacing them with power plants of any technology before their time," Naturstrom board member Oliver Hummel commented.

Power customers, who pay the surcharge with their power bill, would not face higher costs as long as power prices for onshore wind remain above the fixed remuneration.

Gas to Power Journal

Publisher
Stuart Fryer

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

Senior Technology Reporter
Malcolm Ramsay
Tel: +44 (0) 207 017 3413
malcolm@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

Continued from page 1

"This new structure reflects Eni's pivot to the energy transition," Descalzi said. "With our new plan, we have set our path for the next 30 years. We are creating two new busi-

ness groups [with] specific objectives, but they will also cooperate to deliver on the transition and to provide our customers with the widest range of sustainable products."

OPEC and allies agree further production cuts to stabilize prices

OPEC and its allies agreed on Saturday to extend oil production cuts until the end of July, reducing global output by nearly 10 million barrels of oil a day over the next eight weeks. The measure is meant to stabilize prices above \$40/bbl as demand remains slow to recover.

Saudi Oil Minister Abdulaziz bin Salman told participants at Saturday's virtual OPEC meeting "we all have made sacrifices to make where we are today." He said remained shocked by U.S. oil futures having fallen below zero for a few days in April – a phenomenon that needs to be avoided from repetition.

UAE oil minister Suhail al-Mazrouei called the OPEC's latest move a "courageous decision," but market observers are uncertain if the limited extension of production cuts is deep enough to avoid prices from falling so low that it creates a global financial risk.

Saudis want to keep a lid on prices at \$50/bbl

Saudi Arabia, OPEC dominant member state, and Russia are trying to push up prices meet their budget needs and stabilize them around \$40-45/bbl. At the same

time, they want to avoid driving prices much above \$50/bbl as to not incentivize a rebound in rival U.S. shale production.

"Lower oil prices, if sustained, are bad news for highly responsive US oil companies, but we are unlikely to see an impact on output growth until later in the year," analysts at the International Energy Agency (IEA) commented.

Shale oil and gas fracking in North America is very sensitive to price. Latest projections by the U.S. Government see Brent crude oil prices average \$34/bbl in 2020 and in this event exploration & development spending could fall to less than \$10 per barrel of oil equivalent (boe).

Initial cuts in output not steep enough

Eager to prop up prices, OPEC+ had initially

agreed in April to cut supply by 9.7 million barrels per day (bpd) during May-June. Those cuts were meant to taper to 7.7 million bpd from July to December.

However, these supply cuts proved not steep enough to balance the plunge in demand caused by the coronavirus pandemic. Moreover, there was a lack of compliance of members like Iraq and Nigeria with the reduced production quota. Saudi Arabia is now adamant to enforce compensations in the coming months.

Demand is now recovering, albeit slowly. Though lockdowns to contain the spread of the virus have been lifted in several major economies across Asia and Europe, excess oil production keeps weighing down prices as global aviation remains largely grounded. ■



Henry Hub gas spot prices seen bounce back to over \$3/MMBtu in 2021

U.S. government forecasts see Henry Hub natural gas spot prices stage a swift recovery. In May 2020, prices fell to \$1.75/MMBtu as lockdowns depressed demand, but subsequent steep cuts in production and rising demand in winter are set to push up prices to \$3.08/MMBtu by early 2021.

Analysts at the U.S. Energy Information Administration (EIA) said the subdued demand for natural gas will continue through August and keep spot gas prices around \$2.00/MMBtu.

Come September, however, demand is expected to recover. "Despite EIA's forecast of record end-of-October storage levels, we expects that rising demand heading into winter, combined with reduced production, will cause upward price pressures," the agency said in its latest short-term energy outlook.

Total US consumption of natural gas is expected to average 81.9 billion cubic feet per day in 2020, down 3.6% from 2019. "The decline primarily reflects less consumption in the industrial-sector, which the EIA forecasts will average 21.0 Bcf/d in 2020,

down 8.7% from 2019 as a result of reduced manufacturing activity," analysts noted.

Dry gas production hits fresh record

US dry natural gas production set an annual record in 2019, averaging 92.2 Bcf per day and the EIA forecasts production will average 89.7 Bcf/d in 2020, with monthly production falling from 96.2 Bcf/d in November 2019 to 83.6 Bcf/d in March 2021, before increasing slightly.

"Natural gas production declines the most in the Appalachian and Permian regions," the report reads. In the Appalachian region, low natural gas prices are discouraging producers from engaging in natural gas-directed drilling, and in the Permian region, low crude oil prices reduce associated natural gas output from oil-directed wells.

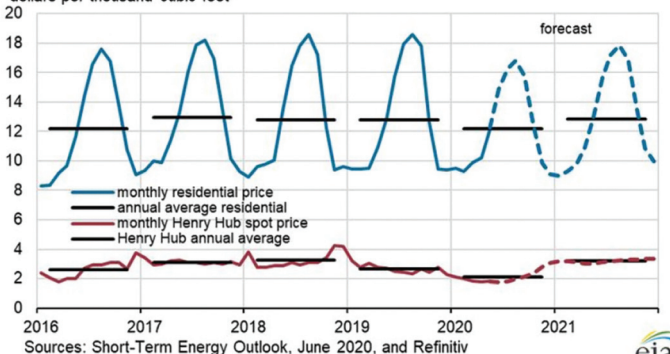
In 2021, analysts see production of dry natural gas in the US average 85.4 Bcf per day. The EIA then expects production to begin rising in the second quarter of 2021 in response to higher prices.

Coal-to-gas switch continues

In the power market, the report forecasts that the share of US utility-scale electricity generation from natural gas-fired power plants will increase from 37% in 2019 to 41% in 2020.

"In 2021, the forecast natural gas share declines to 36% in response to higher natural gas prices," it said. "Coal's forecast share of electricity generation falls from 24% in 2019 to 17% in 2020 and then increases to 20% in 2021." ■

U.S. natural gas prices
dollars per thousand cubic feet



Sources: Short-Term Energy Outlook, June 2020, and Refinitiv

eia

UK market for e-vehicle chargers set for 29% annual growth

Fresh funding by the British government could make the electric vehicle (EV) charge-point market reach a growth rate of 29% in the years through to 2030. Availability of charging stations is vital for a widespread EV adoption, as Britain aims for net-zero emissions by 2050.

As the UK economy reels under the impact of the coronavirus pandemic, pressure is building on the Government to deliver a recovery plan that prioritizes funding for energy infrastructure, notable renewables, energy storage and electric vehicles.

A letter signed by national business leaders argues that funding "projects such as building renovation, offshore wind, electric vehicles, environmental improvements and low-carbon industrial clusters" will boost private investment and create jobs across the UK.

Whitehall has not come forward with concrete spending commitments, but analysts at the consultancy Delta-EE anticipate a growth in the e-vehicle segment – not least because of the UK's legally binding targets, enacted in July 2019, to bring all greenhouse gas emissions to net zero by 2050, compared with the previous target of at least 80% reduction from 1990 levels.

"We expect a significant drop in new vehicle sales in 2020 due to Covid-19 – as much as a 30% reduction. But we believe charge point installations will continue to grow across all segments, backed by renewed government funding," said John Murray, head of electric vehicles at the consultancy Delta-EE.

Removing the lack of e-chargers to boost EV acceptance

To date, the low availability of charge points is one of the key barriers to widespread EV adoption. BP recently revealed through research in France, Germany, Spain and the UK that the availability of charge points was second only to price as the most significant barrier to EV adoption.

Ultra-fast charging is seen as key to EV



uptake with the public. Hence the industry is calling on the private and public sector to work out an implement policy measures to make this a reality.

The majority of charge points, or around 71%, are likely to be still installed at home for years to come. But this figure is forecast to fall by 5% over the next decade as a rising number of EV owners will not have access to off-street parking. Delta-EE expects workplace charging will grow by 7% by 2030, as this option will increasingly substitute home charging.

E-car sales en route to reach record share of overall auto market

Though the coronavirus crisis has badly hit the car industry, sales of electric vehicles jumped 90% in the first quarter of 2020 with more than 145,000 vehicles sold worldwide. The International Energy Agency (IEA) says the e-car segment will have "a much better year than the rest of the industry."

Electric cars are gradually becoming competitive in some countries on the basis of the total cost of ownership (which includes fuel expenses as well as purchase costs), even if the recent plunge in oil prices has eroded that somewhat. But analysts cautioned "the high upfront investment for consumers – electric car prices are still higher than those of conventional cars," meaning the electric car

market still relies on government support.

New e-car models, plus financial incentives

Concerning buyers of electric cars are increasingly spoiled for choice. Around 100 new electric car models will become available over the course of 2020; hence, IEA analysts say it is "quite possible that global electric car sales in 2020 will continue their

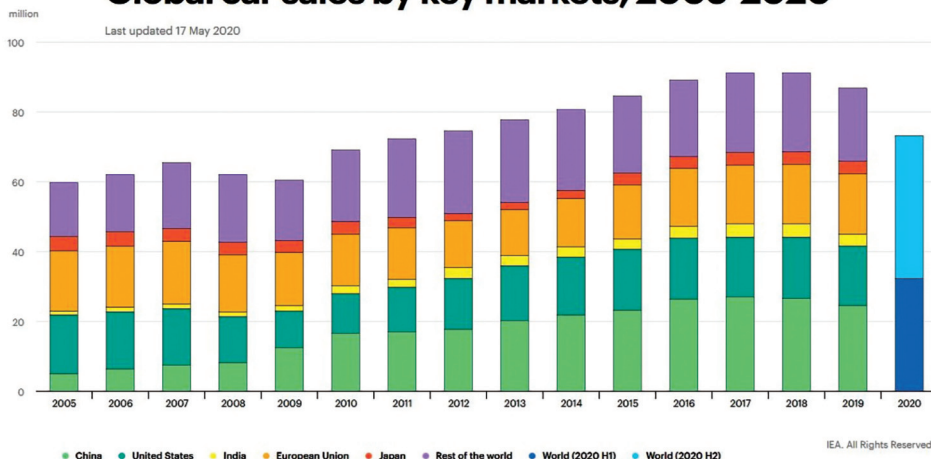
upward trend."

The Paris-base agency estimates global electric car sales to slightly exceed 2019's total to reach more than 2.3 million and achieve a record share of the overall car market of more than 3%. This brings up the total number of electric cars on the road worldwide to a new record of about 10 million, around 1% of the global car stock.

Today, electric cars in many markets are subject to a host of incentives and regulatory efforts. Most global electric car sales involve a financial incentive from governments that often takes the form of direct purchase subsidies or tax reductions.

Concerns that the coronavirus crisis might prompt national government to relax fuel efficiency standards have not happened so far. China announced it would extend the purchase subsidies that it had originally planned to discontinue this year until 2022 – albeit at a slightly reduced rate. In addition, the typical electric car buyer in many countries still tends to be wealthier than the average consumer and might be less affected by the economic downturn.

Global car sales by key markets, 2005-2020



Black & Veatch helps Intermountain Power Plant transition to hydrogen

Black & Veatch has been selected by the Intermountain Power Agency (IPA) as owner's engineer to help transition the Intermountain power plant to green hydrogen. IPA plans to retire the coal-fired facility and replace it with an 840 MW gas combined-cycle power plant in 2025, capable for hydrogen co-firing.

Hydrogen emits only water when burned and if this hydrogen is produced from via electrolysis from solar PV or wind power, the process results in a 100% carbon-free fuel source. IPA is striving to minimize its carbon footprint across Utah, Nevada and California.

Plan to convert IPP to 100% hydrogen by 2045

Black & Veatch was chosen for the Intermountain Power Project (IPP) Renewal Project due to its long-standing relation with the operator, having designed the original coal-fuelled IPP in the early 1980s. The conversion will see the coal power unit get replaced by a gas-fired unit, driven by two single-shaft combustion turbines in combined-cycle mode.

These turbines will be commercially guaranteed capable of blending 30% green hydrogen at start-up, with plans to increase hydrogen utilization to 100% by 2045.

In addition to installing the two combined cycle units at the Intermountain power plant, Black & Veatch will support expansion of existing switchyards, new HVDC converter stations, and conversion of the two existing 900MW generators into synchronous condensers.

Flexible dispatch to respond to renewable swings

The hydrogen co-fired CCGT s being designed with high thermal efficiencies and an operational flexibility that will allow it to quickly ramp up and down in response to California's challenging "duck curve." Hence, it can be dispatched for baseload power, to follow load and renewable generation swings, or in response to long-duration energy storage needs that far exceed current battery capabilities.

Going forward, the IPP Renewal Project envisions development of long-duration hydrogen storage in geologic salt caverns that are adjacent to the power plant. If feasible, this would result in a fully dispatchable zero-carbon energy resource capable of providing highly reliable and resilient electricity on demand.

"Using renewable energy in the form of green hydrogen will help California meet its zero-carbon state goals for 2045," said Brian Sheets, project manager with Black & Veatch's power business.

"The location in central Utah is significant," he stressed, explaining that the local geology allows for storing excess hydrogen in large underground caverns. Moreover, existing regional transmission infrastructure will serve as a hub for collecting and transporting renewable energy to southern California. ■



Bird's eye view of Intermountain Power Plant in Utah

NEWS NUDGES

MHPS expands Browning's role to Americas CEO

Mitsubishi Hitachi Power Systems Americas has appointed Paul F. Browning to an expanded role as Chief Regional Officer of the Americas and co-Chief Regional Officer of Europe, the Middle East and Africa (EMEA). As CEO of the Americas, Browning will lead two global businesses headquartered in the United States and three regional businesses in North and South America.

Gazprom takes FID on Semakovskoye field

Russia's Gazprom and RusGazDobycha has reached a final investment decision (FID) to develop the Semakovskoye gas field in the Yamal-Nenets region. The large field holds estimated recoverable gas reserves of over 320 billion cubic meters (bcm) and will be tapped through 19 wells. According to Gazprom's project schedule, construction will commence this autumn with a view to bringing the field into commercial production in 2022.

ACWA Power buys stake in Hair Electricity Production

ACWA Power has agreed to acquire 4.99% of Samsung C&T shares in Hajr Electricity Production Company (HEPC), the project vehicle that operates the Qurayyah Independent Power Plant (IPP) in Saudi Arabia. With the purchase, ACWA increases its interest in HEPC to 22.49%, becoming the second largest shareholder after Saudi Electricity Company (SEC) which owns a 50% stake.

NamPower to invest \$575m on grid expansion

Namibia's state-owned utility NamPower is planning to spend \$575 million over the next three years in upgrading and extending its power transmission infrastructure. Namibia imports 60% of its total electrical energy requirement, primarily through bilateral contracts from South Africa's Eskom and to a lesser extent, the Southern Africa Power Pool (SAPP). ■

CNTIC receives maiden cargo for Thanlyin LNG-to-Power project

China National Technical Import & Export Corp. (CNTIC), together with VPower Group, has welcomed an inaugural cargo at the new-built jetty adjacent to their Thanlyin gas power plant (350 MW). Petronas delivered the cargo directly to the FSU – not to Myanmar's land-based Yagon LNG terminal.

Malaysia's state energy company Petronas had said in a statement it would deliver the cargo directly to Myanmar, giving rise to rumours the tanker would be headed from Bintulu LNG in Malaysia's eastern state of Sarawak to the port of Yangon. Instead, it did berth directly at the new jetty and regasification unit, built just meters from the gas-fired Thanlyin power plant (see map).

The maiden cargo is the first of a series of LNG deliveries from Petronas to CNTIC and VPower Group under a sale and purchase agreement, signed in early 2020 to ensure a stable fuel supply for three new gas power projects in Myanmar.

A second cargo, loaded the tanker Golar Kelvin, left Bintulu LNG on Thursday last week, according to ship tracking data. However, it is unclear when it will arrive at Thanlyin given that the tanker with the maiden cargo had been waiting in the Gulf of Martaban off Myanmar's coast for almost a month before entering Thilawa port, the site of Thanlyin LNG.

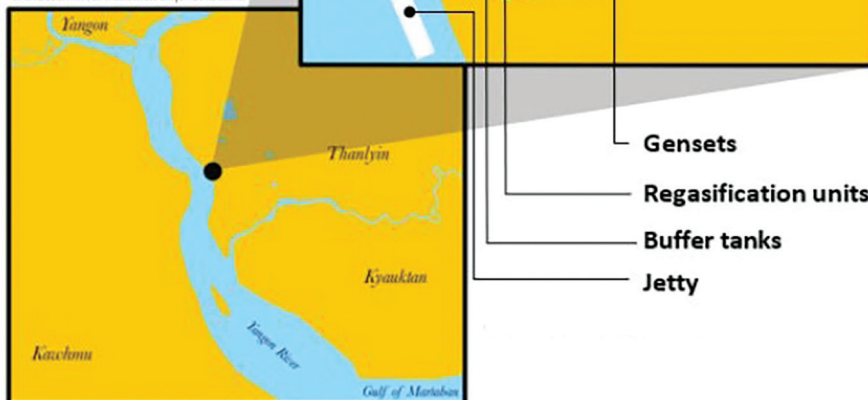
Delayed cargo delivery slows down power project

CNTIC and VPower Group are fast-tracking construction of the 350 MW power plant in bid to avoid the recurrence of blackouts this summer. According to the government tender notice, developers were given seven months to complete the project but commissioning is now running two months late – possibly due to the delayed delivery of fuel.

The tender initially envisaged to source gas for the Thanlyin power plant via a floating storage and regas unit (FSRU), with electricity meant to be generated on floating

350MW Thanlyin LNG-to-Power Project

© LNG Journal. For illustration only. Not to scale.



power barges at Thilawa port.

Later, that plan was changed to an on-shore, engine-based power unit with an associated floating storage unit (FSU). The Thanlyin consortium consequently resorted to importing LNG via small LNG carriers with a shallow draught that can transport the cargo directly to the jetty and offload it onto the FSU.

Emergency power projects meant to mitigate risk of blackouts

Swift start-up of the Thanlyin LNG-to-Power is vital to avoid a repeat of power shortages, and potential blackouts. During the past summer, the Yangon area of the country was subjected to power cuts of up to six hours a day and World Bank warned the country's electricity demand is growing three times as fast as available capacity.

With general election coming up in November, the government wants to avoid a repeat of the dire situation of blackouts this

year; hence it launched tenders for three emergency power units. Once up and running, these Wärtsilä engine-driven gas power plants can operate baseload or in load-following mode to provide balancing power for Myanmar's rising share of wind and solar power.

"Endeavouring to deliver the much-needed electricity to millions of households in Myanmar, we set stringent requirements on product efficiency, reliability and safety, and also the suppliers' capability of timely delivery," said VPower Group's chief commercial officer, Earnest Cheung. "Wärtsilä has proven in previous projects that it can be relied on to deliver on a fast-track schedule, and the high efficiency of its gas engine solutions is what is needed here."

Zeya and VPower build further four units

Together with Zeya Associates, VPower Group is building another four emergency power projects in Myanmar, after having won a competitive tender in mid-October 2019.

The LNG-fuelled power units are being built in the town of Kyaukphyu, Rakhine state, as well as in Thanlyin and Thaketa, Yangon state. VPower also secured a 20 MW project in Kyun Chaung that will be supplied by pipeline gas by Myanmar's state pipeline company.

All these emergency power projects are due to start commercial operation in time for peak summer demand -- and way before Myanmar's upcoming general parliamentary election which is likely to be held in November.



Petronas' Bintulu LNG complex in Sarawak, Malaysia

Maxim Power commissions gas peaking plant in Alberta, Canada

Calgary-based Maxim Power has commissioned the H.R. Milner Generating Station in Grande Cache, Alberta, a 204 MW open-cycle gas peaking power plant. Construction works were completed in just 16 months, with 21 months from equipment procurement to project completion.

Engineering, procurement and construction (EPC) works were carried out by BPC Milner, a joint venture of PCL Construction and Black & Veatch. During the construction phase, the project has created over 120 jobs.

Operating at full capacity since mid-May 8, the M2 peaking power plant is the largest simple-cycle power unit in Alberta and a milestone in the province's transition away from coal generation.

Maxim specified it built the M2 power project with capital expenditure of C\$147 million before borrowing costs, and is considering increasing the plant's capacity from currently 204 MW to about 300 MW by converting the plant into combined-cycle mode.

New M2 block replaces Milner-1 coal power unit

The new M2 gas peaking power unit has been built adjacent to the HR Milner Generating Station -- a 150 MW dual fuel steam turbine generator capable of burning both natural gas and coal. Milner 1 is currently permitted to run at a 9% capacity factor until December 31, 2029.

As a result of commissioning M2, the



View of the Milner power plant near Grande Cache, Alberta.

mostly coal-fired M1 has been laid up with the option to restart at a later date as a stand-alone unit or in combined-cycle operation with Milner 2.

Power produced from both the M2 and the M1 unit is sold to the Alberta Electric System Operator (AESO), the operator Maxim Power specified.

As one of Canada's largest independent power producers, Maxim is focussed entirely on power projects in Alberta. The utility stressed the M2 and M2 power unit generate a stable revenue stream for the Grande Cache regional government and stable electricity supply to local businesses. ■

Siemens supplies power gen equipment to Indonesian refinery

PT Pertamina, better known as Persero, has contracted Siemens to supply a range of compression and power generation equipment for the Balikpapan refinery, situated on Indonesian island of Borneo. The refinery will have a residual fluid catalytic cracker with a capacity of 90,000 barrels per stream per day (bpsd).

The expansion will increase the Balikpapan refinery's output from 240,000 barrels per day (bpd) to 360,000 bpd and enable the facility to produce Euro-V standard fuels. To that end, the development plan for the refinery also foresees the installation a liquefied petroleum gas (LPG) sulfur removal unit; a propylene recovery unit; and an 80,000 bpsd middle distillate hydrotreater.

All the reciprocating compressors will be manufactured in Siemens' Naroda Gujarat plant in India, while the hot gas expander will be built in Olean, New York, the steam turbines in Görlitz, Germany, and the gas turbines in Finspong, Sweden. Installation and commissioning of the equipment are slated for 2022. ■

JFE Steel selects GE to improve efficiency at Chiba power plant

Japanese power producer JFE Steel has selected GE to perform a high efficiency (HE) upgrade at a GT26 MTL2 gas turbine installed at the Chiba power plant. Works will be carried out in Baden, Switzerland, and then the turbine will be shipped to Japan for an operational start around May 2021.

The deregulation of the Japanese power and gas market has caused a shift in the energy landscape and conjured up fierce competition between incumbent energy provider and market entrants. Independent power producers like JFE Steel are rushing to modernize their ex-

isting power plants to optimize operations and reduce fuel costs.

"The industry competition is intense, with a lower barrier to entry for new power generation players," said Satoshi Ogino, manager in the Energy Technology Section of JFE's East Japan Works. He singled out GE as "best partner to work with to expand the business opportunity for JFE."

Follow-up order

For GE, the latest order win for a HE upgrade of a Chiba gas turbine comes on the heels of a similar upgrade at the Chiba power plant. Two years ago, the American manufacturer carried out a MXL2 gas turbine upgrade at a GT26 (former Alstom) turbine installed at Chiba, effectively increasing

its output by up to 60 MW.

This year, the operator JFE Steel opted for GE's latest GT26 HE technology to further improve the plant's efficiency, increase output and improve part-load efficiency. The HE-upgrade will increase the plant's output by 10 MW, while raising efficiency by more than 1% to similar levels as a F-class combined cycle gas turbine.

The technology behind the GT26 HE upgrade, first introduced in 2019, is partly derived from GE's flagship HA gas turbine as well as breakthroughs on major component of the GT26 frame—turbine, compressor and combustor. Combined, these enhancements "take turbine performance to a new level," GE claims, decrease fuel costs while increasing full-load output and reliability. ■



GT26 turbine installed at JFE's Chiba power plant in Japan

LNG Journal & Gas to Power Journal Subscription Package

The journals' comprehensive coverage is dedicated to the entire gas-value-chain. In addition to our LNG Journal and Gas to Power Journal Daily newsletters, each platform provides exclusive, accurate and up-to-date news and analysis divided in the following sector-focused publications:

- ➔ LNG Journal - Monthly issues
- ➔ Gas to Power Journal - Daily e-newsletter + PDF
- ➔ Gas Power Tech Quarterly - Quarterly PDF
- ➔ LNG Unlimited - Weekly magazine + PDF
- ➔ LNG Shipping News - Fortnightly e-newspaper + PDF
- ➔ LNG North America - Bi-Monthly e-newspaper + PDF
- ➔ LNG China - Bi-Monthly e-newspaper + PDF **NEW!**
- ➔ LNG Fuelling - Quarterly e-newspaper + PDF



United Kingdom
Europe and Africa
Asia and Americas

GBP 750
EUR 925
USD 1150

**Multiuser options under request* **new subscribers only*

For further information on subscribing please contact us at venter@lngjournal.com or + 44 20 7253 2700