

LNG China

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LNG rather than late renewable built-out to blame for China's soaring energy prices; IEA says

The latest spike in natural gas and electricity prices in China was caused by lower global LNG production and fast-growing energy demand as the Asian powerhouse was the first country to emerge from the Covid-19 pandemic, the International Energy Agency (IEA) said. But analysts are critical when it comes to Beijing's ambitions to curb CO2 emissions as this would require massive green energy investment.

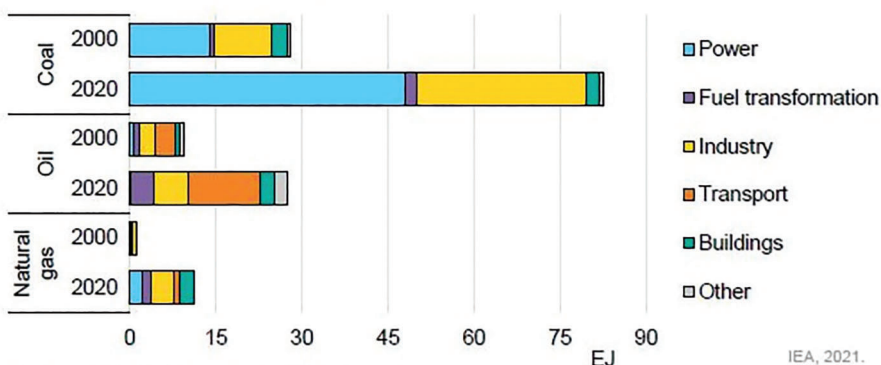
Coal is still king in China's energy mix so far, but things are about to change. Today, over 60% of the country's electricity and heat generation is derived from coal-fired power stations. Natural gas demand has seen a brisk rise since 2015, largely thanks to strong policy support particularly in the electric power sector.

But China still relies heavily on imports, which met over 70% of its consumption of oil and 45% of gas in 2020. Hence, the latest rise in global oil and gas prices directly translates into soaring energy costs for China's state-owned importers: CNPC, Sinopec and PetroChina.

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Fossil fuel consumption by sector in China



Notes: Power sector includes power and heat generation.

IEA, 2021.

Beijing may ease import restriction on Australian coal to alleviate power crunch

To avert an energy crisis, the Chinese government had to impose large-scale restrictions on electricity use during the final two weeks of September. Wood Mackenzie believes Chinese authorities could allow customs clearance of stranded Australian thermal coal, easing import restrictions to boost the availability of thermal coal supply to preempt further power crunches this winter.

At least 18 provinces have implemented demand shedding over the past weeks, including China's industrial power houses Guangdong, Zhejiang and Jiangsu, as well as coal-rich inland regions such as the Inner Mongolia.

Booming electricity demand, strict implementation of environmental targets, and above all, record high prices for imported coal had caused the latest energy shortages.

"China's higher power demand growth has pushed up coal prices.

We estimate that over 50% of this year's power demand growth will have to come from coal-fired power," Wood Mackenzie research director Alex Whitworth commented. Today, coal provides about two-thirds of China's electricity supply and unsurprisingly, the National Development and Reform Commission (NDRC) reported that



Coal is being loaded on a dry bulk carrier, destined for China

thermal power generation (mostly from coal) grew by 12.6% in the first eight months of 2021.

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Cheniere signs SPA with China's ENN Group, first cargo in July 2022

Cheniere Energy, the largest US liquefied natural gas exporter from plants at Sabine Pass in Louisiana and Corpus Christi in Texas, has signed a sale and purchase agreement with ENN Group, the leading non-state energy company in China with LNG and growing city-gas assets.

The ENN's LNG marketing unit, based in Singapore, will purchase 900,000 tons per annum of LNG from Cheniere Marketing on a free-on-board basis for a term of 13 years beginning in July 2022.

The purchase price for the LNG is indexed to the US benchmark Henry Hub price, plus a fixed liquefaction fee. Acting as guarantor of the agreement will be the natural gas units in the ENN Group, which owns the Zhoushan LNG import terminal in the Zhejiang Free Trade Zone in eastern China.

"We are pleased to announce this long-term LNG contract with ENN, a major player in China's rapidly growing natural gas mar-

ket, and we look forward to a successful, long-term relationship with ENN as a customer," said Jack Fusco, Cheniere's President and CEO. "This SPA underscores the strength of the global LNG market, particularly in China, and highlights Cheniere's role as a leading global supplier." Fusco noted that the deal further advanced Cheniere's commercial momentum in anticipation of the final investment decision expected in 2022 on expanding the Corpus Christi facility.

Since the start of 2021, ENN has acquired more exclusive operating rights in four more city-gas projects, the Ruyang Industrial



ENN's Zhoushan LNG terminal in China

area in Henan province, Lvsigang Town in Jiangsu province, the Lantang industrial new town in

Guangdong province and the industrial area of Chizhou in Anhui province. ■

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Seaborne coal price soars

The seaborne thermal coal price marker for China, the Qinhuangdao 5,500, has increased to RMB1,500/ton, equal to US\$230/ton, even as the peak summer season ended in September, more than twice the price in the same period last year. As a result, the coal price delivered to power stations is now around US\$11 per million British thermal units (MMBtu), a price level more commonly associated with expensive LNG imports.

As coal prices continue to rise, Chinese power producers are left in a limbo. The country's hybrid system of selling coal power to the grid around a regulated band

means costs cannot be passed through to consumers. Although most coal generators are not fully exposed to spot thermal coal prices, over 90% of power plants have been loss-making so far this year, Whitworth explained.

Easing import restrictions

To alleviate the crippling power crisis, there are signs that the Chinese government will be softening its stance on stranded Australian coal: Chinese importers have told Wood Mackenzie that they believe they will now be allowed to clear Australian coal through customs. Most of this coal has already been unloaded into stockpiles at ports but has previously not been allowed to clear customs. Customs authorities have yet to officially confirm this with owners of the cargoes.

"We estimate around 5 million ton (Mt) coking and 3 Mt of Australian thermal coal stockpiled in Chinese ports that could be cleared into China's domestic market," said WoodMac's principal analyst Rory Simington.

"The quantity of stockpiled thermal coal is not sufficient to

have a significant impact on prices in China's domestic market. Coking coal's quantity is more significant to China's domestic market and could lead to easing in domestic price."

Rise in domestic coal supply

Additional supply from Australia and more domestic coal from the Inner Mongolia autonomous region as well as Yulin city of Shaanxi are expected to moderate the current market tightness to some extent. The coal inventory of key Chinese power generation companies (Gencos) dropped to 49 Mt by the end of August which is roughly 30 Mt lower than last year.

"As gencos suspended traditional restocking in September this year, we expect the gap of inventory in September or early October to widen to 40 Mt or even more year-on-year. The increasing supply will help gencos to increase their inventory gradually," WoodMac's managing consultant Yu Zhai said, though he does not expect the Qinghuangdao (QHD) price to slump as there are no significant change on fundamentals.

Looking ahead, analysts doubt

that the intense cuts in electric power supply will continue as Beijing is busy seeing up a more orderly system of chronic demand shedding. The aim is to maintain stable energy supply high-value economic growth sectors including high-tech manufacturing and services, while cutting coal burn in energy-intensive sectors.

Keeping a lid on demand

"Chronic but managed demand shedding could impact about 5% of power demand in the last quarter of the year, or about 1.2% of annual demand. So rather than hitting 11% or higher power demand growth in 2021, we expect annual electricity demand to be kept at around 10% – most of which has already happened," Withworth said.

The central government is taking steps to boost domestic coal supply and is expected to make some upwards adjustments to regulated on-grid coal tariffs and end-user tariffs later in the year to ease pressure. "But utilities will still lose a significant amount of cash and the government will still be in effect subsidizing power costs for consumers including industry," he concluded. ■

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Publisher
Stuart Fryer

Editor
Anja Karl
Tel: +44 7733 684682
anja@lngjournal.com

Layout
Vivian Chee
Tel: +44 (0) 20 8995 5540
chee@btconnect.com

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Among the reasons for the spike in European gas prices are a strong economic rebound following a long and cold winter that drained stockpiles, tighter-than-expected gas supply, and other weather-related factors including lower-than-usual availability of wind energy in recent weeks, IEA analysts specified.

“Broader global gas market dynamics have also had an effect, including strong cold spells in East Asia and North America in the first quarter of this year followed by heat-waves in Asia and drought in various regions. Meanwhile, unplanned outages and delayed maintenance have cut into LNG production,” added the statement signed by Executive Director Fatih Birol. “Recent increases in global natural gas prices are the result of multiple factors, and it is inaccurate and misleading to lay the responsibility at the door of the clean-energy transition,” he argued.

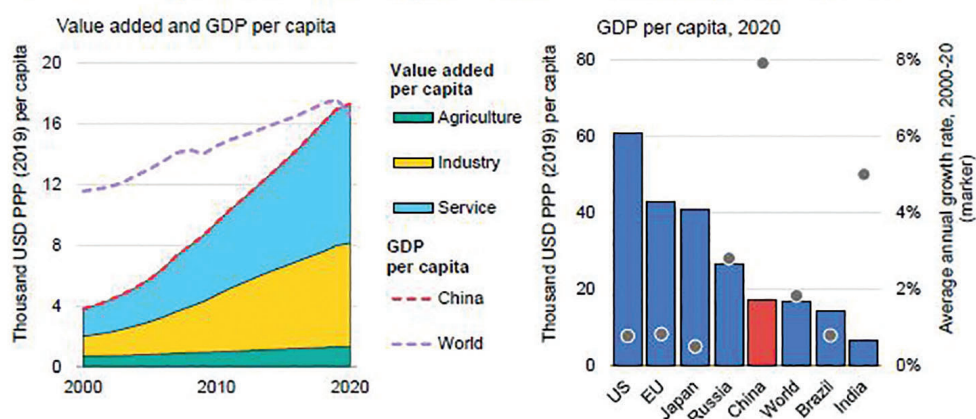
Winter 2021-22: a ‘stress test’ for the system

However, the IEA’s latest statement on global LNG and gas price rises omits any hint that the anti-hydrocarbon and poor gas storage policies of most European Union governments and those of the UK government may have partially caused current shortages in natural gas supply. Still, the IEA head said he believes only that the

coming winter would be a “stress test” for the system. “Going forward, the European gas market could well face further stress tests from unplanned outages and sharp cold spells, especially if they occur late in the winter,” said Birol.

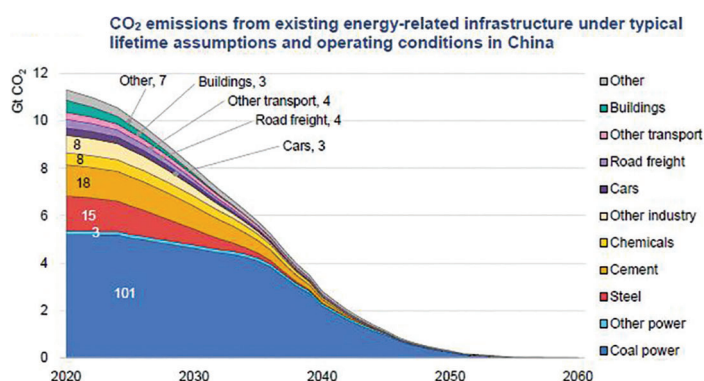
China, meanwhile, is seen to have “a clear pathway” to build a more sustainable, secure and inclusive energy future even as it remained the world’s largest carbon emitter, IEA analysts commented. “China’s remarkable economic growth over the past four decades has lifted hundreds of millions of people out of poverty and made China a leader in many industries, but it is now accounting for one-third of global CO₂ emissions,” the agency’s latest country report states.

Economic and development indicators in China and selected countries



IEA, 2021.

Notes: Gross domestic product (GDP) is expressed in purchasing power parity (PPP) terms and constant 2019 values.
Sources: IEA analysis based on UNDESA (2019); Oxford Economics (2020); IMF (2020a, 2020b); World Bank (2021)



IEA, 2021.

Ambitious goals require massive investment

Today, China’s emission of 33.3% of the global total compares with the less than 1% of global emissions blamed on nations like France and the UK. Going forwards, China is aiming to reach a peak in its CO₂

emissions before 2030 and carbon neutrality before 2060.

Though IEA analysts are convinced that “China has the means to achieve these goals and even accelerate its clean energy transition further, they caution that realizing these goals would mean Beijing would have to incentivize or partially fund a massive expansion of the use of green energy sources like solar, wind power and hydrogen. Major improvements in energy efficiency would also be required, as well as lower emissions from China’s existing stock of fossil-fuel power plants and industrial facilities.

“With its strong track record in clean energy technologies, China has the capabilities to accomplish an accelerated transition that would put its CO₂ emissions into marked decline after 2025, falling to almost 20% below their current level by 2030,” IEA analysts concluded.

Table 1.1 Selected economic and energy indicators for China

Indicator	2000	2010	2020	Change 2000-2020
GDP (USD billion PPP [2019])	4 790	12 747	24 410	+410%
Share of world GDP	7%	13%	19%	+12%-points
GDP per capita (USD PPP [2019])	3 773	9 479	17 291	+358%
Population (millions)	1 269	1 345	1 412	+11%
Total primary energy demand (EJ)	49	107	148	+200%
Primary energy demand per capita (GJ/capita)	39	80	104	+170%
Import dependency (%)	4%	15%	23%*	+19%-points
Energy sector CO ₂ emissions (Gt CO ₂)	4	9	11	+218%
Energy intensity (MJ per USD PPP)	10.2	8.4	6.0	-41%
Carbon intensity (g CO ₂ /USD PPP)	655	616	412	-37%

* 2019 values.

Notes: GDP = gross domestic product; PPP = purchasing power parity. Import dependency is calculated based on the difference between imports and exports relative to total primary energy demand.



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Oil & Gas Capex surges over 30% in Asia on quick Covid-19 recovery

Capital expenditure into oil & gas ventures has surged 30.4% in Asia as the region is staging a fast rebound from the coronavirus crisis. Higher commodity prices unlock greater flexibility in spending, Fitch Rating said, but warned an uneven uptake in vaccinations will leave the recovery in fuel demand tepid in some places.

Uncertainty abounds about future energy demand, as economies around the globe emerge from the pandemic at various speeds and with a changed demand structure. According to Fitch forecasts, “an uneven global vaccination drive will see some markets just begin to recover fuel consumption by late 2021, leaving the market well below pre-pandemic levels into 2022.”

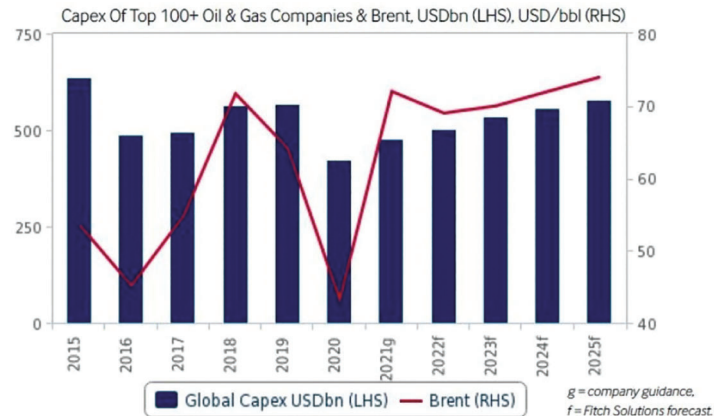
Globally, analysts see oil & gas-related Capex rise by 12.8% to \$447 billion this year as higher commodity prices unlock greater flexibility in spending. However, the growth is spread uneven as oil majors slashed Capex by 3.6% while spending across North America as receded by 2.7%. Europe and Africa, in contrast enjoy a

20.1% rise of oil & gas-related capital spending followed an 18.8% growth in Latin America.

Private investors slash Capex

Risks to the upside for oil and weakened demand growth in 2022 will, in Fitch Rating’s view, see prices cool over the course of next year. Uncertainty about future strong oil prices has prompted some majors to slash Capex into upstream ventures and turn to regulated downstream projects and renewable energy sources instead.

“Value over volume is a re-occurring strategy expressed by companies in our analysis,” Fitch analysts noted, explaining most publicly listed firms have been hesitant to increase expenditure



in light of uncertainty about the global economy and fuel demand impacts on prices.

NOC investment fills the gap

Most National Oil Companies (NOCs), in contrast, plan to in-

crease output in the coming years as they expect a retreat in upstream investment will created the potential for a supply shortfall in the medium terms. Coming in early would give them competitive edge if and when the world’s hunger for hydrocarbons returns. ■

LNG supply risk keeps growing in Europe and Asia

A colder-than-usual winter in Europe as well as in Asia would mean there is insufficient gas available to meet demand. “A cold European winter could boost heating demand up to 20 billion cubic meters (bcm), while a cold Asian winter could add up to 7.5 million tons (or 10.5 bcm) of LNG demand across China, Japan, South Korea and Taiwan. This would take 10.5 bcm in LNG imports away from the European market,” explained Wood

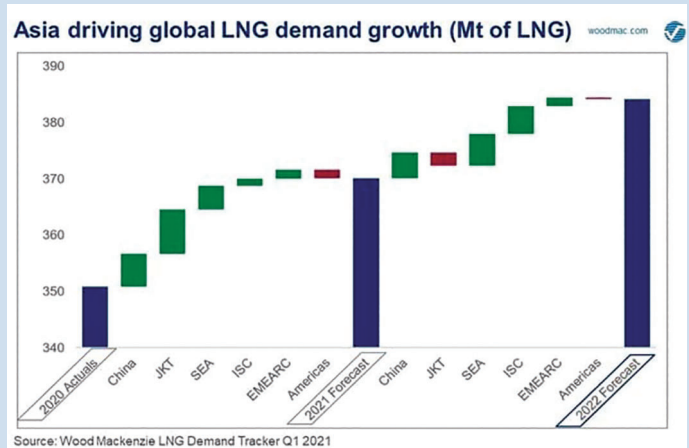
Mackenzie’s vice president, gas and LNG research, Massimo Di-Odoardo.

Still, Wood Mackenzie assumes that Gazprom will fully honor its ship-or-pay agreements on all key gas interconnectors to Western Europe which would leave around 29 bcm of gas in storage by the end of March. According to Wood Mackenzie findings, this would be “below the average level of the past five years, but comfortably above record lows.”

To that end, Gazprom will need to use all its existing capacity - Nord Stream, Yamal-Europe, Turkstream and Ukraine - up to the ship-or-pay agreements. In this case, Europe still needs some 58 Bcm of gas in storage to meet peak winter demand. But with currently only 29 bcm of gas in storage, there is a risk storage levels could drop to zero. If this plays out, Europe would be wholly dependent on Russian



Massimo Di-Odoardo



Asia is driving global LNG demand growth

flows above existing capacity.

Europe storage levels could fall to zero

This winter could be one like no other. A cold winter in both Europe and Asia would risk European storage levels dropping to zero, leaving Europe dependent on timely approval of Nord Stream 2 or Russian willingness to ship

more gas through Ukraine if it is to avoid demand curtailments.

“A cold winter in Russia would limit Gazprom’s ability to support additional exports through both Nord Stream 2 and Ukraine - although that has never been likely,” Di-Odoardo said, suggesting: “The sky could be the limit for European gas prices this winter.” ■



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Russia keeps shipping LNG to China via Northern Sea Route through October

Shipments of Russian LNG via the Northern Sea Route keep rising and continued well into October this year, thanks to mild autumn weather, amid China's unwavering hunger for energy imports. Russian authorities said that cargo transported to Asia along the Northern Sea Route in January-September 2021 amounted to 24.22 million tons, a 3.5 percent rise year-on-year.

"Liquefied natural gas and gas condensate accounted for 60% of the total cargo volumes," said the Russian Federal Agency for Maritime and River Transport (Rosmorrechflot) and with reference to the Northern Sea Route Association (NSRA), established at the initiative of ROSATOM.

Throughout October, LNG shipments have been continuing on the Northern Sea Route with the 172,000 cubic meters capacity "Vladimir Voronin" which delivered a cargo to a Chinese terminal on October 13.

The shipment from the Yamal plant in northern Siberia, operated by Novatek, is for delivery to the Shenzhen Diefu terminal in the southern Chinese province of Guangdong, operated by China National Offshore Oil Corp.

"It is noted that with the appearance of the new and young types of ice, the annual processes of ice formation has begun in the polar regions of the NSR water area," the Rosmorrechflot report reads. "Ice massifs have remained around the Severnaya Zemlya archipelago and Long Straits, as well as on the approaches to them," it added. Other recommended routes of the NSR are free from ice.

Iceberg threat

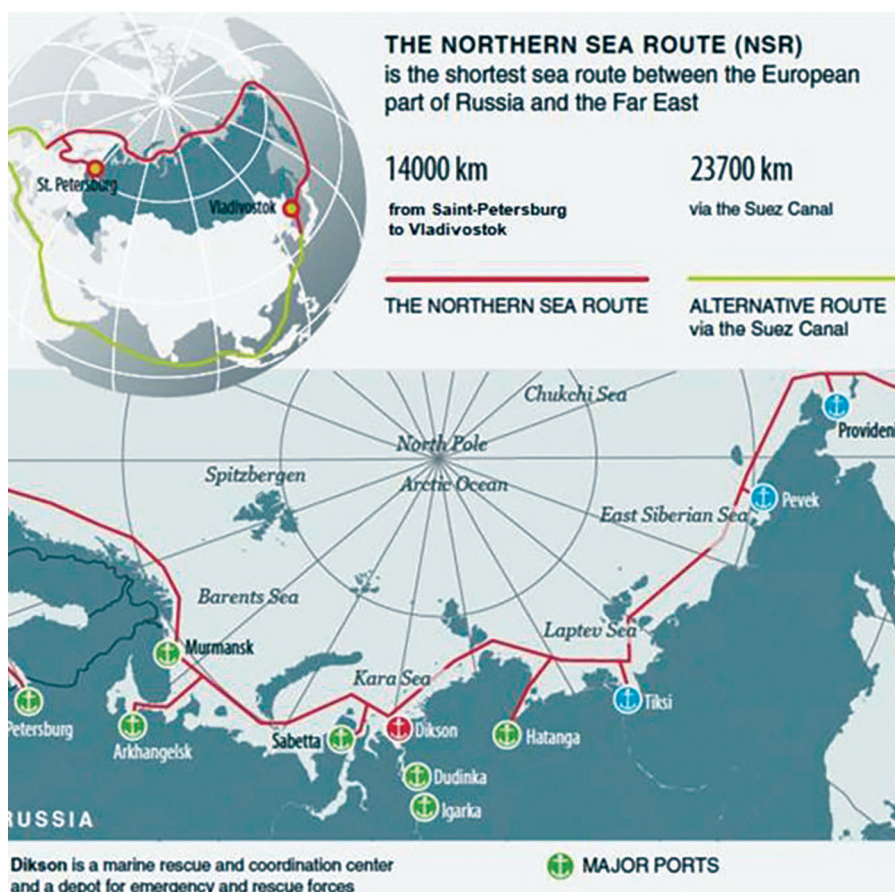
"There is an iceberg threat near Cape Zhelaniya, in the Vilkitskiy Strait and on the approaches to

it," warned Rosmorrechflot. The report stated that the Russian ice-breaker fleet did not work in the NSR waters during September 2021.

"A total of 1,052 permissions for navigation in the water area of the NSR have been issued in the report period and that is 15.3% more than in the same period of 2020," said the report.

"There are 144 vessels under foreign flag (two permits less than in 2020) in the total number," it added.

At the start of the January-September 2021 period Sovcomflot, the Russian shipping line with an overall fleet of 145 vessels, completed the first LNG transit in the month of January when the carrier, "Christophe De Margerie", reached Cape Dezhnev in Russia's Far East on January 16 to complete the earliest annual eastbound voyage carrying a cargo



on the NSR.

The "Christophe De Margerie", with 172,600 cubic meters of capacity, had lifted a cargo from the Yamal plant and delivered it on January 25 to the Pyeongtaek import terminal in South Korea. Having reached the Bering Strait in 11 days with an average safe speed of 9.6 knots, the "Christophe de Margerie" was subsequently followed by a similar LNG tanker, the

172,600 cubic meters capacity "Nikolay Yevgenov", owned and operated by Teekay LNG.

Rosatom, the ice-breaker operator, has also announced plans to start a voyage of the first mid-sized Arctic container ship along the Northern Sea Route in 2025. The Russian operator said it expected to launch a tender for the design of new Arctic container ships by the end of 2021.

Alaska LNG stirs

Alaska Gasline Development Corp. (AGDC), the state-run body and owner of the Alaska LNG project which has been dormant because of the high development costs, has released a consultancy report detailing the environmental benefits achieved by building

the export plant utilizing North Slope natural gas to replace high-emissions coal in Asia. "Alaska has some of the world's strictest environmental laws, and Alaska natural gas should be a key component of any realistic energy roadmap," said Alaska Governor Mike Dunleavy.

AGDC has all its regulatory permits covering three liquefaction Trains with 20 million tons per annum of capacity, two 240,000 cubic metres capacity storage tanks as well as a 807-mile natural gas pipeline from Prudhoe Bay to Nikiski on the Kenai Peninsula. AGDC President

Frank Richards said the justification for Alaska LNG was a "compelling" one. "This timely report uses respected and transparent methodologies to quantify the value of replacing high-emissions energy sources in foreign markets with the low-emissions at Alaska LNG," added Richards.

Chinese LNG Demand Outlook

There were 2.29mmt of LNG on the water with destinations in China according to market visibility at the time of writing on 29 October. These cargoes had an estimated delivery horizon of 30 November. Two cargoes totalling 0.20mmt were broadly headed for China but still had to declare destination terminals. A total of 0.52mmt of these inbound cargoes were derived from the United States via Sabine Pass LNG, Cameron LNG and Freeport LNG.

Most LNG cargoes still in transit at the time of writing and with scheduled arrivals at specified ports in China were due to arrive in North China led by Caofeidian LNG. This was followed by the Tianjin LNG terminal in the greater Beijing/Tianjin area. Concurrently, the South China region was looking to receive roughly 0.42mmt, led by 0.29mmt headed for the Guangdong Dapeng LNG terminal. LNG demand in East China was a close third with 0.40mmt currently expected to arrive. Apparent demand in East China was led by the Zhejiang LNG terminal at the time of writing.

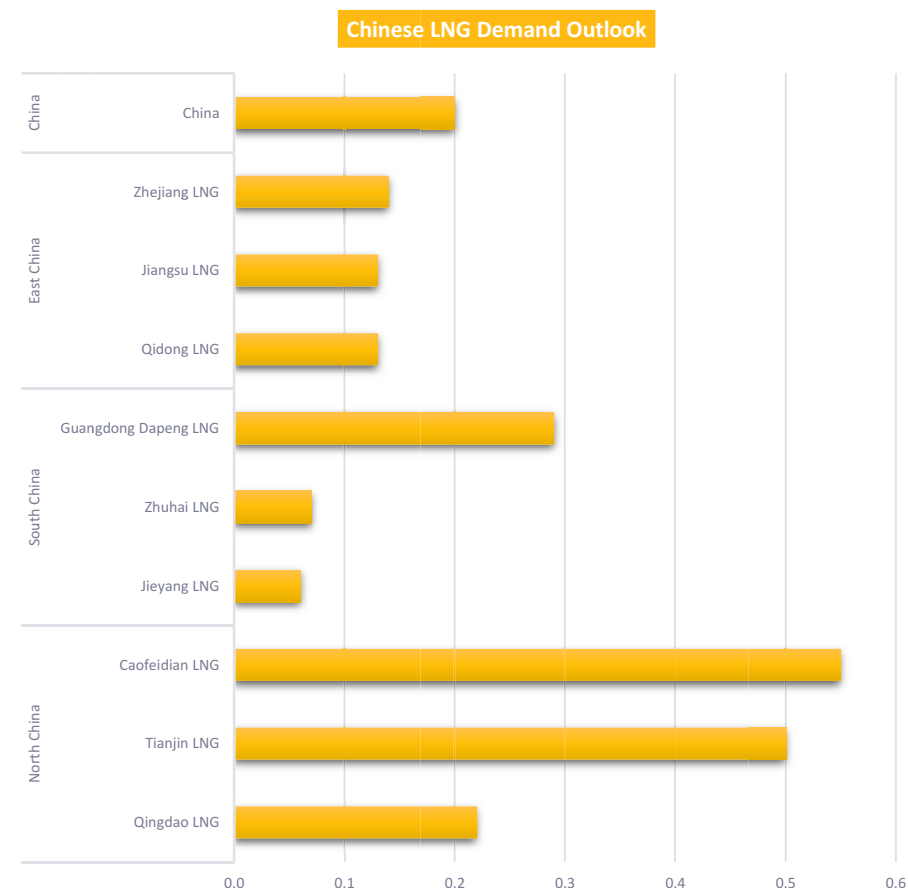
Our market visibility indicated there were seven US LNG cargoes en route to China with scheduled arrivals between the evening of 29 September and 27 November. These cargoes amounted to 0.52mmt, 0.23mmt of which had been loaded at Sabine Pass LNG, followed by 0.23mmt at Cameron LNG and 0.06mmt at Freeport LNG.

Two cargoes amounting to 0.20mmt of loaded LNG were also headed towards China but without specifying an arrival port. These shipments had sailed from Qatar's Ras Laffan LNG complex via the Q-Flex Al Safliya and the Q-Max Al Mayeda. Beyond these Qatari cargoes, we were also tracking 31 shipments carrying 2.30mmt that were broadly en route to China with a preliminary delivery horizon of 30 November. In addition, there were 60 cargoes totalling 4.41mmt broadly en route to the Pacific Basin with a delivery horizon of 1 December. It was unclear at the time of writing to what extent these would arrive in China.

North China

Of total LNG currently en route to China, we are anticipating 1.27mmt to be delivered to North China – comprising the wider Beijing area and China's industrial north – with a delivery horizon of 30 November.

Among the roster of northern Chinese terminals, CNPC's Caofeidian LNG was expected to receive 0.55mmt via eight cargoes by 30 November. These cargoes were exported by the United States, Russia, Nigeria, Papua New Guinea, Indonesia and Australia. The Russian cargoes were two Yamal LNG shipments aboard the Rudolf Samoylovich and the LNG Dubhe via the Northern Sea Route instead of the Suez Canal or South Africa's Cape of Good Hope. The two vessels belong to



Source: LNG Journal Data

Yamal LNG's ice-breaking Arc-7 LNGC fleet, which can traverse the Arctic without the help of dedicated ice breakers during the summer months and shortly thereafter.

Current market visibility further indicated 0.50mmt were destined for Sinopec's Tianjin LNG by 24 October, comprising three cargoes from the United States via the LNGShips Athena, the Ribera del Duero Knutsen, the Flex Resolute and the Marvel Crane from Sabine Pass and Cameron LNG, respectively. There were also three Australian shipments aboard the LNGShips Athena, the Grace Cosmos and the CESI Tianjin from NWS LNG and Australia Pacific LNG, respectively, as well as a Malaysian export from PFLNG Satu via the Seri Anggun.

Qingdao LNG, meanwhile, was looking to receive 0.22mmt via three cargoes by 7 November. Two of these shipments had sailed

from Pluto LNG and Australia Pacific LNG in Australia via the LNG Ebisu and the CESI Gladstone, respectively. The third cargo was aboard the Cameron LNG-delivered Diamond Gas Victoria.

East China

At the time of writing, we expected the East China region – comprising the wider Shanghai area and Zhejiang province – to receive 0.40mmt by 8 November. Zhejiang LNG is scheduled to receive 0.14mmt by 1 November, our data show, comprising two Australian Queensland Curtis LNG shipments via the Sevilla Knutsen and the Castillo de Santisteban. Moreover, we were anticipating the Jiangsu terminal to receive two cargoes by 3 November – comprising one from Indonesia's Bontang LNG and another from Russia's Yamal

LNG via the *Trader* and the *Boris Davydov*, respectively. Additionally, we were seeing a 0.07mmt Australia Pacific LNG-derived cargo travelling to Qidong LNG via the CESI LianYungAng as well as an Idku LNG shipment of 0.06mmt via the *BW Everett*.

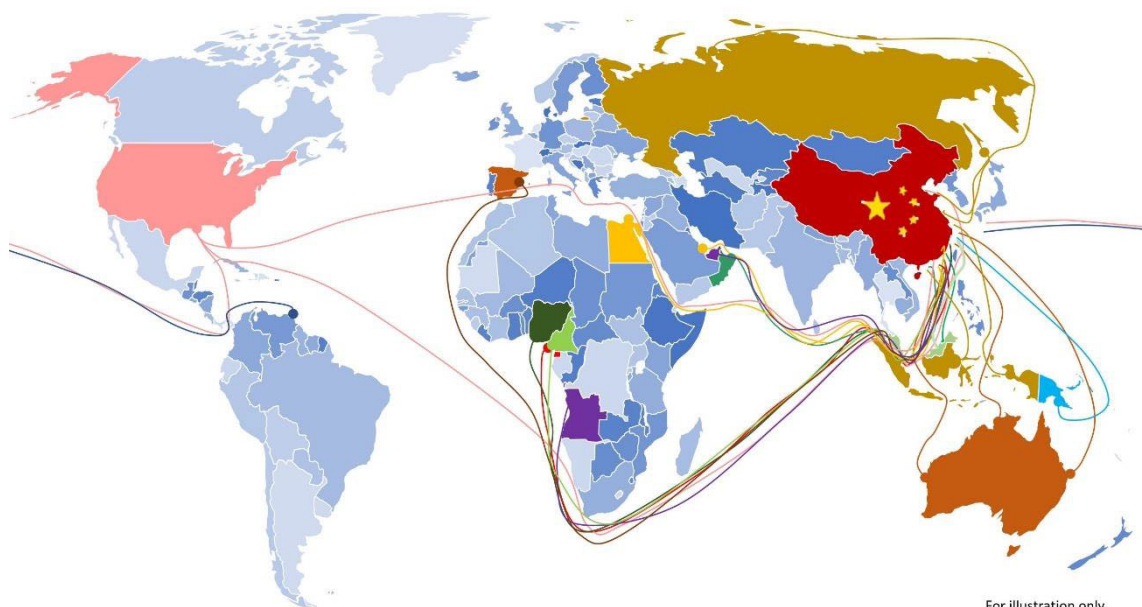
South China

In the south of the country, we were expecting 0.36mmt to be delivered by 27 November.

Expected LNG imports in the South China region were led by Guangdong Dapeng LNG, which at the time of writing was expecting four cargoes amounting to 0.29mmt. These shipments comprised a shipment each from Papua New Guinea and the United States as well as two exports from Australia. These Dapeng LNG-bound cargoes had a delivery horizon of 27 November at the time of writing. A further cargo of 0.07mmt aboard the Malaysia LNG-derived *Tristar Ruby* was headed for Zhuhai LNG. AIS data at the time of writing

indicated these cargoes would be delivered by 14 November. As this implies a relatively long journey time from Malaysia, we expect the vessel to spend several waiting days at Zhuhai's anchorage before making its approach to the terminal.

Chinese LNG Demand: September-October 2021



For illustration only.

China's monthly LNG offtake in October is likely going to be 6.07mmt in October, our data and market visibility indicated at the time of writing, which would constitute a month-on-month reduction by 0.54mmt (-8 percent) from 6.61mmt in September. This decrease comes in the wake of robust month-on-month increases during the previous two months. Chinese LNG imports had increased by 0.33mmt (6 percent) to 6.26mmt in August from 6.5.93mmt in July. These imports had subsequently increased further by 0.35mmt (6 percent) to 6.61mmt in September. Nevertheless, there was still a notable increase in the report period of September-October from the previous two-month period of July-August, increasing by 0.49mmt (4 percent) from 12.19mmt to 12.68mmt. The amount imported during the report period also constituted a significant net increase of 1.97mmt (18 percent) over the September-October period last year. China's annualised LNG import capacity, meanwhile, stood at an average of 84 percent for the report period, up

11pp from 73 percent for the September-October period in 2020 and up 3pp from the 81 percent recorded in July-August.

Prices

The domestic LNG price increase we reported on in our previous report continued in September and October. Privately quoted domestic prices had climbed from a low of US\$8.66/mmBtu on 3rd March to US\$17.73/mmBtu on 30 September before increasing further to US\$23.15/mmBtu by 29 October. Our price data for October suggests Chinese LNG prices are going to continue to remain high. Meanwhile, the average domestic price indicated by the National Bureau of Statistics (CNBS) stood at US\$20.15/mmBtu on 20 October – the latest available data point – which represents growth of US\$ 2.68/mmBtu (15 percent) from the US\$17.47/mmBtu on 20th August, the last available data point in our previous report. Landed LNG prices saw a similar price rally over

the report period, peaking at US\$25.88/mmBtu for w/c 25 October. This represented an increase of US\$4.57/mmBtu (21 percent) from the peak of US\$21.31/mmBtu during the previous report period of July-August, according to our calculations based on Chinese customs data. Landed prices have thus continued to rise since their August peak, reflecting an extremely tight Far Eastern market ahead of winter.

North China

LNG demand saw a drastic monthly increase in the north of China during the report period, our data indicated at the time of writing, growing by 1.01mmt (30 percent) from 3.40mmt in the two months of July-August to 4.41mmt for the report period of September-October. The largest share of additional LNG influx into the region too please via the Tianjin-Nangang terminal, which, however, did not mean that the facility led the North China region by total imports. The region thereby

returned to month-on-month growth following a brief interlude of decreasing imports during the summer. The sum of LNG imports of 4.41mmt in northern China for the period of September-October was thus also considerably ahead of its equivalent of 3.65mmt in 2020, up by 0.76mmt (21 percent).

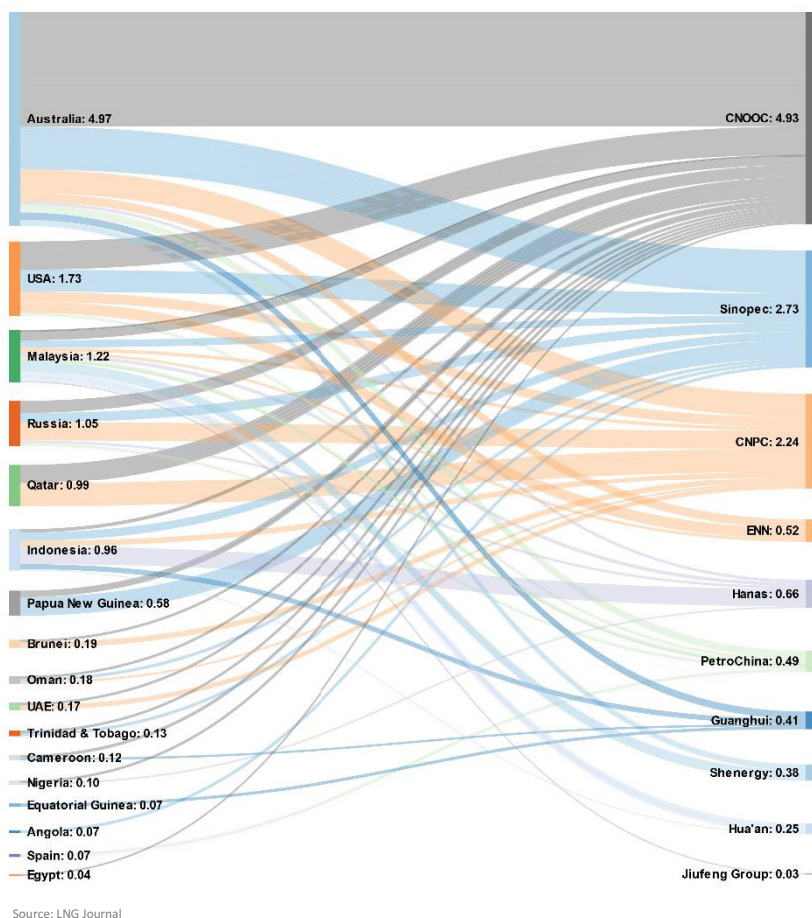
China's North led by Qingdao LNG

Leading the roster of northern terminals by volumes imported, Qingdao LNG took in 1.29mmt during the report period of September-October. This constituted robust offtake growth of 0.22mmt (21 percent) from 1.07mmt in the previous period. Imports consisted predominantly of nine Australian cargoes amounting to 0.66mmt. Australia Pacific LNG delivered seven of these shipments, supplying 0.53mmt. In addition, Papua New Guinea's PNG LNG delivered five cargoes totalling 0.35mmt. The remaining four shipments totalling 0.28mmt were delivered from the United States and Indonesia, comprising Cameron LNG and Bontang LNG.

Caofeidian LNG

Caofeidian LNG, meanwhile, had offtakes amounting to 0.98mmt over the report period compared to 0.82mmt over July-August. The terminal thus saw an increase in imports of 0.16mmt (20 percent). Cargoes from the Pacific Basin totalled 0.42mmt and thereby represented close to half of LNG shipped to the terminal. Australia exported 0.20mmt to Caofeidian LNG during the report period, inter alia via the newbuild Mu Lan. Australian shipments to Caofeidian split among Darwin LNG, Ichthys LNG and Wheatstone LNG. In addition, Brunei, Malaysia and Indonesia delivered a total of 0.22mmt of Pacific Basin volumes to the terminal over the report period.

Chinese LNG Buyers (MMt)



Atlantic Basin shipments of 0.36mmt to Caofeidian LNG were led by Russia directing 0.21mmt to the terminal via three cargoes from Yamal LNG via the Northern Sea Route. The remaining two Atlantic shipments came from Cameron and Freeport LNG in the United States. Finally, Caofeidian LNG's imports from the Middle East amounted to 0.20mmt, comprising one cargo from Qatar's Ras Laffan

LNG complex and two shipments from the UAE's Das Island plant via the Mraweh and the Al Hamra.

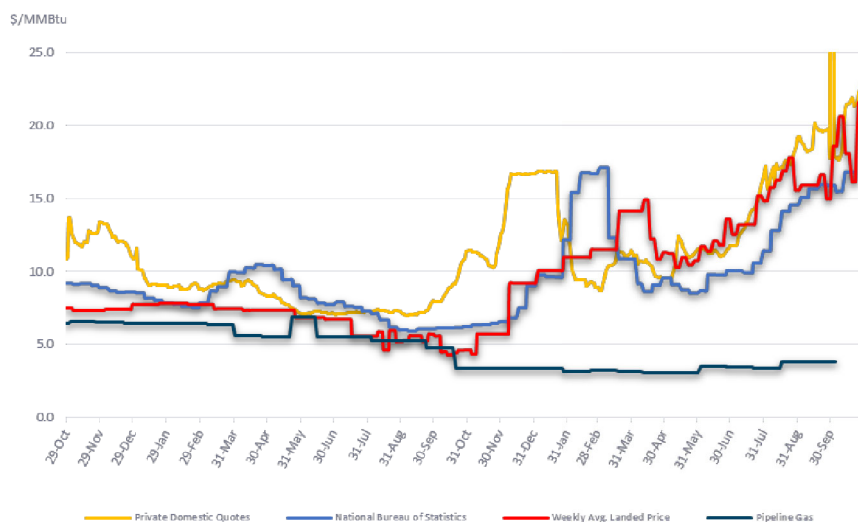
Tianjin-Nangang LNG

Imports at Tianjin-Nangang LNG had also increased significantly by 0.46mmt (110 percent) to 0.88mmt in September-October from 0.42mmt in July-August. The facility thus accounted for the largest growth share in North China over the report period. The bulk of imports came from the Australia Pacific LNG plant, amounting to 0.41mmt via six cargoes. Pacific supply was complemented by a Gorgon LNG export as well as a shipment from Bontang in Indonesia. These two cargoes amounted to 0.13mmt. Unlike in our previous report, Tianjin-Nangang LNG also imported LNG from the Middle East via the Ras Laffan-derived Q-Flex Umm Al Amad. Atlantic cargoes comprised two cargoes from the United States (0.11mmt) as well as two shipments totalling 0.14mmt from Russia's Yamal LNG via the Northern Sea Route.

Tianjin LNG and Dalian LNG

The remaining two northern terminals – Tianjin LNG and Dalian LNG – imported 0.81 and 0.45mmt over the report period, respectively, which in the case of Tianjin LNG stemmed predominantly from the United States with 0.22mmt, comprising two

Chinese Gas Prices



Source: LNG Journal, CNBS, GACC, Domestic Traders

shipments from Sabine Pass LNG and one from Corpus Christi. A 0.07mmt cargo from Atlantic LNG on Trinidad & Tobago pushed Atlantic Basin supply to 0.29mmt. Australia, meanwhile, also supplied 0.20mmt to Tianjin LNG, split nearly equally among Pluto LNG, Gorgon LNG and Wheatstone LNG. Malaysia, meanwhile, supplied 0.17mmt via two cargoes from Malaysia LNG and one from the PFLNG Satu barge. Middle Eastern supply, however, comprised only a single cargo of 0.07mmt via the GasLog Saratoga from Oman LNG.

September-October supply to the Dalian terminal was almost evenly split between the Pacific and Atlantic Basins, with shipments coming from the Middle East. Dalian LNG's Pacific supply of 0.24mmt came via two deliveries from Australia's Gorgon LNG as well as an additional cargo from Queensland Curtis LNG. Pacific LNG supply to Dalian was further complemented by a Malaysian cargo via the Alto Acrux. Meanwhile, Atlantic Basin supply totalling 0.21mmt comprised a Russian Yamal LNG shipment in addition to one from Sabine Pass LNG and a re-export from the Sagunto terminal in Spain via the British Mentor.

East China

At the time of writing, demand in East China was dominated by the wider Shanghai area, where Jiangsu LNG imported 1.26mmt during the report period. This placed the terminal at number three among China's leading terminals in September-October. Accordingly, the terminal operated at above-nameplate capacity. Nevertheless, overall LNG demand in East China had increased only moderately by 0.09mmt (2 percent) to 3.83mmt from the 3.74mmt recorded in July-August.

Wider Shanghai area

Meanwhile, the remaining wider Shanghai area – comprising Qidong LNG, Shanghai LNG and the metropolis' peak-shaving facility – imported a total of 1.01mmt over the report period, down 0.06mmt (-19 percent) from the 1.07mmt recorded in July-August. The sub-region's imports were led by the Qidong LNG terminal, which took in 0.41mmt and thereby grew imports by 0.15mmt (58 percent). Shanghai's peak-shaving facility also increased imports relatively significantly by 0.02mmt (10 percent) 0.22mmt period-on-period. However, Shanghai's Yangshan facility is likely to have curtailed offtakes by 0.23mmt (-38 percent) to 0.38mmt by the end of October, our data suggests.

Zhejiang & Zhoushan LNG

At neighbouring terminals Zhejiang and Zhoushan LNG, imports amounted to 1.04mmt

and 0.52mmt, respectively. Together, the two terminals thereby grew imports only moderately by 0.03mmt (2 percent) to 1.56mmt from the 1.53mmt recorded in July-August. LNG was mainly supplied by Australia via 14 cargoes totalling 0.93mmt and the United States through five shipments totalling 0.33mmt. Zhoushan LNG is one of the few LNG import terminals not controlled by one of the state-owned petrochemical giants PetroChina, Sinopec and CNOOC.

South China

Regional imports in South China – where LNG demand is primarily determined by the southern industrial centre of Shenzhen – discontinued the demand growth seen over the previous summer months, our data suggested at the time of writing. The region's imports had amounted to 4.44mmt over the report period, which meant imports were likely going down by 0.61mmt (-12 percent) from the 5.05mmt recorded in July-August.

Shenzhen terminals

South China's imports were led by Shenzhen's four terminals – Guangdong Dapeng, Shenzhen Diefu, Dongguan LNG and the adjacent peak-shaving facility. The region's most prominent terminal – Guangdong Dapeng LNG (GDLNG) – saw offtakes of 1.35mmt, placing it at the top of China's terminals. The terminal nevertheless cut its September-October imports by 0.21mmt (-13 percent) from 1.56mmt over the previous period. Still, its average capacity utilisation stood at 119 percent over the report period so that neighbouring Shenzhen Diefu LNG imported 0.45mmt, pegging its terminal utilisation at 68 percent. Shenzhen Diefu usually steps in when GDLNG is stretched beyond capacity. Finally, Dongguan LNG imported only 0.03mmt, down 0.07mmt (-70 percent) period-on-period. The Shenzhen Peak-shaving terminal, meanwhile, took in 0.03mmt in September-August, unchanged from the previous period.

Zhuhai and Jieyang LNG

Zhuhai LNG saw a significant decrease in demand by 0.12mmt to 0.74mmt over the report period from 0.86mmt the previous period, which nonetheless still pegged overall capacity utilisation at 132 percent. Roughly two-thirds of Zhuhai's imports were derived from the Pacific Basin and were sourced from Australia. Atlantic Basin supply amounted to only 0.11mmt, which was supplied by Sabine Pass LNG and Freeport LNG in the United States. The remaining imports stemmed from three Middle Eastern shipments totalling

0.16mmt derived from Egypt, Oman and the UAE.

Similarly, Jieyang LNG saw a drastic fall-off in imports during the September-October period. At the time of writing, we were expecting full-period offtakes to be down by 0.17mmt (-29 percent) to 0.41mmt in September-October from 0.58mmt in July-August. Accordingly, Jieyang LNG saw relatively low capacity utilisation of 59 percent over the report period. In April-May, the terminal had seen explosive growth of 0.37mmt to 0.64mmt from 0.27mmt in February-March. This came in the wake of the inauguration of China's state-owned China Oil and Gas Pipeline Network (also known as PipeChina) in March. PipeChina links the Jieyang terminal to Guangdong Province's existing pipeline network and further to China's massive West-East II and III trunklines. Since commissioning in 2017, the terminal had gone through frequent periods without shipments arriving because its send-out options were mostly limited to truck loadings.

Fujian and Beihai LNG

In line with most other terminals in the South China region, Fujian LNG saw demand decrease in September-October compared to the previous report period of July-August. At 0.66mmt, imports were down 0.10mmt (-13 percent) from the 0.76mmt recorded during the previous period. Meanwhile, Beihai LNG was the only major regional terminal that saw higher demand over the report period by increasing offtakes by 0.16mmt (34 percent) to 0.63mmt in September-October from 0.47mmt in July-August. The terminals' annualised capacity utilisation, therefore, stood at 126 percent.

Hainan Island

The remaining two regional LNG terminals on Hainan Island – Hainan LNG and the Hainan Transfer Station – also saw a significant demand decrease due to less activity at the Hainan LNG terminal. Whilst the Transfer Station returned to its regular two-month offtake amount of 0.04mmt by increasing imports by 0.01mmt (33 percent) from the previous period, Hainan LNG decreased imports by 0.11mmt (-52 percent) to 0.10mmt in September-October from 0.21mmt in July-August. This was mainly due to a decrease in re-exports from Beihai LNG to the terminal. LNG capacity utilisation on Hainan Island over the report period was thus 25 percent, down 18pp from the 43 percent during the July-August period.

Region	Terminal	Export Basin			October 2021	September 2021	Rep. Period Utilisation
		Atlantic	Middle East	Pacific			
North	Dalian LNG	-	-	0.18	0.18	0.27	45%
	Tianjin - Nangang LNG	0.06	-	0.32	0.38	0.50	49%
	Qingdao LNG	0.08	-	0.63	0.71	0.58	129%
	Tianjin LNG	0.15	0.07	0.24	0.46	0.35	67%
	Caofeidian LNG	0.22	0.06	0.22	0.50	0.48	90%
East	Zhejiang LNG	0.07	-	0.40	0.47	0.57	208%
	Shanghai (Yangshan)	-	-	0.19	0.19	0.19	76%
	Jiangsu LNG	0.22	0.16	0.19	0.57	0.69	216%
	Qidong LNG	0.12	-	0.12	0.24	0.17	86%
	Zhoushan LNG	0.13	-	0.06	0.19	0.33	104%
South	Shanghai Peak-Shaving	-	-	0.12	0.12	0.10	22%
	Guangdong Dapeng LNG	-	0.09	0.58	0.67	0.68	119%
	Fujian LNG	-	-	0.26	0.26	0.40	63%
	Beihai LNG	0.22	-	0.07	0.29	0.34	126%
	Zhuhai LNG	-	0.12	0.20	0.32	0.42	132%
	Hainan LNG	-	-	0.08	0.08	0.02	20%
	Jieyang LNG	0.05	-	0.06	0.11	0.30	59%
	Dongguan LNG	-	-	0.00	0.00	0.03	25%
	Shenzhen Diefu LNG	0.15	-	0.13	0.28	0.17	68%
	Hainan Transfer Station	-	-	0.02	0.02	0.02	67%
	Shenzhen Peak-Shaving	-	-	0.03	0.03	0.00	23%
	Total	1.47	0.50	4.10	6.07	6.61	84%

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