FINANSIA
FSS INTERNATIONAL INVESTMENT ADVISORY

6 OCTOBER 2021

Thailand Energy

Gas price spike sweetens coal and oil price uptrend

Greener policy leads to price uptrends for coal and oil

While coal is the least loved commodity due to its high carbon emissions, Asia's two largest economies are currently still hooked on coal as their main fuel source for electricity generation. Ironically, China is aiming to wind down its coal use from 2026 as part of its efforts to slash greenhouse gas emissions. India aims to have around 60% of its installed electricity generation capacity from clean sources by 2030. Europe has also been phasing out coal plants in recent years, limiting the opportunity to switch fuel types when prices rise. In addition, funding is evaporating for coal as investors and banks are also increasingly discouraging companies from putting money into new coal production due to the likelihood of a demand decline over the long run and the environmental damage caused by the fuel. The gas supply shortage in Europe has further been exacerbated by the stalled COD of Russia's new USD11b Nord Stream 2 (NS2) pipeline, owned by Gazprom under the Baltic Sea, with a capacity of 55bcmpa from Russia's Arctic to Germany and Europe.

High gas price further lifts the prices of substitutional commodities (coal and oil)

We believe the seasonally high demand for heating via electricity should at least sustain the prices of gas, coal, LPG, and diesel to remain at high levels – USD15-20/mmbtu for LNG, USD200/t for the Newcastle coal price index (NCT), USD85/bbl for diesel, and USD60/bbl for LPG. With the spot LNG price spiking by over 2x recently, the LNG price is now exorbitant for most power producers, resulting in higher coal, diesel, and LPG prices, as the demand for coal, particularly as a key alternative energy source for electricity production, has risen to over USD200/t as of the beginning of Oct-21.

Coal: From the least loved to the most loved commodity in 2021-22?

Given the structural changes in the coal industry – lower coal supply and shrinking funding – the currently strong demand for coal globally due to the climate change impact has inevitably led to a high coal price, which we think could continue into 2022. Hence, we project the NCT coal price to sustain at over USD130-150/t, at least until mid-2022.

BANPU stands out as a clear winner, with PTTEP and TOP for oil plays

We maintain our OVERWEIGHT recommendation on the Thai energy sector and prefer coal over oil and gas plays. With coal production in three major countries, BANPU is the sole winner of the coal price uptrend, in our view. PTTEP and TOP are our preferred oil plays, given their high earnings exposures to the oil & gas prices (PTTEP as a producer of oil & gas) and as potential winners of the expected rebound in the demand for refined oil after the global reopening (TOP). For gas price plays, our top picks are BANPU and IVL as the winners of the current gas price uptrend. BANPU has 0.8bscfd of gas production capacity in both the Marcellus and Barnett shale areas in the US.

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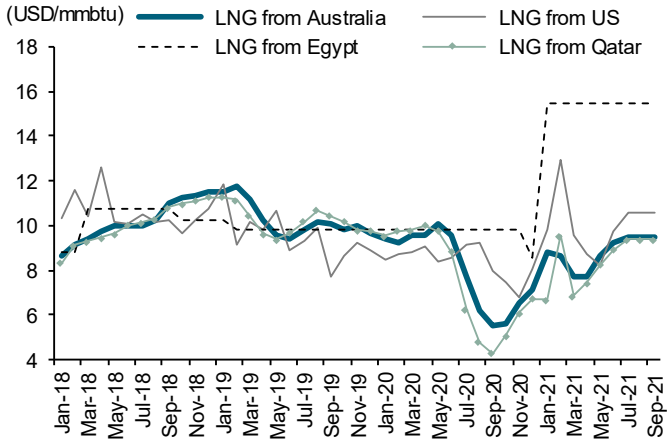
Gas price spike sweetens coal and oil price uptrend

Since Jun-21, the global LNG price from major global gas suppliers, including Qatar, Egypt, Australia, and the US, has jumped markedly from USD8-10/mmbtu (USD50-60/bbl) in 1H21 to USD10-14/mmbtu. According to the 1Q21 quarterly report on European gas markets by the European Commission, although GDP in the EU was still down by 1.2% y-y in 1Q21, EU gas consumption was up by 7.6% y-y (10 billion cubic metres (bcm)) after the slight increase by 2.4% y-y in 4Q20 and the stagnation in 3Q20.

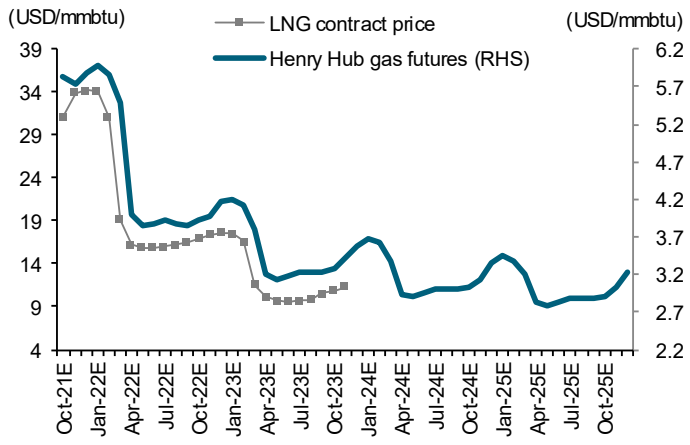
Consumption of gas in electricity generation was up by 3.4% y-y in 1Q21, and the widespread practice of teleworking might also have contributed to the overall increase in gas consumption in the residential sector. However, weather in 1Q21 was milder than usual, but occasional cold spells also impacted gas consumption for residential heating needs. Gas consumption in 1Q21 was at 141.8bcm, up from 131.7bcm in 1Q20.

Exhibit 1: LNG import price to Japan



Source: Bloomberg

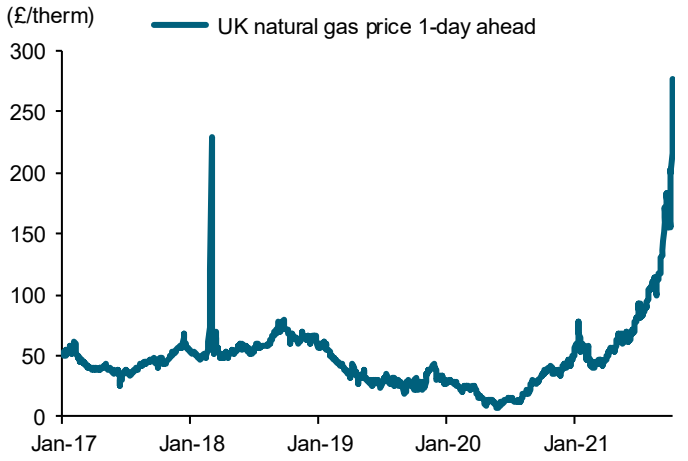
Exhibit 2: LNG futures contract price vs Henry Hub gas price



Price as of 4 Oct 2021
Source: Bloomberg

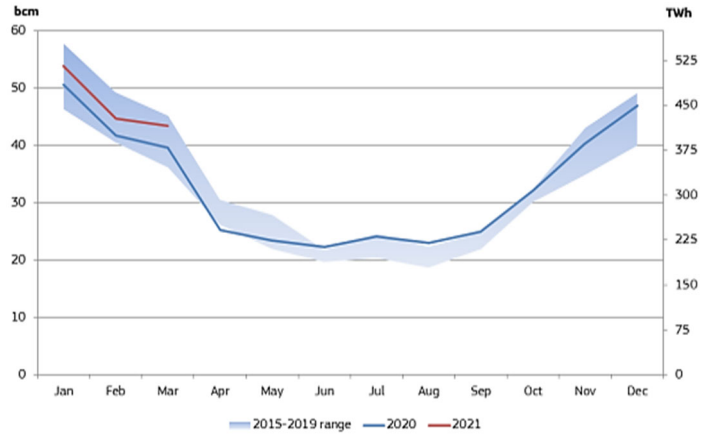
Natural gas prices in the UK and continental Europe have soared to record highs because of the tight supply ahead of winter, raising fears of a severe economic hit to various industries and weather-induced shortages. Day-ahead gas prices in the UK jumped to £1.65 per therm, almost tripling from the level in the beginning of 2021. Concerns about the tight supply started with a prolonged cold winter that drained natural gas storage. Normally this would be refilled over the summer when demand for heating largely evaporates.

Exhibit 3: UK natural gas price reached record highs in Sep-Oct 2021 (£/therm)



Source: Bloomberg

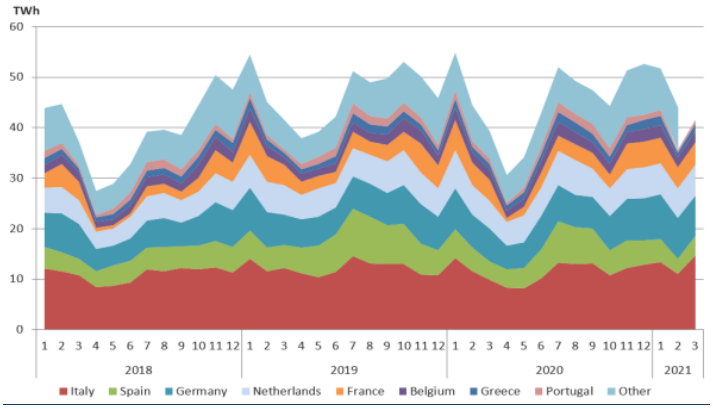
Exhibit 4: EU gas consumption



Source: Quarterly report on European gas market by DG Energy

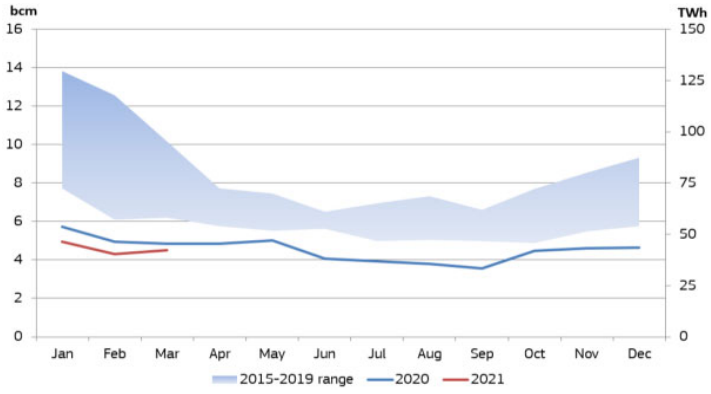
But storage filling has not happened at the pace traders would have liked in 2021. Russia has been sending less gas to Europe, for reasons fiercely debated in the industry. These range from Russia's need to refill its own storage to suspicions that it is trying to pressure European governments, including Germany, to approve the start-up of the highly controversial NS2 gas pipeline.

Exhibit 5: Gas-fuelled power generation in the EU



Source: Quarterly report on European gas markets by European Commission

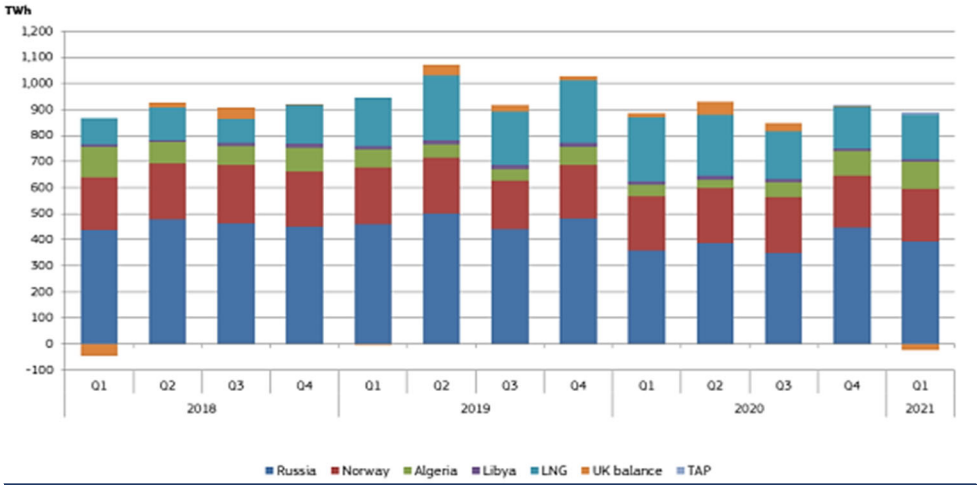
Exhibit 6: Monthly gas production in the EU



Source: Quarterly report on European gas markets by European Commission

In previous winters, the demand for gas to be used for gas-fired power plants in the EU would seasonally jump from below the 40TWh bottom in summer to over 50TWh in Dec-Feb. In 2021, the EU projects that the gas demand will rise by over 30% q-q in 4Q21-1Q22, however there has been historically low gas production in 2021 due to the Covid-19 pandemic.

Exhibit 7: EU imports of natural gas by source, 2018-21



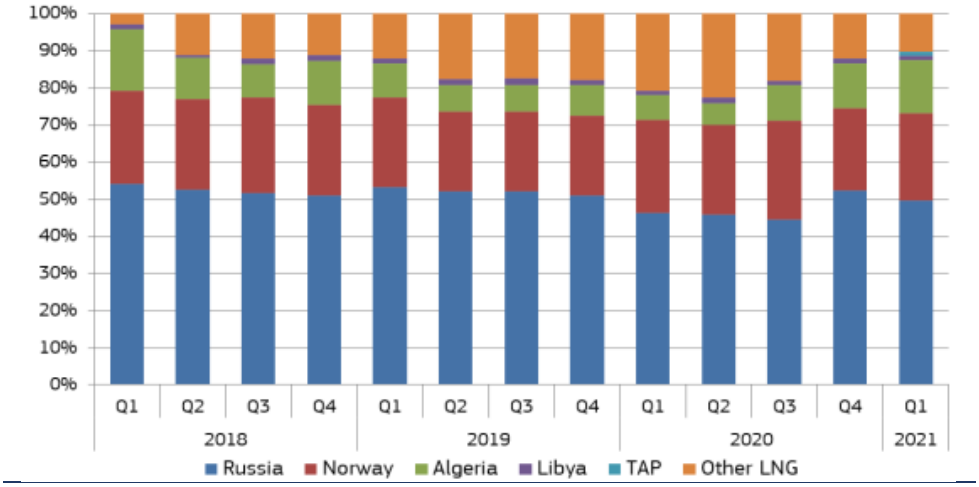
Source: Quarterly report on European gas markets by European Commission

Russia has the largest gas reserves in the world. With 44,600bcm, Russia has 23.9% of the world's currently known gas reserves, followed by Iran (15.8%), Qatar (13.5%), the US, and Turkmenistan (4.3%) as of 2020, according to the US Energy Information Administration (EIA).

Russia is Europe's biggest supplier, but is in itself a big consumer of gas. The country aims to have a record 72.6bcm in domestic inventories by Nov-21, almost double the levels in Jun-21. However, Russia is not on pace to reach its target, likely resulting in a lower gas supply to Europe in the upcoming winter.

Russia is the largest gas supplier to the EU with over 50% of the market share, even prior to the COD of the Nord Stream 2 pipeline. Among the major gas suppliers to the EU, Russia has long been the most dominant supplier with over 50% of the market share on average during 2018-1Q21, followed by Norway, Algeria, Libya, and LNG imports. In 1Q21, the volume of Russian imports rose 9% y-y and gas flows transiting Ukraine were almost 7% lower y-y in 1Q21, which is still significant, even if it was a less steep fall than that in 4Q20 (-27% y-y).

Exhibit 8: Share of gas imports, combining both pipeline and LNG imports

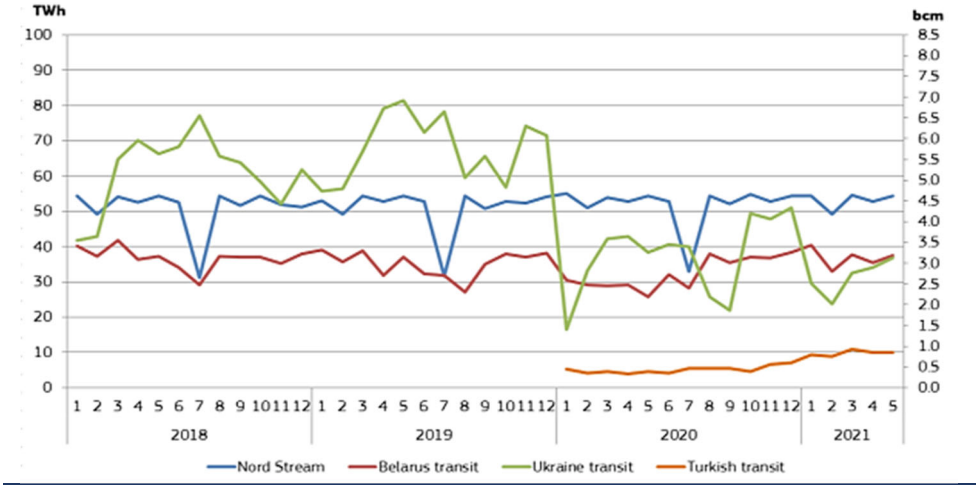


Source: Quarterly report on European gas markets by European Commission

During 1Q21, a monthly average of 2.7bcm of Russian gas transited through Ukraine, implying a decrease from 2.9bcm in 1Q20 and 4.6bcm in 4Q20, when imports ramped up at the beginning of the winter season and ahead of the year's end, fulfilling the annual shipment contractual obligation of 2020.

As a result, according to the European Commission, the EU is expected to import higher gas quantities from Russia – which provides over 50% of the total gas imports for the EU – in the upcoming winter season for its gas-fired power plants. The gas stream via the new NS2 should thereby be granted the green light to export gas from Russia's Arctic region to Germany by Nov-21, based on our estimate.

Exhibit 9: EU imports of natural gas from Russia by supply route, 2018-21



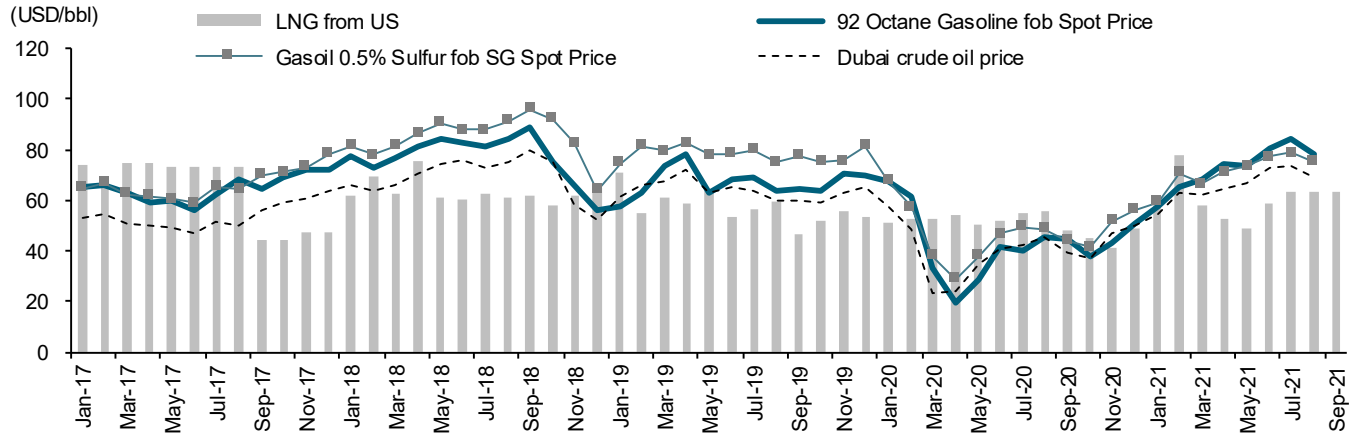
Source: Quarterly report on European gas markets by European Commission

Greener policy leads to price spikes for gas, coal, and diesel. Europe has also been phasing out coal plants in recent years, limiting the opportunity to switch fuels when prices rise. Record carbon prices have also made fuel swaps less attractive because coal emits more carbon dioxide when burnt.

The UK and parts of continental Europe are more reliant on wind turbines for electricity generation, but remarkably still weather in recent weeks has slashed wind's contribution to the grid. That has largely been backfilled by natural gas, boosting demand for the fuel.

Will the gas price continue to rise in 4Q21 into 2022? Not certain. The most important point is the weather. A mild winter in the Northern Hemisphere would go a long way to calming the market. A pick-up in wind generation would also help, reducing the amount of gas being directed to electricity generation.

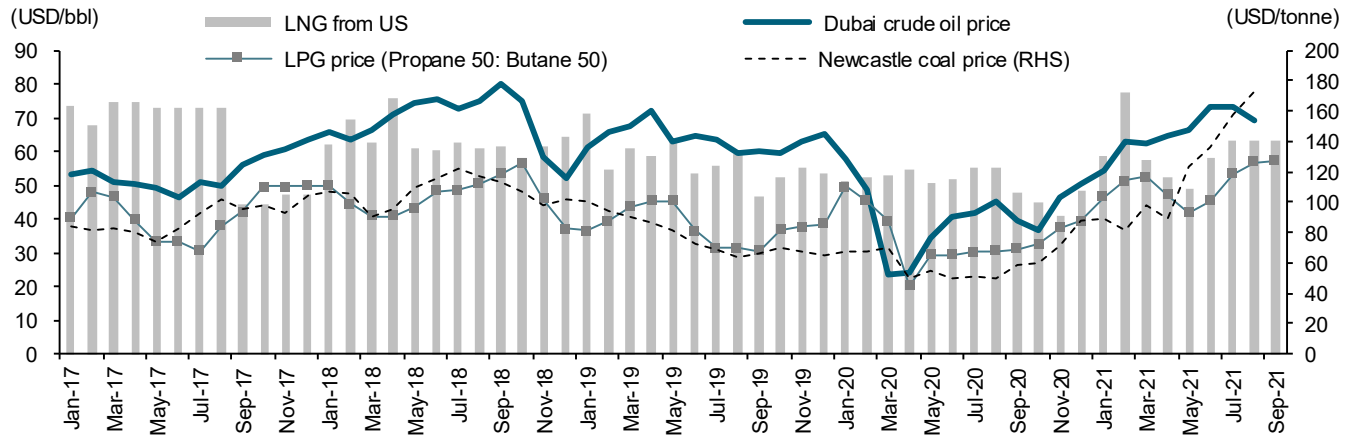
Exhibit 10: Estimated prices of LNG vs diesel and Dubai crude oil price



Source: Bloomberg

LNG price spike increased other alternative energy prices. LNG is one of the alternative energy sources for power plants globally, substitutable by coal, diesel, and LPG, with the latter two energy sources produced from crude oil. As the spot LNG price has spiked by over 2x recently within less than a month, the LNG price is now exorbitant for most power producers. This has resulted in higher coal, diesel, and LPG prices as demand for coal, particularly as a key alternative energy for electricity production, has risen to over USD200/t in the beginning of Oct-21.

Exhibit 11: Estimated prices of LNG vs LPG and Newcastle coal price index



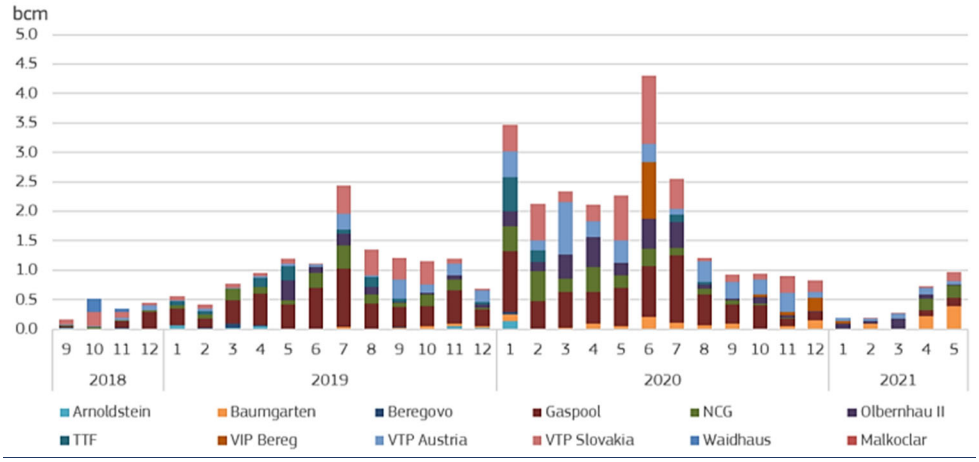
Source: Bloomberg

We believe the seasonally high demand for heating from electricity should at least sustain the prices of gas, coal, LPG, and diesel to remain at high levels – USD15-20/mmbtu for LNG, USD200/t for NCT, USD85/bbl for diesel, and USD60/bbl for LPG.

Gazprom is still reluctant to raise its gas supply to the EU

After the US and Germany agreed in Jul-21 to allow Russia to complete its USD11b, 1,230km NS2 pipeline, owned by Gazprom under the Baltic Sea with a capacity of 55 billion cubic metres per annum (bcmpa) to transport gas from Russia's Arctic region to Germany, Russia has yet to transport and sell any gas to Germany. NS2 would effectively bypass Ukraine and Poland and double the amount of Russia-supplied gas to Europe and Germany, essentially making it possible for Germany to phase out its current overreliance on nuclear and coal power energy.

Exhibit 12: Monthly sales on the Gazprom Electronic Sales Platform (ESP) with delivery points

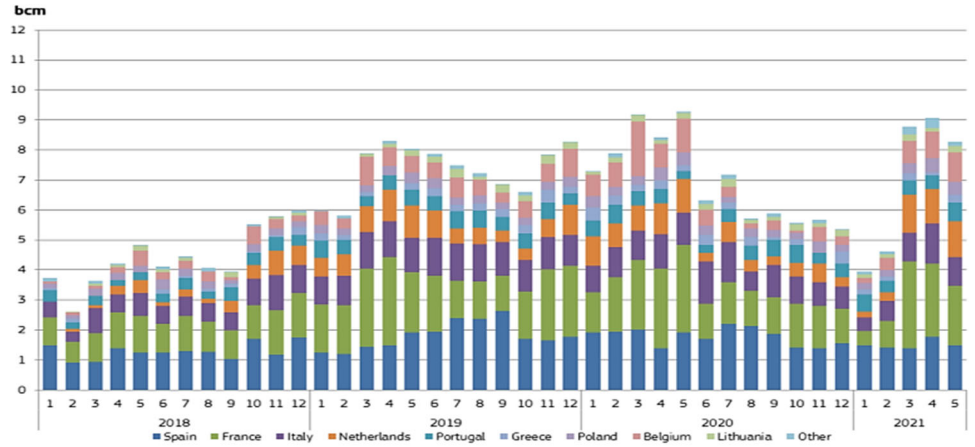


Source: Quarterly report on European gas markets by European Commission

However, given that NS2 transits through the Baltic Sea, posing geo-economic and security challenges to the US and Europe, the Russia-Germany gas sales via NS2 have since become a major political conflict between US and its alliances and Russia. The commencement of the commercial operation date (COD) of NS2 remains unsettled, pending the certification process by European authorities and the US' final approval.

Whether or not NS2 will go online, its emergence raises questions about the EU's future relationship with Kyiv, as well as Ukraine's role both as a transit and storage country for natural gas and as a potential alternative energy exporter. Russia sees the completion of the controversial pipeline not only as a commercial and technological achievement, but as a major geopolitical victory for Moscow.

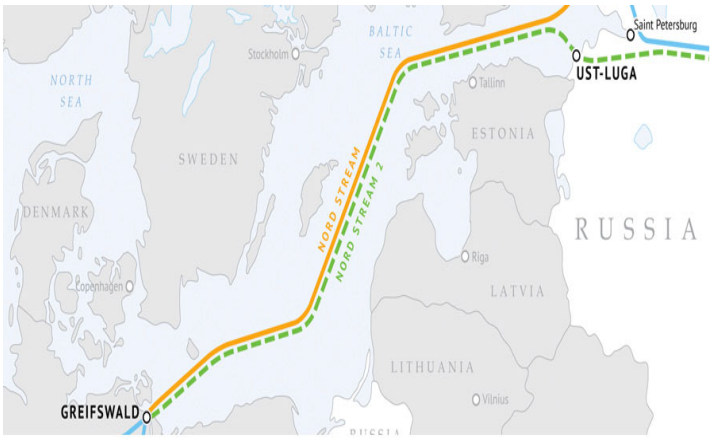
Exhibit 13: LNG imports to the EU by member states



Source: Quarterly report on European gas markets by European Commission

Russia's gain at Ukraine's loss. Ukraine's ties with Russia have been in crisis since Russia's annexation of Crimea in 2014 and its backing of the separatist uprising in Eastern Ukraine. With its annexation of Crimea and intervention in Eastern Ukraine in 2014, Russia began to treat Ukraine in the same way as it had been treating Moldova and Georgia for many years before, according to Euronews, dated 1 Oct 2021. The activation of Gazprom's TurkStream pipeline via the Black Sea in early 2020, and the completion of Nord Stream 2 via the Baltic Sea in Sep-21, concluded Russia's energy-industrial disentanglement from Ukraine.

Exhibit 14: The Nord Stream and planned Nord Stream 2 pipeline routes from Russia to Germany from Gazprom



Source: Ane Gil Elorri, Universidad de Navarra

Exhibit 15: Major gas pipeline network in EU countries

Source: Ane Gil Elorri, Universidad de Navarra

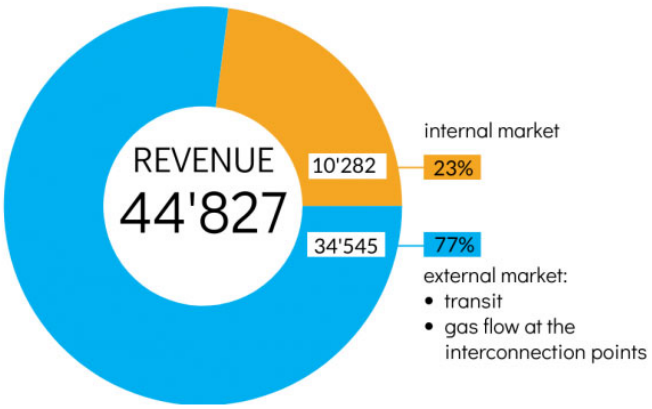
Under the terms of a long-term supply deal with Budapest that kicked in on 1 Oct-21, Gazprom will no longer ship its gas to Hungary via Ukraine, but will send it via Serbia and Austria instead. That deprives Ukraine of transit revenues and also means it can no longer import reverse flow gas via Hungary, which it has been doing since 2015 as a way of not buying gas directly from Russia

Exhibit 16: Ukraine's gas pipeline network

Source: The National Gas Union of Ukraine

Exhibit 17: Ukraine's revenue from gas pipeline (Jan-Sep 2020)

January-September 2020, UAH mln, excl. VAT



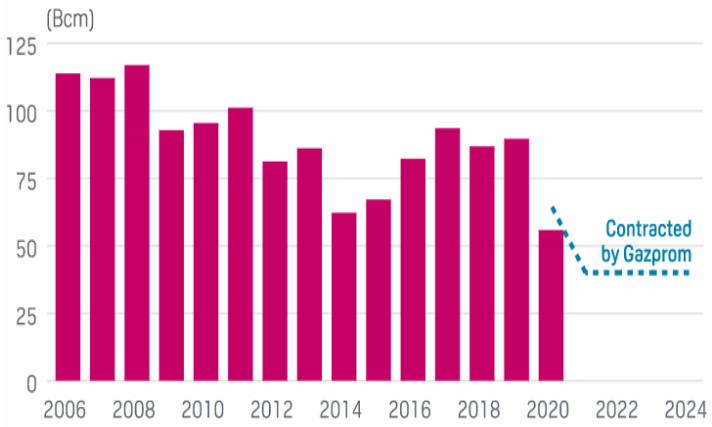
Source: Gas Transmission System Operator of Ukraine

Nord Stream gas pipeline. Nord Stream is a twin set of pipelines that provides gas transportation capacity for the natural gas that comes from Western Russia (Vyborg) into Lubmin, Germany, for distribution into the European gas grid. This system is composed of a set of 1,224km pipelines through the Baltic Sea, and each holds the capacity to transport 27.5bcm of natural gas per year. Nord Stream 1 (NS1) had its COD in 2011, while NS2 remains non-operational.

Exhibit 18: EU gas pipeline networks

Source: Economist

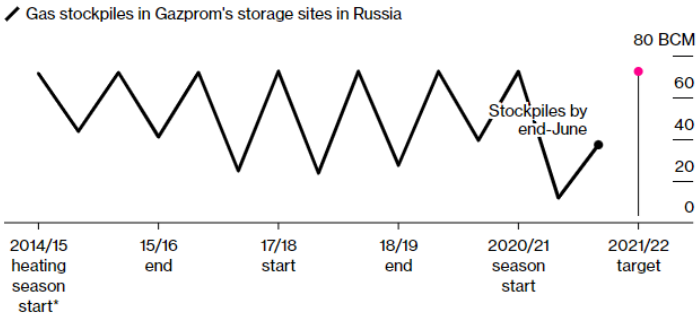
Exhibit 19: Ukraine transited just 55.8bcm in 2020



Sources: Naftogaz

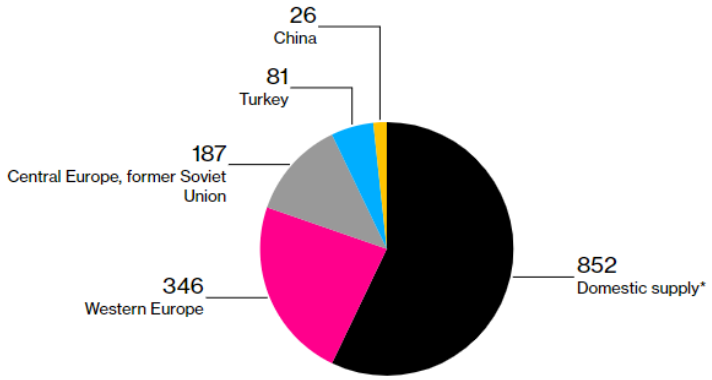
If it starts operating, NS2 will all but remove the remaining leverage that Ukraine had as a major transit country for the export of Russia's Siberian and Central Asian gas to the EU. Russia's onetime economic dependency on Ukraine was reduced with the start of the first leg of the original NS1 pipeline's operation in 2011.

Exhibit 20: Gas stockpiles in Gazprom's storage sites in Russia



Source: Bloomberg

Exhibit 21: Gazprom's average daily gas supplies in 1H21 (mcmpd)



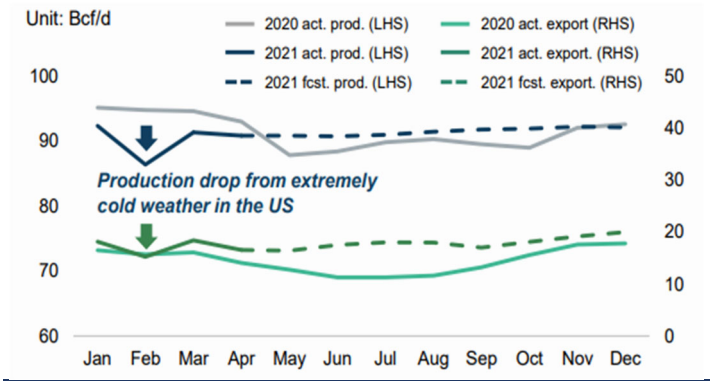
Sources: Gazprom data (Russian accounting standards), Bloomberg
*Russia's domestic supply in 1Q normally more than twice as high as in 2Q

US gas demand-supply remains tight into 2022

As the US is now one of the world's dominant producers of both shale oil and gas, the US gas market has remained undersupplied since mid-2020 due to the lower-than-expected production levels caused by the previously depressed gas prices in 2019-1H20 and the more disciplined producers which preserved their financial resources for shareholder distribution, as demanded by US investors.

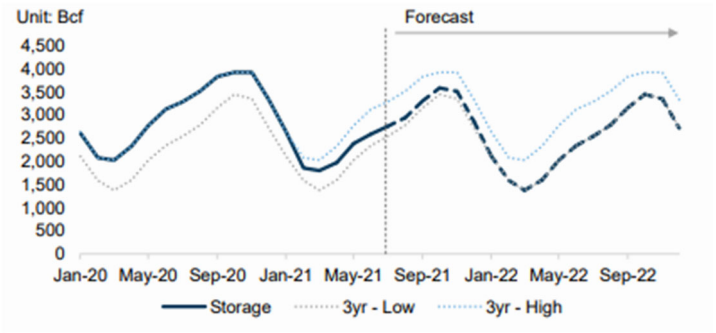
As a result, US gas production has still been weak and below the pre-Covid-19 level, despite the spike in the Henry Hub (HH) gas price index to over USD5/mmbtu in Sep-Oct 2021, result in a seasonally lower gas inventory since 2020.

Exhibit 22: US natural gas production



Source: BANPU

Exhibit 23: US storage level

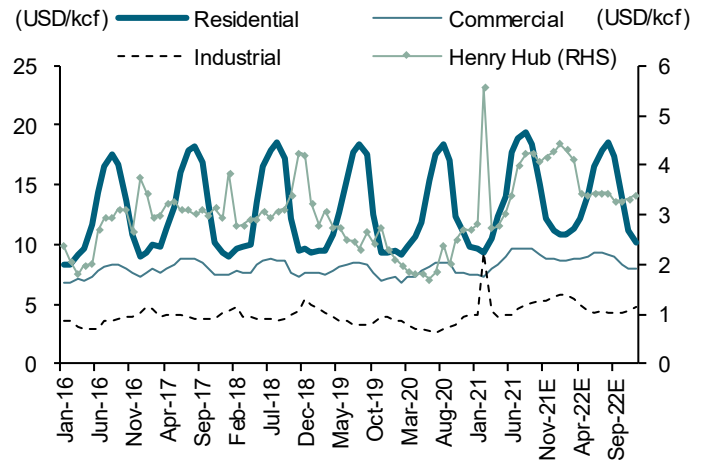


Source: BANPU

The HH price has risen to over USD5/mmbtu in Sep-21, driven by the tight supply and rising demand. The most recent driver is from the substitutional impact from the gas supply shortage in the EU as Russia has trimmed its gas supply to European customers, citing the gas supply shortage and technical production problems.

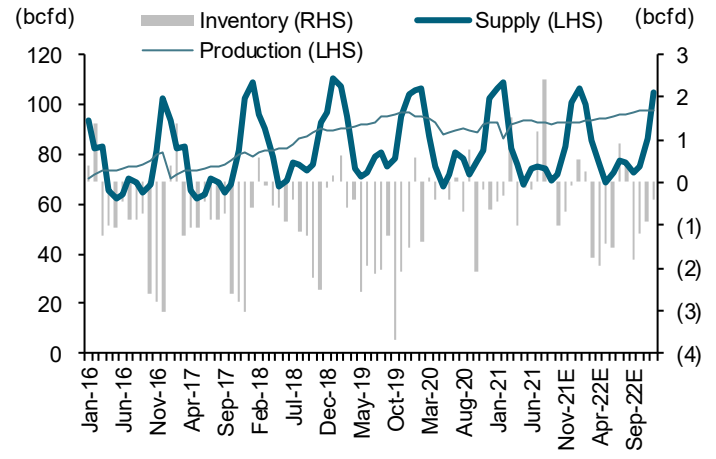
Note that the current HH price of over USD5/mmbtu is much higher than the HH price of USD3.3-3.5/mmbtu projected by the EIA in the beginning of 2021.

Exhibit 24: US gas prices by segment (forecast by the EIA in 1Q21)



Source: EIA

Exhibit 25: US gas production, supply, and balance (forecast by the EIA in 1Q21)

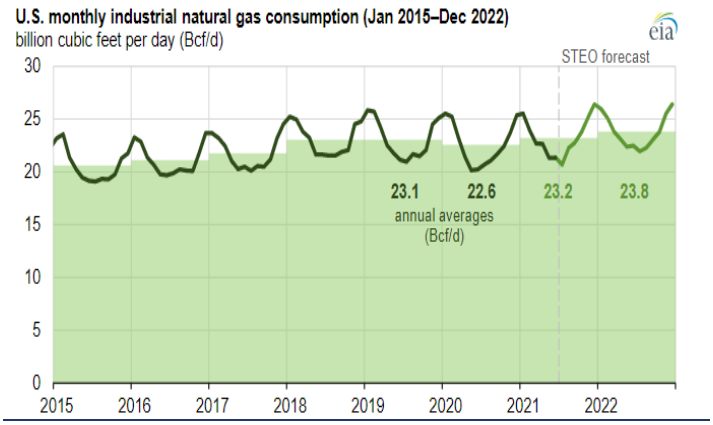


Source: EIA

US gas demand is projected to rise in 4Q21-2022. According to its "Short-term Energy Outlook" report (STEO) dated Sep-21, the EIA projects the demand for gas from the US industrial sector to rise in 4Q21-2022 and expects it to exceed the pre-pandemic 2019 levels. If realised, the projected demand level in 2022 would be close to the US' record high level for gas consumption set in the early 1970s.

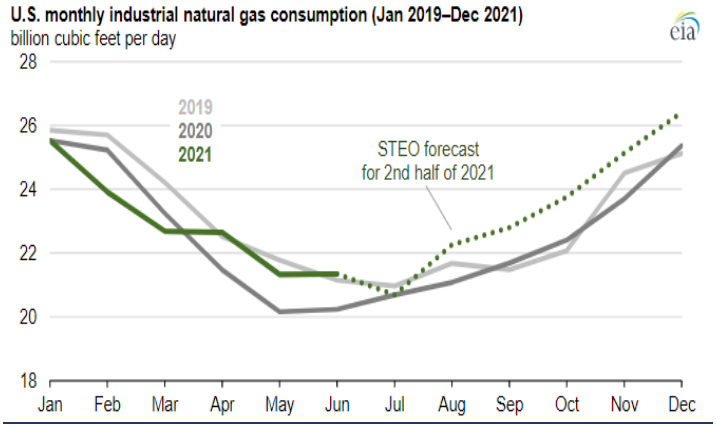
In the US, particularly the Gulf of Mexico, many industrial processes have limited or no alternatives to natural gas for use as both fuel and feedstock, making industrial natural gas consumption relatively insensitive to short-term price fluctuations. Some value-added industrial products such as ammonia, methanol, and hydrogen that are produced from natural gas remain economically competitive even when natural gas prices are relatively high.

Exhibit 26: US monthly industrial natural gas consumption (Jan-15 to Dec-22E)



Source: EIA

Exhibit 27: US monthly industrial natural gas consumption (Jan-19 to Dec-21E)

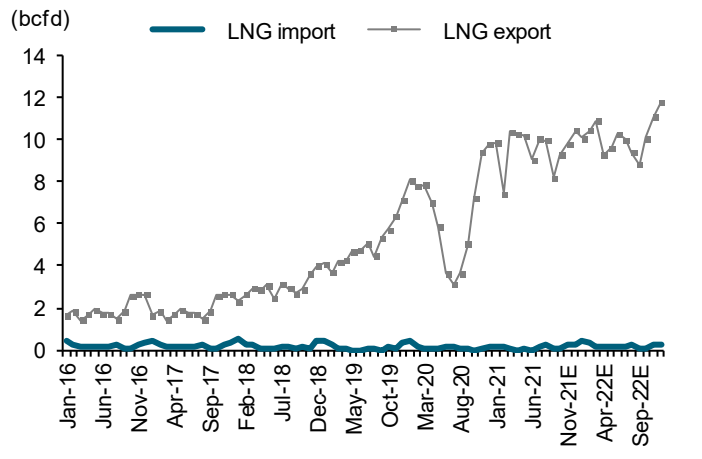


Source: EIA

1H21 US gas demand has already exceeded the 1H19 pre-pandemic level. US industrial natural gas consumption averaged 22.9 billion cubic feet per day (bcfpd) in 1H21, according to the EIA's "Natural Gas Monthly" report. Natural gas consumption fell in the US industrial sector in 2020 when a decline in US economic activity led to a decline in output among industries that consume natural gas, such as the metals, petroleum and coal products, paper, and chemicals industries.

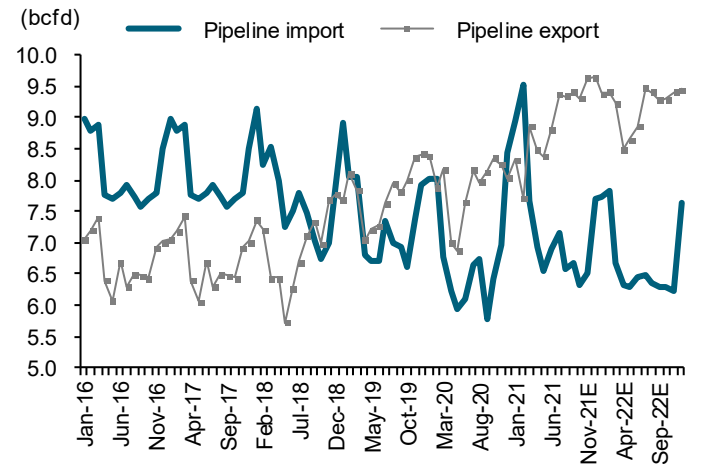
In the EIA's latest STEO, natural gas consumption in the US industrial sector is projected to average 23.5bcfpd in 2H21 and 23.2bcfpd for 2021. If realised, this level of industrial natural gas consumption would exceed the pre-pandemic 2019 average of 23.1bcfpd and mark the highest US industrial natural gas consumption since 1997. In addition, the US has continued to increase its LNG exports to monetise the globally high LNG price, further tightening the demand-supply balance in the US gas market.

Exhibit 28: US LNG exports and imports



Source: EIA

Exhibit 29: US LNG pipeline exports and imports



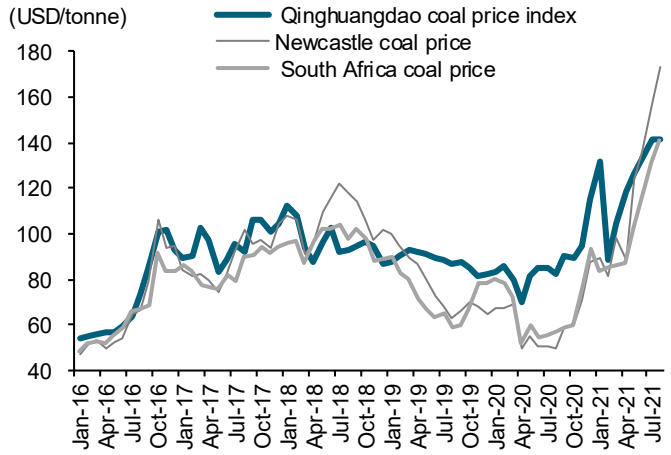
Source: EIA

Coal structural aversion turns to scarcity-driven price uptrend

The NCT price index has continued to rise, hitting a historically high level of over USD200/t in late September. It should rise even further on the demand growth for electricity generation worldwide as a substitute for gas, due to the currently high gas price for power plants, and as a heating fuel, further tightening the demand-supply balance of the coal industry.

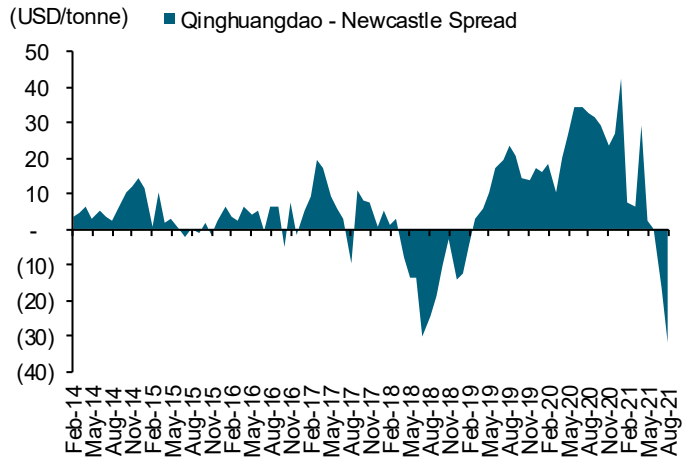
Thanks to the global structural reduction in coal consumption for power plants to reduce carbon emissions, coal production has continued to decline globally, both from permanent shutdowns, more stringent regulations on coal mining, and the lack of funding for existing and new coal mines, which have all contributed to the permanent reduction in the global coal supply since 2018.

Exhibit 30: Benchmark coal prices (QHD vs NCT)



Source: Bloomberg

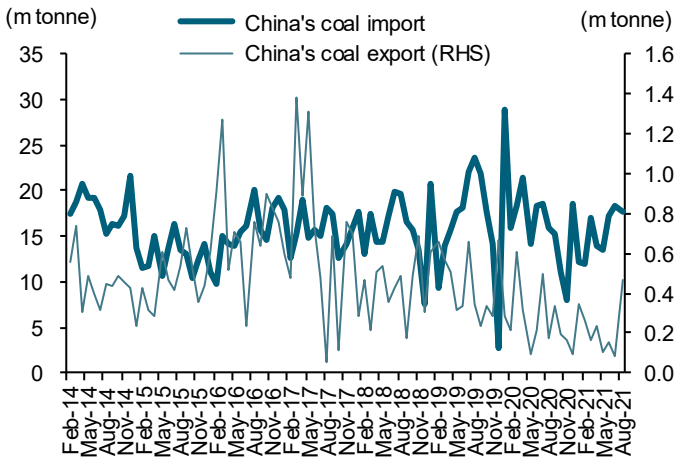
Exhibit 31: Coal price gap between QHD and NCT



Source: Bloomberg

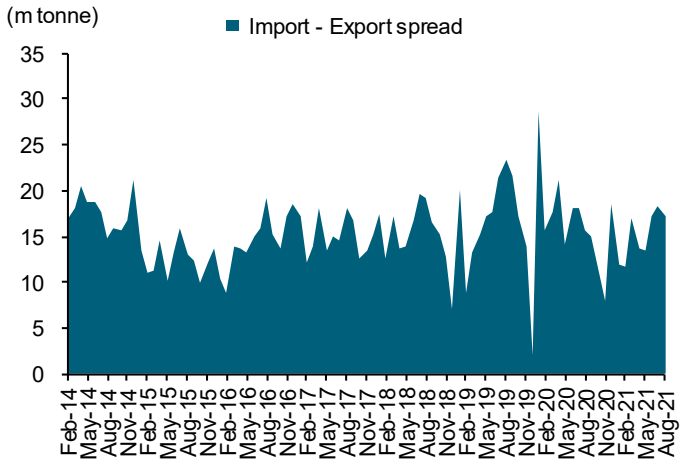
China's electricity shortage and coal dilemma. In China, coal supply is struggling to catch up with demand among top consumers as mine safety checks slow output. The coal price gap between China's Qinghuangdao (QHD) benchmark index and NCT has declined from USD20-40/t in 2019-1H21 to negative USD35/t in Sep-21, as the Chinese government has capped the domestic QHD coal price, while the NCT price has continued to rise even though China's ban on coal imported from Australia is still in place from the beginning of 2021.

Exhibit 32: China's coal imports and exports



Source: Bloomberg

Exhibit 33: China' coal import over export gap

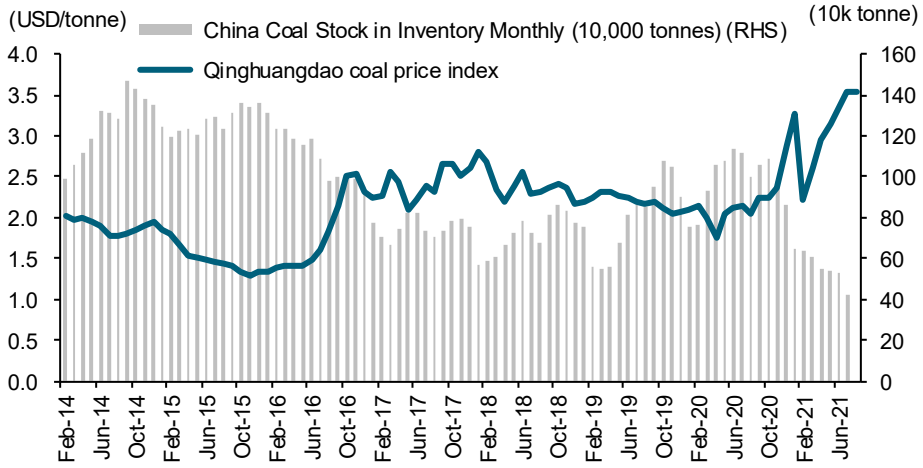


Source: Bloomberg

China's coal inventory remains at an 8-year low as of Sep-21. Thanks to the lower domestic coal production, stagnant coal imports, and higher demand, China's coal inventory has continued to decline to only 40kt in Sep-21, the lowest level since 2014.

Together with the tight coal supply globally, the ongoing ban on coal imported from Australia, and the lower-than-expected power generation from renewable energy sources, particularly wind farms, we think that China's current temporary shutdowns and electricity rationing policy should continue at least until end-October when we expect it to increase the coal production levels and import higher coal volumes to replenish its low coal inventory ahead of the coming winter season.

Exhibit 34: China's coal inventory vs QHD coal price index

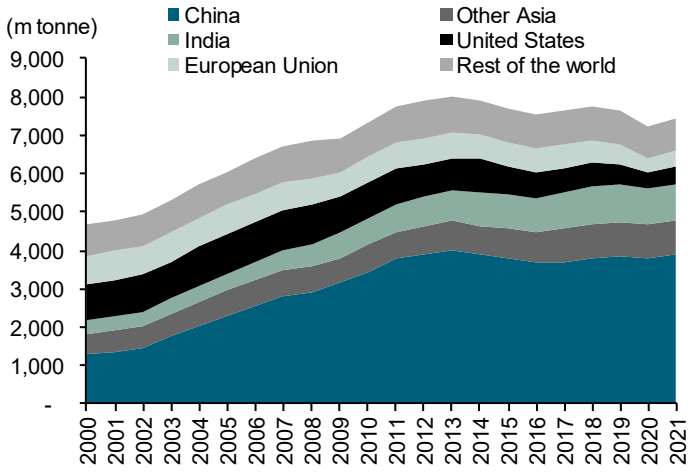


Source: Bloomberg

Coal dilemma for investors and policy makers. While coal is sometimes called the least loved commodity because of carbon emissions, Asia's two largest economies are currently still hooked on the fuel, meaning that the rising costs could feed through to higher energy bills and impact economic activities if they persist.

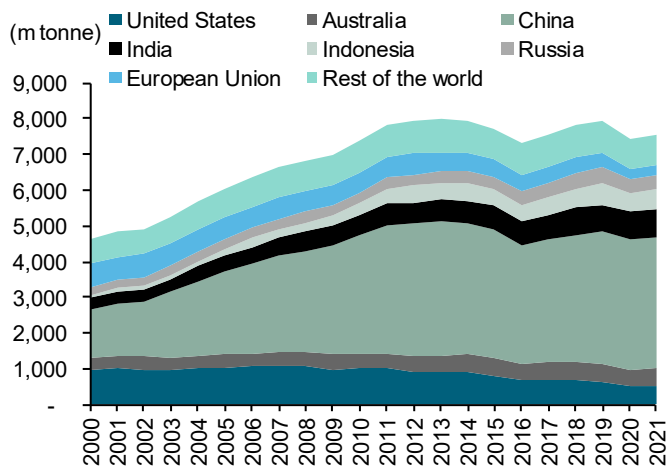
In China and India – which jointly account for 65% of global coal use and are the two biggest importers of the fuel, followed by Japan and South Korea – demand rose this year as the scorching heat of summer and the economic recovery increased the need for electricity.

Exhibit 35: Global coal consumption by region



Source: International Energy Agency (IEA)

Exhibit 36: Global coal production

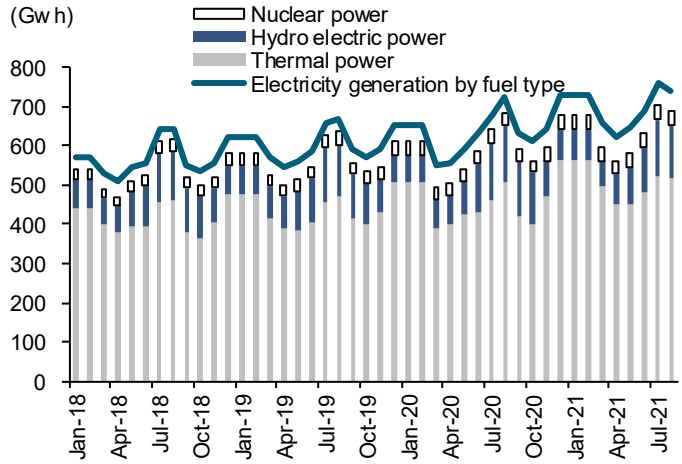


Source: IEA

Could higher electricity demand in China and India lead to a higher demand-rationing coal price? China's major power producers generated 13.2% y-y higher electricity in 7M21, according to China's National Bureau of Statistics. China still needs more coal for its power generation as a result of a drought that led to lower hydroelectric power output. The result was that China was importing a 16% y-y higher coal volume in Jul-21.

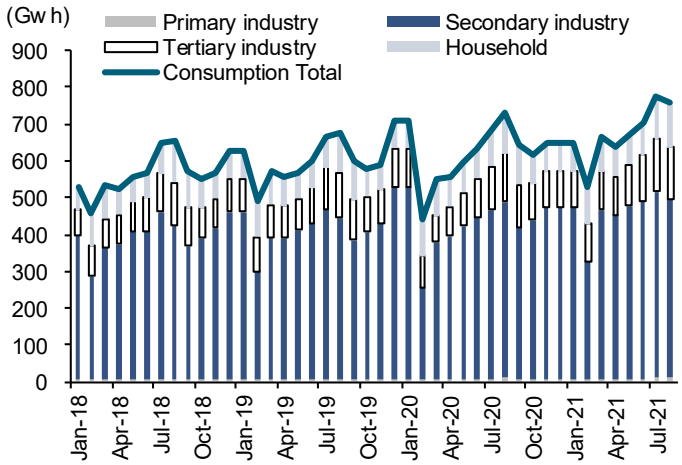
In India, after suffering from a severe wave of Covid-19 infections earlier this year, the economy rebounded to the point that April-June GDP grew at a record pace. Demand for electricity, and therefore coal, should increase further as the pandemic continues to ebb and the country's rainy season ends.

Exhibit 37: Thermal power (mostly coal-fired) remains China's main power generation capacity



Source: Bloomberg

Exhibit 38: China's electricity demand has sharply rebounded above pre-Covid-19 levels

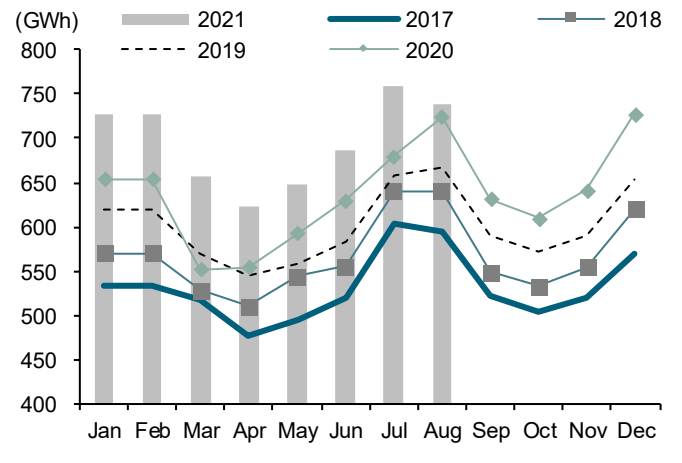


Source: Bloomberg

Coal supply remains unpromising despite the higher coal price. While demand is growing strongly, that is not the case for supply. Short-term disruptions have exacerbated the squeeze this year, and there is little incentive to make investments in new production when public policy is fixed on phasing out coal use to combat global warming.

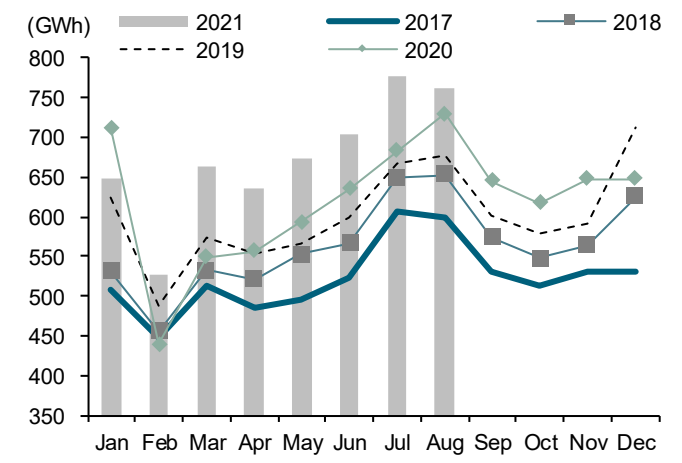
As the world's largest consumer and importer of coal and also the world's largest coal producer, China has restricted activities across the coal industry after fatal accidents have occurred in coal mines, and has implemented reforms to discourage smaller mining operations which have the worst safety records. As a result, domestic coal production is less likely to rise significantly even when prices soar, which is the case currently.

Exhibit 39: China's electricity generation



Source: Bloomberg

Exhibit 40: China's electricity consumption



Source: Bloomberg

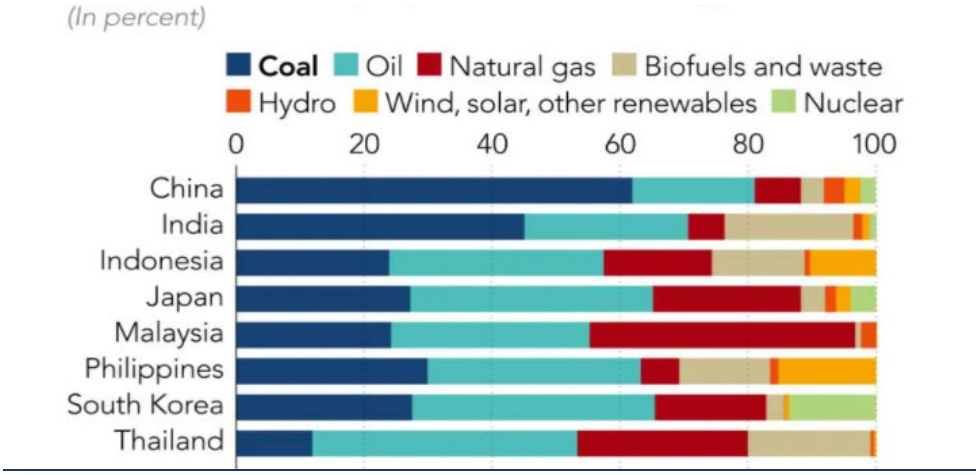
China has been leaning more heavily on Indonesia and Russia for coal after effectively banning imports from Australia amid rising political tension and a trade war with Canberra. But Indonesia, the world's biggest coal exporter, began restricting shipments abroad in Sep-21 after heavy rainfall disrupted production. The government barred exports by 34 mining companies and had prioritised more profitable overseas customers instead of fulfilling domestic obligations.

In Australia, the world's next-largest exporter, coal producers slashed capacity and personnel amid the pandemic last year and remain cautious about dramatically scaling back up, given the likelihood that demand will shrink in the long run.

BANPU's coal production policy. ITMG, BANPU's coal mine producer in Indonesia, has maintained its coal production levels and abandoned its deeper stripping ratio policy, stating that the coal reserve is unlikely to benefit from a high coal price in the future, and hence it is in the best interest of BANPU and ITMG to maximise the coal profitability in 2021.

BANPU's Centennial coal mines have struggled to increase their coal production levels despite the high coal price, as the company remains reluctant over the long-term coal price trend.

Exhibit 41: Coal remained a major part of Asia's energy mix in 2020



Source: EIA

China and India coal policies. China is aiming to phase out coal use from 2026 as part of its efforts to slash greenhouse gas emissions, meaning that its consumption should peak in 2025 and start to fall thereafter, based on China's National Development and Reform Commission. The Chinese president, Xi Jinping, has also pledged to bring China's emissions to a peak before 2030 and make the country carbon neutral by 2060. India aims to have around 60% of its installed electricity generation capacity from clean sources by 2030, mainly by increasing the use of renewables, according to Prime Minister Narendra Modi at the United Nations Climate Action Summit in Sep-20.

Funding is evaporating for coal. Investors and banks are also increasingly discouraging companies from putting money into new coal production due to the likelihood of a demand decline over the long run and the environmental damage caused by the fuel.

Will the Newcastle coal price index remain over USD150/t until 2H21? We think it is likely. Given the structural changes in the coal industry – lower coal supply and shrinking funding – the currently strong demand for coal globally due to the climate change impact has inevitably led to a high coal price, which we think could continue into 2022. Hence, we project the NCT coal price to sustain at over USD130-150/t, at least until mid-2022.

Winners under current price uptrends of coal, gas, and oil

We maintain our Overweight recommendation on the Thai energy sector and prefer PTTEP and TOP as the winners of the oil price uptrend and BANPU and IVL as the winners of the gas price uptrend.

Coal: In the Thai energy market, BANPU is the sole winner of the current coal price uptrend, in our view, with coal production in three major countries – Indonesia (23mtpa coal production estimated in 2021), Australia (12mtpa), and China (1mtpa). In addition, BANPU is the only Thai listed company with a large capacity of shale gas at 0.8bcfpd.

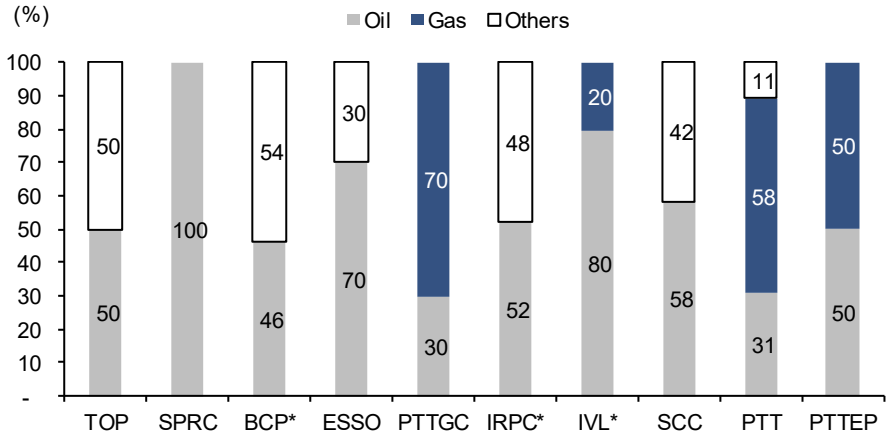
Oil: PTTEP and TOP are our preferred oil plays, given their high earnings exposures to the oil & gas prices (PTTEP as a producer of oil & gas) and as potential winners of the expected rebound in the demand for refined oil after the global reopening (TOP).

Gas: For gas price plays, our top picks are BANPU and IVL as the winners of the current gas price uptrend. BANPU has 0.8bscfd of gas production capacity in both the Marcellus and Barnett shale areas in the US.

IVL has a large exposure to shale gas as a key feedstock for its 4mtpa integrated oxide and derivatives (IOD) product group in the US.

Additionally, the higher HH gas price should directly benefit BANPU's shale gas unit, while the high HH price should indirectly widen the margin of IVL's PET and PTA sold in North America. As one of three major producers of PET and PTA, IVL has high bargaining power to raise the contract and spot selling prices of its PET, PTA and IOD products produced from gas-based ethylene.

Exhibit 42: Net profit breakdown by oil, gas, and others as of 2Q21



*EBITDA breakdown for BCP, IRPC, and IVL
Sources: Companies; FSSIA estimates

Exhibit 43: Peer comparisons

Company	BBG code	Rec	Share Price	Target price	*Upside*	Market Cap	3Y EPS CAGR	------ PE ----		------ ROE ---		---- PBV ----		EV / EBITDA	
								21E	22E	21E	22E	21E	22E	21E	22E
			(LCY)	(LCY)	*(%)*	(USD m)	(%)	(x)	(x)	(%)	(%)	(x)	(x)	(x)	(x)
THAILAND															
Ptt	PTT TB	BUY	39.75	60	*51*	33,622	38.1	9.4	8.8	13.0	12.9	1.2	1.1	4.8	4.1
Ptt Explor & Prod	PTTEP TB	BUY	120.5	158	*31*	14,166	24.6	10.7	10.4	12.3	12.1	1.3	1.2	4.8	5.2
Thai Oil	TOP TB	BUY	54.75	67	*22*	3,308	nm	8.8	9.5	10.6	9.3	0.9	0.9	7.6	8.1
Bangkok Aviation	BAFS TB	BUY	28.5	40.0	*40*	538	nm	(169.6)	16.5	(2.1)	20.0	3.7	3.0	40.8	10.6
Star Petroleum Refin	SPRC TB	BUY	10.2	11	*8*	1,310	43.7	9.1	7.5	17.5	19.4	1.5	1.4	7.1	4.4
Bangchak Corp	BCP TB	BUY	28.5	38	*33*	1,146	nm	14.9	6.8	5.6	11.5	0.8	0.8	9.7	7.5
Esso Thailand	ESSO TB	HOLD	8.25	8.9	*8*	846	67.8	6.4	5.6	26.8	24.5	1.5	1.2	6.1	5.0
Ptt Global Chemical	PTTGC TB	BUY	64.5	75	*16*	8,612	nm	9.0	11.5	11.2	8.7	1.0	1.0	10.9	10.2
IRPC	IRPC TB	BUY	4.38	5	*14*	2,650	nm	8.2	7.3	14.0	14.8	1.1	1.0	6.1	5.4
Indorama Ventures	IVL TB	BUY	44	62	*41*	7,316	71.3	10.9	9.6	16.5	16.4	1.7	1.5	6.6	5.9
BANPU	BANPU TB	BUY	13.9	14.6	*5*	2,785	nm	8.6	12.5	12.7	9.4	1.0	1.1	7.1	8.4
Tipco Asphalt	TASCO TB	BUY	18.5	22.5	*22*	865	(5.7)	13.1	9.6	14.8	19.1	1.9	1.7	10.1	7.2
Thailand avg						**77,163**	**33.3**	**8.5**	**9.5**	**13.0**	**12.7**	**1.2**	**1.2**	**6.3**	**5.7**
PAKISTAN															
Oil & Gas Develop	OGDC PA	NA	81.15	NA	*NA*	2,049	0.0	3.8	3.4	12.2	12.0	0.5	0.4	nm	nm
Pakistan Petroleum	PPL PA	NA	72.48	NA	*NA*	1,146	nm	3.9	3.7	13.8	13.2	nm	nm	nm	nm
Pakistan avg						**3,195**	**-**	**3.8**	**3.5**	**12.8**	**12.4**	**0.3**	**0.3**	**-**	**-**
HONGKONG															
Cnooc	883 HK	NA	9.17	NA	*NA*	52,577	40.8	4.9	4.7	15.1	14.0	0.7	0.7	2.1	1.9
China Petro&Chem	386 HK	NA	4.04	NA	*NA*	79,366	17.5	5.8	6.1	9.0	7.9	0.5	0.5	3.7	3.6
Petrochina	857 HK	NA	4.14	NA	*NA*	162,215	32.1	7.5	8.5	6.5	5.5	0.5	0.5	4.0	4.1
China Oilfield Sers	2883 HK	NA	8.11	NA	*NA*	9,282	6.0	11.4	8.8	7.1	8.3	0.8	0.7	8.9	7.9
Hongkong avg						**303,440**	**29.7**	**6.7**	**7.2**	**8.6**	**7.7**	**0.6**	**0.5**	**3.7**	**3.7**
INDONESIA															
Medco Energi Inter	MEDC IJ	NA	610.00	NA	*NA*	1,073	nm	1.7	1.1	8.8	11.3	1.0	0.1	5.2	4.9
Energi Mega Pers	ENRG IJ	NA	132.00	NA	*NA*	229	nm	nm	nm	nm	nm	nm	nm	nm	nm
Indonesia avg						**1,302**	**nm**	**1.4**	**0.9**	**7.2**	**9.3**	**0.8**	**0.1**	**4.3**	**4.1**
INDIA															
Reliance Industries	RIL IN	NA	2,609.20	NA	*NA*	224,276	20.3	37.0	29.8	8.6	7.8	2.8	2.2	22.9	17.2
Oil & Natural Gas	ONGC IN	NA	163.65	NA	*NA*	28,363	90.9	17.1	7.8	6.1	11.9	1.0	0.9	6.6	4.8
Oil India	OINL IN	NA	242.95	NA	*NA*	3,589	(1.5)	13.1	5.9	7.3	17.6	0.9	1.0	22.7	5.8
Indian Oil	IOCL IN	NA	129.90	NA	*NA*	16,380	nm	8.0	7.2	14.6	13.9	1.2	1.0	7.2	6.4
Bharat Petroleum	BPCL IN	NA	443.85	NA	*NA*	12,936	35.8	9.6	10.6	24.7	16.4	2.1	1.8	7.7	8.7
Hindustan Petrole	HPCL IN	NA	314.45	NA	*NA*	5,880	34.9	5.8	6.7	24.1	16.9	1.3	1.1	5.9	7.3
Gail India	GAIL IN	NA	164.70	NA	*NA*	9,916	(4.1)	14.8	9.1	10.7	14.4	1.5	1.3	11.9	7.3
Petronet Lng	PLNG IN	NA	232.35	NA	*NA*	4,609	6.4	12.8	12.0	23.9	22.0	2.9	nm	7.5	7.1
India avg						**305,949**	**21.0**	**30.5**	**24.1**	**9.9**	**9.6**	**2.4**	**1.9**	**19.0**	**14.3**
JAPAN															
Inpex Corp	1605 JP	NA	976.00	NA	*NA*	12,801	78.5	8.2	7.6	6.2	6.4	0.5	0.5	3.8	3.6
Japan avg						**12,801**	**78.5**	**8.2**	**7.6**	**6.2**	**6.4**	**0.5**	**0.5**	**3.8**	**3.6**
TAIWAN															
Formosa Petroch	6505 TT	NA	101.50	NA	*NA*	34,556	88.9	19.2	20.9	15.6	13.3	2.8	2.7	11.7	12.8
Taiwan avg						**34,556**	**88.9**	**19.2**	**20.9**	**15.6**	**13.3**	**2.8**	**2.7**	**11.7**	**12.8**
SOUTH KOREA															
S-Oil Corp	010950 KS	NA	111,500.00	NA	*NA*	10,491	nm	9.4	10.5	21.9	17.7	1.9	1.7	6.4	7.0
South Korea avg						**10,491**	**nm**	**9.4**	**10.5**	**21.9**	**17.7**	**1.9**	**1.7**	**6.4**	**7.0**
AUSTRALIA															
Woodside Petroleum	WPL AU	NA	25.04	NA	*NA*	17,554	nm	15.0	12.3	9.7	11.0	1.3	1.3	6.0	5.5
Santos	STO AU	NA	7.43	NA	*NA*	11,190	44.9	12.8	10.6	11.9	13.1	1.4	1.3	5.3	4.7
Oil Search	OSH AU	NA	4.55	NA	*NA*	6,835	nm	16.3	12.6	7.2	8.3	1.2	1.1	8.1	7.1
Australia avg						**35,580**	**44.9**	**14.6**	**11.8**	**9.9**	**11.1**	**1.3**	**1.3**	**6.2**	**5.6**
Oil & Gas under coverage						**77,163**	**33.3**	**8.5**	**9.5**	**13.0**	**12.7**	**1.2**	**1.2**	**6.3**	**5.7**
Average (all)						**784,478**	**27.63**	**16.8**	**14.7**	**10.2**	**9.5**	**1.5**	**1.3**	**10.2**	**8.4**

Share prices as of 5 October 2021
Sources: Bloomberg; FSSIA estimates

Corporate Governance report of Thai listed companies 2020

EXCELLENT LEVEL

AAV	ADVANC	AF	AIRA	AKP	AKR	ALT	AMA	AMATA	AMATAV	ANAN
AOT	AP	ARIP	ARROW	ASP	BAFS	BANPU	BAY	BCP	BCPG	BDMS
BEC	BEM	BGRIM	BIZ	BKI	BLA	BOL	BPP	BRR	BTS	BWG
CENTEL	CFRESH	CHEWA	CHO	CIMBT	CK	CKP	CM	CNT	COL	COMAN
COTTO	CPALL	CPF	CPI	CPN	CSS	DELTA	DEMCO	DRT	DTAC	DTC
DV8	EA	EASTW	ECF	ECL	EGCO	EPG	ETE	FNS	FPI	FPT
FSMART	GBX	GC	GCAP	GEL	GFPT	GGC	GPSC	GRAMMY	GUNKUL	HANA
HARN	HMPRO	ICC	ICHI	III	ILINK	INTUCH	IRPC	IVL	JKN	JSP
JWD	K	KBANK	KCE	KKP	KSL	KTB	KTC	LANNA	LH	LHFG
LIT	LPN	MAKRO	MALEE	MBK	MBKET	MC	MCOT	METCO	MFEC	MINT
MONO	MOONG	MSC	MTC	NCH	NCL	NEP	NKI	NOBLE	NSI	NVD
NYT	OISHI	ORI	OTO	PAP	PCSGH	PDJ	PG	PHOL	PLANB	PLANET
PLAT	PORT	PPS	PR9	PREB	PRG	PRM	PSH	PSL	PTG	PTT
PTTEP	PTTGC	PYLON	Q-CON	QH	QTC	RATCH	RS	S	S & J	SAAM
SABINA	SAMART	SAMTEL	SAT	SC	SCB	SCC	SCCC	SCG	SCN	SDC
SEAFCO	SEAOIL	SE-ED	SELIC	SENA	SIRI	SIS	SITHAI	SMK	SMPC	SNC
SONIC	SORKON	SPALI	SPI	SPRC	SPVI	SSSC	SST	STA	SUSCO	SUTHA
SVI	SYMC	SYNTEC	TACC	TASCO	TCAP	TFMAMA	THANA	THANI	THCOM	THG
THIP	THRE	THREL	TIP	TIPCO	TISCO	TK	TKT	TTB	TMILL	TNDT
TNL	TOA	TOP	TPBI	TQM	TRC	TSC	TSR	TSTE	TSTH	TTA
TTCL	TTW	TU	TVD	TVI	TVO	TWPC	U	UAC	UBIS	UV
VGI	VIH	WACOAL	WAVE	WHA	WHAUP	WICE	WINNER	TRUE		

VERY GOOD LEVEL

2S	ABM	ACE	ACG	ADB	AEC	AEONTS	AGE	AH	AHC	AIT
ALLA	AMANAH	AMARIN	APCO	APCS	APURE	AQUA	ASAP	ASEFA	ASIA	ASIAN
ASIMAR	ASK	ASN	ATP30	AUCT	AWC	AYUD	B	BA	BAM	BBL
BFIT	BGC	BJC	BJCHI	BROOK	BTW	CBG	CEN	CGH	CHARAN	CHAYO
CHG	CHOTI	CHOW	CI	CIG	CMC	COLOR	COM7	CPL	CRC	CRD
CSC	CSP	CWT	DCC	DCON	DDD	DOD	DOHOME	EASON	EE	ERW
ESTAR	FE	FLOYD	FN	FORTH	FSS	FTE	FVC	GENCO	GJS	GL
GLAND	GLOBAL	GLOCON	GPI	GULF	GYT	HPT	HTC	ICN	IFS	ILM
IMH	INET	INSURE	IRC	IRCP	IT	ITD	ITEL	J	JAS	JCK
JCKH	JMART	JMT	KBS	KCAR	KGI	KIAT	KOOL	KTIS	KWC	KWM
L&E	LALIN	LDC	LHK	LOXLEY	LPH	LRH	LST	M	MACO	MAJOR
MBAX	MEGA	META	MFC	MGT	MILL	MITSIB	MK	MODERN	MTI	MVP
NETBAY	NEX	NINE	NTV	NWR	OCC	OGC	OSP	PATO	PB	PDG
PDI	PICO	PIMO	PJW	PL	PM	PPP	PRIN	PRINC	PSTC	PT
QLT	RCL	RICHY	RML	RPC	RWI	S11	SALEE	SAMCO	SANKO	SAPPE
SAWAD	SCI	SCP	SE	SEG	SFP	SGF	SHR	SIAM	SINGER	SKE
SKR	SKY	SMIT	SMT	SNP	SPA	SPC	SPCG	SR	SRICHA	SSC
SSF	STANLY	STI	STPI	SUC	SUN	SYNEX	T	TAE	TAKUNI	TBSP
TCC	TCMC	TEAM	TEAMG	TFG	TIGER	TITLE	TKN	TKS	TM	TMC
TMD	TMI	TMT	TNITY	TNP	TNR	TOG	TPA	TPAC	TPCORP	TPOLY
TPS	TRITN	TRT	TRU	TSE	TVT	TWP	UEC	UMI	UOBKH	UP
UPF	UPOIC	UT	UTP	UWC	VL	VNT	VPO	WIIK	WP	XO
YUASA	ZEN	ZIGA	ZMICO							

GOOD LEVEL

7UP	A	ABICO	AJ	ALL	ALUCON	AMC	APP	ARIN	AS	AU
B52	BC	BCH	BEAUTY	BGT	BH	BIG	BKD	BLAND	BM	BR
BROCK	BSBM	BSM	BTNC	CAZ	CCP	CGD	CITY	CMAN	CMO	CMR
CPT	CPW	CRANE	CSR	D	EKH	EP	ESSO	FMT	GIFT	GREEN
GSC	GTB	HTECH	HUMAN	IHL	INOX	INSET	IP	JTS	JUBILE	KASET
KCM	KKC	KUMWEL	KUN	KWG	KYE	LEE	MATCH	MATI	M-CHAI	MCS
MDX	MJD	MM	MORE	NC	NDR	NER	NFC	NNCL	NPK	NUSA
OCEAN	PAF	PF	PK	PLE	PMTA	POST	PPM	PRAKIT	PRECHA	PRIME
PROUD	PTL	RBF	RCI	RJH	ROJNA	RP	RPH	RSP	SF	SFLEX
SGP	SISB	SKN	SLP	SMART	SOLAR	SPG	SQ	SSP	STARK	STC
SUPER	SVOA	TC	TCCC	THMUI	TIW	TNH	TOPP	TPCH	TPIPP	TPLAS
TTI	TYCN	UKEM	UMS	VCOM	VRANDA	WIN	WORK	WPH		

Description	Score Range
Excellent	90-100
Very Good	80-89
Good	70-79

Disclaimer:
The disclosure of the survey results of the Thai Institute of Directors Association ("IOD") regarding corporate governance is made pursuant to the policy of the Office of the Securities and Exchange Commission. The survey of the IOD is based on the information of a company listed on the Stock Exchange of Thailand and the Market for Alternative Investment disclosed to the public and able to be accessed by a general public investor. The result, therefore, is from the perspective of a third party. It is not an evaluation of operation and is not based on inside information.
The survey result is as of the date appearing in the Corporate Governance Report of Thai Listed Companies. As a result, the survey results may be changed after that date. FSS International Investment Advisory Company Limited does not confirm nor certify the accuracy of such survey results.
* CGR scoring should be considered with news regarding wrong doing of the company or director or executive of the company such unfair practice on securities trading, fraud, and corruption SEC imposed a civil sanction against insider trading of director and executive; ** delisted

Source: Thai Institute of Directors Association (IOD); FSSIA's compilation

Anti-corruption Progress Indicator 2020

CERTIFIED										
2S	ADVANC	AI	AIE	AIRA	AKP	AMA	AMANAH	AP	AQUA	ARROW
ASK	ASP	AYUD	B	BAFS	BANPU	BAY	BBL	BCH	BCP	BCPG
BGC	BGRIM	BJCHI	BKI	BLA	BPP	BROOK	BRR	BSBM	BTS	BWG
CEN	CENTEL	CFRESH	CGH	CHEWA	CHOTI	CHOW	CIG	CIMBT	CM	CMC
COL	COM7	CPALL	CPF	CPI	CPN	CSC	DCC	DELTA	DEMCO	DIMET
DRT	DTAC	DTC	EASTW	ECL	EGCO	FE	FNS	FPI	FPT	FSS
FTE	GBX	GC	GCAP	GEL	GFPT	GGC	GJS	GPSC	GSTEEL	GUNKUL
HANA	HARN	HMPRO	HTC	ICC	ICHI	IFS	INET	INSURE	INTUCH	IRPC
ITEL	IVL	K	KASET	KBANK	KBS	KCAR	KCE	KGI	KKP	KSL
KTB	KTC	KWC	L&E	LANNA	LHFG	LHK	LPN	LRH	M	MAKRO
MALEE	MBAX	MBK	MBKET	MC	MCOT	MFC	MFEC	MINT	MONO	MOONG
MPG	MSC	MTC	MTI	NBC	NEP	NINE	NKI	NMG	NNCL	NSI
NWR	OCC	OCEAN	OGC	ORI	PAP	PATO	PB	PCSGH	PDG	PDI
PDJ	PE	PG	PHOL	PL	PLANB	PLANET	PLAT	PM	PPP	PPPM
PPS	PREB	PRG	PRINC	PRM	PSH	PSL	PSTC	PT	PTG	PTT
PTTEP	PTTGC	PYLON	Q-CON	QH	QLT	QTC	RATCH	RML	RWI	S & J
SABINA	SAT	SC	SCB	SCC	SCCC	SCG	SCN	SEAOIL	SE-ED	SELIC
SENA	SGP	SIRI	SITHAI	SMIT	SMK	SMPC	SNC	SNP	SORKON	SPACK
SPC	SPI	SPRC	SRICHA	SSF	SSSC	SST	STA	SUSCO	SVI	SYNTEC
TAE	TAKUNI	TASCO	TBSP	TCAP	TCMC	TFG	TFI	TFMAMA	THANI	THCOM
THIP	THRE	THREL	TIP	TIPCO	TISCO	TKT	TTB	TMD	TMILL	TMT
TNITY	TNL	TNP	TNR	TOG	TOP	TPA	TPCORP	TPP	TRU	TSC
TSTH	TTCL	TU	TVD	TVI	TVO	TWPC	U	UBIS	UEC	UKEM
UOBKH	UWC	VGI	VIH	VNT	WACOAL	WHA	WHAUP	WICE	WIIK	XO
ZEN	TRUE									
DECLARED										
7UP	ABICO	AF	ALT	AMARIN	AMATA	AMATAV	ANAN	APURE	B52	BKD
BM	BROCK	BUI	CHO	CI	COTTO	DDD	EA	EFORL	EP	ERW
ESTAR	ETE	EVER	FSMART	GPI	ILINK	IRC	J	JKN	JMART	JMT
JSP	JTS	KWG	LDC	MAJOR	META	NCL	NOBLE	NOK	PK	PLE
ROJNA	SAAM	SAPPE	SCI	SE	SHANG	SINGER	SKR	SPALI	SSP	STANLY
SUPER	SYNEX	THAI	TKS	TOPP	TRITN	TTA	UPF	UV	WIN	ZIGA

Level	
Certified	This level indicates practical participation with thoroughly examination in relation to the recommended procedures from the audit committee or the SEC's certified auditor, being a certified member of Thailand's Private Sector Collective Action Coalition Against Corruption programme (Thai CAC) or already passed examination to ensure independence from external parties.
Declared	This level indicates determination to participate in the Thailand's Private Sector Collective Action Coalition Against Corruption programme (Thai CAC)

Disclaimer:
The disclosure of the Anti-Corruption Progress Indicators of a listed company on the Stock Exchange of Thailand, which is assessed by Thaipat Institute, is made in order to comply with the policy and sustainable development plan for the listed companies of th e Office of the Securities and Exchange Commission. Thaipat Institute made this assessment based on the information received from the listed company, as stipulated in the form for the assessment of Anti-corruption which refers to the Annual Registration Statement (Form 56-1), Annual Report (Form 56-2), or other relevant documents or reports of such listed company . The assessment result is therefore made from the perspective of Thaipat Institute that is a third party. It is not an assessment of operation and is not based on any inside information. Since this assessment is only the assessment result as of the date appearing in the assessment result, it may be changed after that date or when there is any change to the relevant information. Nevertheless, FSS International Investment Advisory Company Limited does not confirm, verify, or certify the accuracy and completeness of the assessment results.

Note: Companies participating in Thailand's Private Sector Collective Action Coalition Against Corruption programme (Thai CAC) under Thai Institute of Directors (as of June 24, 2019) are categorised into: 1) companies that have declared their intention to join CAC, and; 2) companies certified by CAC.

Source: The Securities and Exchange Commission, Thailand; * FSSIA's compilation

GENERAL DISCLAIMER

ANALYST(S) CERTIFICATION

Suwat Sinsadok FSS International Investment Advisory Securities Co., Ltd

The individual(s) identified above certify(ies) that (i) all views expressed in this report accurately reflect the personal view of the analyst(s) with regard to any and all of the subject securities, companies or issuers mentioned in this report; and (ii) no part of the compensation of the analyst(s) was, is, or will be, directly or indirectly, related to the specific recommendations or views expressed herein.

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Company	Ticker	Price	Rating	Valuation & Risks
PTT PCL	PTT TB	THB 39.75	BUY	Risks to our SoTP-based valuation are the oil price and potential earnings downside from government intervention.
PTT Explor & Prod	PTTEP TB	THB 120.50	BUY	Risks our TP, which is based on EV/EBITDA, are a sharp decline in oil price and a potential earnings downside from government intervention.
Thai Oil	TOP TB	THB 54.75	BUY	Downside risks to our EV/EBITDA-based TP are a sharp rise in oil price and weak demand for refined oil products.
Bangkok Aviation Fuel Services	BAFS TB	THB 28.50	BUY	Downside risks to our SoTP-based target price include a slower than expected vaccination rate, leading to slower demand in tourism activities, plus uncertainty in the fuel volume demand in the north which could lead to volatility in Fuel Pipeline Transportation Limited (FPT)'s income.
Star Petroleum Refining	SPRC TB	THB 10.20	BUY	TP is based on EV/EBITDA. Downside risks are a sharp rise in oil price and weak demand for refined oil products.
Bangchak Corp	BCP TB	THB 28.50	BUY	The downside risks to our SoTP-based TP include: 1) lower-than-expected demand for petroleum products; 2) higher crude premiums; and 3) unplanned shutdowns of the company's refinery plants.
Esso Thailand	ESSO TB	THB 8.25	HOLD	The downside risks to our SoTP-based TP on ESSO include 1) lower-than-expected demand for petroleum products; 2) a higher crude premium; and 3) unplanned shutdowns of its refinery and petrochemical plants. The upside risks include 1) higher-than-expected demand for petroleum products; and 2) a lower crude premium.
PTT Global Chemical	PTTGC TB	THB 64.50	BUY	The key downside risks to our EV/EBITDA-based TP are the weaker-than-expected HDPE price and HDPE-naphtha margin
IRPC PCL	IRPC TB	THB 4.38	BUY	Key risks to our positive view and EV/EBITDA-based target price are weaker-than-expected oil product demand growth and lower-than-expected PP-naphtha and SM-benzene margins.
Tipco Asphalt	TASCO TB	THB 18.50	BUY	Downside risks to our EV/EBITDA multiple based TP include 1) a lower asphalt margin due to a oversupply in Asia on the back of faster recovery of utilisation rate for global refiners; and 2) a lower-than-expected supply of alternative crudes and asphalt.
Banpu	BANPU TB	THB 13.90	BUY	We see downside risks to our SoTP-based TP from lower coal prices, higher diesel costs and any unplanned shutdowns of its power plants.
Indorama Ventures	IVL TB	THB 44.00	BUY	The key downside risks to our EV/EBITDA-based TP are weaker-than-expected margins for PX-PTA and PET-PTA, lower demand for polyester, and delays in IVL's projects.

Source: FSSIA estimates

Additional Disclosures

Target price history, stock price charts, valuation and risk details, and equity rating histories applicable to each company rated in this report is available in our most recently published reports. You can contact the analyst named on the front of this note or your representative at Finansia Syrus Securities Public Company Limited

FSSIA may incorporate the recommendations and target prices of companies currently covered by FSS Research into equity research reports, denoted by an 'FSS' before the recommendation. FSS Research is part of Finansia Syrus Securities Public Company Limited, which is the parent company of FSSIA.

All share prices are as at market close on 05-Oct-2021 unless otherwise stated.

RECOMMENDATION STRUCTURE

Stock ratings

Stock ratings are based on absolute upside or downside, which we define as (target price* - current price) / current price.

BUY (B). The upside is 10% or more.
HOLD (H). The upside or downside is less than 10%.
REDUCE (R). The downside is 10% or more.
Unless otherwise specified, these recommendations are set with a 12-month horizon. Thus, it is possible that future price volatility may cause a temporary mismatch between upside/downside for a stock based on market price and the formal recommendation.

* In most cases, the target price will equal the analyst's assessment of the current fair value of the stock. However, if the analyst doesn't think the market will reassess the stock over the specified time horizon due to a lack of events or catalysts, then the target price may differ from fair value. In most cases, therefore, our recommendation is an assessment of the mismatch between current market price and our assessment of current fair value.

Industry Recommendations

Overweight. The analyst expects the fundamental conditions of the sector to be positive over the next 12 months.
Neutral. The analyst expects the fundamental conditions of the sector to be maintained over the next 12 months.
Underweight. The analyst expects the fundamental conditions of the sector to be negative over the next 12 months.

Country (Strategy) Recommendations

Overweight (O). Over the next 12 months, the analyst expects the market to score positively on two or more of the criteria used to determine market recommendations: index returns relative to the regional benchmark, index sharpe ratio relative to the regional benchmark and index returns relative to the market cost of equity.

Neutral (N). Over the next 12 months, the analyst expects the market to score positively on one of the criteria used to determine market recommendations: index returns relative to the regional benchmark, index sharpe ratio relative to the regional benchmark and index returns relative to the market cost of equity.

Underweight (U). Over the next 12 months, the analyst does not expect the market to score positively on any of the criteria used to determine market recommendations: index returns relative to the regional benchmark, index sharpe ratio relative to the regional benchmark and index returns relative to the market cost of equity.