

Thailand Utilities

Gas game: a dark horse and a white knight

- The SPP sector has been one of the hardest hit in Thailand, as the gas cost has spiked over 60% since 3Q21 due to the higher proportion of high-price LNG imports.
- SPPs should see a structural decline in the gas price based on 1) increasing lower-price gas supplies; 2) a higher supply from the US; and 3) lower-price LNG imports.
- BGRIM and GULF are top picks.

1Q22 should mark the bottom ahead of rising earnings in 2Q22 onward

The SPP sector has been one of the hardest hit in Thailand, as the gas cost has spiked by over 60% since 3Q21, and is likely to rise by 15-20% q-q in 1Q22 due to the higher proportion of high-priced LNG imports. We think the impact of the gas price hike in 2022 will most severely affect the gross margins of SPPs, but should begin to subside by 2Q22, even with the recent impact of the global spike in the spot LNG price. We project that the average selling price of gas to SPPs in Thailand will be USD11.6/mmbtu in 1Q22, before gradually declining to USD9.5/mmbtu in 2Q22, USD9.1/mmbtu in 3Q22, and USD8.4/mmbtu in 4Q22.

Our projected lower gas price sold to IUs in 2022 remains firm

We expect the local gas price sold to SPPs to dip to THB310/mmbtu (USD9.5/mmbtu) in 2Q22 as the high winter demand fades, supply from the US rises, and the Russia-Ukraine crisis potentially wanes, relieving upward pressure on the global spot price. Even including the impact of a c10% higher gas price due to Russia's invasion of Ukraine, we think SPPs will see a structural decline in the gas price based on 1) rising gas supplies from lower-price gas sources like Erawan; 2) a lower global LNG spot price due to the higher supply from the US; and 3) the import of low-price LNG by companies with shipper licenses. In addition, in 2022, the price of the 1.75mt spot LNG imported under the shipper license quotas awarded to private companies and the Electricity Generating Authority of Thailand (EGAT), will be excluded from the pool price.

BGRIM has a high growth potential on the gas price downtrend projected in 2H22

Based on gas consumption, we estimate that BGRIM has the highest sensitivity to changes in the gas prices sold to IUs, with every 1% change in the gas price, ceteris paribus, resulting in a 1.5% change in BGRIM's net profit, followed by GPSC (1.3%) and GULF (0.6%). In 2022, while we project BPP, RATCH, and EGCO to see higher core net profit growth than BGRIM, GULF, and GPSC due to their low earnings bases in 2021, we think BGRIM, GULF, and GPSC are attractive investments as we project their earnings to rise for longer in 2022-26 vs the 2022-24 earnings growth horizon for RATCH, EGCO, and BPP.

BGRIM and GULF are top picks

BGRIM is our SPP pick for its highest earnings sensitivity to the change in the gas price in Thailand and its highest capacity growth potential from five new SPPs. For IPPs, we prefer GULF as our top pick thanks to its most diversified asset portfolio, including conventional and renewable power capacity, its sea port, LNG terminal, infrastructure, and its recent moves into telecommunications and cryptocurrency.



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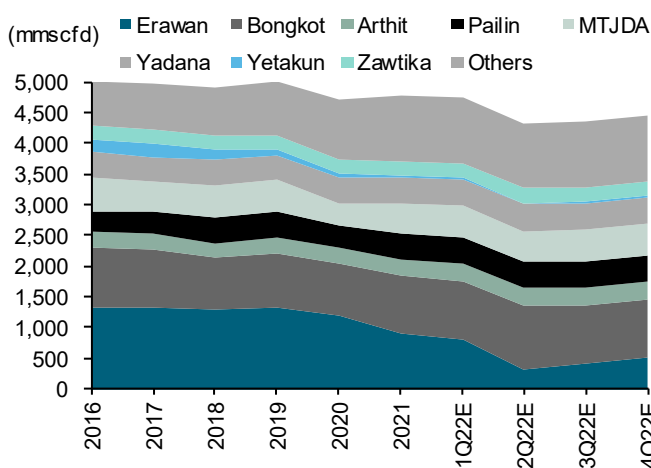
c10% higher gas price for SPPs from Russia’s invasion of Ukraine

In the past six months since Sep-21, the share prices of companies in the utilities sector, particularly small power producers (SPPs), have continued to underperform the SET index, mainly due to the sharp rise in the energy cost as a result of the global energy price spikes and Thailand’s higher imports of LNG to compensate for the structural decline in Thailand’s gas supply, mainly from the two gas fields Erawan and Bongkot whose existing concessions will expire in Apr-22 and Apr-23, respectively.

Hence, in 2022, Thailand needs to import a higher volume of spot LNG of around 4.5mt, up from 1.2mt in 2021, and most of the prices of the LNG imported by PTT (PTT TB, BUY, TP THB60) (60-70% in 2021 of total spot LNG import of 1.2mt), which are included in Thailand’s gas pool price, have risen significantly in 2H21-1Q22 due to the global supply disruptions.

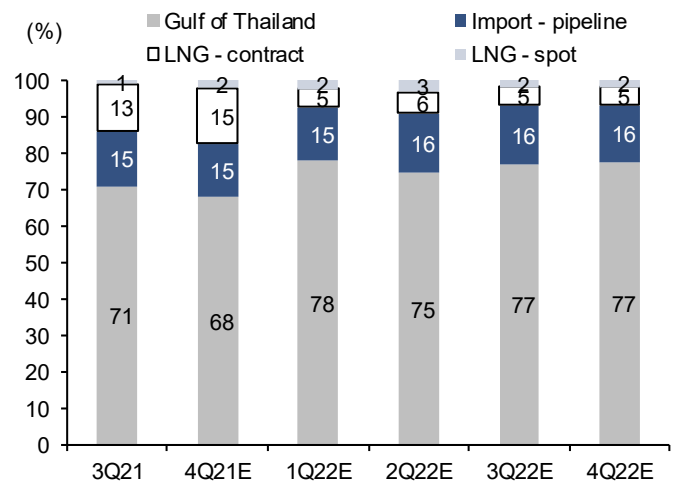
As a result, the pool gas price in Thailand jumped markedly in 2H21, rising from THB260/mmbtu in 3Q21 to THB320/mmbtu in 4Q21, significantly eroding the gross margins of SPPs due to the mismatch of the gas cost hike and the stagnant selling price of electricity sold to industrial users (IU), whose prices are linked directly with the national electricity grid.

Exhibit 1: Gas price by source



Sources: PTT; PTTEP; FSSIA estimates

Exhibit 2: Gas price component breakdown by source (% of pool gas price)



Sources: PTT; PTTEP; FSSIA estimates

In 2022, we expect the local gas price sold to SPPs – which includes the pool gas price, LNG terminal fee, transmission tariff and other charges, and the margin charged on the gas price – to peak in 1Q22 at THB380/mmbtu before dipping to THB310/mmbtu (USD9.5/mmbtu) in 2Q22 as the high winter demand fades, supply from the US rises, and the Russia-Ukraine crisis potentially wanes, relieving upward pressure on the global spot price.

The gross margin (tariff minus energy cost) of SPPs’ sales volumes for the electricity and steam sold to IUs in Thailand, which normally accounts for 24-35% of total revenue, should improve over the course of 2022 as the government has already indicated a series of rises in the pooled grid electricity tariff, which is directly linked to the tariff for electricity sold to IUs.

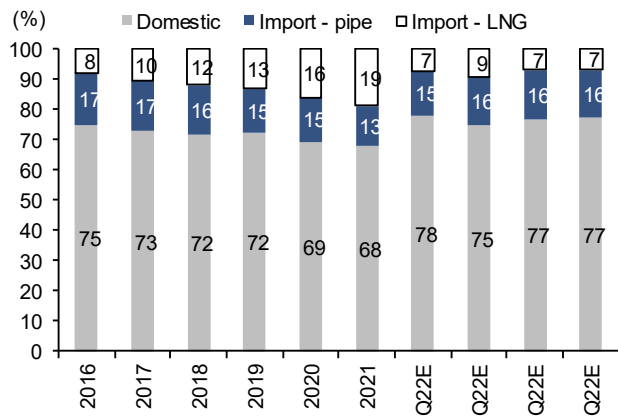
However, even including the impact of a c10% higher gas price due to Russia’s invasion of Ukraine, we think SPPs will see a structural decline in the gas price based on 1) rising gas supplies from lower-priced gas sources like Erawan; 2) a lower global LNG spot price due to the higher supply from the US; and 3) the import of low-priced LNG by companies with shipper licenses. In addition, in 2022, the price of the 1.75mt spot LNG imported under the shipper license quotas awarded to private companies and the EGAT, will be excluded from pool price.

Thailand: impact of the gas price hike should subside by 2Q22 onward

Since 3Q21, Thailand's gas production has been interrupted at Erawan gas field (20% of Thailand's gas supply in 2020-21) due to the production disruption during the transition period from the former operator Chevron and PTT Exploration and Production (PTTEP TB, BUY, TP THB162). The impact of the lower gas production from Erawan and Bongkot combined has led to a gas supply shortfall of 1,100mmscfd (800mmscfd from Erawan and 300mmscfd from Bongkot).

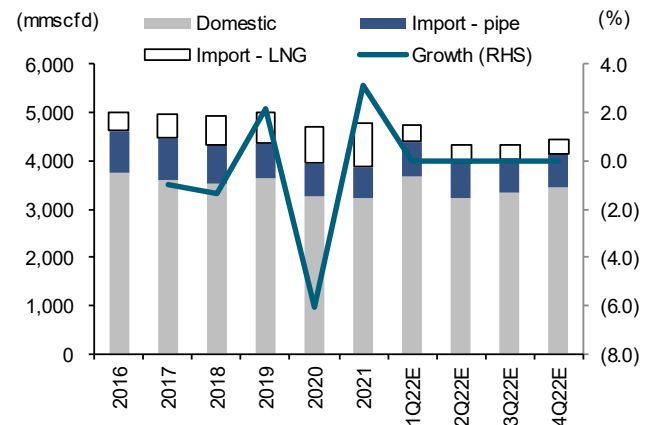
Higher spot LNG imports in 2022 to 4.5mt vs 1.2mt in 2021. To compensate for the gas supply shortage from Erawan and Bongkot, the Thai regulator, the Energy Regulatory Commission, has mandated PTT to import higher volumes of spot LNG, from 1.2mt in 2021 to 4.5mt in 2022, bringing the total LNG import volume to 6.4mt (5.2mt contract volume plus 1.2mt spot volume) in 2021 and 9.7mt (5.2mt contract volume plus 4.5mt spot volume) in 2022, according to PTT's management.

Exhibit 3: Thailand's gas supply, breakdown by source (%)



Sources: Department of Mineral Fuels (DMF) and PTT; FSSIA estimates

Exhibit 4: Thailand's gas supply, breakdown by source

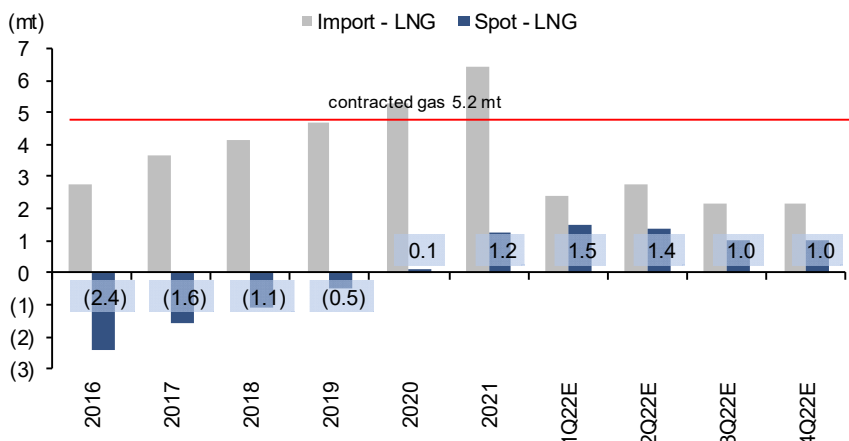


Sources: DMF and PTT; FSSIA estimates

As PTT has no choice but to raise its spot LNG imports to supplement its 5.2mt LNG import contract to compensate for the gas supply shortfall in Thailand, the average pool gas price has spiked from THB260/mmbtu in 3Q21 to THB320/mmbtu in 4Q21, and is projected by PTT to shoot up further to THB380/mmbtu in 1Q22, as the price of spot LNG is much higher at USD27/mmbtu in 1Q22, before declining to USD14/mmbtu in 2Q22, USD9/mmbtu in 3Q22, and USD7/mmbtu in 4Q22, based on our estimate.

In 2022, we forecast that PTT will import up to 9.8mt of LNG, equivalent to 1,372mmscfd or 7-9% of the total gas supply in 2022 at 4,450mmscfd, up from 6.4mt in 2021 and 5.3mt in 2020, based on PTT's guidance. Of the total projected 9.8mt of LNG imported, 5.2mt would come from contract LNG at a USD8-13/mmbtu price and the remainder would come from spot LNG imports at a higher price of over USD25-30/mmbtu, based on our estimate.

Exhibit 5: Thailand's LNG imports and exports

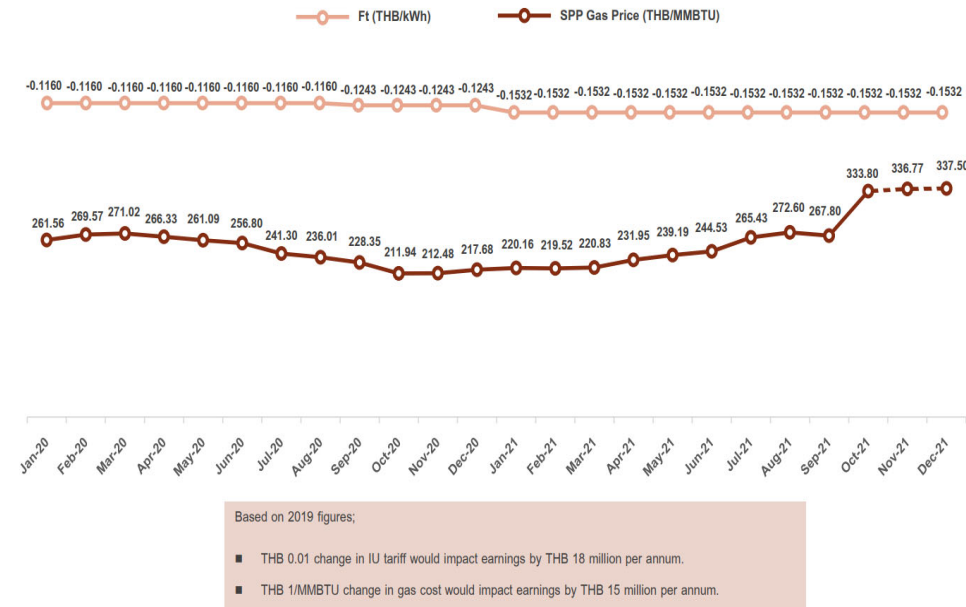


Sources: Energy Regulatory Commission (ERC); PTT; Bloomberg; FSSIA estimates

Impact of Russia's invasion of Ukraine. As Russia has already invaded eastern Ukraine, the gas supply from Russia to Europe is now in jeopardy and could be cut completely if the full sanctions by the EU and US against Russia are implemented.

Hence, the global spot LNG price, represented by the Japan-Korea Market (JKM) price benchmark, has spiked from below USD16/mmbtu in 3Q21 to USD36/mmbtu in 4Q21, and jumped further by over 10% on 24 Feb-22 when Russia invaded Ukraine, sending the JKM LNG spot price to over USD29mmbtu.

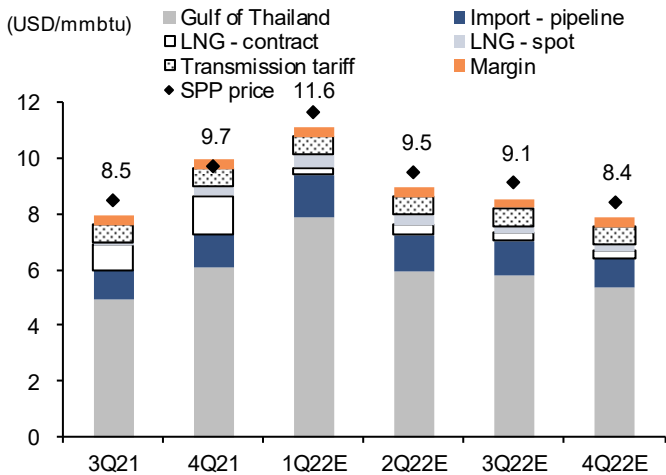
Exhibit 6: Thailand's fuel tariff (Ft) and SPP gas prices



Sources: BGRIM; ERC; PTT

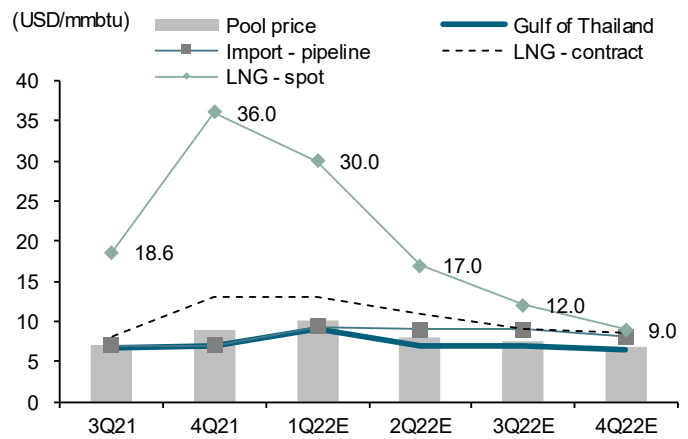
A gradual decline in the gas price to SPPs in 2022. We think the impact of the gas price hike in 2022 will most severely affect the gross margins of SPPs, but should begin to subside by 2Q22 even with the recent impact of the global spike in the spot LNG price. We project that the average selling price of gas to SPPs in Thailand will be USD11.6/mmbtu in 1Q22, before gradually declining to USD9.5/mmbtu in 2Q22, USD9.1/mmbtu in 3Q21, and USD8.4/mmbtu in 4Q22.

Exhibit 7: Post-Russian invasion gas price components of SPPs' final gas price



Sources: PTT; PTTEP; FSSIA estimates

Exhibit 8: Thailand's gas price by source after Russia's invasion of Ukraine (24 Feb 2022)



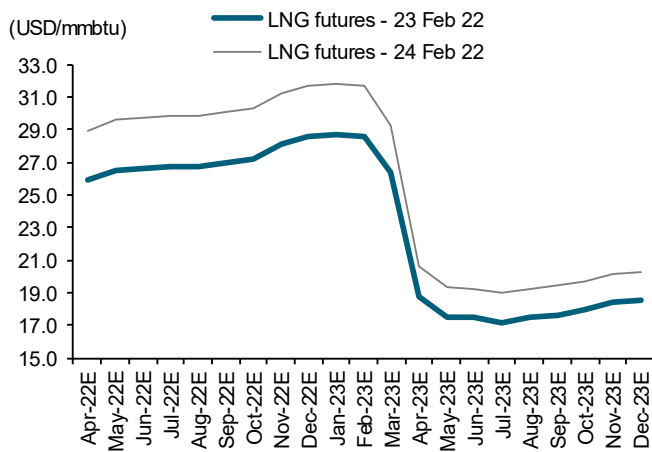
Sources: PTT; PTTEP; FSSIA estimates

The major driver for our projected lower gas prices sold to SPPs in 2022 comes from a lower spot LNG price volume that we estimate at 2.75mt (4.5mt minus 1.75mt volume from private importers with shipper licenses), which we project to drop from USD36/mmbtu in 1Q22 down to USD30/mmbtu in 2Q22, USD17/mmbtu in 3Q22, and USD12/mmbtu in 4Q22.

Meanwhile, the contract price of 5.2mt imported from PTT is estimated to secure a price range of USD11-13/mmbtu in 2022, far lower than the prices of USD12-36/mmbtu for the spot LNG price range, according to PTT. This should be similar for the gas prices from other sources like pipeline imports (mainly from Myanmar) and the Gulf of Thailand as the pricing formula is linked to one-third of the high sulphur fuel oil price, not 100%.

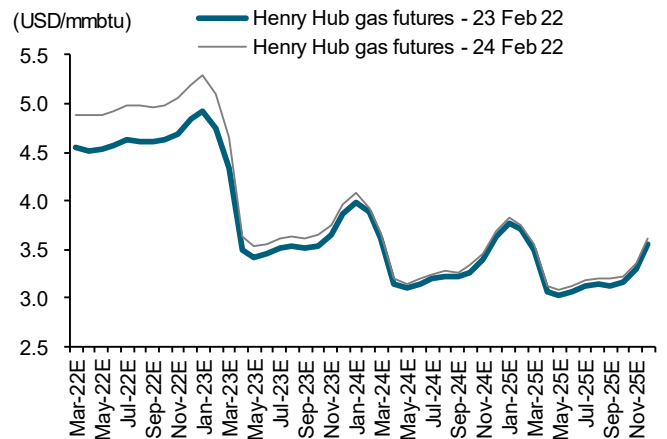
LNG futures reacted the most among all commodities. As the only major source of energy for the EU, LNG futures reacted the most to Russia's invasion of Ukraine, rising by over 10% to USD29-31/mmbtu for the near-dated futures from Mar-22 to Feb-23. Meanwhile, the Henry Hub (HH) benchmark gas price also jumped by over 10% immediately for the near-dated futures (Mar-22 to Jan-23). This reflects the tighter LNG market than crude oil and coal, in our view.

Exhibit 9: LNG Japan-Korea Market futures



Source: Bloomberg

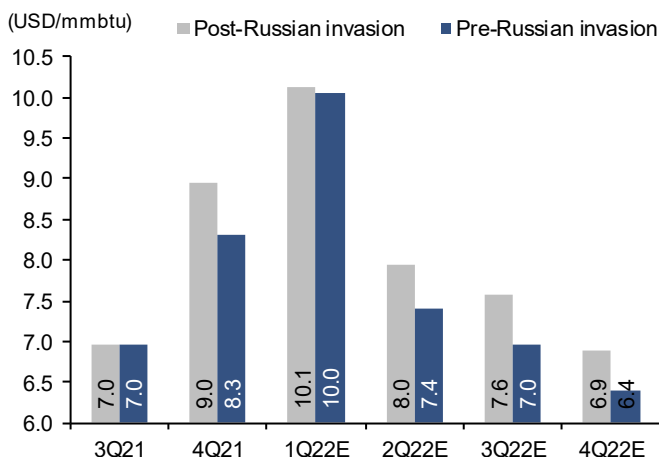
Exhibit 10: Henry Hub futures



Source: Bloomberg

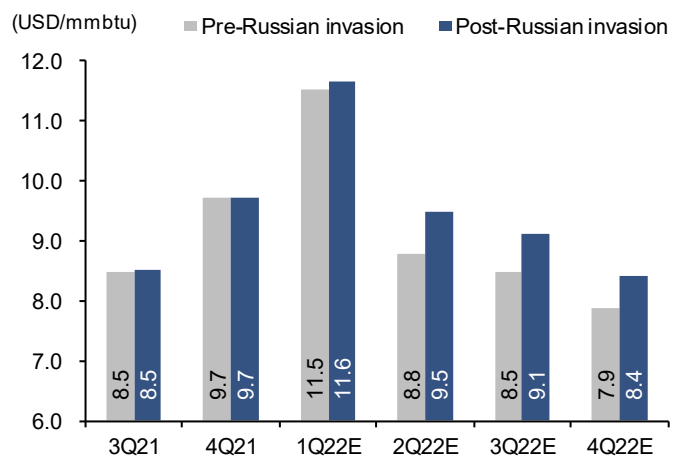
Based on the global LNG futures reactions to Russia's invasion of Ukraine, we think the final gas prices sold to SPPs will increase by 8-12% on average in 2Q-4Q22 and rise by USD0.1/mmbtu in 1Q22, as PTT has already imported 0.6mt of spot LNG out of 0.9mt in 1Q22 at the price of USD30/mmbtu. Hence, we project the average price of spot LNG in 1Q22 to be USD36/mmbtu, inclusive of the impact of Russia's invasion of Ukraine.

Exhibit 11: Thailand's pool gas price, pre- and post-Russian invasion



Sources: PTT; BGRIM; FSSIA estimates

Exhibit 12: Thailand's gas price sold to SPPs, pre- and post-Russian invasion



Sources: PTT; BGRIM; FSSIA estimates

Why we project a gradual decline in the gas prices sold to SPPs in 2022. We project the gas price sold to SPPs to peak at USD11.6/mmbtu in 1Q22 before dropping to USD8.4/mmbtu in 4Q22, backed by:

Factor #1: Higher gas production from G1 with up to a USD2/mmbtu lower price than the current selling price. According to PTTEP, the gas production from G1 should gradually recover from the 250mmscfd bottom level in Apr-22 to 500mmscfd in Dec-22, rising further to 700mmscfd in Dec-23 before reaching the contract production volume of 800mmscfd in Apr-24.

Factor #2: Additional 450mmscfd of gas production from low-price sources. The projected gas production volume from G2 of 200mmscfd in 2022 with a USD2/mmbtu lower price than the current price is because the concession expiration takes effect in Apr-22. In addition, an additional 250mmscfd of combined gas production from three gas fields – 150mmscfd from Bongkot (under existing concession), 60mmscfd from Arthit, and 40mmscfd from MTJDA – should come on stream to compensate for the gas production shortfall of 550mmscfd from G1.

Factor #3: Lower global LNG price due to higher supply. According to the US Energy Information Administration (EIA), US LNG exports are projected to increase in 2022-23, likely leading to a shift in the gas industry balance from undersupplied in 2019-21 to oversupplied in 2022-23. This should lead to lower global LNG prices which should normalise at USD7-10/mmbtu by 4Q22, based on the EIA’s projection.

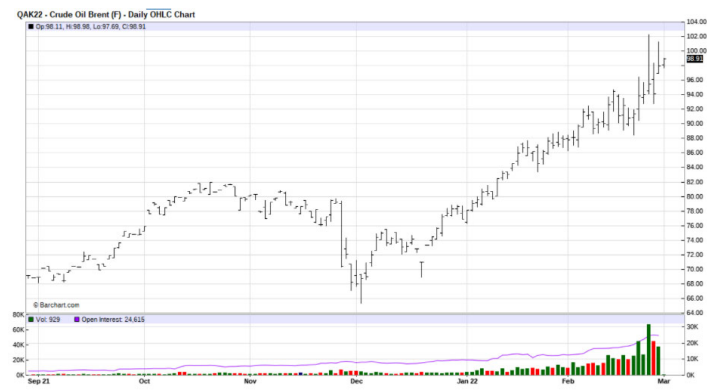
Exhibit 13: Dutch Title Transfer Facility gas price futures (Apr 2022) (TGJ22) in €/MWh



Source: Barchart

Even after Russia’s invasion of Ukraine, the Title Transfer Facility (TTF) gas price index in Europe and the HH gas price index in the US spiked only shortly and then declined, reflecting that the gas supply and demand balance in 2022 is loosening rather than tightening thanks to the rising US gas supply, in our view. However, in the worst-case scenario that Russia completely cuts off the gas supply to Europe, the gas price could spike further, but we think this is less likely and it is not our base case.

Exhibit 15: Brent crude oil futures (May 2022) (CAK22) in USD/bbl



Source: Barchart

Exhibit 14: Henry Hub natural gas price futures (Apr 2022) (NGJ22) in USD/mmbtu



Source: Barchart

Exhibit 16: Newcastle coal price index futures (Mar 2022) (LQH22) in USD/tonne

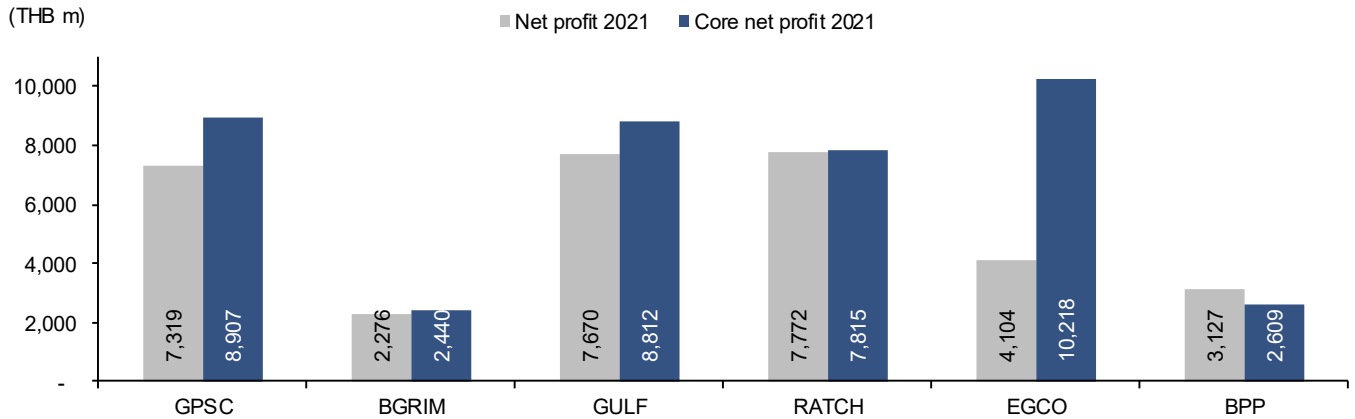


Source: Barchart

SPPs: earnings to bottom in 1Q22 before stellar growth starting in 2Q22

While the utility sector's 1Q22 net profit outlook is likely to weaken due to the spikes in the gas price, we think that starting in 2Q22 the quarterly net profit growth of all six large-cap conventional power companies will significantly accelerate based on 1) margin expansions based on our projected lower gas price, particularly for SPPs; and 2) new capacity growth from new projects.

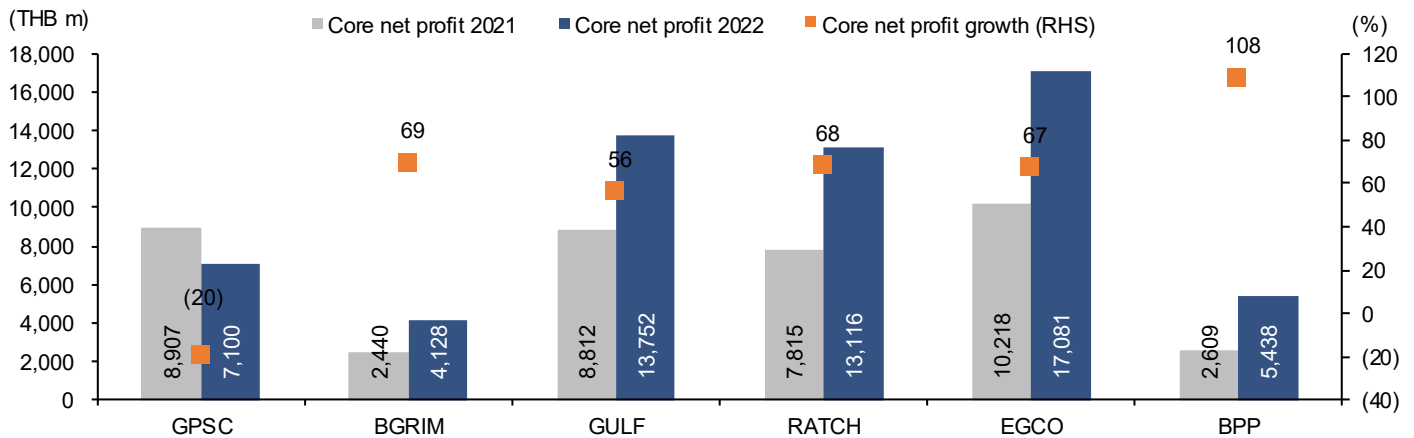
Exhibit 17: 2021 net profit and core profit of six key utility companies in the conventional power business



Sources: Companies; FSSIA estimates

In 2022, while we project BPP, RATCH, and EGCO to see higher core net profit growth than BGRIM, GULF, and GPSC due to their low earnings bases in 2021, improving margins from coal-fired power plants in China (BPP), and additional capacity growth (RATCH, EGCO), we think BGRIM, GULF, and GPSC remain more attractive investments as we project their earnings to rise for longer in 2022-26 vs the 2022-24 earnings growth horizon for RATCH, EGCO, and BPP.

Exhibit 18: 2021A-2022E core net profit and core net profit growth



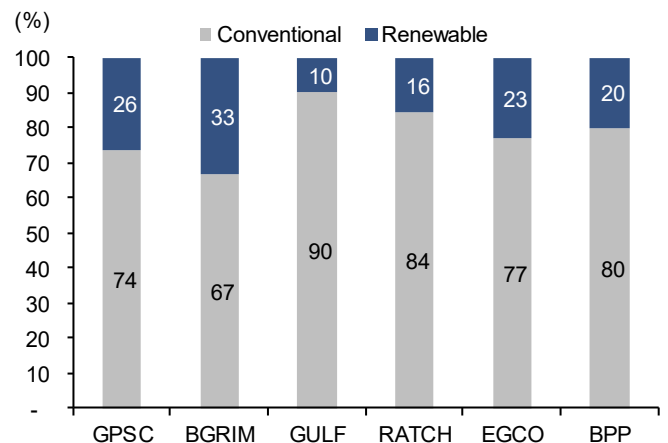
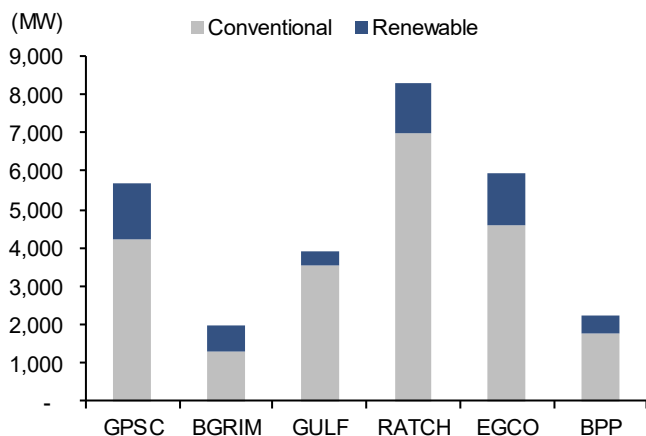
Sources: Companies; FSSIA estimates

Top picks in IPP and SPP sectors. Among the major independent power producer (IPP) (EGCO, RATCH, BPP, GULF) and SPP companies (BGRIM, GPSC), we think BGRIM stands as the best play in the SPP segment for its highest earnings sensitivity to the change in the gas price in Thailand and its highest capacity growth potential from its five new SPPs with SPP replacement power purchase agreements.

For IPPs, we prefer GULF as our top pick thanks to its most diversified asset portfolio, including conventional and renewable power capacity, its sea port, LNG terminal, infrastructure, and its recent move into future industry growth. GULF is leveraging the core strengths of its low-risk, cash cow businesses of utilities and infrastructure to enter the high-risk, high-growth ventures of cryptocurrency (via a JV with Binance), a data centre (via a JV with Singtel and Advanced Info Service (ADVANC TB, BUY, TP THB260)) and 5G telecommunications (via its acquisition of a 42% stake in Intouch Holdings (INTUCH TB, BUY, TP THB 86.8), which owns a 40% stake in ADVANC).

Exhibit 19: Equity capacity breakdown by type as of 2021

Exhibit 20: Equity capacity breakdown (%) as of 2021



Source: Companies

Source: Companies

According to PTT and the EIA, the price of global spot LNG is projected to decline from USD35/mmbtu in 4Q21 down to USD20/mmbtu in 4Q22.

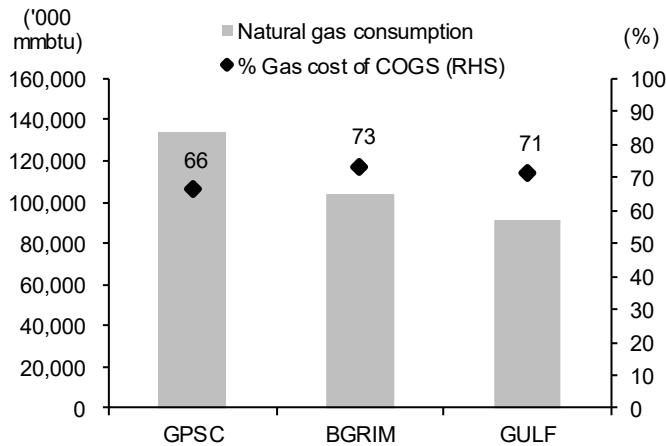
While the Asian spot LNG projections exclude the impact of Russia's invasion of Ukraine, we think the additional impact of the higher LNG spot price should be limited to USD5-10/mmbtu throughout 2022, which we have incorporated into our revised spot LNG import price projections of USD36/mmbtu in 1Q22 down to USD12/mmbtu in 4Q22.

However, we are more positive on the gas price drop in 2022 with a 4Q22 spot LNG price of USD12/mmbtu vs the EIA's projected USD20/mmbtu as we think the additional supply of LNG exported from the US will be more relevant and significant by 2H22.

Sensitivity to gas price changes. Based on gas consumption as % of cost of goods sold (COGS) for the three major SPP companies, we estimate that BGRIM has the highest sensitivity to changes in the gas prices sold to IUs, with every 1% change in the gas price, ceteris paribus, resulting in a 1.5% change in BGRIM's net profit, followed by GPSC (1.3%), and GULF (0.6%).

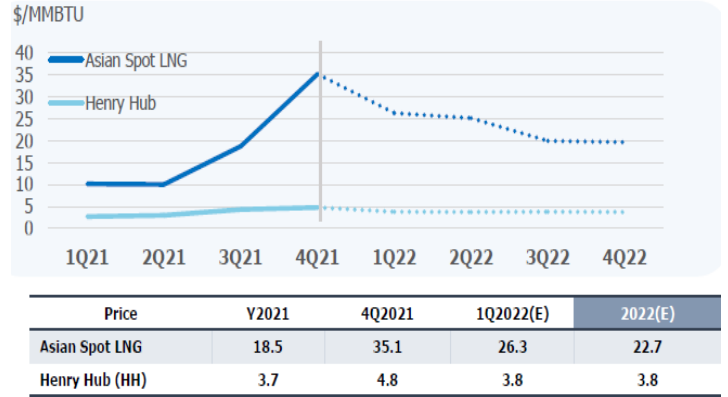
The discrepancies in the earnings sensitivity to the gas price change for BGRIM, GPSC, and GULF are derived from their 1) different revenue and capacity exposures to IUs; and 2) earnings diversification for the non-SPP businesses of IPPs (gas cost pass-through), renewables (indirect impact from the lower electricity tariff for adder-based capacity), and other non-power ventures like infrastructure and telecommunications.

Exhibit 21: Gas cost consumption vs % of total COGS



Sources: Companies; FSSIA estimates

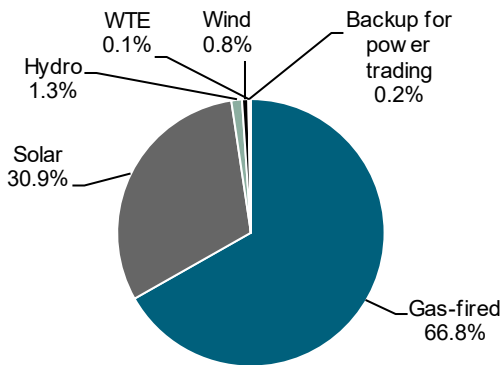
Exhibit 22: Projected lower prices of benchmark spot LNG and Henry Hub



Sources: PTT; EIA as of January 2022

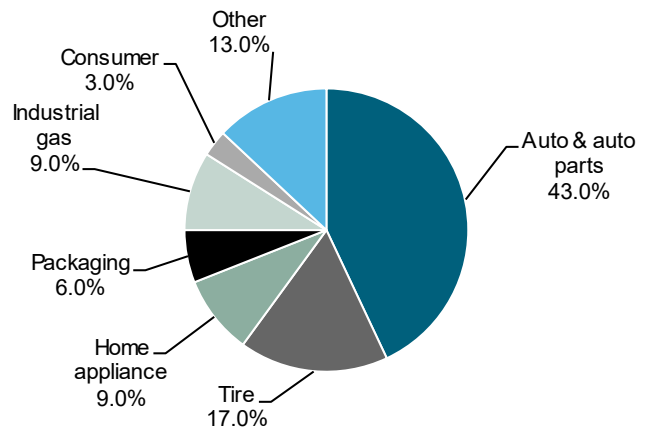
BGRIM is one of Thailand’s two largest SPP operators with a total equity SPP capacity of 1.3GW, representing 66.8% of its total 1.96GW capacity as of 9M21. The remainder of its capacity is renewable, comprising 0.6GW solar, 25MW hydro, 15MW wind, 2MW waste-to-energy (WTE), and 4MW power for backup and trading.

Exhibit 23: Equity capacity (1,961MW) breakdown by power plant type (9M21)



Sources: BGRIM; FSSIA estimates

Exhibit 24: IU breakdown by industry



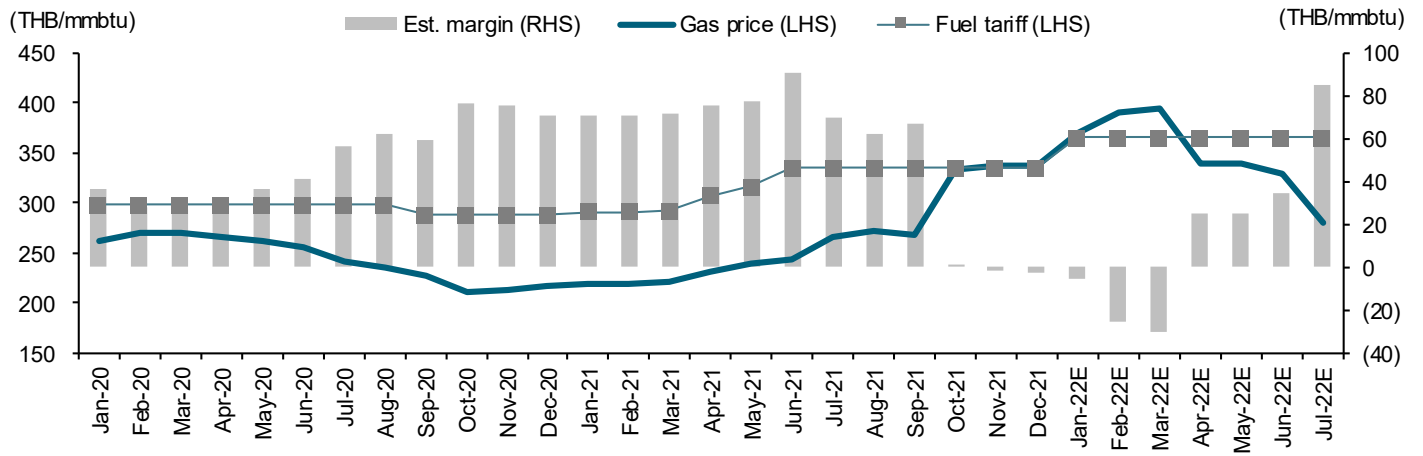
Sources: BGRIM; FSSIA estimates

All of BGRIM’s IUs in Thailand are located inside the industrial estates where BGRIM’s SPP power plants are located (26% of revenue in 3Q21), and are the export-driven companies involved in industries such as auto parts (43% of total revenue from IUs in Thailand), tires (17%), home appliances (9%), packaging (6%), industrial gas (9%), consumer (3%), and others (13%). Hence, the demand for electricity and steam sold to IUs is directly linked to Thailand’s export health.

Revenue for non-IUs in Thailand comes from three state-owned enterprises in Thailand: EGAT at 64% of total revenue as of 9M21, the Provincial Electricity Authority of Thailand (PEA) and the Metropolitan Electricity Authority of Thailand (MEA). In Vietnam, revenues come from Electricity of Vietnam (EVN; 4% as of 9M21) and IUs (3%). In Laos, Électricité du Laos (EDL) accounted for 1% of revenue as of 9M21. All except the IUs in Vietnam have a cost pass-through mechanism that fully protects the gross margins of the electricity produced by BGRIM’s SPPs which is sold to those clients.

However, for the electricity sales volume to IUs, the margin of the electricity tariff over the gas cost will vary depending on two factors. First, how fast and how much the government will allow the electricity tariff to rise to match the timing and degree of the gas cost hikes. Second, how much the gas cost will increase as a result of the regulator’s management of the country’s gas supply with a number of different gas sources and prices.

Exhibit 25: BGRIM’s estimated gross margins for electricity sold to IUs



Sources: BGRIM; FSSIA estimates

Exhibit 26: Peer comparisons

Company	BBG code	Rec	Share Price (LCY)	Target price (LCY)	Up side (%)	Market Cap (USD m)	3Y EPS CAGR (%)	PE		ROE		PBV		EV / EBITDA	
								21E (x)	22E (x)	21E (%)	22E (%)	21E (x)	22E (x)	21E (x)	22E (x)
THAILAND															
B Grimm Power	BGRIM TB	BUY	34.5	46	33	2,755	32.1	41.8	21.8	7.6	13.2	3.1	2.7	13.9	10.2
Gulf Energy Deve	GULF TB	BUY	50.5	60	19	18,149	48.9	67.2	43.1	11.0	13.6	6.1	5.6	43.5	32.3
Global Power Syn	GPSC TB	BUY	75	90	20	6,478	6.2	23.7	29.8	8.4	6.5	2.0	1.9	13.9	18.8
Banpu Power	BPP TB	BUY	16.7	20	20	1,559	9.9	19.5	9.4	6.0	11.5	1.1	1.0	(173.3)	35.6
Electricity Gen	EGCO TB	BUY	179.5	245	36	2,895	26.2	7.2	5.5	12.3	14.5	0.9	0.8	14.0	10.2
Ratch Group	RATCH TB	BUY	46	60	30	2,043	12.3	8.5	7.8	11.9	14.6	0.9	0.9	20.7	12.7
Wha Utilities&Pow	WHAUP TB	HOLD	4.08	4.5	10	478	20.5	18.1	12.1	7.0	10.2	1.3	1.2	29.6	32.7
Bcpq	BCPG TB	BUY	12.5	17	36	1,108	(6.4)	15.8	14.1	9.2	9.1	1.3	1.2	13.8	15.0
Ck Power	CKP TB	BUY	5.1	6.6	29	1,270	95.7	18.7	13.4	9.1	11.8	1.7	1.5	15.4	11.0
Energy Absolute	EA TB	BUY	95	122	28	10,854	38.0	59.2	33.3	19.8	28.7	10.9	8.5	41.6	25.4
Gunkul Engineer	GUNKUL TB	BUY	6.2	8.1	31	1,687	47.1	28.8	14.3	15.0	27.1	4.2	3.6	19.6	12.9
Demco Pcl	DEMCO TB	BUY	3.66	5.9	61	82	64.6	14.8	12.6	3.8	4.4	0.6	0.5	(95.5)	(69.6)
Power Solution	PSTC TB	BUY	2.2	3.7	68	160	196.7	46.9	14.9	1.9	5.8	0.9	0.8	12.9	17.6
Sermasang Power	SSP TB	BUY	11.9	20	68	402	19.5	13.3	10.6	18.7	18.2	2.0	1.8	9.6	8.1
Tpc Power	TPCH TB	BUY	11	14	27	135	31.0	32.6	9.2	4.6	15.8	1.5	1.4	10.8	7.8
Tpi Polene Power	TPIPP TB	BUY	4.08	5.7	40	1,050	(3.6)	7.4	7.5	15.7	14.8	1.1	1.1	6.4	6.4
Absolute Clean	ACE TB	BUY	3.14	4.6	46	979	24.4	20.5	17.6	12.6	13.8	2.5	2.4	15.9	11.9
Earth Tech	ETC TB	HOLD	3.94	3.8	(4)	270	22.6	34.6	26.7	9.5	11.3	3.1	2.9	20.9	17.3
Thailand avg						52,351	25.2	45.0	29.5	12.4	16.2	5.2	4.5	24.7	23.2
HONGKONG															
Datang Intl Power	991 HK	n/a	1.50	n/a	NA	6,729	(2.7)	15.9	7.1	1.9	4.1	0.5	0.5	9.3	7.9
Huadian Power	1071 HK	n/a	2.91	n/a	NA	6,089	7.1	NM	6.2	(4.9)	9.6	0.4	0.4	15.8	8.9
Huaneng Power	902 HK	n/a	4.57	n/a	NA	17,903	(2.6)	NM	10.1	(5.0)	5.5	0.5	0.5	14.9	9.0
China Power Inter	2380 HK	n/a	4.38	n/a	NA	6,071	NM	294.9	16.3	2.1	7.1	1.1	1.0	3.7	2.5
China Resources	836 HK	n/a	17.22	n/a	NA	10,599	NM	14.5	7.8	5.9	11.0	0.9	0.9	3.8	2.7
Clp Holdings Ltd	2 HK	n/a	77.65	n/a	NA	25,101	NM	17.6	17.0	9.7	9.8	1.7	1.6	9.1	8.8
Power Assets	6 HK	n/a	49.00	n/a	NA	13,381	NM	16.3	15.3	7.6	8.2	1.2	1.2	84.2	82.7
Hongkong avg						85,873	141.0	31.6	12.6	3.7	8.2	1.0	1.0	21.5	19.1
MALAYSIA															
Petronas Gas	PTG MK	n/a	17.20	n/a	NA	8,115	(0.9)	16.6	17.4	15.7	14.5	2.6	2.6	9.2	9.2
Tenaga Nasional	TNB MK	n/a	9.11	n/a	NA	12,439	8.6	10.7	11.0	8.6	8.1	0.9	0.9	6.7	6.6
Ytl Power Inte	YTLP MK	n/a	0.61	n/a	NA	1,169	86.3	10.8	19.5	3.6	2.2	0.4	0.4	10.5	11.2
Malaysia avg						21,723	4.2	3.3	3.5	2.8	2.6	0.4	0.4	2.0	2.0
CHINA															
China Datang	1798 HK	n/a	3.10	n/a	NA	2,885	22.1	12.8	9.7	7.1	7.8	1.4	1.0	9.6	8.2
China Gas	384 HK	n/a	12.66	n/a	NA	8,967	NM	6.1	8.0	23.5	14.4	1.4	1.1	NM	NM
China Longyuan	916 HK	n/a	16.32	n/a	NA	27,522	NM	17.4	14.6	10.4	11.0	1.8	1.5	NM	NM
Beijing Enterprises	392 HK	n/a	26.80	n/a	NA	4,328	NM	4.1	4.0	9.4	9.1	0.4	0.3	3.6	3.1
Kunlun Energy	135 HK	n/a	7.67	n/a	NA	8,497	NM	10.7	9.5	10.2	11.6	1.0	0.9	3.7	3.4
China avg						52,200	432.8	7.9	7.0	7.5	6.9	0.9	0.7	0.9	0.8
INDONESIA															
Perusahaan Gas	PGAS IJ	n/a	1,475.00	n/a	NA	2,490	NM	10.3	7.9	12.3	10.4	1.0	0.9	5.8	5.3
Indonesia avg						2,490	NM	0.3	0.2	0.4	0.3	0.0	0.0	0.2	0.2
SINGAPORE															
Sembcorp Indus	SCI SP	n/a	2.66	n/a	NA	3,496	17.3	16.9	11.0	8.3	11.1	1.4	1.2	9.6	9.3
Singapore avg						3,496	17.3	0.7	0.4	0.3	0.5	0.1	0.0	0.4	0.4
Utilities under coverage						52,351	25.2	45.0	29.5	12.4	16.2	5.2	4.5	24.7	23.2
Average (all)						218,132	30.7	25.5	14.1	6.5	9.0	1.9	1.7	14.8	13.5

Share price as of 28 February 2022

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	ICI	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	PAP	PCSGH	PDJ	PG	PHOL	PLANB
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	TRC	TSC	TSR	TSTE	TSTH
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	AMANAHA	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	WIJK	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	TIPIP	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	AMANAHA	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	WIJK	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 the 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, CFA, FRM, ERP 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
B.Grimm Power	BGRIM TB	THB 34.50	BUY	The downside risks to our SoTP-based TP include 1) lower-than-expected demand for electricity in Thailand, 2) a lower crude price, and 3) unplanned shutdowns of its SPPs.
Gulf Energy Development	GULF TB	THB 50.50	BUY	The downside risks to our SoTP-based TP on GULF include 1) lower-than-expected demand for electricity in Thailand; 2) a lower crude price; and 3) delays in project commercial operation dates.
Global Power Synergy	GPSC TB	THB 75.00	BUY	The downside risks to our SoTP-based TP on GPSC include 1) lower-than-expected demand for electricity in Thailand; 2) a lower crude price; and 3) lower-than-expected demand from industrial users.
Banpu Power	BPP TB	THB 16.70	BUY	Downside risks to our SOTP valuation are the start-up delays of its new projects and government intervention in the electricity tariff.
Electricity Generating	EGCO TB	THB 179.50	BUY	Downside risks to our SoTP-based TP include 1) lower-than-expected demand for electricity in Thailand; 2) delays in project commencement or commercial operation dates (COD); and 3) government intervention in electricity tariff subsidies.
Ratch Group	RATCH TB	THB 46.00	BUY	The downside risks to our SoTP-based TP include 1) lower-than-expected demand for electricity in Thailand; 2) lower crude price; and 3) delays in starting new projects.
WHA Utilities & Power	WHAUP TB	THB 4.08	HOLD	Downside risks to our SoTP-based TP include 1) lower-than-expected demand for electricity in Thailand; and 2) lower crude prices. Upside risks are the higher than expected sales volumes of water and electricity for industrial users.
BCPG	BCPG TB	THB 12.50	BUY	The downside risks to our SoTP-based TP include: 1) lower-than-expected demand for electricity in Thailand, the Philippines and Indonesia; and 2) government intervention by way of electricity tariff subsidies.
CK Power	CKP TB	THB 5.10	BUY	The downside risks to our SoTP-based TP include lower-than-expected demand for electricity in Thailand and lower-than-expected water supply for hydro projects.
Energy Absolute	EA TB	THB 95.00	BUY	Downside risks to our SoTP-based TP include: 1) lower-than-expected demand for electricity in Thailand; 2) lower crude prices; and 3) lower-than-expected demand for batteries.
Gunkul Engineering	GUNKUL TB	THB 6.20	BUY	The downside risks to our SoTP-based TP on GUNKUL include 1) lower-than-expected demand for electricity in Thailand, 2) declining EPC backlogs, and 3) lower-than-expected utilisation rates for solar and wind farms
Demco	DEMCO TB	THB 3.66	BUY	Downside risk includes delays in bidding for power transmission projects.
Power Solution Technologies	PSTC TB	THB 2.20	BUY	The downside risks to our SoTP-based TP on PSTC include 1) lower-than-expected demand for electricity in Thailand and delays of power plant project start-ups.
Sermasang Power Corp	SSP TB	THB 11.90	BUY	The downside risks to our SoTP-based TP for SSP include 1) a lower-than-expected demand for electricity in Thailand; 2) a lower crude price; and 3) project start-up delays.
TPC Power Holding	TPCH TB	THB 11.00	BUY	The downside risks to our SoTP-based TP include 1) lower-than-expected demand for electricity in Thailand, 2) a lower crude price, and 3) higher costs of biomass feedstock.
TPI Polene Power	TPIPP TB	THB 4.08	BUY	Downside risks to our SoTP-based TP include 1) lower-than-expected demand for electricity in Thailand; 2) lower crude price, and 3) unplanned shutdown of the company's power plants.
Absolute Clean Energy	ACE TB	THB 3.14	BUY	The downside risks to our SoTP-based TP include 1) lower-than-expected demand for electricity in Thailand, 2) a lower crude price, and 3) higher costs of biomass feedstock.
Earth Tech Environment	ETC TB	THB 3.94	BUY	Downside risks to our SoTP-based TP include: 1) lower-than-expected demand for electricity in Thailand; 2) lower crude price; and 3) lower-than-expected industrial waste volumes.
PTT PCL	PTT TB	THB 39.50	BUY	Risks to our SoTP-based valuation are the oil price and potential earnings downside from government intervention.
PTT Explor & Prod	PTTEP TB	THB 136.50	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.
Advanced Info Service	ADVANC TB	THB 229.00	BUY	The key downside risks to our DCF-based TP are stronger-than-expected competition in the mobile market and the slower-than-expected adoption of 5G use cases.
Intouch Holdings	INTUCH TB	THB 75.75	BUY	The key downside risks to our NAV-discounted TP are if the sluggish performance from the satellite business continues and if there is a slower-than-expected 5G adoption rate.

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 28-Feb-2022 unless otherwise stated.

RECOMMENDATION STRUCTURE**Stock ratings**

Stock ratings are based on absolute upside or downside, which we define as $(\text{target price}^* - \text{current price}) / \text{current price}$.

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.