

PTT PCL PTT TB

THAILAND / OIL & GAS

BUY

UNCHANGED

Energy giant on EV growth ride

- E&P, petrochemical & refining, oil and coal to drive PTT's earnings in 2022-23, while EVs should revive and boost PTT from 2024 onward.
- Maintain BUY with SoTP-based TP of THB50, down from THB60, to factor in higher gas cost.

| | |
|-----------------|----------|
| TARGET PRICE | THB50.00 |
| CLOSE | THB35.00 |
| UP/DOWNSIDE | +42.9% |
| PRIOR TP | THB60.00 |
| CHANGE IN TP | -16.7% |
| TP vs CONSENSUS | +5.0% |

KEY STOCK DATA

| YE Dec (THB m) | 2021 | 2022E | 2023E | 2024E |
|----------------------|-----------|-----------|-----------|-----------|
| Revenue | 2,258,818 | 2,384,459 | 2,556,087 | 2,722,943 |
| Net profit | 108,363 | 118,570 | 128,103 | 130,997 |
| EPS (THB) | 3.79 | 4.15 | 4.48 | 4.59 |
| vs Consensus (%) | - | (0.3) | 7.2 | 8.7 |
| EBITDA | 392,983 | 374,582 | 379,690 | 369,647 |
| Core net profit | 89,249 | 118,570 | 128,103 | 130,997 |
| Core EPS (THB) | 3.12 | 4.15 | 4.48 | 4.59 |
| Chg. In EPS est. (%) | - | (11.6) | (15.6) | (7.7) |
| EPS growth (%) | 57.2 | 32.9 | 8.0 | 2.3 |
| Core P/E (x) | 11.2 | 8.4 | 7.8 | 7.6 |
| Dividend yield (%) | 1.4 | 4.3 | 3.8 | 4.1 |
| EV/EBITDA (x) | 5.2 | 4.8 | 4.3 | 3.9 |
| Price/book (x) | 1.0 | 0.9 | 0.9 | 0.8 |
| Net debt/Equity (%) | 39.3 | 27.0 | 12.0 | (1.3) |
| ROE (%) | 9.5 | 11.4 | 11.4 | 10.8 |

Rising earnings from E&P and refinery are key in 2022-23

We believe PTT's main value driver is its exploration & production (E&P), followed by petrochemical & refining, gas, oil, and coal. EBIT from the core gas unit has continued to decline from 55% of total EBIT in 4Q18 to a mere 14% in 1Q22. The significant declines in EBITDA and EBIT from the core gas business mainly came from the weaker EBITDA from its gas sales and marketing unit and gas separation plants.

Reasons for PTT's share price stagnancy since 2018

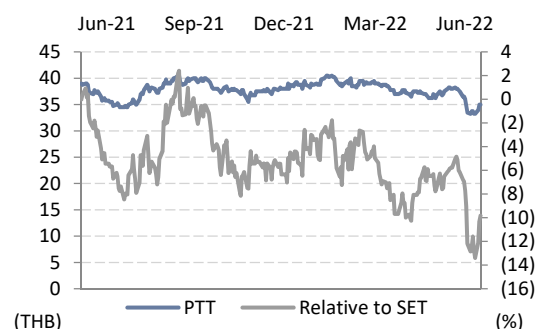
PTT's share price has moved sideways after its share split from THB10/share to THB1/share on 24 Apr-18, reflecting that PTT has already lost its lustre for investors even with its strong and sustainable net profit growth trajectory. We believe four reasons led to PTT's share price underperformance during 2018-1Q22: lack of one-stop investment destiny, weakening core gas business, shrinking value of the unlisted business portfolio, and the persistent subsidies for NGV and LPG.

EV growth is PTT's gamechanger post 2024

We are positive on the PTT-Foxconn JV to build a THB36.1b EV production plant (COD in 1Q24) with an initial capacity to produce 50,000 passenger EVs annually, which is expandable to 150,000 EVs by 2030. With manifest targets for EV usage and production numbers in 2025-35 set by the Thai government, we believe PTT's move into the EV value chain is likely to be its new S-curve growth driver, potentially generating up to THB5b-10b in annual net profit contributions to PTT by 2030, based on THB0.1m net profit per EV, a production capacity of 150,000 EVs annually, and the 60% stake in the JV.

A winner on commodity price uptrend and EV megatrend

We maintain BUY but lower our SoTP-based TP from THB60 to THB50 to reflect our EPS forecast cuts in 2022-24 and the valuation rollover to 2023. We cut our EPS forecasts in 2022-24 by 7.7-15.6% to reflect our assumptions of 16.5-68.7% higher gas costs that should be partly offset by the 20.0-22.2% higher Dubai crude oil prices that we estimate during the same period. We believe PTT is an attractive oil & gas play in the short term on the commodity price uptrends that we project to persist into 2023. However, we think the most important driver for PTT's share price will be the success in its EV venture, including the EV production plant and the battery plant owned by PTT's associate GPSC.



| Share price performance | 1 Month | 3 Month | 12 Month |
|--------------------------------|---------------------------|---------|----------|
| Absolute (%) | (6.7) | (9.7) | (11.4) |
| Relative to country (%) | (2.1) | (3.5) | (11.3) |
| Mkt cap (USD m) | 28,470 | | |
| 3m avg. daily turnover (USD m) | 56.9 | | |
| Free float (%) | 49 | | |
| Major shareholder | Ministry of Finance (51%) | | |
| 12m high/low (THB) | 41.25/32.75 | | |
| Issued shares (m) | 28,563.00 | | |

Sources: Bloomberg consensus; FSSIA estimates



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Investment thesis

We think E&P and refinery are key businesses to boost PTT's earnings in 2022-23, and EV should further enhance the momentum thereafter.

PTT's share price has long been stagnant since the par split in 2018, due to its one-stop investment destiny disappearing, a weakening core gas business, the shrinking value of the unlisted business portfolio, and the persistent subsidies for NGV and LPG, in our view.

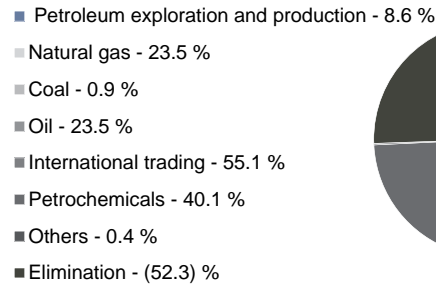
The JV in May-21 with Foxconn in setting up an open platform for producing electric vehicles (EVs) and key components to serve the EV sector in Thailand, which would be bolstered by the Thai government's mandate for EV usage and production in 2025-35, will likely become PTT's new S-curve growth driver.

Company profile

Established in 1978, Petroleum Authority of Thailand was transformed into a public company and changed its name to PTT Plc in Oct-01. PTT is Thailand's only integrated oil and gas company, primarily involved in procuring, transmitting, processing, marketing and distributing natural gas.

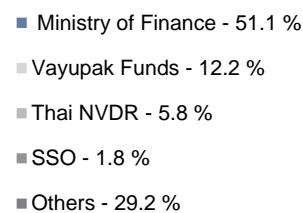
www.pttplc.com

Principal activities (revenue, 2021)



Source: PTT PCL

Major shareholders



Source: PTT PCL

Catalysts

- 1) Rising prices of oil for the exploration and production unit (65% stake in PTTEP), refinery and petrochemical associates (48-49% stakes in TOP, PTTGC, and IRPC).
- 2) Aggressive development of its EV venture.

Risks to our call

Risks to our SoTP-based valuation are the oil price and potential earnings downsides from government intervention.

Event calendar

| Date | Event |
|----------|---------------------------|
| Aug-2022 | 2Q22 results announcement |

Key assumptions

| | 2022E | 2023E | 2024E |
|---------------------------|-------|-------|-------|
| Dubai oil price (USD/bbl) | 120 | 110 | 110 |
| Gas cost (USD/mmbtu) | 14.0 | 13.0 | 12.0 |

Source: FSSIA estimates

Earnings sensitivity

- For every 1% increase in Dubai oil price, we project 2022 earnings would rise 1.2%, and vice versa, all else being equal.
- For every 1% increase in gas price, we estimate 2022 earnings would decline 1.3%, and vice versa.

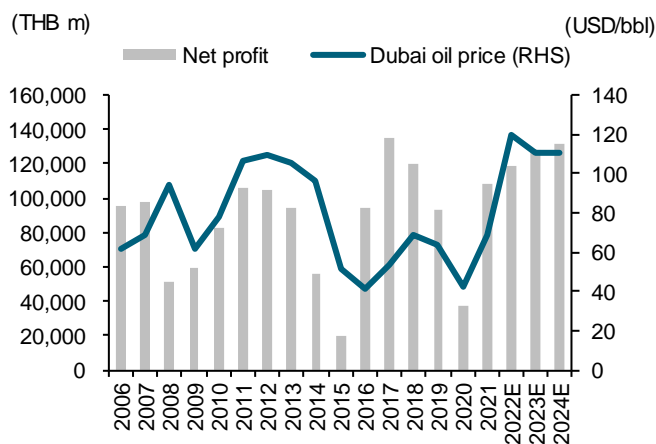
Source: FSSIA estimates

Energy giant on EV growth ride

In the past 15 years, PTT's earnings have been highly volatile and mostly hovered in the range of THB100b to THB140b, except when the Dubai crude oil price declines sharply by over USD20/bbl within one year, resulting in significant inventory losses to PTT and its downstream associates in the refinery and petrochemical businesses.

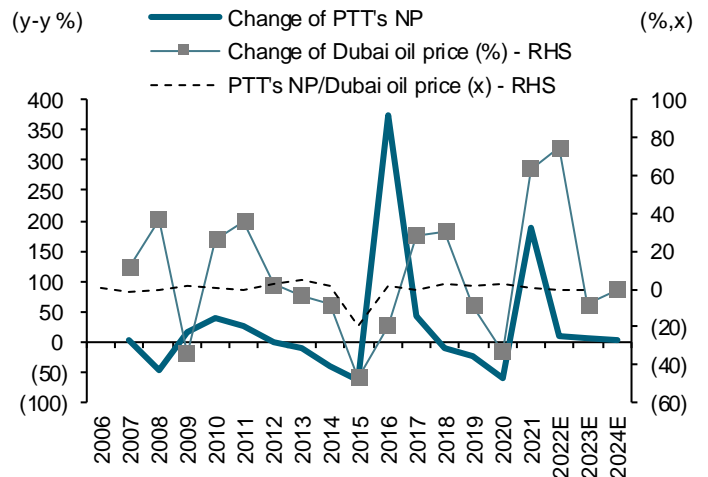
PTT's net profit growth in 2006-21 has also outperformed the changes in the Dubai crude oil price as its net profit growth has been driven by the rising prices of oil for the E&P unit (65% stake in PTT Exploration and Production (PTTEP TB, BUY)) and refinery and petrochemical associates (48-49% stakes in Thai Oil (TOP TB, BUY), PTT Global Chemical (PTTGC TB, REDUCE), and IRPC Pcl (IRPC TB, REDUCE)).

Exhibit 1: Net profit vs Dubai crude oil price



Sources: PTT; FSSIA estimates

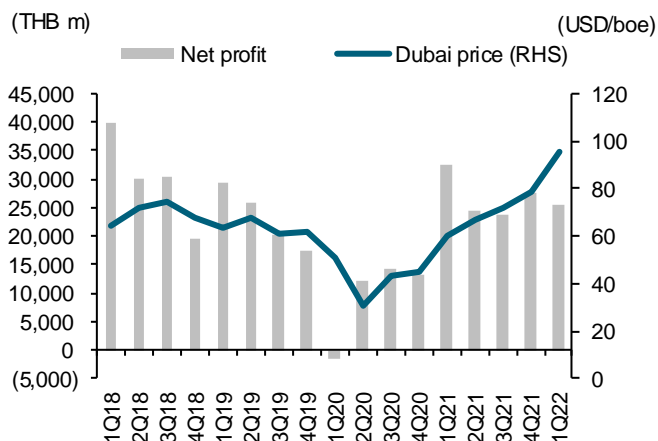
Exhibit 2: Growth comparison: PTT's net profit vs Dubai crude oil price



Sources: PTT; FSSIA estimates

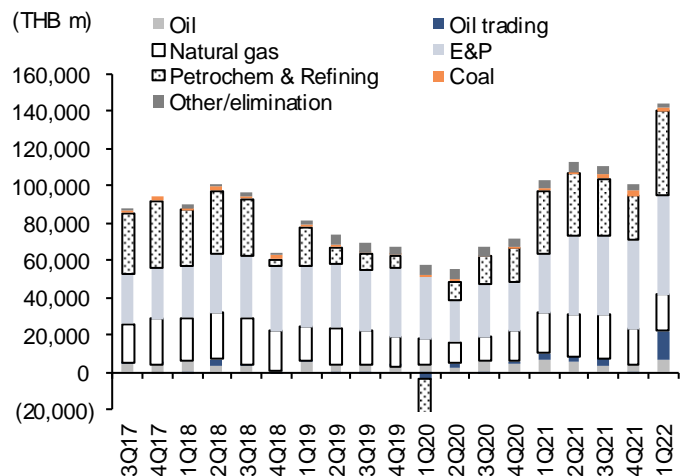
Based on PTT's quarterly EBITDA breakdown by segment in 1Q18-1Q22, we found that the largest EBITDA contributor has been PTTEP (E&P), followed by the refinery & petrochemical unit, and PTT's core gas unit. The remaining EBITDA contributions coming from oil trading, coal, and other businesses are at a much smaller scale than the E&P, refinery and petrochemical, and gas units.

Exhibit 3: Quarterly net profit vs Dubai oil price



Source: PTT

Exhibit 4: Quarterly EBITDA breakdown by segment

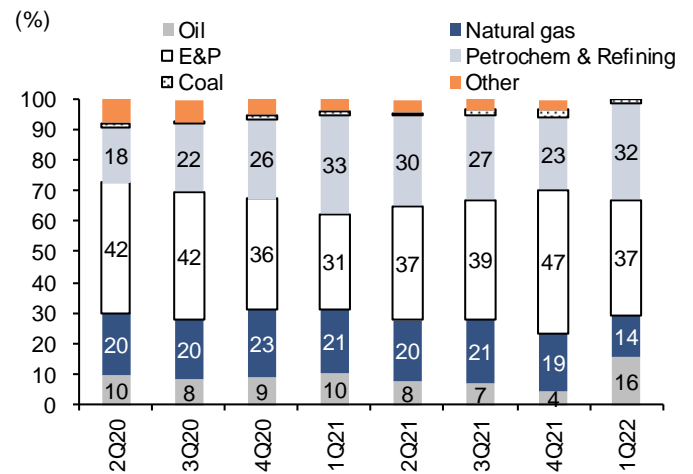
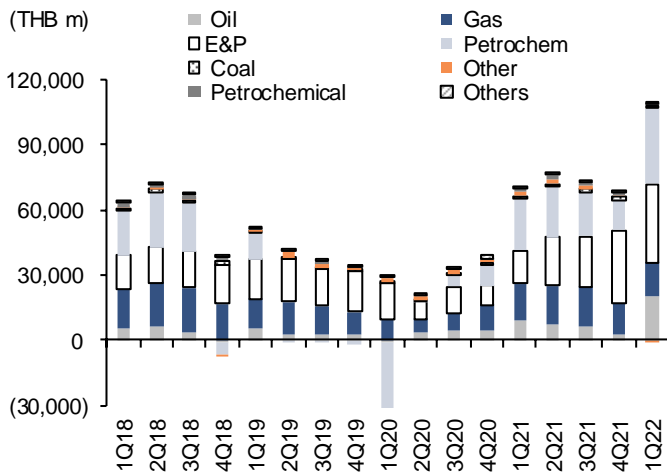


Source: PTT

Excluding the differences in depreciation expenses in 2Q20-1Q22, PTT's quarterly EBIT have clearly been driven by E&P (31-47%), followed by gas (14-23%), petrochemical & refining (18-33%), oil (4-16%), and other businesses filling the rest.

Exhibit 5: Quarterly EBIT breakdown by segment

Exhibit 6: Quarterly EBIT breakdown by segment (%)



Source: PTT

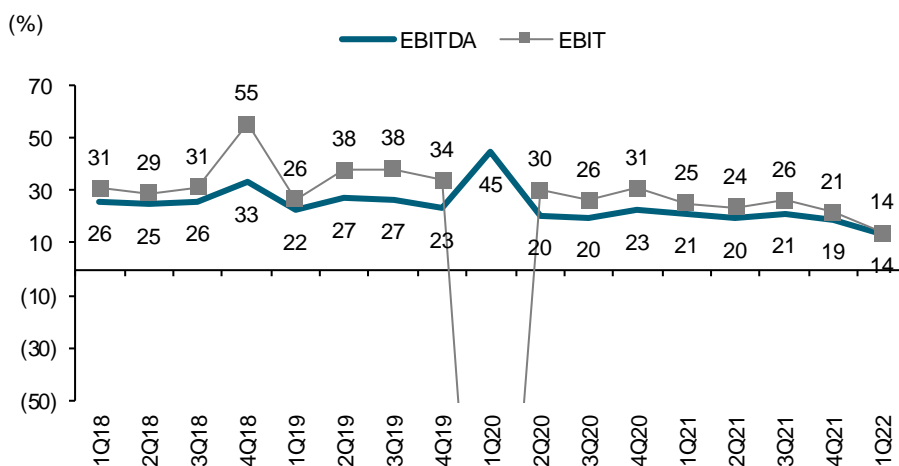
Source: PTT

Analysis of PTT's quarterly EBITDA and EBIT indicates that PTT's main value driver is E&P, followed by petrochemical & refining, gas, oil, and coal. EBIT from the core gas unit has continued to decline from 20% of total EBIT in 1Q20 to a mere 14% in 1Q22.

Except in 1Q20 when PTT faced a large inventory loss that resulted in negative EBIT, the EBITDA and EBIT contributions from the gas unit have continued to decline from over 20-33% down to 19% in 4Q21 and 14% in 1Q22 for EBITDA and from 24-55% down to 14% in 1Q22 for EBIT. The significant declines in EBITDA and EBIT from the core gas business mainly came from the weaker EBITDA from its gas sales and marketing (S&M) unit and gas separation plants (GSPs).

The key drags on the S&M unit were the depressed margins of gas sales to industrial users (IU) and the margin caps for the gas sales volumes to power producers. The culprits for the weak GSP unit were the weak olefins industry margins as a result of the industry oversupply since 2019.

Exhibit 7: % contributions of gas EBITDA and EBIT to total



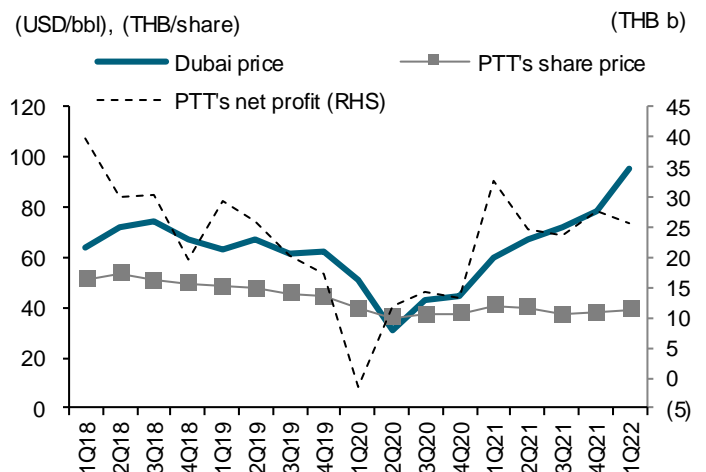
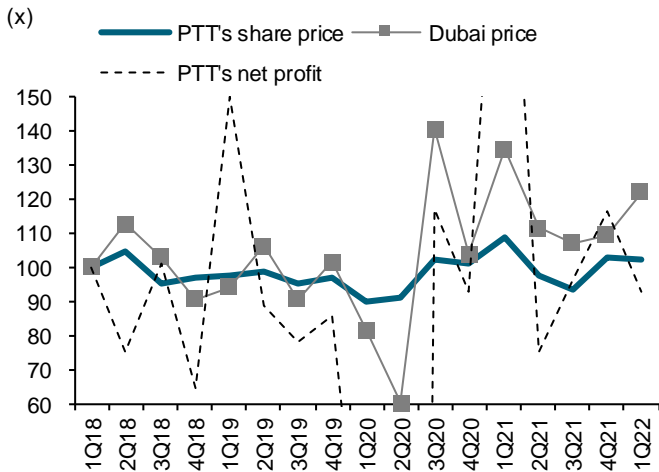
Source: PTT

However, while the net profits have moved in tandem with the changes in the crude oil price, PTT's share price has significantly lagged behind both its net profits and the Dubai crude oil price.

Using the 1Q18 net profit of THB40b, PTT's share price of THB51.1/share, and the Dubai crude oil price of USD63.9/bbl as an index base of 100, we find that the changes in PTT's share price have moved within a narrow range compared to the changes in the Dubai crude oil price and PTT's quarterly net profits.

Exhibit 8: PTT's share price vs Dubai crude oil price vs PTT's net profit performance (indexed as 100 based on 1Q18 figures)

Exhibit 9: PTT's share price, PTT's net profit and Dubai crude oil price



Sources: PTT; Bloomberg

Sources: PTT; Bloomberg

What are the reasons for PTT's share price stagnancy since 2018? PTT's share price has moved sideways after its share split from THB10/share to THB1/share on 24 Apr-18, reflecting that PTT has already lost its lustre for investors even with its strong and sustainable net profit growth trajectory. Why?

We believe there are four reasons that led to PTT's share price underperformance during 2018-1Q22.

One-stop investment destiny disappearing. In the past, PTT had been regarded by institutional investors, particularly foreign investors, on a top-down basis, for its high liquidity, good exposure to the oil and gas prices and demand growth, and its position as Thailand's largest market cap stock.

However, over the past five years, investors, both local and foreign alike, have shunned PTT as a single, one-stop investment choice in favour for a bottom-up investment strategy to pick and choose stocks that have more direct and higher exposures to the changes in the prices of oil and gas, gross refining margin (GRM), and petrochemical margins.

As a result, when the prices of oil and gas and the GRM and petrochemical margins are on an uptrend, investors instead will invest in PTTEP for an oil & gas price play, TOP for the GRM upside, and PTTGC and IRPC for rising petrochemical margins.

No longer a gas monopoly in Thailand. Since its inception in the 1990s, PTT has monopolised all gas businesses throughout the gas value chain, including 1) S&M (volatile margins for IUs, fixed margins for power producers); 2) transmission pipeline tariffs (volume-driven, fee-based); 3) GSPs (volatile margins on the prices of polyolefins); 4) LNG terminal (volume-driven, fee-based); and 5) operating losses for Natural Gas for Vehicles (NGV) due to subsidies.

However, beginning in 2023, the Thai regulator will liberalise the gas market by allowing certain private companies to import LNG and access PTT's gas pipeline networks on a new transmission pipeline tariff structure under the third-party access regulation already approved by the regulator.

This implies that PTT will now permanently lose its long-standing monopoly position in Thailand's gas market, which could lead to earnings erosion for S&M (gas sales volume loss and lower margins), transmission pipeline tariffs (on a new, lower tariff structure based on actual, not average, pipeline usage), and GSPs (on higher gas feedstock costs as a result of the higher transmission pipeline tariff on the offshore pipeline networks).

Shrinking value of the unlisted business portfolio. In its heyday, PTT owned all businesses related to the oil & gas value chains and only PTTEP (IPO in June 1993) was listed before PTT's listing (IPO in December 2001). While PTT's now-delisted petrochemical associates were listed before PTT, their market caps were much smaller than PTT's, making their stocks much less attractive, if not non-investable, for foreign investors.

PTT has now lost its unlisted value for investors after a series of IPOs for PTT's associates, including TOP (IPO in October 2004), IRPC (formerly listed under TPI and later changed its name to IRPC in 2006 after its successful business rehabilitation), PTTGC (relisted in February 2008 after the amalgamation of PTTCH and PTTAR), Global Power Synergy (GPSC TB, HOLD) as a power flagship arm in PTT group (IPO in May 2015), and PTT Oil and Retail Business (OR TB, BUY) as an oil retail flagship arm in PTT group (IPO in February 2021). By investing in PTT now, investors could leverage PTT's eroding gas business while other ventures in the oil & gas value chain – E&P, petrochemical, refinery, power, and retail oil stations – are now better leveraged via investing in PTT's subsidiary (PTTEP) and associates.

Chronic NGV and LPG subsidies. In the past 10 years, as a state-owned enterprise, PTT has been financially burdened over its subsidies for the prices of NGV and LPG, indirectly dictated by the government. The total annual subsidies have remained high in the range of THB3b-5b, and PTT was recently requested by the government to subsidise the price of LPG at THB1.5b per month, in accordance with the Energy Regulatory Commission. As the subsidy burdens are unlikely to end anytime soon, we believe PTT's share price has been discounted by investors in response to its public services.

EV venture could be a gamechanger for PTT's investors. With the recent penetration into the EV business value chain, mainly to build a manufacturing plant via the JV with Foxconn, the global leading, Taiwan-based electronics manufacturer, we believe PTT is now moving into the right direction to seek new S-curve growth in an EV venture which could potentially transform PTT from a lacklustre oil & gas conglomerate into an EV-driven, more diversified energy powerhouse.

Core gas business remains PTT's big cash cow

While we are more bearish on PTT's core gas earnings outlook given the eroding power of its monopoly in the gas value chain, we believe PTT will continue to enjoy strong net profit growth in its core gas unit in 2022 onward.

LNG terminal fees. The first key driver for the gas unit is the rising LNG terminal revenue from the higher LNG import volume, both for PTT per se and for the access by private companies. PTT estimates that its net profit from its 11.5mtpa capacity LNG terminal will rise from THB4b-5b in 2019-21 to THB5b-7b in 2023-24 as the LNG import volume increases.

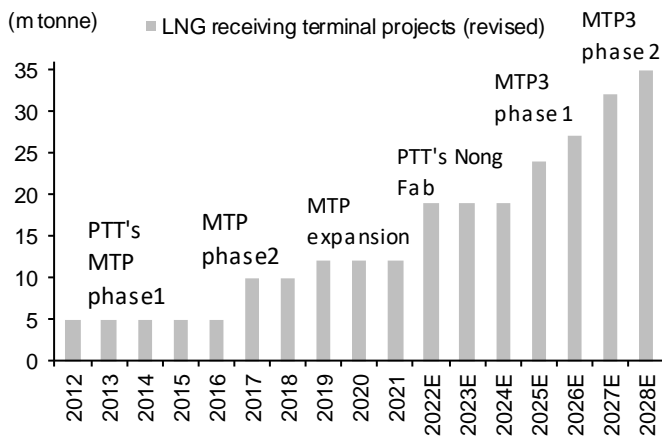
Exhibit 10: Gas transmission pipeline tariff structure

| Transmission pipeline tariff | Area | Fixed tariff (Td) (THB/mmbtu) | Variable tariff (Td) (THB/mmbtu) |
|--|------------------|----------------------------------|-------------------------------------|
| Area 1: offshore pipeline in Rayong | East coast | 8.59 | 1.30 |
| Area 2: offshore pipeline in Khanom | South coast | 14.22 | 1.30 |
| Area 3: nearshore pipeline | On the coast | 12.07 | 1.30 |
| Area 4: onshore pipeline in Rayong | East inland | 2.49 | 0.13 |
| Area 5: offshore pipeline in Namphong | Northeast inland | 1.13 | 0.00 |
| Total transmission pipeline (Area 1-5) | | 38.49 | 4.04 |
| LNG terminal fee | | 18.00 | 0.86 |

Sources: PTT

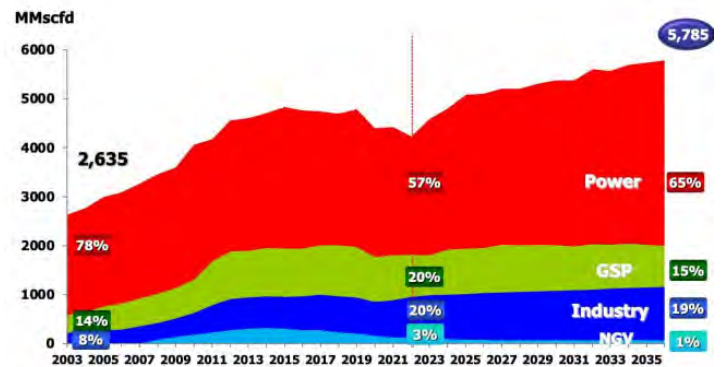
At present, the LNG terminal charge is fixed at THB18/mmbtu and is still monopolised by PTT, with an estimated annual LNG import volume of 11.12mtpa. However, the LNG terminal charge may be revised once the new LNG terminal in Nong Fab, owned by PTT, and the LNG terminals in Map Ta Phut Phase 3, owned by Gulf Energy Development (GULF TB, BUY) and PTT, come on stream in 2022-28.

Exhibit 11: Thailand's LNG terminal capacity projection



Source: Ministry of Energy (MOE)

Exhibit 12: Thailand's gas demand forecast (CAGR during 2022-36) under the current PDP 2018 Revision 1

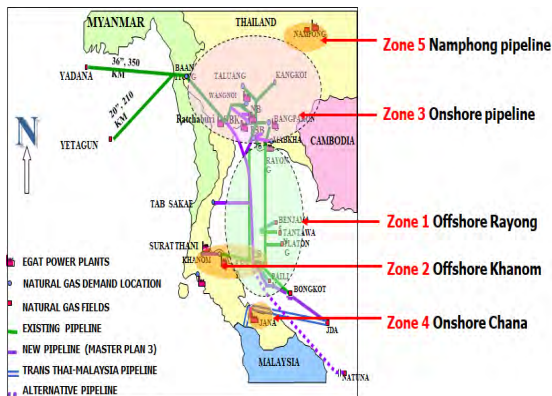


Source: PTT Business Plan 2022

Transmission pipeline tariff. This volume-driven, fee-based unit of the gas pipeline has long been a utility-like business for PTT over the past 30 years. The gas sales volume in Thailand rose significantly during the 1980s to 2020s, growing by over 2x in 2000-21 to reach 4,500mmscfd in 2021, which generated an average of THB33b-40b EBITDA annually to PTT in 2010-21

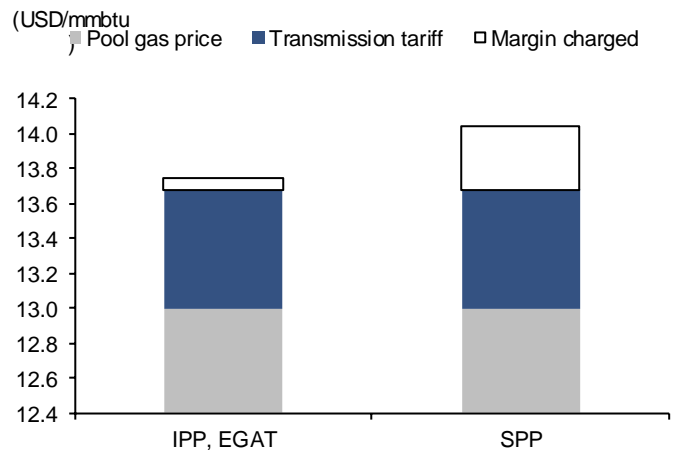
With a fixed average transmission pipeline (TM) charge of THB23.26/mmbtu, comprising THB13.4/mmbtu for TM zone 1 (area 1 for the offshore pipeline in Rayong) and THB9.9/mmbtu for TM zone 3 (area 3 for the nearshore pipeline in Rayong), PTT has long enjoyed this utility-like TM business since the 1980s.

Exhibit 13: Thailand's five gas pipeline networks owned by PTT



Source: PTT

Exhibit 14: Gas price structures breakdown by cost types

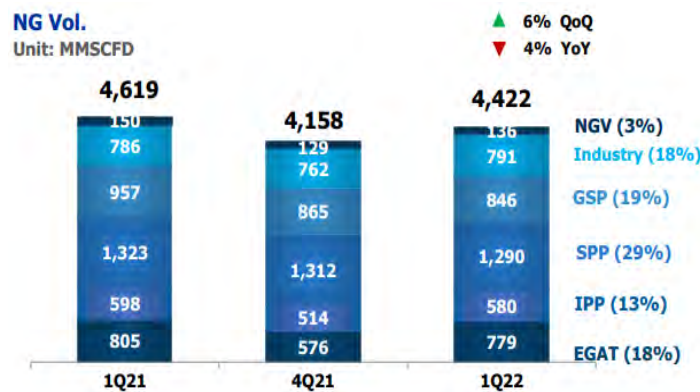


Sources: PTT; FSSIA estimates (gas price as of 2022E)

S&M gas sales. Under the S&M unit, PTT sells gas to different customer groups at different pricing schemes. For large-scale independent power producers (IPP) and the state-owned enterprise Electricity Generating Authority of Thailand (EGAT), PTT will charge a fixed margin at 1.75% or a maximum of THB2.15/mmbtu on top of the TM tariff, commodity charge (THB1.3/mmbtu), and the pool gas price which includes the gas supplied from domestic gas fields (60-70% of total gas supply), the gas imported from Myanmar (10-15%), and LNG imports (10-15%).

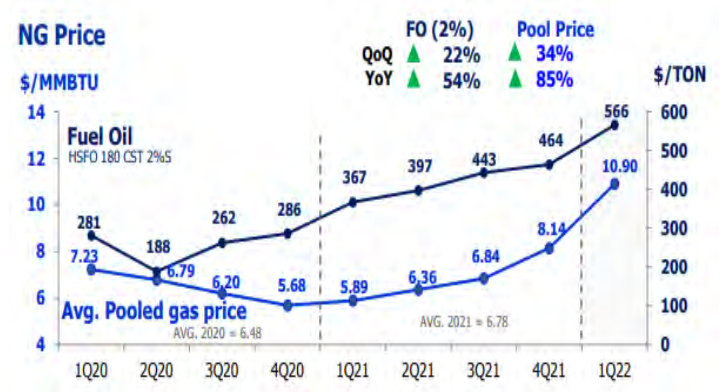
However, the most vulnerable customer segments for PTT after the liberalisation of the gas market in 2023 onward will be the small power producers (SPPs) and IUs. PTT charges a higher margin of 9.3% or a maximum margin of THB11.5/mmbtu on top of the TM tariff, commodity charge, and the pool gas price. In 1Q23, GULF and B.Grimm Power (BGRIM TB, BUY), Thailand's largest IPP and SPP, respectively, will begin to import their own LNG for SPPs, thereby reducing PTT's gas sales volume and margin on these imported LNG volumes.

Exhibit 15: Gas sales volume, breakdown by customers



Source: PTT

Exhibit 16: Fuel oil (FO) price vs average pool gas price

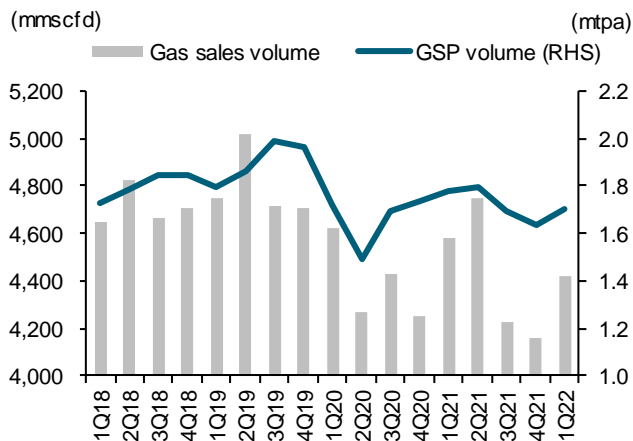


Source: PTT

But the riskiest customer segment for PTT's S&M unit is the IU segment, whose gas pricing is based on the one-month lagging price of high sulphur fuel oil (HSFO) over the pool gas price. In 2021-1Q22 when the crude oil price rose at a fast rate, the gas selling prices to IUs based on the one-month lagging HSFO price was lower than the pool gas price, resulting in operating losses for PTT in the past few quarters.

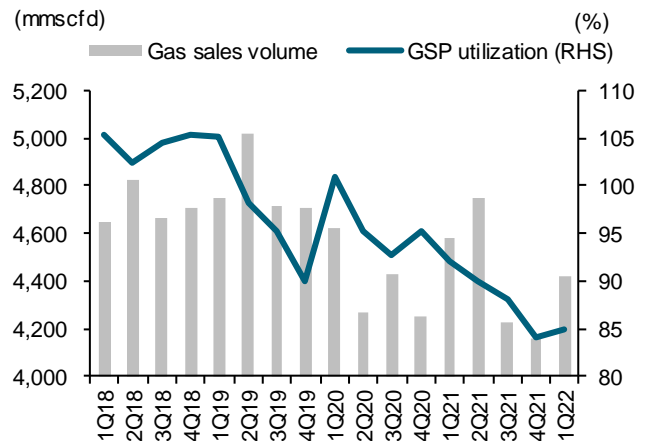
While we expect the oil price uptrend to continue in 2H22, we think the degree of the oil price rise will significantly slow down, thereby resulting in improving margins for PTT's gas sales to IUs, which accounted for 18% of PTT's total gas sales volume in 1Q22.

Exhibit 17: Gas sales volume (S&M) vs GSP sales volume



Source: PTT

Exhibit 18: Gas sales volume (S&M) vs GSP utilisation rate

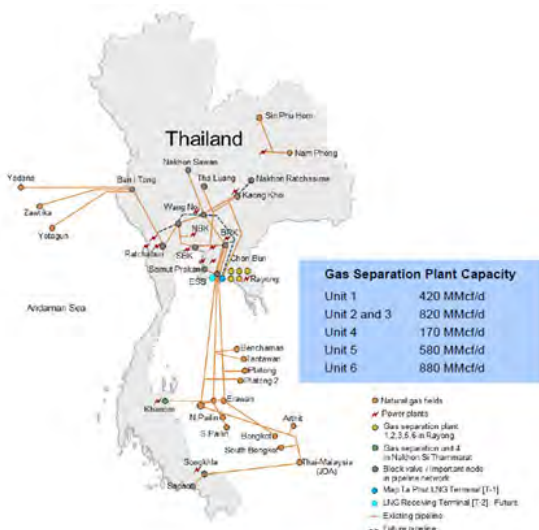


Source: PTT

GSPs: a victim of gas production shortfall in the Gulf of Thailand. PTT owns and operates five GSPs in Thailand with four GSPs located in Rayong in eastern Thailand and one GSP located in the southern part of Thailand. The economic profits of GSPs lie in the margins of the netback pricing formula, which depends on the prices of the end petrochemical products including PE and PP.

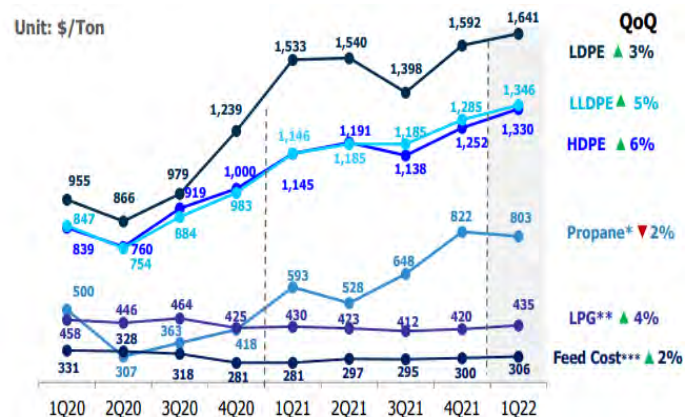
As the prices of PE and PP rise in tandem with the price of naphtha feedstock, which in turn will move along with the oil price direction, the margins of GSPs will widen or shrink depending on how high the prices of PE and PP will go, thanks to the smaller and slower pricing of the gas feedstock than the changes in the oil and naphtha prices.

Exhibit 19: GSPs in Thailand



Source: PTT

Exhibit 20: GSP feedstock cost vs petrochemical prices

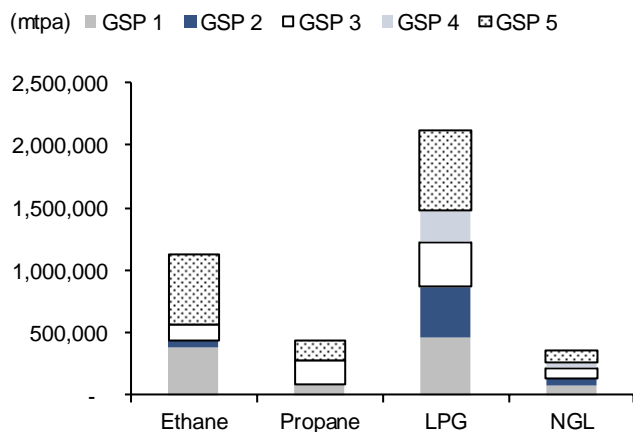


Source: PTT

Gas feedstock shortfall led to lower GSP utilisation rates. However, in the past two years, the wet gas supply from the Gulf of Thailand plunged significantly due to the production disruptions at the Erawan gas field (or G1 under a new production service contract (PSC)), with its gas production dropping from 1,200mmscfd in 2020 down to only 300mmscfd in May-22. It is set to decline further to 250mmscfd in Jul-Aug 2022 before rising toward its PSC target of 800mmscfd by the end of 2024.

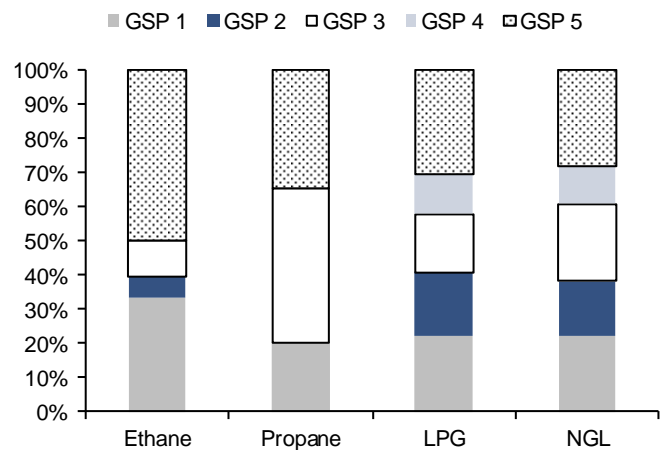
As the wet gas feedstock – gas with a low content of methane C1 below 90% of the total gas content – for GSPs dropped, PTT suffered from the gas supply shortage for its GSPs, resulting in lower utilisation rates from over 90% in 2020 down to 83% in 1Q22. According to PTT’s management, the low utilisation rate of GSPs at sub-90% is likely to continue in 2022-23 until the wet gas feedstock supply from G1 returns to its 800mmscfd target by 4Q24.

Exhibit 21: GSP production yields by plants



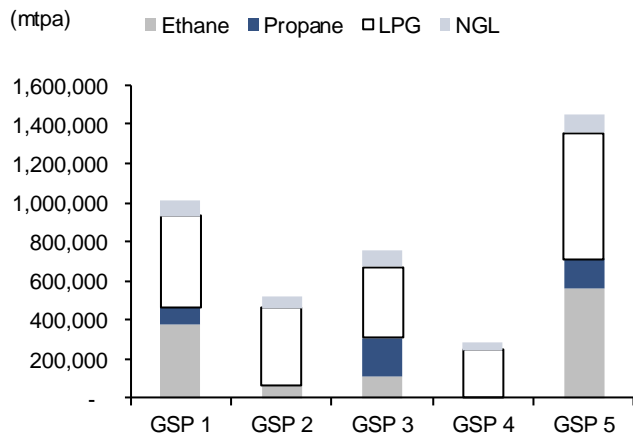
Source: PTT

Exhibit 22: GSP production yields by plants (%)



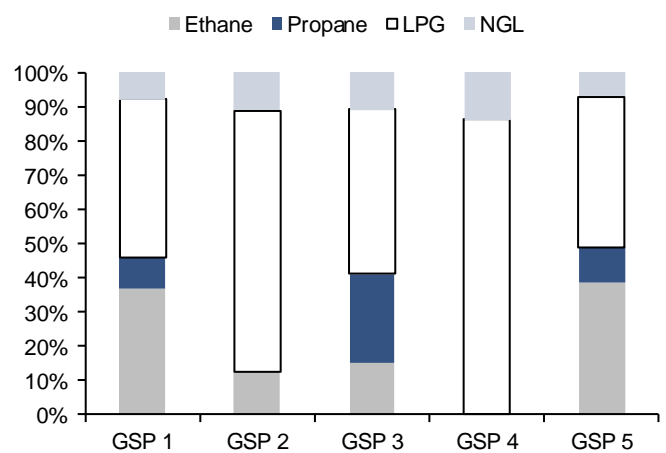
Source: PTT

Exhibit 23: GSP production yields by products



Source: PTT

Exhibit 24: GSP production yields by products (%)



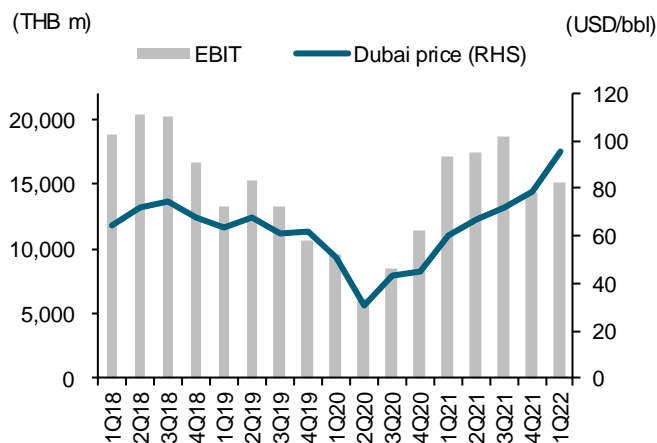
Source: PTT

LPG subsidies from GSPs. In addition, last week the Thai government requested PTT to provide monthly subsidies of THB1.5b its GSP profits for three months in Jul-Sep 2022, citing the excessive windfall profits generated from its LPG sold as a feedstock to produce olefins at PTTGC's olefin cracker units. LPG production of a 2.2mtpa yield accounts for over 50% of the total production from PTT's five GSPs, with the majority of LPG sold as household cooking gas at the subsidised price while the remaining small amount of LPG is sold as a feedstock to PTTGC.

Indeed, GSPs sell ethane, propane, and natural gas liquid (NGL) as feedstocks to PTTGC's ethane crackers to produce olefins with a small amount of LPG to be sold as a petrochemical feedstock.

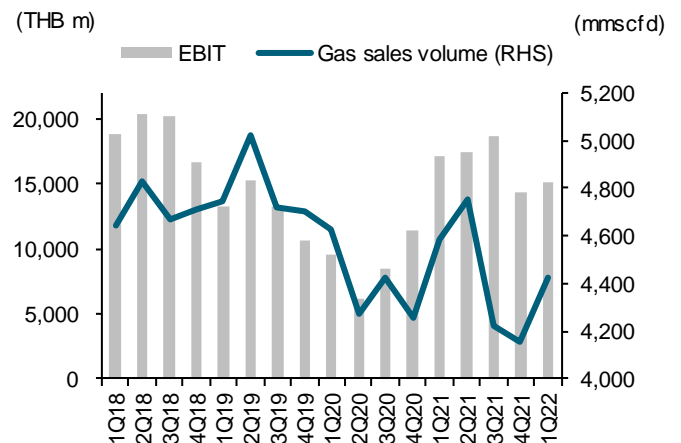
PTT's core gas EBIT vs Dubai crude oil price and sales volume. Thanks to the HSFO-linked gas pricing formula for the gas supplies from the Gulf of Thailand, MTJDA, and the imported gas from Myanmar, the EBIT of PTT's GSPs have been driven mainly by the oil price, followed by the sales volume. With our projected higher Dubai oil price assumptions of USD120/110/110 per bbl in 2022-24, we expect the EBIT from PTT's GSPs to grow y-y in 2022-24 to reach THB50b-60b annual EBITDA.

Exhibit 25: Quarterly gas EBIT vs Dubai oil price



Sources: PTT; Bloomberg

Exhibit 26: Quarterly gas EBIT vs gas sales volume



Source: PTT

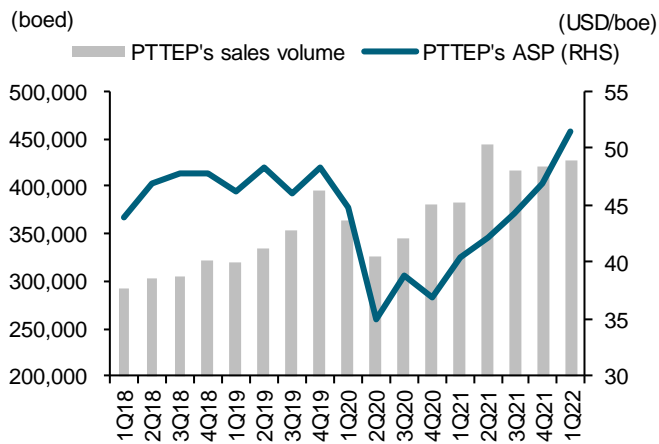
E&P business is PTT's true crown jewel

Thanks to the global oil price spike, PTTEP has a timely and sound growth strategy to grow its production volume in 2022-24, mainly driven by its multiple M&As that should drive its production volume to reach 500kboed in 2025, up from the 400kboed level in 2021.

Since 2017, PTTEP has continued to contribute the largest EBITDA proportion to PTT, ranging between THB23b in 2Q20 to THB53.5b in 1Q22, driven by higher sales volumes and rising average selling prices (ASP) on both the prices of gas and oil.

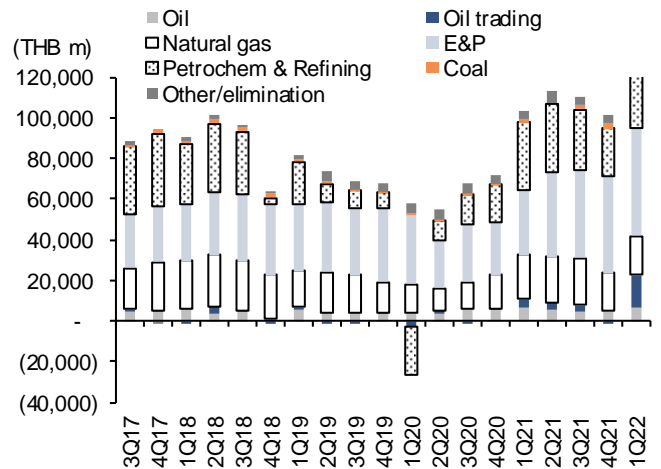
Since 1Q21, PTTEP has generated significant EBITDA contributions for PTT in the range of THB20b-40b a quarter, with reported net profits of over USD300m a quarter in 2021-1Q22. We project PTTEP to generate higher EBITDA and net profit contributions for PTT in 2H22-2024, boosted by rising production volumes, higher ASPs, and its lower cost structure.

Exhibit 27: PTTEP's quarterly sales volume vs ASP



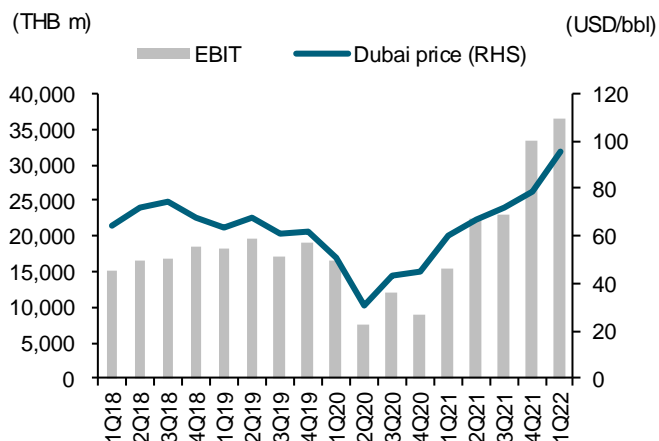
Source: PTTEP

Exhibit 28: Quarterly EBITDA breakdown by segment



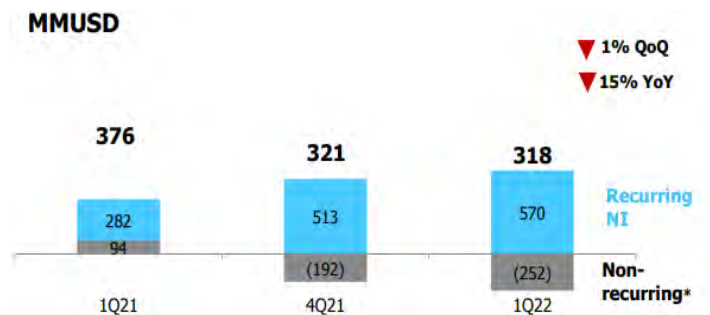
Source: PTTEP

Exhibit 29: PTTEP's quarterly EBIT vs Dubai crude oil price



Source: PTT

Exhibit 30: PTTEP's recent quarterly net profits



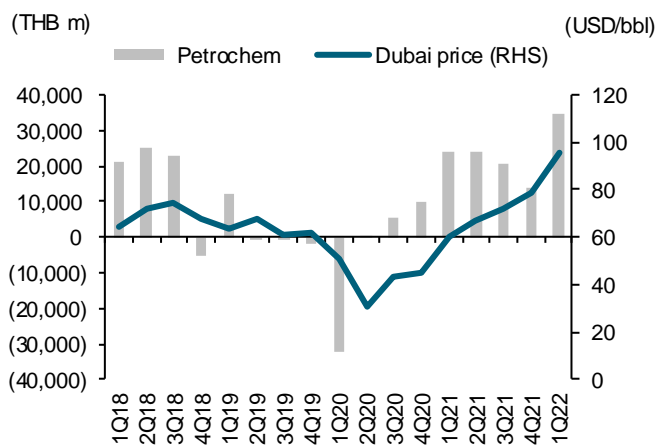
Source: PTT

Petrochemical and refining: PTT’s short-term catalysts in 2H22

Thanks to the higher market GRMs due to the tighter supply and rising demand, high inventory gains, and improving refinery utilisation rates, PTT has seen the EBIT from its petrochemical & refining unit increase to over THB30b in 1Q22, up from a net loss in 1H20. We anticipate that the GRM uptrend will continue and should more than offset the weaker EBIT from the petrochemical unit due to oversupply.

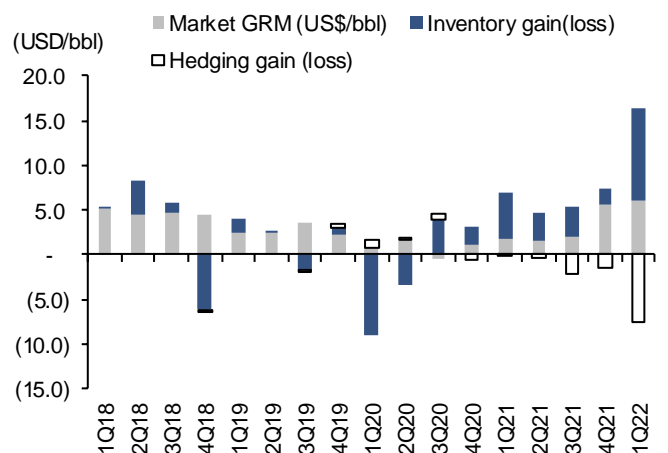
We expect the market GRM to jump from USD8/bbl in 1Q22 to over USD20/bbl in 3Q22, driven by higher margins of gasoline, diesel, and jet over the Dubai crude oil price. Despite the sharp rise in the Dubai crude oil price, refiners have been able to fully pass through the higher crude oil cost and even raise their margins further thanks to the strong pent-up demand post the economic reopening in 2022, the structurally tight supply due to the shutdowns of refinery plants during the Covid-19 period in 2020-21, and the recent cuts in utilisation rates of refiners in Europe due to the impact of the sanctions on Russian fossil fuels.

Exhibit 31: Quarterly EBIT of petrochemical & refining



Source: PTT

Exhibit 32: PTT’s blended market GRM, inventory gain (loss), and hedging gain (loss) per unit



Source: PTT

EV growth is PTT's gamechanger

On 28 Jun-22, according to [The Nation Thailand](#), PTT's subsidiary ARUN PLUS, along with the Secretary-General, Office of the National Economic and Social Development Council, and top executives from Foxconn Technology Group, revealed its plan to build a new EV manufacturing plant under the newly established HORIZON PLUS JV, jointly owned 60% by ARUN PLUS (PTT) and 40% by Foxconn, to serve as an EV OEM for EV car companies, both in Thailand and in the ASEAN region.

The construction of the plant with an investment of THB36.1b will begin in 3Q22 and is scheduled to operate in 1Q24 with an initial capacity to produce 50,000 passenger EVs annually, which is planned to expand to 150,000 EVs by 2030. The plant has already been granted tax exemptions from the Board of Investment, along with the high-speed trains connecting three major airports in the Eastern Economic Corridor area (THB162.3b investment).

PTT-Foxconn's plant will not produce its own brands but instead will be an OEM to facilitate EV car producers, aiming to shorten the design and production processes to accelerate the product launching in the market.

However, according to TechXcite, Foxconn Technology Group, under the JV with Yulon Motor, a Taiwan-based car manufacturer, has revealed three models of EV cars – Foxconn model C for a SUV crossover midsize EV, model E for a sports sedan, and model T for an e-bus.

Exhibit 33: EV manufacturing platform under PTT-Foxconn JV Exhibit 34: Foxconn's model C SUV mid-size EV



Sources: [TechXcite.com](#)



Sources: [TechXcite.com](#)

Exhibit 35: Foxconn's model T e-bus



Sources: [TechXcite.com](#)

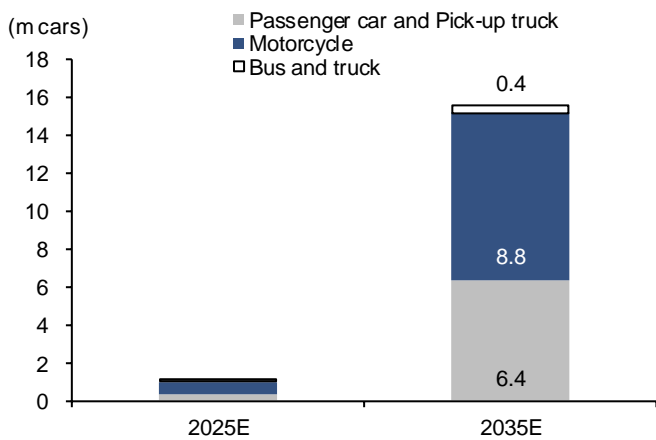
Exhibit 36: Foxconn's model E sedan passenger EV



Sources: [TechXcite.com](#)

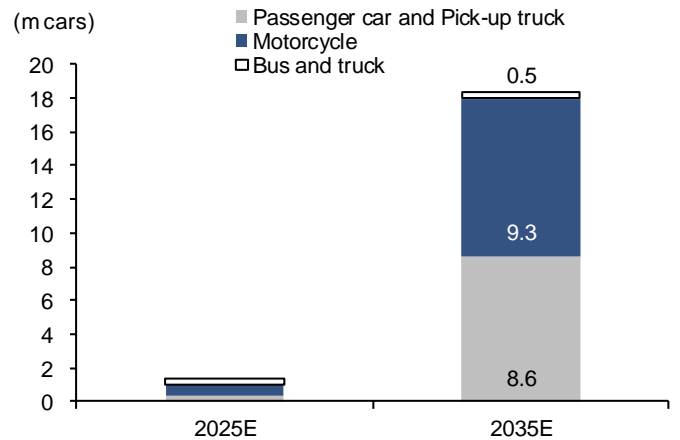
With manifest targets for EV usage and production numbers in 2025-35 set by the Thai government, we believe PTT's move into the EV value chain is likely to be its new S-curve growth driver, potentially generating up to THB5b-10b in annual net profit contributions to PTT by 2030, based on THB0.1m net profit per EV, a production capacity of 150,000 EVs annually, and the 60% stake in the JV.

Exhibit 37: EV usage target by Thai government



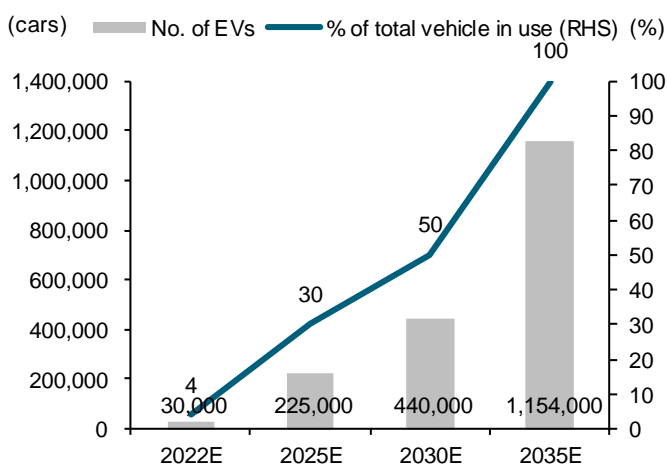
Source: Ministry of Energy

Exhibit 38: EV production target by Thai government



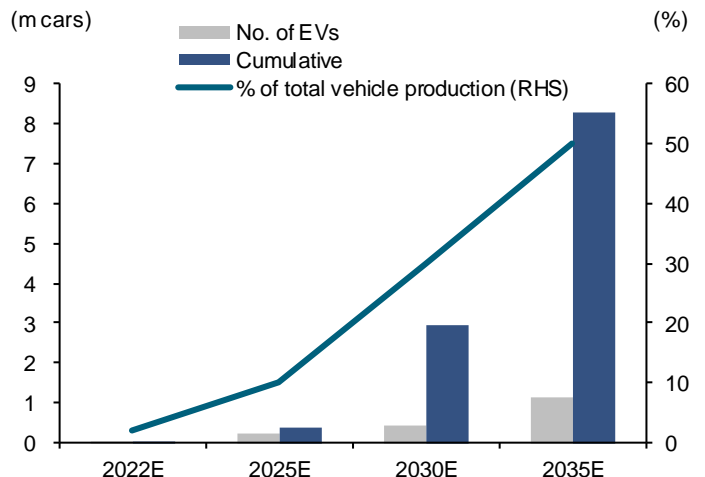
Sources: Ministry of Energy

Exhibit 39: Number of EVs and % of total vehicles in use



Source: Ministry of Energy

Exhibit 40: Number of EVs and % of production



Source: Ministry of Energy

S-T play on commodity price uptrend; L-T play on EV megatrend

We cut our EPS forecasts in 2022-24 by 7.7-15.6% to reflect our assumptions of 16.5-68.7% higher gas costs that should be partly offset by the 20.0-22.2% higher Dubai crude oil prices that we estimate during the same period. We believe PTT's net profit growth remains sanguine in 2022-24 even after our EPS revisions, thanks to the higher oil prices that should continue to drive PTT's earnings in E&P, GSPs, and from the higher GRMs for refinery associates. Meanwhile, PTT's core gas earnings should remain resilient, backed by higher LNG import volumes, rising demand for TM and LNG terminals, and the potential earnings growth from its EV venture starting in 2024.

We lower our SoTP-based TP from THB60 to THB50 to reflect our EPS forecast cuts in 2022-24 and the valuation rollover to 2023. We believe PTT is an attractive oil & gas play in the short term on the commodity price uptrends that we project to persist into 2023. However, we think the most important driver for PTT's share price will be the success in its EV venture, including the EV production plant and the battery plant owned by PTT's associate GPSC.

Exhibit 41: Changes in key assumptions and EPS revisions

| | Current | | | Previous | | | Change | | |
|---------------------------|------------------|------------------|------------------|------------------|------------------|------------------|--------------|--------------|--------------|
| | 2022E (THB m) | 2023E (THB m) | 2024E (THB m) | 2022E (THB m) | 2023E (THB m) | 2024E (THB m) | 2022E (%) | 2023E (%) | 2024E (%) |
| Revenue | 2,384,459 | 2,556,087 | 2,722,943 | 2,223,594 | 2,356,087 | 2,552,943 | 7.2 | 8.5 | 6.7 |
| Gross profit | 246,879 | 246,041 | 229,960 | 266,532 | 275,973 | 243,755 | (7.4) | (10.8) | (5.7) |
| Operating profit | 210,314 | 222,750 | 226,753 | 229,967 | 252,682 | 240,548 | (8.5) | (11.8) | (5.7) |
| Net profit | 118,570 | 128,103 | 130,997 | 134,095 | 151,749 | 141,896 | (11.6) | (15.6) | (7.7) |
| EPS (THB) | 4.2 | 4.5 | 4.6 | 4.7 | 5.3 | 5.0 | (11.6) | (15.6) | (7.7) |
| Key assumptions | | | | | | | | | |
| Dubai oil price (USD/bbl) | 120 | 110 | 110 | 100 | 90 | 90 | 20.0 | 22.2 | 22.2 |
| Gas cost (USD/mmbtu) | 14.0 | 13.0 | 12.0 | 8.3 | 9.3 | 10.3 | 68.7 | 39.8 | 16.5 |

Sources: PTT; FSSIA estimates

Exhibit 42: SoTP-based valuation

| PTT valuation - fair price | (THB m) | (THB/shr) | Comments |
|--|------------------|-------------|-------------------------------|
| PTT core gas and oil trading | 710,213 | 25.2 | DCF @ 11% |
| Net debt | (192,640) | (6.8) | 2023E net debt |
| Net core gas and trading business | 517,572 | 18.4 | |
| PTTEP | 378,810 | 13.4 | At target price of THB176/shr |
| TOP | 70,115 | 2.5 | At target price of THB70/shr |
| PTTGC | 88,318 | 3.1 | At target price of THB40/shr |
| IRPC | 21,900 | 1.1 | At target price of THB3.0/shr |
| OR | 238,454 | 8.5 | At target price of THB32/shr |
| Other LT investments | 241,347 | 8.6 | |
| Total non-core value | 1,038,944 | 37.2 | |
| Equity value | 1,556,517 | 55.5 | |
| Discount | 10% | 5.6 | |
| Target price | | 50.0 | |

Sources: PTT; FSSIA estimates

Exhibit 43: Summary of key valuations of companies under our coverage

| Company | -- Share price -- | | Up (dn) side | --- Recur profit --- | | NP growth | | --- P/E --- | | --- PBV --- | | ----- 2022E ----- | | | | |
|--------------------------------|-------------------|--------|--------------------|----------------------|-----------------|----------------|----------------|---------------|-------------|-------------|-------------|-------------------|------------|-------------|--------------|------------------|
| | BBG | Rec | | Current (THB) | Target (THB) | 22E (THB m) | 23E (THB m) | 22E (%) | 23E (%) | 22E (x) | 23E (x) | 22E (x) | 23E (x) | ROE (%) | Yield (%) | EV/EBITDA (x) |
| Energy & Utilities* | | | | | | 339,186 | 357,608 | 34.8 | 5.4 | 19.1 | 16.7 | 2.5 | 2.3 | 14.1 | 3.9 | 11.0 |
| Oil & Gas* | | | | | | 249,570 | 260,169 | 29.4 | 4.2 | 12.8 | 11.3 | 1.4 | 1.3 | 12.9 | 4.8 | 6.6 |
| PTT PCL | PTT TB | BUY | 35.00 | 50.00 | 43 | 118,570 | 128,103 | 32.9 | 8.0 | 8.4 | 7.8 | 0.9 | 0.9 | 11.4 | 4.3 | 4.8 |
| PTT Explor & Prod | PTTEP TB | BUY | 163.50 | 176.00 | 8 | 54,880 | 51,174 | 13.1 | (6.8) | 11.8 | 12.7 | 1.5 | 1.4 | 12.9 | 5.4 | 4.7 |
| PTT Oil & Retail | OR TB | BUY | 26.25 | 32.00 | 22 | 11,654 | 13,879 | (1.1) | 19.1 | 27.0 | 22.7 | 3.0 | 2.8 | 11.3 | 1.8 | 15.6 |
| Bangkok Aviation | BAFS TB | BUY | 29.00 | 36.00 | 24 | 120 | 408 | nm | 240.4 | 154.3 | 45.3 | 4.1 | 3.7 | 2.6 | 0.3 | 22.5 |
| Thai Oil | TOP TB | BUY | 52.25 | 70.00 | 34 | 13,238 | 13,825 | 5.2 | 4.4 | 8.1 | 7.7 | 0.8 | 0.8 | 10.6 | 5.6 | 10.5 |
| Star Petroleum Refining | SPRC TB | BUY | 12.20 | 14.00 | 15 | 7,375 | 6,844 | 280.7 | (7.2) | 7.2 | 7.7 | 1.3 | 1.1 | 19.6 | 3.3 | 4.2 |
| Bangchak Corp | BCP TB | BUY | 32.00 | 40.00 | 25 | 6,830 | 6,887 | 100.8 | 0.8 | 6.5 | 6.4 | 0.8 | 0.7 | 12.3 | 7.8 | 5.3 |
| PTG Energy | PTG TB | BUY | 13.70 | 18.30 | 34 | 1,784 | 2,263 | 77.3 | 26.8 | 12.8 | 10.1 | 2.4 | 2.1 | 20.3 | 1.5 | 4.6 |
| Esso Thailand | ESSO TB | BUY | 11.60 | 12.90 | 11 | 5,782 | 6,289 | 528.3 | 8.8 | 6.9 | 6.4 | 1.8 | 1.5 | 27.7 | 4.3 | 6.3 |
| Susco | SUSCO TB | BUY | 3.76 | 3.50 | (7) | 303 | 365 | 29.6 | 20.5 | 13.7 | 11.3 | 1.0 | 0.9 | 8.1 | 2.1 | 9.9 |
| Scan Inter | SCN TB | BUY | 2.36 | 3.10 | 31 | 118 | 225 | 70.0 | 91.5 | 24.1 | 12.6 | 1.0 | 1.0 | 4.3 | 2.1 | 22.8 |
| Banpu | BANPU TB | BUY | 12.60 | 18.80 | 49 | 28,728 | 29,682 | 20.7 | 3.3 | 3.2 | 3.8 | 0.8 | 0.8 | 30.4 | 17.7 | 3.6 |
| WP Energy | WP TB | BUY | 4.72 | 5.90 | 25 | 189 | 225 | 0.0 | 0.0 | 13.0 | 10.9 | 1.9 | 1.7 | 14.7 | 5.3 | 3.2 |
| Petrochemical* | | | | | | 57,832 | 64,859 | (17.9) | 12.2 | 10.6 | 9.1 | 1.1 | 1.0 | 10.8 | 5.7 | 7.7 |
| Indorama Ventures | IVL TB | BUY | 47.75 | 70.00 | 47 | 23,553 | 25,905 | 7.6 | 10.0 | 11.4 | 10.3 | 1.5 | 1.3 | 13.7 | 5.4 | 7.3 |
| IRPC PCL | IRPC TB | REDUCE | 3.26 | 3.00 | (8) | 4,676 | 10,098 | (71.6) | 115.9 | 14.2 | 6.6 | 0.8 | 0.7 | 5.5 | 3.5 | 9.3 |
| PTT Global Chem | PTTGC TB | REDUCE | 46.00 | 40.00 | (13) | 29,027 | 28,054 | (7.4) | (3.4) | 7.1 | 7.4 | 0.7 | 0.7 | 9.1 | 7.1 | 7.3 |
| Global Green Chem | GGC TB | BUY | 15.20 | 13.50 | (11) | 576 | 802 | (25.7) | 39.4 | 27.0 | 19.4 | 1.5 | 1.4 | 5.7 | 2.0 | 11.9 |
| Building materials* | | | | | | 39,408 | 50,240 | (23.3) | 27.5 | 13.1 | 10.2 | 1.3 | 1.2 | 10.1 | 4.7 | 13.0 |
| Siam Cement | SCC TB | BUY | 380.00 | 466.00 | 23 | 35,011 | 46,340 | (25.8) | 32.4 | 13.0 | 9.8 | 1.2 | 1.1 | 9.4 | 4.5 | 13.3 |
| Eastern Polymer Group | EPG TB | BUY | 9.50 | 16.00 | 68 | 1,448 | 1,670 | 20.9 | 15.3 | 18.4 | 15.9 | 2.3 | 2.1 | 12.7 | 2.5 | 13.5 |
| Tipco Asphalt | TASCO TB | BUY | 16.00 | 22.50 | 41 | 2,949 | 2,230 | (1.6) | (24.4) | 8.6 | 11.3 | 1.9 | 2.0 | 20.7 | 11.3 | 7.9 |

*Market cap-weighted average

Share prices as of 29 Jun 2022

Sources: Bloomberg; FSSIA estimates

Financial Statements

PTT PCL

| Profit and Loss (THB m) Year Ending Dec | 2020 | 2021 | 2022E | 2023E | 2024E |
|---|----------------|-----------------|----------------|----------------|----------------|
| Revenue | 1,615,665 | 2,258,818 | 2,384,459 | 2,556,087 | 2,722,943 |
| Cost of goods sold | (1,305,456) | (1,736,431) | (1,964,573) | (2,127,832) | (2,301,560) |
| Gross profit | 310,209 | 522,388 | 419,886 | 428,255 | 421,383 |
| Other operating income | - | - | - | - | - |
| Operating costs | (76,974) | (129,405) | (45,305) | (48,566) | (51,736) |
| Operating EBITDA | 233,235 | 392,983 | 374,582 | 379,690 | 369,647 |
| Depreciation | (154,591) | (163,799) | (173,007) | (182,215) | (191,423) |
| Goodwill amortisation | 0 | 0 | 0 | 0 | 0 |
| Operating EBIT | 78,644 | 229,184 | 201,574 | 197,475 | 178,224 |
| Net financing costs | (19,267) | (34,632) | (30,424) | (30,230) | (30,036) |
| Associates | 4,178 | 9,010 | 9,911 | 10,902 | 11,992 |
| Recurring non-operating income | 24,757 | 5,992 | 18,651 | 36,177 | 60,521 |
| Non-recurring items | (19,017) | 19,114 | 0 | 0 | 0 |
| Profit before tax | 65,116 | 219,658 | 189,801 | 203,422 | 208,709 |
| Tax | (25,166) | (67,591) | (39,858) | (42,719) | (43,829) |
| Profit after tax | 39,950 | 152,068 | 149,943 | 160,703 | 164,880 |
| Minority interests | (2,184) | (43,704) | (31,373) | (32,601) | (33,883) |
| Preferred dividends | 0 | 0 | 0 | 0 | 0 |
| Other items | - | - | - | - | - |
| Reported net profit | 37,766 | 108,363 | 118,570 | 128,103 | 130,997 |
| Non-recurring items & goodwill (net) | 19,017 | (19,114) | 0 | 0 | 0 |
| Recurring net profit | 56,783 | 89,249 | 118,570 | 128,103 | 130,997 |
| Per share (THB) | | | | | |
| Recurring EPS * | 1.99 | 3.12 | 4.15 | 4.48 | 4.59 |
| Reported EPS | 1.32 | 3.79 | 4.15 | 4.48 | 4.59 |
| DPS | 0.50 | 0.50 | 1.50 | 1.31 | 1.42 |
| Diluted shares (used to calculate per share data) | 28,563 | 28,563 | 28,563 | 28,563 | 28,563 |
| Growth | | | | | |
| Revenue (%) | (27.2) | 39.8 | 5.6 | 7.2 | 6.5 |
| Operating EBITDA (%) | (18.8) | 68.5 | (4.7) | 1.4 | (2.6) |
| Operating EBIT (%) | (44.5) | 191.4 | (12.0) | (2.0) | (9.7) |
| Recurring EPS (%) | (38.9) | 57.2 | 32.9 | 8.0 | 2.3 |
| Reported EPS (%) | (59.4) | 186.9 | 9.4 | 8.0 | 2.3 |
| Operating performance | | | | | |
| Gross margin inc. depreciation (%) | 9.6 | 15.9 | 10.4 | 9.6 | 8.4 |
| Gross margin of key business (%) | 9.6 | 15.9 | 10.4 | 9.6 | 8.4 |
| Operating EBITDA margin (%) | 14.4 | 17.4 | 15.7 | 14.9 | 13.6 |
| Operating EBIT margin (%) | 4.9 | 10.1 | 8.5 | 7.7 | 6.5 |
| Net margin (%) | 3.5 | 4.0 | 5.0 | 5.0 | 4.8 |
| Effective tax rate (%) | 38.6 | 30.8 | 21.0 | 21.0 | 21.0 |
| Dividend payout on recurring profit (%) | 25.2 | 16.0 | 36.1 | 29.3 | 30.9 |
| Interest cover (X) | 5.4 | 6.8 | 7.2 | 7.7 | 7.9 |
| Inventory days | 39.4 | 35.8 | 40.2 | 39.5 | 39.0 |
| Debtor days | 31.4 | 24.8 | 30.9 | 30.6 | 30.7 |
| Creditor days | 57.9 | 51.7 | 60.5 | 59.4 | 58.7 |
| Operating ROIC (%) | 6.9 | 24.0 | 19.6 | 16.0 | 15.6 |
| ROIC (%) | 3.2 | 7.4 | 7.6 | 8.6 | 9.2 |
| ROE (%) | 6.5 | 9.5 | 11.4 | 11.4 | 10.8 |
| ROA (%) | 2.8 | 5.6 | 5.6 | 5.8 | 5.7 |
| * Pre-exceptional, pre-goodwill and fully diluted | | | | | |
| Revenue by Division (THB m) | | | | | |
| Petroleum exploration and production | 192,963 | 194,893 | 196,842 | 198,810 | 200,798 |
| Natural gas | 512,874 | 531,465 | 531,465 | 531,465 | 531,465 |
| Coal | 22,654 | 21,452 | 21,452 | 21,452 | 21,452 |
| Oil | 511,478 | 531,211 | 531,211 | 531,211 | 531,211 |

Sources: PTT PCL; FSSIA estimates

Financial Statements

PTT PCL

| Cash Flow (THB m) Year Ending Dec | 2020 | 2021 | 2022E | 2023E | 2024E |
|-----------------------------------|------------------|------------------|------------------|------------------|------------------|
| Recurring net profit | 56,783 | 89,249 | 118,570 | 128,103 | 130,997 |
| Depreciation | 154,591 | 163,799 | 173,007 | 182,215 | 191,423 |
| Associates & minorities | (4,178) | (9,010) | (9,911) | (10,902) | (11,992) |
| Other non-cash items | 79,186 | (79,095) | 130,046 | 130,131 | 130,287 |
| Change in working capital | 3,052 | (52,023) | 101,680 | 103,932 | 103,863 |
| Cash flow from operations | 289,435 | 112,921 | 513,391 | 533,479 | 544,577 |
| Capex - maintenance | - | - | - | - | - |
| Capex - new investment | (110,494) | (110,494) | (110,494) | (110,494) | (110,494) |
| Net acquisitions & disposals | 5,283 | 5,194 | 5,194 | 5,194 | 5,194 |
| Other investments (net) | 0 | 0 | 0 | 0 | 0 |
| Cash flow from investing | (105,212) | (105,300) | (105,300) | (105,300) | (105,300) |
| Dividends paid | (14,281) | (14,281) | (42,844) | (37,504) | (40,519) |
| Equity finance | 0 | 0 | 0 | 0 | 0 |
| Debt finance | 109,972 | 129,476 | 0 | 0 | 0 |
| Other financing cash flows | (240,423) | (142,117) | (181,118) | (181,203) | (181,358) |
| Cash flow from financing | (144,733) | (26,922) | (223,962) | (218,707) | (221,877) |
| Non-recurring cash flows | - | - | - | - | - |
| Other adjustments | 0 | 0 | 0 | 0 | 0 |
| Net other adjustments | 0 | 0 | 0 | 0 | 0 |
| Movement in cash | 39,490 | (19,302) | 184,129 | 209,472 | 217,400 |
| Free cash flow to firm (FCFF) | 212,759.39 | 35,783.75 | 438,515.23 | 458,408.81 | 469,313.24 |
| Free cash flow to equity (FCFE) | 53,771.55 | (5,020.35) | 226,973.19 | 246,975.59 | 257,918.94 |

Per share (THB)

| | | | | | |
|-------------------------------|-------|--------|-------|-------|-------|
| FCFF per share | 7.45 | 1.25 | 15.35 | 16.05 | 16.43 |
| FCFE per share | 1.88 | (0.18) | 7.95 | 8.65 | 9.03 |
| Recurring cash flow per share | 10.03 | 5.77 | 14.41 | 15.04 | 15.43 |

| Balance Sheet (THB m) Year Ending Dec | 2020 | 2021 | 2022E | 2023E | 2024E |
|---|------------------|------------------|------------------|------------------|------------------|
| Tangible fixed assets (gross) | 1,910,343 | 2,020,837 | 2,131,332 | 2,241,826 | 2,352,320 |
| Less: Accumulated depreciation | (1,392,217) | (1,556,017) | (1,729,024) | (1,911,239) | (2,102,661) |
| Tangible fixed assets (net) | 518,126 | 464,821 | 402,308 | 330,588 | 249,659 |
| Intangible fixed assets (net) | 21,678 | 21,679 | 21,679 | 21,679 | 21,679 |
| Long-term financial assets | - | - | - | - | - |
| Invest. in associates & subsidiaries | 75,680 | 128,779 | 184,568 | 241,347 | 299,217 |
| Cash & equivalents | 333,251 | 313,949 | 498,078 | 707,550 | 924,950 |
| A/C receivable | 110,528 | 196,243 | 207,158 | 222,069 | 236,565 |
| Inventories | 129,779 | 210,410 | 222,114 | 238,101 | 253,644 |
| Other current assets | 147,372 | 132,804 | 583,070 | 579,144 | 575,483 |
| Current assets | 720,930 | 853,406 | 1,510,420 | 1,746,865 | 1,990,641 |
| Other assets | 1,207,769 | 1,609,335 | 963,831 | 889,566 | 816,413 |
| Total assets | 2,544,183 | 3,078,019 | 3,082,805 | 3,230,044 | 3,377,609 |
| Common equity | 882,040 | 1,006,696 | 1,082,421 | 1,173,020 | 1,263,498 |
| Minorities etc. | 403,805 | 466,243 | 393,333 | 425,934 | 459,817 |
| Total shareholders' equity | 1,285,845 | 1,472,940 | 1,475,755 | 1,598,954 | 1,723,315 |
| Long term debt | 664,732 | 786,224 | 781,224 | 776,224 | 771,224 |
| Other long-term liabilities | 295,579 | 325,201 | 306,563 | 303,542 | 300,355 |
| Long-term liabilities | 960,312 | 1,111,425 | 1,087,786 | 1,079,766 | 1,071,578 |
| A/C payable | 174,873 | 316,864 | 334,488 | 358,564 | 381,970 |
| Short term debt | 98,793 | 106,778 | 114,763 | 122,748 | 130,733 |
| Other current liabilities | 24,360 | 70,013 | 70,013 | 70,013 | 70,013 |
| Current liabilities | 298,026 | 493,654 | 519,264 | 551,325 | 582,716 |
| Total liabilities and shareholders' equity | 2,544,183 | 3,078,019 | 3,082,805 | 3,230,044 | 3,377,609 |
| Net working capital | 188,446 | 152,580 | 607,841 | 610,738 | 613,708 |
| Invested capital | 2,011,699 | 2,377,193 | 2,180,226 | 2,093,918 | 2,000,676 |

* Includes convertibles and preferred stock which is being treated as debt

Per share (THB)

| | | | | | |
|-------------------------------|-------|-------|-------|-------|-------|
| Book value per share | 30.88 | 35.24 | 37.90 | 41.07 | 44.24 |
| Tangible book value per share | 30.12 | 34.49 | 37.14 | 40.31 | 43.48 |

Financial strength




| | | | | | |
|---------------------------|------|------|------|------|-------|
| Net debt/equity (%) | 33.5 | 39.3 | 27.0 | 12.0 | (1.3) |
| Net debt/total assets (%) | 16.9 | 18.8 | 12.9 | 5.9 | (0.7) |
| Current ratio (x) | 2.4 | 1.7 | 2.9 | 3.2 | 3.4 |
| CF interest cover (x) | 9.5 | 4.0 | 12.1 | 12.8 | 13.3 |

| Valuation | 2020 | 2021 | 2022E | 2023E | 2024E |
|---|-------------|-------------|-------------|-------------|-------------|
| Recurring P/E (x) * | 17.6 | 11.2 | 8.4 | 7.8 | 7.6 |
| Recurring P/E @ target price (x) * | 25.2 | 16.0 | 12.0 | 11.1 | 10.9 |
| Reported P/E (x) | 26.5 | 9.2 | 8.4 | 7.8 | 7.6 |
| Dividend yield (%) | 1.4 | 1.4 | 4.3 | 3.8 | 4.1 |
| Price/book (x) | 1.1 | 1.0 | 0.9 | 0.9 | 0.8 |
| Price/tangible book (x) | 1.2 | 1.0 | 0.9 | 0.9 | 0.8 |
| EV/EBITDA (x) ** | 7.9 | 5.2 | 4.8 | 4.3 | 3.9 |
| EV/EBITDA @ target price (x) ** | 9.7 | 6.3 | 5.9 | 5.4 | 5.0 |
| EV/invested capital (x) | 0.9 | 0.9 | 0.8 | 0.8 | 0.7 |

* Pre-exceptional, pre-goodwill and fully diluted ** EBITDA includes associate income and recurring non-operating income

Sources: PTT PCL; FSSIA estimates

Corporate Governance report of Thai listed companies 2021

|  EXCELLENT LEVEL – Score range 90-100 | | | | | | | | | | |
|---|--------|--------|--------|--------|--------|--------|---------|--------|-------|--------|
| AAV | BCPG | CPALL | GCAP | K | MSC | PLANET | SAMART | SPI | THRE | TVD |
| ADVANC | BDMS | CPF | GFPT | KBANK | MST | PLAT | SAMTEL | SPRC | THREL | TVI |
| AF | BEM | CPI | GGC | KCE | MTC | PORT | SAT | SPVI | TIPCO | TVO |
| AH | BGC | CPN | GLAND | KKP | MVP | PPS | SC | SSSC | TISCO | TWPC |
| AIRA | BGRIM | CRC | GLOBAL | KSL | NCL | PR9 | SCB | SST | TK | U |
| AKP | BIZ | CSS | GPI | KTB | NEP | PREB | SCC | STA | TKT | UAC |
| AKR | BKI | DDD | GPSC | KTC | NER | PRG | SCCC | STEC | TMT | UBIS |
| ALT | BOL | DELTA | GRAMMY | LALIN | NKI | PRM | SCG | STI | TNDT | UV |
| AMA | BPP | DEMCO | GULF | LANNA | NOBLE | PROUD | SCGP | SUN | TNITY | VGI |
| AMATA | BRR | DRT | GUNKUL | LH | NSI | PSH | SCM | SUSCO | TOA | VIH |
| AMATAV | BTS | DTAC | HANA | LHFG | NVD | PSL | SDC | SUTHA | TOP | WACOAL |
| ANAN | BTW | DUSIT | HARN | LIT | NWR | PTG | SEAFECO | SVI | TPBI | WAVE |
| AOT | BWG | EA | HMPRO | LPN | NYT | PTT | SEAOIL | SYMC | TQM | WHA |
| AP | CENTEL | EASTW | ICC | MACO | OISHI | PTTEP | SE-ED | SYNTEC | TRC | WHAUP |
| ARIP | CFRESH | ECF | ICHI | MAJOR | OR | PTTGC | SELIC | TACC | TRU | WICE |
| ARROW | CHEWA | ECL | III | MAKRO | ORI | PYLON | SENA | TASCO | TRUE | WINNER |
| ASP | CHO | EE | ILINK | MALEE | OSP | Q-CON | SHR | TCAP | TSC | ZEN |
| AUCT | CIMBT | EGCO | ILM | MBK | OTO | QH | SIRI | TEAMG | TSR | |
| AWC | CK | EPG | INTUCH | MC | PAP | QTC | SIS | TFMAMA | TSTE | |
| AYUD | CKP | ETC | IP | MCOT | PCSGH | RATCH | SITHAI | TGH | TSTH | |
| BAFS | CM | FPI | IRPC | METCO | PDG | RS | SMK | THANA | TTA | |
| BANPU | CNT | FPT | ITEL | MFEC | PDJ | S | SMPC | THANI | TTB | |
| BAY | COM7 | FSMART | IVL | MINT | PG | S & J | SNC | THCOM | TTCL | |
| BBL | COMAN | GBX | JSP | MONO | PHOL | SAAM | SONIC | THG | TTW | |
| BCP | COTTO | GC | JWD | MOONG | PLANB | SABINA | SPALI | THIP | TU | |
|  VERY GOOD LEVEL – Score range 80-89 | | | | | | | | | | |
| 2S | ASIMAR | CHOW | FLOYD | IT | LOXLEY | OCC | RPC | SKY | TCC | TVT |
| 7UP | ASK | CI | FN | ITD | LRH | OGC | RT | SLP | TCMC | TWP |
| ABICO | ASN | CIG | FNS | J | LST | PATO | RWI | SMIT | TEAM | UEC |
| ABM | ATP30 | CMC | FORTH | JAS | M | PB | S11 | SMT | TFG | UMI |
| ACE | B | COLOR | FSS | JCK | MATCH | PICO | SA | SNP | TFI | UOBKH |
| ACG | BA | CPL | FTE | JCKH | MBAX | PIMO | SAK | SO | TIGER | UP |
| ADB | BAM | CPW | FVC | JMART | MEGA | PJW | SALEE | SORKON | TITLE | UPF |
| AEONTS | BC | CRD | GEL | JMT | META | PL | SAMCO | SPA | TKN | UPOIC |
| AGE | BCH | CSC | GENCO | KBS | MFC | PM | SANKO | SPC | TKS | UTP |
| AHC | BEC | CSP | GJS | KCAR | MGT | PMTA | SAPPE | SPCG | TM | VCOM |
| AIT | BEYOND | CWT | GYT | KEX | MICRO | PPP | SAWAD | SR | TMC | VL |
| ALL | BFIT | DCC | HEMP | KGI | MILL | PPPM | SCI | SRICHA | TMD | VPO |
| ALLA | BJC | DCON | HPT | KIAT | MITSIB | PRIME | SCN | SSC | TMI | VRANDA |
| ALUCON | BJCHI | DHOUSE | HTC | KISS | MK | PRIN | SCP | SSF | TMILL | WGE |
| AMANAH | BLA | DOD | HYDRO | KOOL | MODERN | PRINC | SE | STANLY | TNL | WIK |
| AMARIN | BR | DOHOME | ICN | KTIS | MTI | PSG | SFLEX | STGT | TNP | WP |
| APCO | BROOK | DV8 | IFS | KUMWEL | NBC | PSTC | SFP | STOWER | TOG | XO |
| APCS | CBG | EASON | IMH | KUN | NCAP | PT | SFT | STPI | TPA | XPG |
| APURE | CEN | EFORL | IND | KWC | NCH | QLT | SGF | SUC | TPAC | YUASA |
| AQUA | CGH | ERW | INET | KWM | NETBAY | RBF | SIAM | SWC | TPCS | |
| ASAP | CHARAN | ESSO | INSET | L&E | NEX | RCL | SINGER | SYNEX | TPS | |
| ASEFA | CHAYO | ESTAR | INSURE | LDC | NINE | RICHY | SKE | TAE | TRITN | |
| ASIA | CHG | ETE | IRC | LEO | NRF | RML | SKN | TAKUNI | TRT | |
| ASIAN | CHOTI | FE | IRCP | LHK | NTV | ROJNA | SKR | TBSP | TSE | |
|  GOOD LEVEL – Score range 70-79 | | | | | | | | | | |
| A | BGT | CITY | GIFT | JTS | MDX | PK | SGP | SUPER | TQR | YGG |
| AI | BH | CMAN | GLOCON | JUBILE | MJD | PLE | SICT | SVOA | TTI | ZIGA |
| AIE | BIG | CMO | GREEN | KASET | MORE | PPM | SIMAT | TC | TYCN | |
| AJ | BLAND | CMR | GSC | KCM | MUD | PRAKIT | SISB | TCCC | UKEM | |
| ALPHAX | BM | CPT | GTB | KK | NC | PRAPAT | SK | THMUI | UMS | |
| AMC | BROCK | CRANE | HTECH | KKC | NDR | PRECHA | SMART | TNH | UNIQ | |
| APP | BSBM | CSR | HUMAN | KWI | NFC | PTL | SOLAR | TNR | UPA | |
| AQ | BSM | D | IHL | KYE | NNCL | RJH | SPACK | TOPP | UREKA | |
| ARIN | BTNC | EKH | IIG | LEE | NOVA | RP | SPG | TPCH | VIBHA | |
| AS | BYD | EMC | INGRS | LPH | NPK | RPH | SQ | TPIPL | W | |
| AU | CAZ | EP | INOX | MATI | NUSA | RSP | SSP | TPIPP | WIN | |
| B52 | CCP | F&D | JAK | M-CHAI | PAF | SABUY | STARK | TPLAS | WORK | |
| BEAUTY | CGD | FMT | JR | MCS | PF | SF | STC | TPOLY | WPH | |

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

Sources: Thai Institute of Directors Association (IOD); FSSIA's compilation; data as of 26 October 2021

Anti-corruption Progress Indicator

| CERTIFIED | | | | | | | | | | |
|-----------|--------|--------|--------|--------|-------|--------|--------|--------|--------|--------|
| 2S | BCH | CPALL | GC | K | MFC | PE | QLT | SNP | THCOM | TU |
| 7UP | BCP | CPF | GCAP | KASET | MFEC | PG | QTC | SORKON | THIP | TVD |
| ADVANC | BCPG | CPI | GEL | KBANK | MILL | PHOL | RATCH | SPACK | THRE | TVI |
| AF | BE8 | CPN | GFPT | KBS | MINT | PK | RML | SPALI | THREL | TVO |
| AI | BEYOND | CSC | GGC | KCAR | MONO | PL | RWI | SPC | TIDLOR | TWPC |
| AIE | BGC | DCC | GJS | KCE | MOONG | PLANB | S & J | SPI | TIPCO | U |
| AIRA | BGRIM | DELTA | GPI | KGI | MSC | PLANET | SAAM | SPRC | TISCO | UBE |
| AKP | BJCHI | DEMCO | GPSC | KKP | MST | PLAT | SABINA | SRICHA | TKS | UBIS |
| ALPHAX | BKI | DIMET | GSTEEL | KSL | MTC | PM | SAPPE | SSF | TKT | UEC |
| AMA | BLA | DRT | GUNKUL | KTB | MTI | PPP | SAT | SSP | TMD | UKEM |
| AMANAHA | BPP | DTAC | HANA | KTC | NBC | PPPM | SC | SSSC | TMILL | UOBKH |
| AMATA | BROOK | DUSIT | HARN | KWC | NEP | PPS | SCB | SST | TMT | UPF |
| AMATAV | BRR | EA | HEMP | KWI | NINE | PR9 | SCC | STA | TNITY | UV |
| AP | BSBM | EASTW | HENG | L&E | NKI | PREB | SCCC | STOWER | TNL | VGI |
| APCS | BTS | ECL | HMPRO | LANNA | NMG | PRG | SCG | SUSCO | TNP | VIH |
| AQUA | BWG | EGCO | HTC | LH | NNCL | PRINC | SCN | SVI | TNR | WACOAL |
| ARROW | CEN | EP | ICC | LHFG | NOBLE | PRM | SEAOIL | SYMC | TOG | WHA |
| AS | CENTEL | EPG | ICHI | LHK | NOK | PROS | SE-ED | SYNTEC | TOP | WHAUP |
| ASIAN | CFRESH | ERW | IFEC | LPN | NSI | PSH | SELIC | TAE | TOPP | WICE |
| ASK | CGH | ESTAR | IFS | LRH | NWR | PSL | SENA | TAKUNI | TPA | WIIK |
| ASP | CHEWA | ETE | ILINK | M | OCC | PSTC | SGP | TASCO | TPP | XO |
| AWC | CHOTI | FE | INET | MAKRO | OGC | PT | SINGER | TBSP | TRU | ZEN |
| AYUD | CHOW | FNS | INSURE | MALEE | ORI | PTG | SIRI | TCAP | TRUE | |
| B | CIG | FPI | INTUCH | MATCH | PAP | PTT | SITHAI | TCMC | TSC | |
| BAFS | CIMBT | FPT | IRC | MBAX | PATO | PTTEP | SKR | TFG | TSTE | |
| BAM | CM | FSMART | IRPC | MBK | PB | PTTGC | SMIT | TFI | TSTH | |
| BANPU | CMC | FSS | ITEL | MC | PCSGH | PYLON | SMK | TFMAMA | TTA | |
| BAY | COM7 | FTE | IVL | MCOT | PDG | Q-CON | SMPC | TGH | TTB | |
| BBL | COTTO | GBX | JKN | META | PDJ | QH | SNC | THANI | TTCL | |
| DECLARED | | | | | | | | | | |
| AJ | CHG | DDD | ETC | JR | MAJOR | NUSA | RS | SSS | TQM | YUASA |
| ALT | CPL | DHOUSE | FLOYD | JTS | NCAP | NYT | SAK | STECH | TSI | ZIGA |
| APCO | CPR | DOHOME | GULF | KEX | NCL | OR | SCGP | STGT | VARO | |
| B52 | CPW | ECF | III | KUMWEL | NOVA | PIMO | SCM | TKN | VCOM | |
| BEC | CRC | EKH | INOX | LDC | NRF | PLE | SIS | TMI | VIBHA | |

| 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 26 October 2021) are categorised into: 1) companies that have declared their intention to join CAC, and; 2) companies certified by CAC.

Sources: 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 |
|--------------------------------|----------|------------|--------|---|
| PTT PCL | PTT TB | THB 35.00 | BUY | Risks to our SoTP-based valuation are the oil price and potential earnings downside from government intervention. |
| PTT Explor & Prod | PTTEP TB | THB 163.50 | 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. |
| PTT Oil and Retail Business | OR TB | THB 26.25 | BUY | The downside risks to our SOTP-based TP include: 1) lower-than-expected demand for petroleum products; 2) a lower marketing margin; and 3) weaker-than-expected jet demand. |
| Bangkok Aviation Fuel Services | BAFS TB | THB 29.00 | BUY | Downside risks to our SoTP-based target price include a slower-than-expected vaccination rate, leading to slower demand in tourism activities, and uncertainty in the fuel volume demand in the north which could lead to volatility in Fuel Pipeline Transportation Limited (FPT)'s income. |
| Thai Oil | TOP TB | THB 52.25 | BUY | Downside risks to our EV/EBITDA-based TP are a sharp fall in oil price and weak demand for refined oil products. |
| Star Petroleum Refining | SPRC TB | THB 12.20 | 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 32.00 | 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. |
| PTG Energy | PTG TB | THB 13.70 | BUY | The downside risks to our SoTP-based TP include 1) a government cap on oil prices; and 2) weaker demand for diesel and gasoline. |
| Esso Thailand | ESSO TB | THB 11.60 | BUY | 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. |
| Susco | SUSCO TB | THB 3.76 | BUY | The downside risks to our SOTP-based TP include: 1) lower-than-expected demand for petroleum products; 2) a lower marketing margin; and 3) weaker-than-expected jet fuel demand. |
| Scan Inter | SCN TB | THB 2.36 | BUY | The downside risks to our SOTP-based TP include 1) a sharp decline in oil prices; and 2) weaker demand for NGV and delays in new NGV projects. |
| Banpu | BANPU TB | THB 12.60 | 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. |
| WP Energy | WP TB | THB 4.72 | BUY | The downside risks to our SOTP-based TP include: 1) lower-than-expected demand for LPG gas; and 2) a lower marketing margin. |
| Indorama Ventures | IVL TB | THB 47.75 | 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. |
| IRPC PCL | IRPC TB | THB 3.26 | REDUCE | Key risks to our bearish view and EV/EBITDA-based target price are rising margins of PP-naphtha, SM and ABS-benzene, and a higher market GRM. |
| PTT Global Chemical | PTTGC TB | THB 46.00 | REDUCE | The key upside risks to our EV/EBITDA-based TP are a stronger-than-expected HDPE price and HDPE-naphtha margin. |
| Global Green Chemicals | GGC TB | THB 15.20 | BUY | Downside risks to our EV/EBITDA-based target price include: 1) a sharp decline in crude palm oil price; 2) a change in government policy for biodiesel from the current B7; and 3) a narrower fatty alcohol margin due to the new supply in the US |
| Siam Cement | SCC TB | THB 380.00 | BUY | Downside risks to our SOTP based TP include 1) a lower-than-expected demand for chemicals, CBM, and packaging; 2) rising coal costs for its cement and packaging units; and 3) weaker demand from the automobile industry that could erode the demand for SCC's chemical unit and its dividend contributions. |
| Eastern Polymer Group | EPG TB | THB 9.50 | BUY | Downside risks to our EV/EBITDA-based target price include 1) a sharp rise in feedstock prices, driven mostly by a higher oil price; and 2) lower-than-expected demand for plastics used for insulators and the automobile and packaging industries. |
| Tipco Asphalt | TASCO TB | THB 16.00 | 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. |

| | | | | |
|-------------------------|----------|-----------|------|---|
| Global Power Synergy | GPSC TB | THB 65.25 | HOLD | 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. Upside risks are a lower gas price and higher sales volume. |
| Gulf Energy Development | GULF TB | THB 47.50 | 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. |
| B.Grimm Power | BGRIM TB | THB 35.25 | 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. |

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 29-Jun-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.