

# PTT PCL PTT TB

## THAILAND / OIL & GAS

# BUY

## UNCHANGED

### ยักษ์ใหญ่ในธุรกิจพลังงานจากการเกาะกระแสการเติบโตในธุรกิจยานยนต์ไฟฟ้า (EV)

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%

- ธุรกิจสำรวจและผลิต (E&P), ปิโตรเคมีและโรงกลั่น, น้ำมันและถ่านหินจะช่วยผลักดันกำไรของ PTT ในปี 2022-23 ในขณะที่ธุรกิจ EV น่าจะช่วยฟื้นฟูและกระตุ้น PTT ตั้งแต่ปี 2024 เป็นต้นไป
- คงแนะนำซื้อที่ราคาเป้าหมาย 50 บาท (SoTP) ลดลงจาก 60 บาทเพื่อสะท้อนต้นทุนก๊าซที่สูงขึ้น

### กำไรที่เพิ่มขึ้นจากธุรกิจ E&P และโรงกลั่นเป็นกุญแจสำคัญในปี 2022-23

เราเชื่อว่าปัจจัยสำคัญที่ผลักดันมูลค่าของ PTT อยู่ที่ธุรกิจ E&P ตามด้วยปิโตรเคมีและโรงกลั่น ก๊าซ น้ำมัน และถ่านหินโดย EBIT จากธุรกิจก๊าซยังลดลงต่อเนื่องจาก 55% ของ EBIT รวมใน 4Q18 เหลือเพียง 14% ใน 1Q22 EBITDA และ EBIT จากธุรกิจก๊าซที่ลดลงอย่างมีนัยสำคัญเกิดขึ้นส่วนมากจาก EBITDA ที่ลดลงจากการขายและการตลาดในธุรกิจก๊าซ รวมถึงธุรกิจโรงแยกก๊าซ

### เหตุผลที่ทำให้ราคาหุ้น PTT หยุดชะงักมาตั้งแต่ปี 2018

ราคาหุ้นของ PTT ได้เคลื่อนไหวตัวออกห่างหลังการแตกหุ้นจาก 10 บาท/หุ้นเป็น 1 บาท/หุ้นในวันที่ 24 เม.ย. 18 ซึ่งสะท้อนให้เห็นว่า PTT ได้สูญเสียความน่าสนใจสำหรับนักลงทุนแม้ว่าแนวโน้มการเติบโตของกำไรสุทธิจะดีและยั่งยืน เราเชื่อว่ามี 4 เหตุผลที่ทำให้ราคาหุ้นของ PTT ปรับตัวได้ต่ำกว่าตลาดในช่วง 2018-1Q22 ประกอบด้วย: การขาดจุดมุ่งหมายในด้านการลงทุนแบบเบ็ดเสร็จ ธุรกิจก๊าซที่อ่อนแอลง มูลค่าพอร์ตธุรกิจที่ไม่ได้จดทะเบียนที่ลดลง และเงินอุดหนุน NGV และ LPG อย่างต่อเนื่อง

### การเติบโตในธุรกิจ EV จะเป็นปัจจัยพลิกสถานการณ์ของ PTT หลังปี 2024

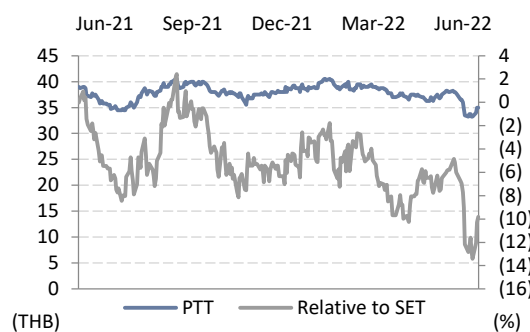
เรามีความมั่นใจเกี่ยวกับกิจการร่วมค้าระหว่าง PTT และ Foxconn ในการสร้างโรงงานผลิต EV มูลค่า 36.1 พัน ลบ. (กำหนดเริ่มดำเนินงานเชิงพาณิชย์ใน 1Q24) พร้อมกำลังการผลิต EV ประสิทธิภาพโดยสายเริ่มต้นที่ 50,000 คันต่อปี ซึ่งสามารถขยายได้เป็น 150,000 คันภายในปี 2030 ด้วยเป้าหมายที่ชัดเจนสำหรับการใช้ EV และตัวเลขการผลิตในปี 2025-35 ที่รัฐบาลไทยได้ตั้งไว้ เราเชื่อว่าการตัดสินใจของ PTT เพื่อเข้าสู่ธุรกิจ EV น่าจะเป็นปัจจัยหนุนการเติบโตในระดับสูงใหม่ ซึ่งอาจสร้างส่วนแบ่งกำไรสุทธิได้สูงถึง 5-10 พัน ลบ. ต่อปีให้แก่ PTT ภายในปี 2030 โดยมีสมมติฐานจากกำไรสุทธิ 0.1 ลบ. ต่อ EV 1 คัน, กำลังการผลิต EV 150,000 คันต่อปี, และหุ้น 60% ในกิจการร่วมค้าดังกล่าว

### ผู้ชนะจากกระแสราคาสินค้าโภคภัณฑ์ที่ปรับขึ้นและกระแส EV โลก

เราคงแนะนำซื้อแต่ปรับลดราคาเป้าหมายจาก 60 เป็น 50 บาท (SoTP) เพื่อสะท้อนการปรับลดประมาณการกำไรต่อหุ้นในปี 2022-24 รวมถึงการปรับการประเมินมูลค่าไปในปี 2023 เราปรับประมาณการกำไรต่อหุ้นในปี 2022-24 ลง 7.7-15.6% เพื่อสะท้อนสมมติฐานต้นทุนก๊าซที่เพิ่มขึ้น 16.5-68.7% ซึ่งน่าจะชดเชยได้บางส่วนจากราคาน้ำมันดิบที่ปรับขึ้น 20.0-22.2% ที่เราคาดไว้ในช่วงเดียวกัน เราเชื่อว่า PTT เป็นหุ้นน้ำมันและก๊าซที่น่าสนใจในระยะสั้นจากกระแสราคาสินค้าโภคภัณฑ์ที่สูงขึ้น ซึ่งเราคาดว่าจะต่อเนื่องไปถึงปี 2023 อย่างไรก็ตาม เราคิดว่าปัจจัยหนุนที่สำคัญที่สุดสำหรับราคาหุ้นของ PTT จะอยู่ที่ความสำเร็จในกิจการร่วมค้าอันประกอบด้วยโรงงานผลิต EV และโรงงานผลิตแบตเตอรี่ที่ GPSC (บริษัทร่วมของ PTT) เป็นเจ้าของ

### 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



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.

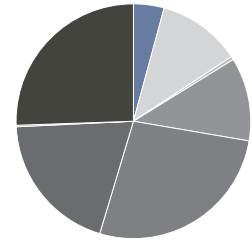
## Company profile

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](http://www.pttplc.com)

## Principal activities (revenue, 2021)

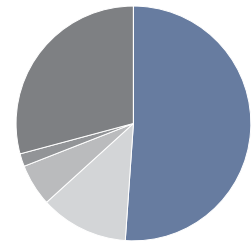
- Petroleum exploration and production - 8.6 %
- Natural gas - 23.5 %
- Coal - 0.9 %
- Oil - 23.5 %
- International trading - 55.1 %



Source: PTT PCL

## Major shareholders

- Ministry of Finance - 51.1 %
- Vayupak Funds - 12.2 %
- Thai NVDR - 5.8 %
- SSO - 1.8 %
- Others - 29.2 %



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

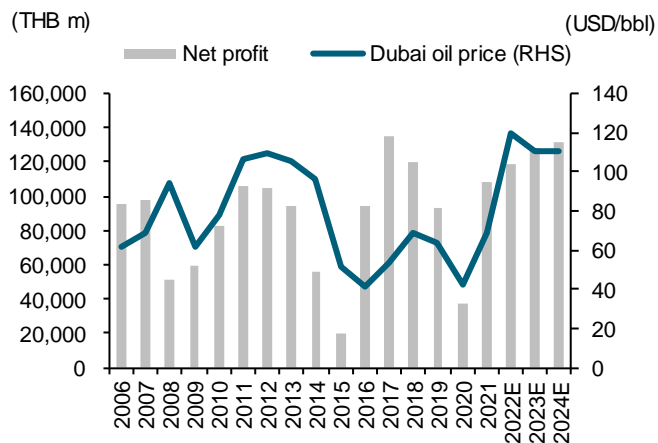


## Energy giant on EV growth ride

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.

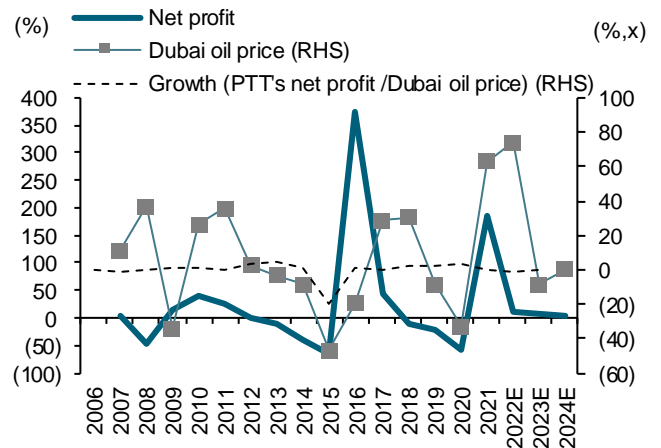
PTT's net profit growth in 2006-21 has also outperformed the changes in the Dubai crude oil price as its net profit growth has been driven by the rising prices of oil for the E&P unit (65% stake in PTT Exploration and Production (PTTEP TB, BUY)) and refinery and petrochemical associates (48-49% stakes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

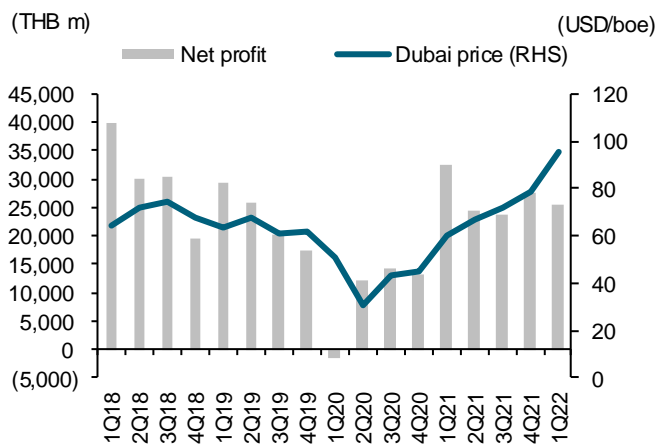
**Exhibit 2: Growth comparison: PTT's net profit vs Dubai crude oil price**



Sources: PTT; FSSIA estimates

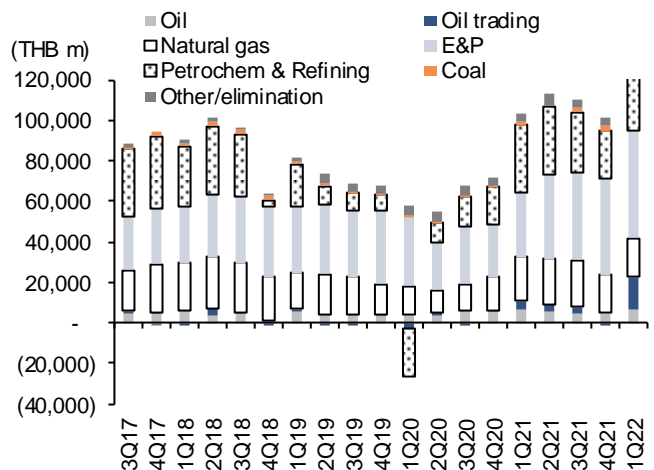
Based on PTT's quarterly EBITDA breakdown by segment in 1Q18-1Q22, we found that the largest EBITDA contributor has been PTTEP (E&P), followed by the refinery & petrochemical unit, and PTT's core gas unit. The remaining EBITDA contributions coming from oil trading, coal, and other businesses are at a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

**Exhibit 3: Quarterly net profit vs Dubai oil price**



Source: PTT

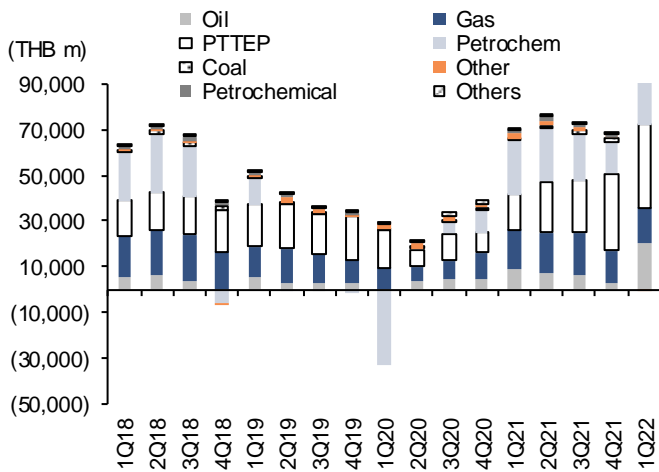
**Exhibit 4: Quarterly EBITDA breakdown by segment**



Source: PTT

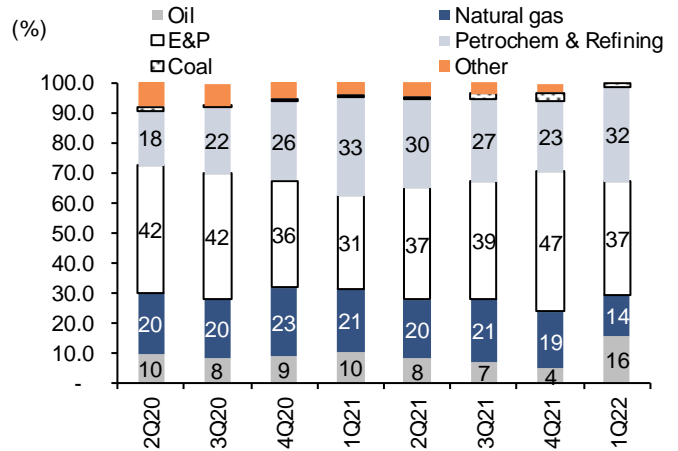
Excluding the differences in depreciation expenses in 2Q20-1Q22, PTT's quarterly EBIT have clearly been driven by E&P (31-47%), followed by gas (14-23%), petrochemical & refining (18-33%), oil (4-16%), and other businesses filling the rest.

**Exhibit 5: Quarterly EBIT breakdown by segment**



Source: PTT

**Exhibit 6: Quarterly EBIT breakdown by segment (%)**



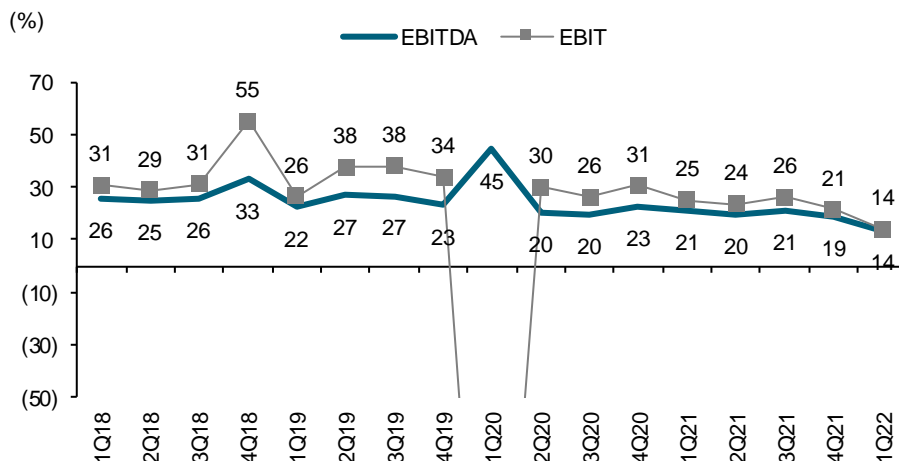
Source: PTT

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**

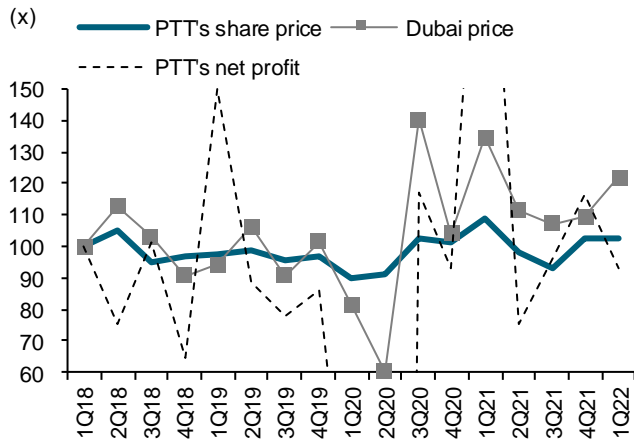


Source: PTT

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.

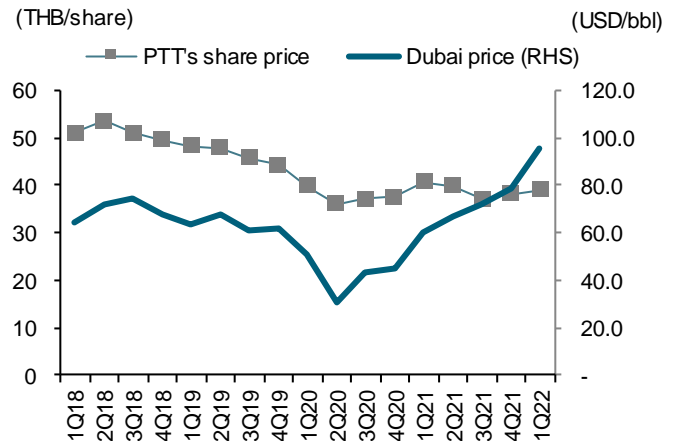
Using the 1Q18 net profit of THB40b, PTT's share price of THB51.1/share, and the Dubai crude oil price of USD63.9/bbl as an index base of 100, we find that the changes in PTT's share price have moved within a narrow range compared to the changes in the Dubai crude oil price and PTT's quarterly net profits.

**Exhibit 8: PTT's share price, PTT's net profit, Dubai crude oil price**



Sources: PTT; Bloomberg

**Exhibit 9: PTT's share price vs Dubai crude oil price performance (indexed as 100 based on 1Q18 figures)**



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.

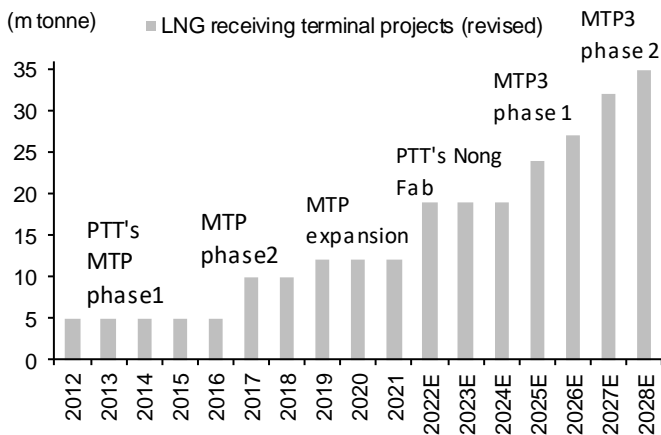
### Exhibit 10: Gas transmission pipeline tariff structure

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

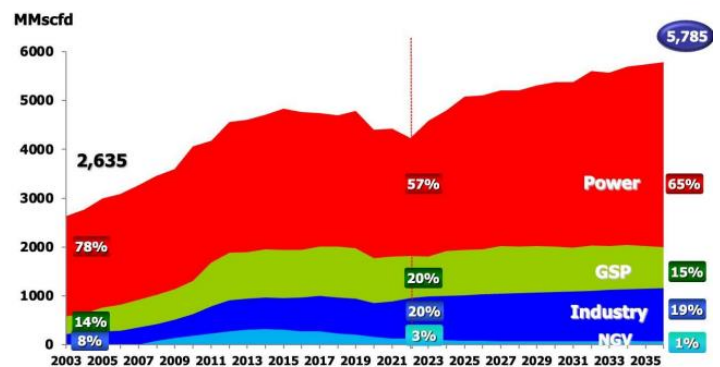
At present, the LNG terminal charge is fixed at THB18/mmbtu and is still monopolised by PTT, with an estimated annual LNG import volume of 11.12mtpa. However, the LNG terminal charge may be revised once the new LNG terminal in Nong Fab, owned by PTT, and the LNG terminals in Map Ta Phut Phase 3, owned 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



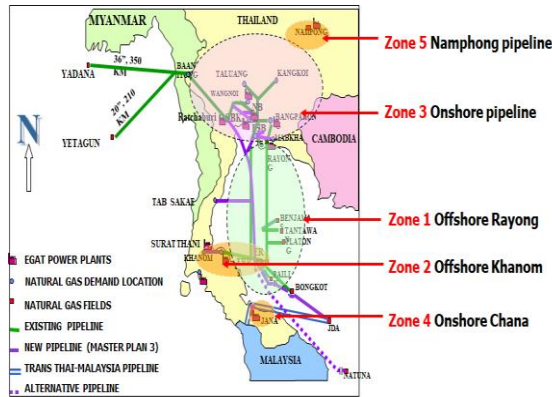
Source: PTT Business Plan 2022



**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

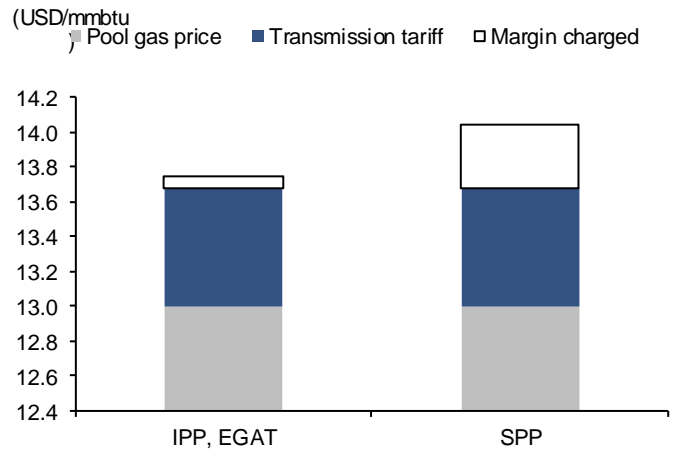
With a fixed average transmission pipeline (TM) charge of THB23.26/mmbtu, comprising THB13.4/mmbtu for TM zone 1 (area 1 for the offshore pipeline in Rayong) and THB9.9/mmbtu for TM zone 3 (area 3 for the nearshore pipeline in Rayong), PTT has long enjoyed this utility-like TM business since the 1980s.

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



Source: PTT

**Exhibit 14: Gas price structures breakdown by cost types**

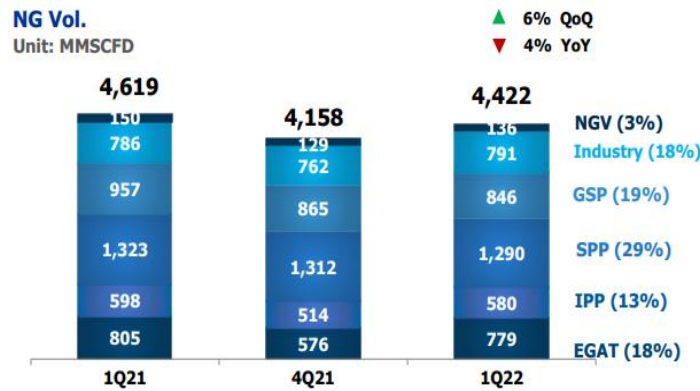


Sources: PTT; FSSIA estimates (gas price as of 2Q22E)

**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%).

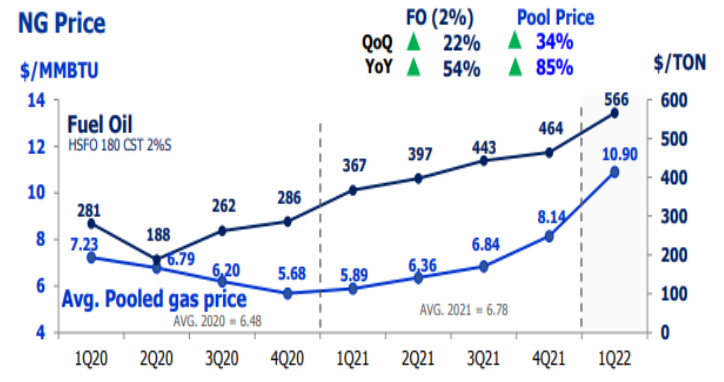
However, the most vulnerable customer segments for PTT after the liberalisation of the gas market in 2023 onward will be the small power producers (SPPs) and IUs. PTT charges a higher margin of 9.3% or a maximum margin of THB11.5/mmbtu on top of the TM tariff, commodity charge, and the pool gas price. 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**

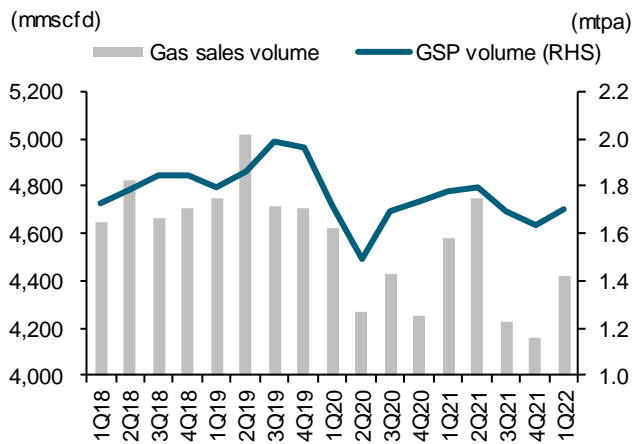


Source: PTT

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.

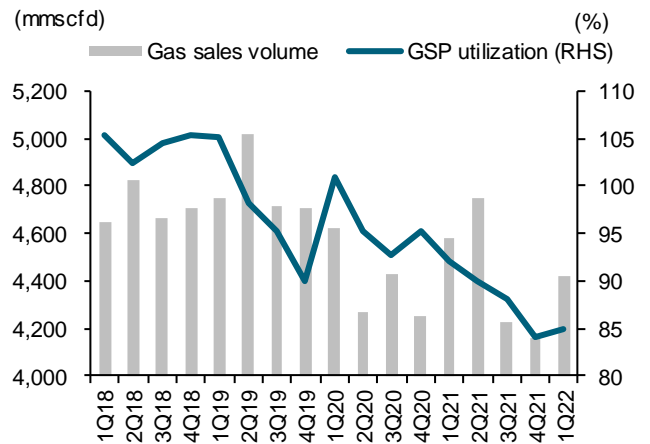
While we expect the oil price uptrend to continue in 2H22, we think the degree of the oil price rise will significantly slow down, thereby resulting in improving margins for PTT's gas sales to IUs, which accounted for 18% of PTT's total gas sales volume in 1Q22.

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



Source: PTT

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

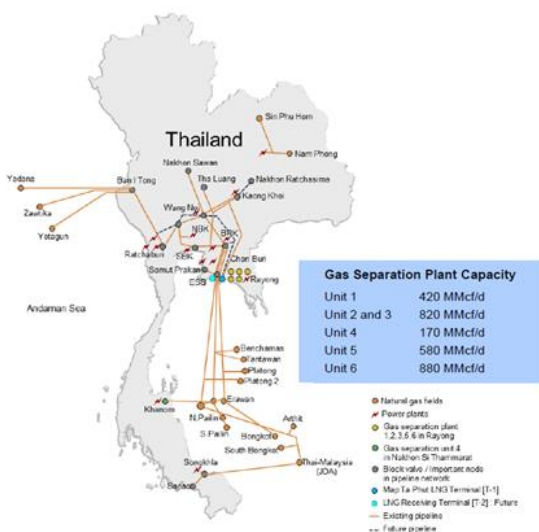


Source: PTT

**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.

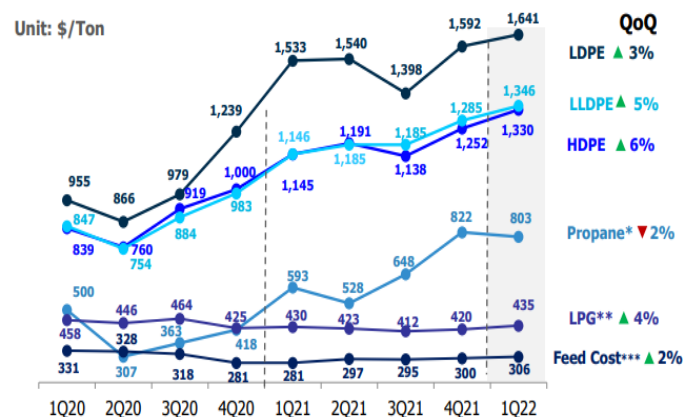
As the prices of PE and PP rise in tandem with the price of naphtha feedstock, which in turn will move along with the oil price direction, the margins of GSPs will widen or shrink depending on how high the prices of PE and PP will go, thanks to the smaller and slower pricing of the gas feedstock than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

Exhibit 19: GSPs in Thailand



Source: PTT

Exhibit 20: GSP feedstock cost vs petrochemical prices

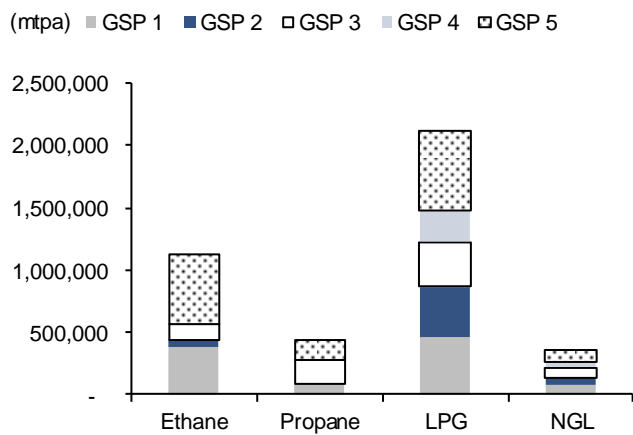


Source: PTT

**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.

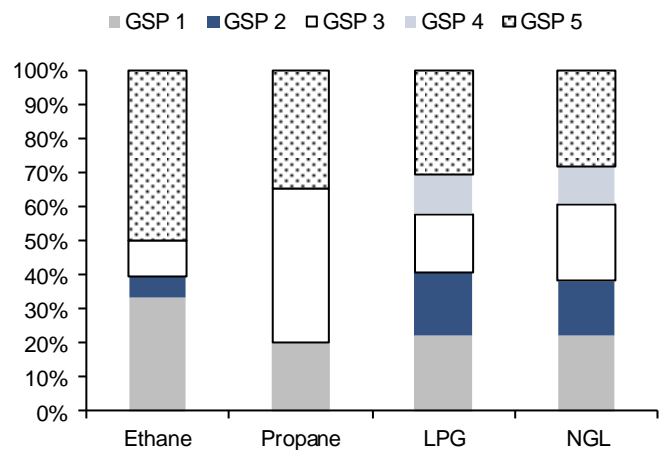
As the wet gas feedstock – gas with a low content of methane C1 below 90% of the total gas content – for GSPs dropped, PTT suffered from the gas supply shortage for its GSPs, resulting in lower utilisation rates from over 90% in 2020 down to 83% in 1Q22. According to PTT’s management, the low utilisation 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**



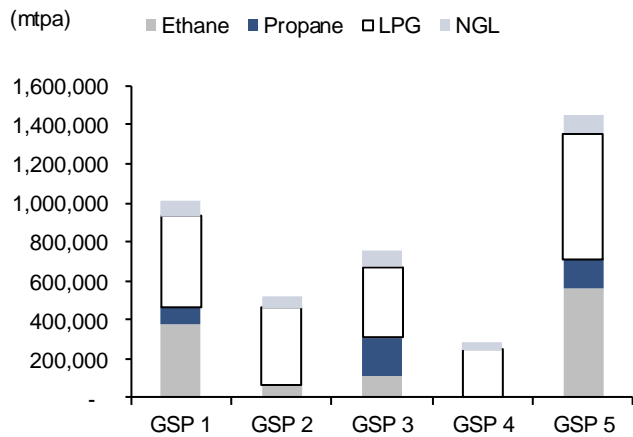
Source: PTT

**Exhibit 22: GSP production yields by plants (%)**



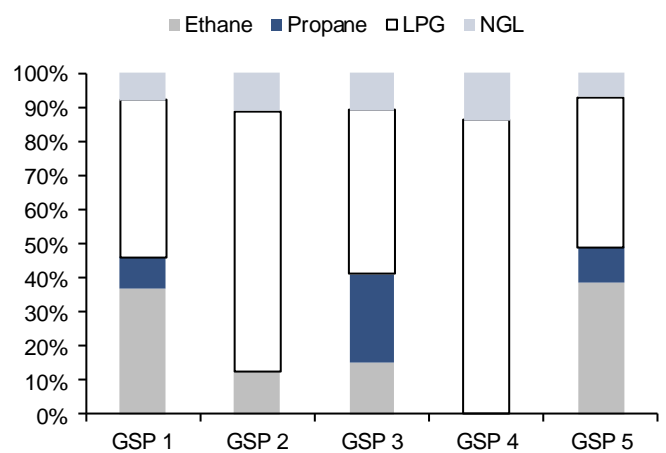
Source: PTT

**Exhibit 23: GSP production yields by products**



Source: PTT

**Exhibit 24: GSP production yields by products (%)**



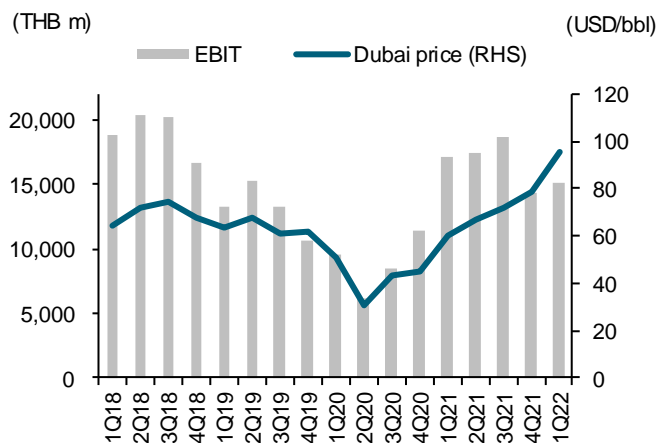
Source: PTT

**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.

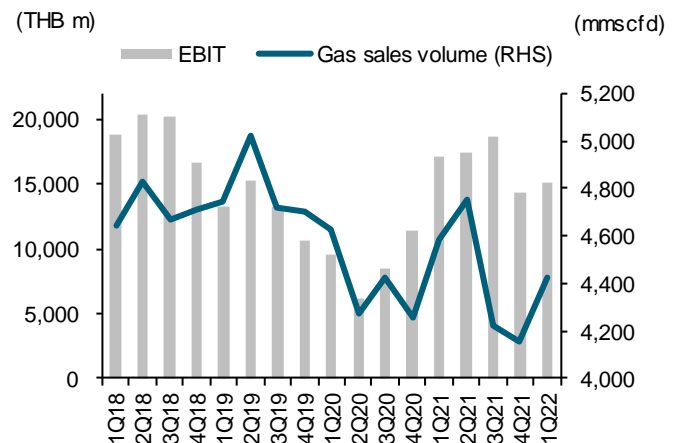
**PTT’s core gas EBIT vs Dubai crude oil price and sales volume.** Thanks to the HSFO-linked gas pricing formula for the gas supplies from the Gulf of Thailand, MTJDA, and the imported gas from Myanmar, the EBIT of PTT’s GSPs have been driven mainly by the oil price, followed by the sales volume. With 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

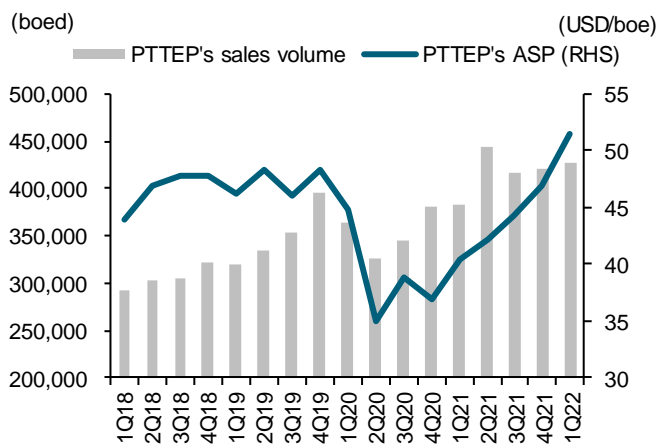
### E&P business is PTT's true crown jewel

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.

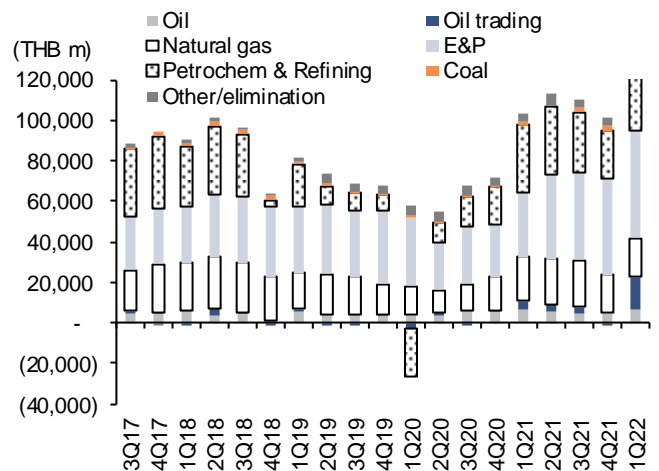
Since 1Q21, PTTEP has generated significant EBITDA contributions for PTT in the range of THB20b-40b a quarter, with reported net profits of over USD300m a quarter in 2021-1Q22. We project PTTEP to generate higher EBITDA and net profit contributions for PTT in 2H22-2024, boosted by rising production volumes,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

**Exhibit 27: PTTEP's quarterly sales volume vs ASP**



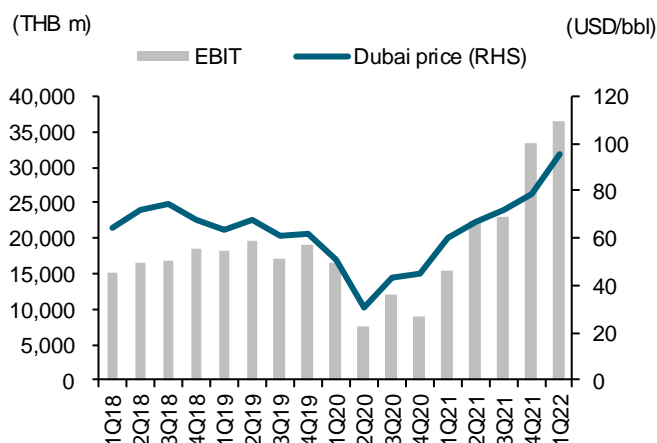
Source: PTTEP

**Exhibit 28: Quarterly EBITDA breakdown by segment**



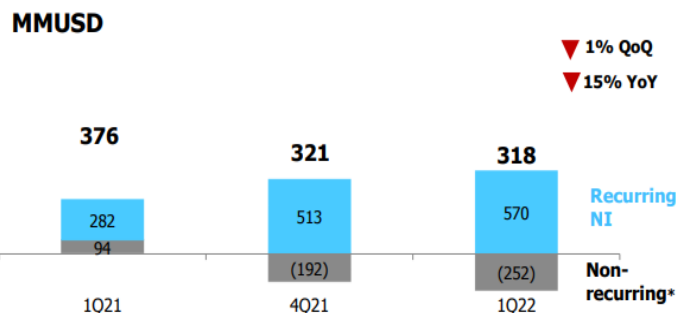
Source: PTTEP

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



Source: PTT

**Exhibit 30: PTTEP's recent quarterly net profits**



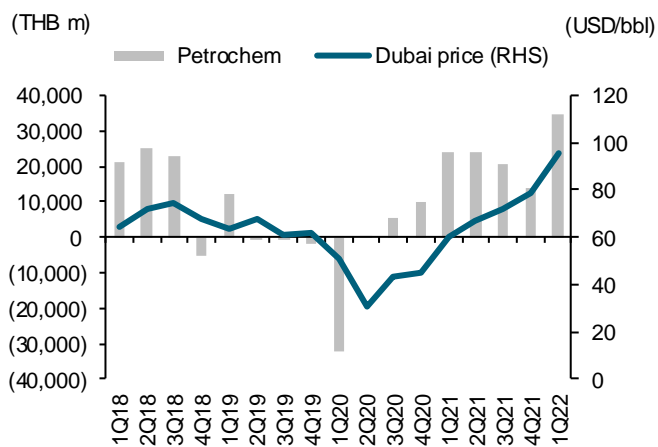
Source: PTT

### 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.

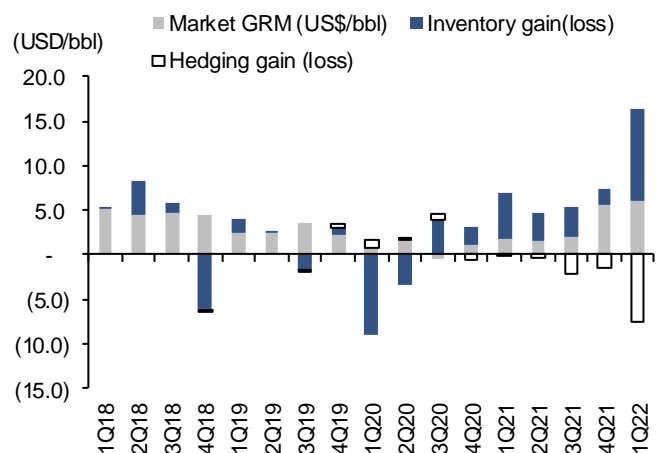
We expect the market GRM to jump from USD8/bbl in 1Q22 to over USD20/bbl in 3Q22, driven by higher margins of gasoline, diesel, and jet over the Dubai crude oil price. Despite the sharp rise in the Dubai crude oil price, refiners have been able to fully pass through the higher crude oil cost and even 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



Sources: [TechXcite.com](#)

### Exhibit 34: Foxconn's model C SUV mid-size EV



Sources: [TechXcite.com](#)

### Exhibit 35: Foxconn's model T e-bus



Sources: [TechXcite.com](#)

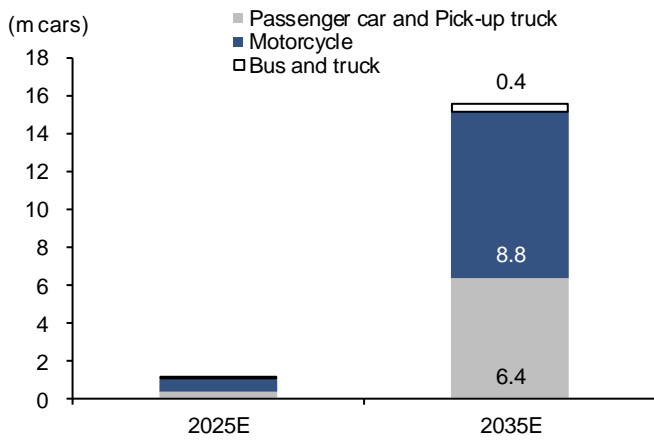
### Exhibit 36: Foxconn's model E sedan passenger EV



Sources: [TechXcite.com](#)

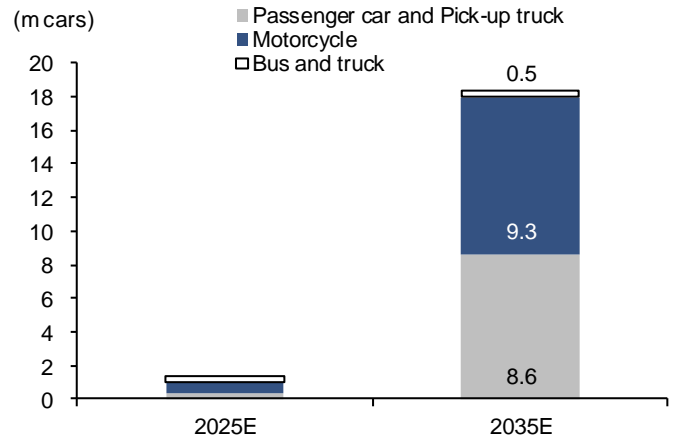
With manifest targets for EV usage and production numbers in 2025-35 set by the Thai government, we believe PTT's move into the EV value chain is likely to be its new S-curve growth driver, potentially generating up to THB5b-10b in annual net profit contributions to PTT by 2030, based on THB0.1m net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



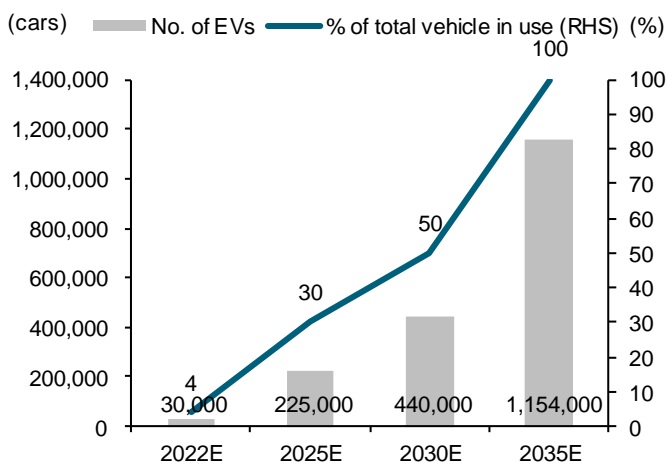
Source: Ministry of Energy

**Exhibit 38: EV production target by Thai government**



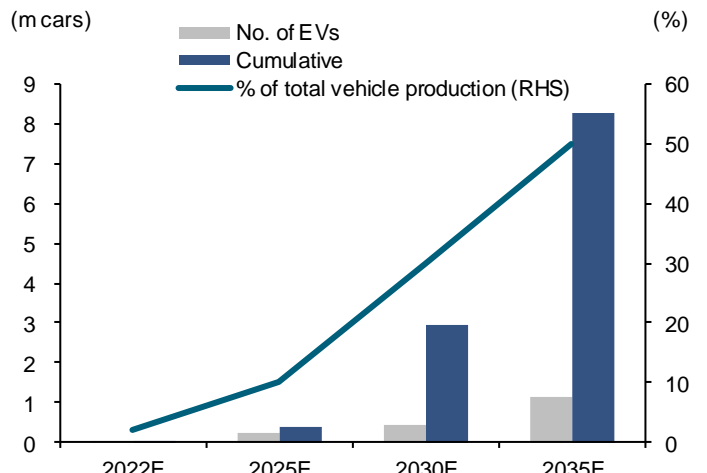
Sources: Ministry of Energy

**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	2023E	2024E	2022E	2023E	2024E	2022E	2023E	2024E
	(THB m)	(THB m)	(THB m)	(THB m)	(THB m)	(THB m)	(%)	(%)	(%)
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)
<b>Key assumptions</b>									
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
<b>Net core gas and trading business</b>	<b>517,572</b>	<b>18.4</b>	
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	
<b>Total non-core value</b>	<b>1,038,944</b>	<b>37.2</b>	
<b>Equity value</b>	<b>1,556,517</b>	<b>55.5</b>	
Discount	10%	5.6	
<b>Target price</b>		<b>50.0</b>	

Sources: PTT; FSSIA estimates

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

		-- Share price --		Up (dn)	--- Recur profit ---		NP growth		--- P/E ---		--- PBV ---		----- 2022E -----			
Company		Current	Target	side	22E	23E	22E	23E	22E	23E	22E	23E	ROE	Yield	EV/EBITDA	
	BBG	Rec	(THB)	(THB)	(%)	(THB m)	(THB m)	(%)	(%)	(x)	(x)	(x)	(x)	(%)	(%)	(x)
<b>Energy &amp; Utilities</b>						<b>339,186</b>	<b>357,608</b>	<b>34.8</b>	<b>5.4</b>	<b>19.1</b>	<b>16.7</b>	<b>2.5</b>	<b>2.3</b>	<b>14.1</b>	<b>3.9</b>	<b>11.0</b>
<b>Oil &amp; Gas</b>						<b>249,570</b>	<b>260,169</b>	<b>29.4</b>	<b>4.2</b>	<b>12.8</b>	<b>11.3</b>	<b>1.4</b>	<b>1.3</b>	<b>12.9</b>	<b>4.8</b>	<b>6.6</b>
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
<b>Petrochemical</b>						<b>57,832</b>	<b>64,859</b>	<b>(17.9)</b>	<b>12.2</b>	<b>10.6</b>	<b>9.1</b>	<b>1.1</b>	<b>1.0</b>	<b>10.8</b>	<b>5.7</b>	<b>7.7</b>
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
<b>Building materials</b>						<b>39,408</b>	<b>50,240</b>	<b>(23.3)</b>	<b>27.5</b>	<b>13.1</b>	<b>10.2</b>	<b>1.3</b>	<b>1.2</b>	<b>10.1</b>	<b>4.7</b>	<b>13.0</b>
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

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)
<b>Gross profit</b>	<b>310,209</b>	<b>522,388</b>	<b>419,886</b>	<b>428,255</b>	<b>421,383</b>
Other operating income	-	-	-	-	-
Operating costs	(76,974)	(129,405)	(45,305)	(48,566)	(51,736)
<b>Operating EBITDA</b>	<b>233,235</b>	<b>392,983</b>	<b>374,582</b>	<b>379,690</b>	<b>369,647</b>
Depreciation	(154,591)	(163,799)	(173,007)	(182,215)	(191,423)
Goodwill amortisation	0	0	0	0	0
<b>Operating EBIT</b>	<b>78,644</b>	<b>229,184</b>	<b>201,574</b>	<b>197,475</b>	<b>178,224</b>
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
<b>Profit before tax</b>	<b>65,116</b>	<b>219,658</b>	<b>189,801</b>	<b>203,422</b>	<b>208,709</b>
Tax	(25,166)	(67,591)	(39,858)	(42,719)	(43,829)
<b>Profit after tax</b>	<b>39,950</b>	<b>152,068</b>	<b>149,943</b>	<b>160,703</b>	<b>164,880</b>
Minority interests	(2,184)	(43,704)	(31,373)	(32,601)	(33,883)
Preferred dividends	0	0	0	0	0
Other items	-	-	-	-	-
<b>Reported net profit</b>	<b>37,766</b>	<b>108,363</b>	<b>118,570</b>	<b>128,103</b>	<b>130,997</b>
<b>Non-recurring items &amp; goodwill (net)</b>	<b>19,017</b>	<b>(19,114)</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>Recurring net profit</b>	<b>56,783</b>	<b>89,249</b>	<b>118,570</b>	<b>128,103</b>	<b>130,997</b>
<b>Per share (THB)</b>					
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
<b>Growth</b>					
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
<b>Operating performance</b>					
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					
<b>Revenue by Division (THB m)</b>					
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
<b>Cash flow from operations</b>	<b>289,435</b>	<b>112,921</b>	<b>513,391</b>	<b>533,479</b>	<b>544,577</b>
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
<b>Cash flow from investing</b>	<b>(105,212)</b>	<b>(105,300)</b>	<b>(105,300)</b>	<b>(105,300)</b>	<b>(105,300)</b>
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)
<b>Cash flow from financing</b>	<b>(144,733)</b>	<b>(26,922)</b>	<b>(223,962)</b>	<b>(218,707)</b>	<b>(221,877)</b>
Non-recurring cash flows	-	-	-	-	-
Other adjustments	0	0	0	0	0
<b>Net other adjustments</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>Movement in cash</b>	<b>39,490</b>	<b>(19,302)</b>	<b>184,129</b>	<b>209,472</b>	<b>217,400</b>
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)
<b>Tangible fixed assets (net)</b>	<b>518,126</b>	<b>464,821</b>	<b>402,308</b>	<b>330,588</b>	<b>249,659</b>
<b>Intangible fixed assets (net)</b>	<b>21,678</b>	<b>21,679</b>	<b>21,679</b>	<b>21,679</b>	<b>21,679</b>
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
<b>Current assets</b>	<b>720,930</b>	<b>853,406</b>	<b>1,510,420</b>	<b>1,746,865</b>	<b>1,990,641</b>
Other assets	1,207,769	1,609,335	963,831	889,566	816,413
<b>Total assets</b>	<b>2,544,183</b>	<b>3,078,019</b>	<b>3,082,805</b>	<b>3,230,044</b>	<b>3,377,609</b>
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
<b>Total shareholders' equity</b>	<b>1,285,845</b>	<b>1,472,940</b>	<b>1,475,755</b>	<b>1,598,954</b>	<b>1,723,315</b>
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
<b>Long-term liabilities</b>	<b>960,312</b>	<b>1,111,425</b>	<b>1,087,786</b>	<b>1,079,766</b>	<b>1,071,578</b>
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
<b>Current liabilities</b>	<b>298,026</b>	<b>493,654</b>	<b>519,264</b>	<b>551,325</b>	<b>582,716</b>
<b>Total liabilities and shareholders' equity</b>	<b>2,544,183</b>	<b>3,078,019</b>	<b>3,082,805</b>	<b>3,230,044</b>	<b>3,377,609</b>
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
<b>Recurring P/E (x) *</b>	<b>17.6</b>	<b>11.2</b>	<b>8.4</b>	<b>7.8</b>	<b>7.6</b>
<b>Recurring P/E @ target price (x) *</b>	<b>25.2</b>	<b>16.0</b>	<b>12.0</b>	<b>11.1</b>	<b>10.9</b>
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	DRS	SCM	SUSCO	TOA	VIH
AMATAV	BTS	DTAC	HANA	LHFG	NVD	PSL	SDC	SUTHA	TOP	WACOAL
ANAN	BTW	DUSIT	HARN	LIT	NWR	PTG	SEAFCO	SVI	TPBI	WAVE
AOT	BWG	EA	HMPRO	LPN	NYT	PTT	SEAOIL	SYMC	TQM	WHA
AP	CENTEL	EASTW	ICC	MACO	OISHI	PTTEP	ICC	SE-ED	SYNTEC	TRC
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	WIJK
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	TIPIP	WIN	
B52	CCP	F&D	JAK	M-CHAI	PAF	SABUY	STARK	TPLAS	WORK	
BEAUTY	CGD	FMT	JR	MCS	PF	SF	STC	TPOLY	WPH	

**Disclaimer:**

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\* 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	WIJK
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 (target price\* - current price) / current price.

BUY (B). The upside is 10% or more.

HOLD (H). The upside or downside is less than 10%.

REDUCE (R). The downside is 10% or more.

Unless otherwise specified, these recommendations are set with a 12-month horizon. Thus, it is possible that future price volatility may cause a temporary mismatch between upside/downside for a stock based on market price and the formal recommendation.

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

### Industry Recommendations

**Overweight.** The analyst expects the fundamental conditions of the sector to be positive over the next 12 months.

**Neutral.** The analyst expects the fundamental conditions of the sector to be maintained over the next 12 months.

**Underweight.** The analyst expects the fundamental conditions of the sector to be negative over the next 12 months.

### Country (Strategy) Recommendations

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

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

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