

PTT EXPLOR & PROD

THAILAND / ENERGY

PTTEP TB

BUY

Normalized earnings outlook

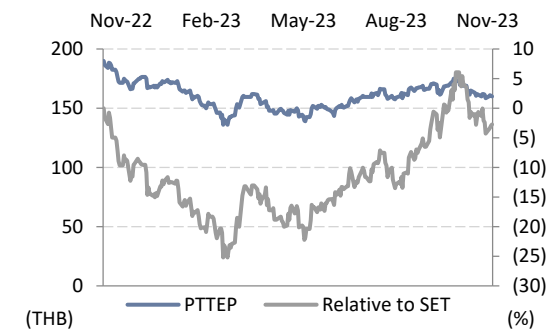
- Steady oil price outlook and falling gas price in 2024-25E cap PTTEP's earnings.
- Expect 2023-2025E core EPS growth of -16.9%/-2.8%/-10.5% with negative EPS growth from lower average selling price.
- Reinitiate PTTEP with a BUY rating at our TP of THB179/share.

TARGET PRICE	THB179.00
CLOSE	THB160.00
UP/DOWNSIDE	+11.9%
TP vs CONSENSUS	-1.4%

KEY STOCK DATA

YE Dec (THB m)	2022	2023E	2024E	2025E
Revenue	331,350	287,199	287,996	271,855
Net profit	70,901	77,686	75,473	67,579
EPS (THB)	17.86	19.57	19.01	17.02
vs Consensus (%)	-	4.4	7.8	1.6
EBITDA	195,282	165,575	168,017	156,741
Recurring net profit	93,491	77,686	75,473	67,579
Core EPS (THB)	23.55	19.57	19.01	17.02
EPS growth (%)	95.5	(16.9)	(2.8)	(10.5)

Core P/E (x)	6.8	8.2	8.4	9.4
Dividend yield (%)	5.8	6.1	5.9	5.3
EV/EBITDA (x)	3.3	3.7	3.5	3.5
Price/book (x)	1.4	1.2	1.1	1.0
Net debt/Equity (%)	2.2	(2.9)	(7.8)	(12.7)
ROE (%)	21.2	15.7	13.6	11.1



Share price performance	1 Month	3 Month	12 Month
Absolute (%)	(7.8)	1.3	(17.3)
Relative to country (%)	(8.3)	11.5	(4.5)
Mkt cap (USD m)	18,006		
3m avg. daily turnover (USD m)	50.7		
Free float (%)	35		
Major shareholder	PTT Plc. (64%)		
12m high/low (THB)	193.50/134.50		
Issued shares (m)	3,969.99		

Sources: Bloomberg consensus; FSSIA estimates

Lingering oil price movements in 2024

We believe oil prices will be stable and remain at a high level until 2024, given the expectation of an extended supply cut by Saudi Arabia and Russia through 2024 to balance the market. As a result, EIA estimates that 2024 oil demand will increase by 1.3 MBD y-y while oil supply should escalate by only 0.9MBD y-y, despite rising non-OPEC oil supply, especially from the Americas. Our Dubai oil price assumptions for 2023-2025E are at USD83/bbl, USD85/bbl, and USD75/bbl, respectively. In addition, our 2023-25E gas price assumption is at USD6.0/mmbtu, USD5.6/mmbtu, and USD5.1/mmbtu, respectively. This brings our PTTEP's average selling price to USD47.3/boe, USD46.1/boe, and USD41.5/boe in 2023-2025E, given the pegged sales volume proportion of 73% gas and 27% liquid.

MZ write-off is expected in 4Q23 despite higher price and volume

4Q23 earnings should improve q-q from a higher sales volume and selling price, mainly from ramping up the production of block G1/61 and the scheduled gas selling price adjustment on October 1. However, it would be partly offset by slightly q-q higher unit costs. Moreover, there is a potential downside from an impairment loss from Mozambique Area 1. We have not included this in our estimates; however, it was previously recorded at ~USD160m or ~THB5.7b in 4Q22. 9M23 results are equal to 75% of our 2023E.

Falling selling prices cap the 2024-25E outlook

We estimate 2024-25E EPS to down by -2.8% and -10.5%, while our 2024-25E sales volume growth is at +8.5% q-q and +4.9% y-y. It is due mainly to a lower weighted average selling price in 2024-2025E, in tandem with our oil and gas price forecast. In addition, we expect higher unit costs to partly offset a higher sales volume, mainly from the ramping up of G1/61 and higher other operating costs.

Reinitiate with a BUY rating at our TP of THB179.0/share

We reinitiate PTTEP with a BUY rating. Our 2024E TP is at THB179/share, based on a long-term average EV/EBITDA of 4.2x. There is a 12% upside to our TP. Despite prosaic 2023-2024E EPS growth, we think its valuation is still attractive, trading below its 5-year average.



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Investment thesis

We have a BUY rating on PTTEP because of its attractive valuation. It is currently trading below its long-term average EV/EBITDA and at a valuation below its pre-COVID level.

However, PTTEP's average selling price should decrease, in tandem with falling gas and oil prices in 2024-25E. In addition, the unit cost should increase from ramping up of the production of G1/61 and higher operating costs.

Therefore, despite an expected production volume growth of 4.6% 3-yrs CAGR (2023-2025E), our 2023-25E normalized EPS growth is -16.9%/-2.8%/-10.5%, respectively.

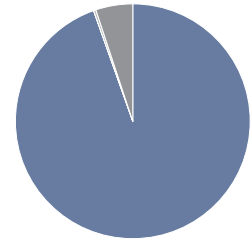
Company profile

Established by PTT Plc (formerly Petroleum Authority of Thailand) in 1985, PTTEP is Thailand's premier oil & gas exploration and production company. Most of its petroleum assets are in the Gulf of Thailand. It was listed on the Stock Exchange of Thailand in 1992.

www.pttep.com

Principal activities (revenue, 2022)

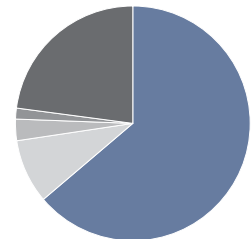
- Exploration and production - 105.3 %
- Others - 0.4 %
- Inter company eliminations - (5.7) %



Source: PTT Explor & Prod

Major shareholders

- PTT Plc. - 63.8 %
- Thai NDVR - 8.8 %
- State Street Europe Limited - 3.0 %
- Siam Management Holdings Company Limited - 1.5 %
- Others - 22.9 %



Source: PTT Explor & Prod

Catalysts

Key catalysts for the stock are an increase in oil and gas prices and new M&As that could potentially increase production volume or increase reserve.

Risks to our call

Risks our TP, which is based on EV/EBITDA, are a sharp decline in oil prices and a potential earnings downside from government intervention.

Event calendar

Date	Event
30 Nov 2023	OPEC meeting
Early Feb 2024	4Q23 financial performance announcement
Mid Feb 2024	4Q23 analyst meeting

Key assumptions

Key assumptions	Unit	2022	2023E	2024E	2025E
Dubai oil price	USD/bbl	96.3	83.0	85.0	75.0
Gas price	USD/mmbtu	6.3	6.0	5.6	5.1
ASP	USD/boe	52.9	47.3	46.1	41.5
Production volume	kboed	468	470	510	535
Cost per bbl	USD/boe	28.4	27.7	27.8	27.0

Source: FSSIA estimates

Earnings sensitivity

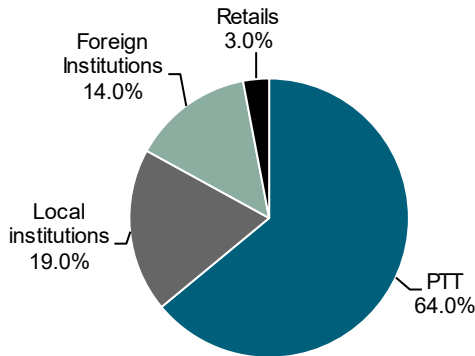
- For every USD1/bbl increase in the Dubai oil price, we project 2024 earnings will rise 1.3%, and vice versa, all else being equal.
- For every 1% increase in sales volume, we estimate 2024 earnings will rise 1.6%, and vice versa, all else being equal.

Source: FSSIA estimates

Oil and gas exploration and production (E&P) flagship of PTT group

PTTEP is a domestic oil and gas exploration and production company committed to ensuring a consistent petroleum supply for Thailand and the nations in which they operate. The company was established in 1985 and was listed on the stock exchange of Thailand on 10 June 1993. Also, they are the E&P flagship of PTT, a Thai state-owned energy company, which holds 65.29% of the shares.

Exhibit 1: Shareholders base



Source: PTTEP

Exhibit 2: Major shareholders

Shareholders	% holding
PTT	63.79%
Thai NVDR	8.84%
State Street Europe	2.96%
SEA UK (Type C) Nominees	2.01%
Siam Management Holding	1.50%
BNY Mellon Nominees	0.88%
Social Security Office	0.63%
Citibank Nominees Singapore	0.63%
State Street Bank and Trust	0.44%
Nortrust Nominees	0.35%

Source: SET

Currently, PTTEP manages a portfolio of over 50 projects involving petroleum exploration, development, and production, spanning over 10 countries in various regions. The main emphasis is on Southeast Asia and the Middle East.

In Thailand, the company takes on the role of the operator for significant petroleum fields, such as G1/61, G2/61, Arthit, and S1 projects. Additionally, they participate in numerous joint venture initiatives, both onshore and offshore, in the Gulf of Thailand.

Internationally, PTTEP serves as the operator for several pivotal projects. This includes the Hassi Bir Rekaiz project in Algeria, a crucial oil production venture in Africa, Block H in Malaysia, a significant gas production initiative, and the SK410B project in Malaysia, marked by their largest-ever gas discovery at the Lang Lebah field, currently in the exploration phase.

Their joint venture endeavors encompass the Oman Block 61 Project, a substantial onshore gas block vital for Oman's domestic market; the Abu Dhabi Offshore 2 Project, where a substantial natural gas reserve was uncovered, and the Mozambique Area 1 Project, a large-scale liquefied natural gas (LNG) facility in Africa.

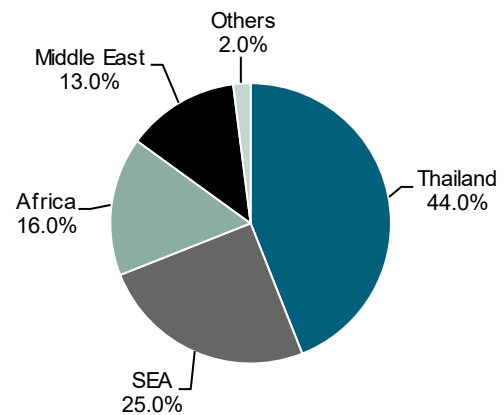
Besides exploration and production, PTTEP invests in midstream ventures to further support their business. This includes involvement in Oman LNG (OLNG), the sole LNG facility in Oman, and ADNOC Gas Processing (AGP), the largest onshore gas processing facility in Abu Dhabi, United Arab Emirates.

Exhibit 3: % of sales volume breakdown by regions and key projects

Focus countries	96%	Projects
Thailand	66%	G1/61, G2/61, Arthit, S1
Malaysia	10%	SBK, SBH, SK309/311
Myanmar	9%	Yadana, Zawtika
Oman	11%	Block 61, PDO, OLNG
UAE	<1%	Exploration fields, AGP
Africa and rest of the world	4%	
Africa	2%	HBR, BSR
Others	<2%	Small presence in Vietnam, Indonesia, Kazakhstan, Mexico, Australia, Angola

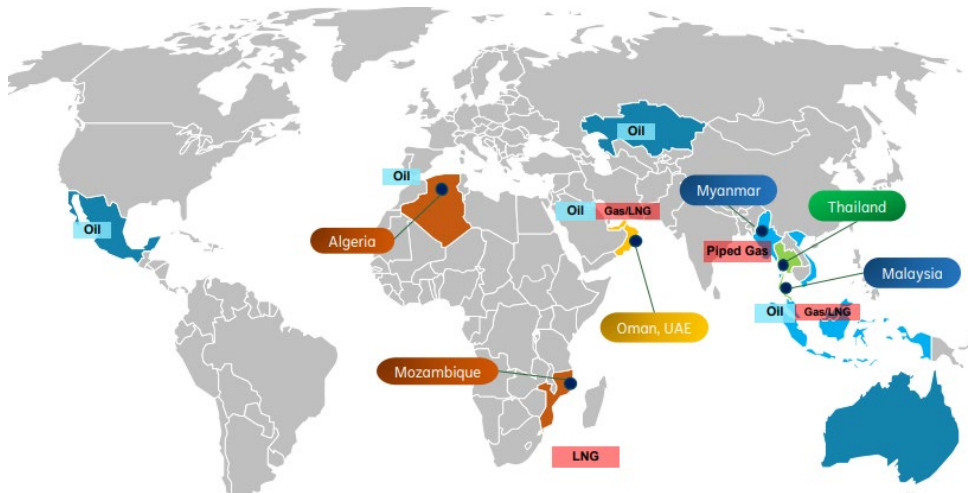
Source: PTTEP

Exhibit 4: Book value of assets by region – total value of USD24.7b or ~THB865b



Source: PTTEP; data as of Sep 2023

Exhibit 5: Global E&P portfolio



Source: PTTEP

New potential growth businesses beyond E&P

PTTEP has diversified into innovative sectors mostly related to alternative energy, advanced technology, and decarbonization. These ventures are instrumental in achieving their goal of becoming a low-carbon organization, providing growth opportunities in industries beyond energy, including agriculture and healthcare.

To drive these initiatives, they have established subsidiaries such as AI and Robotics Ventures Company Limited (ARV), FutureTech Energy Ventures Company Limited (FTEV), and Xplor Ventures Company Limited, the latter serving as a corporate venture capital entity dedicated to investing in emerging technology startups.

A focal point in PTTEP's pursuit of a sustainable future is its adoption of Carbon Capture and Storage (CCS) technologies. They are actively exploring CCS project development both in Thailand and internationally, aiming to mitigate carbon emissions from petroleum and other industries. Their groundbreaking move includes Thailand's inaugural CCS project at the Arthit field in the Gulf of Thailand. Additionally, they are investigating Carbon Capture and Utilization (CCU) technology to transform carbon dioxide into high-value products like methanol. Their interest also extends to the advancement of future energy sources, particularly hydrogen. In June 2023, FTEV achieved a significant milestone in the clean energy sector by investing in a large-scale green hydrogen project in Oman, anticipated to commence production in 2030.

Exhibit 6: Decarbonization solutions and new energy transition



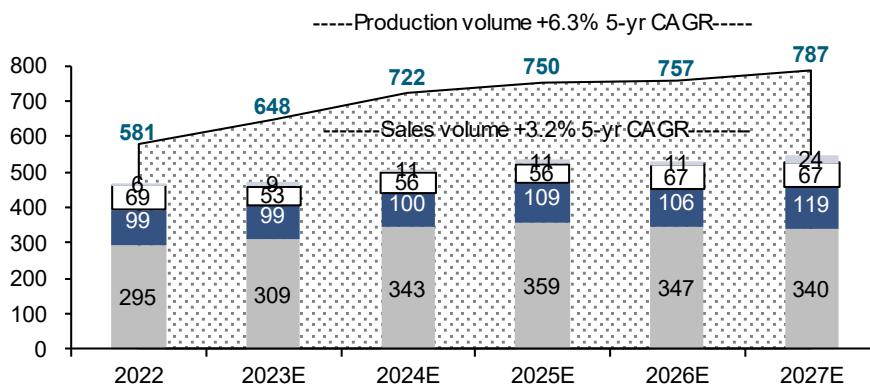
Source: PTTEP

PTTEP's 5-year investment plan

Exhibit 7: Sales volume and production plan

(kboed)

□ Production volume ■ Thailand ■ Other SEA □ Middle East ■ Africa

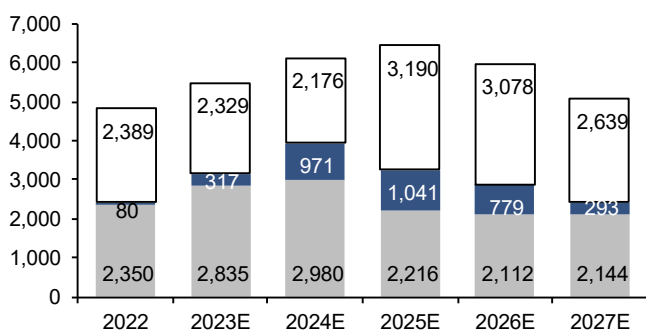


Source: PTTEP

Exhibit 8: 2023-27E investment plan – total CAPEX of USD18.1b and OPEX of USD11.0b

(USD m)

■ Producing projects ■ Dev & Pre-sanction projects □ OPEX



Source: PTTEP

Exhibit 9: Potential key project start-up timeline

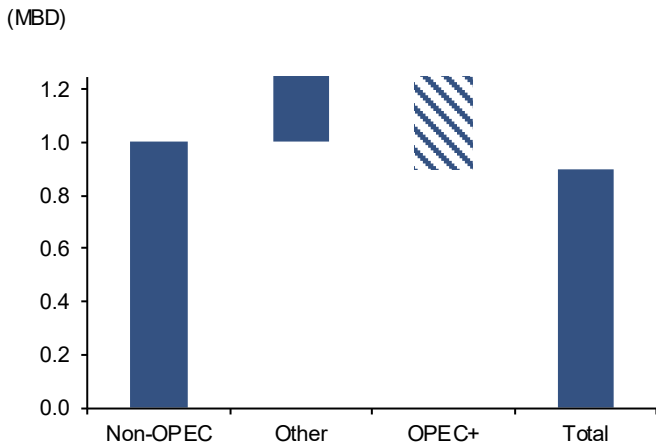
Year	Project	Scheduled start- up
2023	G2/61	Apr 22: 200 MMSCFD Mar 23: 500 MMSCFD
2024	G1/61	Apr 24: 800 MMSCFD (Full capacity)
2026	Southwest Vietnam ¹	2H26
2027	MZA1 LNG ²	1H27
	SK405B ¹	1H27
	HBR ¹	2H27 (full phase)
	SK410B ¹	2H27 (full phase)

Note: ¹Subject to regulatory approval and FID timing, ²Subject to site re-entering and resume construction timing
Source: PTTEP

Lingering oil price movements

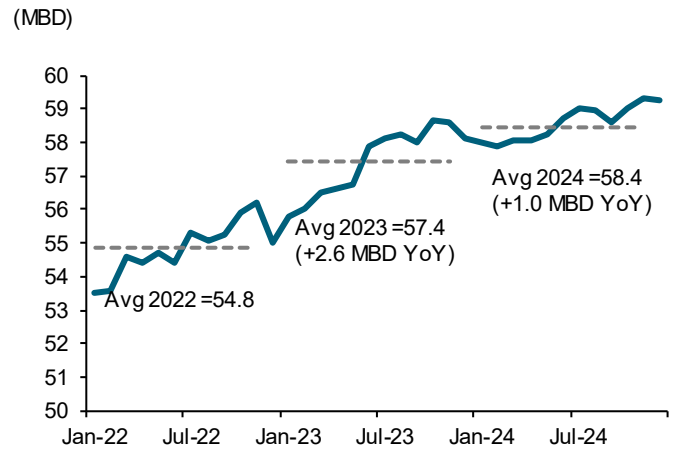
We believe oil prices will be stable and remain high until 2024, given the expectation of an extended supply cut by Saudi Arabia and Russia through 2024 to balance the market. As a result, EIA estimates 2024 oil demand will increase by 1.3 MBD y-y while oil supply should escalate by only 0.9MBD y-y, despite rising non-OPEC oil supply, especially from the U.S. Our Dubai oil price assumption for 2023-2025E are at USD83/bbl, USD85/bbl and USD75/bbl, respectively. In addition, our 2023-25E gas price assumption is at USD6.0/mmbtu, USD5.6/mmbtu, and USD5.1/mmbtu, respectively. This brings our PTTEP's average selling price to USD47.3/boe, USD46.1/boe, and USD41.5/boe in 2023-2025E, given the pegged sales volume proportion of 73% gas and 27% liquid.

Exhibit 10: 2024E new additional supply - limited increase from balance of OPEC+ production cut



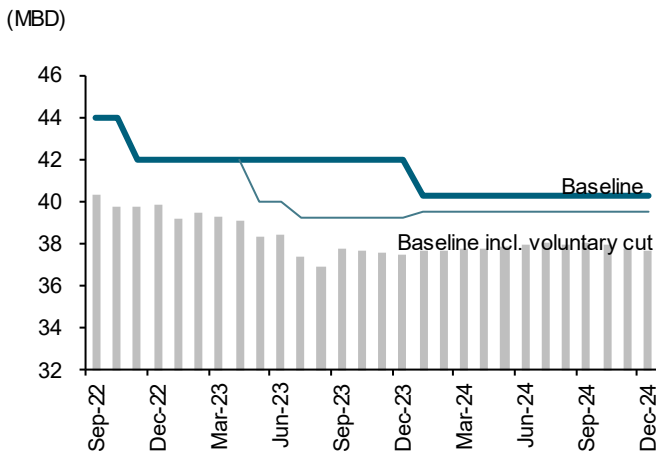
Source: EIA

Exhibit 11: Non-OPEC production excl Russia continues to be higher



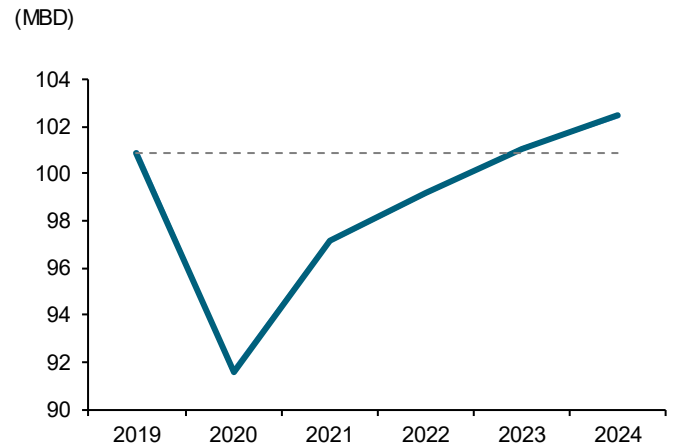
Source: EIA

Exhibit 12: OPEC+ production lower from expected supply cut through 2024



Source: EIA

Exhibit 13: Global oil demand – already exceeds pre-COVID level



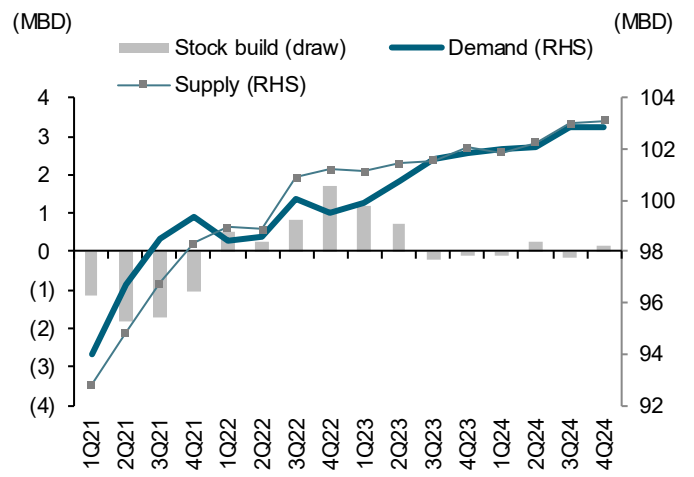
Source: EIA

Exhibit 14: Global oil demand forecast

Global oil demand forecast	2023	2024
EIA	+1.8	+1.3
FGE	+2.5	+1.5
IEA	+2.3	+0.9
OPEC	+2.5	+2.2
Avg demand growth	+2.3	+1.5

Source: TOP

Exhibit 15: Demand growth forecasts – global oil demand and production



Source: EIA

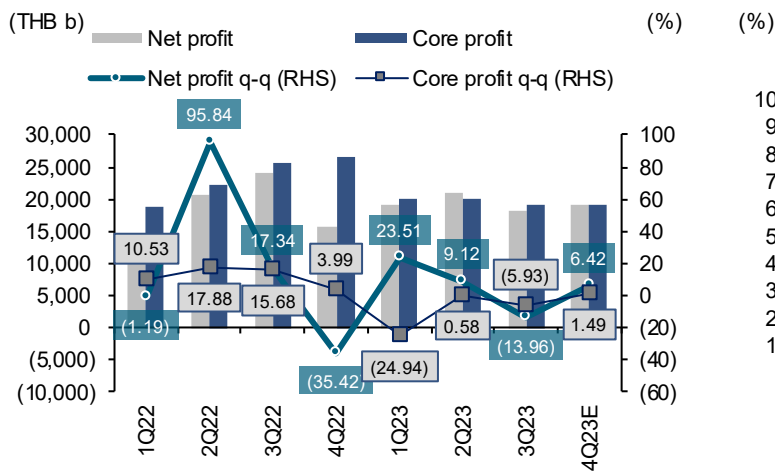
Earnings growth outlook

4Q23 earnings outlook

4Q23 earnings outlook should improve from a higher sales volume and selling price, mainly from ramping up the production of block G1/61 and the scheduled selling price adjustment for major blocks in Thailand on October 1. The selling price for domestic gas usually links to 6-12-month lagging fuel oil prices.

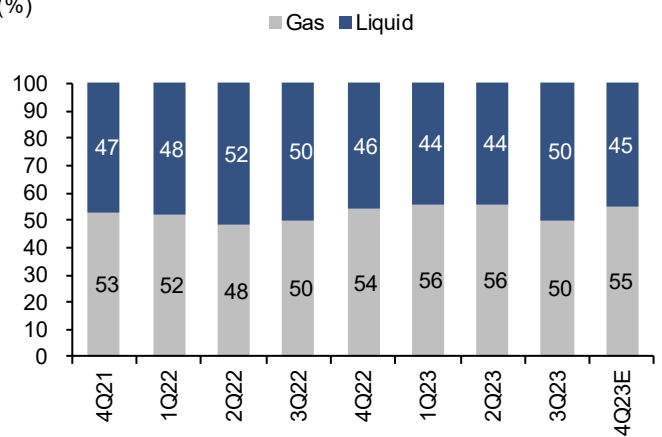
However, it would be partly offset by q-q higher unit costs. Moreover, there is a potential earnings downside from an impairment loss from Mozambique Area 1 due to construction suspension following political unrest in the area. Compared to the previous record in 4Q22, it was at ~USD160m or ~THB5.7b. We have not included this in our estimates. 9M23 results are equal to 75% of our estimates.

Exhibit 16: Quarterly net profit



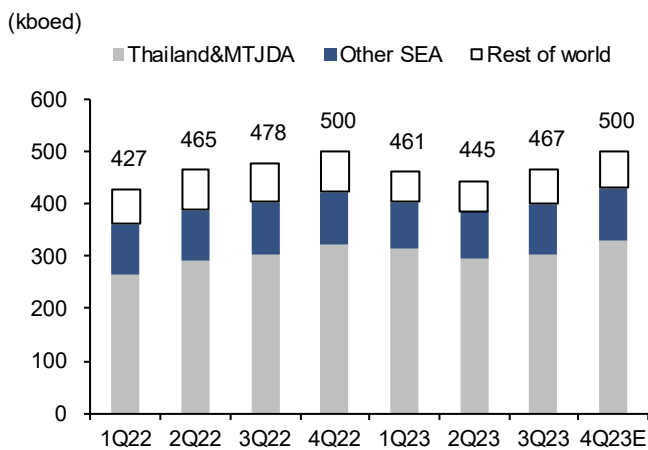
Sources: PTTEP, FSSIA estimates

Exhibit 17: Quarterly proportion of revenue by product



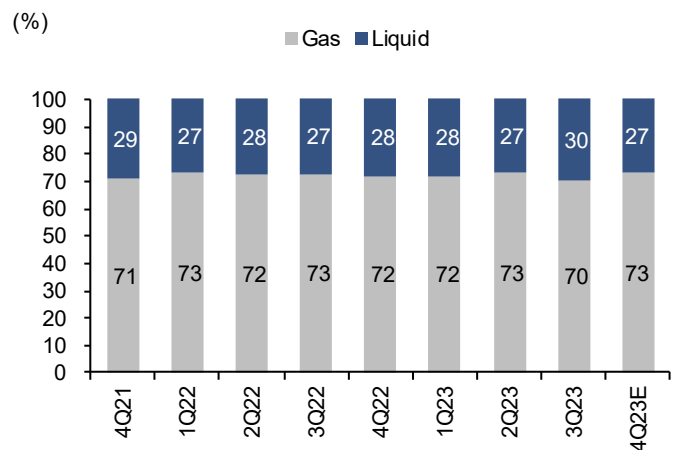
Sources: PTTEP, FSSIA estimates

Exhibit 18: Quarterly sales volume



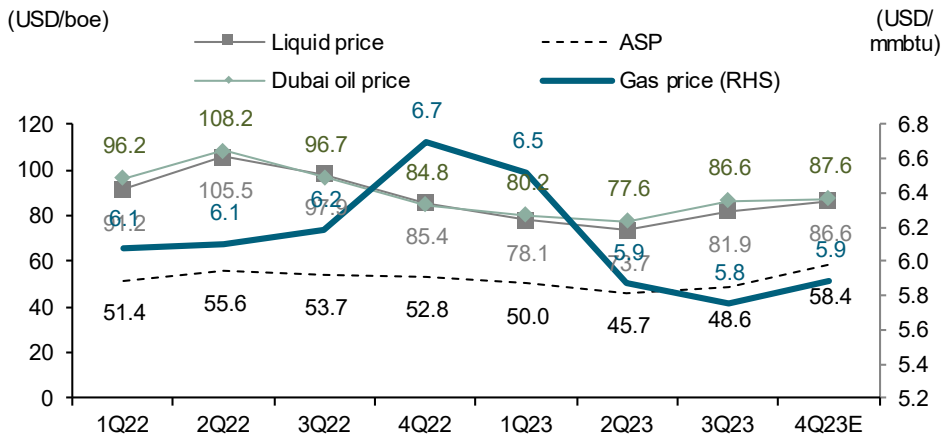
Sources: PTTEP, FSSIA estimates

Exhibit 19: Quarterly proportion of sales volume breakdown by product



Sources: PTTEP, FSSIA estimates

Exhibit 20: Quarterly average prices



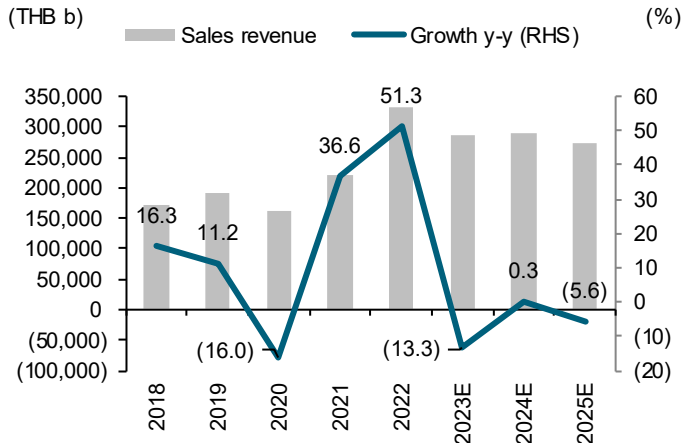
Sources: PTTEP, FSSIA estimates

2024-25E outlook capped by falling selling prices

We estimate 2024-25E EPS growth of -2.8% and -10.5%, despite sales volume growth of 8.5% y-y in 2024E and 4.9% y-y in 2025E. Volume growth would come mainly from ramping up the production of G1/61. Currently, the project is producing 400-420 mmscf and is accelerating it to reach 800 mmscf by April 2024.

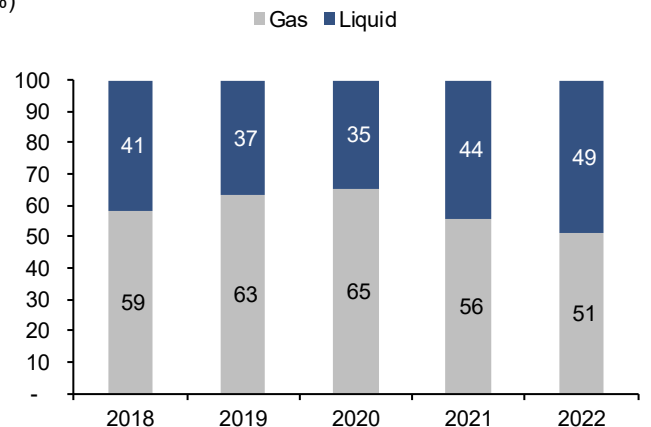
However, the expected negative earnings growth would be from a potential energy price downtrend, resulting in a lower estimated weighted average selling price in 2024-2025E, in tandem with our oil and gas price forecast. In addition, it is possible to see higher unit costs in 2024, which would partially counterbalance the expected higher sales volume.

Exhibit 21: Revenue and growth



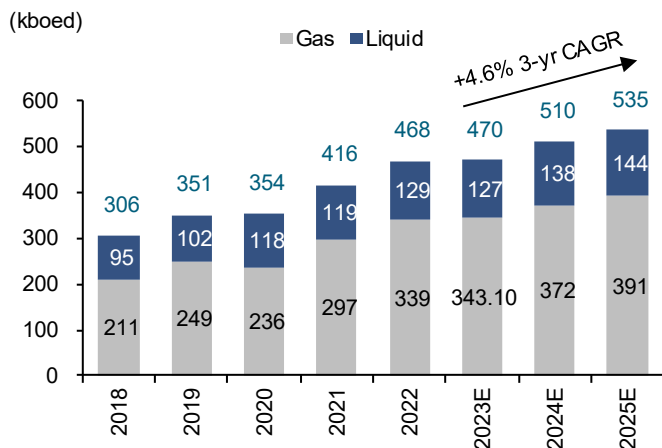
Sources: PTTEP, FSSIA estimates

Exhibit 22: Revenue breakdown by product



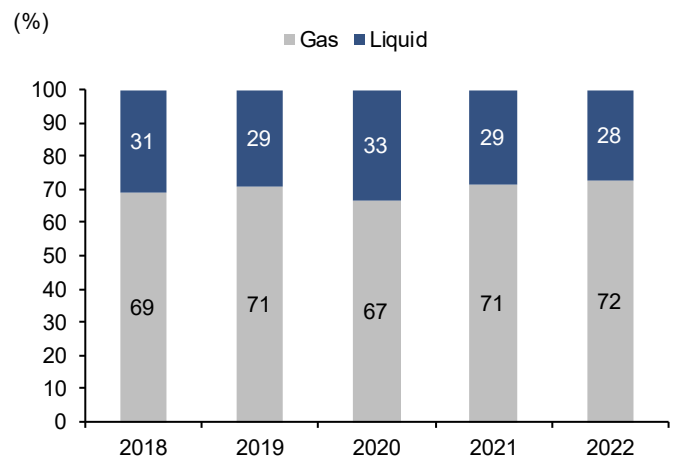
Sources: PTTEP, FSSIA estimates

Exhibit 23: Sales volume breakdown by product



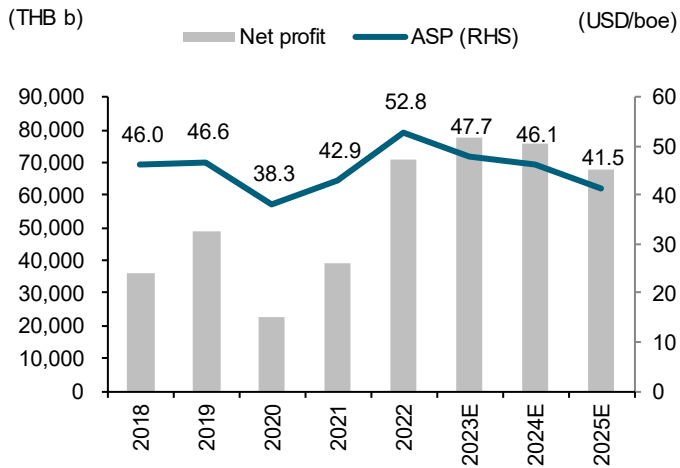
Sources: PTTEP, FSSIA estimates

Exhibit 24: Sales volume breakdown by product



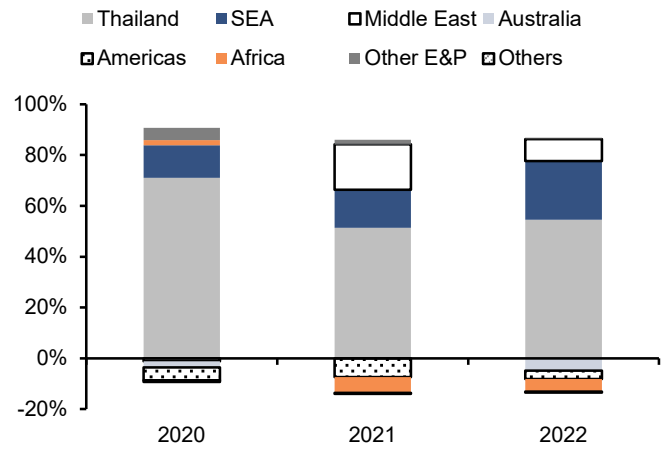
Sources: PTTEP, FSSIA estimates

Exhibit 25: Earnings move in line with ASP



Sources: PTTEP, FSSIA estimates

Exhibit 26: Net profit breakdown by country and business



Source: PTTEP

Exhibit 27: Key assumptions

Key assumptions	Unit	2022	2023E	2024E	2025E
Dubai oil price	USD/bbl	96.34	83.00	85.00	75.00
Gas price	USD/mmbtu	6.27	6.00	5.60	5.10
ASP	USD/boe	52.85	47.75	46.13	41.51
Production volume	kboed	468	470	510	535
Cost per bbl	USD/boe	28.36	27.71	28.00	27.29

Sources: PTTEP, FSSIA estimates

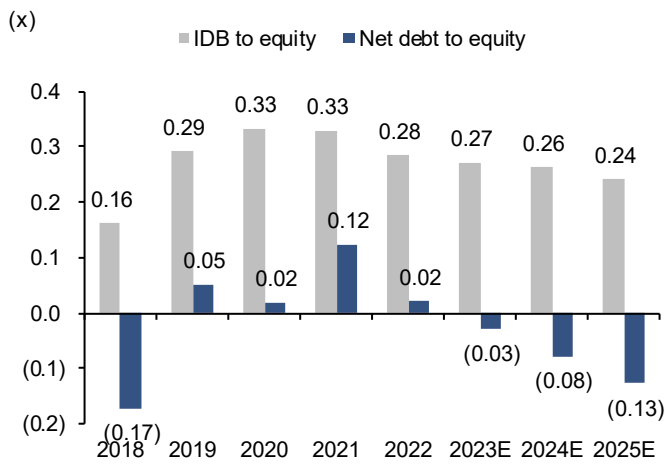
A low-leverage company

PTTEP has a solid balance sheet with 9M23 interest-bearing debt (IDB) to equity of 0.26x, and we estimate they will maintain it at this low level through 2024-25E. The cash position is also high, with a 2023-2025E net debt to equity of only 0.03x.

For the cost of debt profile, 100% of its debts have a fixed interest rate with a current competitive cost of debt of ~3.9%. The company has a BBB+ rating and could maintain its cost of debt at a low level despite the increasing interest rate trend. The weighted average loan life is also high at >10 years, and we estimate it to keep at this level.

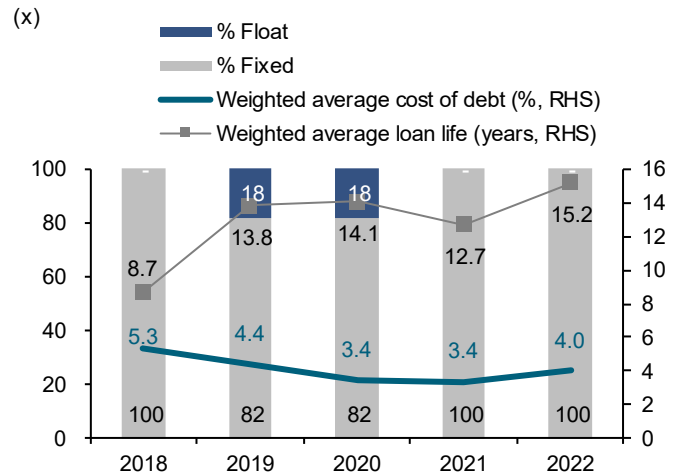
Given the currently strong cash on hand and low leverage level, we think the company has more than sufficient funds to develop existing projects and pursue investment in new businesses or M&As in new projects.

Exhibit 28: Low-leverage company



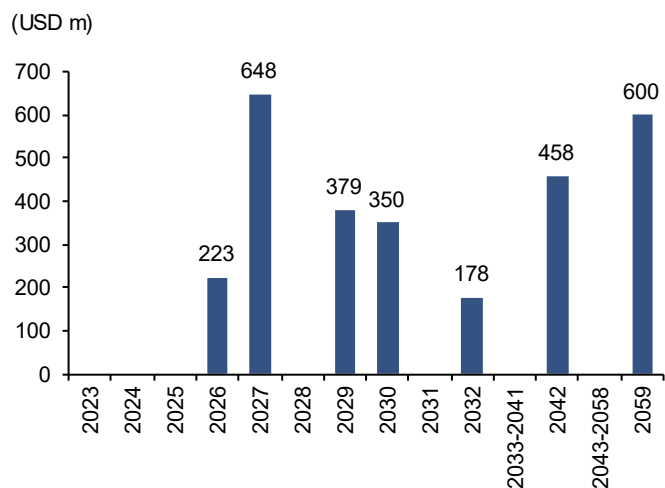
Sources: PTTEP, FSSIA estimates

Exhibit 29: 100% fixed-rate debts with competitive cost of debt and uptrend loan life



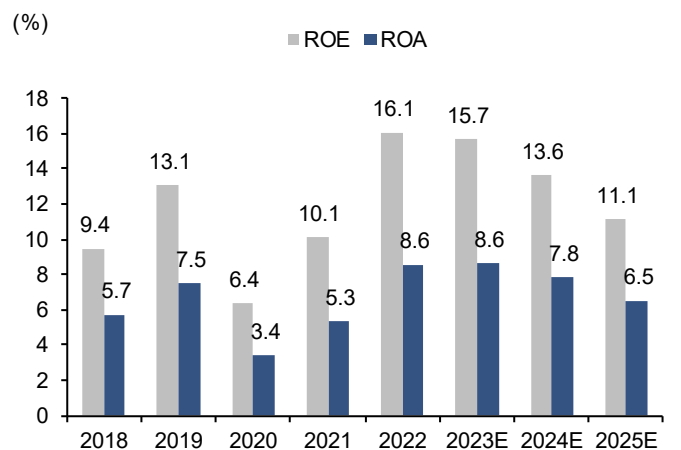
Source: PTTEP

Exhibit 30: Debt maturity profile



Source: PTTEP

Exhibit 31: ROE vs ROA



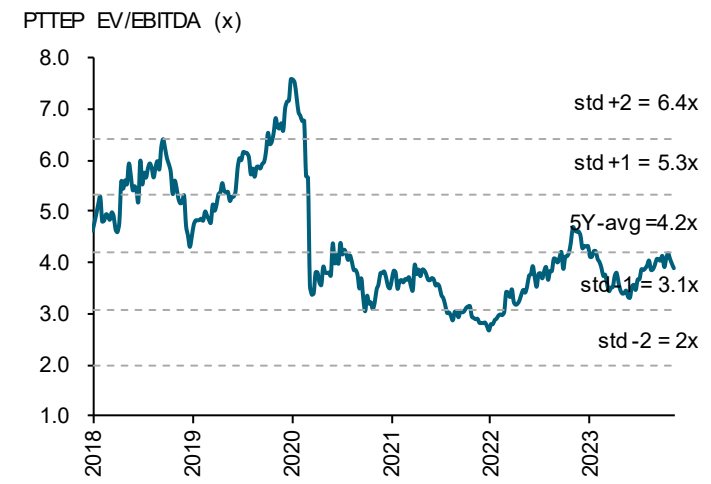
Sources: PTTEP, FSSIA estimates

Valuation

We reinitiate PTTEP with a BUY rating, despite expect 2023-2025E normalized EPS growth of -16.9%/-2.8%/-10.5% from lower average selling price because of its attractive valuation. The stock is currently trading at EV/EBITDA and P/E below its long-term average and the pre-COVID level. Thus, we think it has the potential to rally while oil prices remain high during this uncertainty on global political tension.

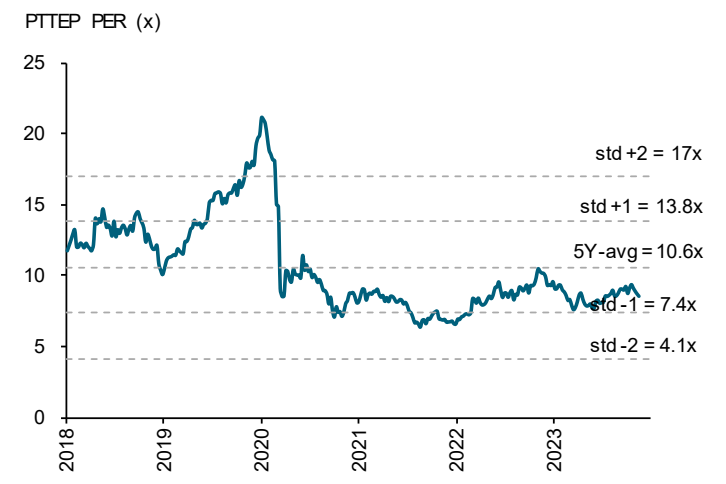
Our 2024E TP is at THB179/share, based on a 5-year average EV/EBITDA of 4.2x. This provides a 12% upside to our TP.

Exhibit 32: EV/EBITDA band



Sources: Bloomberg, FSSIA estimates

Exhibit 33: P/B band



Sources: Bloomberg, FSSIA estimates

Exhibit 34: Valuation comparisons

Company	BBG	Rec	Share Price (LCY)	Target price (LCY)	Up side (%)	Market Cap (USD m)	3Y EPS CAGR (%)	----- PE -----		----- ROE -----		----- PBV -----		- EV/ EBITDA -	
								23E	24E	23E	24E	23E	24E	23E	24E
Integrated Oils															
PTT	PTT TB	n/a	34.5	n/a	n/a	28,199	2.6	9.9	9.7	9.1	8.8	0.9	0.9	5.6	5.4
China Petroleum & Chem.	386 HK	n/a	4.15	n/a	n/a	86,487	12.9	6.2	5.7	9.3	9.6	0.6	0.5	5.0	4.5
Exxon Mobil	XOM US	n/a	104.5	n/a	n/a	418,641	(12.4)	11.2	10.9	18.7	16.8	2.1	1.8	6.0	5.7
Petrobras - Petroleo Bras	PETR3 BZ	n/a	39.39	n/a	n/a	102,780	(20.7)	3.9	4.4	31.8	25.3	1.0	0.9	2.8	2.9
Shell	SHELL NA	n/a	30.605	n/a	n/a	218,557	(4.2)	8.1	7.4	14.7	13.8	1.2	1.1	3.8	3.8
BP	BP/ LN	n/a	480.45	n/a	n/a	101,262	(3.0)	6.9	6.2	21.1	19.7	1.4	1.2	3.3	3.3
Total SE	TTE FP	n/a	63	n/a	n/a	166,612	(15.7)	6.9	7.0	21.2	18.4	1.4	1.2	3.9	4.0
Chevron	CVX US	n/a	144.38	n/a	n/a	272,553	(8.0)	10.6	10.0	15.9	15.7	1.6	1.6	5.6	5.3
ENI SPA	ENI IM	n/a	15.008	n/a	n/a	55,186	(15.7)	5.9	6.1	14.2	13.0	0.9	0.8	3.0	3.0
Reliance Industries	RELIANCE IN	n/a	2349.35	n/a	n/a	193,144	10.0	23.3	21.9	8.3	9.0	1.9	1.9	13.2	11.7
Conocophillips	COP US	n/a	115.39	n/a	n/a	137,015	(9.8)	12.8	11.2	22.3	23.5	2.8	2.6	5.7	5.2
Repsol SA	REP SM	n/a	13.935	n/a	n/a	19,387	(13.3)	3.9	4.8	17.3	12.1	0.6	0.6	2.7	2.9
Petrochina	857 HK	n/a	5.18	n/a	n/a	175,811	(12.8)	5.3	5.4	11.6	10.5	0.6	0.6	3.3	3.2
Average						1,975,633	(10.8)	8.8	8.5	16.6	15.1	1.3	1.2	4.9	4.7
E&P															
PTT Explor & Prod	PTTEP TB	BUY	160	199	24	18,058	(100.0)	9.5	9.5	14.6	14.0	1.4	1.3	4.5	4.4
Occidental Petroleum	OXY US	n/a	61.14	n/a	n/a	53,826	(24.5)	15.1	12.0	15.9	19.1	2.6	2.2	5.8	5.4
CNOOC	883 HK	n/a	12.94	n/a	n/a	81,953	(4.2)	4.3	4.1	20.3	19.3	0.8	0.8	2.0	2.0
Suncor Energy	SU CN	n/a	45.94	n/a	n/a	43,365	(9.5)	8.6	7.3	17.2	17.7	1.4	1.3	4.3	4.2
Oil & Natural Gas Corp	ONGC IN	n/a	197.85	n/a	n/a	28,873	(2.0)	5.0	5.1	18.0	16.1	0.8	0.8	4.0	3.6
Gail India	GAIL IN	n/a	124.55	n/a	n/a	9,861	(9.9)	10.8	9.3	10.3	13.8	1.3	1.2	10.4	8.2
Korea Gas	036460 KS	n/a	23,750.00	n/a	n/a	1,696	(24.3)	12.1	3.3	2.2	5.6	0.2	0.2	12.0	10.9
Phillips 66	PSX US	n/a	118.11	n/a	n/a	51,963	(12.7)	7.6	8.8	22.9	18.7	1.7	1.6	5.6	6.6
Enterprise Prods Partners	EPD US	n/a	26.26	n/a	n/a	57,034	2.5	10.4	9.8	20.1	20.5	2.0	2.0	9.4	9.0
Petronas Gas Bhd	PTG MK	n/a	17.18	n/a	n/a	7,303	4.2	17.9	17.6	13.9	13.9	2.5	2.5	9.8	9.6
Kunlun Energy	135 HK	n/a	7.25	n/a	n/a	8,053	8.7	8.7	8.1	10.4	10.5	0.9	0.8	3.5	3.3
Gas Malaysia Bhd	GMB MK	n/a	3.20	n/a	n/a	883	(5.7)	11.1	11.7	27.8	24.1	3.1	3.0	6.6	6.7
Perusahaan Gas	PGAS IJ	n/a	1,140.00	n/a	n/a	1,781	1.3	6.7	6.1	10.4	10.3	0.6	0.6	2.8	2.7
Petronet Lng	PLNG IN	n/a	195.15	n/a	n/a	3,515	(5.3)	9.4	9.1	21.5	20.7	1.8	1.6	4.8	4.5
Ck Power	CKP TB	n/a	3.32	n/a	n/a	758	(6.6)	23.8	16.5	3.4	5.2	1.0	0.9	16.6	15.3
Chesapeake Energy	CHK US	n/a	81.76	n/a	n/a	10,716	(18.2)	18.1	15.5	6.5	6.7	1.1	1.1	4.8	4.7
Santos	STO AU	n/a	7.07	n/a	n/a	15,084	(14.9)	9.7	9.4	10.4	9.8	1.0	0.9	4.4	4.4
Manila Electric	MER PM	n/a	373.00	n/a	n/a	7,590	6.1	12.1	12.2	28.7	25.3	3.3	3.1	8.8	8.4
Oil India	OINL IN	n/a	314.00	n/a	n/a	4,006	4.3	4.1	5.5	24.9	16.8	0.9	0.8	3.9	4.7
Average						406,317	(22.2)	10.8	9.5	15.8	15.2	1.5	1.4	6.5	6.2
Other Emerging Market															
Petrobras - Petroleo Bras	PETR3 BZ	n/a	39.39	n/a	n/a	102,780	(20.7)	3.9	4.4	31.8	25.3	1.0	0.9	2.8	2.9
Average						102,780	(20.7)	3.9	4.4	31.8	25.3	1.0	0.9	2.8	2.9
Average (all)						2,484,731	(16.5)	9.8	8.9	16.8	15.6	1.4	1.3	5.8	5.5

As of 23 Nov 2023

Sources: Bloomberg, FSSIA estimates

Key executives and board of directors

Exhibit 35: Management team

No.	Name	Position	Age	Starting date
1	Mr. Montri Rawanchaikul	Chief Executive Officer	59	1-Oct-21
2	Mrs. Natruedee Khositaphai	Executive Vice President, Operations Support Group	58	1-Sep-23
3	Mr. Chayong Borisuitsawat	Executive Vice President, Strategy, Business Development, and Human Resources Group	56	1-Sep-23
4	Mr. Sumrid Sumneing	Executive Vice President, Finance and Accounting Group	59	1-Jan-19
5	Mr. Suksant Ongvises	Executive Vice President, Lang Lebah Project, seconded to PTTEP Sarawak Oil Limited as Lang Lebah Project Director	59	1-Sep-23
6	Mr. Piya Sukhumpunumet	Executive Vice President, International Production Asset Group	58	1-Apr-22
7	Mr. Nirandorn Rojanasomsith	Executive Vice President, Engineering, Development, and Maintenance Group	58	1-Jan-23
8	Ms. Kanita Sartwattayu	Executive Vice President, Domestic Production Asset Group	53	1-Jan-23
9	Mr. Chalongrut Ya-anan	Executive Vice President, Geosciences, Subsurface, and Exploration Group	57	1-Oct-22
10	Mr. Nopasit Chaiwanakupt	Acting Executive Vice President, Technology, Carbon Solutions, and Sustainable Growth Group	54	1-Sep-23

Sources: PTTEP

Exhibit 36: Board of directors

No.	Name	Position	Age	Starting date
1	Mr. Krairit Euchukanonchai	Chairman and Chairman of the Independent Directors Committee	68	1-Feb-21
2	Mr. Pitipan Teparimargorn	Independent Director, Chairman of the Risk Management Committee and Member of the Nominating and Remuneration Committee	67	1-Nov-15
3	Ms. Penchun Jarikasem	Independent Director and Chairman of the Audit Committee	68	1-Feb-18
4	Mrs. Angkarat Priebrivat	Independent Director and Member of the Audit Committee	68	1-Oct-19
5	Mr. Auttapol Rerkpiboon	Director	58	1-Aug-20
6	Mr. Veerathai Santiprabhob	Independent Director, Member of the Risk Management Committee and Member of the Corporate Governance and Sustainability Committee	53	15-Oct-20
7	Mr. Wattanapong Kurovat	Director and Member of the Nominating and Remuneration Committee	49	1-May-21
8	Mr. Teerapong Wongsiwawilas	Independent Director, Chairman of the Nominating and Remuneration Committee and Member of the Audit Committee	59	1-Jan-22
9	Mr. Wuttikorn Stithit	Director and Member of the Risk Management Committee	58	1-Jan-23
10	General Nithi Chungcharoen	Independent Director, Member of the Nominating and Remuneration Committee and Member of the Risk Management Committee	52	1-Jan-23
11	Mrs. Natjaree Anuntasilpa	Independent Director and Member of the Audit Committee	53	17-Mar-23
12	Mr. Ekniti Nitithanprapas	Director and Member of the Corporate Governance and Sustainability Committee	52	3-Apr-23
13	Mr. Montri Rawanchaikul	Director and Secretary to the Board	59	1-Oct-21

Source: PTTEP

Financial Statements

PTT Explor & Prod

Profit and Loss (THB m) Year Ending Dec	2021	2022	2023E	2024E	2025E
Revenue	219,068	331,350	287,199	287,996	271,855
Cost of goods sold	(51,828)	(65,781)	(66,056)	(66,239)	(62,527)
Gross profit	167,240	265,569	221,143	221,757	209,328
Other operating income	-	-	-	-	-
Operating costs	(81,710)	(103,555)	(89,062)	(89,062)	(89,062)
Operating EBITDA	113,647	195,282	165,575	168,017	156,741
Depreciation	(28,118)	(33,267)	(33,494)	(35,322)	(36,475)
Goodwill amortisation	0	0	0	0	0
Operating EBIT	85,530	162,015	132,081	132,695	120,267
Net financing costs	(7,253)	(9,930)	3,028	(1,888)	(4,102)
Associates	489	668	1,470	1,514	1,559
Recurring non-operating income	11,072	13,700	6,138	6,416	6,707
Non-recurring items	(8,957)	(22,589)	0	0	0
Profit before tax	80,392	143,196	141,248	137,224	122,871
Tax	(41,528)	(72,295)	(63,562)	(61,751)	(55,292)
Profit after tax	38,864	70,901	77,686	75,473	67,579
Minority interests	0	0	0	0	0
Preferred dividends	0	0	0	0	0
Other items	-	-	-	-	-
Reported net profit	38,864	70,901	77,686	75,473	67,579
Non-recurring items & goodwill (net)	8,957	22,589	0	0	0
Recurring net profit	47,821	93,491	77,686	75,473	67,579
Per share (THB)					
Recurring EPS *	12.05	23.55	19.57	19.01	17.02
Reported EPS	9.79	17.86	19.57	19.01	17.02
DPS	5.00	9.25	9.78	9.51	8.51
Diluted shares (used to calculate per share data)	3,970	3,970	3,970	3,970	3,970
Growth					
Revenue (%)	36.6	51.3	(13.3)	0.3	(5.6)
Operating EBITDA (%)	61.0	71.8	(15.2)	1.5	(6.7)
Operating EBIT (%)	92.2	89.4	(18.5)	0.5	(9.4)
Recurring EPS (%)	95.1	95.5	(16.9)	(2.8)	(10.5)
Reported EPS (%)	71.5	82.4	9.6	(2.8)	(10.5)
Operating performance					
Gross margin inc. depreciation (%)	76.3	80.1	77.0	77.0	77.0
Gross margin exc. depreciation (%)	89.2	90.2	88.7	89.3	90.4
Operating EBITDA margin (%)	51.9	58.9	57.7	58.3	57.7
Operating EBIT margin (%)	39.0	48.9	46.0	46.1	44.2
Net margin (%)	21.8	28.2	27.0	26.2	24.9
Effective tax rate (%)	51.7	50.5	45.0	45.0	45.0
Dividend payout on recurring profit (%)	41.5	39.3	50.0	50.0	50.0
Interest cover (X)	13.3	17.7	(45.6)	73.7	31.0
Inventory days	186.5	186.3	192.9	181.0	209.1
Debtor days	33.7	32.4	63.3	72.9	75.2
Creditor days	621.6	669.2	632.8	424.3	392.2
Operating ROIC (%)	16.1	26.6	19.2	(12.2)	(12.0)
ROIC (%)	10.3	16.8	12.4	(7.7)	(6.6)
ROE (%)	12.4	21.2	15.7	13.6	11.1
ROA (%)	7.2	12.0	8.4	7.7	6.4
* Pre-exceptional, pre-goodwill and fully diluted					
Revenue by Division (THB m)					
Exploration and production	239,892	348,956	282,578	283,362	267,481
Pipeline					
Others	(9,013)	1,195	4,621	4,634	4,374
Inter company eliminations	(11,811)	(18,801)			

Sources: PTT Explor & Prod; FSSIA estimates

Financial Statements

PTT Explor & Prod

Cash Flow (THB m) Year Ending Dec	2021	2022	2023E	2024E	2025E
Recurring net profit	47,821	93,491	77,686	75,473	67,579
Depreciation	28,118	33,267	33,494	35,322	36,475
Associates & minorities	-	-	-	-	-
Other non-cash items	35,066	35,066	35,066	35,067	35,067
Change in working capital	(27,871)	(15,396)	(11,468)	(202)	4,089
Cash flow from operations	83,133	146,428	134,778	145,660	143,209
Capex - maintenance	-	-	-	-	-
Capex - new investment	(126,684)	(82,620)	(108,744)	(130,383)	(139,623)
Net acquisitions & disposals	457	838	1,301	2,133	2,133
Other investments (net)	2,368	29,850	29,850	29,850	29,850
Cash flow from investing	(123,860)	(51,931)	(77,593)	(98,399)	(107,639)
Dividends paid	(19,325)	(28,670)	(19,422)	(18,868)	(16,895)
Equity finance	0	0	0	0	0
Debt finance	18,704	(4,333)	10,000	10,000	0
Other financing cash flows	15,252	(24,698)	(12,405)	1,928	16,278
Cash flow from financing	14,631	(57,701)	(21,827)	(6,940)	(617)
Non-recurring cash flows	-	-	-	-	-
Other adjustments	366	0	0	0	0
Net other adjustments	366	0	0	0	0
Movement in cash	(25,729)	36,796	35,358	40,320	34,953
Free cash flow to firm (FCFF)	(34,254.77)	102,715.09	67,345.03	58,220.50	46,929.68
Free cash flow to equity (FCFE)	(6,404.44)	65,465.40	54,780.09	59,188.56	51,847.74

Per share (THB)

FCFF per share	(8.63)	25.87	16.96	14.67	11.82
FCFE per share	(1.61)	16.49	13.80	14.91	13.06
Recurring cash flow per share	27.96	40.76	36.84	36.74	35.04

Balance Sheet (THB m) Year Ending Dec	2021	2022	2023E	2024E	2025E
Tangible fixed assets (gross)	1,255,645	1,369,120	1,477,864	1,524,512	1,575,830
Less: Accumulated depreciation	(875,338)	(958,506)	(1,042,241)	(1,130,546)	(1,221,732)
Tangible fixed assets (net)	380,307	410,614	435,623	393,966	354,098
Intangible fixed assets (net)	0	0	0	0	0
Long-term financial assets	-	-	-	-	-
Invest. in associates & subsidiaries	14,408	9,594	8,930	8,310	7,736
Cash & equivalents	85,528	122,324	157,683	198,004	232,956
A/C receivable	16,715	42,166	57,440	57,599	54,371
Inventories	14,069	19,115	15,309	15,351	14,491
Other current assets	23,272	13,238	13,238	13,238	13,238
Current assets	139,584	196,842	243,670	284,192	315,056
Other assets	249,237	252,814	243,010	316,940	395,441
Total assets	783,536	869,864	931,233	1,003,409	1,072,331
Common equity	415,350	467,121	525,385	581,990	632,675
Minorities etc.	0	0	0	0	0
Total shareholders' equity	415,350	467,121	525,385	581,990	632,675
Long term debt	115,645	121,999	131,999	141,999	141,999
Other long-term liabilities	148,038	166,129	158,041	149,953	141,865
Long-term liabilities	263,684	288,128	290,040	291,952	283,864
A/C payable	49,398	69,827	43,080	28,800	27,185
Short term debt	21,166	10,479	10,479	10,479	10,479
Other current liabilities	33,938	34,310	32,399	30,488	28,577
Current liabilities	104,502	114,616	85,957	69,766	66,241
Total liabilities and shareholders' equity	783,536	869,864	901,383	943,708	982,779
Net working capital	(29,280)	(29,618)	10,508	26,901	26,338
Invested capital	614,672	643,404	698,072	746,118	783,612

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

Per share (THB)

Book value per share	104.62	117.66	132.34	146.60	159.36
Tangible book value per share	104.62	117.66	132.34	146.60	159.36

Financial strength

Net debt/equity (%)	12.3	2.2	(2.9)	(7.8)	(12.7)
Net debt/total assets (%)	6.5	1.2	(1.6)	(4.5)	(7.5)
Current ratio (x)	1.3	1.7	2.8	4.1	4.8
CF interest cover (x)	17.6	15.9	(53.0)	101.4	47.7

Valuation	2021	2022	2023E	2024E	2025E
Recurring P/E (x) *	13.3	6.8	8.2	8.4	9.4
Recurring P/E @ target price (x) *	14.9	7.6	9.1	9.4	10.5
Reported P/E (x)	16.3	9.0	8.2	8.4	9.4
Dividend yield (%)	3.1	5.8	6.1	5.9	5.3
Price/book (x)	1.5	1.4	1.2	1.1	1.0
Price/tangible book (x)	1.5	1.4	1.2	1.1	1.0
EV/EBITDA (x) **	6.0	3.3	3.7	3.5	3.5
EV/EBITDA @ target price (x) **	6.7	3.7	4.2	4.0	4.0
EV/invested capital (x)	1.1	1.0	0.9	0.8	0.7

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

Sources: PTT Explor & Prod; FSSIA estimates

PTT EXPLORATION AND PRODUCTION PCL (PTTEP TB)

FSSIA ESG rating



71.91 / 100

Exhibit 37: FSSIA ESG score implication

Rating	Score	Implication
★★★★★	>79-100	Leading its industry peers in managing the most significant ESG risks which not only better cost efficiency but also lead to higher profitability.
★★★★★	>59-79	A mixed track record of managing the most significant ESG risks and opportunities relative to industry peers.
★★★★	>39-59	Relevant ESG materiality matrix has been constructively addressed, well-managed and incorporated into day-to-day operations, in which targets and achievements are evaluated annually.
★★★	>19-39	Relevant ESG materiality matrix has been identified with key management in charge for progress to be followed up on and to provide intensive disclosure. Most targets are conventional and achievable.
★	1-19	The company has adopted the United Nations Sustainable Development Goals (UN SDGs), established sustainability management guidelines and fully complies with regulations or ESG suggested guidance from related organizations such as the SET and SEC.

Sources: FSSIA estimates

Exhibit 38: ESG – peer comparison

	FSSIA ESG score	Domestic ratings						Global ratings						Bloomberg	
		DJSI	SET	THSI	THSI	CG score	IGM level	Thai CAC	Morningstar ESG risk	ESG Book	MSCI	Moody's	Refinitiv	S&P Global	ESG score
SET100	69.20	5.34	4.40	4.40	4.76	4.65	3.84	Medium	51.76	BBB	20.87	58.72	63.91	3.72	28.17
Coverage	67.12	5.11	4.15	4.17	4.83	4.71	3.53	Medium	52.04	BB	16.97	56.85	62.09	3.40	31.94
BCP	77.54	--	Y	Y	5.00	5.00	Certified	Medium	56.04	AA	--	79.53	83.00	6.34	69.77
SPRC	44.50	--	--	--	5.00	5.00	Certified	High	55.86	--	--	36.91	28.00	3.77	54.54
TOP	84.35	Y	Y	Y	5.00	5.00	Certified	Medium	52.10	BBB	38.00	75.83	88.00	6.81	--
ESSO	30.81	--	--	--	4.00	5.00	--	Severe	46.89	--	--	45.86	17.00	2.06	34.92
PTTEP	71.91	--	Y	Y	5.00	4.00	Certified	High	61.83	AA	43.00	51.40	69.00	6.28	--

Sources: SETTRADE.com; FSSIA's compilation

Exhibit 39: ESG score by Bloomberg

FY ending Dec 31	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022
ESG financial materiality scores - ESG score	5.74	6.21	6.29	6.22	6.31	6.27	—
BESG environmental pillar score	5.01	6.12	6.50	6.47	6.92	5.96	—
BESG social pillar score	6.83	6.95	6.34	6.14	5.81	7.38	—
BESG governance pillar score	5.94	5.66	5.92	5.87	5.83	5.71	—
ESG disclosure score	64.19	70.39	71.61	72.91	73.46	80.95	—
Environmental disclosure score	56.84	66.57	70.25	69.95	71.61	75.05	—
Social disclosure score	45.77	54.66	54.66	58.86	58.86	71.61	—
Governance disclosure score	89.86	89.86	89.86	89.86	89.86	96.12	—
Environmental							
Emissions reduction initiatives	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Climate change policy	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Climate change opportunities discussed	No	No	No	No	No	No	No
Risks of climate change discussed	Yes	Yes	Yes	Yes	Yes	Yes	Yes
GHG scope 1	4,631	4,645	4,128	3,914	5,388	5,148	5,711
GHG scope 2 location-based	6	6	6	6	14	14	15
GHG Scope 3	59	27,167	28,629	29,165	36,946	37,367	—
Carbon per unit of production	—	0.26	0.25	0.23	0.26	0.22	0.24
Biodiversity policy	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Energy efficiency policy	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Total energy consumption	7,313	6,892	6,804	7,194	9,084	9,218	—
Renewable energy use	—	21	18	17	15	12	—
Electricity used	32	299	322	2,644	38	94	—
Fuel used - natural gas	—	555,186	593,652	638,031	694,051	850,146	—

Sources: Bloomberg; FSSIA's compilation

Exhibit 40: ESG score by Bloomberg (cont.)

FY ending Dec 31	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022
Fuel used - crude oil/diesel	No	No	No	No	No	No	No
Waste reduction policy	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Hazardous waste	29	40	58	84	113	65	52
Total waste	178	148	181	159	176	171	234
Waste recycled	—	—	54	123	81	44	45
Waste sent to landfills	0.06	0.06	0.15	0.11	0.00	0.83	0.47
Environmental supply chain management	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Water policy	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Water consumption	—	—	—	—	73,480.00	650.00	710.00
Social							
Human rights policy	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Policy against child labor	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Quality assurance and recall policy	No	No	No	No	No	No	No
Consumer data protection policy	No	No	No	Yes	Yes	Yes	Yes
Equal opportunity policy	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Gender pay gap breakout	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Pct women in workforce	33.05	34.00	33.00	33.00	35.00	35.00	35.00
Pct disabled in workforce	—	—	—	—	—	—	—
Business ethics policy	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Anti-bribery ethics policy	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Health and safety policy	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Lost time incident rate - employees	0.00	0.02	0.00	0.00	0.00	0.00	0.02
Total recordable incident rate - employees	0.11	0.14	0.12	0.13	0.00	0.04	0.10
Training policy	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Fair remuneration policy	No	No	No	No	No	No	No
Number of employees – CSR	3,794.00	3,774.00	3,861.00	4,449.00	4,496.00	4,564.00	5,173.00
Employee turnover pct	7.16	6.13	4.89	3.70	2.80	4.50	5.00
Total hours spent by firm - employee training	102,438.00	184,926.00	212,355.00	191,307.00	179,840.00	219,072.00	292,512.00
Social supply chain management	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Governance							
Board size	15	15	14	15	15	15	16
No. of independent directors (ID)	9	9	7	8	9	10	10
No. of women on board	1	1	2	2	2	2	2
No. of non-executive directors on board	14	14	13	14	14	14	14
Company conducts board evaluations	Yes	Yes	Yes	Yes	Yes	Yes	Yes
No. of board meetings for the year	16	16	18	20	18	19	18
Board meeting attendance pct	94	92	93	91	95	96	95
Board duration (years)	3	3	3	3	3	3	3
Director share ownership guidelines	No	No	No	No	No	No	No
Age of the youngest director	45	46	47	48	49	47	48
Age of the oldest director	67	68	69	68	69	68	69
No. of executives / company managers	21	25	18	20	20	16	16
No. of female executives	10	12	9	9	8	8	6
Executive share ownership guidelines	No	No	No	No	No	No	No
Size of audit committee	4	3	3	4	4	4	4
No. of ID on audit committee	4	3	3	4	4	4	4
Audit committee meetings	11	13	16	15	13	14	14
Audit meeting attendance %	98	98	98	88	91	89	100
Size of compensation committee	3	3	3	3	6	6	4
No. of ID on compensation committee	2	2	2	2	4	5	3
No. of compensation committee meetings	2	2	3	4	8	8	7
Compensation meeting attendance %	100	100	100	92	96	100	100
Size of nomination committee	3	4	3	4	6	6	4
No. of nomination committee meetings	8	8	9	8	8	8	7
Nomination meeting attendance %	96	97	100	100	96	100	100
Sustainability governance							
Verification type	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Sources: Bloomberg; FSSIA's compilation

Disclaimer for ESG scoring

ESG score	Methodology	Rating																			
The Dow Jones Sustainability Indices (DJSI) By S&P Global	The DJSI World applies a transparent, rules-based component selection process based on the companies' Total Sustainability Scores resulting from the annual S&P Global Corporate Sustainability Assessment (CSA). Only the top-ranked companies within each industry are selected for inclusion.	Be a member and invited to the annual S&P Global Corporate Sustainability Assessment (CSA) for DJSI. Companies with an S&P Global ESG Score of less than 45% of the S&P Global ESG Score of the highest scoring company are disqualified. The constituents of the DJSI indices are selected from the Eligible Universe.																			
Sustainability Investment List (THSI) by The Stock Exchange of Thailand (SET)	THSI quantifies responsibility in Environmental and Social issues by managing business with transparency in Governance, updated annually. Candidates must pass the preemptive criteria, with two crucial conditions: 1) no irregular trading of the board members and executives; and 2) free float of >150 shareholders, and combined holding must be >15% of paid-up capital. Some key disqualifying criteria include: 1) CG score of below 70%; 2) independent directors and free float violation; 3) executives' wrongdoing related to CG, social & environmental impacts; 4) equity in negative territory; and 5) earnings in red for > 3 years in the last 5 years.	To be eligible for THSI inclusion , verified data must be scored at a minimum of 50% for each indicator, unless the company is a part of DJSI during the assessment year. The scoring will be fairly weighted against the nature of the relevant industry and materiality. SETTHSI Index is extended from the THSI companies whose 1) market capitalization > THB5b (~USD150b); 2) free float >20%; and 3) liquidity >0.5% of paid-up capital for at least 9 out of 12 months. The SETTHSI Index is a market capitalisation-weighted index, cap 5% quarterly weight at maximum, and no cap for number of stocks.																			
CG Score by Thai Institute of Directors Association (Thai IOD)	An indicator of CG strength in sustainable development, measured annually by the Thai IOD, with support from the Stock Exchange of Thailand (SET). The results are from the perspective of a third party, not an evaluation of operations.	Scores are rated in six categories: 5 for Excellent (90-100), 4 for Very Good (80-89), 3 for Good (70-79), 2 for Fair (60-69), 1 for Pass (60-69), and not rated for scores below 50. Weightings include: 1) the rights; 2) and equitable treatment of shareholders (weight 25% combined); 3) the role of stakeholders (25%); 4) disclosure & transparency (15%); and 5) board responsibilities (35%).																			
AGM level By Thai Investors Association (TIA) with support from the SEC	It quantifies the extent to which shareholders' rights and equitable treatment are incorporated into business operations and information is transparent and sufficiently disclosed. All form important elements of two out of five the CG components to be evaluated annually. The assessment criteria cover AGM procedures before the meeting (45%), at the meeting date (45%), and after the meeting (10%). <i>(The first assesses 1) advance circulation of sufficient information for voting; and 2) facilitating how voting rights can be exercised. The second assesses 1) the ease of attending meetings; 2) transparency and verifiability; and 3) openness for Q&A. The third involves the meeting minutes that should contain discussion issues, resolutions and voting results.)</i>	The scores are classified into four categories: 5 for Excellent (100), 4 for Very Good (90-99), 3 for Fair (80-89), and not rated for scores below 79.																			
Thai CAC By Thai Private Sector Collective Action Against Corruption (CAC)	The core elements of the Checklist include corruption risk assessment, establishment of key controls, and the monitoring and developing of policies. The Certification is good for three years. <i>(Companies deciding to become a CAC certified member start by submitting a Declaration of Intent to kick off an 18-month deadline to submit the CAC Checklist for Certification, including risk assessment, in place of policy and control, training of managers and employees, establishment of whistleblowing channels, and communication of policies to all stakeholders.)</i>	The document will be reviewed by a committee of nine professionals. A passed Checklist will move for granting certification by the CAC Council approvals whose members are twelve highly respected individuals in professionalism and ethical achievements.																			
Morningstar Sustainalytics	The Sustainalytics' ESG risk rating provides an overall company score based on an assessment of how much of a company's exposure to ESG risk is unmanaged. <i>Sources to be reviewed include corporate publications and regulatory filings, news and other media, NGO reports/websites, multi-sector information, company feedback, ESG controversies, issuer feedback on draft ESG reports, and quality & peer reviews.</i>	A company's ESG risk rating score is the sum of unmanaged risk. The more risk is unmanaged, the higher ESG risk is scored. <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>NEGL</th> <th>Low</th> <th>Medium</th> <th>High</th> <th>Severe</th> </tr> </thead> <tbody> <tr> <td>0-10</td> <td>10-20</td> <td>20-30</td> <td>30-40</td> <td>40+</td> </tr> </tbody> </table>	NEGL	Low	Medium	High	Severe	0-10	10-20	20-30	30-40	40+									
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0-10	10-20	20-30	30-40	40+																	
ESG Book	The ESG score identifies sustainable companies that are better positioned to outperform over the long term. The methodology considers the principle of financial materiality including information that significantly helps explain future risk-adjusted performance. Materiality is applied by over-weighting features with higher materiality and rebalancing these weights on a rolling quarterly basis.	The total ESG score is calculated as a weighted sum of the features scores using materiality-based weights. The score is scaled between 0 and 100 with higher scores indicating better performance.																			
MSCI	MSCI ESG ratings aim to measure a company's management of financially relevant ESG risks and opportunities. It uses a rules-based methodology to identify industry leaders and laggards according to their exposure to ESG risks and how well they manage those risks relative to peers. <table border="1" style="margin-left: auto; margin-right: auto;"> <tbody> <tr> <td>AAA</td> <td>8.571-10.000</td> <td rowspan="3">Leader:</td> <td rowspan="3">leading its industry in managing the most significant ESG risks and opportunities</td> </tr> <tr> <td>AA</td> <td>7.143-8.570</td> </tr> <tr> <td>A</td> <td>5.714-7.142</td> </tr> <tr> <td>BBB</td> <td>4.286-5.713</td> <td rowspan="3">Average:</td> <td rowspan="3">a mixed or unexceptional track record of managing the most significant ESG risks and opportunities relative to industry peers</td> </tr> <tr> <td>BB</td> <td>2.857-4.285</td> </tr> <tr> <td>B</td> <td>1.429-2.856</td> </tr> <tr> <td>CCC</td> <td>0.000-1.428</td> <td>Laggard:</td> <td>lagging its industry based on its high exposure and failure to manage significant ESG risks</td> </tr> </tbody> </table>	AAA	8.571-10.000	Leader:	leading its industry in managing the most significant ESG risks and opportunities	AA	7.143-8.570	A	5.714-7.142	BBB	4.286-5.713	Average:	a mixed or unexceptional track record of managing the most significant ESG risks and opportunities relative to industry peers	BB	2.857-4.285	B	1.429-2.856	CCC	0.000-1.428	Laggard:	lagging its industry based on its high exposure and failure to manage significant ESG risks
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Moody's ESG solutions	Moody's assesses the degree to which companies take into account ESG objectives in the definition and implementation of their strategy policies. It believes that a company integrating ESG factors into its business model and relatively outperforming its peers is better positioned to mitigate risks and create sustainable value for shareholders over the medium to long term.																				
Refinitiv ESG rating	Designed to transparently and objectively measure a company's relative ESG performance, commitment and effectiveness across 10 main themes, based on publicly available and auditable data. The score ranges from 0 to 100 on relative ESG performance and insufficient degree of transparency in reporting material ESG data publicly. <i>(Score ratings are 0 to 25 = poor; >25 to 50 = satisfactory; >50 to 75 = good; and >75 to 100 = excellent.)</i>																				
S&P Global	The S&P Global ESG Score is a relative score measuring a company's performance on and management of ESG risks, opportunities, and impacts compared to its peers within the same industry classification. The score ranges from 0 to 100.																				
Bloomberg	ESG Score	Bloomberg score evaluating the company's aggregated Environmental, Social and Governance (ESG) performance. The score is based on Bloomberg's view of ESG financial materiality. The score is a weighted generalized mean (power mean) of Pillar Scores, where the weights are determined by the pillar priority ranking. Values range from 0 to 10; 10 is the best.																			
Bloomberg	ESG Disclosure Score	Disclosure of a company's ESG used for Bloomberg ESG score. The score ranges from 0 for none to 100 for disclosure of every data point, measuring the amount of ESG data reported publicly, and not the performance on any data point.																			

Rating regarding the sustainable development of Thai listed companies, both on the SET and MAI, are publicly available on the website of the Securities and Exchange Commission of Thailand (SEC). Currently, ratings available are 1) "CG Score"; 2) "AGM Level"; 3) "Thai CAC"; and 4) THSI. The ratings are updated on an annual basis. FSSIA does not confirm nor certify the accuracy of such ratings.

Source: FSSIA's compilation

GENERAL DISCLAIMER

ANALYST(S) CERTIFICATION

Kwanwaree Apichartsataporn FSS International Investment Advisory Securities Co., Ltd

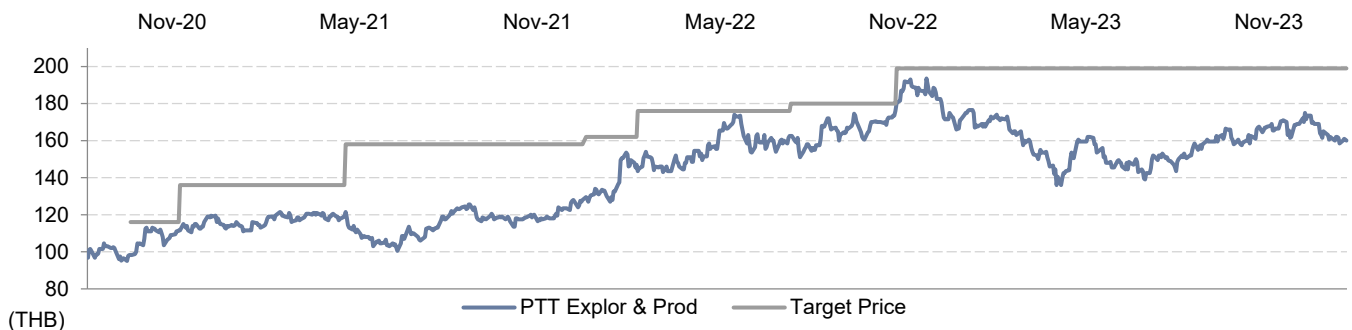
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History of change in investment rating and/or target price

PTT Explor & Prod (PTTEP TB)



Date	Rating	Target price	Date	Rating	Target price	Date	Rating	Target price
30-Dec-2020	BUY	116.00	28-Jan-2022	BUY	162.00	27-Oct-2022	BUY	199.00
11-Feb-2021	BUY	136.00	16-Mar-2022	BUY	176.00			
05-Jul-2021	BUY	158.00	27-Jul-2022	BUY	180.00			

Kwanwaree Apichartsataporn started covering this stock from 24-Nov-2023

Price and TP are in local currency

Source: FSSIA estimates

Company	Ticker	Price	Rating	Valuation & Risks
PTT Explor & Prod	PTTEP TB	THB 160.00	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.

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.

All share prices are as at market close on 23-Nov-2023 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.