

15 OCTOBER 2021

THAILAND / OIL & GAS

PTT EXPLOR & PROD PTTEP TB

BUY

UNCHANGED

TARGET PRICE	THB158.00
CLOSE	THB123.50
UP/DOWNSIDE	+27.9%
PRIOR TP	THB158.00
CHANGE IN TP	UNCHANGED
TP vs CONSENSUS	+13.6%

More gas and growth in AI & robotics

Core E&P as a cash cow; stepping into AI & robotics for growth

During our conference call with the newly appointed CEO of PTTEP, Mr. Montri Rawanchaikul, the new strategic direction for the company was elaborated on. PTTEP aims to transform from a conventional, fossil-centric producer into an environmentally focused, cleaner fuel-producing firm in the next five years. The new vision focuses on three strategies, including to sustain the core exploration and production (E&P) business, growing new platform-based ventures to harness innovation, technology and utilities, and entering into energy transitions and future energy.

Green transition via higher gas production and CCUS & CCS

PTTEP plans to implement two key strategies to transform itself into a greener enterprise. First, it plans to increase the 'transition fuel' gas production proportion from 73% in 2Q21 to 80% of total production by 2025. Second, PTTEP plans to increase the implementation of two technologies – carbon capture storage (CCS) and carbon capture utilisation and storage (CCUS) – to reduce carbon emissions and greenhouse gases (GHG) by over 50%, based on our estimate. Even without deploying CCS and CCUS, PTTEP already has a committed plan to reduce GHG by 25% from the current level by 2030 via improvements in its execution, operations, and production of oil & gas worldwide.

20% earnings from non-E&P by 2030, led by ARV

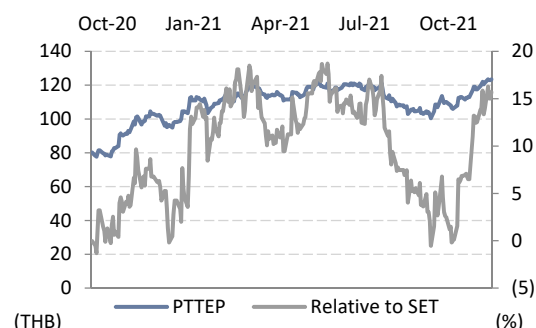
PTTEP plans to diversify and increase its non-E&P earnings to 20% of its total net profit by 2030, up from zero in 2020. Two non-E&P businesses are planned – technology and future energy under PTTEP's subsidiary startup, AI & Robotics Ventures (ARV), and a downstream power business in Vietnam and Myanmar. ARV is positioned as a profit-centre company focusing on developments in technology, artificial intelligence, and robotics innovations to not only fit into today's fast-changing, highly dynamic industry landscape, but also to grow the business into the 'blue ocean' industry and capitalise on consumer megatrends. While ARV remains loss-making three years on from its inception, we think it is poised to reach the breakeven points for each business unit, which are classified into four key segments by PTTEP.

One of Thailand's best plays on the oil price uptrend

Maintain BUY and our TP of THB158. We believe PTTEP's net profit growth momentum is poised to be much stronger in 4Q21 onward thanks to the high oil price that we project at over USD80/bbl, and which we expect to persist until 2Q22 on higher demand for heating and power.

KEY STOCK DATA

YE Dec (THB m)	2020	2021E	2022E	2023E
Revenue	160,401	218,352	261,837	260,318
Net profit	22,664	44,667	46,059	45,782
EPS (THB)	5.71	11.25	11.60	11.53
vs Consensus (%)	-	8.1	(5.3)	(4.1)
EBITDA	70,603	114,586	111,417	113,413
Core net profit	23,685	44,667	46,059	45,782
Core EPS (THB)	5.97	11.25	11.60	11.53
Chg. In EPS est. (%)	-	-	-	-
EPS growth (%)	(46.8)	88.6	3.1	(0.6)
Core P/E (x)	20.7	11.0	10.6	10.7
Dividend yield (%)	3.4	5.5	5.6	5.6
EV/EBITDA (x)	6.8	4.9	5.3	4.9
Price/book (x)	1.4	1.3	1.3	1.2
Net debt/Equity (%)	(3.7)	19.0	25.2	17.1
ROE (%)	6.7	12.3	12.1	11.4



Share price performance	1 Month	3 Month	12 Month
Absolute (%)	9.8	10.8	52.9
Relative to country (%)	9.3	6.0	18.7
Mkt cap (USD m)	14,762		
3m avg. daily turnover (USD m)	32.2		
Free float (%)	35		
Major shareholder	PTT Plc. (65%)		
12m high/low (THB)	125.00/76.50		
Issued shares (m)	3,969.99		

Sources: Bloomberg consensus; FSSIA estimates



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Investment thesis

PTTEP could see a negative impact from declining gas prices in 2021, reflecting the low oil prices in 2020, as PTTEP's gas price is linked to the average past 6-month oil price.

We believe PTTEP's average selling price will rise in tandem with the higher oil price, given PTTEP's high exposure to the oil price via its liquid price, which accounts for 30% of its production volume and 50% of its revenue. Gas constitutes 70% of its total sales volume but only 50% of its revenue.

PTTEP's cost structure remains highly competitive compared with its regional peers due to its low-cost gas fields and strict cost control strategy implemented in 2015.

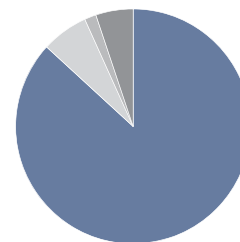
Company profile

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, 2020)

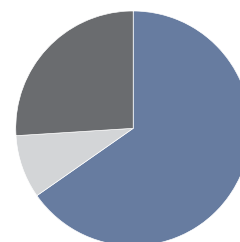
- Exploration and production - 96.7 %
- Pipeline - 7.2 %
- Others - 1.8 %
- Inter company eliminations - (5.7) %



Source: PTT Explor & Prod

Major shareholders

- PTT Plc. - 65.3 %
- Thai NDVR - 8.7 %
- Others - 26.0 %



Source: PTT Explor & Prod

Catalysts

Potential catalysts for PTTEP are rising oil and gas prices and potential M&A that could further drive its production and reserves higher.

Risks to our call

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

Event calendar

Date	Event
Nov 2021	3Q21 results announcement

Key assumptions

	2021E	2022E	2023E
Brent oil price (USD/bbl)	68	65	60
Sales volume (boed)	424,740	513,890	533,890
ASP (USD/boe)	41.9	41.5	39.8
Gas price (USD/mmbtu)	5.5	5.6	5.5
Cost (USD/boe)	32.5	32.4	33.4

Source: FSSIA estimates

Earnings sensitivity

- For every 1% increase in Dubai oil price, we project 2021 earnings would rise 1.3%, and vice versa, all else being equal.
- For every 1% increase in gas price, we estimate 2021 earnings would rise 1.2%, and vice versa.
- For every 1% increase in sales volume, we estimate 2021 earnings would rise 1.1%, and vice versa.

Source: FSSIA estimates

Strengthening core E&P while stepping into AI & robotics

During our conference call with the newly appointed CEO of PTTEP, Mr. Montri Rawanchaikul, the new strategic direction for the company was elaborated on. PTTEP aims to transform from a conventional, fossil-centric producer into an environmentally focused, cleaner fuel-producing company in the next five years.

The new vision focuses on three strategies, including to sustain the core E&P business, to grow new platform-based ventures to harness innovation, technology and utilities, and to explore energy transitions and future energy.

Exhibit 1: PTTEP's new business direction under its new CEO



Source: PTTEP

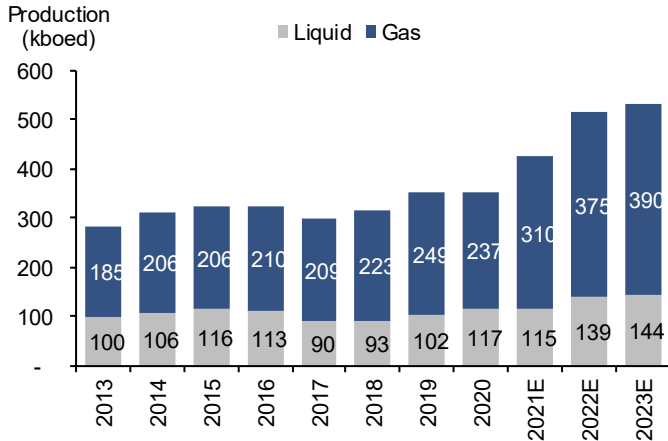
Strategy #1: Sustaining the core E&P business with a focus on environmental, social, and corporate governance

As Thailand's leading E&P player and a global E&P company, PTTEP has long grown its fossil fuel production business over the past 37 years since its inception. However, challenges arising from the rapid pace of change across the globe and an increasing awareness of global warming have led to the mandate for PTTEP to change its traditional fossil oil & gas production to a cleaner and greener approach.

Management believes that PTTEP needs to implement two key strategies to turn itself into a more environmental, social and corporate governance (ESG)-focused enterprise.

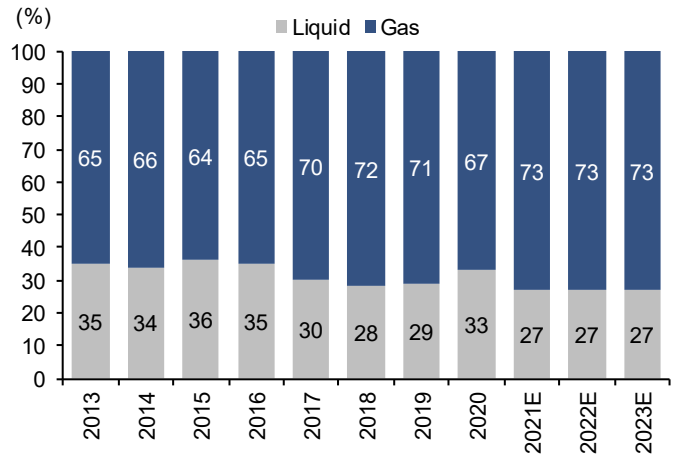
First, PTTEP plans to increase the ‘transition fuel’ gas production proportion from 73% in 2Q21 to 80% of total production by 2025. Based on its committed growth projects, we project that PTTEP’s gas production proportion will rise from 67% in 2020 to 73% in 2021-23, driven by the large greenfield and acquired gas production fields in Malaysia and the brownfield G1 gas field (formerly known as Erawan) in Thailand under the new production service contracts (PSC) starting in Apr-22 and Mar-23.

Exhibit 2: Production of oil and gas breakdown



Sources: PTTEP; FSSIA estimates

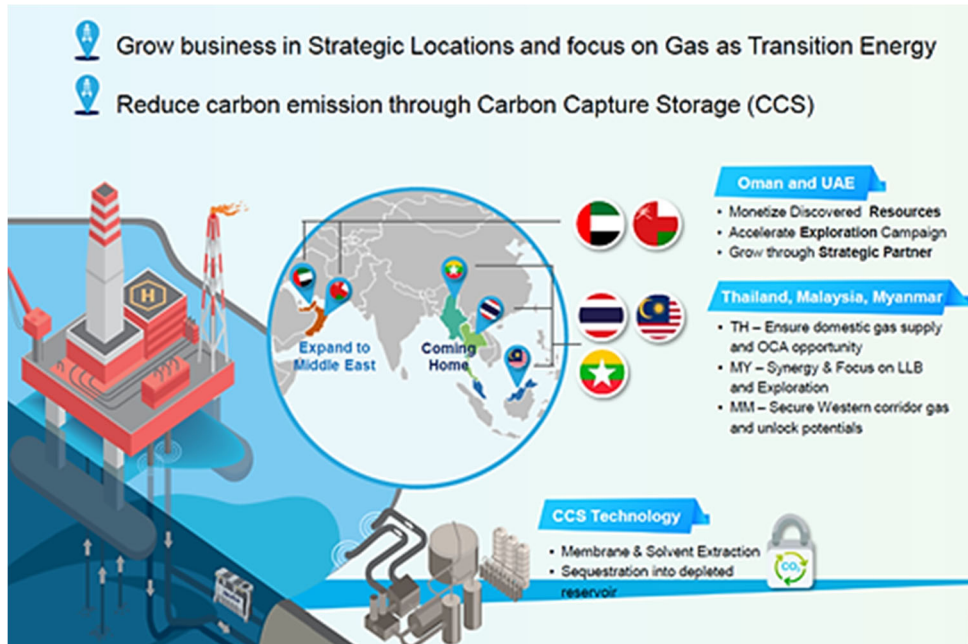
Exhibit 3: Production of oil and gas breakdown (%)



Sources: PTTEP; FSSIA estimates

Second, PTTEP plans to increase the implementation of two technologies – CCS and CCUS – to reduce carbon emissions and greenhouse gases by over 50%, based on our estimate. Even without deploying CCS and CCUS, PTTEP already has a committed plan to reduce greenhouse gases by 25% from the current level by 2030 via improvements in its execution, operations, and production of oil & gas worldwide.

Exhibit 4: Sustaining core E&P business via higher gas production and CCS



Source: PTTEP

What is carbon capture and storage (CCS)? According to the [International CCS Knowledge Centre](#), CCS is an emission reduction process designed to prevent large amounts of carbon dioxide (CO₂) from being released into the atmosphere. It is considered a key technology to actively reduce industry-driven greenhouse gas emissions. CCS involves capturing CO₂, compressing it for transportation and then injecting it deep into a rock formation at a selected site, where it is permanently stored. The CSS Knowledge Centre sums up the process as follows:

The process of large-scale CCS involves three major steps and different types of technologies, including:

- 1) Capture: The separation of CO₂ from other gases produced at facilities such as coal and natural gas power plants, oil and gas refineries, steel mills, and cement plants.
- 2) Transport: Once captured and separated, the CO₂ is compressed to a 'dense phase' or liquid-like state to make it easier to transport and store (liquid takes up much less space than a gas). The CO₂ is usually transported to a suitable site for geological storage using pipelines, although some countries use ships and – for smaller amounts of CO₂ – trucks and trains can also be used.
- 3) Injection for storage: There are two major storage methods. First is permanent storage. The captured CO₂ is transported to a geological storage site and then injected deep underground where it is permanently stored. Second is utilisation to storage via enhanced oil recovery. The captured CO₂ is transported to an oil field and is used to stimulate more oil production, with the CO₂ then being stored in the oil-depleted reservoir.

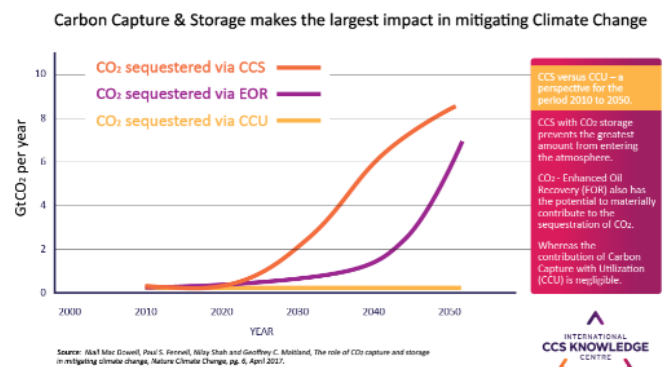
What is CCCUS? CCUS stands for carbon capture utilisation and storage. Essentially it is CCS that also enables the “utilisation” of the CO₂; however, CCS\CCUS are often used interchangeably. Increasingly there are several emerging forms of CO₂ utilisation – for example as an additive to improve the integrity of products, such as cement. The volumes required for these by-products, however, is small and hence negligible toward the goal to mitigate climate change. Alternatively, large volume CO₂ utilisation occurs when it is applied to EOR activity which has the added benefit of permanently storing the CO₂ underground.

Exhibit 5: Carbon emissions for each type of power plant



Sources: [International CCS Knowledge Centre](#)

Exhibit 6: Carbon capture & storage makes the largest impact in mitigating climate change



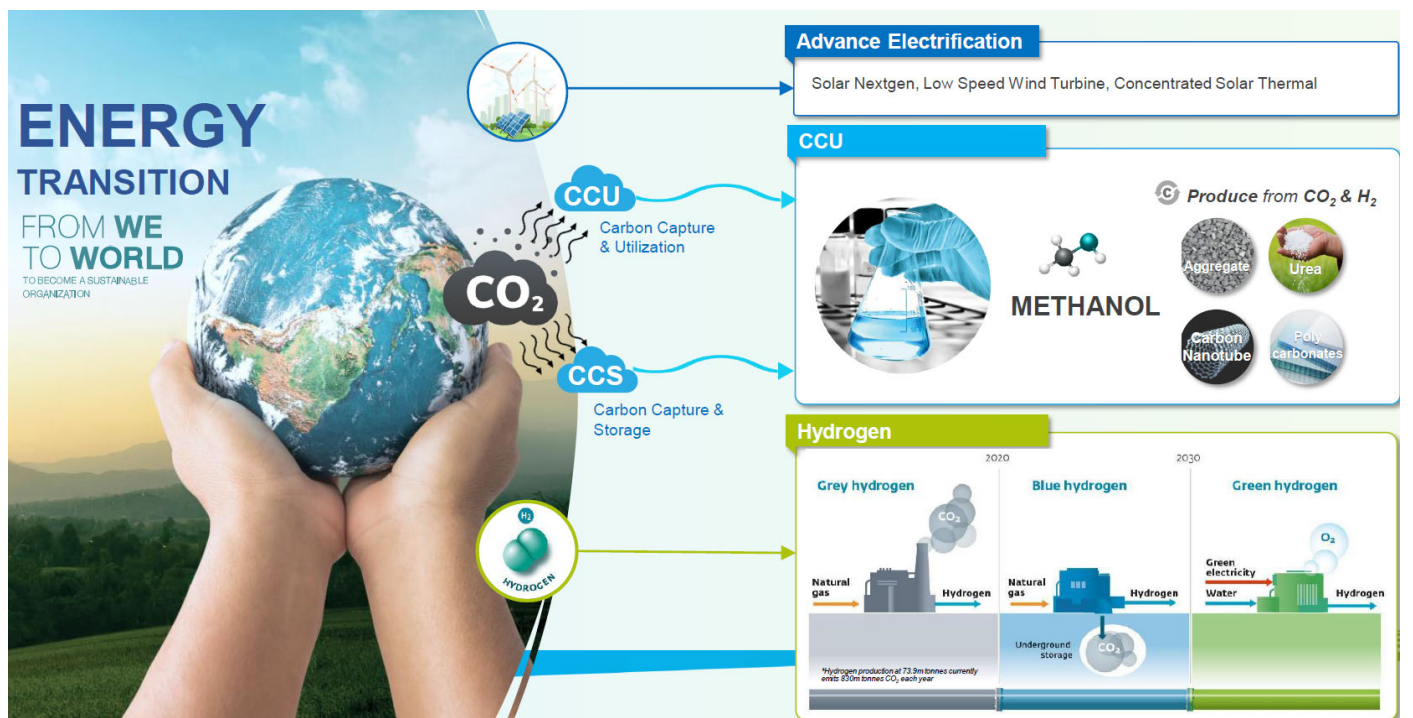
Sources: [International CCS Knowledge Centre](#)

Why is it important to capture CO₂? As the CSS Knowledge Centre states, “CO₂ is captured to prevent large amounts of it from entering the atmosphere. CO₂ is the greatest contributor to global warming, and large-scale CCS is the only technology that can help our planet meet the 2°C climate goals set out in the Paris Agreement. Several global organisations including the International Energy Agency, and the UN International Panel on Climate Change recognise that much of the world cannot meet their emission reduction targets without large-scale CCS. Research affirms that without CCS, the median increase in mitigation cost is 138 per cent.”

CO₂ makes up 74% of global greenhouse gas emissions, according to Climate Watch, with 89% of this CO₂ coming from the use of fossil fuels in power generation, industry and transportation. Each regular power plant is capable of emitting several million tonnes of CO₂ every year. Other industrial processes, such as oil refineries, cement works and metal production, also emit large amounts of CO₂ from each plant. These emissions could be reduced to close to zero by capturing and storing the CO₂.

What is the current status of CCS? According to the Energy Information Administration (EIA), as of 2020, there are 51 large-scale CCS facilities all over the world. Work is also ongoing at smaller, pilot-scale locations to help us learn even more about the important technologies in CCS that are needed to help combat the amount of emissions entering the atmosphere. So far, over 260 million tonnes of human-induced CO₂ have been safely stored, indicating that CCS can make a difference in helping to combat climate change.

Exhibit 7: Energy transition & future energy

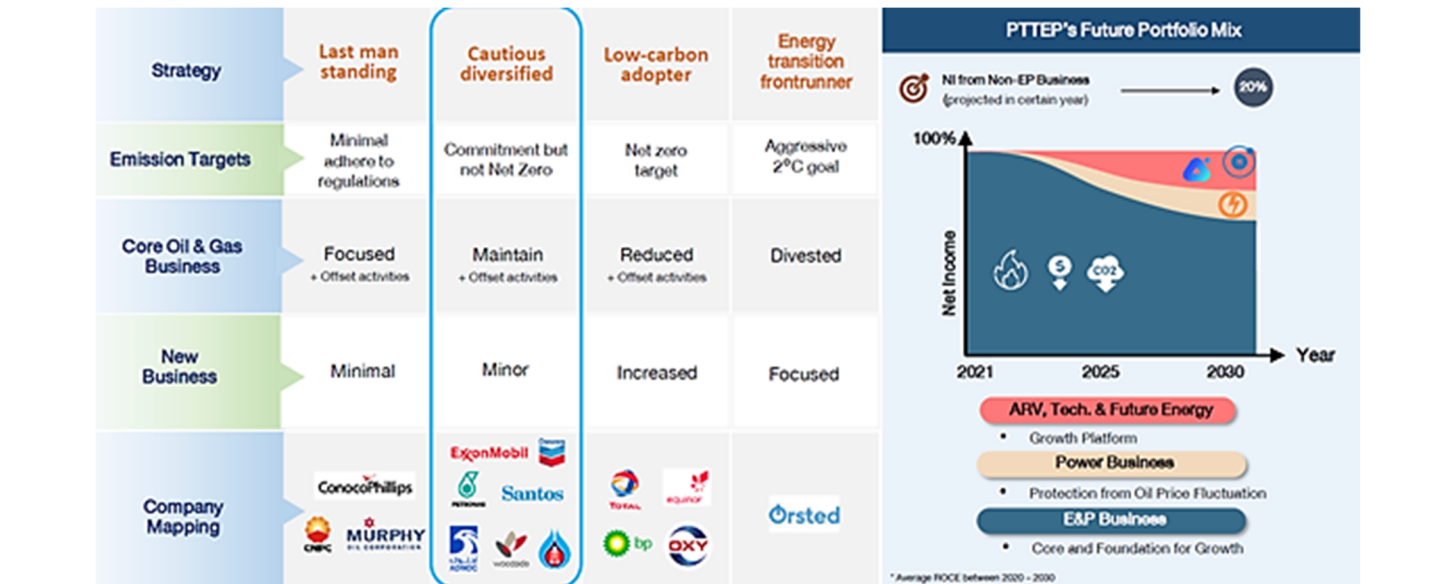


Source: PTTEP

Strategy #2: Growing new platform-based ventures to harness innovation, technology, and utilities

PTTEP positions itself as a “cautious diversified” E&P company with an emissions target commitment but not at the extreme ‘net zero’ level, and will still produce oil & gas with only a small revenue contribution from its new businesses. According to PTTEP, this would place it in the same group with ExxonMobil, Petronas, Woodside, and Abu Dhabi National Oil & Gas (ADNOC).

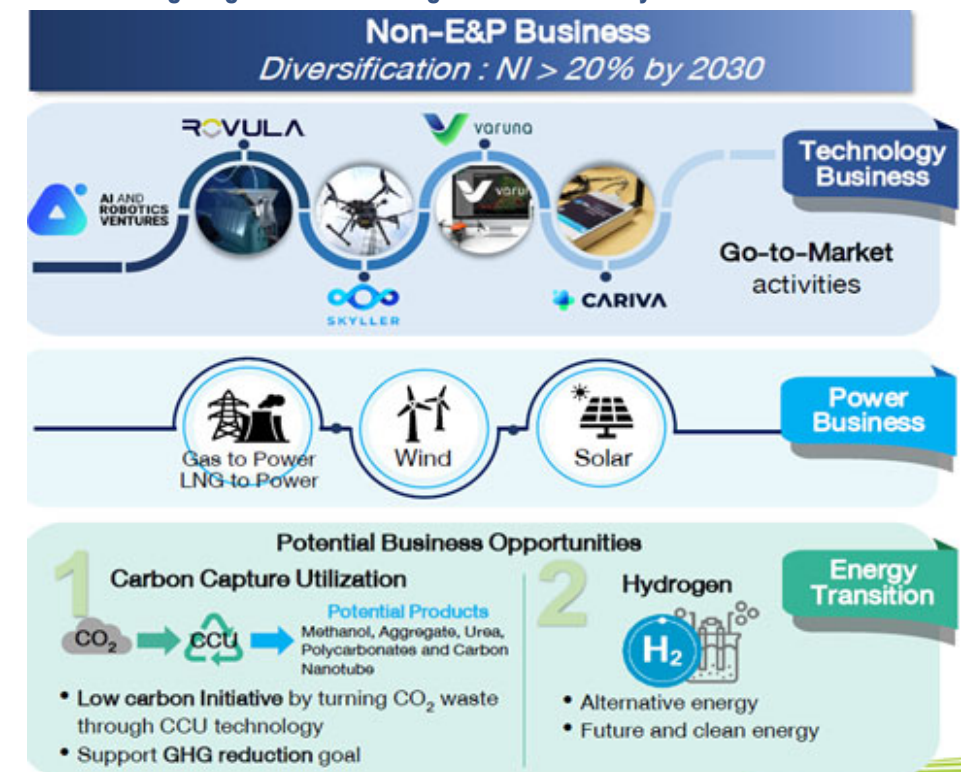
Exhibit 8: Energy transition underway



Source: PTTEP

PTTEP plans to diversify and increase its non-E&P earnings to 20% of its total net profit by 2030, up from zero in 2020. Two non-E&P businesses are planned – technology and future energy under PTTEP’s subsidiary startup ARV and a downstream power business in Vietnam and Myanmar – to create higher value for its oil & gas products via a forward integration strategy.

Exhibit 9: Targeting non-E&P earnings to rise to 20% by 2030

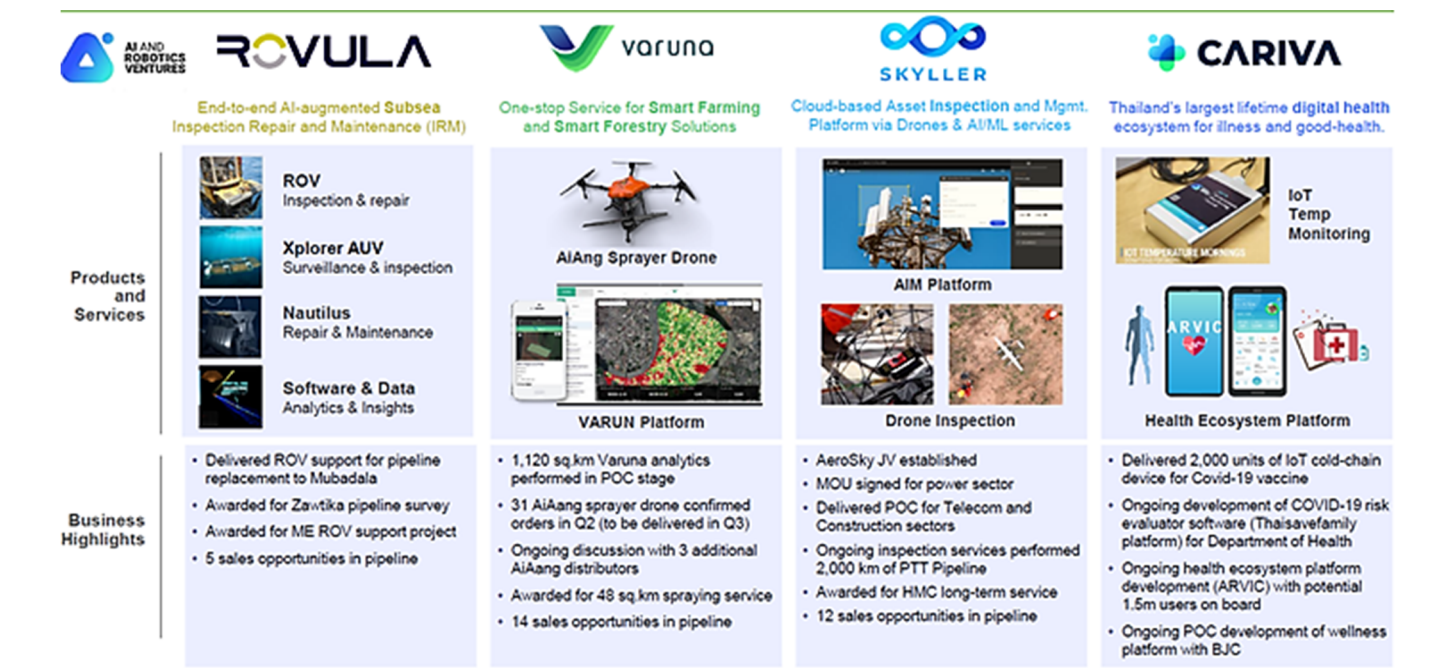


Source: PTTEP

ARV is a potential key growth engine. According to management, ARV is positioned as a profit-centre company focusing on developments in technology, artificial intelligence, and robotics innovations to not only fit into today's fast-changing, highly dynamic industry landscape, but also to grow the business into the 'blue ocean' industry and capitalise on consumer megatrends.

While ARV remains loss-making three years on from its inception, we think it is poised to reach the breakeven points for each business unit, which are classified into four key segments by PTTEP. However, in our view, there are five core business units, and in the past three years PTTEP has already invested around USD15m in ARV, comprising USD12m for Rovula, and USD1m each for Varuna, Skyller, and Cariva. Management expects ARV to reach the financial breakeven point in 2023-25 and plans to potentially spin off ARV after it reaches breakeven.

Exhibit 10: ARV – new technology-driven startup



Source: PTTEP

Business #1: ARV core venture builder with R&D and solution provider using robotics and AI technologies. ARV functions as a centre for developments using in-house R&D for AI, drones, and robotic technologies for commercial applications. ARV employs a 5G technology platform for autonomous aerial applications (drones) and computer vision applications (AI).

ARV generates revenue in three ways, including R&D fees, licensing fees, and dividends and capital gains via venture capital investments.

Business #2: Rovula as an AI-augmented subsea inspection repair and maintenance service. Rovula employs AI and robotics technology for subsea services, including inspection, surveillance, maintenance and repairs, and information analysis. Rovula's strength is that it is safer, faster, and more cost effective than existing diver-based subsea services.

Management expects to see up to 50% cost savings from Rovula's service vs the current diver-based service solution. The potential market size for Rovula is USD100m in Southeast Asia and over USD18b worldwide, according to management.

Business #3: Varuna as a one-stop service for smart farming and forestry using drones and AI technology. Varuna focuses on the application of drones and AI to improve farming and forestry activities using satellites for farm management and yields and crop production forecasts. Currently, PTTEP's Varuna has already served over 0.8m rais of sugar cane farming and aims to further increase the farming area serviced by 3-5x in 2022.

Business #4: Skyller as a cloud-based asset inspection and management service using drones and AI platform technology. Skyller deploys drones and AI technology to inspect and analyse maintenance and repairs and improve the operational efficiency of telecommunications (towers and equipment), oil & gas (pipeline and tanks), power (transmission line and substation inspection), and a number of heavy industries such as petrochemical, refinery, and cement.

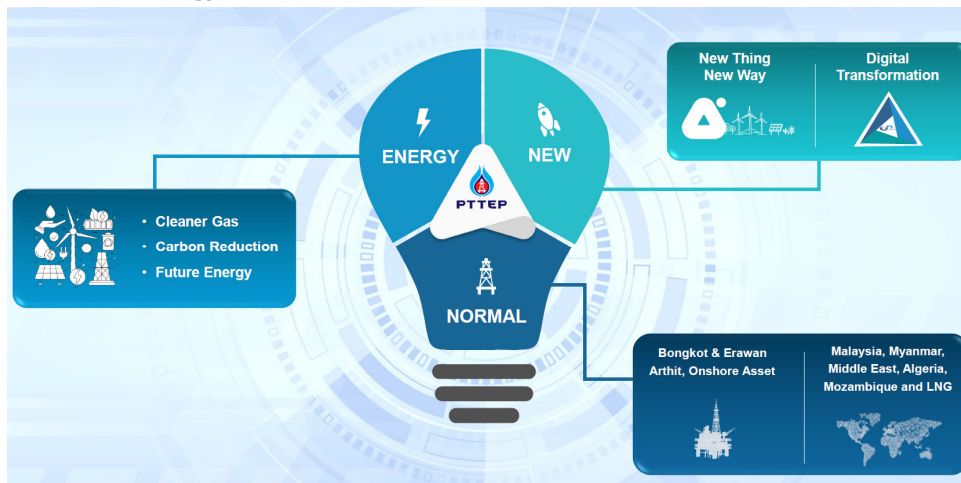
Business #5: Cariva as an innovative lifetime digital information database for health applications in Thailand. Cariva is an ecosystem using medical devices, the internet of things (IoT), AI, and robotic software and hardware to create a healthcare system. The applications include Covid-19 risk evaluator software for the Department of Health and a health ecosystem platform to collect and analyse the data of over 1.5m users.

Strategy #3: Entering into energy transitions and future energy

In preparation for the changes in the energy sector, PTTEP plans to enter into a number of future technologies, including CCS, CCUS and the hydrogen ecosystem.

We believe this strategy is the most ambitious among its three strategies, given the high uncertainty in terms of technological and financial requirements, regulatory feasibility, and the time required from development to commerciality.

Exhibit 11: Energy new normal



Source: PTTEP

Valuation remains attractive on the oil price uptrend

We believe PTTEP's net profit growth momentum is poised to be much stronger in 4Q21 onward, thanks to the high oil price that we project at over USD80/bbl, and which we expect to persist until 2Q22 on higher demand as a heating fuel for the upcoming winter and as an alternative fuel to gas and coal for electricity generation.

As a major producer of both oil and gas in Thailand, PTTEP is a winner of the oil price uptrend, and we think the 4Q21-2022E sales volume growth from higher production levels at its existing fields as well as its new projects overseas should boost its quarterly net profits higher in 4Q21-2Q22.

Financial Statements

PTT Explor & Prod

Profit and Loss (THB m) Year Ending Dec	2019	2020	2021E	2022E	2023E
Revenue	191,053	160,401	218,352	261,837	260,318
Cost of goods sold	(18,946)	(14,793)	(49,178)	(84,961)	(81,826)
Gross profit	172,107	145,607	169,174	176,877	178,493
Other operating income	-	-	-	-	-
Operating costs	(74,681)	(75,004)	(54,588)	(65,459)	(65,080)
Operating EBITDA	97,426	70,603	114,586	111,417	113,413
Depreciation	(25,124)	(26,100)	(28,948)	(31,819)	(34,276)
Goodwill amortisation	0	0	0	0	0
Operating EBIT	72,301	44,503	85,638	79,599	79,137
Net financing costs	(1,235)	(5,987)	(14,000)	(5,640)	(5,640)
Associates	380	1,307	1,307	1,307	1,307
Recurring non-operating income	(5,564)	3,933	2,807	2,807	2,807
Non-recurring items	4,252	(1,021)	0	0	0
Profit before tax	69,754	41,428	74,444	76,766	76,304
Tax	(20,952)	(18,764)	(29,778)	(30,706)	(30,522)
Profit after tax	48,803	22,664	44,667	46,059	45,782
Minority interests	0	0	0	0	0
Preferred dividends	0	0	0	0	0
Other items	-	-	-	-	-
Reported net profit	48,803	22,664	44,667	46,059	45,782
Non-recurring items & goodwill (net)	(4,252)	1,021	0	0	0
Recurring net profit	44,550	23,685	44,667	46,059	45,782
Per share (THB)					
Recurring EPS *	11.22	5.97	11.25	11.60	11.53
Reported EPS	12.29	5.71	11.25	11.60	11.53
DPS	8.25	4.25	6.75	6.96	6.92
Diluted shares (used to calculate per share data)	3,970	3,970	3,970	3,970	3,970
Growth					
Revenue (%)	11.2	(16.0)	36.1	19.9	(0.6)
Operating EBITDA (%)	9.5	(27.5)	62.3	(2.8)	1.8
Operating EBIT (%)	11.1	(38.4)	92.4	(7.1)	(0.6)
Recurring EPS (%)	23.0	(46.8)	88.6	3.1	(0.6)
Reported EPS (%)	34.8	(53.6)	97.1	3.1	(0.6)
Operating performance					
Gross margin inc. depreciation (%)	76.9	74.5	64.2	55.4	55.4
Gross margin of key business (%)	76.9	74.5	64.2	55.4	55.4
Operating EBITDA margin (%)	51.0	44.0	52.5	42.6	43.6
Operating EBIT margin (%)	37.8	27.7	39.2	30.4	30.4
Net margin (%)	23.3	14.8	20.5	17.6	17.6
Effective tax rate (%)	30.0	45.3	40.0	40.0	40.0
Dividend payout on recurring profit (%)	73.5	71.2	60.0	60.0	60.0
Interest cover (X)	54.1	8.1	6.3	14.6	14.5
Inventory days	184.2	248.2	80.9	55.0	62.1
Debtor days	63.4	58.4	40.5	58.4	78.0
Creditor days	143.2	475.6	152.5	46.0	52.0
Operating ROIC (%)	13.5	8.6	15.7	12.0	11.0
ROIC (%)	7.6	5.5	9.3	7.8	7.6
ROE (%)	11.9	6.7	12.3	12.1	11.4
ROA (%)	6.9	4.1	7.9	7.3	7.3
* Pre-exceptional, pre-goodwill and fully diluted					
Revenue by Division (THB m)					
Exploration and production	194,999	155,181	222,543	266,029	264,510
Pipeline	11,439	11,513	11,513	11,513	11,513
Others	2,653	2,875	2,875	2,875	2,875
Inter company eliminations	(18,039)	(9,168)	(18,579)	(18,579)	(18,579)

Sources: PTT Explor & Prod; FSSIA estimates

Financial Statements

PTT Explor & Prod

Cash Flow (THB m) Year Ending Dec	2019	2020	2021E	2022E	2023E
Recurring net profit	44,550	23,685	44,667	46,059	45,782
Depreciation	25,124	26,100	28,948	31,819	34,276
Associates & minorities	-	-	-	-	-
Other non-cash items	35,065	35,065	35,066	35,066	35,066
Change in working capital	34,563	(17,958)	(27,045)	(12,139)	7,152
Cash flow from operations	139,303	66,891	81,636	100,805	122,276
Capex - maintenance	-	-	-	-	-
Capex - new investment	(115,506)	(115,506)	(114,807)	(114,807)	(81,807)
Net acquisitions & disposals	192	176	457	838	838
Other investments (net)	0	1	0	0	0
Cash flow from investing	(115,314)	(115,329)	(114,350)	(113,969)	(80,969)
Dividends paid	(21,655)	(20,986)	(26,800)	(27,636)	(27,469)
Equity finance	0	0	0	0	0
Debt finance	31,659	3,457	4,984	5,000	(20,000)
Other financing cash flows	(52,064)	92,102	(24,288)	13,128	14,805
Cash flow from financing	(42,061)	74,574	(46,104)	(9,508)	(32,664)
Non-recurring cash flows	-	-	-	-	-
Other adjustments	0	0	0	0	0
Net other adjustments	0	0	0	0	0
Movement in cash	(18,072)	26,136	(78,818)	(22,672)	8,643
Free cash flow to firm (FCFF)	31,279.40	(40,482.25)	(25,923.41)	(6,373.71)	48,098.11
Free cash flow to equity (FCFE)	3,582.99	47,121.57	(52,018.40)	4,964.02	36,112.84

Per share (THB)

FCFF per share	7.88	(10.20)	(6.53)	(1.61)	12.12
FCFE per share	0.90	11.87	(13.10)	1.25	9.10
Recurring cash flow per share	26.38	21.37	27.38	28.45	29.00

Balance Sheet (THB m) Year Ending Dec	2019	2020	2021E	2022E	2023E
Tangible fixed assets (gross)	1,061,295	1,100,534	1,215,341	1,330,148	1,411,955
Less: Accumulated depreciation	(739,794)	(805,044)	(877,415)	(956,961)	(1,042,652)
Tangible fixed assets (net)	321,501	295,491	337,927	373,187	369,303
Intangible fixed assets (net)	0	0	0	0	0
Long-term financial assets	-	-	-	-	-
Invest. in associates & subsidiaries	13,675	13,523	13,992	14,461	14,929
Cash & equivalents	85,122	111,257	32,439	9,767	18,411
A/C receivable	27,599	23,752	24,657	59,135	52,064
Inventories	9,961	10,156	11,639	13,957	13,876
Other current assets	19,443	7,551	7,551	7,551	7,551
Current assets	142,125	152,716	76,286	90,410	91,901
Other assets	192,163	213,908	238,677	204,189	194,359
Total assets	669,464	675,637	666,881	682,247	670,493
Common equity	357,059	354,411	372,280	390,703	409,016
Minorities etc.	0	0	0	0	0
Total shareholders' equity	357,059	354,411	372,280	390,703	409,016
Long term debt	81,559	85,016	90,000	95,000	75,000
Other long-term liabilities	169,005	179,953	171,865	163,777	155,689
Long-term liabilities	250,564	264,969	261,865	258,777	230,689
A/C payable	7,194	31,356	9,746	11,687	11,620
Short term debt	13,208	13,208	13,208	13,208	13,208
Other current liabilities	41,440	11,693	9,782	7,871	5,960
Current liabilities	61,841	56,257	32,736	32,766	30,788
Total liabilities and shareholders' equity	669,464	675,637	666,881	682,247	670,493
Net working capital	8,369	(1,591)	24,318	61,084	55,910
Invested capital	535,709	521,330	614,913	652,921	634,502

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

Per share (THB)

Book value per share	89.94	89.27	93.77	98.41	103.03
Tangible book value per share	89.94	89.27	93.77	98.41	103.03

Financial strength

Net debt/equity (%)	2.7	(3.7)	19.0	25.2	17.1
Net debt/total assets (%)	1.4	(1.9)	10.6	14.4	10.4
Current ratio (x)	2.3	2.7	2.3	2.8	3.0
CF interest cover (x)	97.5	28.2	5.5	22.2	21.9

Valuation	2019	2020	2021E	2022E	2023E
Recurring P/E (x) *	11.0	20.7	11.0	10.6	10.7
Recurring P/E @ target price (x) *	14.1	26.5	14.0	13.6	13.7
Reported P/E (x)	10.0	21.6	11.0	10.6	10.7
Dividend yield (%)	6.7	3.4	5.5	5.6	5.6
Price/book (x)	1.4	1.4	1.3	1.3	1.2
Price/tangible book (x)	1.4	1.4	1.3	1.3	1.2
EV/EBITDA (x) **	5.1	6.8	4.9	5.3	4.9
EV/EBITDA @ target price (x) **	6.5	8.7	6.1	6.5	6.1
EV/invested capital (x)	0.9	0.9	0.9	0.9	0.9

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

Sources: PTT Explor & Prod; FSSIA estimates

Corporate Governance report of Thai listed companies 2020

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

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

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

Description

Score Range

Excellent

90-100

Very Good

80-89

Good

70-79

Disclaimer:

The disclosure of the survey results of the Thai Institute of Directors Association ("IOD") regarding corporate governance is made pursuant to the policy of the Office of the Securities and Exchange Commission. The survey of the IOD is based on the information of a company listed on the Stock Exchange of Thailand and the Market for Alternative Investment disclosed to the public and able to be accessed by a general public investor. The result, therefore, is from the perspective of a third party. It is not an evaluation of operation and is not based on inside information.

The survey result is as of the date appearing in the Corporate Governance Report of Thai Listed Companies. As a result, the survey results may be changed after that date. FSS International Investment Advisory Company Limited does not confirm nor certify the accuracy of such survey results.

* CGR scoring should be considered with news regarding wrong doing of the company or director or executive of the company such unfair practice on securities trading, fraud, and corruption SEC imposed a civil sanction against insider trading of director and executive; ** delisted

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

Anti-corruption Progress Indicator 2020

CERTIFIED										
2S	ADVANC	AI	AIE	AIRA	AKP	AMA	AMANAHA	AP	AQUA	ARROW
ASK	ASP	AYUD	B	BAFS	BANPU	BAY	BBL	BCH	BCP	BCPG
BGC	BGRIM	BJCHI	BKI	BLA	BPP	BROOK	BRR	BSBM	BTS	BWG
CEN	CENTEL	CFRESH	CGH	CHEWA	CHOTI	CHOW	CIG	CIMBT	CM	CMC
COL	COM7	CPALL	CPF	CPI	CPN	CSC	DCC	DELTA	DEMCO	DIMET
DRT	DTAC	DTC	EASTW	ECL	EGCO	FE	FNS	FPI	FPT	FSS
FTE	GBX	GC	GCAP	GEL	GFPT	GGC	GJS	GPSC	GSTEEL	GUNKUL
HANA	HARN	HMPRO	HTC	ICC	ICHI	IFS	INET	INSURE	INTUCH	IRPC
ITEL	IVL	K	KASET	KBANK	KBS	KCAR	KCE	KGI	KKP	KSL
KTB	KTC	KWC	L&E	LANNA	LHFG	LHK	LPN	LRH	M	MAKRO
MALEE	MBAX	MBK	MBKET	MC	MCOT	MFC	MFEC	MINT	MONO	MOONG
MPG	MSC	MTC	MTI	NBC	NEP	NINE	NKI	NMG	NNCL	NSI
NWR	OCC	OCEAN	OGC	ORI	PAP	PATO	PB	PCSGH	PDG	PDI
PDJ	PE	PG	PHOL	PL	PLANB	PLANET	PLAT	PM	PPP	PPPM
PPS	PREB	PRG	PRINC	PRM	PSH	PSL	PSTC	PT	PTG	PTT
PTTEP	PTTGC	PYLON	Q-CON	QH	QLT	QTC	RATCH	RML	RWI	S & J
SABINA	SAT	SC	SCB	SCC	SCCC	SCG	SCN	SEAOIL	SE-ED	SELIC
SENA	SGP	SIRI	SITHAI	SMIT	SMK	SMPC	SNC	SNP	SORKON	SPACK
SPC	SPI	SPRC	SRICHA	SSF	SSSC	SST	STA	SUSCO	SVI	SYNTEC
TAE	TAKUNI	TASCO	TBSP	TCAP	TCMC	TFG	TFI	TFMAMA	THANI	THCOM
THIP	THRE	THREL	TIP	TIPCO	TISCO	TKT	TTB	TMD	TMILL	TMT
TNITY	TNL	TNP	TNR	TOG	TOP	TPA	TPCORP	TPP	TRU	TSC
TSTH	TTCL	TU	TVD	TVI	TVO	TWPC	U	UBIS	UEC	UKEM
UOBKH	UWC	VGI	VIH	VNT	WACOAL	WHA	WHAUP	WICE	WIJK	XO
ZEN	TRUE									

DECLARED										
7UP	ABICO	AF	ALT	AMARIN	AMATA	AMATAV	ANAN	APURE	B52	BKD
BM	BROCK	BUI	CHO	CI	COTTO	DDD	EA	EFORL	EP	ERW
ESTAR	ETE	EVER	FSMART	GPI	ILINK	IRC	J	JKN	JMART	JMT
JSP	JTS	KWG	LDC	MAJOR	META	NCL	NOBLE	NOK	PK	PLE
ROJNA	SAAM	SAPPE	SCI	SE	SHANG	SINGER	SKR	SPALI	SSP	STANLY
SUPER	SYNEX	THAI	TKS	TOPP	TRITN	TTA	UPF	UV	WIN	ZIGA

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

Disclaimer:

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

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

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

GENERAL DISCLAIMER

ANALYST(S) CERTIFICATION

Suwat Sinsadok FSS International Investment Advisory Securities Co., Ltd

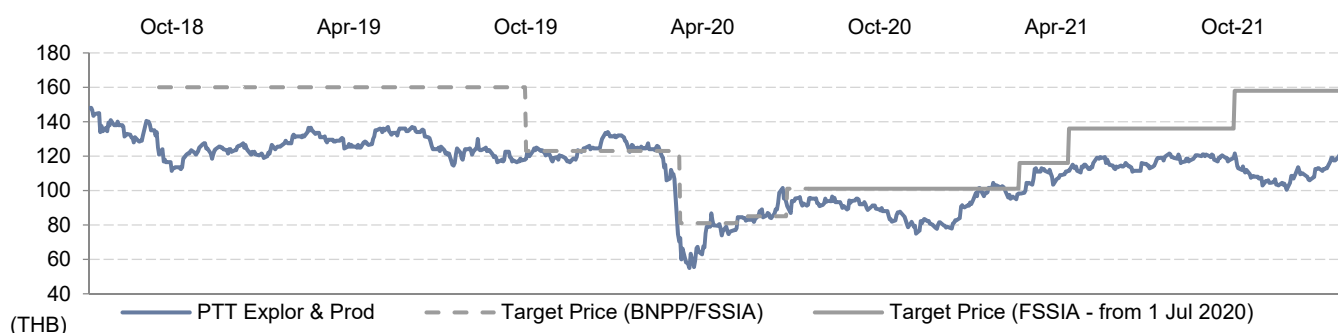
The individual(s) identified above certify(ies) that (i) all views expressed in this report accurately reflect the personal view of the analyst(s) with regard to any and all of the subject securities, companies or issuers mentioned in this report; and (ii) no part of the compensation of the analyst(s)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

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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
14-Dec-2018	BUY	160.00	30-Apr-2020	BUY	85.00	29-Jan-2021	BUY	116.00
29-Oct-2019	HOLD	123.00	12-Jun-2020	BUY	101.00	11-Feb-2021	BUY	136.00
11-Mar-2020	HOLD	81.00	12-Jun-2020	BUY	101.00	05-Jul-2021	BUY	158.00
26-Mar-2020	BUY	81.00	30-Dec-2020	BUY	116.00			

Suwat Sinsadok started covering this stock from 09-Oct-2018

Price and TP are in local currency

Source: FSSIA estimates

Company	Ticker	Price	Rating	Valuation & Risks
PTT Explor & Prod	PTTEP TB	THB 123.50	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.

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 Finasia 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 Finasia Syrus Securities Public Company Limited, which is the parent company of FSSIA.

All share prices are as at market close on 14-Oct-2021 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.