Energy – oil & gas

SET ENERG index	Close: 10/10/2024	19,899.71	+130.53 / +0.66%	Bt8,965mn
Bloomberg ticker:	SETENERG			

A Subsidiary of SCBX Group

Stay Neutral amidst upside risk on oil price

We are Neutral on energy (oil & gas) despite a near-term catalyst from oil price, driven up by rising geopolitical tension. Brent has risen 7% over the past two weeks on concerns an escalation of the conflict could lead to supply disruption. SETENERG inched up only 1% in the same period but is still down 4% YTD vs. the SET's +3%. We believe investor confidence on sector earnings remains low, especially for oil refiners. We are selective on our stock picks, choosing those that still have share price catalysts in the near term with attractive valuation and dividend yield. Top picks are BCP, PTTEP and PTT.

Oil price sparked by intense geopolitics. Global oil prices are on the rise again, entering 4Q24 with a jump of >10% before cooling off after a few days when China refrained from adding new stimulus measures and more oil supply returned to the market after a brief disruption. Oil price was weaker in 9M24 than expected and led us to revise down our Brent price assumption for 2024F from US$85/bbl to US$82, the same level as in 2023. (Bloomberg consensus is US$81.4/bbl). We view that higher oil price could delay an interest rate cut due to inflation concerns and also hurt demand, which could lead oil price to fall back to US$80± on more production and slower demand.

GRM disappoints in 3Q24, but expected to recover in 4Q24. Average Singapore GRM in 3Q24 disappointed, falling a sharp 62% YoY to only US$3.58/bbl, though still +3% QoQ. This reflects slowing global economic activity and new refineries coming on stream this year, especially in the Middle East. Lower crude oil premium in 3Q24 at US$1.67/bbl±, vs. US$1.9 in 2Q24 will reduce crude cost pressure for Thai oil refiners in the quarter. We expect seasonal demand for middle distillates (diesel and jet fuel) to enhance market GRM in 4Q24, with less impact from China's export quota.

Oil marketing hurt by negative volume growth. Retail oil marketing will continue to face two key challenges: slower demand and pressure on marketing margin, especially for diesel, due to the price cap and rising oil price. The business will have to depend more heavily on non-fuel revenue, which normally provides a wider EBITDA margin but much lower revenue.

3Q24F earnings outlook. We expect most oil and gas companies to report weaker profit QoQ in 3Q24F, particularly oil refiners, as GRM remained weak and the move down in oil price likely brought inventory losses. Lower profit at PTTEP, both YoY and QoQ, will also eat into parent PTT's earnings in 3Q24F as the E&P business accounts for >50% of the parent's total operating income.

Risk factors. An economic slowdown would erode demand for energy and petrochemical products while oil price volatility may cause stock losses. Other risks are asset impairment and regulatory changes on GHG emissions and government intervention in the energy business. Key ESG risk factors are the environmental impact and how it adapts to the transition to clean energy.

Valuation summary – Energy

	Rating	Price (Bt)	TP (Bt)	ETR (%)	P/E (x) 24F	P/E (x) 25F	P/BV (x) 24F	P/BV (x) 25F
BCP	Outperform	36.8	46.0	30.6	5.6	4.0	0.6	0.6
BSRC	Underperform	8.1	7.3	(7.4)	11.6	8.2	1.0	0.9
IRPC	Neutral	1.7	1.7	3.6	26.6	13.2	0.4	0.4
OR	Outperform	16.7	24.0	46.6	17.3	14.4	1.7	1.6
PTT	Outperform	33.5	41.0	28.4	8.3	8.1	0.8	0.8
PTTEP	Outperform	134.0	172.0	35.4	6.6	6.8	1.0	0.9
SPRC	Neutral	7.2	8.5	24.5	6.9	8.2	0.8	0.7
TOP	Outperform	50.0	77.0	60.6	5.4	4.8	0.6	0.6
Average					**11.0**	**8.5**	**0.9**	**0.8**

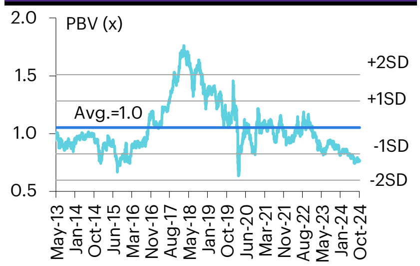
Source: InnovestX Research

Price performance

(%)	Absolute 1M	Absolute 3M	Absolute 12M	Relative to SET 1M	Relative to SET 3M	Relative to SET 12M
BCP	(2.0)	0.7	(7.5)	(5.5)	(8.9)	(8.3)
BSRC	15.7	(4.7)	(22.9)	11.5	(13.7)	(23.5)
IRPC	0.0	1.8	(18.1)	(3.6)	(7.8)	(18.8)
OR	0.0	3.1	(11.6)	(3.6)	(6.7)	(12.4)
PTT	1.5	2.3	0.0	(2.2)	(7.4)	(0.9)
PTTEP	(3.2)	(11.0)	(20.7)	(6.7)	(19.4)	(21.4)
SPRC	5.9	(12.3)	(14.4)	2.1	(20.6)	(15.1)
TOP	(5.2)	(5.7)	0.0	(8.6)	(14.6)	(0.9)

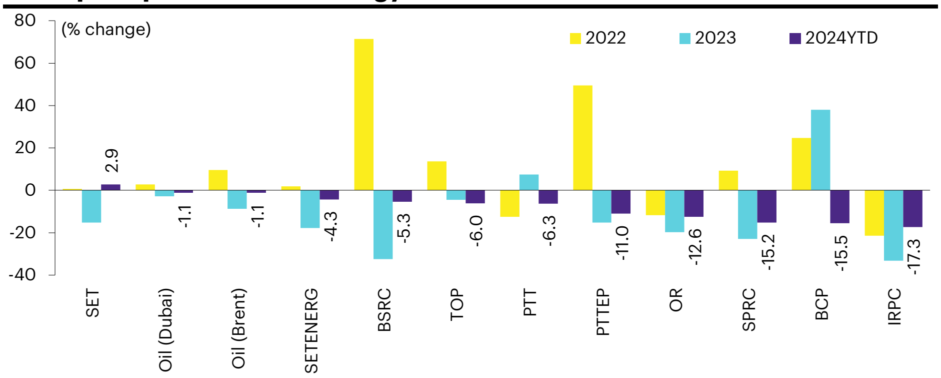
Source: SET and InnovestX Research

PBV band – SETENERG



Source: SET, InnovestX Research

Share price performance – Energy – Oil & Gas



Source: Bloomberg Finance L.P. and InnovestX Research

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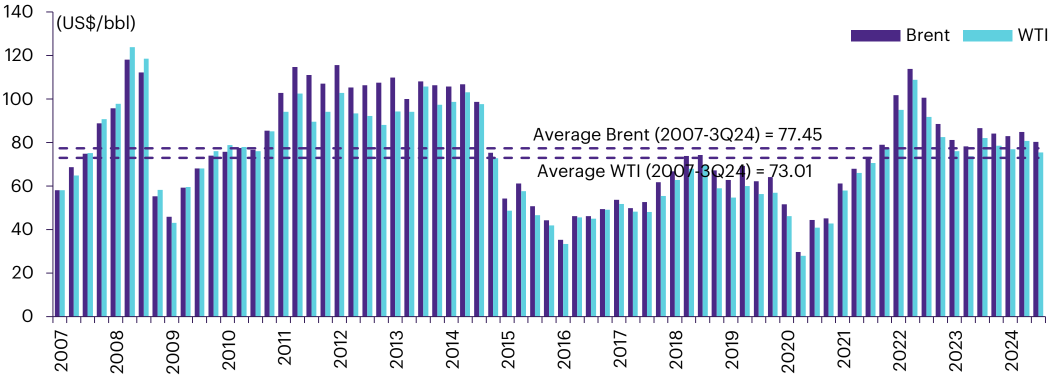
Oil price overview and outlook

Average oil price in 9M24 misses estimates. After oil prices sparked up briefly in April on geopolitical tension, they fell under pressure in 3Q24 and average crude price moved down 20% from Jul to early Sep on weakening demand in China, higher supply from non-OPEC producers, mainly the US, and bearish sentiment on OPEC+'s plan to gradually unwind its production cut of 2.2mb/d from Oct. Average Brent oil price in the quarter fell 5.3% QoQ to US$80.3/bbl, with an average price YTD of US$82.7/bbl, well below INVX estimate (in Apr 2024) of average Brent oil price of US$85/bbl in 2024.

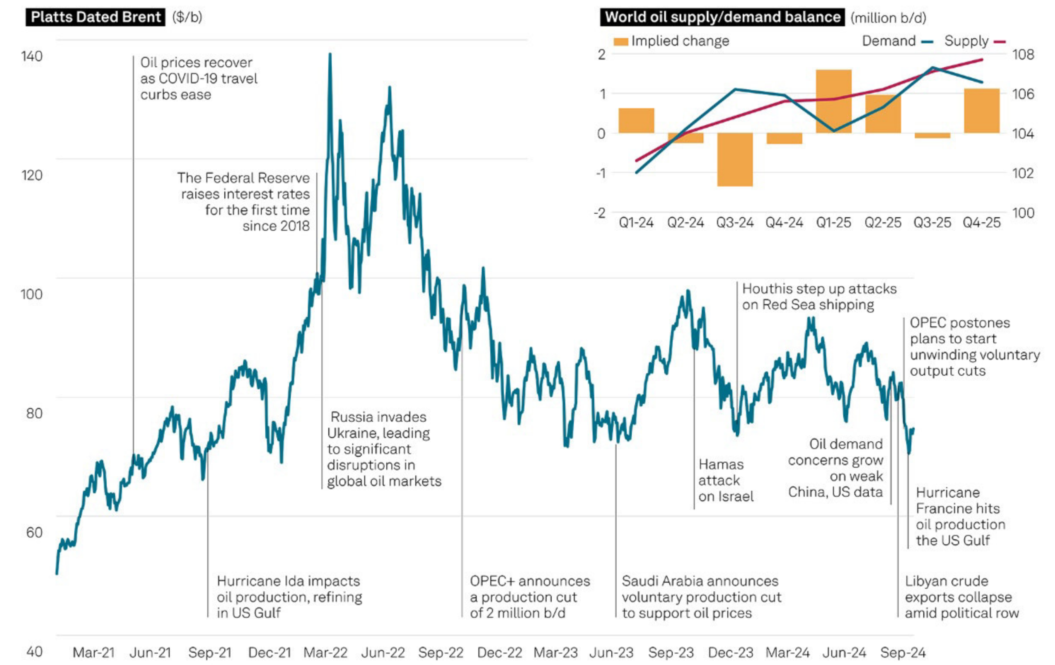
Figure 1: Quarterly average oil prices



Source: Bloomberg Finance L.P. and InnovestX Research

Falling oil price on concerns of a weak global economy and soft economic data from China, the world's biggest oil importer, led OPEC+ to delay for two months a planned increase in output (Oct and Nov) on phasing out the production cuts. The cartel remains committed to gradually phasing out these cuts on a monthly basis starting in Dec. China's economic stimulus package, announced in late Sep, coupled with rising geopolitical tension in the Middle East, has pulled crude oil price up 12% from the low in Sep.

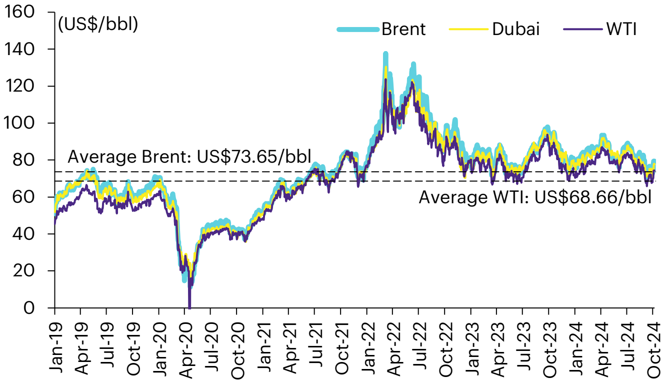
Figure 2: Events affecting oil price



Source: S&P Global Commodity Insights

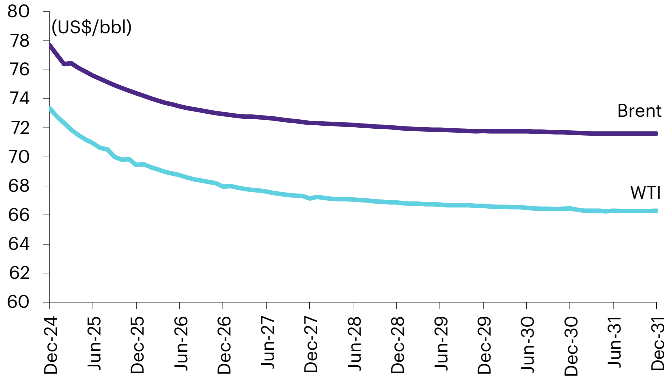
Oil price bounced back after trending down in 3Q24. Global oil price increased more rapidly in early Oct and is now up 12% from the low in early Sep on concerns of supply disruption amid escalating tensions in the Middle East (military tension between Israel and Iran): the latest available data from IEA shows that Iran supplied >3.4mb/d in Aug (~3.3% of total global consumption). A global supply shock could intensify fears of a commodity-driven inflation resurgence, which would damage demand growth. Despite the near-term rally in oil price, the oil price forward curve still suggests a gradual decline back to the long-term average of US$70/bbl± for Brent and US$65/bbl for WTI±. We expect this to be led by a higher oil supply attracted by current high oil price, especially from non-OPEC producers.

Figure 3: Benchmark oil prices



Source: Bloomberg Finance L.P. and InnovestX Research

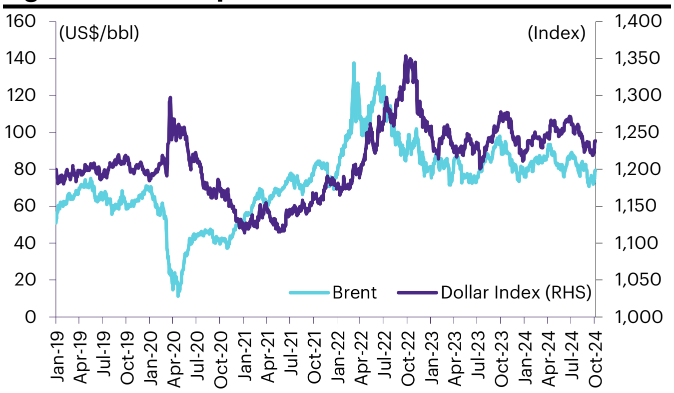
Figure 4: Oil price forward curve



Source: barchart.com and InnovestX Research

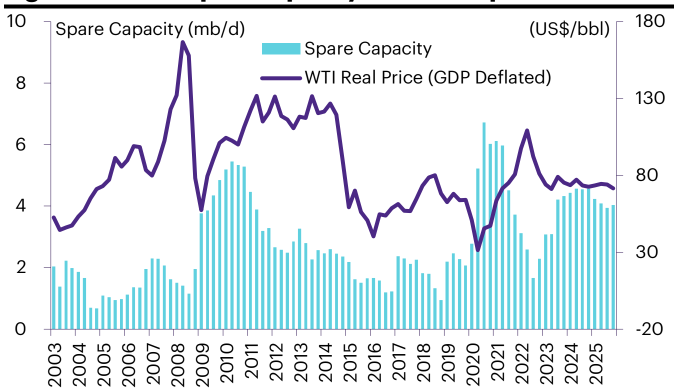
IEA expects added production from non-OPEC+ of 1.5mb/d each in 2024-25 would more than cover demand growth. Combined oil supply from the US, Guyana, Canada and Brazil of 1.1mb/d accounts for three-quarters of total non-OPEC+ supply gains in each of the two years. This implies a lower call for OPEC+ crude of ~760 kb/d in 2024 before rising 1.9mb/d in 2025 if OPEC+ producers taper production. This would lower spare capacity from the current 5.7mb/d, though it will still have the capability of softening the adverse impact on global oil supply brought by widening geopolitical risks in the Middle East and Europe, especially the 3.4mb/d of Iranian supply if production facilities of other OPEC members are not affected.

Figure 5: Brent oil price vs. Dollar Index



Source: Bloomberg Finance L.P. and InnovestX Research

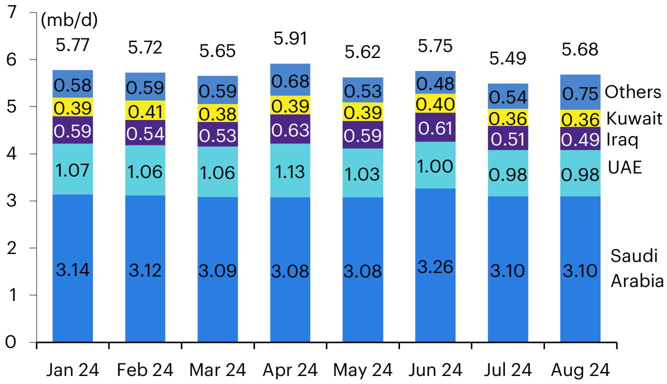
Figure 6: OPEC spare capacity vs. WTI oil price



Source: U.S. EIA, Refinitiv and InnovestX Research

OPEC+ to remain the balancer in the global oil market. We expect OPEC+ producers to continue to work towards their goal of stabilizing the oil market amidst an uncertain demand-supply outlook caused by uprising geopolitical tension and slower demand growth that may keep demand from pacing the supply expansion by non-OPEC producers. This was seen in its recent decision to delay the tapering of a voluntary supply cut reduction of 2.2mb/d in response to the slump in oil price. The cartel would also be a shock absorber if the conflicts in the Middle East worsen and lead to air strikes by Israel on Iran's oil facilities. The OPEC+ spare capacity of 5.7mb/d (as of Aug) remains sufficient to offset production loss from Iran, if any, in our view. Even so, a surge in oil price is inevitable.

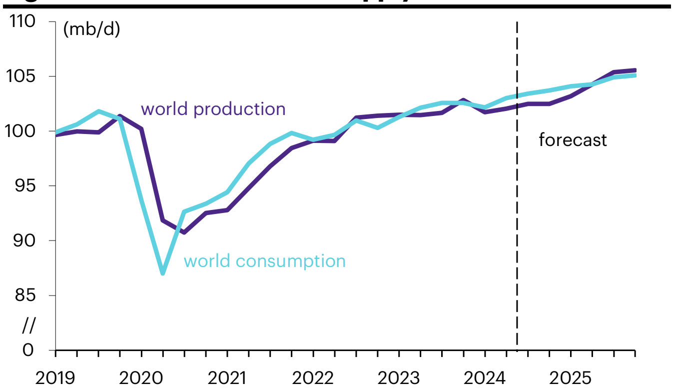
Figure 7: OPEC+ spare capacity



Source: IEA and InnovestX Research

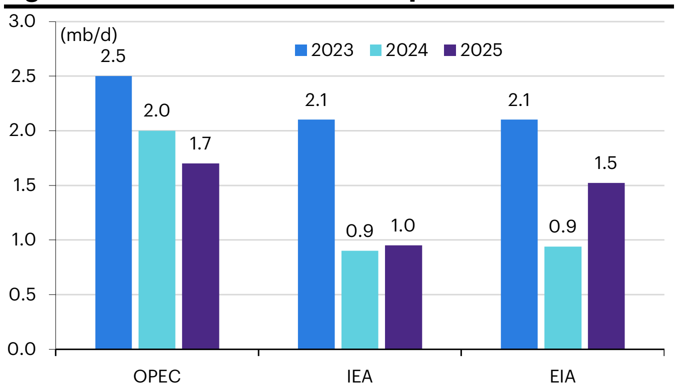
Oil demand growth to decelerate in 2024. The latest oil demand forecasts by three international organizations, OPEC, IEA and EIA, reaffirm a deceleration in global oil demand growth in 2024, on a rapid slowing in China, where consumption contracted YoY for the fourth month in July. The country's oil demand is now expected to increase by only 180kb/d in 2024 on the broad-based economic slowdown and a greater move away from oil in favor of alternative fuels. Surging EV sales are reducing road fuel demand while the development of a vast national high-speed rail network is restricting growth in domestic air travel. *(IEA)* IEA and EIA expect oil demand growth of only 0.9mb/d in 2024, the lowest increase post-COVID. We believe it was this expectation that led OPEC+ to postpone the start of their planned unwinding of extra voluntary production cuts by two months.

Figure 8: Global oil demand-supply outlook



Source: U.S. EIA and InnovestX Research

Figure 9: Oil demand forecast comparison



Source: OPEC, IEA, U.S. EIA and InnovestX Research

Oil demand growth is expected to rise slightly in 2025 with IEA's demand growth forecast the most conservative at only 0.95mb/d. We believe this does not incorporate any positive from China's economic stimulus package announced in late Sep. The positive from its latest stimulus is likely to be less than the 2008 package as the country is shifting its economic growth model to less energy-intensive sectors such as service, and its investment in energy-intensive infrastructure build-out remains very high.

Geopolitical risks back in play. The persistent geopolitical tension in the Middle has heated up after Israel's strike against Hezbollah headquarters that killed the party's secretary-general, Hassan Nasrallah, on Sep 27, which was followed by Iran's missile attack on Israel on Oct 1. This has raised concerns about potential retaliation via attacks on Iran's oil infrastructure, which is the country's economic lifeline. The INVX economist team has divided the Israel-Iran conflict into three scenarios (Figure 10:), with the current situation somewhere between the base scenario (status quo) and the shadow war scenario.

Figure 10: Scenario analysis of geopolitics in the Middle East

Scenario	Expectation	Probability
Shadow war	Israel responds by firing missiles at Iranian military bases, with limited casualties (similar to the April 19 incident), and declares victory, keeping oil prices at **US$80/bbl**, which will allow the US and Thai economies to expand by 2.3% and 2.5%, respectively and inflation at 3.0% and 0.6%, respectively. This could lead the US Fed and the BoT to cut interest rates two more times.	50%
Proxy war	Israel responds by firing missiles at Iranian military bases and key locations, including oil refineries, with the goal of eliminating Iranian military leaders. This will result in an average oil price of **US$85/bbl**, which will cause the US economy to expand by 2.2% and the Thai economic growth to slow down to +2.4%, and inflation to rise to 3.2% and 0.8% respectively. This may keep the interest rate cuts by the US Fed and the BoT to only once in 2024.	40%
All-out war between Israel and Iran	Israel responds by firing missiles at military bases, especially nuclear weapon production plants, with the goal of eliminating and destroying the nuclear weapons development program, leading to an escalation risk (Escalation), which may cause the US economy to slow down to +2%, the Thai economy to slow down to +2.3%, and inflation to rise to 3.4% and 1.0% respectively. This would cause the US Fed and the BoT to maintain interest rates.	10%

Source: Kleinman Center for Energy Policy, EPIC, The Hill, Pew Research Center, DNC Services Corporation

INVX believes that if the situation worsens, it would cause a stagflation-lite situation, where the economy slows down, inflation increases and the central bank can cut interest rates less, or not cut interest rates at all, even though the economy slows. The risk on the supply side caused by the tension between Iran and Israel is difficult to predict and the impact of further escalation of tension on oil price will not be immaterial.

Global energy demand rose to 103.6mb/d in 2Q24 and is likely to slow down in line with the slowing global economy. Meanwhile, global production volume increased to 102.2mb/d, with OPEC production down to 26.5mb/d currently from 28.9mb/d, with Saudi Arabia the key producer maintaining production capacity. The country currently produces 9mb/d, while other producers such as Iran, UAE and Iraq have raised production capacity. Our INVX economist expects the latest development in geopolitical tension in the Middle East to create a war premium of US$3-5/bbl. If worst comes to worst for oil supply disruption, this is likely to prompt Saudi Arabia to increase production capacity to stabilize oil prices in the global market. (More details in *Macro Making Sense* issued Oct 7, 2024.)

Figure 11: Expected impact of potential war (Iran-Israel)

	2023	2024 Shadow War (Base)	2024 Proxy War	2024 Full-Blown War
Probability	-	50%	40%	10%
Brent base case ($/bl.)	82	80	85	90
US GDP (%)	2.5	2.3	2.2	2.0
US Inflation (%)	4.4	3.0	3.2	3.4
US Fed Funds Rate (%)	5.38	4.38	4.63	4.88
Thai GDP (%)	1.9	2.5	2.4	2.3
Thai Inflation (%)	1.26	0.6	0.8	1.0
BOT RP (%)	2.50	2.00	2.25	2.50

Source: OPEC, IEA, US EIA and InnovestX Research

US presidential election could impact oil price. Another event which could determine oil price direction in the medium term is the result of the US presidential election in Nov. A comparison of energy policies for the two candidates running for president is shown in Figure 12:. It suggests that the policies of a candidate who supports fossil fuel production could reduce oil price in the medium given higher supply from the US, which is currently the world's top oil producer. The country's production of crude oil and petroleum liquids, averaging just under 22mb/d, accounted for 22% of the world's production in 2023, with most consumed domestically. The Dallas Federal Reserve Bank's latest energy sector survey (released Sep 25) shows that executives at exploration and production and oil services provider companies are being cautious until they get more clarity on longer-term conditions after the result of the US election, featuring two candidates with vastly different outlooks on the energy sector. *(S&P Global Commodity Insights)*

Figure 12: US election 2024 – comparison of energy policies

Policy Area	Republicans	Democrats
Climate change	Generally skeptical of human-caused climate change	Recognize climate change as a major threat and prioritize addressing it
Fossil fuels	Support expanding fossil fuel production, including oil, gas, and coal, to lower prices	Aim to reduce reliance on fossil fuels and transition to renewable energy
Renewable energy	Support but reduce subsidies for renewables, potentially increasing costs, prioritize traditional energy sources	Strongly support expanding renewable energy sources like wind and solar, aiming to lower long-term costs
Nuclear energy	Favor expanding nuclear energy	Support nuclear energy but with more caution and regulation
Regulations	Advocate deregulation to boost energy production. Roll back environmental regulations to reduce costs for traditional energy	Implement stricter regulations to reduce emissions, which may increase short-term costs, and promote clean energy
International agreements	Mixed view; some support, others oppose and want to withdraw from international climate agreements, focusing on domestic energy independence	Strongly support international efforts to combat climate change, potentially impacting energy prices through global cooperation
Tax incentives	Favor tax incentives for traditional energy industries	Favor tax incentives for renewable energy and energy efficiency
Energy efficiency	Less emphasis on energy efficiency measures	Promote energy efficiency in homes and businesses

Source: Kleinman Center for Energy Policy, EPIC, The Hill, Pew Research Center, DNC Services Corporation

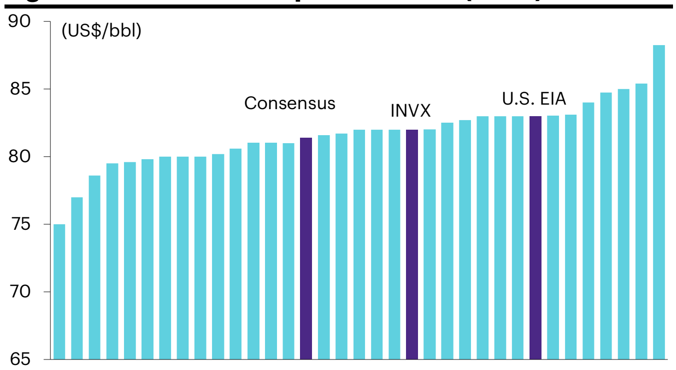
Fine-tuning oil price assumptions. We maintain our conservative stance on oil price for 2024-26 amidst the recent geopolitical tension and revise down our assumptions for 2024 and 2025 as shown in Figure 13:. These remain more conservative than the EIA forecasts but align with market consensus. Brent in 2024 is now expected at US$82/bbl (vs. YTD average of US$82.6), slightly below the US EIA's forecast of US$83, amidst a more balanced demand-supply picture. We maintain our view that oil price will gradually decline back to long-term average and thus expect Brent to soften to US$77/bbl in 2025 to reach the long-term average of US$70/bbl from 2026. This is based on the 5-year average and OPEC's precautionary measures to curb production to stabilize oil price. With a US$1/bbl discount applied to derive Dubai crude price in 2024, we estimate price at US$81/bbl vs. YTD average of US$81.6. We still assign a US$2 discount to Brent oil price assumption to derive Dubai oil price in 2025-26 at US$75/bbl and US$68/bbl, respectively. Key risks for these assumptions are stronger demand than expected and more supply disruption.

Figure 13: INVX oil price assumptions

(US$/bbl)		2024 (YTD)	2024	2025	2026	Long-term
Brent (yearly average)	Previous		85.00	80.00	70.00	70.00
	New	82.59	82.00	77.00	70.00	70.00
	Change		-3.00	-3.00	-	-
Dubai (yearly average)	Previous		83.00	78.00	68.00	68.00
	New	81.55	81.00	75.00	68.00	68.00
	Change		-2.00	-3.00	-	-

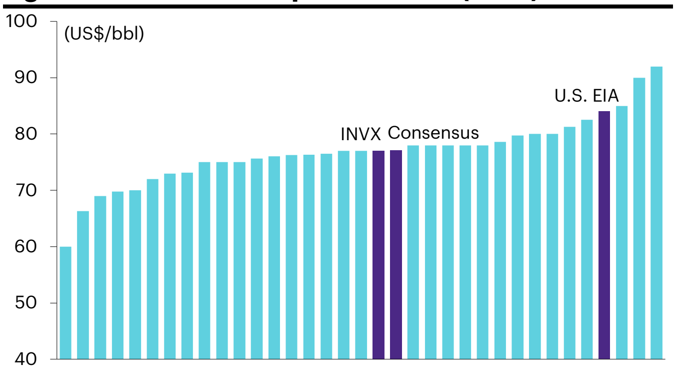
Source: OPEC, IEA, US EIA and InnovestX Research

Figure 14: Consensus oil price forecast (2024) – Brent



Source: EIA, Bloomberg Finance L.P. and InnovestX Research

Figure 15: Consensus oil price forecast (2025) – Brent



Source: EIA, Bloomberg Finance L.P. and InnovestX Research

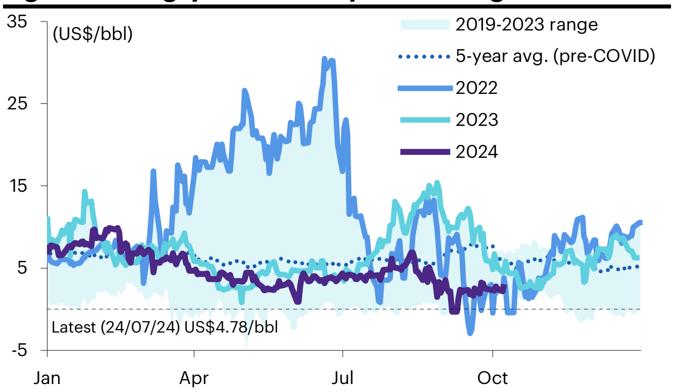
Oil refinery – a rough year so far

Weak global oil demand, especially in key consumer countries the US and China, depressed market GRM in 9M24 as shown in a fall of average Singapore GRM by 35% YoY to US$4.7/bbl, vs. 5-year average of US$5/bbl and pre-COVID 5-year average of US$6.3/bbl. Behind this was a drop in crack spread for middle distillate products (diesel and jet fuel) to US$22/bbl (-29% YoY) and for gasoline to US$14/bbl (-22% YoY).

Market GRM in 3Q24, in particular, was disappointing falling a sharp 62% YoY to only US$3.58/bbl, though still +3% QoQ. A drop in refining margins in recent months reaffirms the negative impact from slowing global economic activity and new refineries coming on stream this year, especially from the Middle East. This was partly offset by refinery run cuts in North Asia. In addition, the hurricane season in the US has not significantly disrupted supply from refineries in the US, with only a few days of outages. A lower crude oil premium at US$1.67/bbl±, vs. US$1.9 in 2Q24 should have reduced pressure on crude cost for Thai oil refiners in the quarter.

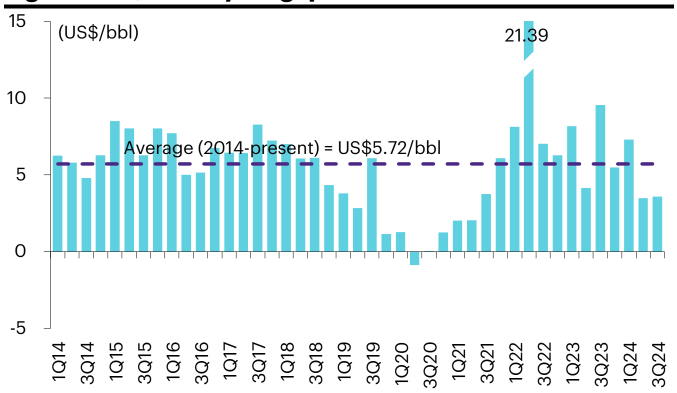
China's gradual shift toward electric vehicles also hurt domestic gasoline demand, which is expected to peak either this year or next on a gradual move towards electric vehicles*. (Vitol)* Diesel consumption also weakened this year due to lower road fuel demand, amid the property crisis and a structural change in transportation as an ongoing shift to LNG-powered trucks reduces diesel used for transportation, slowing overall oil demand growth.

Figure 16: Singapore GRM – hydrocracking



Source: Reuters and InnovestX Research

Figure 17: Quarterly Singapore GRM

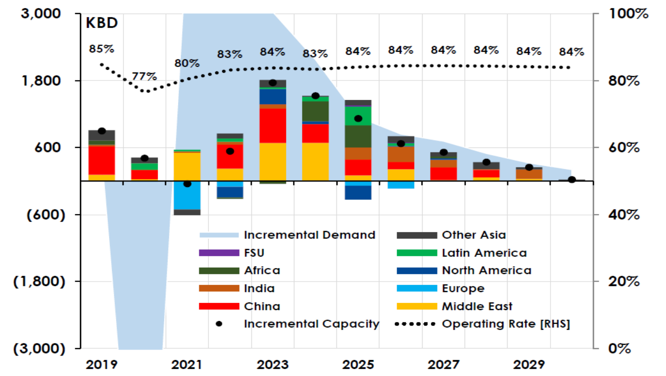


Source: Reuters and InnovestX Research

We expect market GRM to recover marginally in 4Q24, driven by higher crack spread for middle distillates (diesel and jet fuel) on seasonal demand, though expect a fall YoY from US$5.5/bbl in 4Q23. Key to watch is China's 4Q24 fuel export quota of 9mn tons (~17% of total quota for 2024), most being clean refined fuels and 1mn tons in bunkering fuel. The impact from this last batch could be smaller than the first two allotments with combined volume of 45mn tons. It is also smaller than the last batch for 2023 at 12mn tons. There is still upside risk to market GRM stemming from the recovery of domestic demand that could lessen export volume from China into regional markets.

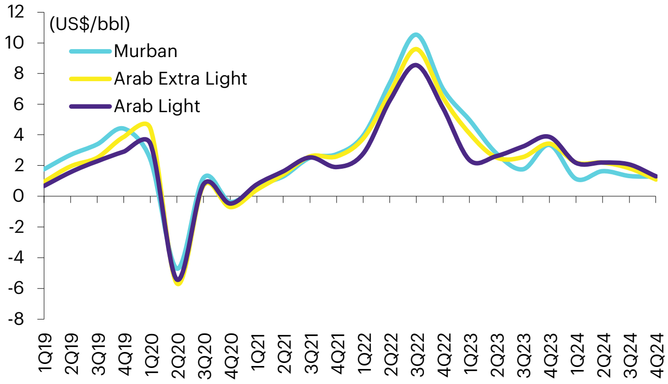
Balanced CDU addition and demand growth in 2025 implies stable GRM. Global CDU (crude distillate unit) effective additions and growth in demand for refined oil products as shown below suggest that new supply of oil products continues to outpace demand growth this year, finally becoming more balanced in 2025. Conservatively, market GRM for 2025 will be stable YoY at US$5/bbl± although we believe there is upside surprise on GRM given that ramping new capacity up is likely to take longer than expected. This includes the world's largest single-train CDU located in Nigeria (Dangote Refinery) which is operating at 60-70% capacity, with full operations anticipated by the end of this year. The Dangote Refinery, which is Africa's largest refinery with a capacity of 650kbd, has faced some operational challenges in 2024. While it was expected to start full operations by mid-Sep 2024, there have been delays, primarily due to hiccups in crude oil supply. Despite these setbacks, the refinery has been conducting test runs and is gradually ramping up its production. The refinery started to produce gasoline in Sep 2024 after several months of commissioning and delays caused by recent crude shortages.

Figure 18: Global CDU addition vs additional demand



Source: TOP, FACTs, Energy Aspect, EIA and IEA

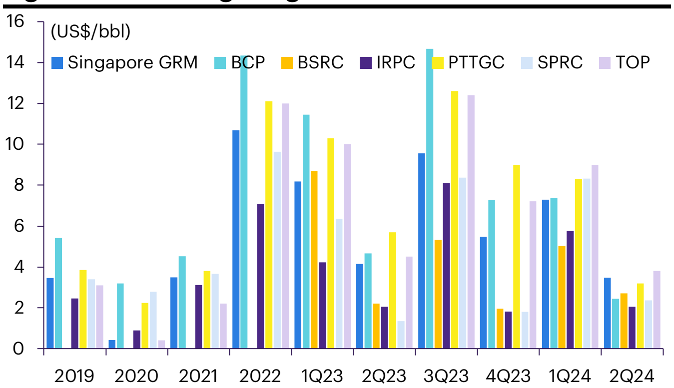
Figure 19: Crude premium



Source: Reuters and InnovestX Research

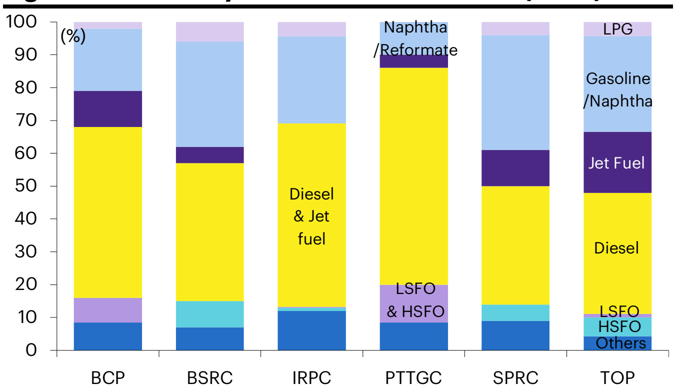
Market GRM for Thai oil refineries continued to align with Singapore GRM in 1H24, with TOP still outperforming peers. BCP's GRM in 2Q24 was slightly off track due to a planned maintenance shutdown. This is expected to improve QoQ in 3Q24 after the refinery resumed normal operations with increased efficiency. BCP is able to maximize crude intake to its >120kbd nameplate capacity without adding loss-making products like high-sulfur fuel oil to its product slate. Its market for high-margin unconverted oil is North Asia, which feeds the base oil to produce synthetic lubricant products. Low-sulfur fuel oil is also marketable for power generation in North Asia and bunker fuel, which complies with IMO regulations. For TOP, a high utilization rate, refinery efficiency and downstream integration to aromatics and lube base oil are pivotal to its strong GRM. Its GRM is expected to improve further from 2025 upon commercial startup of the Clean Fuel Project (CFP), which will increase capacity to 400kbd from 275kbd and flexibility of crude selection to maximize integrated margin. The initial production rate could be at 75-80% utilization, as upgrading units are planned to start up later of the year.

Figure 20: Refining margin of Thai oil refiners



Source: Company data and InnovestX Research

Figure 21: Product yield of Thai oil refineries (2023)

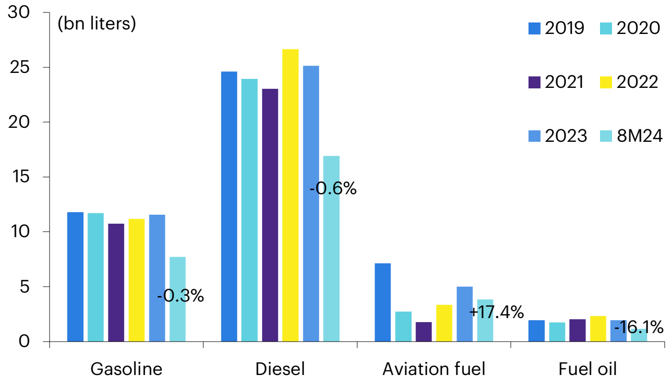


Source: Company data and InnovestX Research

Oil marketing business – challenged by slowing demand

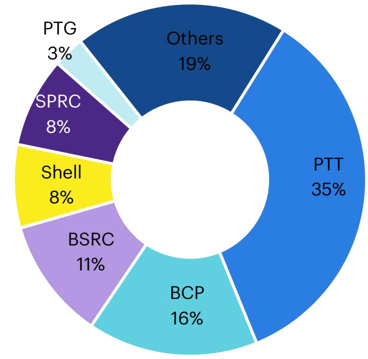
Sales volume edged down in 8M24. Domestic oil sales volume for 8M24 (the latest available data) was stable YoY at 122mn liters/day, supported by higher demand for jet fuel (+18% YoY). Demand for diesel and gasoline edged down 0.6% and 0.3% YoY, respectively, partly reflecting slower economic activities and more electric and hybrid vehicles. Jet fuel consumption remained at 81% of pre-COVID level but continues to improve while consumption of other fuels has returned to normal. We believe this in part reflects recovery of air traffic and in part shows the greater efficiency of new aircraft. As shown in Figure 27:, total aircraft movement in 8M24 was at 80%+ of pre-COVID and higher than in 2023. Tourist numbers in 9M24 grew 30% YoY to 26.1mn, 89% of pre-COVID-19 levels. This data suggests that international tourist numbers in 2024 will be able to increase to reach INVX's projection of 35mn. INVX tourism analyst expects Thai tourism to reach pre-COVID-19 level in 2025 at 40mn international tourists, 14% YoY growth.

Figure 22: Thailand's oil sales volume



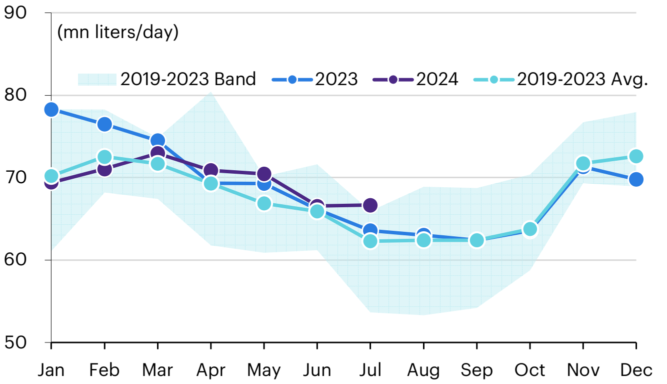
Source: Ministry of Energy and InnovestX Research

Figure 23: Market share of oil sales volume[1/] (8M24)



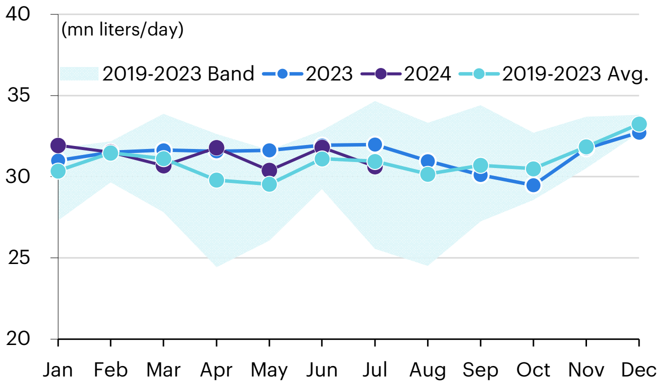
Source: Ministry of Energy and InnovestX Research
Note: 1/ Including diesel and gasoline

Figure 24: Sales volume – diesel



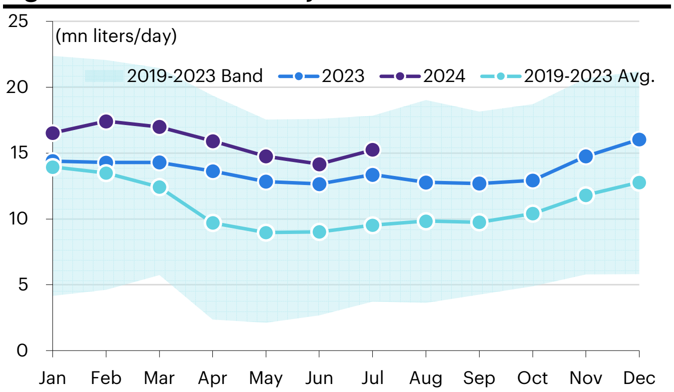
Source: Ministry of Energy and InnovestX Research

Figure 25: Sales volume – gasoline



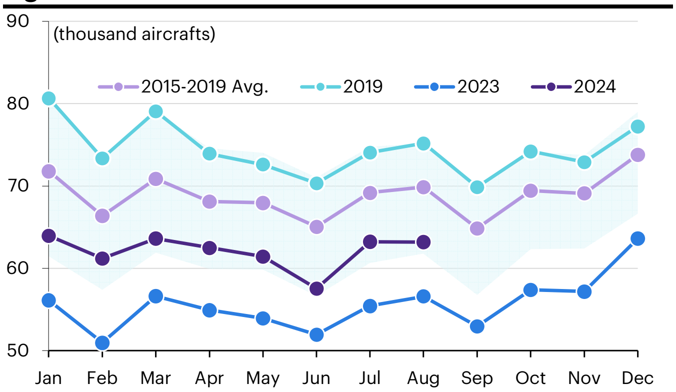
Source: Ministry of Energy and InnovestX Research

Figure 26: Sales volume – jet fuel



Source: Ministry of Energy and InnovestX Research

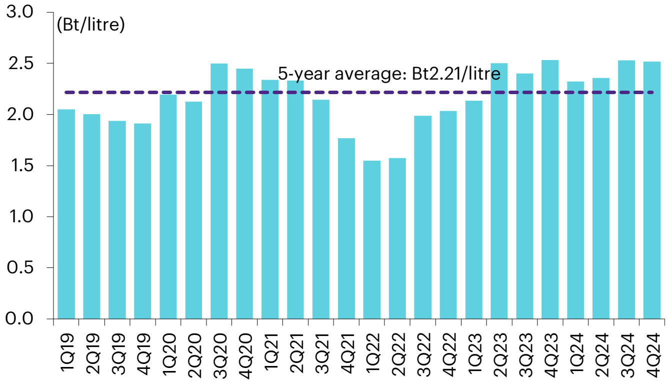
Figure 27: AOT – total aircraft movement



Source: AOT and InnovestX Research

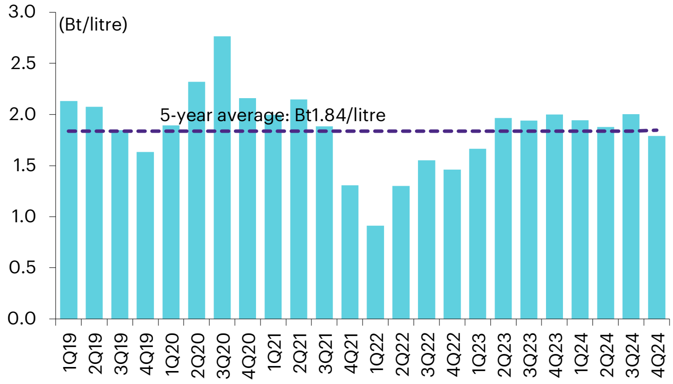
Overall marketing margin remains stable above 5-year average. Oil marketing margin in 3Q24 and thus far in Oct for the retail segment has improved to nearly Bt2.5/liter, based on Ministry of Energy statistics, remaining above the 5-year average of Bt2.2/liter. This is fueled primarily by the margin for gasoline, which is less regulated. Marketing margin for diesel remained under pressure despite a brief increase in 3Q24 due to weakening oil price. The recent oil price spike has hurt diesel's marketing margin, falling to below 5-year average of Bt1.8/liter given government intervention by capping the retail price at Bt33/liter. We expect the persistent geopolitical tension in the Middle East to erode marketing margin in the near term in view of higher global oil prices and government intervention to cap domestic oil price, especially diesel, which accounts for nearly 60% of domestic sales volume for the past three years. The burden on the Oil Fuel will decline gradually: the current retail price structure shows that the contribution to the Fund from diesel turned positive in Aug and is now at Bt1.66/liter compared with a negative contribution of >Bt4/liter in 2Q24.

Figure 28: Oil marketing margin (overall)



Source: Ministry of Energy and InnovestX Research

Figure 29: Marketing margin – diesel



Source: Ministry of Energy and InnovestX Research

3Q24 earnings outlook – hit by weak oil price and GRM

We expect most oil and gas companies to report weaker profit QoQ in 3Q24F, particularly oil refiners, as GRM remained weak and unlikely to offset inventory losses brought by the move down in oil price in the quarter. In general, we expect inventory loss of US$5/bbl± vs. market GRM of US$3.5-3.8/bbl. This will be partly offset by oil price hedging, but the hedging position will be limited on a more dynamic hedging strategy. Lower profit for PTTEP, both YoY and QoQ, will detract from parent PTT's earnings in 3Q24F since the E&P business accounts for >50% of total operating income of the parent.

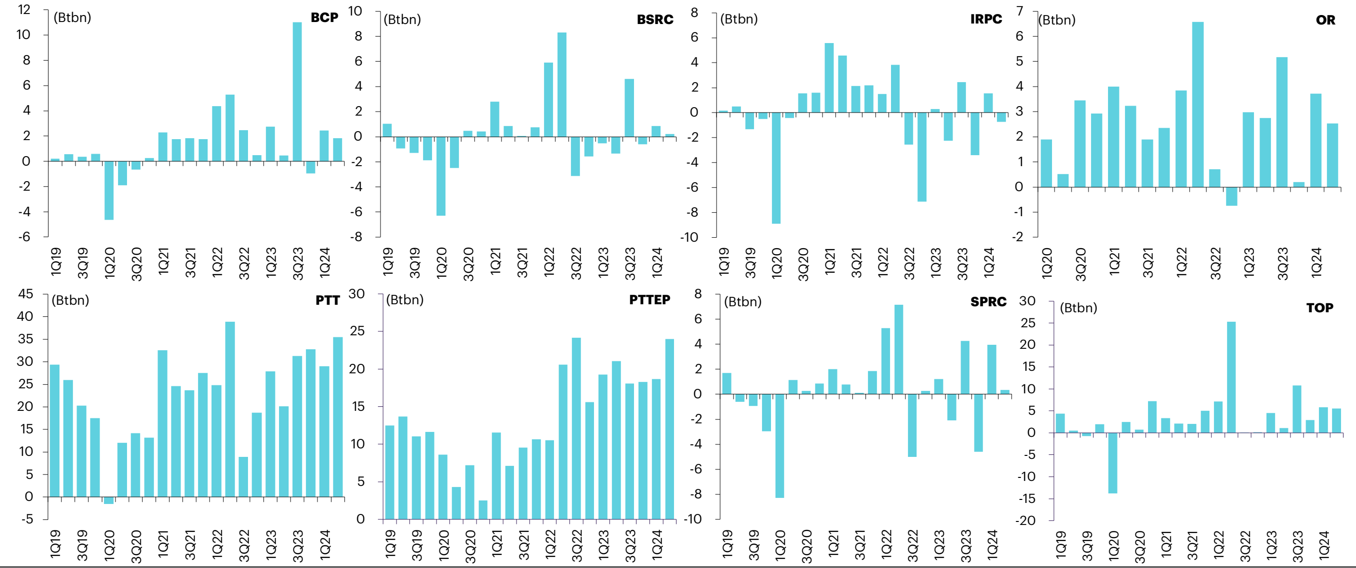
The outlook for 4Q24 is brighter, as oil price is recovering. We expect E&P and integrated oil companies to lead earnings performance in 4Q24. The earnings recovery of oil refineries will be driven largely by higher crack spread for middle distillate products due to seasonal demand. Any positive from China's stimulus is expected to be limited in 4Q24.

Figure 30: Quarterly net profit for oil & gas companies

Company	3Q23	4Q23	1Q24	2Q24	3Q24F		4Q24F	
					YoY	QoQ	YoY	QoQ
BCP	11,011	(977)	2,437	1,824	-	+	+	+
					Profit to improve marginally QoQ in 3Q24 on a planned shutdown in 2Q24, but weak GRM and stock loss could bite into the bottom line.			
BSRC	4,600	(587)	855	221	-	-	+	+
					Earnings to turn into the red in 3Q24 on weak GRM and stock loss, offset partly by oil hedging and FX gains.			
IRPC	2,439	(3,417)	1,545	(732)	-	-	+	+
					Earnings to turn into the red in 3Q24 on weak GRM and stock loss, offset partly by oil hedging FX gains.			
OR	5,170	193	3,723	2,536	-	-	+	+
					Profit to weaken on lower sales volume due to seasonal impact and floods. Lower oil price will cause stock loss.			
PTT	31,297	32,765	28,968	35,469	-	-	+	+
					Profit to weaken on lower profit contribution from E&P, impairment of petrochemical business, weak refinery profit and lower FX gain.			
PTTEP	18,101	18,284	18,683	23,978	-	-	+	+
					Net profit is expected to soften in 3Q24 on lower sales volume due to maintenance and lower oil loading before recovering in 4Q24.			
SPRC	4,245	(4,589)	3,943	346	-	-	+	+
					Earnings to turn into the red in 3Q24 on weak GRM and stock loss, offset partly by lower opex after SPM resumed operation.			
TOP	10,828	2,944	5,863	5,566	-	-	+	+
					Earnings to turn into the red in 3Q24 on weak GRM and stock loss, offset partly by oil hedging and FX gains.			

Source: Company data and InnovestX Research

Figure 31: Quarterly earnings – Oil & Gas

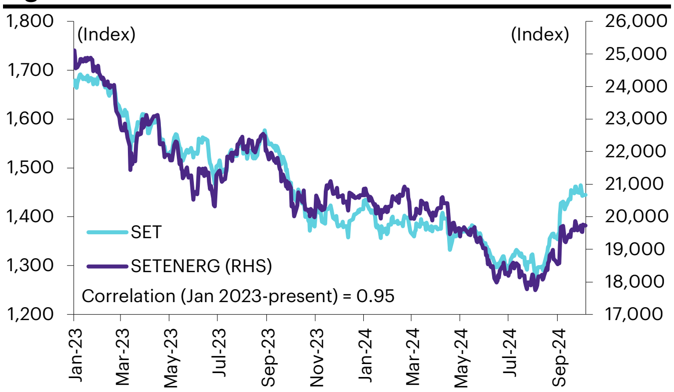


Source: SET, Bloomberg Finance L.P. and InnovestX Research

Sector picks

Share price performance of SETENERG and SET has been highly correlated from 2023 to the present. The Energy sector (-4.3% YTD) has underperformed the SET (+2.9%) as government intervention in local energy prices hurt market sentiment. SETENERG was dragged down by the oil refinery sector, where stock prices dropped an average 12% as market GRM was disappointing, on new supply and lower demand growth than expected in China and the US. Fluctuations in oil prices also caused inventory losses at oil refineries, which were also hit by weak GRM in 2Q24-3Q24.

Figure 32: SET vs. SETENERG



Source: Bloomberg Finance L.P. and InnovestX Research

While we are Neutral on the Energy sector (oil and gas) amidst the uncertain oil price outlook, positioned to be hit by geopolitical risks that could disrupt supply and demand, as well as a possible spillover effect on global economic growth and inflation, we remain selective on our stock picks by focusing on companies with near-term share price catalysts and attractive valuation and dividend yield. The buy list includes BCP (on upside risk from oil price and earnings growth from the acquisition of BSRC and business diversification), PTTEP (on upside from oil price and strong volume growth) and PTT (attractive dividend yield and deep discount to sum-of-the-parts valuation).

Figure 33: Target price revision and rating

Company	Rating		Target price (Bt/share)		
	Previous	New	Previous	New	% change
BCP	Outperform	Outperform	44.00	46.00	+4.5%
BSRC	Underperform	Underperform	6.80	7.30	+7.4%
IRPC	Neutral	Neutral	1.65	1.70	+3.0%
OR	Outperform	Outperform	21.70	24.00	+10.6%
PTT	Outperform	Outperform	45.00	41.00	-8.9%
PTTEP[1/]	Outperform	Outperform	204.00	172.00	-15.7%
SPRC	Neutral	Neutral	8.10	8.50	+4.9%
TOP	Outperform	Outperform	77.00	77.00	+0.0%

Source: InnovestX Research
Note: [1/] TP revision was shown in Company Update report dated Oct 7th, 2024.

BCP: Deeply discounted valuation

Stronger profit in 3Q24F expected. We expect BCP's GRM to improve QoQ, outperforming peers due to full operation of Phra Khanong oil refinery after a planned shutdown in 2Q24. BCP was able to maintain a high crude run in 3Q24 after a 27-day major refinery turnaround in May (its shortest ever refinery shutdown). After this shutdown, the maintenance cycle will be extended to four years vs. 2-3 years now. Synergy with BSRC, which will maximize gasoline production to accommodate BCP's oil retail outlets, will optimize overall GRM for its group. We also expect better contribution from the E&P segment on higher production at Statfjord operated by Equinor (with 28% working interest) whose operations dipped QoQ due to a planned maintenance shutdown. We also see limited downside risk from impairments on this asset.

Stronger gas price QoQ in 3Q24 in Europe supports OKEA. The 3Q24 average natural gas price in Europe was up 12% QoQ to €35.62/MWh (~US$11.4/mmbtu) as EU countries replenished gas supplies ahead of winter. This boosts OKEA's gas sales to the UK, which is its market. This will, however, be partly offset by the downward trend of oil price in 3Q24.

Valuation at deep discount to peers. BCP is trading at EV/EBITDA of 3.0x (2025F) on a consolidated basis, a deep discount to 10.1x for regional peers. The market seems overly concerned about the government's intervention in capping domestic oil price, as well as the potential for asset impairment of its E&P business. The current share price, net of other listed companies, implies trailing EV/EBITDA of merely 2.4x for refinery and marketing businesses.

(Risk factors in Figure 37:)

Figure 34: Forecasts and valuation – BCP

Year to 31 Dec	Unit	2022	2023	2024F	2025F	2026F
Revenue	(Btmn)	312,202	374,542	552,970	538,152	476,354
EBITDA	(Btmn)	47,735	39,107	47,852	52,938	49,845
Core profit	(Btmn)	18,513	12,655	9,066	12,626	12,793
Reported profit	(Btmn)	12,575	13,233	11,130	12,626	12,793
Core EPS	(Bt)	13.45	9.19	6.58	9.17	9.29
DPS	(Bt)	2.25	2.00	2.00	2.25	2.50
P/E, core	(x)	2.7	4.0	5.6	4.0	4.0
EPS growth, core	(%)	99.1	(31.6)	(28.4)	39.3	1.3
P/BV, core	(x)	0.8	0.7	0.6	0.6	0.5
ROE	(%)	24.2	13.8	8.6	10.7	9.8
Dividend yield	(%)	6.1	5.4	5.4	6.1	6.8
EV/EBITDA	(x)	2.0	3.9	3.6	3.0	2.3

Source: InnovestX Research

PTTEP: Upside from oil price increase

Hedging play on oil price rise. Amidst uncertainty in the oil industry, PTTEP is the hedging play for prolonged and intense geopolitical tension in the Middle East. Share price has risen more slowly than oil price, despite the high 69% correlation between stock price and oil price (Jan 2023 to present). We believe high oil prices in the short term will remain an important stock price catalyst.

4Q24 volume up QoQ but offset by lower ASP. We estimate a 7-9% QoQ rise in PTTEP's sales volume in 4Q24 to 520-530kBOED from higher oil loading at operating projects in Malaysia and Algeria as well as a full quarter production from fields in the Gulf of Thailand after maintenance shutdowns in 3Q24. This implies full-year sales volume of 499kBOE vs. guidance of 501kBOED and INVX assumption of 490kBOED. We believe there remains some upside to our current forecast.

Solid earnings and strong balance sheet. Operating results and balance sheet remain excellent. We expect strong 2024 earnings, driven by higher sales volume and strong oil price. PTTEP's unit cost in 2024 will remain manageable at <US$30/BOE, in line with 2024 guidance. This will provide an EBITDA margin of >75% in 2024. We expect net D/E at <0.2x in 2024-26. Strong balance sheet and cash flow enables the company to maintain dividend payments that offer yield of 6.8-7.1%.

(Risk factors in Figure 37:)

Figure 35: Forecasts and valuation – PTTEP

Year to 31 Dec	Unit	2022	2023	2024F	2025F	2026F
Revenue	(Btmn)	331,350	300,694	319,227	316,539	303,772
EBITDA	(Btmn)	253,734	232,446	234,881	228,462	215,197
Core profit	(Btmn)	90,721	78,656	80,088	78,201	68,434
Reported profit	(Btmn)	70,901	76,706	79,434	78,201	68,434
Core EPS	(Bt)	22.85	19.81	20.17	19.70	17.24
DPS	(Bt)	9.25	9.50	9.50	9.00	9.00
P/E, core	(x)	5.9	6.8	6.6	6.8	7.8
EPS growth, core	(%)	111.5	(13.3)	1.8	(2.4)	(12.5)
P/BV, core	(x)	1.1	1.1	1.0	0.9	0.9
ROE	(%)	20.6	16.3	15.4	13.9	11.4
Dividend yield	(%)	6.9	7.1	7.1	6.7	6.7
EV/EBITDA	(x)	2.0	2.1	2.3	2.6	3.0

Source: InnovestX Research

PTT: Safe bet amidst uncertainties

Resilient earnings amidst uncertainties. PTT's earnings performance over the past years has proved its resilience amidst volatile oil and petrochemical prices, in our view, thanks to its business integration from upstream E&P to downstream petrochemicals and power. The company's gas business also provides stable cash flow despite rising competition from other players in imported LNG business in Thailand.

The worst has passed. PTT has suffered a series of government intervention moves attempting to reduce energy cost in the domestic market amidst rising global energy prices. We believe most of the burden has been paid out, especially the revenue from the gas shortfall which the government asked for in order to compensate EGAT for its gas cost.

Undemanding valuation. Current valuation is undemanding at 0.8x PBV (2025F) and 8.1x P/E vs. 10-average of 1.3x and 14.6x. Dividend yield of 6% is also compelling, which is likely to continue given the company's strong cash flow and financial health. The current share price implies a holding discount for other listed companies under PTT group of 69%.

(Risk factors in Figure 37:)

Figure 36: Forecasts and valuation – PTT

Year to 31 Dec	Unit	2022	2023	2024F	2025F	2026F
Revenue	(Btmn)	3,367,203	3,144,551	3,152,488	3,030,764	2,967,928
EBITDA	(Btmn)	480,495	442,938	398,395	423,312	421,149
Core profit	(Btmn)	160,536	102,933	115,668	118,749	120,811
Reported profit	(Btmn)	91,175	112,024	104,317	118,749	120,811
Core EPS	(Bt)	5.62	3.60	4.05	4.16	4.23
DPS	(Bt)	2.00	2.00	2.00	2.00	2.00
P/E, core	(x)	6.0	9.3	8.3	8.1	7.9
EPS growth, core	(%)	9.4	(35.9)	12.4	2.7	1.7
P/BV, core	(x)	0.9	0.9	0.8	0.8	0.7
ROE	(%)	10.7	6.5	7.0	6.8	6.6
Dividend yield	(%)	6.0	6.0	6.0	6.0	6.0
EV/EBITDA	(x)	3.5	3.5	3.5	3.2	3.0

Source: InnovestX Research

Figure 37: Investment summary

Company	TP (end-2025) & Valuation method	Bullish views	Bearish views	Risks
BCP *(OUTPERFORM)*	46.00 (Sum-of-parts)	▪ BCP's oil refinery has become more cost efficient after the efficiency improvement project was completed. In addition to saving costs, it allows the company to operate the oil refinery at 120kbd as it increases the capacity of upgrading units, reducing processing cost/bbl and improving GRM. ▪ Strong and stable earnings cash flow from the power business will stabilize performance in the longer term. Contribution from the E&P business in Norway is solid. ▪ The acquisition of oil refiner BSRC will accelerate the growth of market share with a synergy benefit of at least Bt2.5bn in 2024 and >Bt3bn p.a. from 2025 onwards.	▪ Asset impairment for the E&P business may continue to reduce investor appetite for the stock. ▪ Competition in the oil retail business may intensify, requiring more promotional expenses, thus reducing marketing margin. ▪ The government's measures to control the cost of living by capping retail oil price will hurt marketing margin from time to time.	▪ Economic slowdown would hurt demand for refined oil products and GRM while oil price volatility may cause more stock loss. ▪ Other risks are regulatory changes on GHG emissions, asset impairments for the E&P business and government intervention in domestic retail oil price. ▪ Key ESG risk factors include the environmental impact of its business and how it adapts during the transition to clean energy.
PTT *(OUTPERFORM)*	41.00 (sum-of-parts)	▪ PTT's business integration protects its earnings from the volatility of oil price. ▪ Its gas sales volume is expected to gradually increase in the medium term on higher electricity consumption as economic activities improve. ▪ Domestic oil demand continues to recover to pre-COVID level, especially for diesel and gasoline, while jet fuel demand is gradually moving up to the pre-COVID level. This is expected to solidify earnings for PTT's oil business and oil refining associates in 2024. It could, however, be partly offset by weak performance at petrochemical subsidiaries and associates as product spreads remain subdued.	▪ Government moves to cap domestic energy prices will hurt PTT's earnings in the near term. ▪ More threat from new players in the gas business upon liberalization of the industry, chiefly in terms of LNG imports. ▪ Unexciting earnings growth outlook.	▪ An economic slowdown would erode demand for PTT's energy and petrochemical products while oil price volatility may cause more stock loss. ▪ Other risks are asset impairment, losses from asset divestment, regulatory changes on GHG emissions and the government's intervention in the retail oil business. ▪ Key ESG risk factors are the environmental impact of its business and how it adapts during the transition to clean energy.
PTTEP *(OUTPERFORM)*	172.00 (DCF)	▪ Sales volume is expected to gradually increase in the medium term upon continuing development of new projects both domestically and internationally. ▪ ASP is more stable than crude oil price due to the lag before prices of its gas output are adjusted (>70% of total sales volume). ▪ Greater petroleum recovery, mainly in Malaysia, will drive sales volume growth.	▪ PTTEP is a proxy play on oil price, which will hover in a narrow range over the next six months on weaker-than-expected demand and higher global supply. Geopolitical tension in the Middle East could spark crude oil prices from time to time. ▪ Average gas price will be eroded by more volume contribution from Sabah-H in Malaysia and Oman Block 61, whose gas prices are lower than those in the Gulf of Thailand and Myanmar.	▪ Volatile crude oil price. ▪ Higher unit cost. ▪ Asset impairment. ▪ Regulatory change on GHG emissions. ▪ Key ESG risk factors are the environmental impact of its business and adapting to transition to clean energy.

Source: InnovestX Research

Figure 38: ESG summary – Energy (Oil& Gas)

Company	BCP	BSRC	IRPC
2023 SET ESG Ratings	AAA	--	AA
2023 CG Rating	5	4	5
Member of DJSI	No	No	Yes
2022 Bloomberg ESG Financial Materiality Score [1/] (Rank in the sector)	6.4 (2/63)	2.41 (24/63)	4.14 (13/63)
- Environmental Score and Rank	7.38 (2/63)	1.67 (20/63)	3.26 (14/63)
- Social Score and Rank	6.37 (4/63)	1.83 (25/63)	3.93 (12/63)
- Governance Score and Rank	4.93 (16/63)	4.6 (18/63)	6.01 (3/63)
Environmental Issue	▪ BCP has committed to conducting a low-carbon business and leading energy transition with increases in the proportion of green companies to lower carbon emissions. ▪ BCP also founded the Carbon Markets Club to promote carbon credit trading and set a carbon-neutral target by 2030, with GHG emission set to be reduced by 30% and zero GHG emission by 2050. ▪ BCP reduced water consumption in 2021 by improving tap water quality with a micro-filtration system and a reverse osmosis system. It cut 0.10 million cubic meters per year of water consumption. ▪ BCP manages 99.78% of waste from the refinery using the 3Rs (Reduce, Reuse & Recycle) in 2021 with the target of zero waste sent to be incinerated by 2025. ▪ We have a positive view of BCP's environmental management, which is reflected in its ranking higher than other companies in the same industry.	▪ BSRC supports the parent company's aim to achieve carbon neutrality by 2036 and net-zero Scope 1 and 2 GHG emissions from its operated assets by 2050. ▪ Direct and indirect GHG emissions from its operations were reduced from 1.07mtCO2e (Scope 1 and Scope 2) in 2022 to 0.97 mtCO2e in 2023, down 9% YoY. It has reduced greenhouse gas emissions (Scope 1) approximately 9% from 2022. ▪ The Sriracha Refinery has had no reportable spill for 16 years, since 2007. ▪ BSRC is continuing efforts to reduce and reuse operational waste. About 92% of disposed wastes from the refinery have been sent to either recycle as energy or alternative raw material in 2023. The company's desalination and reverse osmosis units can reduce fresh water requirement around 1.3mn cu.m/year, equivalent to water required for 65,000 heads or 13,000 households	▪ IRPC aims at limiting GHG emissions to 20% of the business-as-usual level by 2030. The company also pledged to achieve Carbon Neutrality by 2050 and Net Zero target by 2060. ▪ IRPC continues to study projects to use more renewable energy, such as floating solar power, as well as the long-term goals of the index for IRPC's energy efficiency (Energy Intensity Index: EII) to reduce and use energy efficiently. ▪ IRPC's floating solar is the largest floating solar power generation project in Southeast Asia. It is expected to reduce greenhouse gas emissions by approximately 9,459 tons of carbon dioxide equivalent per year. The project was granted an award from Thailand Greenhouse Gas Management Organization (TGO).
Social Issue	▪ BCP has gained trust from the local community with community satisfaction of 94.4%. The community engagement score is 89.2% from the refinery community, the highest score since 2014. ▪ Employee engagement for 2022 was 75%, exceeding the target. BCP continues to emphasize occupational health and safety with zero Lost Time Injury Rate for employees and one for contractors. ▪ Its policies to support community engagement to advance women's rights brought BCP an award from the UN Women Thailand Women's Empowerment Principles Awards (WEPs) (Honorable Mention). This acknowledged organizations that were advancing gender equality and inclusivity in the workplace and promoting and empowering women in business. ▪ BCP's social risk management is at the leading edge compared to the industry average.	▪ The refinery achieved 16 years without reportable spill and 12 years of no work-related injury for employees and contractors. Furthermore, the terminal operations facilities outstandingly accomplished 30 years of no lost-time incident. ▪ BSRC continues to maintain its high standards on occupational health and safety with total recordable injury rate (TRIR) of 0.14 per 200,000 working hours for employees and 0.12 for contractors and a zero lost time injury rate (LTIR) ▪ BSRC has active oversight of diversity mix throughout all career stages. Women Interest Network (WIN) and Mentoring through Women's Leadership Team are networks sponsored by the company to promote inclusion and diversity.	▪ Community satisfaction was 99% for 2022, higher than target of 95% with no incident of business interruption caused by community protest. ▪ IRPC intensified the human resource management program to improve employees' capability to help propel the company towards stable and sustainable growth while maintaining IRPC's competitive edge. ▪ Employee engagement was 87% (up from 85% in 2021) with no lost time accidents of employees and contractors. ▪ IRPC was the 1st runner-up of UN Women 2022 Thailand WEPs Awards from the United Nations organization for the promotion of gender equality and the empowerment of women, or UN Women.
Governance Issue	▪ BCP's board of directors consists of 15 directors, 14 non-executive directors (93.33% of the entire Board), 11 independent directors, which exceeds half of the Board (73.33% of the entire Board), and an executive director. These include three female members (20% of the entire Board). ▪ BCP has been rated "Excellent" (5 stars) by the Thai Institute of Directors for 2022.	▪ BSRC's board of directors consists of 12 directors, comprising four non-executive directors (66.67% of the entire board), seven independent directors (58.33% of the entire board), and one executive directors. This includes three female members (25% of the entire board). ▪ BSRC has been rated "Very Good" (4 stars) by the Thai Institute of Directors for the sixth consecutive year in 2023.	▪ IRPC's board of directors consists of 15 directors, 14 non-executive directors (93.33% of the entire Board), 9 independent directors, and an executive director. These include three female directors (20% of the entire board). The number of independent directors is above the regulator's requirement. ▪ IRPC has been rated "Excellent" (5 stars) by the Thai Institute of Directors for 14th consecutive year in 2022. .

Note: [1/] Scores range between 0-10, with higher scores indicating a better management of material issues.
Source: Company data, SET, Thai Institute of Directors, Bloomberg Finance L.P. and InnovestX Research

Figure 39: ESG summary – Energy (Oil& Gas) – continued

Company	OR	PTT	PTTEP
2023 SET ESG Ratings	AAA	AAA	AAA
2023 CG Rating	5	5	5
Member of DJSI	Yes	Yes	Yes
2022 Bloomberg ESG Financial Materiality Score [1/] (Rank in the sector)	6.5 (1/63)	4.64 (9/63)	6.21 (4/63)
- Environmental Score and Rank	8.05 (1/63)	4.72 (8/63)	6.34 (4/63)
- Social Score and Rank	6.72 (3/63)	3.79 (14/63)	6.77 (2/63)
- Governance Score and Rank	4.07 (23/63)	5.39 (11/63)	5.48 (9/63)
Environmental Issue	▪ OR is committed to the prevention and minimization of environmental impacts across the value chain. It has adopted ISO14001 environmental management system as guidance for LPG, oil, and petroleum terminals, Café Amazon Roasting Plant and Phra Khanong headquarters. There was no violation of environmental regulations and laws reported in 2022. ▪ The company has achieved zero wastewater discharge in 2022 as all wastewater undergoes treatment before being reused in operating processes, in bathrooms, or to water plants. ▪ OR is also committed to reducing the amount of waste produced from its operations to align with the eco-efficiency principle by extending product lifespans and promoting resource efficiency by utilizing waste from the process. ▪ OR is working to expand its EV Station PluZ network across PTT stations and other high potential areas to promote the transition toward electricity vehicles.	▪ PTT aims at limiting PTT Group's greenhouse gas emissions, both scope 1 and scope 2. The long-term target of reducing emission 15% by 2030 compares to 2020 greenhouse gas emissions and achieving Carbon Neutrality by 2040 and Net Zero emissions by 2050 for PTT-owned operations. PTT group was able to achieve target in 2023 with CO2 emission of 41.59mn tons vs. ≤51.5mn tons target. ▪ PTT has outlined a shift in business model for the country's target industries, which includes investing in the future of energy, such as renewable energy, energy storage systems and electric vehicles. ▪ PTT also conducts research and studies in Carbon Capture and Storage (CCS) technology and is studying the feasibility of using carbon dioxide for commercial benefits in addition to compensation for greenhouse gas emissions within the PTT Group from reforestation by introducing one million rai of land for the Low Emission Support Scheme (LESS).	▪ PTTEP aims at reducing GHG intensity by 30% by 2030 from the base year in 2020. This will be reduced further to 50% by 2040 and to net zero by 2050. PTTEP was able to reduce GHG by 358.187k tons of CO2 equivalent. ▪ PTTEP has conducted feasibility studies on carbon capture utilization and storage (CCUS) as one of its strategies on greenhouse gas management. The company has selected Arthit Project as a pilot project for CCS implementation. With the success of this project in the future, CO2 emissions will be reduced by more than 500k tons/year. ▪ PTTEP has continued to develop technologies for minimizing environmental impacts in both existing and new production areas. These include the conservation and restoration of natural resources and marine ecosystems project under "Ocean for Life Strategy" and the technology for supporting energy transition.
Social Issue	▪ OR strives to foster a positive work environment in all aspects and conducts annual employee engagement survey. 91% of OR's employees took part in the annual survey in 2022, and the employee engagement rate was at 71%, which met the short-term goal for the year. ▪ OR consistently develops products and services to build customer satisfaction with responsibility, integrity, and ethics. It conducts customer and consumer satisfaction surveys on a yearly basis to develop plans and key performance indicators for each business unit for improvement. The customer satisfaction rate was 92% in 2022, in line with the target of above 91%. ▪ OR's CSR process is undertaken within the framework of a sustainability management policy and focuses on eco-friendly operations and responsibility towards all groups of stakeholders. The company seeks to foster collaboration with local communities in order solve problems and develop CSR projects and activities.	▪ PTT is committed to driving Thailand through enhanced national energy security and economic growth in parallel with a better quality of life for society and communities. The company supports public policy in alleviating higher energy cost in Thailand. ▪ PTT's performance in safety management with KPI on safety and occupational health for employees met target with no lost time accidents in 2023 while three incidents were reported for contractors. ▪ PTT's Human Capital Index for 2023 remains on track at 80%, vs. short-term target of >76%. ▪ Long-term consumer behavior on fossil fuel could impact PTT's oil and gas products but PTT has mitigated this risk via its investment in the power business via GPSC and in the EV supply chain, including a JV with Foxxcon of Taiwan to manufacture on the EV platform in Thailand.	▪ PTTEP is committed to minimize impact of its operation to the communities. These include its commitment of zero waste to landfill and circular model of E&P operation by reusing at least 50% of main structures. ▪ The Ocean for Life Strategy is aiming at achieving net positive impact of ocean biodiversity and ecosystem while Increase 50% of community income for focused communities and achieve 16,000 conservation networks by 2030. ▪ PTTEP emphasizes and commits to continuously improving SSHE (Safety, Security, Health, and Environment) implementation, so as to achieve its ultimate goal of being a "Zero Incident Organization" where employees and contractors can come to work and return home safely every day.
Governance Issue	▪ OR's board of directors consists of 15 directors, 14 non-executive directors (93.33% of the entire board), 9 independent directors, which exceeds half of the board (60% of the entire board), and an executive director. ▪ OR has applied regulations and requirements regarding investment criteria and investment management, along with the investment supervision guidelines for share-holding companies to govern the investments of subsidiaries and associated companies.	▪ PTT's board of directors consists of 15 directors, 14 non-executive directors (93.33% of the entire board), 12 independent directors, which exceeds half of the board (80% of the entire Board), and an executive director. ▪ PTT was rated "5 star" (Excellent) by the Thai Institute of Directors for 13 consecutive years.	▪ PTTEP's board of directors (as of Sep'24) consists of 14 directors, 13 non-executive directors (92.9% of the entire board), 9 independent directors (64.3% of the entire Board), and an executive director. These include two female members (14.3% of the entire board). ▪ PTTEP was rated "5 star" (Excellent) by the Thai Institute of Directors for 2023.

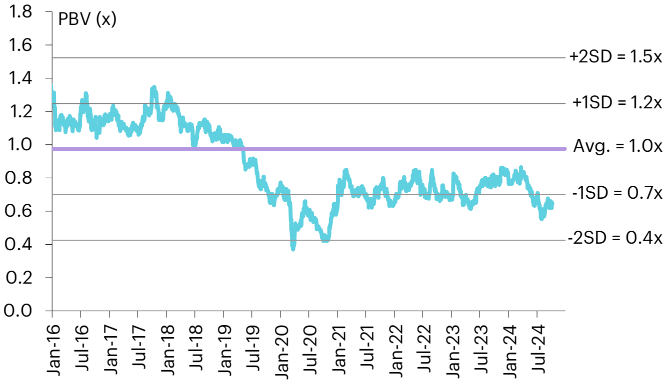
Note: [1/] Scores range between 0-10, with higher scores indicating a better management of material issues.
Source: Company data, SET, Thai Institute of Directors, Bloomberg Finance L.P. and InnovestX Research

Figure 40: ESG summary – Energy (Oil& Gas) – continued

Company	SPRC	TOP
2023 SET ESG Ratings	--	AAA
2023 CG Rating	5	5
Member of DJSI	No	Yes
2022 Bloomberg ESG Financial Materiality Score [1/] (Rank in the sector)	3.75 (15/63)	6.38 (3/63)
- Environmental Score and Rank	2.03 (19/63)	5.51 (5/63)
- Social Score and Rank	5.18 (7/63)	8.35 (1/63)
- Governance Score and Rank	5.75 (7/63)	6.02 (2/63)
Environmental Issue	▪ SPRC cooperated with Chevron, a world leading refiner, to study and establish continuous improvements to improve energy efficiency and reduce greenhouse gas emissions, including the new projects in terms of renewable/clean energy, carbon capture and storage. ▪ SPRC has achieved its target on the Energy Intensity Index and maintains its rank in the first quartile of Solomon EII of Asia Pacific. ▪ Despite its effort to prevent oil spills with several maintenance and inspection programs, there was an incident at SPRC's oil loading facility, i.e., single-point mooring (SPM) in Jan 2022 which cost the company >US$40mn in 1H22. The company's quick response to the incident helped contain the damage to the surrounding environment. The SPM already resumed normal operation in Jul'24 after a long pause given the lengthy inspection by related authorities.	▪ TOP continued the environmental management in 2022 to align with global pathways towards net zero GHG emissions, targeting carbon neutrality by 2050 and net zero GHG emissions by 2060. ▪ TOP managed to reduce GHG emissions in production processes (16,758tCO2e from energy efficiency improvement projects and reduced 41% of raw water, being replaced by with sea water.) ▪ There were no complaints raised by local communities about environmental impact in 2022. ▪ TOP was ranked in the 2nd quartile of the Solomon benchmark on energy efficiency across companies in the Asia-Pacific Region. The completion of the Clean Fuel Project in 2025 will improve its competitiveness which is expected to lift its ranking to top quartile.
Social Issue	▪ In 2023, SPRC achieved 36.3mn man-hours without days away from work injury, attained one million man-hours without recordable injuries, and sustained eight consecutive months without environmental impact. ▪ The incident at SPM had some impact on local communities and the environment. SPRC has continued to compensate for the damages and regain public trust. ▪ Due to the crude oil spill at single point mooring (SPM) on January 25, 2022, the company has expanded the area of social responsibility activities and engagement with stakeholders to cover areas affected by such events, thus receiving a 86% community engagement score, vs. target of 80%.	▪ TOP's community engagement rate fell from 96.7% in 2021 to 95.85% in 2022 but still higher than target of ≥85% reflecting continuous CSR programs to improve local community well-being while accommodating the company's journey to net zero emissions in the long term. ▪ TOP maintained its employee occupational health and safety management with a total recordable incident rate (TRIR) of 0.34 case/mn manhours in 2022, slightly higher than the target of ≤0.30 case/mn manhours. Employee engagement decreased from 94% to 89% while turnover increased from 2.72% to 4.97%. ▪ TOP implemented the "Partnership for Life" initiative to support customer services. It leveraged its R&D team to develop new high value products that better respond to customer needs.
Governance Issue	▪ SPRC's board of directors consists of 9 directors, 4 non-executive directors (88.89% of the entire board), 4 independent directors (44.44% of the entire board), and an executive director. These include 2 female directors (22.22% of the entire board). ▪ The company was rated "Excellent" (5 stars) by the Thai Institute of Directors for the seventh consecutive year in 2023.	▪ TOP's board of directors consists of 14 directors, 14 non-executive directors (92.86% of the entire board), 7 independent directors, which exceeds half of the Board (50% of the entire Board), and an executive director. This includes one female member (7.14% of the entire Board). ▪ The company was rated "Excellent" (5 stars) by the Thai Institute of Directors for the 14th consecutive year in 2022.

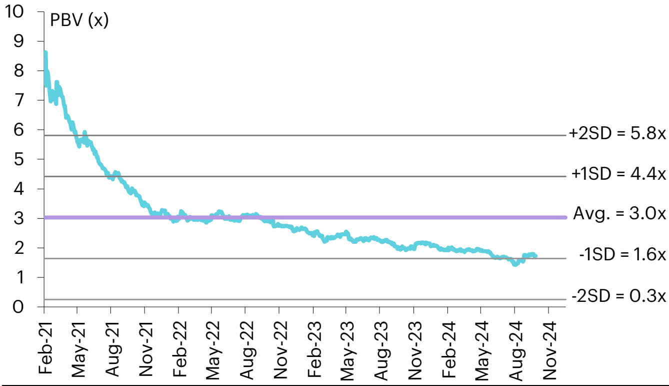
Note: [1/] Scores range between 0-10, with higher scores indicating a better management of material issues.
Source: Company data, SET, Thai Institute of Directors, Bloomberg Finance L.P. and InnovestX Research

Figure 41: PBV band – BCP



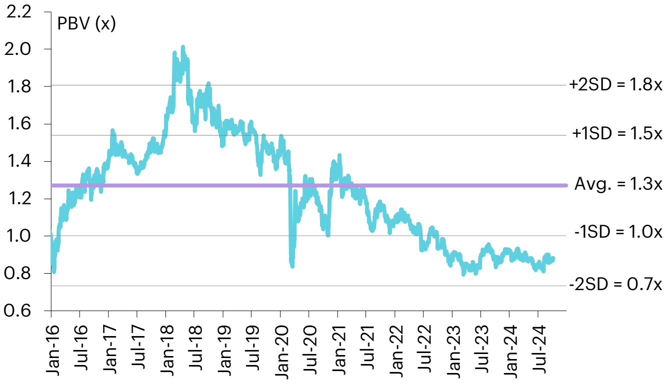
Source: InnovestX Research

Figure 42: PBV band – OR



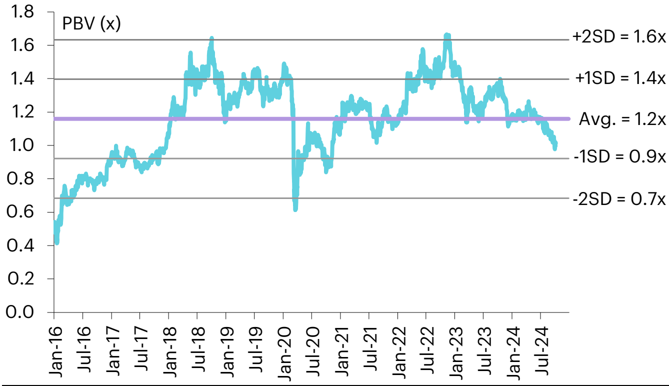
Source: InnovestX Research

Figure 43: PBV band – PTT



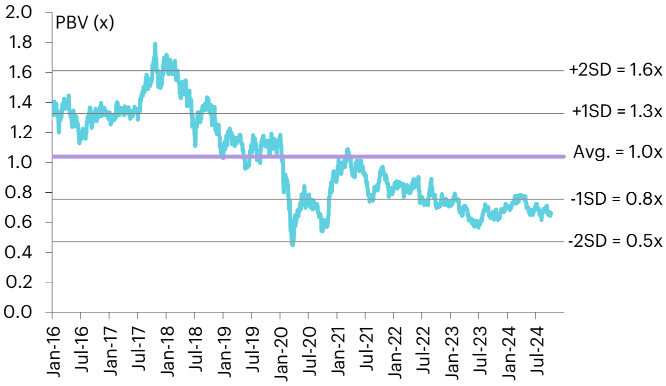
Source: InnovestX Research

Figure 44: PBV band – PTTEP



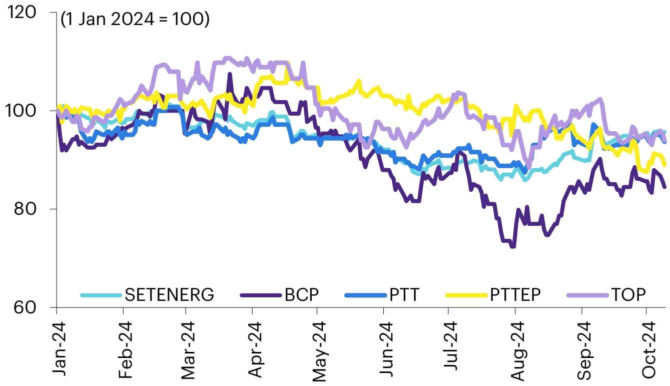
Source: InnovestX Research

Figure 45: PBV band – TOP



Source: InnovestX Research

Figure 46: Share price performance



Source: InnovestX Research

Figure 47: Valuation summary – Energy (price as of Oct 10, 2024)

	Rating	Price (Bt/Sh)	Target (Bt/Sh)	ETR (%)	P/E (x) 23A	P/E (x) 24F	P/E (x) 25F	EPS growth (%) 23A	EPS growth (%) 24F	EPS growth (%) 25F	P/BV (x) 23A	P/BV (x) 24F	P/BV (x) 25F	ROE (%) 23A	ROE (%) 24F	ROE (%) 25F	Div. Yield (%) 23A	Div. Yield (%) 24F	Div. Yield (%) 25F	EV/EBITDA (x) 23A	EV/EBITDA (x) 24F	EV/EBITDA (x) 25F
BCP	Outperform	36.75	46.0	30.6	4.0	5.6	4.0	(32)	(28)	39	0.7	0.6	0.6	14	9	11	5.4	5.4	6.1	3.9	3.6	3.0
BSRC	Underperform	8.10	7.3	(7.4)	13.1	11.6	8.2	(77)	13	41	1.0	1.0	0.9	8	8	11	3.1	2.5	4.9	9.7	8.5	6.4
IRPC	Neutral	1.67	1.7	3.6	n.m.	26.6	13.2	n.m.	n.m.	101	0.4	0.4	0.4	(5)	2	3	1.8	1.8	3.6	16.4	6.4	5.9
OR	Outperform	16.70	24.0	46.6	17.5	17.3	14.4	7	1	20	1.8	1.7	1.6	10	10	12	3.1	2.9	3.0	8.9	9.2	7.8
PTT	Outperform	33.50	41.0	28.4	9.3	8.3	8.1	(36)	12	3	0.9	0.8	0.8	7	7	7	6.0	6.0	6.0	3.5	3.5	3.2
PTTEP	Outperform	134.00	172.0	35.4	6.8	6.6	6.8	(13)	2	(2)	1.1	1.0	0.9	16	15	14	7.1	7.1	6.7	2.1	2.3	2.6
SPRC	Neutral	7.15	8.5	24.5	n.m.	6.9	8.2	n.m.	n.m.	(15)	0.9	0.8	0.7	(3)	12	9	0.0	5.6	4.2	25.4	4.7	4.0
TOP	Outperform	50.00	77.0	60.6	5.1	5.4	4.8	(34)	(6)	13	0.7	0.6	0.6	14	12	13	6.8	6.6	7.4	6.4	6.9	4.6
Average					**9.3**	**11.0**	**8.5**	**(31)**	**(1)**	**25**	**0.9**	**0.9**	**0.8**	**8**	**9**	**10**	**4.2**	**4.7**	**5.2**	**9.5**	**5.6**	**4.7**

Source: InnovestX Research

Figure 48: Regional peer comparison – oil and gas

Company	PE (x)			EPS Growth (%)			PBV (x)			ROE (%)			Div. Yield (%)			EV/EBITDA (x)		
	24F	25F	26F	24F	25F	26F	24F	25F	26F	24F	25F	26F	24F	25F	26F	24F	25F	26F
Sinopec Shanghai Petrochemical	98.5	13.1	9.8	108.8	654.5	32.5	0.4	0.4	0.5	0.6	3.2	4.3	0.9	2.6	3.7	10.5	8.7	8.2
China Petroleum & Chemical	8.2	7.7	6.8	12.3	6.9	12.8	0.7	0.6	0.6	7.9	8.3	8.3	7.7	8.3	8.7	5.6	5.3	5.1
PetroChina	6.4	6.2	6.0	4.0	2.0	4.8	0.7	0.6	0.6	10.7	10.5	9.9	7.3	7.0	7.4	3.7	3.7	3.6
Indian Oil Corp	8.3	9.2	8.7	(19.0)	(9.7)	5.1	1.2	1.1	1.0	16.6	12.8	12.0	5.2	4.3	4.6	6.5	6.5	6.2
Petronas Dagangan	17.9	18.2	18.1	7.0	(2.0)	0.5	3.0	3.0	2.9	16.8	16.7	16.5	4.7	4.7	5.0	8.5	8.4	8.3
PTT	9.1	8.7	9.1	(6.5)	4.7	(3.6)	0.8	0.8	0.8	8.7	8.8	8.5	5.6	5.8	6.0	5.2	4.9	4.8
PTT Exploration & Production	7.0	7.2	7.6	3.2	(3.5)	(5.6)	1.0	0.9	0.9	14.7	12.9	10.9	6.8	6.4	5.8	2.3	2.4	2.5
Average	**22.2**	**10.0**	**9.4**	**15.7**	**93.3**	**6.7**	**1.1**	**1.1**	**1.0**	**10.9**	**10.4**	**10.1**	**5.5**	**5.6**	**5.9**	**6.0**	**5.7**	**5.5**

Source: Bloomberg Finance L.P

Figure 49: Regional peer comparison – oil refinery

Company	PE (x)			EPS Growth (%)			PBV (x)			ROE (%)			Div. Yield (%)			EV/EBITDA (x)		
	24F	25F	26F	24F	25F	26F	24F	25F	26F	24F	25F	26F	24F	25F	26F	24F	25F	26F
Bharat Petroleum Corp	8.1	9.4	8.8	(14.9)	(13.8)	7.5	1.7	1.5	1.4	24.2	16.3	15.0	5.4	4.6	3.7	6.8	7.3	7.1
Hindustan Petroleum Corp	8.2	8.5	7.6	(0.5)	(4.0)	12.0	1.6	1.4	1.2	24.4	18.7	17.2	4.1	4.1	4.3	7.7	7.5	7.1
Indian Oil Corp	8.3	9.2	8.7	(19.0)	(9.7)	5.1	1.2	1.1	1.0	16.6	12.8	12.0	5.2	4.3	4.6	6.5	6.5	6.2
Reliance Industries	24.0	20.6	18.7	12.1	16.8	10.2	2.1	1.9	1.8	9.2	9.8	10.2	0.4	0.4	0.4	12.2	10.8	9.8
S-Oil Corp	13.3	7.0	6.4	(42.9)	91.7	8.0	0.8	0.7	0.7	6.6	12.1	10.7	3.1	3.8	3.7	6.4	5.1	4.6
SKC Co	n.m	n.m	156.4	46.3	75.5	178.3	4.4	4.5	4.3	(12.2)	17.7	4.2	0.7	0.7	0.8	176.4	25.6	18.1
Bangchak Corp	5.9	5.3	4.5	(32.8)	11.0	18.2	0.6	0.6	0.5	12.7	13.5	13.3	5.9	6.5	6.9	3.8	3.6	3.4
Bangchak Sriracha	8.4	5.8	4.4	54.8	44.3	33.8	0.9	0.9	0.8	10.7	14.7	15.2	4.0	5.7	6.7	7.9	6.3	6.0
IRPC	1,670	22.9	9.1	100.7	7,200	152.1	0.5	0.4	0.4	0.7	2.9	4.5	2.6	3.6	4.3	10.4	8.7	7.4
Star Petroleum Refining	6.7	7.2	5.7	478.6	(6.6)	26.3	0.8	0.7	0.7	13.2	11.3	11.6	7.9	7.9	8.5	4.6	4.6	4.5
Thai Oil PCL	7.2	5.2	4.0	(20.0)	38.6	28.4	0.6	0.6	0.5	9.0	10.6	12.2	5.8	7.1	8.6	8.2	6.7	5.6
Average	**18.8***	**10.1**	**21.3**	**51.1**	**676.7**	**43.6**	**1.4**	**1.3**	**1.2**	**10.5**	**12.8**	**11.5**	**4.1**	**4.4**	**4.8**	**22.8**	**8.4**	**7.3**

Source: Bloomberg Finance L.P
*Note: *excluding IRPC*

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CG Rating 2023 Companies with CG Rating

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7UP, AAV, ABM, ACE, ACG, ADB, ADD, ADVANC, AEONTS, AF, AGE, AH, AHC, AIRA, AIT, AJ, AKP, AKR, ALLA, ALT, AMA, AMARIN, AMATA, AMATAV, ANAN, AOT, AP, APCO, APCS, ARIP, ARROW, ASEFA, ASK, ASP, ASW, ATP30, AUCT, AWC, AYUD, B, BA, BAFS, BAM, BANPU, BAY, BBGI, BBIK, BBL, BC, BCH, BCP, BCPG, BDMS, BEC, BEM, BEYOND, BGC, BGRIM, BH, BIZ, BJC, BJCHI, BKI, BLA, BOL, BPP, BRI, BROOK, BRR, BTS, BTW, BWG, BYD, CBG, CENTEL, CFRESH, CHASE, CHEWA, CHG, CHOW, CIMBT, CIVIL, CK, CKP, CM, CNT, COLOR, COM7, COTTO, CPALL, CPAXTT, CPF, CPI, CPL, CPN, CPW, CRC, CRD, CSC, CSS, CV, DCC, DDD, DELTA, DEMCO, DMT, DOHOME, DRT, DUSIT, EA, EASTW, ECF, ECL, EE, EGCO, EPG, ERW, ETC, ETE, FE, FLOYD, FN, FPI, FPT, FSX, FVC, GBX, GC, GCAP, GENCO, GFPT, GGC, GLAND, GLOBAL, GPSC, GRAMMY, GULF, GUNKUL, HANA, HARN, HENG, HMPRO, HPT, HTC, ICC, ICHI, ICN, III, ILINK, ILM, IMH, IND, INET, INTUCH, IP, IRC, IRPC, ITC, ITEL, IVL, JAS, JTS, KBANK, KCC, KCE, KEX, KKP, KSL, KTB, KTC, KTMS, KUMWEL, KUN, LALIN, LANNA, LH, LHFG, LIT, LOXLEY, LPN, LRH, LST, M, MAJOR, MALEE, MATCH, MBK, MC, M-CHAI, MCOT, MEGA, MFC, MFEC, MILL, MINT, MONO, MOONG, MSC, MST, MTC, MTI, NC, NCH, NCL, NDR, NER, NKI, NOBLE, NRF, NTV, NVD, NWR, NYT, OCC, OISHI[1], ONEE, OR, ORI, OSP, OTO, PAP, PATO, PB, PCSGH, PDG, PDJ, PG, PHOL, PIMO, PJW, PLANB, PLAT, PLUS, PM, POLY, PORT, PPP, PPS, PR9, PRG, PRINC, PRM, PRTR, PSH, PSL, PT, PTC, PTT, PTTEP, PTTGC, Q-CON, QH, QTC, RATCH, RBF, RPH, RS, RT, S, S&J, SA, SABINA, SAK, SAMART, SAMTEL, SAPPE, SAT, SBNEXT, SC, SCB, SCC, SCCC, SCG, SCGP, SCM, SDC, SEAFCO, SEAOIL, SECURE, SELIC, SENA, SENX, SFP[2], SFT, SGC, SGF, SGP, SHR, SICT, SIRI, SIS, SITHAI, SJWD, SKR, SM, SMPC, SMT, SNC, SNNP, SNP, SO, SPALI, SPC, SPCG, SPI, SPRC, SR, SSC, SSF, SSSC, STA, STC, STEC, STGT, STI, SUC, SUN, SUSCO, SUTHA, SVI, SVT, SYMC, SYNEX, SYNTEC, TACC, TAE, TCAP, TCMC, TEAMG, TEGH, TFG, TFMAMA, TGE, TGH, THANA, THANI, THCOM, THIP, THRE, THREL, TIDLOR, TIPH, TISCO, TK, TKN, TKS, TKT, TLI, TM, TMC, TMD, TMT, TNDT, TNITY, TNL, TNR, TOA, TOG, TOP, TPBI, TPCS, TPIPL, TPIPP, TPS, TQM, TQR, TRT, TRUE, TRV, TSC, TSTE, TSTH, TTA, TTB, TTCL, TTW, TURTLE, TVDH, TVH, TVO, TVT, TWPC, UAC, UBE, UBIS, UKEM, UP, UPF, UPOIC, UV, VCOM, VGI, VIBHA, VIH, VL, WACOAL, WGE, WHA, WHAUP, WICE, WINMED, WINNER, XPG, YUASA, ZEN

Companies with Very Good CG Scoring

2S, A5, AAI, AIE, ALUCON, AMR, APURE, ARIN, AS, ASIA, ASIAN, ASIMAR, ASN, AURA, BR, BSBM, BSRC, BTG, CEN, CGH, CH, CHIC, CI, CIG, CMC, COMAN, CSP, DOD, DPAINT, DV8, EFORL, EKH, ESTAR, EVER, FORTH, FSMART, FTI, GEL, GPI, HEALTH, HUMAN, IFS, INSET, IT, J, JCKH, JDF, JKN, JMART, JUBILE, K, KCAR, KGI, KIAT, KISS, KK, KTIS, KWC, KWM, LDC, LEO, LHK, MACO, METCO, MICRO, MK, MVP, NCAP, NOVA, NTSC, PACO, PIN, PQS, PREB, PRI, PRIME, PROEN, PROS, PROUD, PSTC, PTECH, PYLON, RCL, SALEE, SANKO, SCI, SCN, SE, SE-ED, SFLEX, SINGER, SKN, SONIC, SORKON, SPVI, SSP, SST, STANLY, STP, SUPER, SVOA, SWC, TCC, TEKA, TFM, TMILL, TNP, TPLAS, TPOLY, TRC, TRU, TRUBB, TSE, VRANDA, WAVE, WFX, WIIK, WIN, WP, XO

Companies with Good CG Scoring

24CS, AMANAH, AMARC, AMC, APP, ASAP, BCT, BE8, BIG, BIOTEC, BLESS, BSM, BVG, CAZ, CCET, CHARAN, CHAYO, CHOTI, CITY, CMAN, CMR, CRANE, CWT, DHOUSE, DTCENT, EASON, FNS, FTE, GIFT, GJS, GTB, GTV, GYT, HL, HTECH, HYDRO, IIG, INGRS, INSURE, IRCP, ITD, ITNS, JCK, JMT, JR, JSP, KBS, KGEN, KJL, L&E, LEE, MASTER, MBAX, MEB, MENA, META, MGT, MITSIB, MJD, MOSHI, MUD, NATION, NNCL, NPK, NSL, NV, OGC, PAF, PCC, PEACE, PICO, PK, PL, PLANET, PLE, PMTA, PPM, PRAKIT, PRAPAT, PRECHA, PRIN, PSG, RABBIT, READY, RJH, RSP, RWI, S11, SAAM, SAF, SAMCO, SAWAD, SCAP, SCP, SIAM, SKE, SKY, SMART, SMD, SMIT, SOLAR, SPA, STECH, STPI, SVR, TC, TCCC[3], TEAM, TFI, TIGER, TITLE, TKC, TMI, TNH, TPA, TPAC, TRITN, UBA, UMI, UMS, UTP, VARO, VPO, W, WARRIX, WORK, WPH, YONG, ZIGA

Corporate Governance Report

The material contained in this publication is for general information only and is not intended as advice on any of the matters discussed herein. Readers and others should perform their own independent analysis as to the accuracy or completeness or legality of such information. The Thai Institute of Directors, its officers, the authors and editor make no representation or warranty as to the accuracy, completeness or legality of any of the information contained herein. By accepting this document, each recipient agrees that the Thai Institute of Directors Association, its officers, the authors and editor shall not have any liability for any information contained in, or for any omission from, this publication.
The survey result is as of the date appearing in the Corporate Governance Report of Thai Listed Companies. As a result, the survey result may be changed after that date. InnovestX Securities Company Limited does not conform nor certify the accuracy of such survey result.
To recognize well performers, the list of companies attaining “Good”, “Very Good” and “Excellent” levels of recognition (Not including listed companies qualified in the "no announcement of the results" clause from 1 January 2022 to 31 October 2023) is publicized.
[1]OISHI was voluntarily delisted from the Stock Exchange of Thailand, effectively on September 6, 2023
[2]SFP was voluntarily delisted from the Stock Exchange of Thailand, effectively on July 19, 2023
[3]TCCC was voluntarily delisted from the Stock Exchange of Thailand effectively on August 25, 2023

Anti-corruption Progress Indicator

Certified (ได้รับการรับรอง)

2S, AAI, ADB, ADVANC, AE, AF, AH, AI, AIE, AIRA, AJ, AKP, AMA, AMANAH, AMATA, AMATAV, AP, APCS, AS, ASIAN, ASK, ASP, ASW, AWC, AYUD, B, BAFS, BAM, BANPU, BAY, BBGI, BBL, BCH, BCP, BCPG, BE8, BEYOND, BGC, BGRIM, BLA, BPP, BRI, BRR, BSBM, BTC, BTG, BTS, BWG, CBG, CEN, CENTEL, CFRESH, CGH, CHEWA, CHOTI, CHOW, CI, CIG, CIMBT, CM, CMC, COM7, CPALL, CPAXTT, CPF, CPI, CPL, CPN, CPW, CRC, CREDIT, CSC, DCC, DELTA, DEMCO, DIMET, DMT, DOHOME, DRT, DUSIT, EA, EASTW, ECF, EGCO, EP, EPG, ERW, ETC, ETE, FNS, FPI, FPT, FSMART, FSX, FTE, GBX, GC, GCAP, GEL, GFPT, GGC, GJS, GLOBAL, GPI, GPSC, GSTEEL, GULF, GUNKUL, HANA, HARN, HEALTH, HENG, HMPRO, HTC, ICC, ICHI, IFS, III, ILINK, ILM, INET, INOX, INSURE, INTUCH, IRPC, ITEL, IVL, JAS, JR, JTS, KASET, KBANK, KCAR, KCC, KCE, KGEN, KGI, KKP, KSL, KTB, KTC, L&E, LANNA, LHFG, LHK, LPN, LRH, M, MAJOR, MALEE, MATCH, MBAX, MBK, MC, MCOT, MEGA, MENA, META, MFC, MFEC, MILL, MINT, MODERN, MONO, MOONG, MSC, MTC, MTI, NATION, NCAP, NEP, NKI, NOBLE, NRF, NWR, OCC, OGC, OR, ORI, OSP, PAP, PATO, PB, PCSGH, PDG, PDJ, PG, PHOL, PIMO, PK, PL, PLANB, PLANET, PLAT, PM, PPP, PPPM, PPS, PR9, PREB, PRG, PRINC, PRM, PROS, PSH, PSL, PSTC, PT, PTECH, PTG, PTT, PTTEP, PTTGC, PYLON, Q-CON, QH, QLT, QTC, RABBIT, RATCH, RBF, RML, RS, RWI, S&J, SA, SAAM, SABINA, SAK, SAPPE, SAT, SC, SCB, SCC, SCCC, SCG, SCGP, SCM, SCN, SEAOIL, SE-ED, SELIC, SENA, SENX, SFLEX, SGC, SGP, SIRI, SITHAI, SKR, SM, SMIT, SMPC, SNC, SNP, SORKON, SPACK, SPALI, SPC, SPI, SPRC, SRICHA, SSF, SSP, SSSC, SST, STA, STGT, STOWER, SUSCO, SVI, SVOA, SVT, SYMC, SYNTEC, TAE, TAKUNI, TASCO, TCAP, TCMC, TEGH, TFG, TFI, TFMAMA, TGE, TGH, THANI, THCOM, THIP, THRE, THREL, TIDLOR, TIPCO, TIPH, TISCO, TKN, TKS, TKT, TMD, TMILL, TMT, TNITY, TNL, TNP, TNR, TOG, TOP, TOPP, TPA, TPCS, TPLAS, TRT, TRU, TRUE, TSC, TSI, TSTE, TSTH, TTA, TTB, TTCL, TU, TURTLE, TVDH, TVO, TWPC, UBE, UBIS, UEC, UKEM, UPF, UV, VCOM, VGI, VIBHA, VIH, WACOAL, WHA, WHAUP, WICE, WIIK, XO, YUASA, ZEN, ZIGA

Declared (ประกาศเจตนารมณ์)

ACE, ADVICE, ALT, AMARIN, AMC, ANI, APCO, B52, BLAND, BPS, BYD, CAZ, CHASE, CHG, CV, DEXON, DITTO, ECL, EKH, EVER, FLOYD, GREEN, HL, HUMAN, ICN, IHL, IP, ITC, JDF, JMART, K, KJL, LDC, LH, LIT, MITSIB, MJD, MOSHI, NER, NEX, PLE, PLUS, POLY, PQS, PRI, PRIME, PROEN, PROUD, PRTR, PTC, RT, S, SANKO, SAWAD, SCAP, SCGD, SFT, SHR, SINGER, SINO, SIS, SJWD, SKE, SNNP, SOLAR, SONIC, SUPER, TBN, TMI, TPAC, TPP, TQM, UREKA, VNG, WELL, WIN, WPH, XPG

N/A

24CS, 3K-BAT, A, A5, AAV, ABM, ACAP, ACC, ACG, ADD, AEONTS, AFC, AGE, AHC, AIT, AJA, AKR, AKS, ALLA, ALPHAX, ALUCON, AMARC, AMR, ANAN, AOT, APEX, APO, APP, APURE, AQUA, ARIN, ARIP, ARROW, ASAP, ASEFA, ASIA, ASIMAR, ASN, ATP30, AU, AUCT, AURA, BA, BBIK, BC, BCT, BDMS, BEAUTY, BEM, BGT, BH, BIG, BIOTEC, BIS, BIZ, BJC, BJCHI, BKD, BKGI, BKIH, BLC, BLESS, BLISS, BM, BOL, BR, BROCK, BSM, BSRC, BTNC, BTW, BUI, BVG, CCET, CCP, CEYE, CFARM, CGD, CH, CHAO, CHARAN, CHAYO, CHIC, CHO, CITY, CIVIL, CK, CKP, CMAN, CMO, CMR, CNT, COCOCO, COLOR, COMAN, CPANEL, CPH, CPR, CPT, CRANE, CRD, CSP, CSR, CSS, CTW, CWT, D, DCON, DDD, DHOUSE, DOD, DPAINT, DTCENT, DTCI, DV8, EASON, EE, EFORL, EMC, ESTAR, ETL, EURO, F&D, FANCY, FE, FM, FMT, FN, FORTH, FTI, FVC, GABLE, GENCO, GFC, GIFT, GL, GLAND, GLOCON, GLORY, GRAMMY, GRAND, GSC, GTB, GTV, GYT, HFT, HPT, HTECH, HYDRO, I2, IIG, IMH, IND, INGRS, INSET, IRC, IRCP, IT, ITD, ITNS, ITTHI, J, JAK, JCK, JCKH, JCT, JKN, JMT, JPARK, JSP, JUBILE, KAMART, KBS, KC, KCG, KCM, KDH, KEX, KIAT, KISS, KK, KKC, KLINIQ, KOOL, KTIS, KTMS, KUMWEL, KUN, KWC, KWI, KWM, KYE, LALIN, LEE, LEO, LOXLEY, LPH, LST, LTS, MAGURO, MANRIN, MASTER, MATI, MCA, M-CHAI, MCS, MDX, MEB, METCO, MGC, MGI, MGT, MICRO, MIDA, MK, ML, MORE, MST, MTW, MUD, MVP, NAM, NAT, NC, NCH, NCL, NCP, NDR, NEO, NETBAY, NEW, NEWS, NFC, NL, NNCL, NOK, NOVA, NPK, NSL, NTSC, NTV, NUSA, NV, NVD, NYT, OHTL, OKJ, ONEE, ORN, PACO, PAF, PANEL, PCC, PCE, PEACE, PEER, PERM, PF, PHG, PICO, PIN, PJW, PLT, PMC, PMTA, POLAR, PORT, PPM, PRAKIT, PRAPAT, PRECHA, PRIN, PRO, PSG, PSP, PTL, QTCG, RAM, RCL, READY, RICHY, RJH, ROCK, ROCTEC, ROH, ROJNA, RP, RPC, RPH, RSP, S11, SABUY, SAF, SAFARI, SAFE, SALEE, SAM, SAMART, SAMCO, SAMTEL, SAUCE, SAV, SAWANG, SBNEXT, SCI, SCL, SCP, SDC, SE, SEAFCO, SECURE, SEI, SGF, SHANG, SIAM, SICT, SIMAT, SISB, SK, SKN, SKY, SLM, SLP, SMART, SMD, SMK, SMT, SO, SPA, SPCG, SPG, SPREME, SPVI, SQ, SR, SRS, SSC, STANLY, STC, STEC, STECH, STHAI, STI, STP, STPI, STX, SUC, SUN, SUTHA, SVR, SWC, SYNEX, TACC, TAN, TAPAC, TATG, TC, TCC, TCJ, TCOAT, TEAM, TEAMG, TEKA, TERA, TFM, TGPRO, TH, THAI, THANA, THE, THG, THMUI, TIGER, TITLE, TK, TKC, TLI, TM, TMC, TMW, TNDT, TNH, TNPC, TOA, TPBI, TPCH, TPIPL, TPIPP, TPL, TPOLY, TPS, TQR, TR, TRC, TRITN, TRP, TRUBB, TRV, TSE, TTI, TTT, TTW, TVH, TVT, TWP, TWZ, TYCN, UAC, UBA, UMI, UMS, UNIQ, UOBKH, UP, UPOIC, UTP, UVAN, VARO, VL, VPO, VRANDA, W, WARRIX, WAVE, WFX, WGE, WINDOW, WINMED, WINNER, WORK, WP, YGG, YONG, ZAA

Explanations

Companies participating in Thailand's Private Sector Collective Action Coalition Against Corruption programme (Thai CAC) under Thai Institute of Directors (as of June 30, 2024) are categorised into: companies that have declared their intention to join CAC, and companies certified by CAC.