

Thailand Energy Sector

Lifeline stretched out

Sector Valuation			Current price	Target price	Market Cap	Norm EPS grw		— Norm PE —		— P/BV —		— Div. yield —	
Company	BBG Code	Rec.	(Bt)	(Bt)	(US\$ m)	2021F (%)	2022F (%)	2021F (x)	2022F (x)	2021F (x)	2022F (x)	2021F (%)	2022F (%)
Bangchak Corp.	BCP TB	BUY	28.50	32.00	1,183	na	169.0	23.3	8.6	0.8	0.7	7.0	7.0
Esso (Thailand)	ESSO TB	HOLD	7.65	8.00	798	na	na	na	11.1	1.4	1.2	0.0	0.0
IRPC Pcl	IRPC TB	BUY	3.82	4.40	2,354	na	9.7	15.7	14.3	0.9	0.8	2.6	3.5
Indorama Ventures	IVL TB	BUY	48.00	60.00	8,127	260.7	22.9	11.6	9.5	1.9	1.7	5.1	5.3
PTT Pcl	PTT TB	BUY	38.75	46.00	33,376	206.6	(13.2)	9.5	10.9	1.1	1.0	5.2	5.2
PTT Exploration	PTTEP TB	BUY	129.00	152.00	15,443	105.6	32.0	11.6	8.8	1.2	1.1	3.9	4.7
PTT Global Chemical	PTTGC TB	HOLD	57.00	56.00	7,750	286.2	(20.5)	8.7	11.0	0.8	0.8	7.0	4.6
Star Petroleum	SPRC TB	SELL	9.65	8.40	1,262	na	na	na	13.2	1.4	1.4	5.0	2.9
Thai Oil	TOP TB	SELL	51.75	46.00	3,184	na	65.3	27.4	16.6	0.9	0.9	4.2	2.4

Source: Thanachart estimates, Based on 3 February 2022 closing prices

We upgrade our stance on the energy sector to OVERWEIGHT from a stretching-out of its lifeline due to strong oil prices, while petrochemical spreads are already near their troughs. IVL is now our top pick on its turnaround story and exposure to high oil prices.

Upgrading to OVERWEIGHT...

We upgrade the energy sector to OVERWEIGHT (from Neutral) on the back of “higher-for-longer” oil prices and petrochemical spreads already being near their troughs despite the improving supply outlook from 2023F. Our Brent assumptions are revised up to USD80/73/71 per barrel (from USD65/66/68) in 2022-24F vs. USD70 in 2021 and the USD69 five-year average. We are bearish on the refinery sector with the refinery margin having recovered above the pre-COVID level with a new supply cycle during the next few years, cost pressure from the high crude premium and the weak structural demand outlook. *This report marks a transfer of analyst coverage.*

...despite the weak Thai structural cycle

Cyclically strong oil prices will transcend the weak Thai structural cycle in our view. Thailand’s depletion of energy resources will likely become more apparent in 2022F with a further drop in gas output from the Bongkot and Erawan fields despite the country’s gas output already reaching a 12-year low in 2021. Negatively impacted by depleting domestic energy output are PTT (weaker GSP profit), PTTGC (less cheap gas feedstock) and PTTEP (higher capex spending).

Valuation and short-term stories are key

Another good thing is that the Thai energy sector’s valuation has already been de-rated from an average of 1.3x in 2014-19 (pre-COVID). We start off 2022F with 1.1x. Due to the weak structural outlook and the end of the post-crisis turnaround, our investment strategy focuses on valuation and short-term stories. With this, we have IVL as our sector top pick, followed by PTTEP due to strong oil price momentum. Other BUY-rated stocks are BCP on the company’s bottom-up stories and PTT and IRPC on what we see as attractive valuations. We SELL TOP given its weak balance sheet and SPRC for its high valuations.

IVL is our sector top pick

We like IVL the most in the sector. *First*, the PET market is resilient because of limited capacity growth. *Second*, the disappointing Huntsman contribution during the COVID years is turning around. *Finally*, we forecast IVL to be among the stronger-growth companies in the sector.

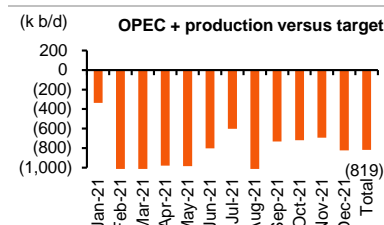


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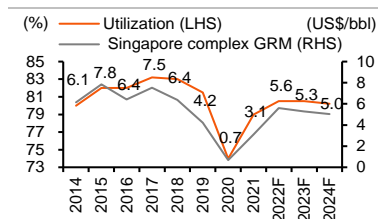
yupapan.pol@thanachartsec.co.th

Opec Output Behind Target



Sources: Reuters, Thanachart estimate

Global Refinery Utilization Vs. GRM



Sources: Bloomberg, TOP, Thanachart estimate

Sector upgrade to OVERWEIGHT

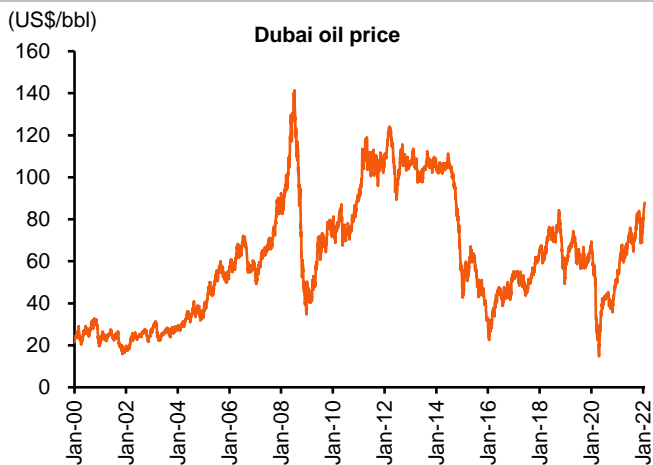
We are bullish on oil and petrochemicals and bearish on refinery

We believe the Thai energy sector has already completed its post-COVID turnaround with energy prices and spreads having recovered significantly from their COVID lows. However, there are two key factors behind our upgrade of the sector to OVERWEIGHT (from Neutral). One factor is stretching out period for high oil prices and two is petrochemical spreads having already come down to reflect new capacity this year despite improving supply outlook from 2023F.

We expect oil price strength to be supported by the Russian factor, multi-year low inventories, limited supply growth amid weak investment in the sector, falling OPEC spare capacity and potential upside risk from supply disruption. As for the petrochemical sector, margins have already come down to near trough level due to supply pressure this year. At the same time, several Asian naphtha crackers have already announced run rate cuts, while new supply outlook seems to improve from 2023F onward. Longer term, we see the petrochemical segment as more resilient than both oil and refinery segments as demand for petrochemicals more closely links to consumer products.

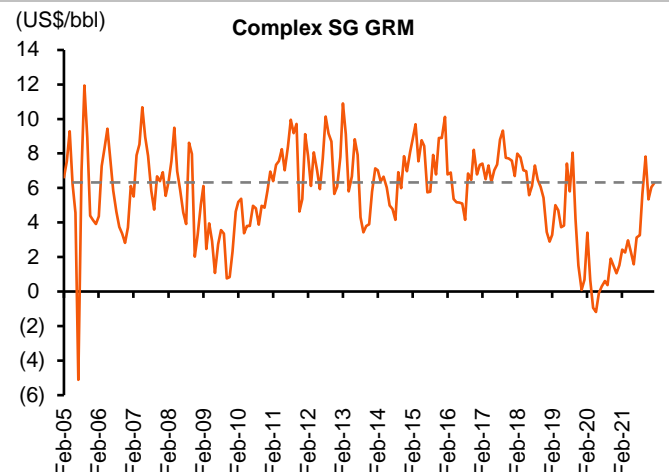
We are bearish on the oil refinery segment with the refinery margin having already recovered to above pre-COVID level despite the outlook of new supply cycle.

Ex 1: Crude Oil Prices Near US\$90/bbl



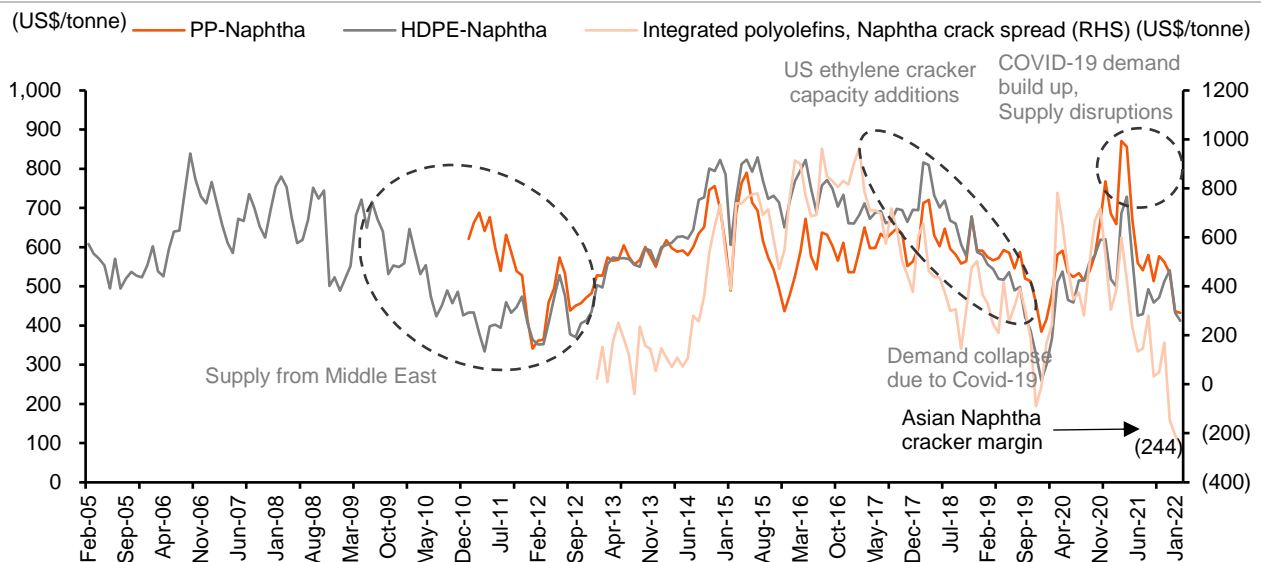
Source: Bloomberg

Ex 2: Refining Margin Back To Normalized Level



Sources: Bloomberg, TOP, Thanachart Estimate

Ex 3: Chemical Margins At Near Trough Levels



Source: Bloomberg

Oil – Oil price to remain strong

Oil prices have already recovered and they should stay elevated

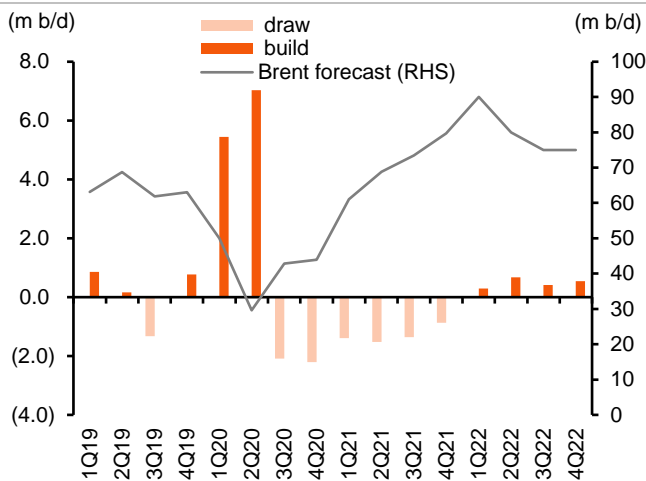
Despite the Brent crude oil price having recovered to the USD90/bbl range, we expect the price to remain elevated and likely spike if supply disruption continues given the limited supply cushion left in 2022F. Our Brent assumptions are revised up to USD80/73/71 per barrel (from USD65/66/68) in 2022-24F vs. USD70 in 2021 and the USD69 five-year average. Aside from the Russian factor, key reasons for the tighter market compared to the previous cycle are: multi-year low inventories, weak investment in the sector, falling OPEC spare capacity, and stronger-than-expected demand post-COVID.

Ex 4: Our Brent Crude Oil Price Assumptions

(USD/bbl)	2021A	2022F	2023F	2024F
New	69	80	73	71
Old	69	65	66	68

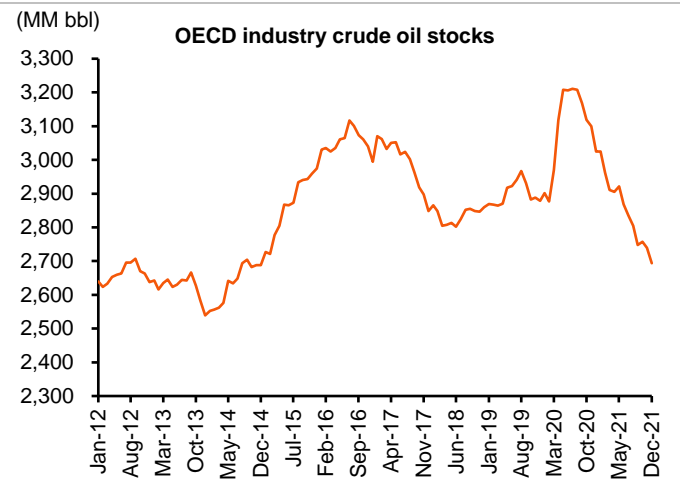
Source: Thanachart estimates

Ex 5: EIA Forecasts A Small Surplus Through 2022F



Source: EIA

Ex 6: Low Oil Inventories Support Prices

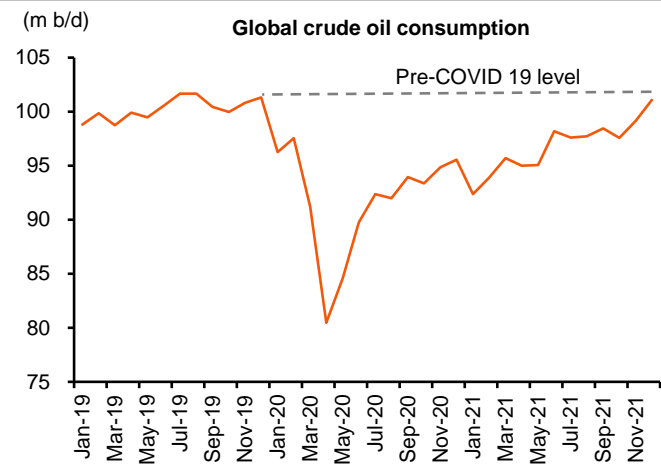


Source: Bloomberg

Global oil demand has been more resilient than expected

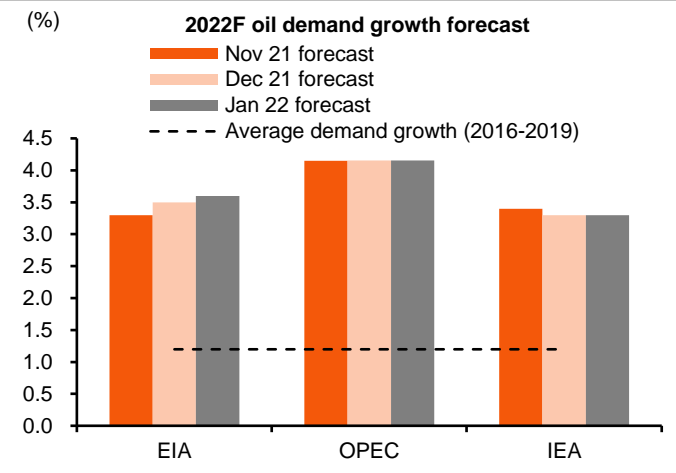
Oil demand continues to rise: Global oil demand has already recovered back to near the pre-COVID level. Global crude oil consumption reached 101m b/d in December 2021 and 99m b/d in 4Q21, only 2% below the level in 4Q19. However, we expect growth to continue this year, albeit at a slower pace. The EIA forecasts more normalized demand growth of 3.5m b/d in 2022, or 3.7% vs. 5% growth in 2021. Despite slower growth, this is still higher than the historical average of 1.2m b/d over 2016-19. Meanwhile, the pace of demand growth continues to surprise the market. We foresee industry experts (IEA, EIA, OPEC) maintaining or revising up their oil demand growth estimates for 2022 despite the outbreak of Omicron variant.

Ex 7: Global Oil Demand Recovery



Source: EIA

Ex 8: 2022F Recovery Has Been Stronger Than Expected



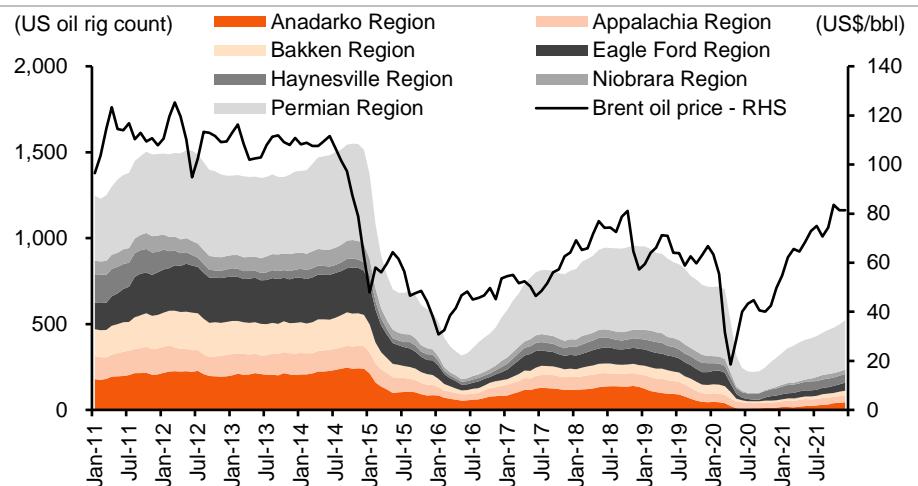
Sources: OPEC, IEA, EIA

Higher US production but still tight

Tight US supply: US oil production is being ramped up but we expect the market to remain relatively tight. The EIA projects US crude oil production growth in 2022 at 0.6m b/d from -0.1m b/d in 2021. This is compared to YTD decline of -0.2m b/d. Therefore, we still see a risk of a not-so-fast US production ramp-up.

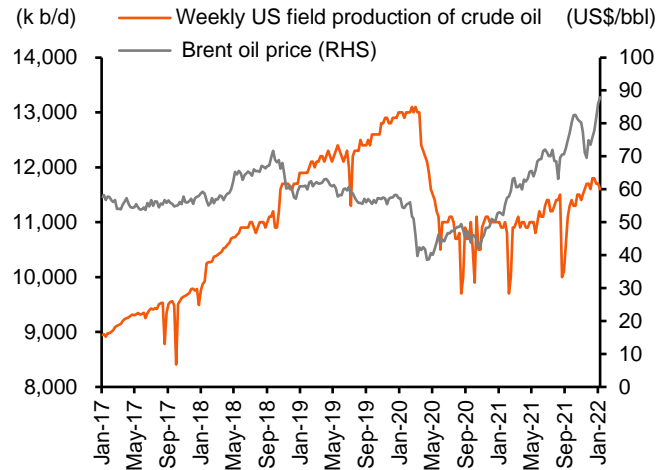
- The number of drilling rigs has been increasing slowly despite the currently high oil prices. The US oil rig count is now at 522 vs. the 2011-19 average of 1,042. We believe this is due to oil companies' greater focus on capital discipline and shareholders' return.
- We expect capex spending in the upstream oil sector to be far lower than in the past. Based on Rystad and Bloomberg data, US shale expenditure is projected to recover from the crisis level by c.20% to USD83bn in 2022F. This level is considered low given the current high oil prices and the average spending of USD17bn p.a. during 2018-19 when the oil price stood at around USD60 per barrel.

Ex 9: Drilling Rigs Have Been Increasing But Only Slowly Since September 2020



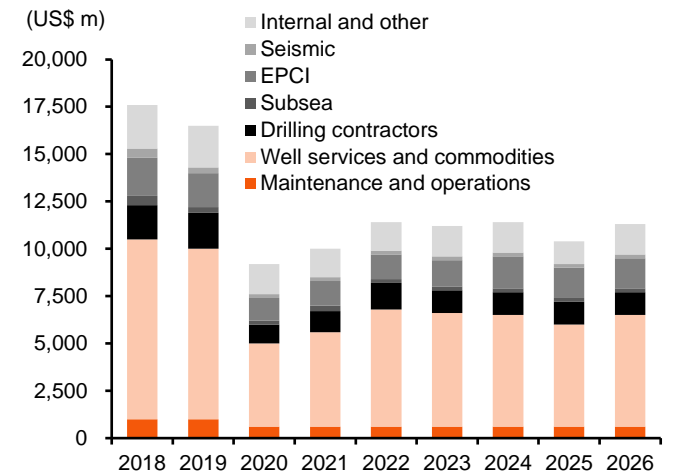
Source: EIA

Ex 10: Low US Oil Output Despite High Oil Prices



Sources: EIA, Bloomberg

Ex 11: Tame US Upstream Capex



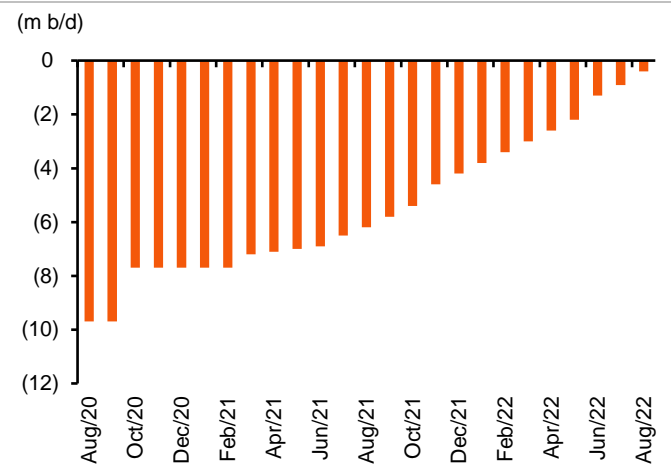
Source: Rystad

Doubts over OPEC+'s ability to restore output as planned

OPEC+ spare capacity becoming exhausted: OPEC+'s production increase has been below its target at an estimated 1m b/d. Note that, to respond to the COVID crisis, OPEC+ agreed to cut its production by 9.7m b/d from March 2020 (from a production level of 42m b/d in January 2020) before gradually increasing output by 0.4m b/d each month from August 2021 and getting back to normal level in September 2022.

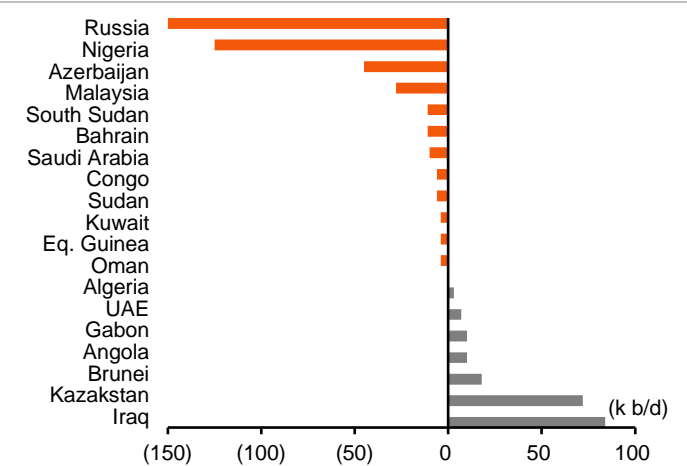
OPEC+'s output has so far been below target, and this raises questions over its actual level of spare capacity. Based on Bloomberg data, OPEC+ production has been running at 819k b/d below target. Global crude oil spare production capacity at the end of 2021 stood at only 5.3m b/d vs. 9.5m b/d in February 2020 and was mainly concentrated in two OPEC+ countries, Saudi Arabia and the UAE. The two countries hold around 95% of the group's extra production capacity, but both countries have said they have no intention of risking the harmony within the alliance to infringe on others' market share. As for Russia, it is the biggest under-achiever in terms of keeping pace with the target and it has little spare capacity as its production was already plateauing in late 2021. We see a risk of OPEC+ not being able to increase output by 0.4m b/d each month unless Saudi Arabia and the UAE boost output above their quotas.

Ex 12: OPEC's Output Cut Plan



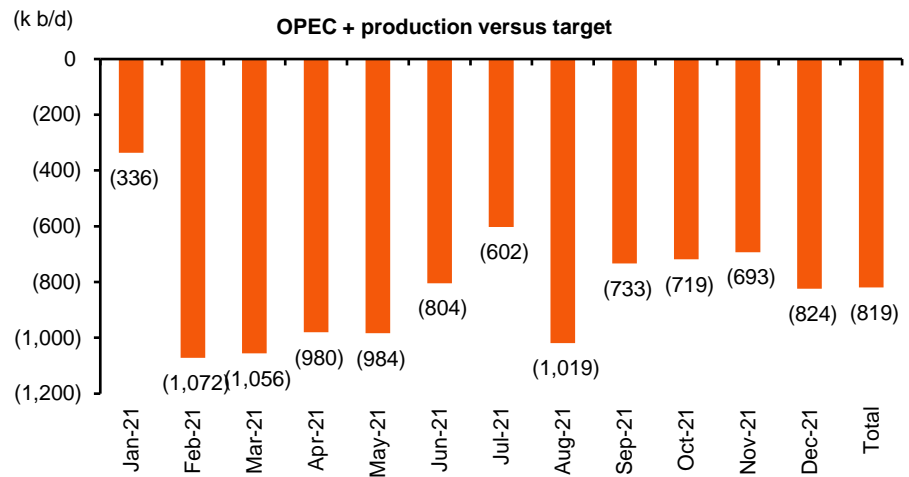
Source: OPEC

Ex 13: OPEC + Actual Output Vs. Target By Country



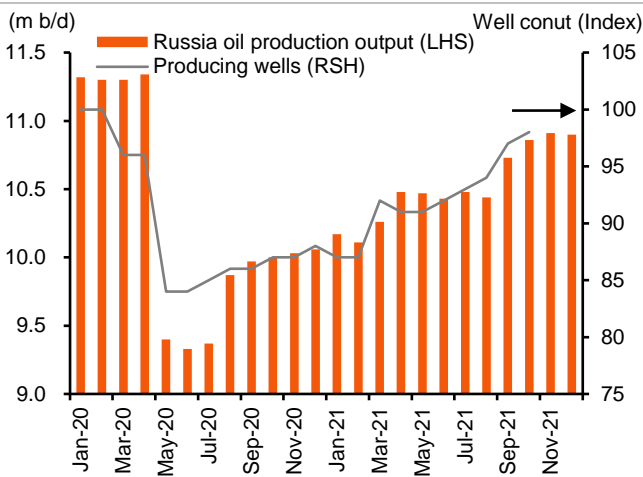
Source: Bloomberg

Ex 14: Ramp-Up Has Been Below Target



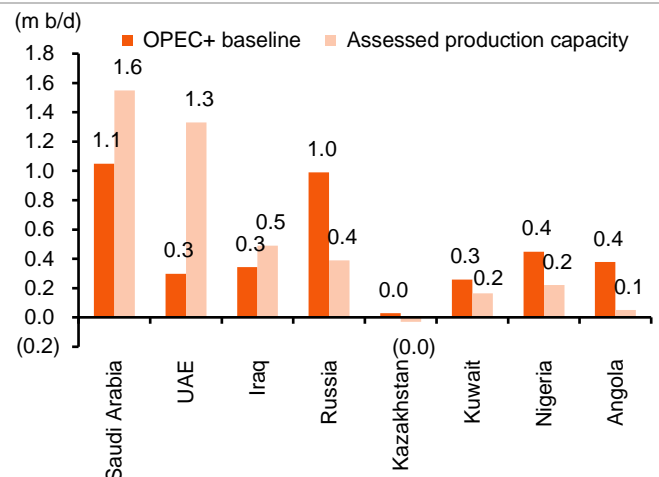
Sources: Reuters, Thanachart estimates

Ex 15: Russia Appears To Have Little Spare Capacity



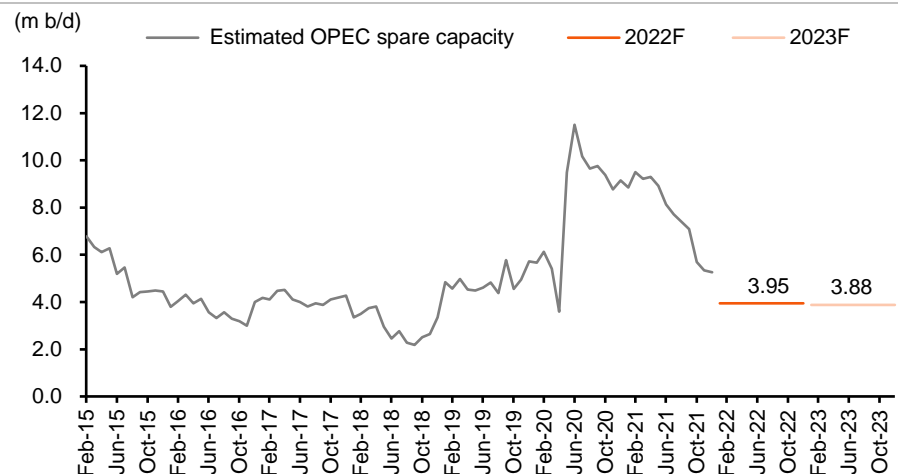
Source: Bloomberg

Ex 16: Spare Capacity Concentrated In Saudi And UAE



Source: Bloomberg

Ex 17: OPEC's Spare Capacity

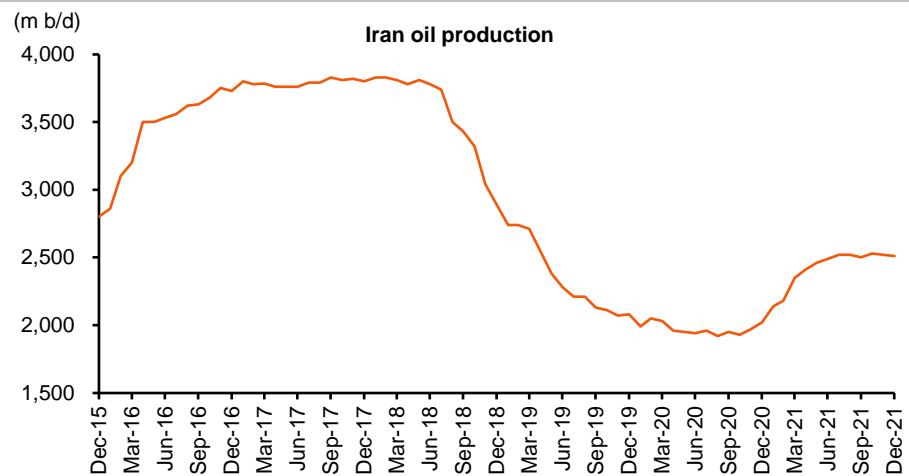


Sources: Bloomberg, EIA

Iran is a wildcard factor, in our view

Slow progress on lifting Iran sanctions: Note that Iran has been sanctioned by the US since 2018, after pulling out of the 2015 nuclear deal as the Trump administration argued it was skewed in Iran's favor. The US is now in the process of considering whether or not to lift the Trump-era sanctions as Iran has since resumed its nuclear activity and the US wants to return to the initial Joint Comprehensive Plan of Action (JCPOA) of the 2015 nuclear deal. If the sanctions are lifted, around 1.3m b/d of crude oil supply should get back on the market. That said, there's a risk of continued sanctions as the progress in lifting them has been very slow. Iran has also been criticized for continuing to increase production of uranium as well as failing to fully cooperate with the International Atomic Energy Agency, which is assigned to monitor and verify a series of commitments made by Tehran. The US strongly believes that the uranium Iran is producing will be used for the development and production of weapons of mass destruction (WMD).

Ex 18: Iran Output Could Add 1.3m b/d To The Market



Source: Bloomberg

Chemical – Low base spread vs. improving supply outlook

High spreads in 2020-21 were a windfall

The petrochemical sector saw substantial supply growth for the olefins chain during 2020-21. However, because of the COVID crisis and severe weather-related supply disruption causing reductions in plant operating rates, olefins spreads enjoyed a windfall. The HDPE-naphtha spread rallied to as high as USD728/tonne in April 2021 vs. the normal mid-cycle level of c.USD500/tonne. Some new projects delayed their launch schedule.

Spreads have already come back down

Since 2H21, spreads have been coming back down as supply disruption has become less of an issue and plant operating rates have risen. There is also the expectation of substantial new capacities in China in 2022 along with softer demand growth after major economies have recovered from the crisis. The HDPE-naphtha spread is down to USD412/tonne now.

A rebalancing of the market in 2H22F

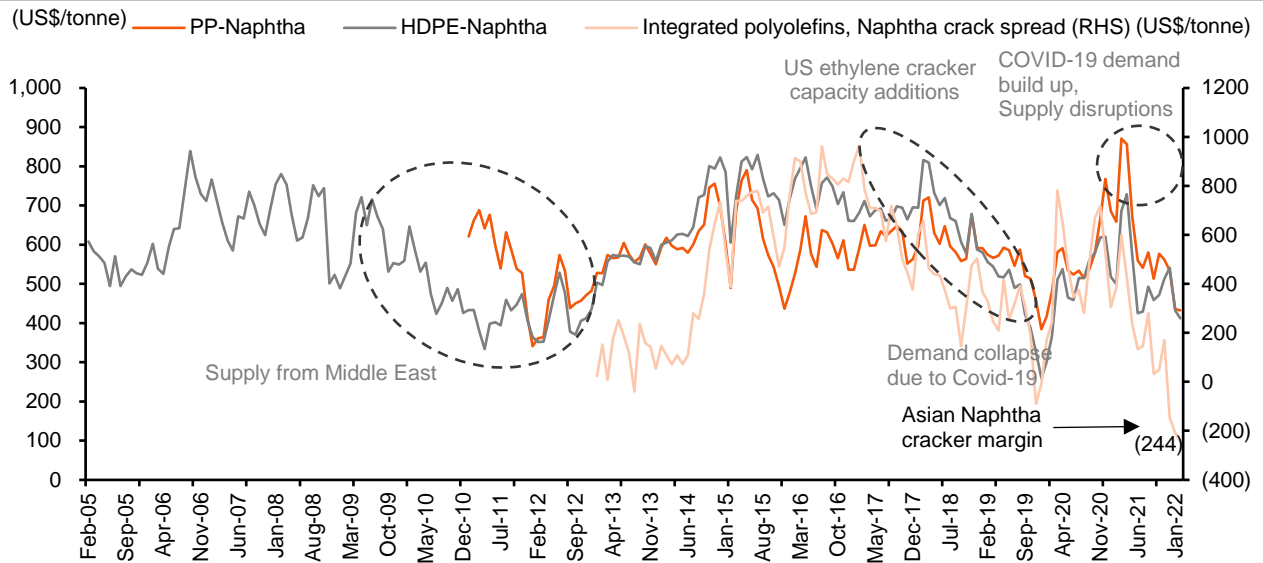
Looking to 2022F, we expect a petrochemical market rebalancing in 2H22F. Weak spreads already reflect the supply outlook from China and softer demand while they have caused several naphtha-based olefins crackers to cut run rates by 5-15%. High coal prices should also lead to lower utilization of coal-to-olefins plants in China which account for 9% of China's ethylene capacity and 11% of propylene capacity.

Supply cycle to improve from 2023F

We expect a stronger market in 2023F. We estimate net new olefins capacity, especially ethylene, to fall from the levels seen during 2020-22F (Exhibit 24-25). We also expect that in the longer term, China's ambition of reaching peak carbon emissions by 2030 should start to be felt via a lower level of capacity additions. That could be done through the rationalization of small and inefficient plants. China aims to gradually retire small crackers

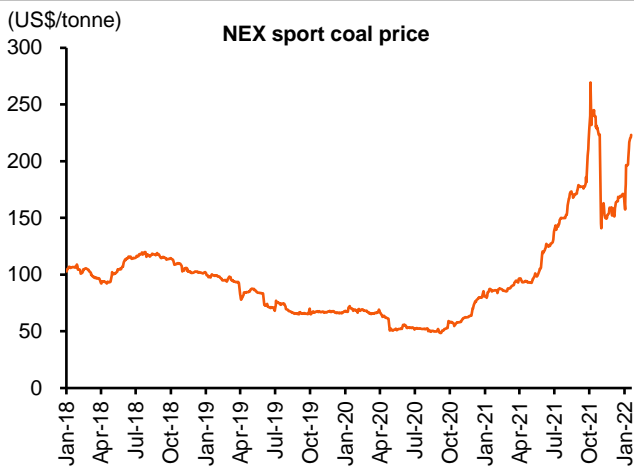
with under 300k tpa of capacity (5% of total capacity) and ban new naphtha-based crackers with capacities below 800k tpa.

Ex 19: Chemical Spreads Have Fallen Back Down



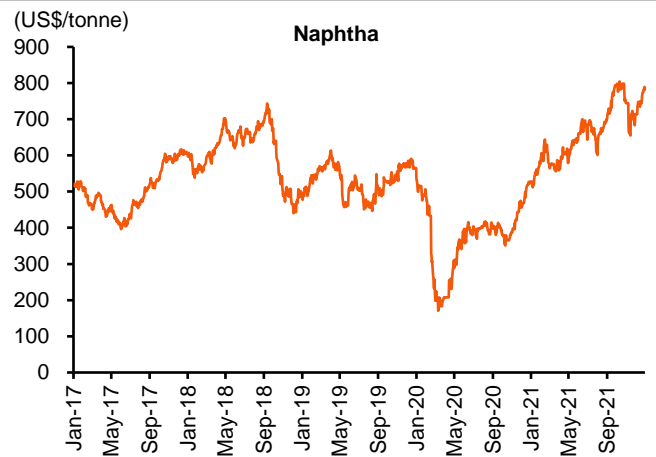
Source: Bloomberg

Ex 20: Coal Price Remains High



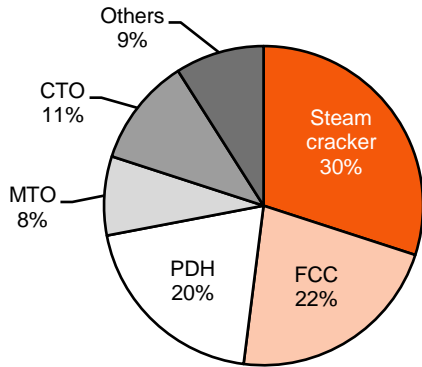
Source: Bloomberg

Ex 21: Rising Oil Prices Push Up Naphtha Cost



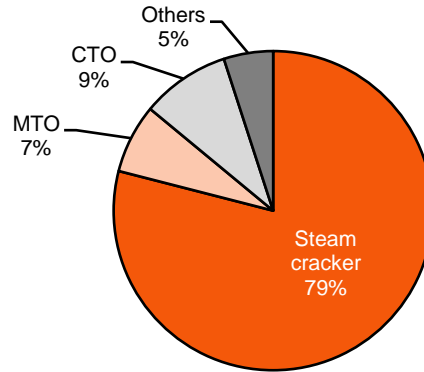
Source: Bloomberg

Ex 22: China's Propylene Capacity By Feedstock



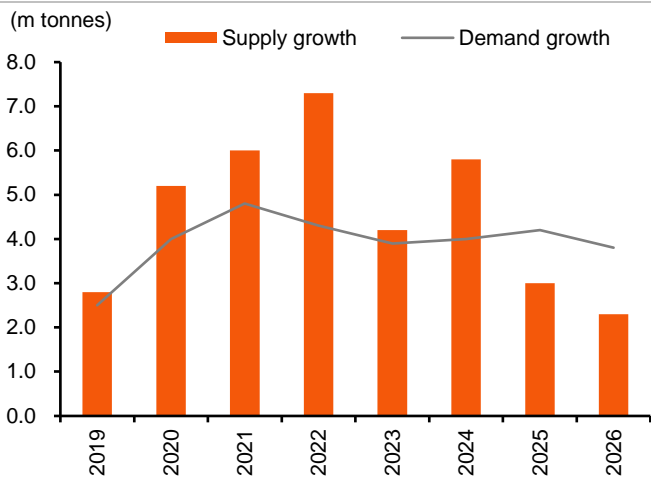
Source: PTTGC
 Note: FCC stands for Fluid Catalytic Cracking, PDH for propane dehydrogenation, MTO for Methanol to Olefin and CTO for Coal to Olefin

Ex 23: China's Ethylene Capacity By Feedstock



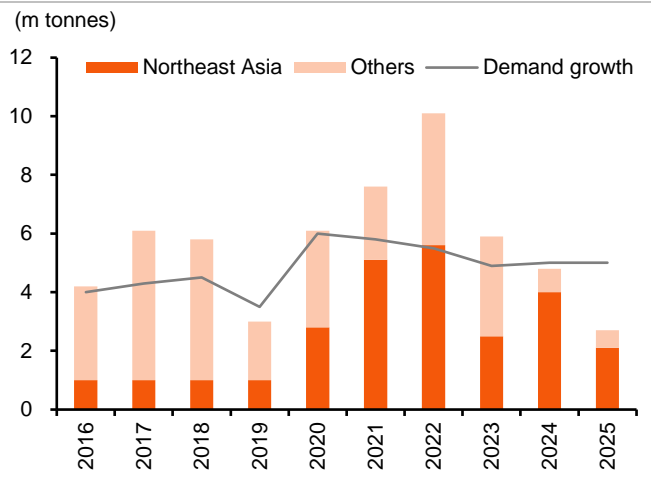
Source: PTTGC
 Note: MTO for Methanol to Olefin and CTO for Coal to Olefin

Ex 24: Global PP Supply vs Demand Growth



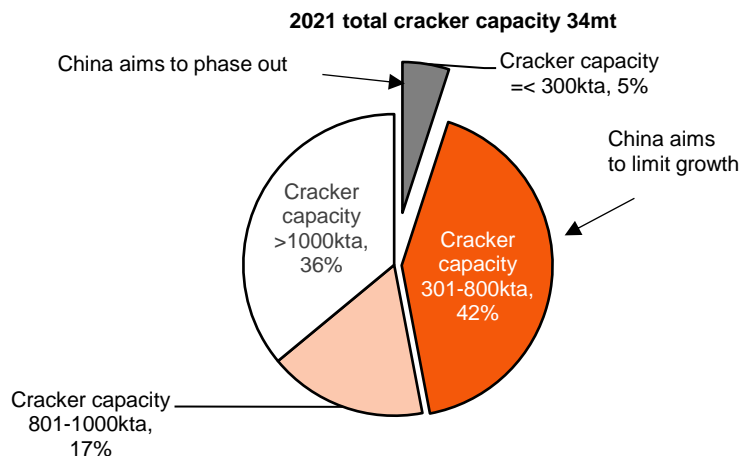
Source: IRPC

Ex 25: Global PE Supply vs Demand Growth



Source: PTTGC

Ex 26: Longer Term, China Aims To Phase Out Inefficient Capacities



Source: Bloomberg

Ex 27: Key Chemical Spread Assumptions

(US\$/tonne)	2020	2021F	2022F	2023F	2024F
HDPE-Naphtha	506	630	480	530	590
LDPE-naphtha	626	1,020	750	800	830
LLDPE-naphtha	479	630	500	550	600
PP-Naphtha	616	680	550	600	620
MEG-Ethylene	101	180	150	180	210
BPA-Phenol	639	1,712	800	300	300
ABS-Naphtha	1,137	1,780	1,000	1,100	1,100
PS-Naphtha	725	983	800	800	800
Px-Naphtha	229	259	200	200	250
Bz-Naphtha	106	291	200	200	250
Asia Integrated PET	206	223	227	227	227

Sources: Bloomberg, Thanachart estimates

Petrochemical is linked more to the resilient consumer sector

Chemical demand looks more solid than refinery demand: We foresee a stronger demand outlook allowing the petrochemical market to remain more structurally resilient than the refinery market. First of all, petrochemical products are linked more to the consumer market as a lot of petrochemical products are used to produce consumer products. The trend of increased online spending is also a driver for plastic packaging demand.

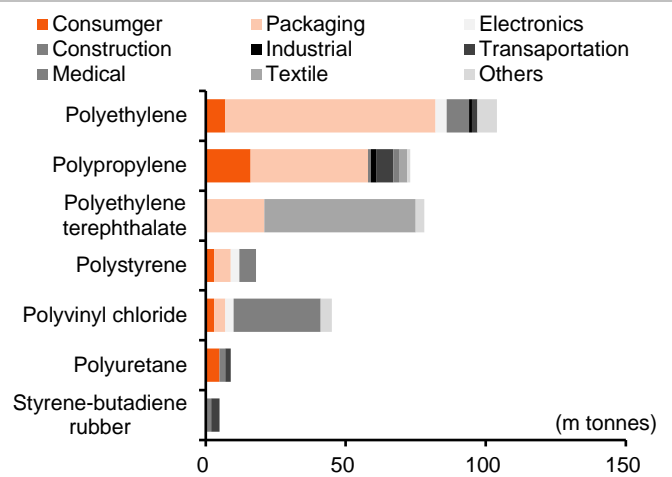
Second of all, the world’s energy consumption mega-trend is the move toward green energy. One clear sector of change is the auto sector which is embracing electric vehicles (EV), which implies a potential fall in the demand for refined oil products, which are mainly used in the transportation sector. Meanwhile, chemical demand should benefit from a continued rise in automotive demand since numerous auto parts are made from plastic.

Ex 28: Online Sales Booming Due To COVID-19



Source: Bloomberg

Ex 29: Chemical Plastics Are Linked More To Consumers

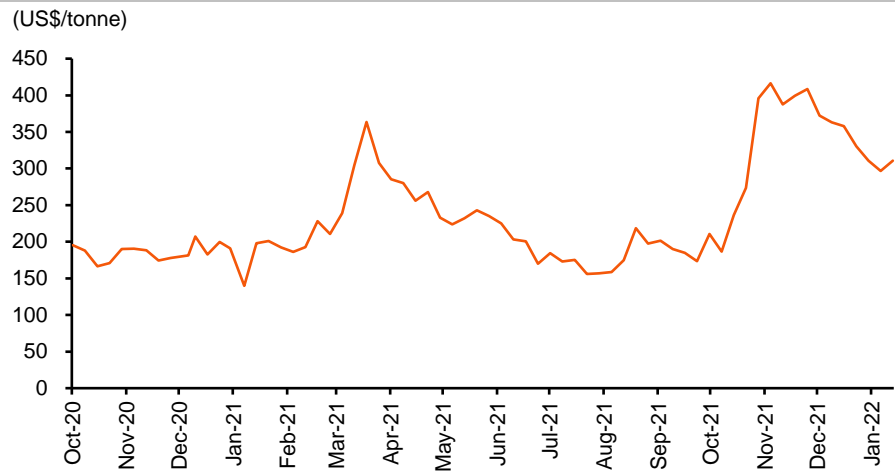


Source: Mckinsey

Relatively lower supply addition

PET outlook stronger than for other products: We are more positive on the polyethylene terephthalate (PET) petrochemical chain than the olefins (or ethylene and propylene) and aromatics chains. *First*, PET’s main end products are drinking water bottles and these are necessity-product items for consumers, so demand for them is highly resilient. COVID-induced behavioral change also supports the demand for bottled water. Note that around 77% of PET supply goes to water bottle production. Seasonally, demand is high during summer, which is approaching in 2Q22. *Second*, the new supply outlook for PET doesn’t appear threatening with more balanced demand-supply additions (see Exhibit 35). *Third*, China’s dual-control policy is positive for PET because this will lead to supply disruptions in the market. Note that China accounts for 37% of global PET supply. Additionally, the currently high aluminum price is supporting demand for PET as a substitute.

Ex 30: Asia Integrated PET Spread

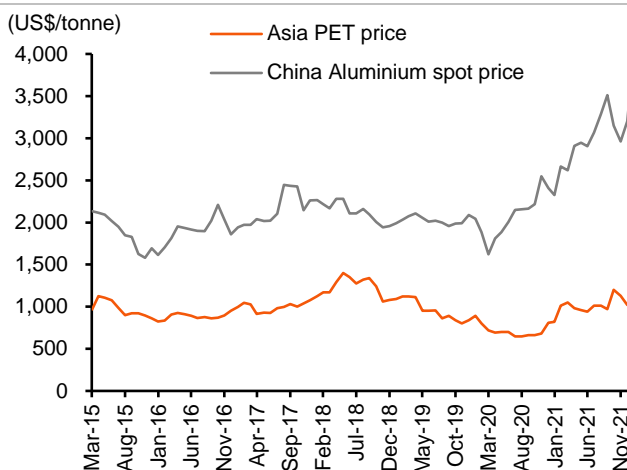


Source: Bloomberg

Note: Asia integrated PET spread = PET spread + 0.86 x PTA spread

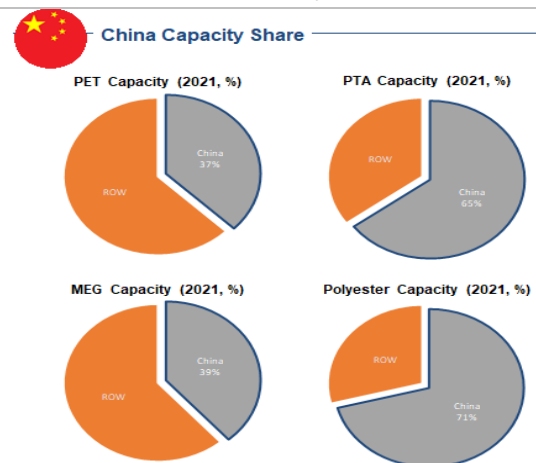
PET is polyethylene terephthalate. PTA is purified terephthalic acid and it is a key feedstock for PET

Ex 31: High Aluminum Price Indirectly Positive For PET



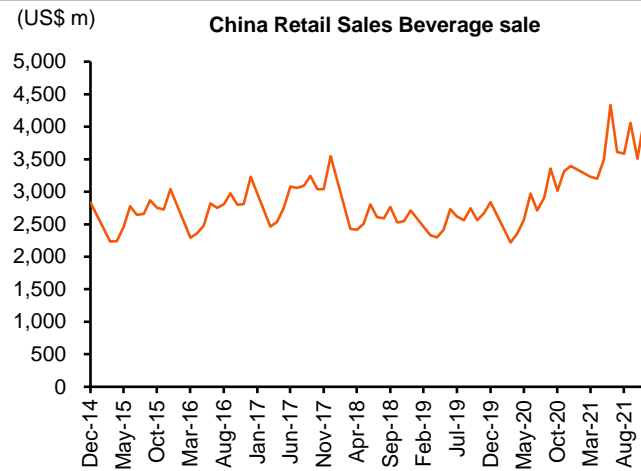
Source: Bloomberg

Ex 32: China Dual Control Policy Impact On PTA/PET



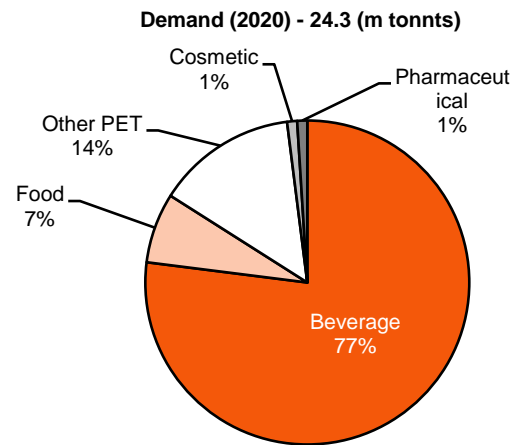
Source: IVL

Ex 33: China Beverage Sales Are Rising



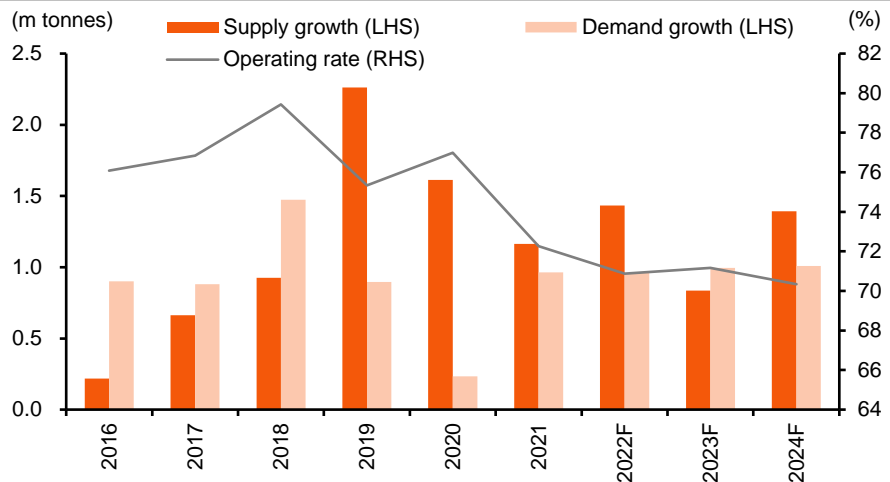
Source: Bloomberg

Ex 34: PET Linked Closely To End-Consumer Demand



Source: IVL

Ex 35: PET Supply Vs. Demand Growth



Source: IVL

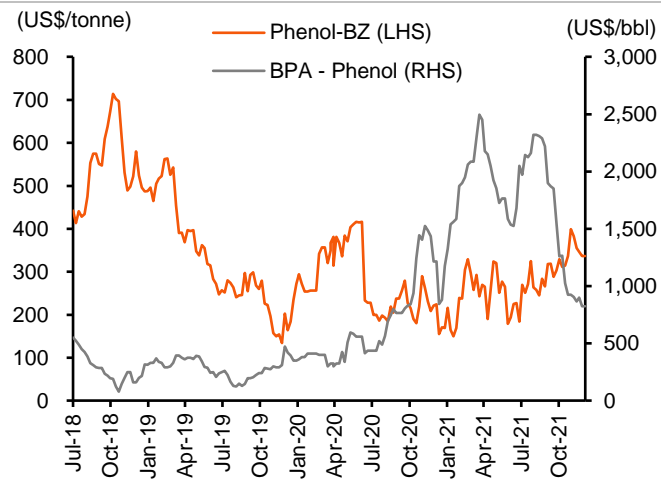
Note: PET is polyethylene terephthalate. PTA is purified terephthalic acid and it is a key feedstock for PET production.

Downstream spreads have normalized

Downstream spreads have already normalized from a high base: Down the line of the olefins and aromatics chains are further downstream products. These products are more specialized ones using upstream petrochemicals such as ethylene, propylene and aromatics as feedstock to produce them. As they are more specialized and further downstream, prices are higher but production volumes are smaller. Key downstream products that Thai petrochemical companies produce are bis-phenol A (BPA), used in polycarbonate plastic (linked to the automotive sector and resin for wind turbine), propylene oxide (PO) used in polyurethane (mainly used in foams for refrigerator and freezer thermal insulation systems), and acrylonitrile butadiene-styrene (ABS) used in the auto sector.

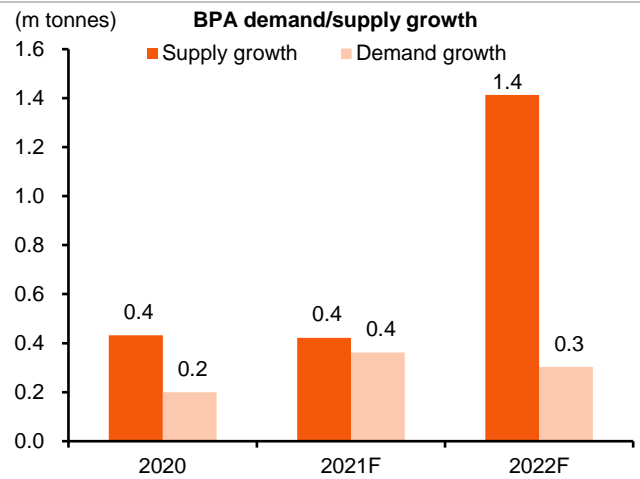
These products enjoyed a strong year in 2021 because of robust demand for durables. We expect spreads to normalize this year on the back of upcoming new supplies (see Exhibits 37 and 39). According to PTTGC, new PO capacity is expected at ~1.5m tpa, or 14% global capacity growth in 2022 vs. 0.4m tpa demand growth. Meanwhile, new ABS capacity is expected at 2m tpa in 2022 vs. 0.5m tpa demand growth and new BPA capacity is projected at 1.3m tpa in 2022 vs. 0.3m tpa demand growth.

Ex 36: BPA Spread Has Normalized From...



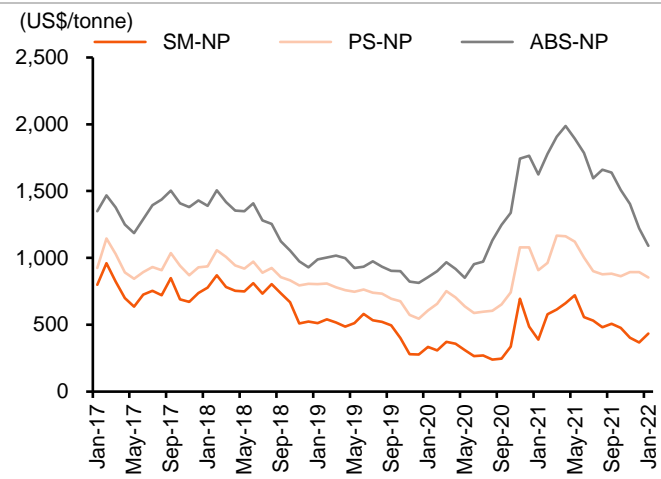
Source: Bloomberg

Ex 37: ...A Supply Jump This Year



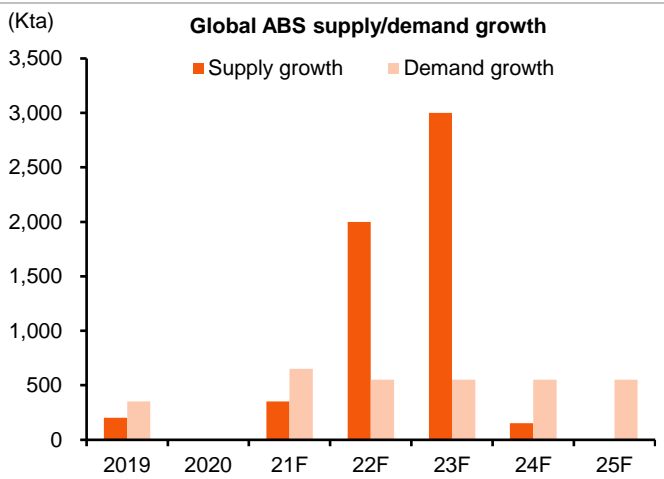
Source: PTTGC

Ex 38: ABS Spread Has Normalized From...



Source: Bloomberg

Ex 39: ...The Prospect Of A Jump In New Supply



Source: PTTGC

Refinery – High margins vs. weak structural demand

New supply cycle poses a threat to GRM

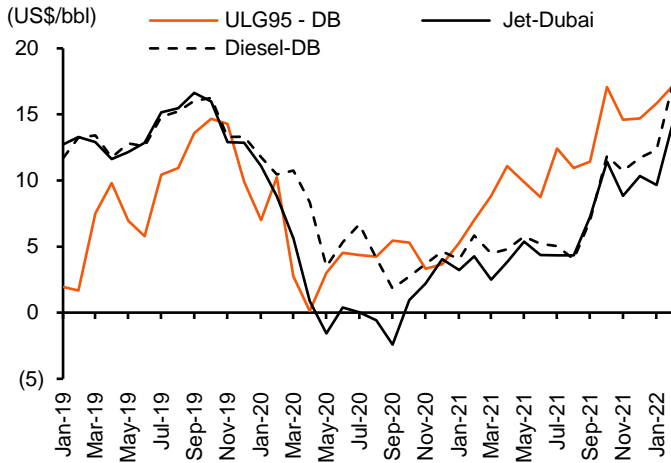
Refined oil products had a strong year in 2021 because of recovering demand and falling inventories. However, we see limited upside from here. While refinery margin (GRM) is already above pre-COVID level, the challenge lies with net capacity growth this year. Based on Thai oil data, net capacity growth in the Asia Pacific and Middle East is expected to be 1.1m b/d in 2022F, more than double the net supply growth of 0.3-0.4m b/d seen in 2020-21. We expect Chinese oil exports to continue to fall in 2022F, but this shouldn't provide much further support to GRM given that its export base is already at a very low level. We actually see downside risk to GRM from potentially weaker domestic demand in China. Additionally, there could be risk that the premium will remain high if OPEC output were to fail to reach its target while demand continues to improve. This will offset a GRM recovery, in our view.

New supply will be more than offset capacity closure

Subdued outlook extending beyond 2022F: The outlook beyond 2022F isn't good either for GRM, in our view. Despite refinery capacities continuing to be retired, we expect additional capacities and weak demand to keep a lid on GRM. New supplies from the Middle East and China could distort regional balances, offsetting the impact of various refinery closures. There is the prospect of a global capacity increase of some 6m b/d over the next five years to 2026. This is more than the estimated supply reduction of 1m b/d from

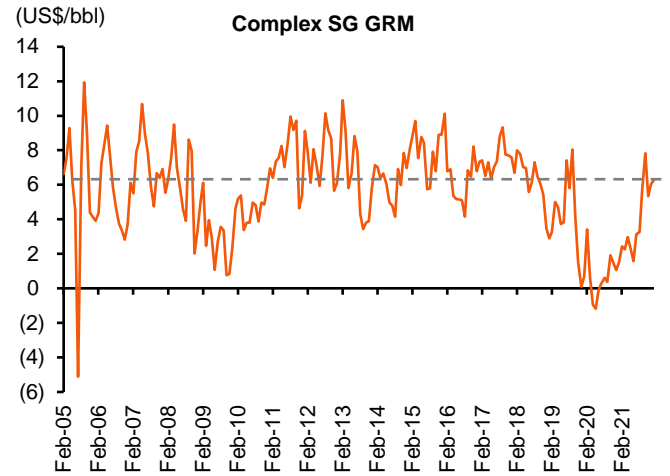
production rationalization. We also expect demand to be on a declining trend with increasing efforts to lower carbon emissions. Therefore, we foresee the Singapore complex GRM normalizing at USD5.6/5.3/5.0 per bbl over 2022-24F, lower than the pre-COVID average (2015-19) of USD6.5/bbl.

Ex 40: Refined Crack Spreads Have Recovered



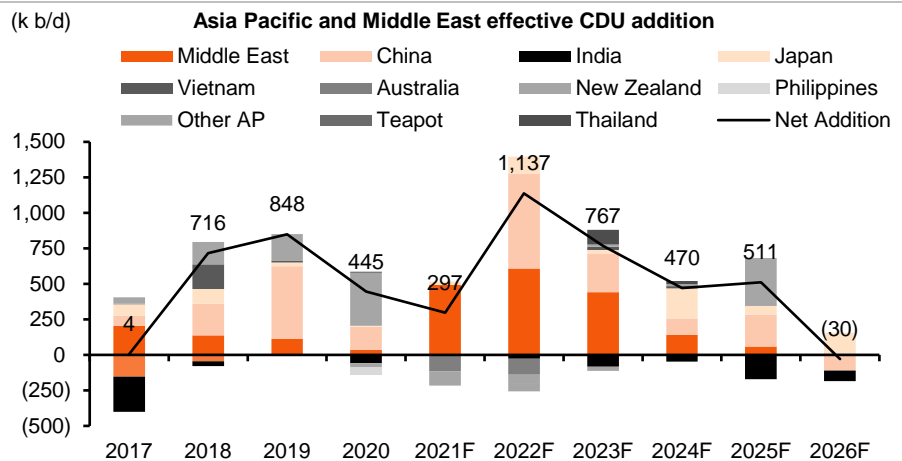
Source: TOP

Ex 41: SG Complex GRM Back To Historical Average



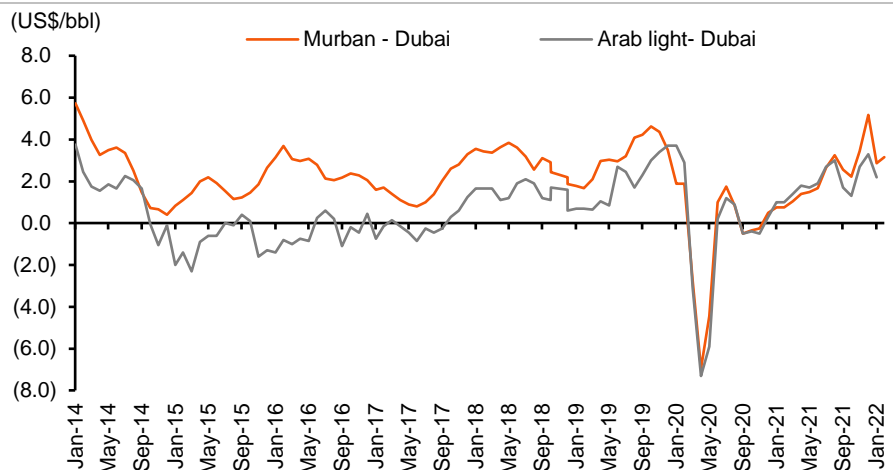
Source: Bloomberg, TOP, Thanachart estimate

Ex 42: Capacity Additions In 2022F To More Than Double The 2020-21 Level



Source: TOP

Ex 43: Crude Premium Could Remain Alleviated Offsetting GRM Recovery



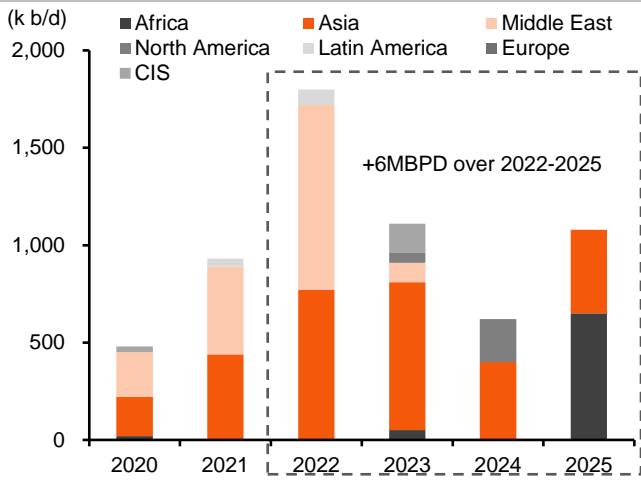
Source: Bloomberg

Ex 44: GRM Likely To Normalize At A Lower Level of USD6.5/bbl

(USD/bbl)	2020	2021	2022F	2023F	2024F
Gasoline-Dubai	4.4	11.0	13.5	12.0	12.0
Diesel-Dubai	6.2	6.7	13.0	13.0	13.0
Jet-Dubai	2.6	5.8	12.5	12.0	12.0
HSFO-Dubai	(3.0)	(4.9)	(8.0)	(8.0)	(8.0)
SG GRM	0.7	3.1	5.6	5.3	5.0

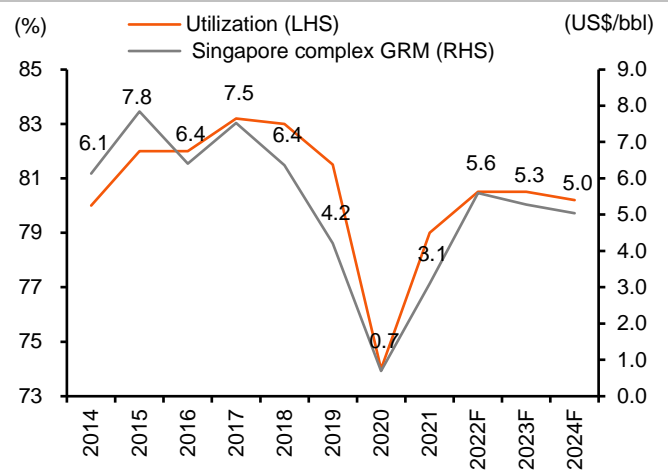
Sources: Bloomberg, TOP, Thanachart estimates

Ex 45: Global Refinery Capacity Addition



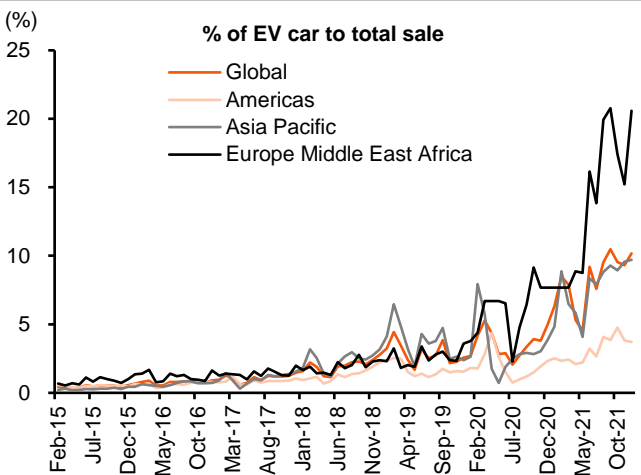
Source: Bloomberg

Ex 46: Global Utilization Rate Vs. Refinery Margins



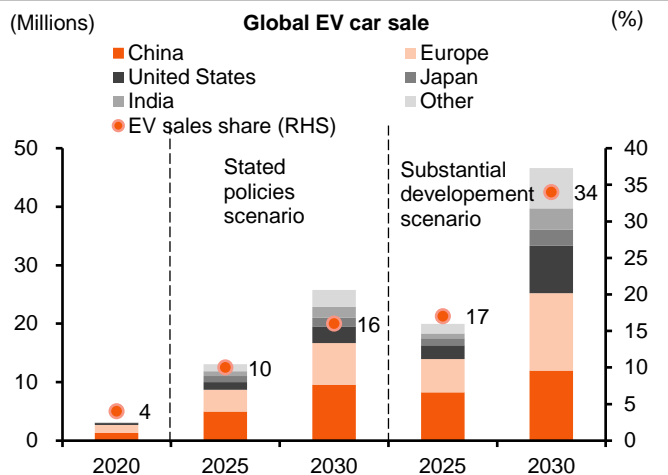
Source: Bloomberg, TOP, Thanachart estimates

Ex 47: EV Car Penetration Is Skyrocketing



Source: Bloomberg

Ex 48: And Expect To Continue To Rise



Source: IEA

China factors are not net positive in our view

Positive net new capacity and falling structural demand

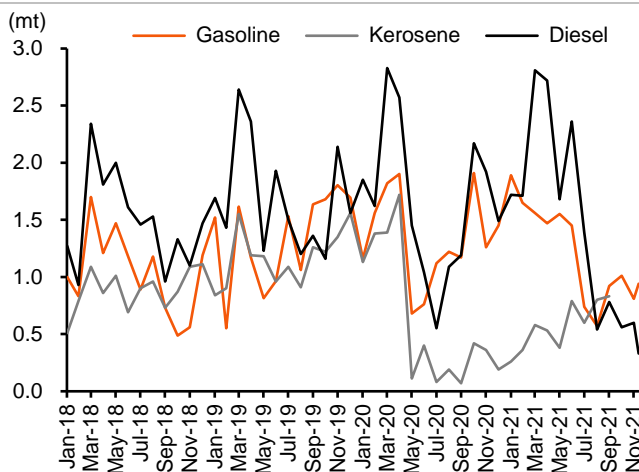
China targets to cut inefficient capacity to 6% of total by 2025

China factors aren't a plus for GRM: Despite two positive factors from China, we do not expect the net effect to be positive for regional GRM. The first positive factor is China's policy to terminate ageing, small (teapot) and inefficient capacities. The second factor is a drop in refined product exports from China.

These two factors are being offset by capacity increases from larger and more efficient plants and that "net" new supply is still on the rise (see Exhibit 51). As for the fall in exports from China, the export base is already low, leaving marginal room for a further drop. Chinese gasoline exports now account for only 4% of Asia-Pacific (excluding China) gasoline demand and 2% of diesel demand. This is a drop from 8-10% in 2020. Longer term, the mega-trend remains that China intends to cut carbon emissions and continues to increase the use of green energy which implies a structural declining demand trend for refinery products.

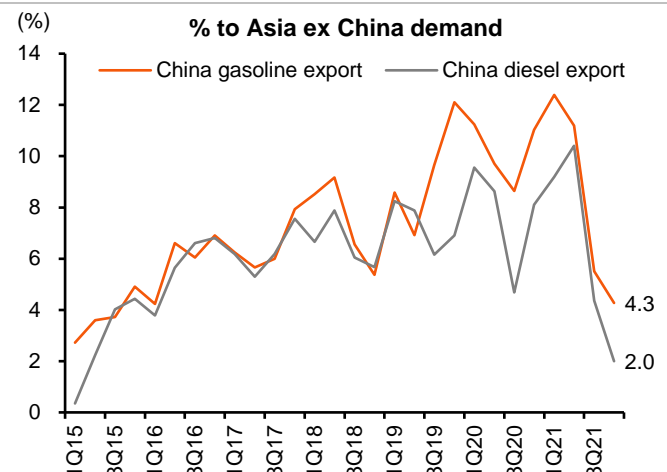
As for China's policy, it targets to cut small and inefficient plant capacities by 2025. China's capacities that are considered to be in such categories amount to approximately 0.7m bpd, or 6% of China's total refinery capacity. However, these are small plants and they are likely running at low utilization rates; therefore, the net impact is unlikely to reach 6%. Meanwhile, Exhibit 52 shows net new supply additions of 1.2m bpd over 2022-25 vs. only 0.8m bpd of net new capacity during 2017-20.

Ex 49: China's Refined Oil Exports Near Decades Low



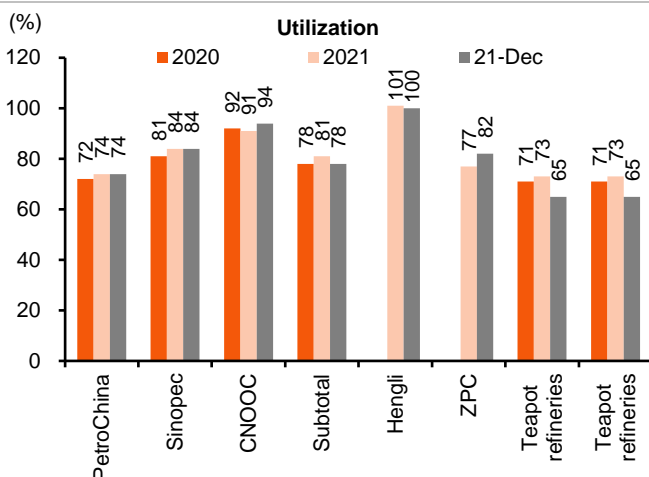
Source: Bloomberg

Ex 50: China's Refined Oil Exports Near Decades Low



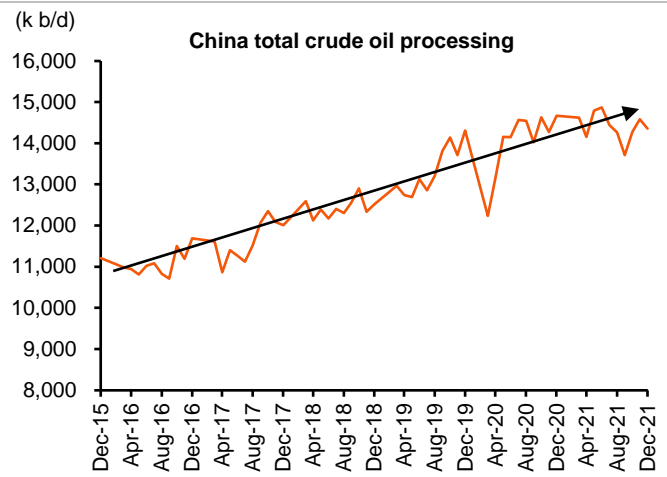
Sources: Bloomberg, Thanachart estimates

Ex 51: Lower Teapot U-Rate Offset By Other Increases

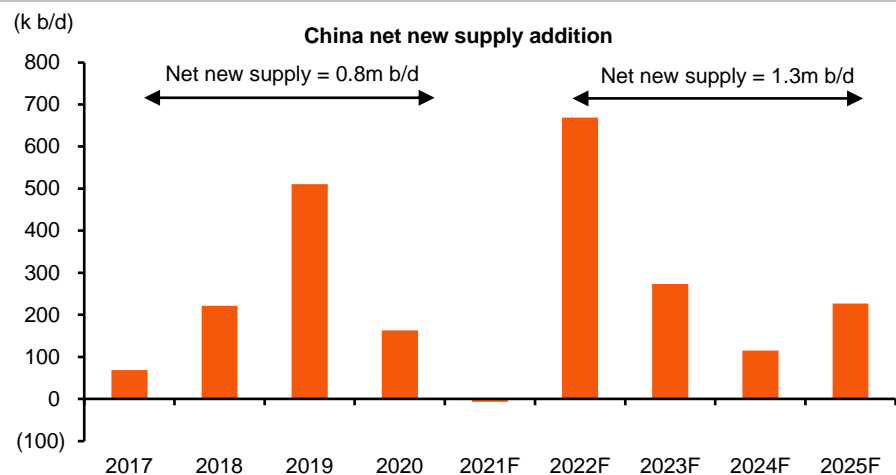


Source: SP Platts

Ex 52: China Crude Oil Processing Still On The Rise



Source: Bloomberg

Ex 53: China Still Sees “Net” Capacity Addition

Source: TOP

Strong oil price transcends weak Thai structural cycle

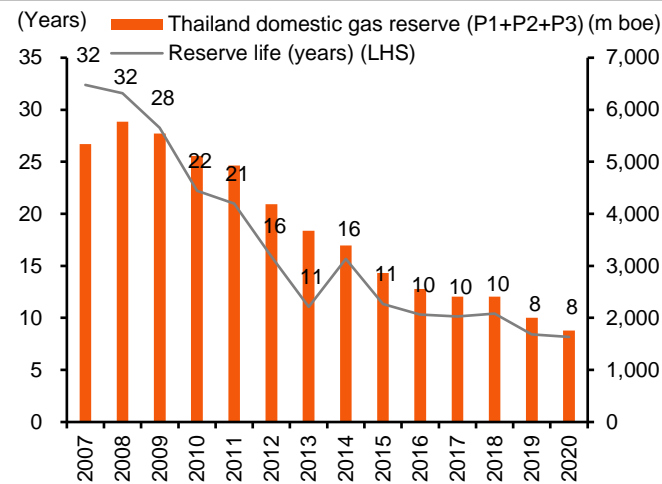
*Depleting reserves,
falling domestic gas
production*

Thailand's natural gas reserves have been on the decline with proved and probable reserve life falling from 32 years in 2007 to eight years in 2020. There have been no major gas finds in the past decade. Thai energy companies are therefore expecting to continue to experience a headwind from the structural decline in domestic gas output. Despite domestic gas output already reaching a 12-year low in 2021, the declining gas output trend looks set to become even more apparent in 2022 with the Bongkot and Erawan fields seeing lower production levels. These projects will be operated under new production-sharing scheme (PSC) contracts starting in April this year. The drop in domestic gas supply has resulted in rising imports of liquefied natural gas (LNG) which is more expensive than domestic gas and this has caused the average gas price in Thailand to increase.

*Rising gas imports, rising
average gas pool price*

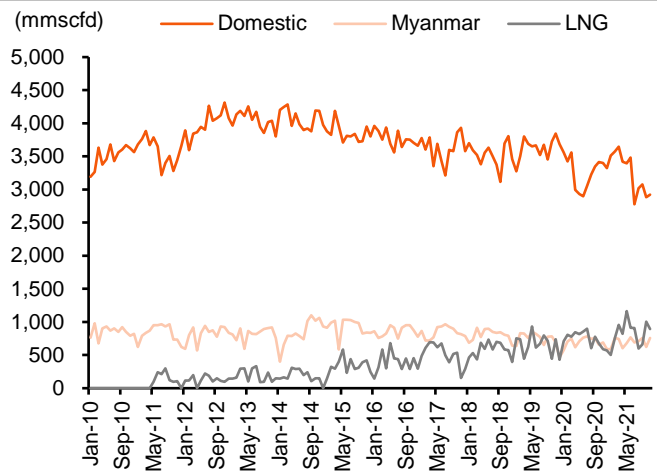
LNG imports rose from 11% of total domestic gas demand five years ago in 2017 to an estimated 18% in 2021. At the same time, Thailand's pool gas price has risen from USD5.8/mmbtu five years ago in 2017 to USD6.8 at present. Note that one factor alleviating the rising average pool gas price because of the increased gas import portion is falling domestic gas prices from two domestic fields, Bongkot and Erawan. As mentioned, Bongkot and Erawan will be operated under new PSC contracts from April 2022 and the new contracts have an estimated 40% lower price compared with the old concession contracts. However, with Erawan still producing below minimum volume over the next two years and the much higher LNG spot price relative to the domestic gas price, we still think that Thailand's gas pool price will trend upward. Please see more details on Thailand's domestic gas supply in *Energy Sector – Assessing Thailand's energy security*, dated 4 October 2021 and *PTT – Riding multiple tailwinds*, dated 9 September 2021.

Ex 54: Thailand's Declining Gas Reserves



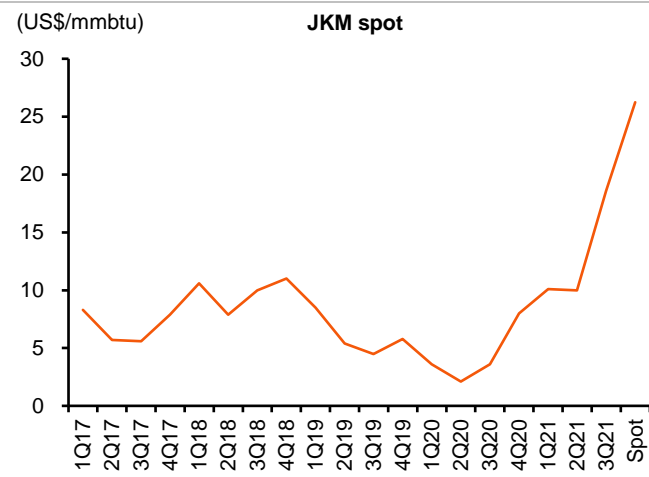
Source: EPPO

Ex 55: Sources Of Thailand's Gas Supply



Source: EPPO

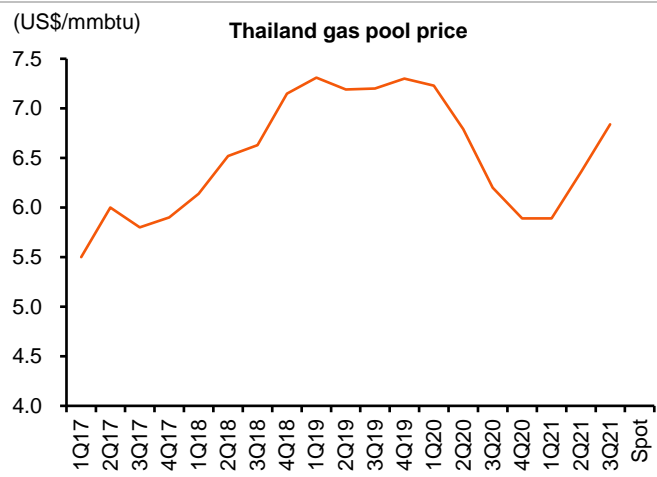
Ex 56: JKM Spot LNG Price



Source: PTT

Note: JKM stands for Japan Korea Marker and is benchmark LNG spot price in Asian region.

Ex 57: Thailand Domestic Gas Price On The Rise



Source: PTT

Further output fall from two major gas fields

Erawan's gas output to be at 250-300 mmscfd in 22F vs. 1,318 in 2017

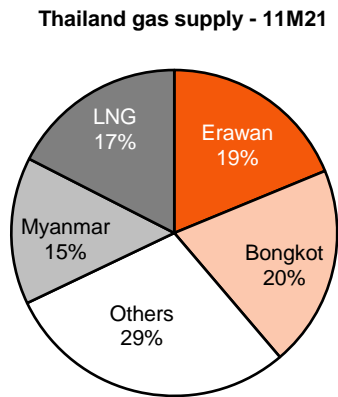
In 2022F, we see the biggest near-term risk for Thailand's gas supply being the transition from old operators to new ones for the Erawan and Bongkot gas fields. The changeover at Bongkot is likely to be less problematic as PTTEP will remain the operator. The transition could be trickier for Erawan as Chevron will hand over operations to PTTEP in April 2022. Complicating the matter further is the dispute between Chevron and the Thai government on decommissioning costs. This has caused Chevron not to provide enough capex to maintain production levels, while PTTEP still can't get into the site to prepare for the new concession. The combined output from these two fields fell to 38% of total gas supply, i.e., domestic output and imports, in 11M21 from 46% in 2017.

- **A sharp fall in Erawan's output.** Due to the expiring concession run by Chevron, Erawan's existing operator, new capex has dried up and production has fallen. Erawan's production fell by around 32% from 1,322 mmscfd in 2019 to 897 mmscfd in 11M21. PTTEP, the new concessionaire under a new 10-year concession, is scheduled to take over the operations in April 2022. PTTEP expects Erawan's output to continue to fall this year by around 67-72% to average 250-300 mmscfd, which is well below its minimum output of 800 mmscfd under the new PSC contract. PTTEP expects to take two years to ramp the output back up to 800 mmscfd.

Bongkot's output to fall to 700-800 mmscfd from 955 in 2021

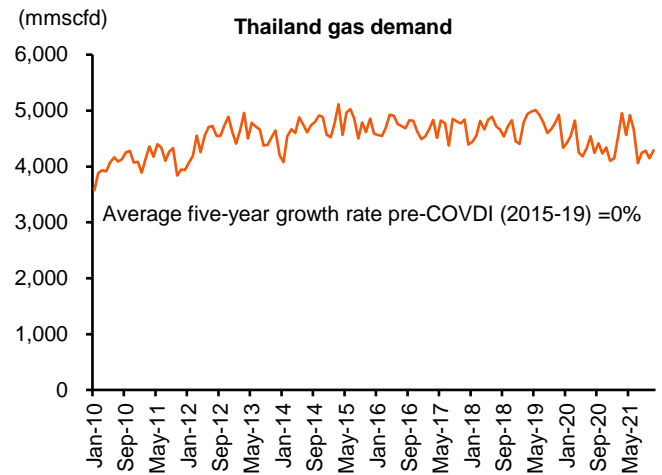
- **Bongkot's output also likely to fall.** PTTEP won the bid for the new PSC contract for the Bongkot field from April 2022. However, PTTEP was already the operator of Bongkot under the old concession. Bongkot's production stood at 955 mmscfd in 11M21. We expect PTTEP's output to drop to 700-800 mmscfd given depleting reserves since the field has been operating for nearly 30 years.

Ex 58: Thailand's Gas Supply Breakdown



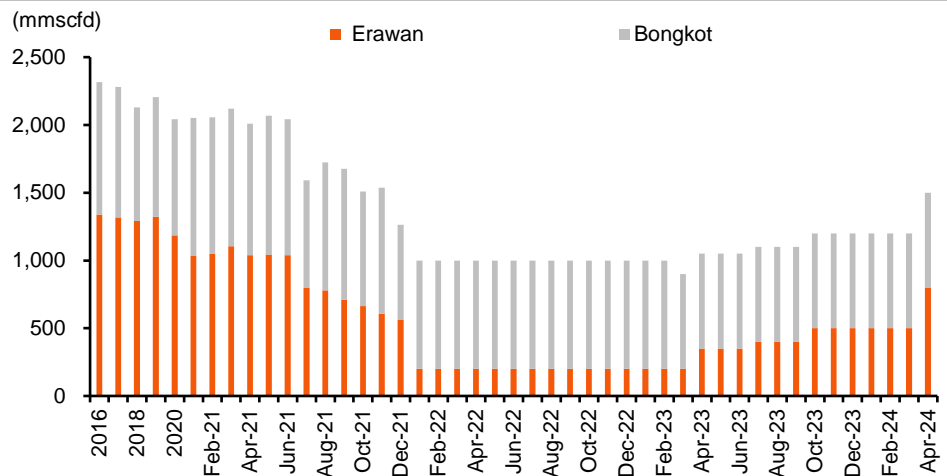
Sources: EPPO

Ex 59: Thailand's Domestic Gas Demand



Sources: EPPO

Ex 60: Falling Erawan And Bongkot Output



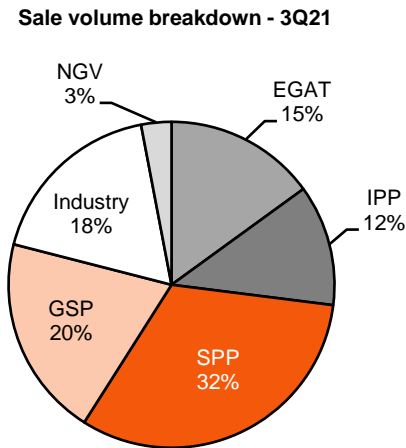
Sources: EPPO, Thanachart estimates

Three key Thai energy companies will be impacted by lower domestic gas output:

Impact on PTT via lower gas sales margin and lower GSP utilization

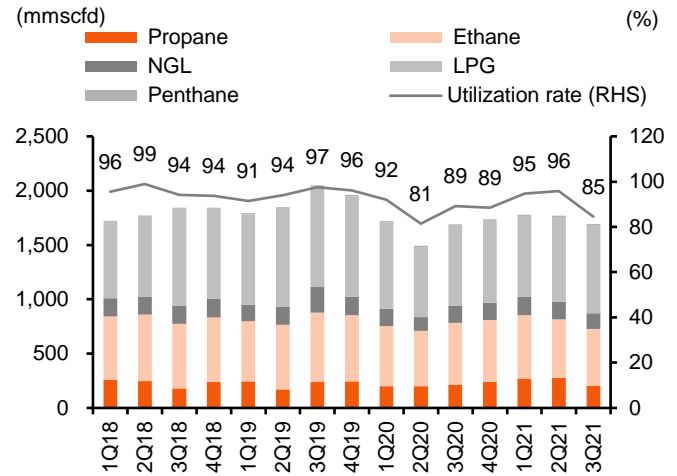
Impact on PTT: PTT is being negatively impacted in two areas. The first is a potentially lower margin of its gas sales business. PTT sells gas to power plants (59% of gas sales), industrial users (18%) and its own gas separation plants (GSP, 20%). PTT can pass on most of the rising average pool gas cost to power plant producers but not industrial users and GSP. This is because gas price sold to industrial users is based on a formula linked to fuel oil rather than a cost-plus one. As for GSP, most end-product prices are linked to market petrochemical prices, such as polyethylene and LPG, and are not cost plus. The second area where PTT will be hit is a lower utilization rate of its GSP because of falling domestic gas feedstock. GSP cannot use imported LNG as LNG is a dry gas, not a wet gas that is used as petrochemical feedstock. GSP contribution accounted for 8% of PTT's total EBITDA in 2021.

Ex 61: PTT's Gas Sales Volume Breakdown



Source: PTT

Ex 62: GSP's Utilization Falls

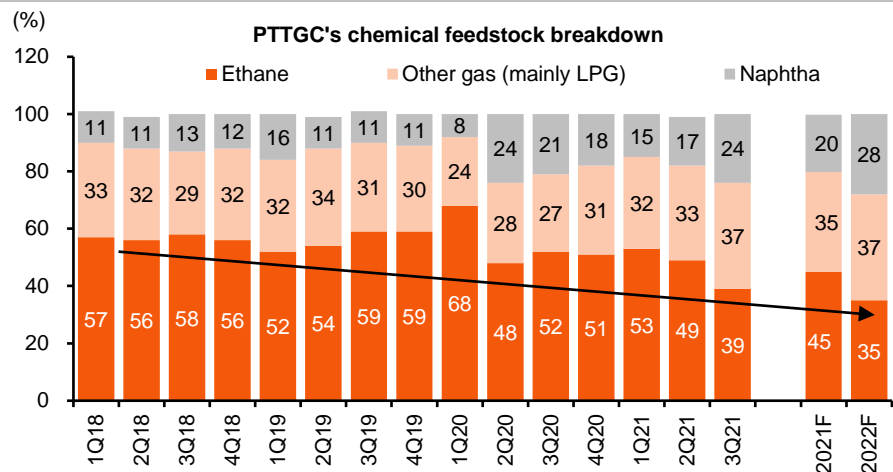


Source: PTT

PTTGC's gas-based crackers hit by rising gas feedstock costs

Impact on PTTGC: The impact on PTTGC is more about the availability of ethane gas feedstock due to falling domestic supply. This is due to the fact LNG can't be used as petrochemical feedstock because it's a dry gas. PTTGC is more of a gas-based petrochemical firm with ethane gas feedstock normally accounting for 50-60% of total feedstock, but this dropped to 45% in 2021F, and we expect it to decline further to 35% in 2022F. The greater dependency on naphtha and LPG in turn caused PTTGC's margin to drop because of the relatively higher cost than that of ethane, whose pricing is based on a net-back formula with its parent, PTT. Therefore, PTTGC is losing its competitive edge in being a low-cost producer.

Ex 63: PTTGC's Feedstock Breakdown

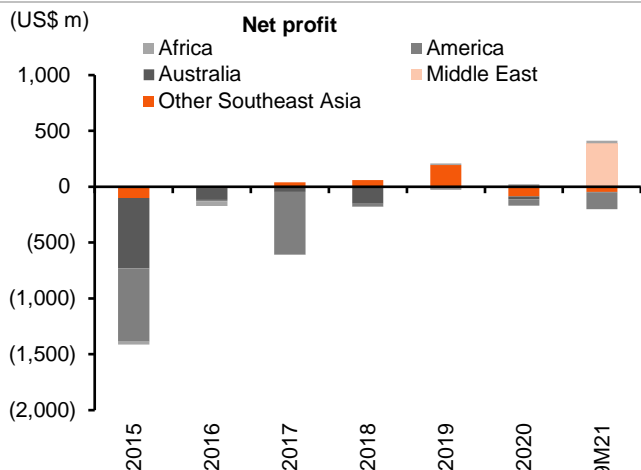


Sources: PTTGC, Thanachart estimate

PTTEP has been a direct victim of depleting domestic reserves

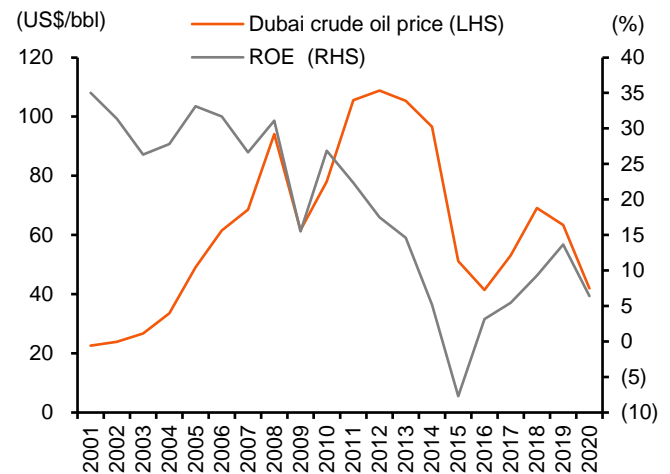
Impact on PTTEP: As a domestic E&P company, PTTEP has been hit by depleting domestic oil and gas reserves for a long time. Falling domestic reserves have forced PTTEP to invest more and more outside of Thailand to maintain or grow its earnings. However, because of its limited operating experience overseas, the risk-return profile is worse for PTTEP for its overseas projects where it has to compete with global- and regional-scale oil companies. Starting this year, PTTEP as a new operator had to inject more capex to ramp up Erawan production as Chevron didn't maintain production as planned. Under the PSC contracts, we expect a lower return profile for both Erawan and Bongkot fields.

Ex 64: Losses At Most of PTTEP's Overseas Investments



Source: PTTEP

Ex 65: PTTEP's ROE Lower At The Same Oil Price



Source: Bloomberg, PTTEP

Valuation and short-term stories are key

The sector has de-rated, in our view

One good thing in our view is that the Thai energy sector's valuation has already been de-rated from an average of 1.6x P/BV in 2011-14 (pre-shale gas revolution) to 1.3x in 2014-19 (pre-COVID). 2022F has started off at 1.1x. Given the weak structural outlook and the end of the post-crisis turnaround cycle, our investment strategy focuses on valuation and short-term stories and catalysts.

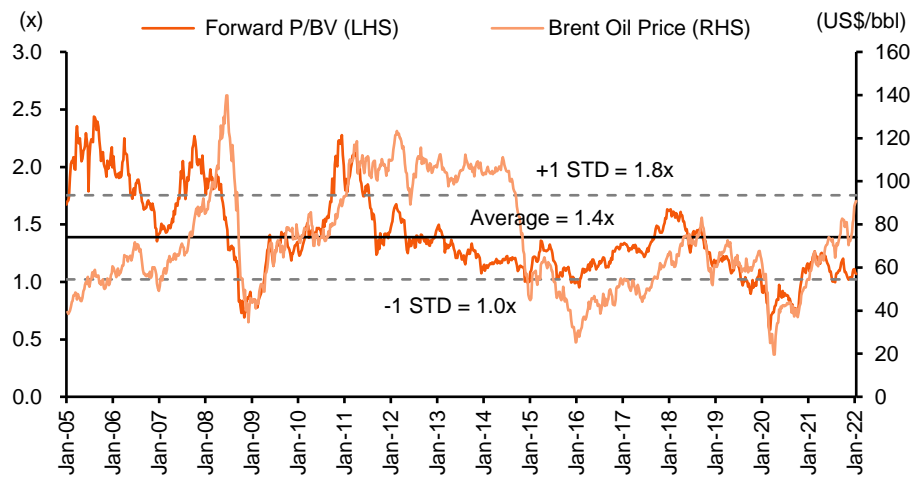
IVL is our top pick: We like IVL the most in the sector. *First*, it offers a story of limited PET capacity growth in the market. *Second*, the disappointing Huntsman contribution during the COVID years is turning around following higher oil prices. *Third*, we forecast IVL's EPS growth to be one of the strongest in the sector. *Lastly*, rPET expansion allows IVL to ride the greener trend.

PTT and PTTEP for strong oil prices: PTTEP is our no.2 choice. Although there are several headwinds, we still see the near-term price driver being oil prices. We expect PTTEP to be one of the companies that will see strong profit growth this year. Additionally, volume should grow by 12% despite the Erawan output shortfall. Our BUY call on PTT is mainly on valuations given its substantial share price underperformance relative to oil and its subsidiaries.

Buy BCP and IRPC on attractive valuations. We see IRPC as being in a good position for a turnaround in chemical margins, while capex is limited, and its valuations are attractive in our view. We rate BCP as a BUY despite its strong performance because we still see its valuations as attractive given that it's the cheapest refiner in Thailand, on our estimates, trading at 0.7x P/BV with a 7% forecast dividend yield.

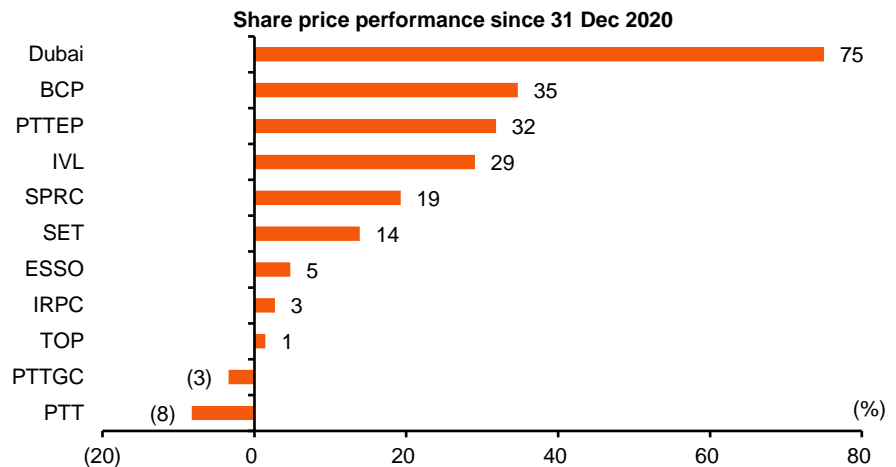
SELL TOP and SPRC, HOLD ESSO and PTTGC. We have a SELL call on TOP because we expect the company to continue to struggle to fund its capacity expansion while it looks unlikely to enjoy a big profit turnaround this year. We have a SELL on SPRC because of its strong share price performance and limited new catalysts to drive the share price up further. We rate Esso as HOLD on the back of a shutdown of its PX loss-making unit and share price underperformance during GRM turnaround since 4Q21. Finally, we rate PTTGC as a HOLD because of concerns about rising naphtha costs, but its valuations already look to have reflected the change in its cost structure.

Ex 66: Thai Energy Company Valuations Still Lag Strong Oil Prices



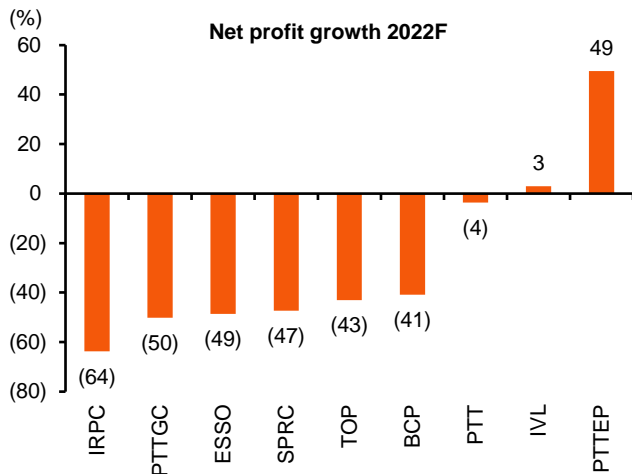
Sources: Bloomberg, Thanachart estimates

Ex 67: Thai Energy Share Price Performances



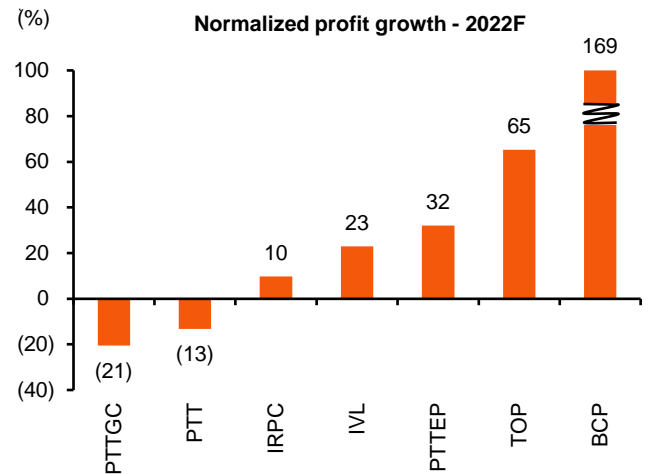
Sources: Bloomberg

Ex 68: We Expect IVL To Deliver Both...



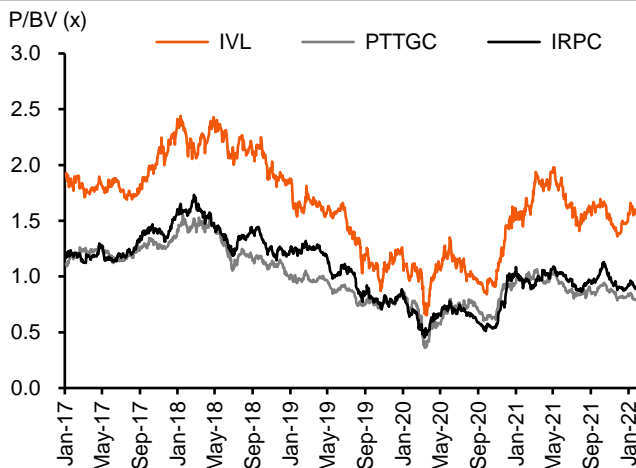
Sources: Company, Thanachart estimates

Ex 69: ...Reported Profit And Core Profit Growth



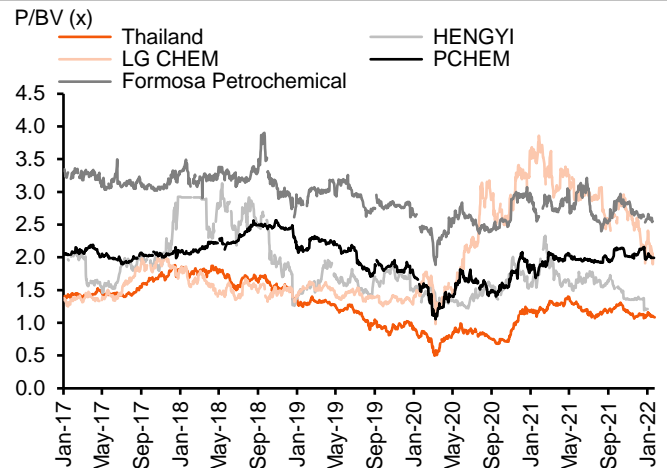
Sources: Company, Thanachart estimates

Ex 70: Chemical Names' P/BV



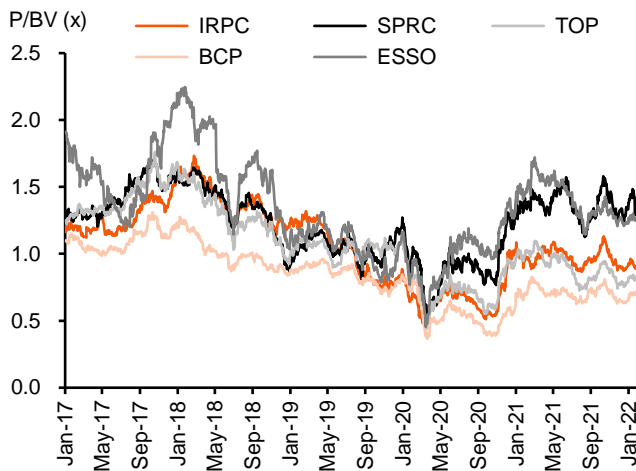
Sources: Bloomberg, Thanachart estimates

Ex 71: Thailand Chemical P/BVs Are Below Peers'



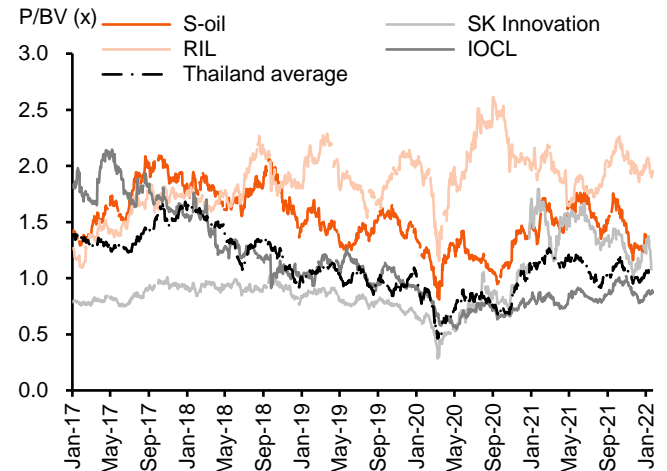
Sources: Bloomberg, Thanachart estimates

Ex 72: Among Refiners, We Prefer IRPC And BCP



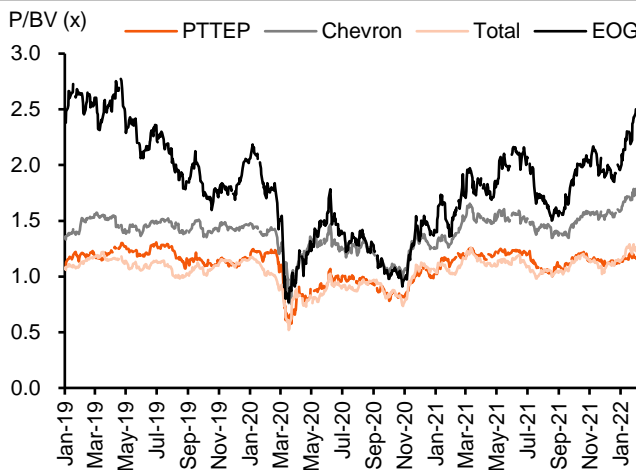
Sources: Bloomberg, Thanachart estimates

Ex 73: Thai Refineries Are Also Trading Lower Than Peers



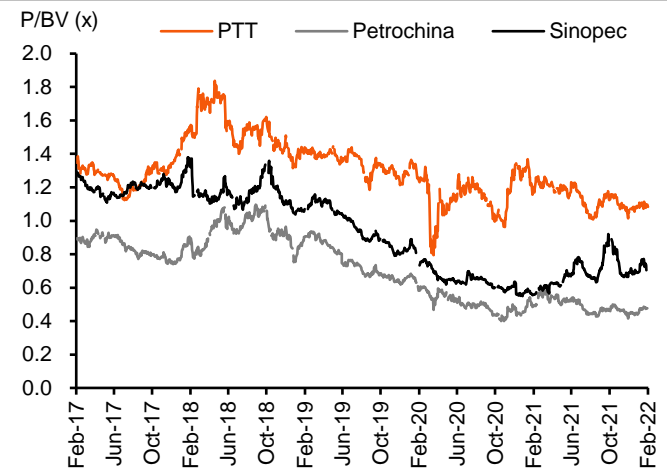
Sources: Bloomberg, Thanachart estimates

Ex 74: Shale Gas Players Gaining A Premium



Sources: Bloomberg, Thanachart Estimate

Ex 75: Integrated Oil SOEs See Deratings



Sources: Bloomberg, Thanachart Estimate

Ex 76: Sector Valuation Comparison

		BCP	ESSO	IRPC	IVL	PTT	PTTEP	PTTGC	SPRC	TOP	Industry
Rating		BUY	HOLD	BUY	BUY	BUY	BUY	HOLD	SELL	SELL	
Target price (Bt)	Thanachart	32.00	8.00	4.40	60.00	46.00	152.00	56.00	8.40	46.00	
	Consensus	33.00	8.10	4.30	56.00	49.25	145.00	72.00	11.40	63.00	
Consensus rec.	BUY	12	3	11	20	25	24	16	15	16	
	HOLD	3	1	12	2	2	4	10	3	8	
	SELL	1	4	2	0	0	1	1	1	3	
Sales (Bt m)	2020	136,450	126,672	152,319	331,513	1,615,665	160,401	329,291	130,163	247,913	3,230,387
	2021F	179,392	159,073	216,364	490,610	1,977,624	219,068	414,276	180,793	347,890	4,185,091
	2022F	190,131	169,762	242,065	545,124	2,188,754	274,681	564,750	206,426	374,352	4,756,045
	2023F	187,913	169,343	235,484	538,287	2,110,815	246,589	520,860	205,289	351,198	4,565,779
Norm profits (Bt m)	2020	(4,450)	(7,911)	(5,196)	6,433	38,053	21,397	7,634	(6,325)	(10,421)	39,212
	2021F	1,687	(902)	4,962	23,202	116,669	43,989	29,480	(1,104)	3,850	221,833
	2022F	4,538	2,384	5,440	28,510	101,252	58,083	23,442	3,167	6,363	233,179
	2023F	4,085	2,769	6,638	29,995	94,758	49,469	23,380	2,764	6,621	220,479
Sales growth (%)	2020	(28.4)	(25.2)	(29.7)	(6.0)	(27.2)	(16.0)	(20.2)	(22.9)	(31.9)	(23.1)
	2021F	31.5	25.6	42.0	48.0	22.4	36.6	25.8	38.9	40.3	34.6
	2022F	6.0	6.7	11.9	11.1	10.7	25.4	36.3	14.2	7.6	14.4
	2023F	(1.2)	(0.2)	(2.7)	(1.3)	(3.6)	(10.2)	(7.8)	(0.6)	(6.2)	(3.7)
Norm EPS growth (%)	2020	na	na	na	22.8	(51.0)	(56.2)	(6.5)	na	na	(22.7)
	2021F	na	na	na	260.7	206.6	105.6	286.2	na	na	214.8
	2022F	169.0	na	9.7	22.9	(13.2)	32.0	(20.5)	na	65.3	37.9
	2023F	(10.0)	16.2	22.0	5.2	(6.4)	(14.8)	(0.3)	(12.7)	4.1	0.4
Operating margin (%)	2020	(2.1)	(7.9)	(5.4)	3.0	4.3	27.7	1.8	(6.1)	(4.0)	1.3
	2021F	5.2	0.1	3.9	7.5	12.5	39.5	7.5	0.2	2.1	8.7
	2022F	5.9	1.7	2.5	8.3	9.9	40.8	4.6	2.0	2.3	8.7
	2023F	5.6	1.9	3.1	8.9	9.8	38.7	4.9	1.9	2.7	8.6
ROE (%)	2020	(9.1)	(43.4)	(6.5)	5.0	4.3	6.0	2.7	(21.5)	(8.8)	(7.9)
	2021F	3.4	(5.4)	6.0	17.1	12.3	11.4	9.9	(3.9)	3.3	6.0
	2022F	8.6	11.8	6.0	18.7	9.7	13.2	7.3	10.4	5.3	10.1
	2023F	7.5	12.2	7.1	17.9	8.8	10.4	7.1	8.7	5.4	9.4
Dividend yield (%)	2020	4.9	0.0	1.6	1.5	2.6	3.3	1.8	0.0	1.4	1.9
	2021F	7.0	0.0	2.6	5.1	5.2	3.9	7.0	5.0	4.2	4.5
	2022F	7.0	0.0	3.5	5.3	5.2	4.7	4.6	2.9	2.4	3.9
	2023F	7.0	0.0	4.3	5.6	6.5	5.4	4.5	4.1	2.5	4.4
P/BV (x)	2020	0.8	1.8	1.0	2.1	1.3	1.4	0.9	1.6	0.9	1.3
	2021F	0.8	1.4	0.9	1.9	1.1	1.2	0.8	1.4	0.9	1.1
	2022F	0.7	1.2	0.8	1.7	1.0	1.1	0.8	1.4	0.9	1.1
	2023F	0.7	1.1	0.8	1.5	1.0	1.1	0.8	1.3	0.8	1.0
Norm PE (x)	2020	na	na	na	41.9	29.1	23.9	33.7	na	na	32.1
	2021F	23.3	na	15.7	11.6	9.5	11.6	8.7	na	27.4	15.4
	2022F	8.6	11.1	14.3	9.5	10.9	8.8	11.0	13.2	16.6	11.6
	2023F	9.6	9.6	11.8	9.0	11.7	10.4	11.0	15.1	15.9	11.6
EV/EBITDA (x)	2020	20.2	na	167.7	14.9	6.9	4.6	13.2	na	na	37.9
	2021F	6.5	18.4	7.5	7.7	4.1	3.5	8.6	16.3	15.6	9.8
	2022F	6.6	8.6	8.8	6.9	4.2	2.8	8.7	7.2	16.9	7.8
	2023F	6.7	7.2	7.8	6.6	4.1	3.0	8.2	6.8	15.2	7.3
Net D/E (x)	2020	0.7	1.9	0.7	1.3	0.3	(0.0)	0.3	0.3	0.6	0.7
	2021F	1.2	1.3	0.6	1.2	0.3	0.1	0.7	0.3	1.0	0.7
	2022F	1.3	0.9	0.6	1.3	0.3	0.1	0.6	0.2	1.3	0.7
	2023F	1.2	0.7	0.5	1.1	0.3	0.1	0.5	0.1	1.3	0.6

Sources: Company data; Thanachart estimates

Valuation Comparison

Ex 77: Comparison With Regional Peers

Company	Code	Country	EPS Growth		PE		P/BV		EV/EBITDA		Div. Yield		ROE	
			21F (%)	22F (%)	21F (x)	22F (x)	21F (x)	22F (x)	21F (x)	22F (x)	21F (%)	22F (%)	21F (%)	22F (%)
Refining & Marketing														
Caltex Australia	CTX AU	Australia	77.0	32.0	na	na	na	na	na	na	na	na	11.7	14.9
BPCL	BPCL IN	India	121.2	(2.2)	8.1	8.3	1.8	1.4	7.3	7.3	5.5	5.6	24.7	18.4
HPCL	HPCL IN	India	160.5	(11.2)	5.4	6.0	1.2	1.0	5.5	6.4	6.5	6.3	24.1	17.5
IOCL	IOCL IN	India	129.5	36.5	7.7	5.6	1.1	1.0	6.8	5.4	6.6	8.7	14.6	17.1
Reliance Industries	RIL IN	India	(0.6)	26.5	33.9	26.8	2.6	2.0	21.9	16.3	0.3	0.3	8.6	7.9
SK Energy	096770 KS	S.Korea	na	81.9	28.4	15.6	1.2	1.1	8.5	7.9	0.9	1.5	4.4	7.6
S-OIL	010950 KS	S.Korea	na	(9.2)	7.0	7.7	1.5	1.3	5.2	5.8	4.3	4.0	23.5	18.7
Petron	PCOR PM	Philippines	na	200.0	19.5	6.5	0.5	0.5	10.8	7.5	na	na	1.9	5.5
Formosa Petrochemical	6505 TT	Taiwan	na	(8.0)	17.7	19.2	2.6	2.6	11.2	11.7	4.3	3.6	15.3	13.4
Bangchak *	BCP TB	Thailand	na	169.0	23.3	8.6	0.8	0.7	6.5	6.6	7.0	7.0	na	na
ESSO (Thailand) *	ESSO TB	Thailand	na	na	na	11.1	1.4	1.2	18.4	8.6	0.0	0.0	na	na
IRPC Pcl *	IRPC TB	Thailand	na	9.7	15.7	14.3	0.9	0.8	7.5	8.8	2.6	3.5	na	na
PTG Pcl *	PTG TB	Thailand	(3.6)	11.8	13.6	12.2	2.8	2.5	6.8	6.4	3.7	4.1	21.5	21.4
PTT Global Chemicals *	PTTGC TB	Thailand	286.2	(20.5)	8.7	11.0	0.8	0.8	8.6	8.7	7.0	4.6	9.9	7.3
Star Petroleum Refining *	SPRC TB	Thailand	na	na	na	13.2	1.4	1.4	16.3	7.2	5.0	2.9	na	na
SUSCO Pcl	SUSCO TB	Thailand	3.0	23.4	18.7	15.2	1.1	1.1	7.6	6.2	2.7	3.3	5.9	7.1
Thai Oil *	TOP TB	Thailand	na	65.3	27.4	16.6	0.9	0.9	15.6	16.9	4.2	2.4	3.3	5.3
Average			96.7	40.3	16.8	12.4	1.4	1.3	10.3	8.6	4.0	3.9	13.0	12.5
Integrated oils														
PetroChina	857 HK	China	na	(5.6)	7.7	8.1	0.6	0.5	3.5	3.4	6.4	6.1	7.2	6.5
Sinopec	386 HK	China	112.7	(9.7)	6.6	7.3	0.6	0.6	3.5	3.5	8.9	8.3	9.7	8.4
Total	FP	France	na	12.7	na	na	na	na	na	na	na	na	15.3	16.0
Eni	ENI IM	Italy	na	30.2	11.3	8.7	1.2	1.1	3.9	3.4	6.5	6.8	10.6	13.1
RD/Shell A	RDSA NA	Netherlands	na	30.0	na	na	na	na	4.7	4.0	na	na	11.2	12.8
Repsol	REP SM	Spain	na	20.7	7.5	6.2	0.8	0.7	4.0	3.6	5.4	5.6	11.1	12.6
Chevron Texaco	CVX US	USA	na	19.4	15.8	13.2	1.9	1.8	6.8	6.0	3.9	4.1	11.7	13.3
Exxon Mobil	XOM US	USA	na	25.6	15.4	12.2	2.0	1.9	7.4	6.4	4.3	4.4	13.5	15.9
Conoco Phillips	COP US	USA	na	37.7	15.3	11.1	2.7	2.4	6.4	5.1	1.9	2.2	20.8	22.9
PTT Pcl *	PTT TB	Thailand	206.6	(13.2)	9.5	10.9	1.1	1.0	4.1	4.2	5.2	5.2	12.3	9.7
Average			159.6	14.8	11.1	9.7	1.4	1.3	4.9	4.4	5.3	5.3	12.3	13.1
Exploration and Production														
Santos	STO AU	Australia	168.2	48.9	18.2	12.2	2.0	1.7	7.4	4.6	1.5	2.1	11.0	17.3
Woodside	WPL AU	Australia	194.3	43.5	16.9	11.8	1.8	1.7	5.3	4.0	4.0	5.1	11.2	15.3
Suncor Energy	SU US	Canada	na	73.2	11.7	6.7	1.2	1.2	5.6	4.6	3.5	5.6	10.9	16.7
ONGC	ONGC IN	India	(46.2)	195.9	16.9	5.7	1.0	0.8	6.5	4.3	1.9	5.9	6.1	15.3
RIL	RIL IN	India	(0.6)	26.5	33.9	26.8	2.6	2.0	21.9	16.3	0.3	0.3	8.6	7.9
Cairn India	CAIR IN	India	na	na	na	na	na	na	na	na	na	na	na	na
Apache	APA US	USA	na	50.0	8.7	5.8	na	na	4.7	3.9	0.4	1.4	(104.9)	(174.8)
Devon Energy	DVN US	USA	na	61.5	15.8	9.8	3.7	2.7	7.4	5.4	1.9	2.7	38.1	40.5
PTTEP *	PTTEP TB	Thailand	105.6	32.0	11.6	8.8	1.2	1.1	3.5	2.8	3.9	4.7	11.4	13.2
Average			84.3	66.4	16.7	11.0	1.9	1.6	7.8	5.7	2.2	3.5	(1.0)	(6.1)

Sources: Bloomberg, * Thanachart estimates
Based on 3 February 2022 closing prices

Ex 78: Comparison With Regional Peers

Name	BBG code	Country	EPS growth		— PE —		— P/BV —		EV/EBITDA		– Div yield –	
			21F (%)	22F (%)	21F (x)	22F (x)	21F (x)	22F (x)	21F (x)	22F (x)	21F (%)	22F (%)
Sinopec Shanghai	338 HK	Hong Kong	na	25.4	6.6	5.2	0.6	0.6	6.9	5.5	7.3	9.2
Sinopec Yizheng	1033 HK	Hong Kong	na	32.5	17.0	12.8	1.6	1.4	10.1	9.1	0.0	0.0
AKR Corporindo	AKRA IJ	Indonesia	31.9	19.9	13.5	11.3	1.5	1.4	10.1	9.0	3.8	4.4
Reliance Industries Ltd	RIL IN	India	(0.6)	26.5	33.9	26.8	2.6	2.0	21.9	16.3	0.3	0.3
LG Chem	051910 KS	South Korea	175.7	(20.8)	13.1	16.5	2.3	2.1	7.3	7.4	1.6	1.6
SK Energy	096770 KS	South Korea	na	81.9	28.4	15.6	1.2	1.1	8.5	7.9	0.9	1.5
Petronas Chemicals Group	PCHEM MK	Malaysia	na	(15.2)	10.8	12.8	2.1	2.0	7.2	7.7	5.3	4.3
Formasa Chemical	1326 TT	Taiwan	130.6	(17.4)	11.3	13.7	1.2	1.2	8.5	11.2	6.5	5.3
Far Eastern New Century	1402 TT	Taiwan	32.3	(0.9)	13.0	13.2	0.7	0.7	11.6	11.3	5.9	6.0
IRPC Pcl *	IRPC TB *	Thailand	na	9.7	15.7	14.3	0.9	0.8	7.5	8.8	2.6	3.5
Indorama Ventures *	IVL TB *	Thailand	260.7	22.9	11.6	9.5	1.9	1.7	7.7	6.9	5.1	5.3
PTT Global Chemical *	PTTGC TB *	Thailand	286.2	(20.5)	8.7	11.0	0.8	0.8	8.6	8.7	7.0	4.6
Siam Cement *	SCC TB *	Thailand	29.2	(2.4)	9.4	9.7	1.3	1.2	9.1	8.8	4.8	5.3
TPI Polene	TPIPL TB	Thailand	125.0	(40.7)	6.7	11.3	na	na	8.3	9.9	na	na
Average			119.0	7.2	14.3	13.1	1.4	1.3	9.5	9.2	3.9	3.9

Sources: Bloomberg, * Thanachart estimates

Based on 3 February 2022 closing prices

STOCK PERFORMANCE

	Absolute (%)				Rel SET (%)			
	1M	3M	12M	YTD	1M	3M	12M	YTD
SET INDEX	0.7	3.5	12.6	0.7	—	—	—	—
Energy	4.3	0.8	4.4	4.3	3.6	(2.7)	(8.2)	3.6
BCP TB	12.9	7.5	10.7	12.9	12.2	4.0	(2.0)	12.2
ESSO TB	4.1	(1.9)	(10.5)	4.1	3.4	(5.5)	(23.2)	3.4
IRPC TB	(0.5)	(8.6)	6.1	(0.5)	(1.2)	(12.2)	(6.5)	(1.2)
IVL TB	11.0	15.0	27.2	11.0	10.3	11.4	14.5	10.3
PTT TB	2.0	2.6	1.3	2.0	1.3	(0.9)	(11.3)	1.3
PTTEP TB	9.3	9.8	20.0	9.3	8.6	6.2	7.4	8.6
PTTGC TB	(3.0)	(7.3)	(6.9)	(3.0)	(3.7)	(10.9)	(19.6)	(3.7)
SPRC TB	(1.5)	(4.5)	1.0	(1.5)	(2.2)	(8.0)	(11.6)	(2.2)
TOP TB	4.5	(5.5)	(8.8)	4.5	3.9	(9.0)	(21.5)	3.9

Source: Bloomberg

SECTOR - SWOT ANALYSIS

S — Strength

- Strong balance sheets should enable Thai energy companies to take advantage of low oil prices in M&As.
- Synergies within the PTT group could help lower costs and increase competitiveness via integration.

O — Opportunity

- Potential investment in new areas such as retail, consumer, pharmaceutical, EV and parts and renewable energy areas.
- Thai refineries, i.e. TOP, IRPC and PTTGC have room for further downstream expansion into higher value-added plastic pellets.
- Overseas acquisitions that could drive growth and value.

W — Weakness

- Limited growth opportunities within the country and domestic gas reserve is depleting.
- High-cost E&P operation in Thailand.
- Earnings and cash flows are highly volatile, following fluctuations in global oil prices.
- PTT group companies are state-owned enterprise companies that could have lower investment flexibility.

T — Threat

- Cheap imported LNG is a major threat to local gas producers, including PTTEP.
- Overpaying for acquisitions and higher-than-expected expansion costs.
- Regulatory risk, ie, price caps.

REGIONAL COMPARISON

Name	—EPS growth—		— PE —		— P/BV —		— EV/EBITDA —		— Div. Yield —	
	21F	22F	21F	22F	21F	22F	21F	22F	21F	22F
	(%)	(%)	(x)	(x)	(x)	(x)	(x)	(x)	(%)	(%)
Australia	146.5	41.5	17.6	12.0	1.9	1.7	6.4	4.3	2.8	3.6
China	112.7	(7.6)	7.1	7.7	0.6	0.6	3.5	3.5	7.7	7.2
India	60.7	45.3	17.6	13.2	1.7	1.4	11.6	9.3	3.5	4.5
S.Korea	na	36.4	17.7	11.6	1.3	1.2	6.8	6.9	2.6	2.8
US	na	38.8	14.2	10.4	2.6	2.2	6.5	5.4	2.5	3.0
Thailand	119.6	34.7	16.1	12.2	1.2	1.2	9.5	7.6	4.1	3.8
Average	109.8	31.5	15.0	11.2	1.6	1.4	7.4	6.2	3.9	4.1

Sources: Bloomberg Consensus

Note: * Thanachart estimate – using normalized EPS

BUY (From: SELL)

TP: Bt 32.00

(From: Bt 21.00)

Transfer of Coverage

Upside : 12.3%

4 FEBRUARY 2022

Bangchak Corporation Pcl (BCPTB)

Another value oil play

We upgrade BCP to BUY due to its cheapest valuation in the sector in our view and a turnaround of its E&P business. We also expect its oil retail and biofuel businesses to bottom out this year. We value BCP at Bt32.



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Upgrading to BUY

We upgrade BCP to BUY (from Sell) with a higher DCF-based 12-month TP of Bt32 (from Bt21). **First**, we see BCP as the least expensive stock in the sector at 0.7x P/BV, 8.6x PE and 7.0% yield. **Second**, it has E&P exposure to enjoy the currently elevated oil price environment. **Third**, we expect its biofuel and oil retail businesses to bottom out this year. In this report we revise up our earnings forecasts by 202/101% in 2022-23F to reflect our higher oil price assumptions (Exhibit 5) and a faster-than-expected GRM recovery since 4Q21. This report is a part of *Energy Sector – Lifeline stretched out, dated 4 February 2022* and it marks a coverage transfer.

E&P up both from price and volume

BCP started investing in E&P business with a 46%-owned listed E&P company OKEA in Norway since 2018. And we estimate it to contribute 17/14% of BCP's total profit in 2022-23F. OKEA isn't only benefiting from high oil prices but we also expect an 18% volume growth in 2022F. The volume growth is contributed by the start-up of OKEA's Yme field's operation in October 2021. Oil price sensitivity is 4% rise in BCP's profit from every USD1/bbl oil price increase.

Higher refinery utilization

We expect BCP to also enjoy higher refinery utilization this year, when there is no maintenance schedule compared to a major plant turnaround in 1Q21. On GRM, like other refinery companies, BCP should enjoy higher GRM this year as a result of GRM turnaround last year that brought GRM back to a normalized level. We forecast BCP's GRM at USD6/5.8/5.7 per barrel in 2022-24F from an average of USD4.2 in 2021F and a full turnaround at USD6 in 4Q21. BCP's five-year average GRM was USD7/bbl.

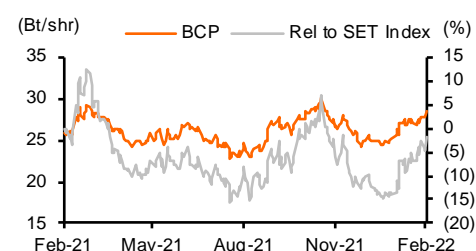
Biofuel and oil retail bottoming out

BCP's biofuel business accounted for 11% of EBITDA in 2019 with oil retail at 26%. These businesses suffered from the COVID crisis and the recent government intervention to keep retail oil prices low. BCP's marketing margin fell from Bt0.85/liter in 2020 to Bt0.73 in 2021 and around Bt0.55 currently. Due to our view of elevated oil prices this year, we forecast BCP's marketing margin at Bt0.7 this year and before rising to Bt0.8 in 2023-24F. As for biofuel business, BCP produces palm-based fuel for diesel mix. The government has intervened to temporarily stop sales of B10 (10% biodiesel mix) and B20 and changed to sales of B5 diesel. This reduces biofuel demand. However, we expect this to revert to normal in 2023F when oil prices start to come down and help offset with better margin from higher crude palm oil price.

COMPANY VALUATION

Y/E Dec (Bt m)	2020A	2021F	2022F	2023F
Sales	136,450	179,392	190,131	187,913
Net profit	(6,967)	7,675	4,538	4,085
Consensus NP	—	6,500	4,941	4,804
Diff frm cons (%)	—	18.1	(8.2)	(15.0)
Norm profit	(4,450)	1,687	4,538	4,085
Prev. Norm profit	—	(77)	1,502	2,037
Chg frm prev (%)	—	na	202.1	100.6
Norm EPS (Bt)	(3.2)	1.2	3.3	3.0
Norm EPS grw (%)	na	na	169.0	(10.0)
Norm PE (x)	na	23.3	8.6	9.6
EV/EBITDA (x)	20.2	6.5	6.6	6.7
P/BV (x)	0.8	0.8	0.7	0.7
Div yield (%)	4.9	7.0	7.0	7.0
ROE (%)	na	3.4	8.6	7.5
Net D/E (%)	71.3	116.5	131.7	120.4

PRICE PERFORMANCE



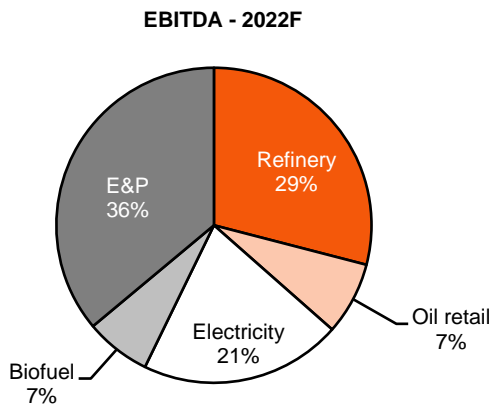
COMPANY INFORMATION

Price as of 3-Feb-22 (Bt)	28.50
Market Cap (US\$ m)	1,183.4
Listed Shares (m shares)	1,376.9
Free Float (%)	64.3
Avg Daily Turnover (US\$ m)	3.9
12M Price H/L (Bt)	30.25/22.70
Sector	Energy
Major Shareholder	Social Security Office 14.40%

Sources: Bloomberg, Company data, Thanachart estimates

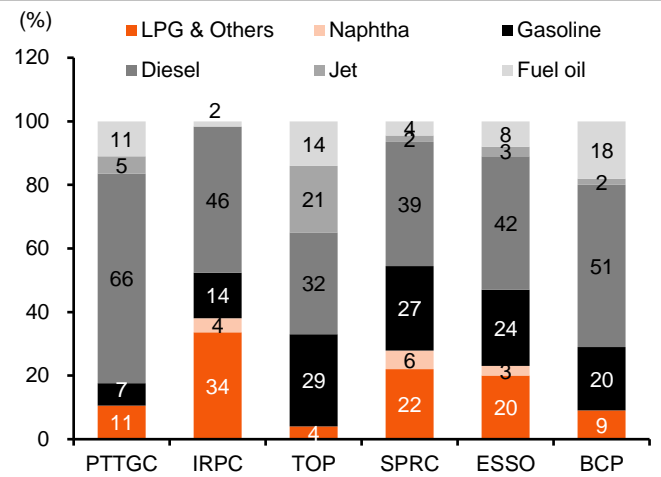


Ex 1: Refinery and E&P Are Driving 2022F Profit Growth



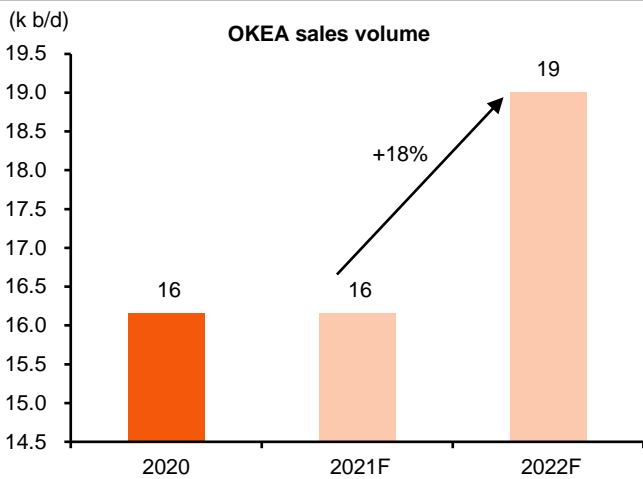
Sources: Thanachart estimates

Ex 2: Refinery Yield Breakdown



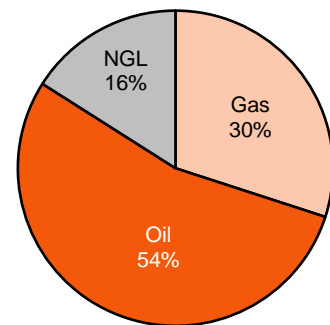
Sources: Company data

Ex 3: OKEA Volume To Jump 18% in 2022F



Sources: Company data, Thanachart estimates

Ex 4: OKEA Volume Breakdown In 3Q21



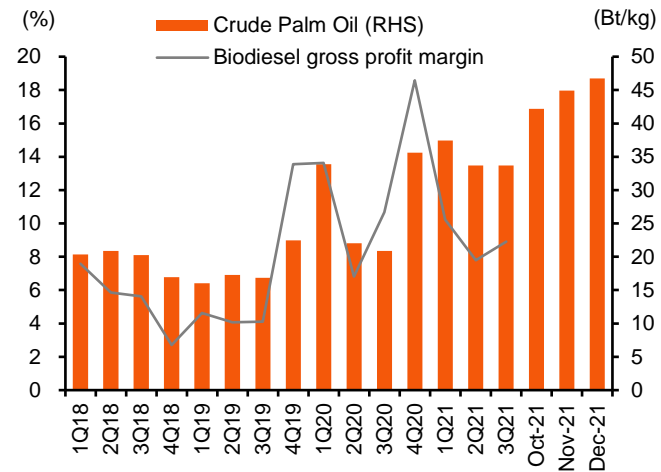
Sources: Company data

Ex 5: Our Brent Crude Oil Price Assumptions

(USD/bbl)	2021	2022F	2023F	2024F
New	69	80	73	71
Old	69	65	66	68

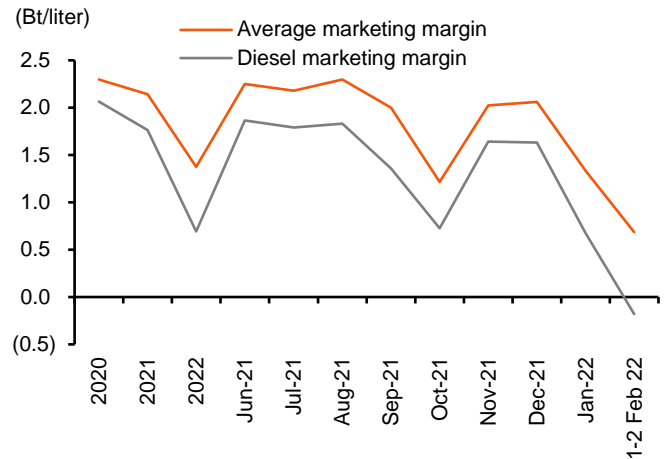
Sources: Company data, Thanachart estimates

Ex 6: Higher CPO Could Lead To Higher Biodiesel Margin



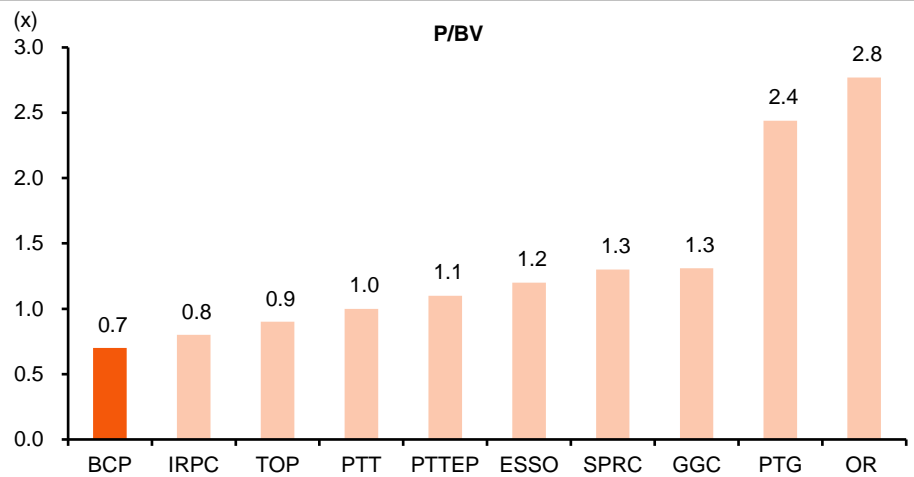
Sources: Company data

Ex 7: Retail Marketing Margin at Rock Bottom



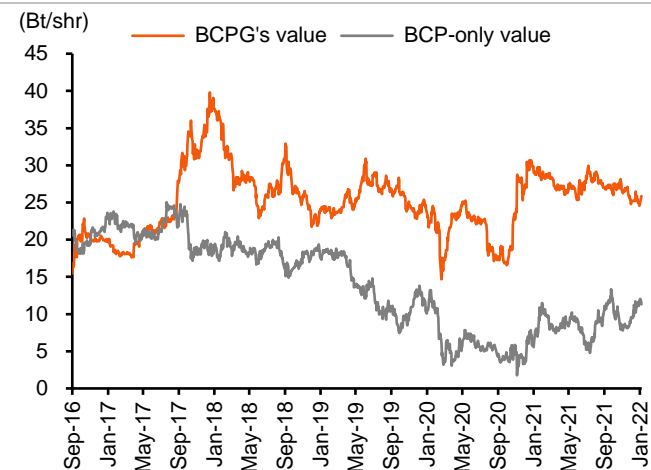
Sources: EPPO

Ex 8: Valuation Looks Inexpensive To Us



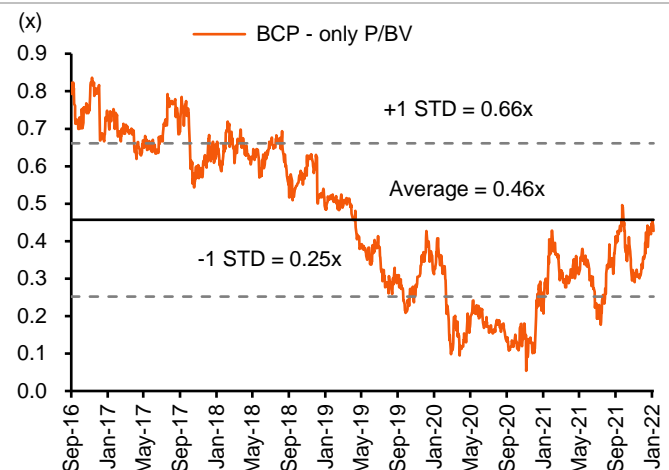
Sources: Bloomberg, Thanachart estimates

Ex 9: BCP-Only Value Vs. Subsidiary BCPG's Value



Sources: Bloomberg, Thanachart estimates

Ex 10: BCP-Only P/BV



Sources: Bloomberg, Thanachart estimates

Ex 11: 12-month DCF-based TP Calculation, Using A Base Year Of 2022F

(Bt m)	2022F	2023F	2024F	2025F	2026F	2027F	2028F	2029F	2030F	2031F	2032F	Terminal value
EBITDA	19,666	18,623	17,670	18,258	18,211	17,686	18,378	18,466	17,952	18,655	18,754	
Free cash flow *	(10,806)	7,387	8,455	6,772	10,095	10,921	9,369	10,532	11,364	9,817	10,986	192,036
PV of free cash flow *	(10,106)	6,460	6,913	5,092	7,068	7,120	5,687	5,953	5,981	4,616	4,789	83,723
Risk-free rate (%)	2.5											
Market risk premium (%)	8.0											
Beta	1.3											
WACC (%)	6.9											
Terminal growth (%)	2.0											
Enterprise value - add investments	133,295											
Net debt (2021F)	76,008											
Minority interest	13,524											
Equity value	43,763											
# of shares (m)	1,377											
Equity value/share (Bt)	32											

Sources: Company data, Thanachart estimates

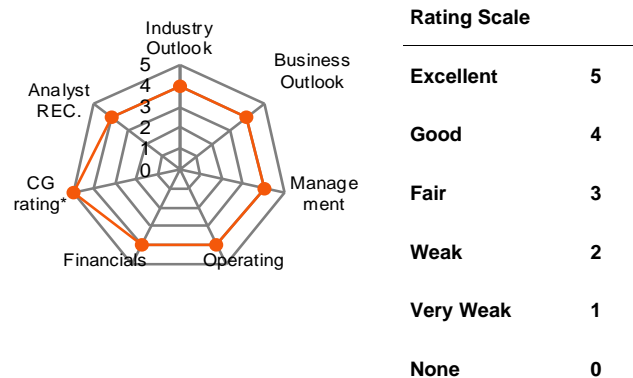
Note: *Excluding solar farm cash flows; our TP is rounded up

COMPANY DESCRIPTION

Bangchak Corporation (BCP) engages in a number of businesses with its core operations centring on oil refining (capacity 120,000bpd) and marketing (the No.3 player in Thailand with a 16% market share). In recent years, the company has invested heavily in the power business, chiefly renewable energy via 70%-owned subsidiary BCPG. It has also diversified into new industries such as oil & gas exploration and production.

Source: Thanachart

COMPANY RATING



Source: Thanachart; *CG Rating

Rating Scale

Excellent	5
Good	4
Fair	3
Weak	2
Very Weak	1
None	0

THANACHART'S SWOT ANALYSIS

S — Strength

- Integrated refinery and marketing model. This provides BCP with a high-margin outlet for its refinery.
- Access to high-quality yet relatively low-priced domestic crude oil helps improve its GRM vs peers

O — Opportunity

- Diversifying into green energy.

W — Weakness

- Volatile earnings due to its refinery exposure
- Significant investments in new businesses have yet to pay off.
- Limited opportunity to expand its refinery given constraints over land availability

T — Threat

- The government intervenes in the marketing margin at the gas station business, especially when oil prices increase rapidly.
- Overpaying for acquisitions and higher-than-expected expansion costs.

CONSENSUS COMPARISON

	Consensus	Thanachart	Diff
Target price (Bt)	32.98	32.00	-3%
Net profit 21F (Bt m)	6,500	7,675	18%
Net profit 22F (Bt m)	4,941	4,538	-8%
Consensus REC	BUY: 12	HOLD: 3	SELL: 1

RISKS TO OUR INVESTMENT CASE

- Lower-than-expected GRM would represent the key downside risk to our EPS forecasts and TP.
- Lower-than-expected returns on new investments would represent another downside risk to our EPS forecasts and TP.

HOW ARE WE DIFFERENT FROM THE STREET?

- Our 2022F earnings are 8% lower than consensus, mainly due to our lower GRM assumption.
- Our TP is slightly less than consensus as we likely assume slower recovery and lower long-term GRM.

Sources: Bloomberg consensus, Thanachart estimates

Source: Thanachart

INCOME STATEMENT

FY ending Dec (Bt m)	2019A	2020A	2021F	2022F	2023F
Sales	190,489	136,450	179,392	190,131	187,913
Cost of sales	180,257	132,122	162,917	171,294	169,926
Gross profit	10,232	4,328	16,476	18,837	17,987
% gross margin	5.4%	3.2%	9.2%	9.9%	9.6%
Selling & administration expenses	7,614	7,141	7,176	7,605	7,517
Operating profit	2,618	(2,813)	9,300	11,232	10,471
% operating margin	1.4%	-2.1%	5.2%	5.9%	5.6%
Depreciation & amortization	5,032	6,821	8,553	8,434	8,152
EBITDA	7,650	4,008	17,853	19,666	18,623
% EBITDA margin	4.0%	2.9%	10.0%	10.3%	9.9%
Non-operating income	495	533	533	533	533
Non-operating expenses	147	0	0	0	0
Interest expense	(1,701)	(1,969)	(1,650)	(2,183)	(2,281)
Pre-tax profit	1,558	(4,250)	8,183	9,582	8,723
Income tax	68	(1,589)	5,858	4,312	3,925
After-tax profit	1,491	(2,661)	2,325	5,270	4,797
% net margin	0.8%	-2.0%	1.3%	2.8%	2.6%
Shares in affiliates' Earnings	404	(592)	936	936	936
Minority interests	(757)	(1,197)	(1,574)	(1,668)	(1,649)
Extraordinary items	593	(2,517)	5,988	0	0
NET PROFIT	1,732	(6,967)	7,675	4,538	4,085
Normalized profit	1,138	(4,450)	1,687	4,538	4,085
EPS (Bt)	1.3	(5.1)	5.6	3.3	3.0
Normalized EPS (Bt)	0.8	(3.2)	1.2	3.3	3.0

Likely to report a profit decline in 2022F due to the absence of stock gains

BALANCE SHEET

FY ending Dec (Bt m)	2019A	2020A	2021F	2022F	2023F
ASSETS:					
Current assets:	37,621	47,296	52,396	54,167	53,845
Cash & cash equivalent	7,564	21,651	20,000	20,000	20,000
Account receivables	9,038	6,402	8,417	8,920	8,816
Inventories	15,835	16,162	19,929	20,954	20,787
Others	5,184	3,080	4,050	4,292	4,242
Investments & loans	21,142	15,586	15,586	15,586	15,586
Net fixed assets	52,584	54,567	77,514	94,280	93,328
Other assets	16,441	30,874	50,214	50,891	50,751
Total assets	127,788	148,323	195,709	214,923	213,510
LIABILITIES:					
Current liabilities:	27,083	25,502	33,387	36,519	35,718
Account payables	13,447	12,277	15,139	15,917	15,790
Bank overdraft & ST loans	5,051	3,975	4,800	5,521	5,315
Current LT debt	5,198	5,174	9,121	10,491	10,099
Others current liabilities	3,387	4,076	4,328	4,590	4,514
Total LT debt	37,792	54,095	82,087	94,417	90,888
Others LT liabilities	4,098	10,409	15,010	15,312	15,250
Total liabilities	68,973	90,006	130,485	146,247	141,855
Minority interest	7,211	11,950	13,524	15,192	16,841
Preferreds shares	0	0	0	0	0
Paid-up capital	1,377	1,377	1,377	1,377	1,377
Share premium	11,157	11,157	11,157	11,157	11,157
Warrants	0	0	0	0	0
Surplus	11,338	10,732	10,732	10,732	10,732
Retained earnings	27,732	23,100	28,434	30,218	31,549
Shareholders' equity	51,604	46,366	51,700	53,484	54,815
Liabilities & equity	127,788	148,323	195,709	214,923	213,510

BCP's investment is mainly in its subsidiary, BCPG

Sources: Company data, Thanachart estimates

CASH FLOW STATEMENT

FY ending Dec (Bt m)	2019A	2020A	2021F	2022F	2023F
Earnings before tax	1,558	(4,250)	8,183	9,582	8,723
Tax paid	(68)	1,589	(5,858)	(4,312)	(3,925)
Depreciation & amortization	5,032	6,821	8,553	8,434	8,152
Chg In working capital	3,997	1,139	(2,920)	(750)	144
Chg In other CA & CL / minorities	(4,837)	6,707	219	955	910
Cash flow from operations	5,682	12,007	8,177	13,909	14,004
Capex	(8,186)	(8,804)	(31,500)	(25,200)	(7,200)
Right of use	0	(11,087)	0	0	0
ST loans & investments	0	0	0	0	0
LT loans & investments	(1,080)	5,556	0	0	0
Adj for asset revaluation	0	(190)	0	0	0
Chg In other assets & liabilities	(6,014)	(1,248)	(8,974)	(376)	78
Cash flow from investments	(15,279)	(15,773)	(40,474)	(25,576)	(7,122)
Debt financing	(1,809)	15,935	32,987	14,421	(4,128)
Capital increase	0	0	0	0	0
Dividends paid	(1,760)	(743)	(2,341)	(2,754)	(2,754)
Warrants & other surplus	8,917	2,661	0	0	0
Cash flow from financing	5,349	17,854	30,646	11,667	(6,881)
Free cash flow	(2,503)	3,202	(23,323)	(11,291)	6,804

We project negative FCF over 2022F, due to power subsidiary capex

VALUATION

FY ending Dec	2019A	2020A	2021F	2022F	2023F
Normalized PE (x)	34.5	na	23.3	8.6	9.6
Normalized PE - at target price (x)	38.7	na	26.1	9.7	10.8
PE (x)	22.7	na	5.1	8.6	9.6
PE - at target price (x)	25.4	na	5.7	9.7	10.8
EV/EBITDA (x)	10.4	20.2	6.5	6.6	6.7
EV/EBITDA - at target price (x)	11.1	21.4	6.7	6.8	7.0
P/BV (x)	0.8	0.8	0.8	0.7	0.7
P/BV - at target price (x)	0.9	1.0	0.9	0.8	0.8
P/CFO (x)	6.9	3.3	4.8	2.8	2.8
Price/sales (x)	0.2	0.3	0.2	0.2	0.2
Dividend yield (%)	2.8	4.9	7.0	7.0	7.0
FCF Yield (%)	(6.4)	8.2	(59.4)	(28.8)	17.3
(Bt)					
Normalized EPS	0.8	(3.2)	1.2	3.3	3.0
EPS	1.3	(5.1)	5.6	3.3	3.0
DPS	0.8	1.4	2.0	2.0	2.0
BV/share	37.5	33.7	37.5	38.8	39.8
CFO/share	4.1	8.7	5.9	10.1	10.2
FCF/share	(1.8)	2.3	(16.9)	(8.2)	4.9

Sources: Company data, Thanachart estimates

BCP looks inexpensive on a P/BV basis and with a dividend yield of 7%

FINANCIAL RATIOS

FY ending Dec	2019A	2020A	2021F	2022F	2023F
Growth Rate					
Sales (%)	(0.8)	(28.4)	31.5	6.0	(1.2)
Net profit (%)	(29.7)	na	na	(40.9)	(10.0)
EPS (%)	(29.7)	na	na	(40.9)	(10.0)
Normalized profit (%)	(52.0)	na	na	169.0	(10.0)
Normalized EPS (%)	(52.0)	na	na	169.0	(10.0)
Dividend payout ratio (%)	63.6	(27.7)	35.9	60.7	67.4
Operating performance					
Gross margin (%)	5.4	3.2	9.2	9.9	9.6
Operating margin (%)	1.4	(2.1)	5.2	5.9	5.6
EBITDA margin (%)	4.0	2.9	10.0	10.3	9.9
Net margin (%)	0.8	(2.0)	1.3	2.8	2.6
D/E (incl. minor) (x)	0.8	1.1	1.5	1.6	1.5
Net D/E (incl. minor) (x)	0.7	0.7	1.2	1.3	1.2
Interest coverage - EBIT (x)	1.5	na	5.6	5.1	4.6
Interest coverage - EBITDA (x)	4.5	2.0	10.8	9.0	8.2
ROA - using norm profit (%)	0.9	na	1.0	2.2	1.9
ROE - using norm profit (%)	2.4	na	3.4	8.6	7.5
DuPont					
ROE - using after tax profit (%)	3.2	na	4.7	10.0	8.9
- asset turnover (x)	1.6	1.0	1.0	0.9	0.9
- operating margin (%)	1.7	na	5.5	6.2	5.9
- leverage (x)	2.6	2.8	3.5	3.9	4.0
- interest burden (%)	47.8	186.4	83.2	81.4	79.3
- tax burden (%)	95.7	na	28.4	55.0	55.0
WACC (%)	6.9	6.9	6.9	6.9	6.9
ROIC (%)	3.1	(3.1)	3.0	4.8	4.0
NOPAT (Bt m)	2,504	(2,813)	2,642	6,178	5,759
invested capital (Bt m)	92,081	87,959	127,708	143,913	141,116

Sources: Company data, Thanachart estimates

We expect D/E to remain elevated

HOLD (From: SELL)

Transfer of Coverage

TP: Bt 8.00

(From: Bt 6.90)

Upside : 4.6%

4 FEBRUARY 2022**Esso (Thailand) Pcl** (ESSO TB)**Unexciting long-term outlook**

We upgrade ESSO to HOLD with a new 12-month TP of Bt8.0 on the back of a shutdown of its PX loss-making unit and share price underperformance during GRM turnaround since 4Q21. However, we remain bearish on its refinery business over the long term.

**YUPAPAN POLPORNPRASERT**

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Upgrading to a HOLD

We upgrade ESSO to a HOLD (from Sell). One reason is on its decision to shut down its 500k tonne paraxylene (PX) unit which had been operating at a loss for the past 6 years. Another reason is ESSO's share price has underperformed the energy sector by -3 to -18% since the start of 3Q21, when GRM significantly recovered. However, we remain bearish on the company's long-term business outlook operating in an organic growth oil retail industry and weak refinery outlook from a new supply cycle. We value ESSO at Bt8.0 (from Bt6.9) on DCF calculation which implies limited upside. This is despite raising our 2022-23F earnings by 1,162/22% to reflect the PX plant shutdown and a jump in GRM base in 4Q21. This report is a part of *Energy Sector – Lifeline stretched out, dated 4 February 2022* and it marks a coverage transfer.

PX unit shut down

ESSO decided to cease the operation of its PX unit in April 2021. The unit generated Bt1.4bn p.a. loss for the past five years due to weak PX-naphtha spread (Exhibit 1) and the fact that ESSO's overall aromatics units are not fully integrated. Without PX production and improved domestic demand, gasoline output has increased. ESSO's refined product volume grew 4% in 2021F, and we expect a full-year effect of 8% growth in 2022F. The increased output is mainly gasoline.

Organic growth in oil retail

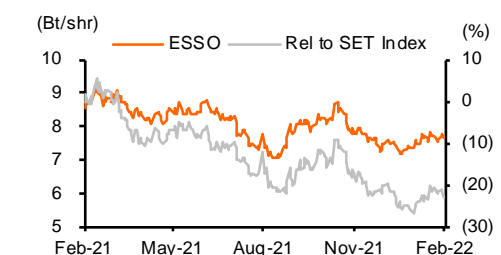
We estimate ESSO's gross profit breakdown was 70% refinery and 30% oil retail. The oil retail business was also a victim of COVID crisis. It turned around in 2021F with gross profit back to 7% of 2019 level. With limited risk of lockdown this year along with resumption of economic activities, we expect its gross profit to grow 13/14% in 2022-23F to return to the pre-COVID level. However, longer term, this is an organic growth business of 3-4% p.a. growth. ESSO's strategy isn't an aggressive expansion but a change of product mix toward higher margin premium products, such as gasohol and diesel supreme plus. It's still only 3% of total oil retail sale volume but ESSO targets to increase this portion to 15% in five years.

Refinery peaked out

Due to the refinery industry's new supply cycle, we forecast ESSO's GRM of USD5.2/5.1/5.0 per barrel in 2022-24F. This compares to five-year pre-COVID average of USD7.3/bbl. Aside from the GRM factor, we do not see any other growth drivers for ESSO in this business as the company doesn't have plan to expand both horizontally and vertically.

COMPANY VALUATION

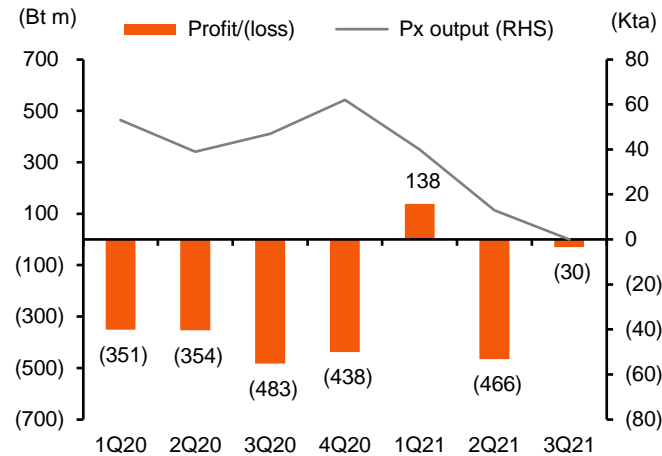
Y/E Dec (Bt m)	2020A	2021F	2022F	2023F
Sales	126,672	159,073	169,762	169,343
Net profit	(7,911)	4,642	2,384	2,769
Consensus NP	—	4,263	4,154	4,777
Diff frm cons (%)	—	8.9	(42.6)	(42.0)
Norm profit	(7,911)	(902)	2,384	2,769
Prev. Norm profit	—	(896)	189	2,264
Chg frm prev (%)	—	na	1,162.4	22.3
Norm EPS (Bt)	(2.3)	(0.3)	0.7	0.8
Norm EPS grw (%)	na	na	na	16.2
Norm PE (x)	na	na	11.1	9.6
EV/EBITDA (x)	na	18.4	8.6	7.2
P/BV (x)	1.8	1.4	1.2	1.1
Div yield (%)	0.0	0.0	0.0	0.0
ROE (%)	na	na	11.8	12.2
Net D/E (%)	194.6	125.4	94.0	65.5

PRICE PERFORMANCE**COMPANY INFORMATION**

Price as of 3-Feb-22 (Bt)	7.65
Market Cap (US\$ m)	798.4
Listed Shares (m shares)	3,460.9
Free Float (%)	34.0
Avg Daily Turnover (US\$ m)	3.7
12M Price H/L (Bt)	9.25/7.05
Sector	Energy
Major Shareholder	ExxonMobil Int'l 65.99%

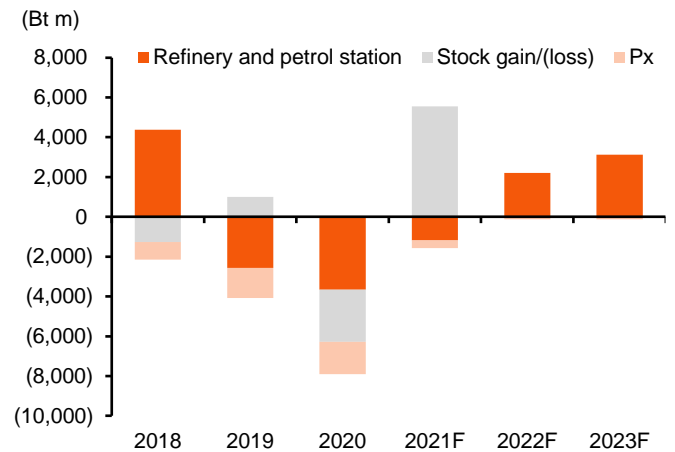
Sources: Bloomberg, Company data, Thanachart estimates

Ex 1: ESSO Ended Loss Making Px Operation In 3Q21



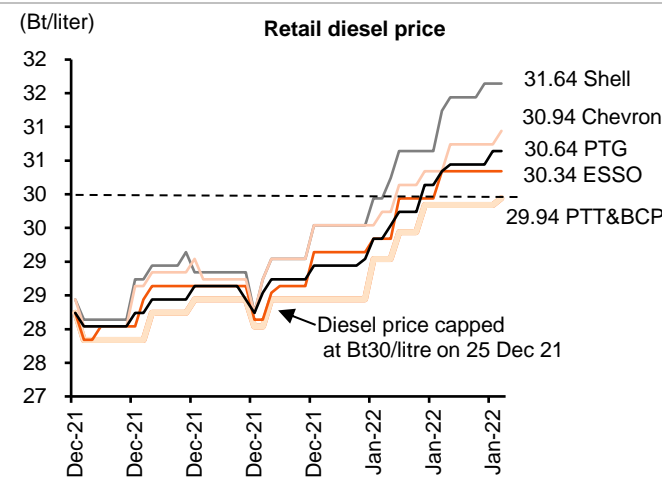
Sources: Company data

Ex 2: Core Profit Set To Improve in 2022F



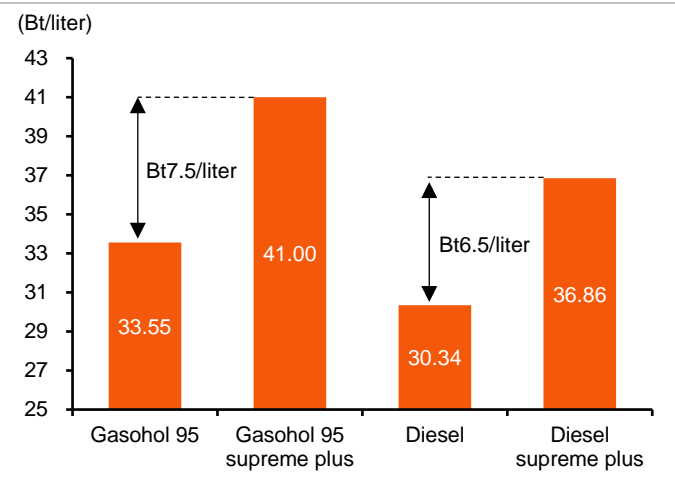
Sources: Company data, Thanachart estimates

Ex 3: ESSO Didn't Cap Oil Prices As Per Govt Guideline



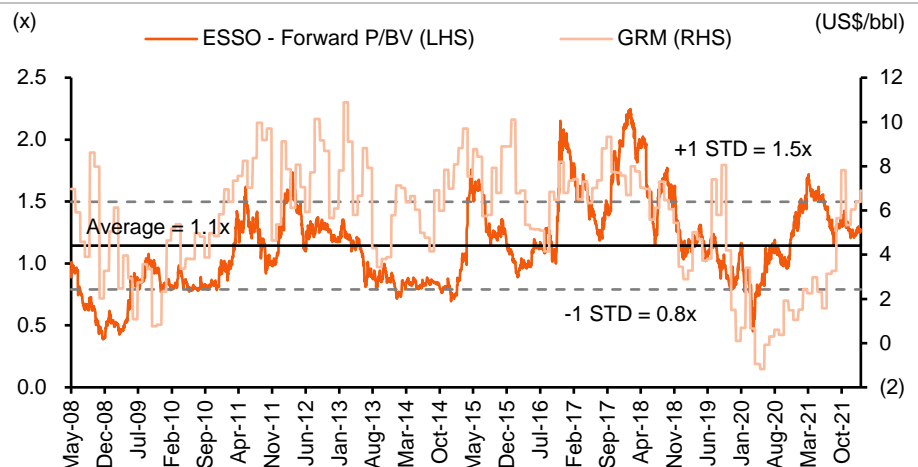
Sources: EPPO

Ex 4: ESSO's Premium Products Command Higher Margin



Sources: Company data

Ex 5: ESSO's P/BV Vs GRM



Sources: Bloomberg, TOP, Thanachart estimates

Ex 6: 12-month DCF-based TP Calculation, Using A Base Year Of 2022F

(Bt m)	2022F	2023F	2024F	2025F	2026F	2027F	2028F	2029F	2030F	2031F	2032F	Terminal Value
EBITDA + dividend	5,434	5,891	5,706	4,980	5,175	5,605	5,369	4,878	5,308	5,737	5,502	
Free cash flow	3,018	4,402	4,525	3,566	3,792	4,159	3,935	3,534	3,946	4,297	4,066	59,894
PV of free cash flow	2,795	3,774	3,591	2,576	2,525	2,554	2,227	1,844	1,898	1,827	1,587	23,376
Risk-free rate (%)	2.5											
Market risk premium (%)	8.0											
Beta	1.1											
WACC (%)	8.0											
Terminal growth (%)	2.0											
Enterprise value - add investments	50,573											
Net debt (2021F)	23,835											
Minority interest	8											
Equity value	26,729											
# of shares (m)	3,461											
Equity value/share (Bt)	8.0											

Sources: Company data, Thanachart estimates

COMPANY DESCRIPTION

Esso (Thailand) Pcl (ESSO) is one of the leading refining companies in Thailand. It operates a 177,000bpd complex refinery with a Nelson Complexity of 6.6. It controls 13% of Thailand's refining production capacity and commands around a 15% oil retail market share. ESSO also has a PX capacity of 0.5m tonnes. The company is a 65%-owned subsidiary of ExxonMobil while the Ministry of Finance owns 7%. ESSO has one of the highest sales volumes in the domestic market at over 90%, as its parent, ExxonMobil, has strategically positioned ESSO as a key refinery supplier for Thailand, while ExxonMobil's larger refinery and petrochemical complex in Singapore is used for export markets.

Source: Thanachart

THANACHART'S SWOT ANALYSIS

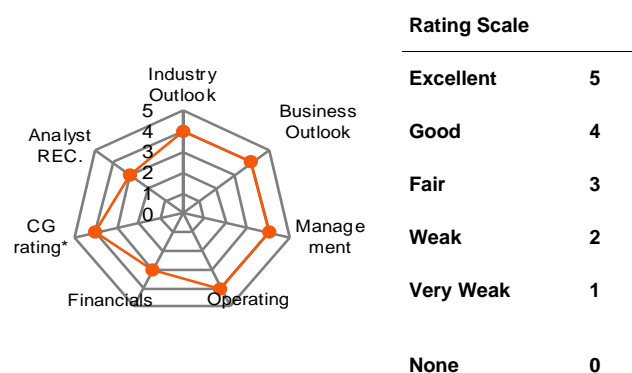
S — Strength

- Technology transfer and benefits of crude sourcing from Exxon – its parent company.

O — Opportunity

- Only moves along with industry; limited growth opportunities in our view.

COMPANY RATING



Source: Thanachart; *CG Rating

W — Weakness

- Inactive parent company policy limits growth potential.
- Government intervention in retail refined oil price easier than at the wholesale level via control of marketing margins.
- Being a less complex refinery would cause the company to have a higher cost structure and is thus less competitive.

T — Threat

- Rivals under PTT group are active in capacity expansion and new areas of growth potential.
- Threat of substitutes such as electric vehicles may lower demand for oil products.

CONSENSUS COMPARISON

	Consensus	Thanachart	Diff
Target price (Bt)	8.43	8.00	-5%
Net profit 21F (Bt m)	4,263	4,642	9%
Net profit 22F (Bt m)	4,154	2,384	-43%
Consensus REC	BUY: 3	HOLD: 1	SELL: 4

HOW ARE WE DIFFERENT FROM THE STREET?

- Our 2022F EPS estimate is lower than consensus mainly due to our lower GRM assumptions which we assume at near pre-COVID-19 levels.
- Consequently, our target price is slight lower than consensus.

RISKS TO OUR INVESTMENT CASE

- Higher-than-expected refining margins and/or PX spreads would be the key upside risks to our call.
- A decrease in crude premium would positively impact ESSO's GRM, representing a secondary upside risk to our call.
- Lower-than-expected domestic demand growth would negatively impact ESSO's oil retail business and is the key downside risk to our call.

Sources: Bloomberg consensus, Thanachart estimates

Source: Thanachart

INCOME STATEMENT

FY ending Dec (Bt m)	2019A	2020A	2021F	2022F	2023F
Sales	169,348	126,672	159,073	169,762	169,343
Cost of sales	167,344	131,408	153,873	161,551	160,721
Gross profit	2,004	(4,736)	5,200	8,211	8,622
% gross margin	1.2%	-3.7%	3.3%	4.8%	5.1%
Selling & administration expenses	6,110	5,217	5,063	5,404	5,390
Operating profit	(4,106)	(9,953)	137	2,808	3,232
% operating margin	-2.4%	-7.9%	0.1%	1.7%	1.9%
Depreciation & amortization	2,019	2,568	2,593	2,626	2,659
EBITDA	(2,087)	(7,385)	2,730	5,434	5,891
% EBITDA margin	-1.2%	-5.8%	1.7%	3.2%	3.5%
Non-operating income	90	70	70	70	70
Non-operating expenses	0	0	0	0	0
Interest expense	(322)	(360)	(330)	(280)	(223)
Pre-tax profit	(4,337)	(10,243)	(123)	2,598	3,079
Income tax	(893)	(2,048)	1,161	596	693
After-tax profit	(3,445)	(8,195)	(1,284)	2,001	2,387
% net margin	-2.0%	-6.5%	-0.8%	1.2%	1.4%
Shares in affiliates' Earnings	380	285	384	384	384
Minority interests	(1)	(1)	(1)	(1)	(1)
Extraordinary items	0	0	5,544	0	0
NET PROFIT	(3,066)	(7,911)	4,642	2,384	2,769
Normalized profit	(3,066)	(7,911)	(902)	2,384	2,769
EPS (Bt)	(0.9)	(2.3)	1.3	0.7	0.8
Normalized EPS (Bt)	(0.9)	(2.3)	(0.3)	0.7	0.8

Core profit to improve in 2022F on higher GRM, absence of loss-making Px unit

BALANCE SHEET

FY ending Dec (Bt m)	2019A	2020A	2021F	2022F	2023F
ASSETS:					
Current assets:	31,978	22,921	27,602	29,173	29,058
Cash & cash equivalent	277	262	262	262	262
Account receivables	6,464	5,083	6,383	6,812	6,795
Inventories	19,085	13,144	15,391	16,159	16,076
Others	6,152	4,432	5,565	5,939	5,925
Investments & loans	3,708	5,649	5,649	5,649	5,649
Net fixed assets	25,600	24,750	23,057	21,331	19,572
Other assets	4,957	8,058	9,022	9,340	9,328
Total assets	66,243	61,378	65,331	65,494	63,607
LIABILITIES:					
Current liabilities:	36,676	35,446	33,662	32,041	28,358
Account payables	5,020	4,452	5,213	5,473	5,445
Bank overdraft & ST loans	6,488	16,703	14,271	12,062	9,520
Current LT debt	16,289	5,167	4,415	3,731	2,945
Others current liabilities	8,878	9,125	9,763	10,774	10,447
Total LT debt	4,167	6,333	5,411	4,574	3,610
Others LT liabilities	3,282	5,239	7,255	7,491	7,482
Total liabilities	44,125	47,019	46,328	44,106	39,449
Minority interest	7	7	8	9	10
Preferred shares	0	0	0	0	0
Paid-up capital	17,075	17,075	17,075	17,075	17,075
Share premium	4,032	4,032	4,032	4,032	4,032
Warrants	0	0	0	0	0
Surplus	173	325	325	325	325
Retained earnings	831	(7,080)	(2,438)	(54)	2,715
Shareholders' equity	22,110	14,352	18,995	21,379	24,148
Liabilities & equity	66,243	61,378	65,331	65,494	63,607

With low capex, higher profit should improve the balance sheet

Sources: Company data, Thanachart estimates

CASH FLOW STATEMENT

Strong cash-flow generation due to limited capex and lower working capital requirements

FY ending Dec (Bt m)	2019A	2020A	2021F	2022F	2023F
Earnings before tax	(4,337)	(10,243)	(123)	2,598	3,079
Tax paid	893	2,048	(1,161)	(596)	(693)
Depreciation & amortization	2,019	2,568	2,593	2,626	2,659
Chg In working capital	(2,818)	6,754	(2,786)	(937)	72
Chg In other CA & CL / minorities	(3,645)	2,269	(112)	1,021	71
Cash flow from operations	(7,889)	3,394	(1,589)	4,712	5,189
Capex	(1,619)	(1,718)	(900)	(900)	(900)
Right of use	0	(4,287)	0	0	0
ST loans & investments	0	0	0	0	0
LT loans & investments	(976)	(1,941)	0	0	0
Adj for asset revaluation	0	0	0	0	0
Chg In other assets & liabilities	586	(163)	6,595	(82)	3
Cash flow from investments	(2,009)	(8,110)	5,695	(982)	(897)
Debt financing	11,599	1,259	(4,106)	(3,730)	(4,292)
Capital increase	0	0	0	0	0
Dividends paid	(346)	0	0	0	0
Warrants & other surplus	(302)	153	0	0	0
Cash flow from financing	10,950	1,411	(4,106)	(3,730)	(4,292)
Free cash flow	(9,508)	1,676	(2,489)	3,812	4,289

VALUATION

We think ESSO looks attractive on 11x PE.

FY ending Dec	2019A	2020A	2021F	2022F	2023F
Normalized PE (x)	na	na	na	11.1	9.6
Normalized PE - at target price (x)	na	na	na	11.6	10.0
PE (x)	na	na	5.7	11.1	9.6
PE - at target price (x)	na	na	6.0	11.6	10.0
EV/EBITDA (x)	na	na	18.4	8.6	7.2
EV/EBITDA - at target price (x)	na	na	18.9	8.8	7.4
P/BV (x)	1.2	1.8	1.4	1.2	1.1
P/BV - at target price (x)	1.3	1.9	1.5	1.3	1.1
P/CFO (x)	(3.4)	7.8	(16.7)	5.6	5.1
Price/sales (x)	0.2	0.2	0.2	0.2	0.2
Dividend yield (%)	0.0	0.0	0.0	0.0	0.0
FCF Yield (%)	(35.9)	6.3	(9.4)	14.4	16.2
(Bt)					
Normalized EPS	(0.9)	(2.3)	(0.3)	0.7	0.8
EPS	(0.9)	(2.3)	1.3	0.7	0.8
DPS	0.0	0.0	0.0	0.0	0.0
BV/share	6.4	4.1	5.5	6.2	7.0
CFO/share	(2.3)	1.0	(0.5)	1.4	1.5
FCF/share	(2.7)	0.5	(0.7)	1.1	1.2

Sources: Company data, Thanachart estimates

FINANCIAL RATIOS

FY ending Dec	2019A	2020A	2021F	2022F	2023F
Growth Rate					
Sales (%)	(15.7)	(25.2)	25.6	6.7	(0.2)
Net profit (%)	na	na	na	(48.6)	16.2
EPS (%)	na	na	na	(48.6)	16.2
Normalized profit (%)	na	na	na	na	16.2
Normalized EPS (%)	na	na	na	na	16.2
Dividend payout ratio (%)	0.0	0.0	0.0	0.0	0.0
Operating performance					
Gross margin (%)	1.2	(3.7)	3.3	4.8	5.1
Operating margin (%)	(2.4)	(7.9)	0.1	1.7	1.9
EBITDA margin (%)	(1.2)	(5.8)	1.7	3.2	3.5
Net margin (%)	(2.0)	(6.5)	(0.8)	1.2	1.4
D/E (incl. minor) (x)	1.2	2.0	1.3	1.0	0.7
Net D/E (incl. minor) (x)	1.2	1.9	1.3	0.9	0.7
Interest coverage - EBIT (x)	na	na	0.4	10.0	14.5
Interest coverage - EBITDA (x)	na	na	8.3	19.4	26.4
ROA - using norm profit (%)	na	na	na	3.6	4.3
ROE - using norm profit (%)	na	na	na	11.8	12.2
DuPont					
ROE - using after tax profit (%)	na	na	na	9.9	10.5
- asset turnover (x)	2.6	2.0	2.5	2.6	2.6
- operating margin (%)	na	na	na	1.7	1.9
- leverage (x)	2.7	3.5	3.8	3.2	2.8
- interest burden (%)	108.0	103.6	(59.7)	90.3	93.2
- tax burden (%)	na	na	na	77.0	77.5
WACC (%)	8.0	8.0	8.0	8.0	8.0
ROIC (%)	(10.1)	(20.4)	3.4	5.1	6.0
NOPAT (Bt m)	(4,106)	(9,953)	1,424	2,163	2,505
invested capital (Bt m)	48,778	42,293	42,830	41,484	39,961

Sources: Company data, Thanachart estimates

We expect net gearing to improve over the next few years

BUY (Unchanged)

Transfer of Coverage

TP: Bt 4.40 (From: Bt 5.10)**Upside : 15.2%****4 FEBRUARY 2022**

IRPC Public Co Ltd (IRPC TB)

Valuation looks enticing

We see IRPC's valuation trading below its book value as attractive. We also expect limited potential downside risk to its chemical margin which we expect to rebound on the naphtha crackers cut run, and as chemical supplies subside next year. We also like IRPC's move towards specialty chemical products. Reaffirm BUY.

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An inexpensive petrochemical play

We reaffirm our BUY call on IRPC with a DCF-based 12-month TP of Bt4.4 (from Bt5.1). **First**, IRPC is inexpensive to us at 0.8x P/BV vs. its past-5-year pre-COVID average of 1.2x. **Second**, having 51% of its EBITDA exposed to petrochemical business in 2021F, it is a potential turnaround play on our expectation of recovering petrochemical spreads next year. This is despite 13% cuts to our earnings in 2022F. **Third**, we like IRPC's move toward specialty chemical products which have higher margin than base chemical products. We lift our 2023F profits by 5% as we incorporate potential profit from higher specialty profit. **Lastly**, on its petrochemical business, we like it better than PTT Global Chemical (PTTGC TB, Bt57.00, HOLD), which is seeing a rising feedstock cost trend. On its refinery business, we like it better than Thai Oil (TOP TB, Bt51.75, SELL) which is fully exposed to the supply cycle of the refinery sector. This report is a part of *Energy Sector – Lifeline stretched out, dated 4 February 2022*, and it marks a transfer of coverage.

Limited downside to chemical spreads

We expect spreads for IRPC's key chemical products (PP, ABS and lube) to reach their bottoms in 1Q22F, having already fallen by c.40% from their 2021 peaks on industry's capacity additions. PP and ABS over naphtha spreads are below their 5-year historical averages at USD590/t and USD1,269/t while lube base margin is already back to its historical average. We expect chemical spreads to rebound later this year as supply pressures subside. Naphtha crackers are also cutting run rates by 5-15% amid low spreads. IRPC's key products are PP and ABS which account for 20% and 8% of total EBITDA, respectively.

Higher utilization rate despite shutdown

Despite a planned maintenance turnaround in 4Q22, IRPC expects to see overall increase in utilization rate in 2022F due to domestic demand recovery. It is guiding for a crude run rate of 198k bpd in 2022F vs. 191k bpd in 2021F. IRPC also plans to cut operating costs, especially those related to employee expenses via early retirement.

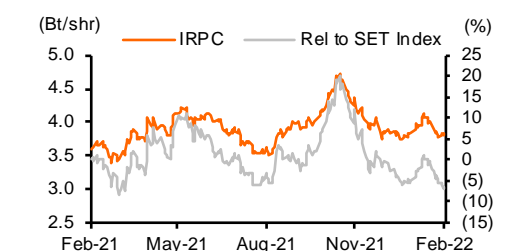
Going more specialties

IRPC targets its specialty product volume to rise to 52% of total petrochemical volume by 2025 vs. 20% at present. This would be done via upgrading its existing portfolio and M&As and would require a low investment amount. We see this strategy allowing the company to ride the global megatrend given demand is linked to medical, automotive and hygiene segment. We are assuming 50% probability that company will achieve its target and expect margin increase of Bt375-844m over 2023-24F.

COMPANY VALUATION

Y/E Dec (Bt m)	2020A	2021F	2022F	2023F
Sales	152,319	216,364	242,065	235,484
Net profit	(6,152)	14,999	5,440	6,638
Consensus NP	—	13,276	6,147	6,854
Diff frm cons (%)	—	13.0	(11.5)	(3.1)
Norm profit	(5,196)	4,962	5,440	6,638
Prev. Norm profit	—	5,721	6,271	6,344
Chg frm prev (%)	—	(13.3)	(13.2)	4.6
Norm EPS (Bt)	(0.3)	0.2	0.3	0.3
Norm EPS grw (%)	na	na	9.7	22.0
Norm PE (x)	na	15.7	14.3	11.8
EV/EBITDA (x)	167.7	7.5	8.8	7.8
P/BV (x)	1.0	0.9	0.8	0.8
Div yield (%)	1.6	2.6	3.5	4.3
ROE (%)	na	6.0	6.0	7.1
Net D/E (%)	70.2	58.6	56.2	48.9

PRICE PERFORMANCE

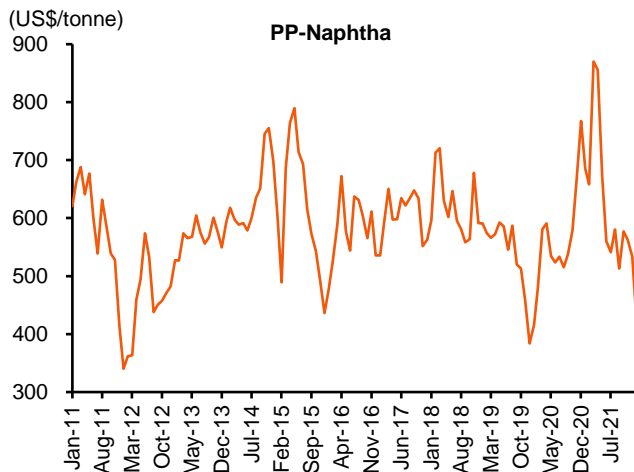


COMPANY INFORMATION

Price as of 3-Feb-22 (Bt)	3.82
Market Cap (US\$ m)	2,353.9
Listed Shares (m shares)	20,434.4
Free Float (%)	51.9
Avg Daily Turnover (US\$ m)	18.0
12M Price H/L (Bt)	4.72/3.38
Sector	Energy
Major Shareholder	PTT Pcl 45.05%

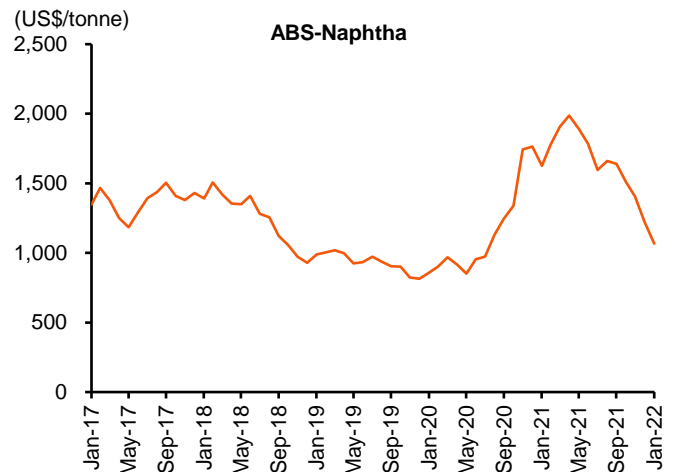
Sources: Bloomberg, Company data, Thanachart estimates

Ex 1: PP-Naphtha Towards A Low Base



Source: Bloomberg

Ex 2: Same Goes For ABS-Naphtha



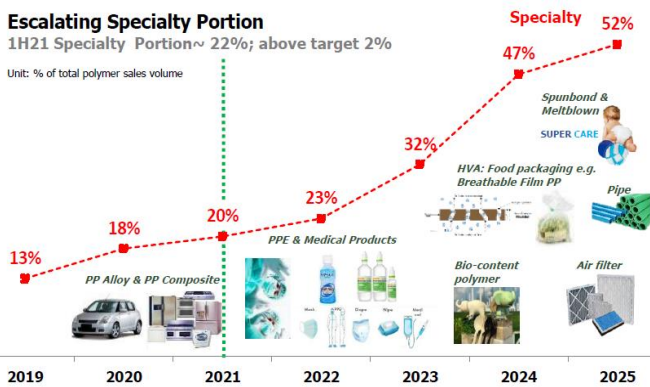
Source: Bloomberg

Ex 3: IRPC's Target For Specialty Products

Escalating Specialty Portion

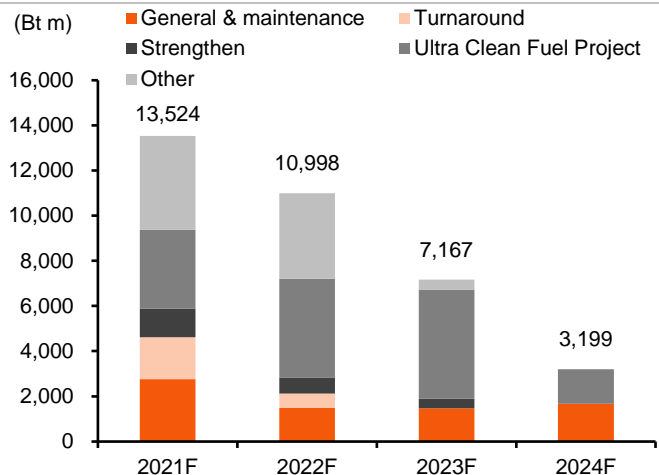
1H21 Specialty Portion ~ 22%; above target 2%

Unit: % of total polymer sales volume



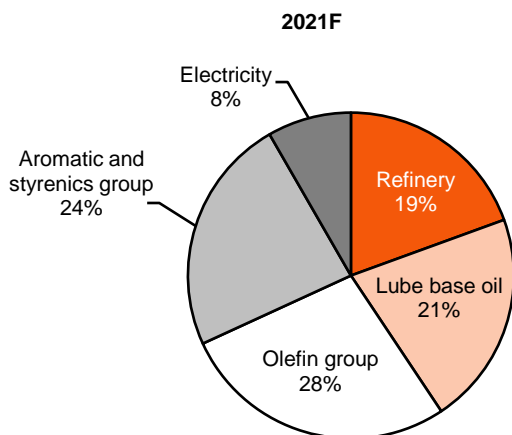
Source: Company data

Ex 4: IRPC's Capex



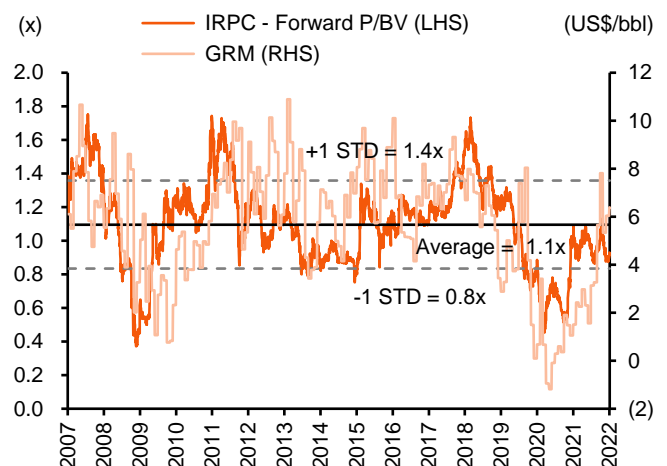
Source: IRPC

Ex 5: IRPC's Gross Integrated Margin (GIM) breakdown



Sources: Company data, Thanachart estimates

Ex 6: IRPC's P/BV And GRM



Sources: Bloomberg, TOP, Thanachart estimates

Ex 7: 12-month DCF-based TP Calculation, Using A Base Year Of 2022F

(Bt m)	2022F	2023F	2024F	2025F	2026F	2027F	2028F	2029F	2030F	2031F	2032F	Terminal value
EBITDA	14,794	16,012	19,185	18,792	18,590	18,590	18,590	18,590	18,590	18,590	18,590	
Free cash flow	3,090	9,929	14,084	13,130	13,447	13,489	13,529	13,570	13,611	13,652	13,692	179,516
PV of free cash flow	2,839	8,381	10,917	9,193	8,612	7,903	7,249	6,651	6,102	5,368	4,903	64,287
Risk-free rate (%)	2.5											
Market risk premium (%)	8.0											
Beta	1.3											
WACC (%)	8.9											
Terminal growth (%)	2.0											
Enterprise value - add investments	142,406											
Net debt (2021F)	52,165											
Minority interest	171											
Equity value	90,071											
# of shares (m)	20,434											
Equity value/share (Bt)	4.4											

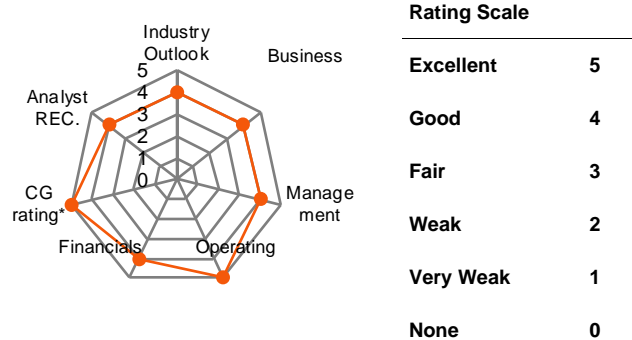
Sources: Company data, Thanachart estimates

COMPANY DESCRIPTION

IRPC Pcl (IRPC) is an integrated refinery and petrochemical complex located on Thailand's eastern seaboard. The company has 215kbd of crude refining capacity, 1.2m tpa of olefin capacity and 0.6m tpa of aromatics and styrenics capacities. The company's growth strategy mainly focuses on expanding its specialty portfolio which the company targets to raise to 52% of polymer sales volume by 2025 from 20% currently.

Source: Thanachart

COMPANY RATING



Source: Thanachart; *CG Rating

THANACHART'S SWOT ANALYSIS

S — Strength

- Integrated refinery and petrochemical complex.
- Part of the PTT group.

O — Opportunity

- Significant potential to cut costs and improve domestic sales portion.
- Potential margin uplift from successful expansion in its specialty portfolio.

W — Weakness

- Legacy cost structure.
- Relatively isolated location in the Map Ta Phut Industrial Estate on the eastern seaboard.

T — Threat

- Weaker-than-expected refining margins and petrochemical spreads from either soft demand or significant growth in new supplies.

CONSENSUS COMPARISON

	Consensus	Thanachart	Diff
Target price (Bt)	4.49	4.40	-2%
Net profit 21F (Bt m)	13,276	14,999	13%
Net profit 22F (Bt m)	6,147	5,440	-11%
Consensus REC	BUY: 11	HOLD: 12	SELL: 2

HOW ARE WE DIFFERENT FROM THE STREET?

- Our 2022F earnings are lower than the Bloomberg consensus due to our more conservative GRM assumption.
- Consequently, our TP is slightly lower than street.

Sources: Bloomberg consensus, Thanachart estimates

RISKS TO OUR INVESTMENT CASE

- Weaker-than-expected refining margins or petrochemical spreads would be the key downside risk to our call.
- If the crude oil price were to be sustained at a high level that would lead to higher operating costs, this would be a secondary downside risk to our call.
- Lower-than-expected margin uplift from specialty portfolio expansion.
- Delivering less cost savings and/or productivity improvements would be another downside risk to our call.

Source: Thanachart

INCOME STATEMENT

FY ending Dec (Bt m)	2019A	2020A	2021F	2022F	2023F
Sales	216,577	152,319	216,364	242,065	235,484
Cost of sales	205,090	145,180	192,791	220,686	212,077
Gross profit	11,487	7,139	23,573	21,379	23,407
% gross margin	5.3%	4.7%	10.9%	8.8%	9.9%
Selling & administration expenses	16,250	15,309	15,049	15,362	16,037
Operating profit	(4,763)	(8,170)	8,524	6,017	7,370
% operating margin	-2.2%	-5.4%	3.9%	2.5%	3.1%
Depreciation & amortization	8,542	8,952	8,748	8,777	8,642
EBITDA	3,779	782	17,272	14,794	16,012
% EBITDA margin	1.7%	0.5%	8.0%	6.1%	6.8%
Non-operating income	2,036	2,177	2,309	2,121	2,214
Non-operating expenses	140	773	(1,209)	0	0
Interest expense	(934)	(1,847)	(1,213)	(1,633)	(1,584)
Pre-tax profit	(3,521)	(7,067)	8,411	6,505	8,001
Income tax	(779)	(1,554)	3,757	1,369	1,668
After-tax profit	(2,742)	(5,513)	4,654	5,136	6,333
% net margin	-1.3%	-3.6%	2.2%	2.1%	2.7%
Shares in affiliates' Earnings	368	339	339	339	339
Minority interests	(28)	(22)	(31)	(35)	(34)
Extraordinary items	1,228	(956)	10,037	0	0
NET PROFIT	(1,174)	(6,152)	14,999	5,440	6,638
Normalized profit	(2,402)	(5,196)	4,962	5,440	6,638
EPS (Bt)	(0.1)	(0.3)	0.7	0.3	0.3
Normalized EPS (Bt)	(0.1)	(0.3)	0.2	0.3	0.3

Core profit set to improve from 2021F due to GRM recovery.

BALANCE SHEET

FY ending Dec (Bt m)	2019A	2020A	2021F	2022F	2023F
ASSETS:					
Current assets:	43,647	43,371	58,851	63,592	64,557
Cash & cash equivalent	3,036	8,851	14,000	12,699	15,421
Account receivables	10,100	9,626	11,989	13,413	13,048
Inventories	25,995	21,169	27,571	31,560	30,329
Others	4,515	3,725	5,291	5,920	5,759
Investments & loans	9,667	8,071	8,071	8,071	8,071
Net fixed assets	121,069	114,551	119,327	121,548	120,073
Other assets	3,467	7,498	10,241	11,342	11,060
Total assets	177,850	173,491	196,490	204,554	203,762
LIABILITIES:					
Current liabilities:	45,707	44,059	43,775	49,336	47,012
Account payables	24,871	23,983	26,630	30,483	29,294
Bank overdraft & ST loans	6,900	0	0	0	0
Current LT debt	8,190	13,335	9,925	9,669	9,334
Others current liabilities	5,745	6,741	7,220	9,184	8,384
Total LT debt	43,881	48,597	56,240	54,791	52,891
Others LT liabilities	4,860	5,169	7,414	8,271	8,052
Total liabilities	94,448	97,825	107,429	112,399	107,955
Minority interest	146	140	171	206	240
Preferreds shares	0	0	0	0	0
Paid-up capital	20,434	20,434	20,434	20,434	20,434
Share premium	28,554	28,554	28,554	28,554	28,554
Warrants	0	0	0	0	0
Surplus	(130)	(110)	(110)	(110)	(110)
Retained earnings	34,397	26,648	40,012	43,070	46,689
Shareholders' equity	83,256	75,526	88,890	91,949	95,567
Liabilities & equity	177,850	173,491	196,490	204,554	203,762

Balance sheet is strong given limited capex

Sources: Company data, Thanachart estimates

CASH FLOW STATEMENT

FY ending Dec (Bt m)	2019A	2020A	2021F	2022F	2023F
Earnings before tax	(3,521)	(7,067)	8,411	6,505	8,001
Tax paid	779	1,554	(3,757)	(1,369)	(1,668)
Depreciation & amortization	8,542	8,952	8,748	8,777	8,642
Chg In working capital	3,220	4,412	(6,118)	(1,560)	407
Chg In other CA & CL / minorities	(3,128)	3,509	(748)	1,674	(300)
Cash flow from operations	5,892	11,361	6,536	14,027	15,081
Capex	(4,874)	(2,434)	(13,524)	(10,998)	(7,167)
Right of use	0	(198)	0	0	0
ST loans & investments	0	0	0	0	0
LT loans & investments	(1,226)	1,596	0	0	0
Adj for asset revaluation	0	0	0	0	0
Chg In other assets & liabilities	1,699	(5,890)	10,082	(244)	62
Cash flow from investments	(4,401)	(6,926)	(3,442)	(11,242)	(7,105)
Debt financing	2,064	2,958	3,689	(1,704)	(2,235)
Capital increase	0	0	0	0	0
Dividends paid	(1,837)	(2,041)	(1,635)	(2,382)	(3,020)
Warrants & other surplus	(1,020)	464	0	0	0
Cash flow from financing	(792)	1,381	2,054	(4,086)	(5,255)
Free cash flow	1,018	8,927	(6,988)	3,029	7,914

We expect FCF to be positive over the next few years with limited capex

VALUATION

FY ending Dec	2019A	2020A	2021F	2022F	2023F
Normalized PE (x)	na	na	15.7	14.3	11.8
Normalized PE - at target price (x)	na	na	18.1	16.5	13.5
PE (x)	na	na	5.2	14.3	11.8
PE - at target price (x)	na	na	6.0	16.5	13.5
EV/EBITDA (x)	35.5	167.7	7.5	8.8	7.8
EV/EBITDA - at target price (x)	38.6	182.9	8.2	9.6	8.5
P/BV (x)	0.9	1.0	0.9	0.8	0.8
P/BV - at target price (x)	1.1	1.2	1.0	1.0	0.9
P/CFO (x)	13.2	6.9	11.9	5.6	5.2
Price/sales (x)	0.4	0.5	0.4	0.3	0.3
Dividend yield (%)	2.6	1.6	2.6	3.5	4.3
FCF Yield (%)	1.3	11.4	(9.0)	3.9	10.1
(Bt)					
Normalized EPS	(0.1)	(0.3)	0.2	0.3	0.3
EPS	(0.1)	(0.3)	0.7	0.3	0.3
DPS	0.1	0.1	0.1	0.1	0.2
BV/share	4.1	3.7	4.4	4.5	4.7
CFO/share	0.3	0.6	0.3	0.7	0.7
FCF/share	0.0	0.4	(0.3)	0.1	0.4

Valuation looks enticing to us

Sources: Company data, Thanachart estimates

FINANCIAL RATIOS

FY ending Dec	2019A	2020A	2021F	2022F	2023F
Growth Rate					
Sales (%)	(16.4)	(29.7)	42.0	11.9	(2.7)
Net profit (%)	na	na	na	(63.7)	22.0
EPS (%)	na	na	na	(63.7)	22.0
Normalized profit (%)	na	na	na	9.7	22.0
Normalized EPS (%)	na	na	na	9.7	22.0
Dividend payout ratio (%)	(174.1)	(19.9)	13.6	50.0	50.0
Operating performance					
Gross margin (%)	5.3	4.7	10.9	8.8	9.9
Operating margin (%)	(2.2)	(5.4)	3.9	2.5	3.1
EBITDA margin (%)	1.7	0.5	8.0	6.1	6.8
Net margin (%)	(1.3)	(3.6)	2.2	2.1	2.7
D/E (incl. minor) (x)	0.7	0.8	0.7	0.7	0.6
Net D/E (incl. minor) (x)	0.7	0.7	0.6	0.6	0.5
Interest coverage - EBIT (x)	na	na	7.0	3.7	4.7
Interest coverage - EBITDA (x)	4.0	0.4	14.2	9.1	10.1
ROA - using norm profit (%)	na	na	2.7	2.7	3.3
ROE - using norm profit (%)	na	na	6.0	6.0	7.1
DuPont					
ROE - using after tax profit (%)	na	na	5.7	5.7	6.8
- asset turnover (x)	1.2	0.9	1.2	1.2	1.2
- operating margin (%)	na	na	4.4	3.4	4.1
- leverage (x)	2.1	2.2	2.3	2.2	2.2
- interest burden (%)	136.1	135.4	87.4	79.9	83.5
- tax burden (%)	na	na	55.3	79.0	79.2
WACC (%)	8.9	8.9	8.9	8.9	8.9
ROIC (%)	(3.3)	(5.9)	3.7	3.4	4.1
NOPAT (Bt m)	(4,763)	(8,170)	4,716	4,751	5,834
invested capital (Bt m)	139,191	128,607	141,055	143,710	142,371

We expect net D/E to remain low

Sources: Company data, Thanachart estimates

BUY (Unchanged)

Transfer of Coverage

TP: Bt 60.00 (From: Bt 52.00)

Upside : 25.0%

4 FEBRUARY 2022

Indorama Ventures Pcl (IVL TB)

Solid turnaround story

We reaffirm our BUY call on IVL, our new top sector pick. We see IVL's turnaround story as sustainable arising from both sides of its business chains of PET and Huntsman. We also view IVL as the most resilient company in the sector with its products linked closely to end consumers and positioned in the more consolidated PET market.



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IVL is our sector top pick

We reaffirm our BUY call on IVL with a new DCF-based 12-month TP (2022F base year) of Bt60 (from Bt52) and assign it as our top sector pick. **First**, we see a strong earnings growth turnaround trend of 23/5% in 2022-23F. **Second**, we expect the turnaround to be a sustainable one from an improving PET demand-supply balance and an end to depressed oil prices normalizing Huntsman's business. We raise our earnings by 66/80% in 2022-23F. **Third**, we like it that IVL's products are more resilient being closely linked to end-consumer products and that its core PET business is in a more consolidated market which should result in better supply outlook. **Lastly**, IVL looks inexpensive to us at 7x EV/EBITDA and 9.5x PE vs. 10-year averages of 10x and 15x, respectively. This report is a part of *Energy Sector – Lifeline stretched out*, dated 4th February 2022 and it marks a coverage transfer.

PET turnaround

Given the better demand outlook and the supply chain disruption, the Asian PET spread started to improve since the end of 2021. Meanwhile, we expect IVL to benefit this year from the full-year impact of the West PET spread rising since last year. For IVL, US production accounted for 23% of total PET EBITDA in 2Q21, Europe 17% and Asia 13% vs. the volume breakdown of approximately one-third from each market. Note that PET EBITDA accounted for 54% of total EBITDA in 2021F.

IOD, the key turnaround factor

IVL took over Huntsman's surfactant and integrated oxide (IOD) business in 2019. This was supposed to add 30% in growth to IVL's EBITDA in 2020 but it only added 2% due to the COVID crisis depressing oil prices. The business is now turning around. **First**, recovering oil prices have lifted IOD spreads (Exhibit 13). **Secondly**, recovering demand, especially for the gasoline additive MTBE, and less weather-induced supply disruption should drive volume growth by 18% this year. **Thirdly**, contribution from its newly acquired Oxiteno, a leading global surfactant producer, should further lift EBITDA growth by 6% in 2022F.

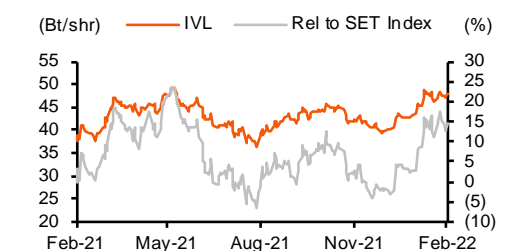
Long-term drivers

We see a few long-term volume growth drivers. The first is its new surfactant factory under Oxiteno. That should be seen in 2022F. It also plans to expand its IOD derivatives portfolio of EO and surfactant both horizontally and vertically to new applications. IVL also plans to double its higher-margin recycling PET (rPET) capacity to 750k tpa in 2025. As for its existing core PET, we expect organic demand growth of 4% p.a.

COMPANY VALUATION

Y/E Dec (Bt m)	2020A	2021F	2022F	2023F
Sales	331,513	490,610	545,124	538,287
Net profit	2,414	27,707	28,510	29,995
Consensus NP	—	26,811	27,227	28,756
Diff frm cons (%)	—	3.3	4.7	4.3
Norm profit	6,433	23,202	28,510	29,995
Prev. Norm profit	—	17,307	17,156	16,672
Chg frm prev (%)	—	34.1	66.2	79.9
Norm EPS (Bt)	1.1	4.1	5.1	5.3
Norm EPS grw (%)	22.8	260.7	22.9	5.2
Norm PE (x)	41.9	11.6	9.5	9.0
EV/EBITDA (x)	14.9	7.7	6.9	6.6
P/BV (x)	2.1	1.9	1.7	1.5
Div yield (%)	1.5	5.1	5.3	5.6
ROE (%)	5.0	17.1	18.7	17.9
Net D/E (%)	134.1	117.7	126.7	108.4

PRICE PERFORMANCE



COMPANY INFORMATION

Price as of 3-Feb-22 (Bt)	48.00
Market Cap (US\$ m)	8,126.7
Listed Shares (m shares)	5,614.6
Free Float (%)	35.1
Avg Daily Turnover (US\$ m)	27.8
12M Price H/L (Bt)	49.25/36.25
Sector	PETRO
Major Shareholder	Indorama Resources 62.43%

Sources: Bloomberg, Company data, Thanachart estimates

Strong West PET spreads continue

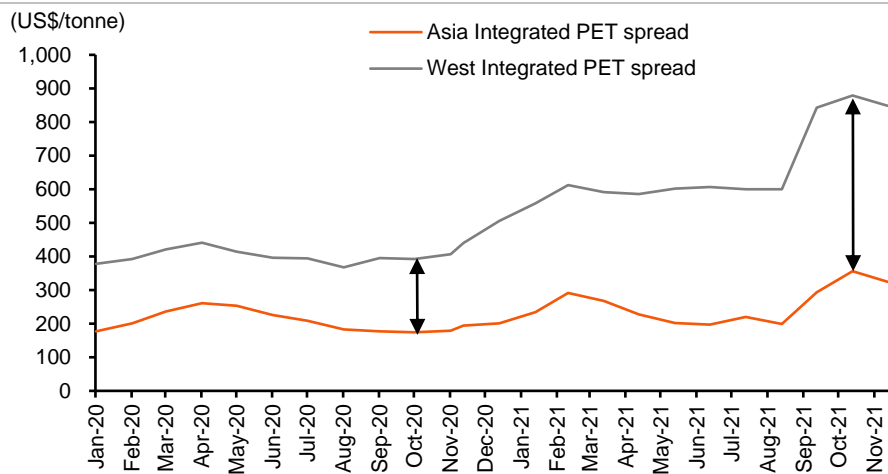
High container rate puts IVL in a favorable position

The gap between Asia and West PET spreads surged to a historical high of USD524/tonne in December last year. The global container shortage has led to a surge in container freight rates which limits the flow of cargoes from Asia to the West. Additionally, severe weather conditions have led to supply disruption in both the US and Europe. These factors pushed up the integrated West PET spread to US\$829/tonne in December 2021, double the average of USD424/tonne during 2016-20. We expect this trend to continue given that the container shortage looks set to be prolonged into this year.

Strong West PET spread will be realized in 2022F.

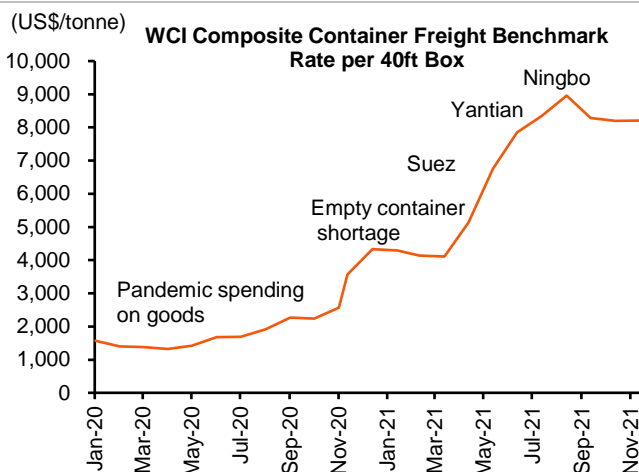
For IVL, West PET is the largest segment, making up 40% of total EBITDA or 75% of PET EBITDA. The strong West PET margin has put IVL in a favorable position for ongoing 2022 contract negotiations. The company didn't fully capture the West PET margin surge in 2021 as 60-70% of West PET volume is based on fixed contract prices. Based on IVL's 3Q21 MDA, the company has been able to secure new contract prices for 2022F where PTA margins in the US will increase by USD88 per tonne. We expect PET EBITDA growth from the new West contract price of around USD200m (after taking into account higher energy costs) in 2022F, or 12% growth from 2021F.

Ex 1: West PET Premium Surged Due To Supply Disruption And High Freight Rates



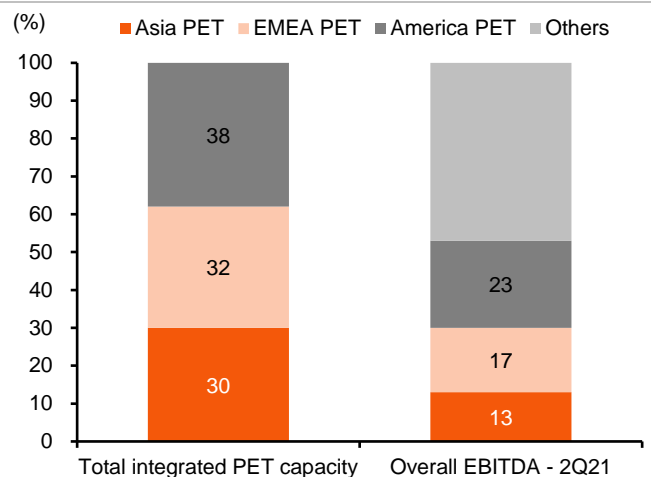
Source: Company Data

Ex 2: Freight Rate Likely To Remain High In 2022F



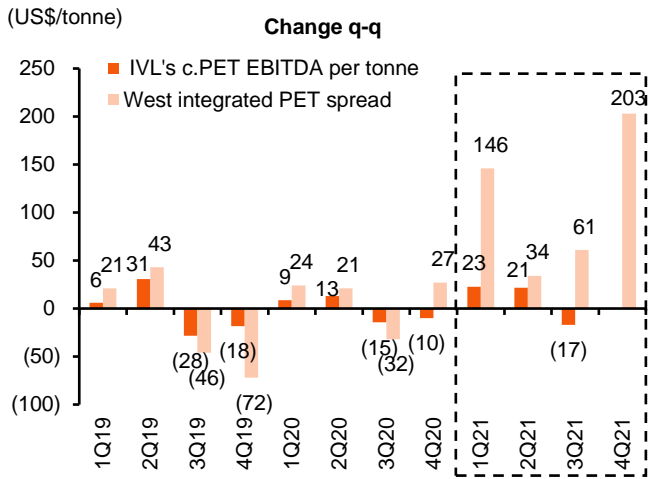
Source: Bloomberg

Ex 3: West PET Is The Largest Contributor



Source: Company data

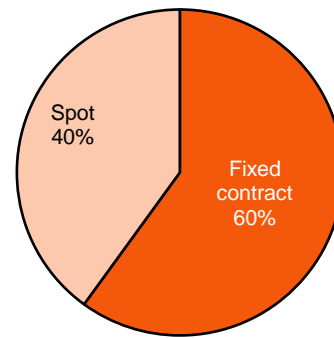
Ex 4: Yet To Fully Benefit From Strong West PET...



Source: Company data

Ex 5: ...As 60-70% Is Based On Fixed Contract Prices

West PET volume breakdown



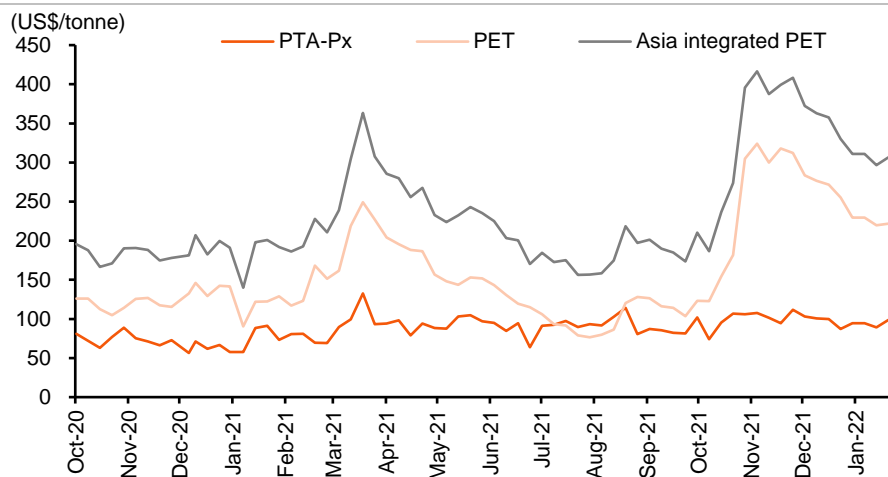
Source: Company data

Asia PET spread strengthens despite seasonal weakness

Strong demand and China dual policy led Asia PET spread to surge

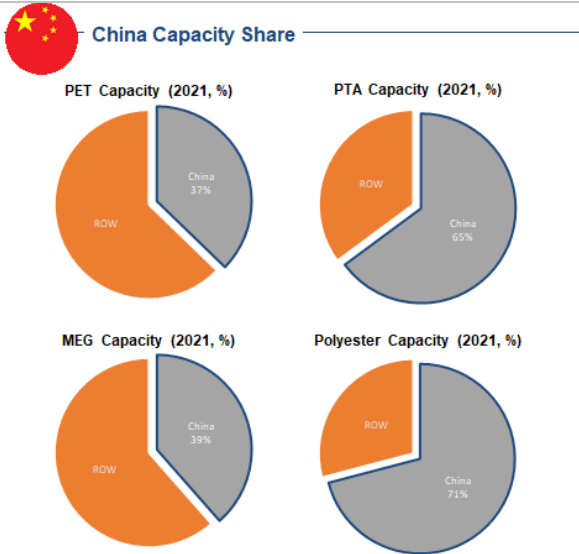
China's dual-control policy coupled with strong demand/supply fundamentals has translated into enhanced PET spreads in Asia in 4Q21-1Q22. This is contrary to the typical seasonal weakness seen in 4Q. We expect spreads to remain high in 1H22 as we are approaching the high summer season in 2Q22. Spreads could normalize once supply disruption and summer demand pass their peak in 2H22F but they should remain high due to limited PET capacity additions. Despite our expectation for the Asia PET spread to trend down, we see the impact as limited given locked-in contract prices for West PET margin while the contribution from Asia is now at only 13% of total EBITDA in 2Q21, vs. 19-20% in 2019-20.

Ex 6: High Asia Integrated PET Spread Despite 4Q Low Season



Source: Bloomberg

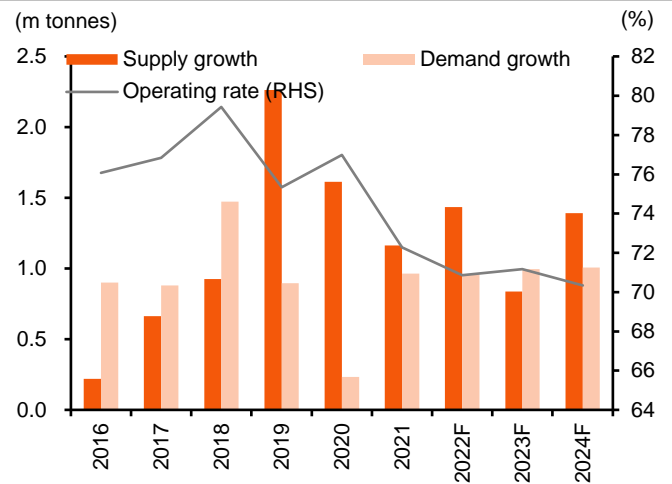
Ex 7: China's Dual Control Policy Has Its Say



10-15% of China's petrochemical industry is currently shut down or running at reduced rates. Jiangsu and Zhejiang which host 75% of China polyester capacity have also been impacted

Source: Company data

Ex 8: Limited PET New Capacity



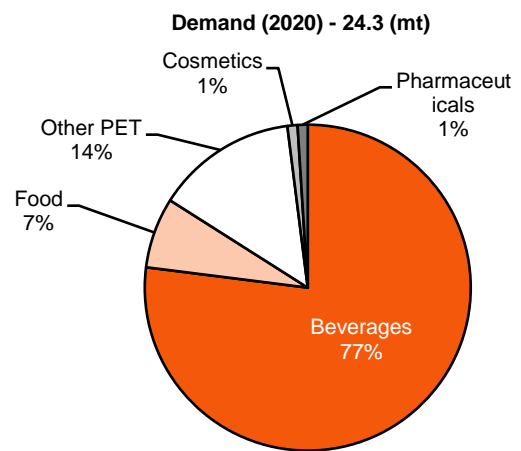
Source: Company data

Ex 9: China Retail Beverage Sales Trending Up...



Source: Bloomberg

Ex 10: ...A Key Factor For Strong PET Demand



Source: Bloomberg

IOD turnaround

Huntsman and Oxiteno are key growth contributors

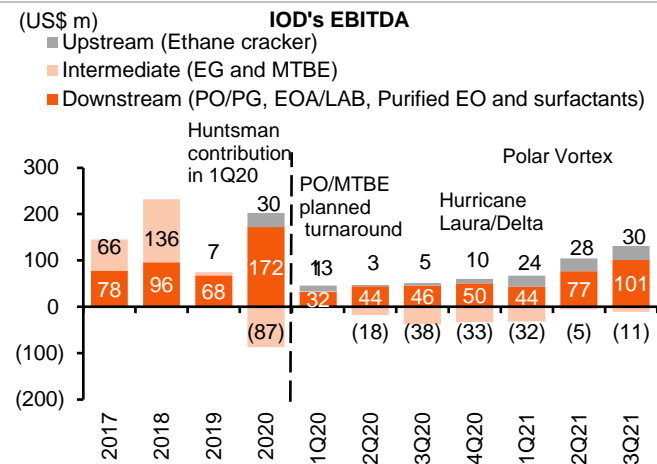
After the disappointing performance with the Huntsman acquisition since 2020, we expect the business to show its full potential this year. The acquisition was hit by the COVID-19 crisis which led to a substantial decline in oil prices and demand, not to mention severe weather conditions which caused unplanned shutdowns in 2020-21.

Key spreads for integrated oxides, such as Monoethylene Glycol (MEG) and Methyl tert-butyl ether (MTBE), have continued to improve from the lows seen in 2020. This has been supported by improved demand and higher oil prices which sent spreads trending higher since the company uses gas as a feedstock.

IVL is further strengthening its integrated oxide value chain, announcing its acquisition of Oxiteno, a leading integrated surfactant producer in Latin America, and we expect contributions from 2022F. We see the acquisition as strategic and financially sound. Strategically, it would help IVL expand its downstream surfactants portfolio in terms of end markets, technology and raw material integration. Oxiteno is the biggest surfactant producer in Latin America, a big and growing market but where IVL has so far had a limited presence. Surfactants are in the ethylene oxide (EO) chain, with main uses as detergents, wetting agents and emulsifiers. The price tag of US\$1.3bn equates to about 9x the current year's adjusted EBITDA, which is attractive, in our view. We see this deal as value accretive to IVL. There could also be potential upside risks to our forecasts if IVL can realize the targeted US\$100m in annual synergies by 2025, with US\$30m to be captured by 2023.

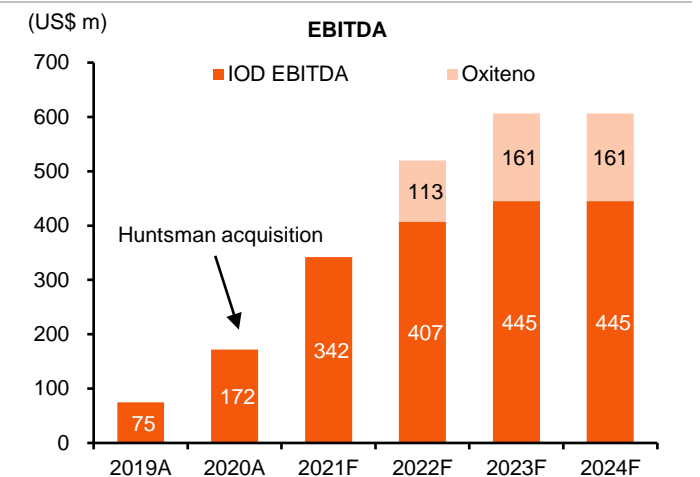
With the soon-to-be-completed acquisition of Oxiteno's IOD assets in Brazil and the recent commercial operation date (COD) of its ethane cracker after more than a year's delay, we project IVL's EBITDA from the IOD segment to grow by 26% YoY from US\$0.4bn in 2021F to US\$0.5bn in 2022F, accounting for 23% of IVL's total 2022F EBITDA.

Ex 11: IOD's EBITDA Suffered During COVID Years



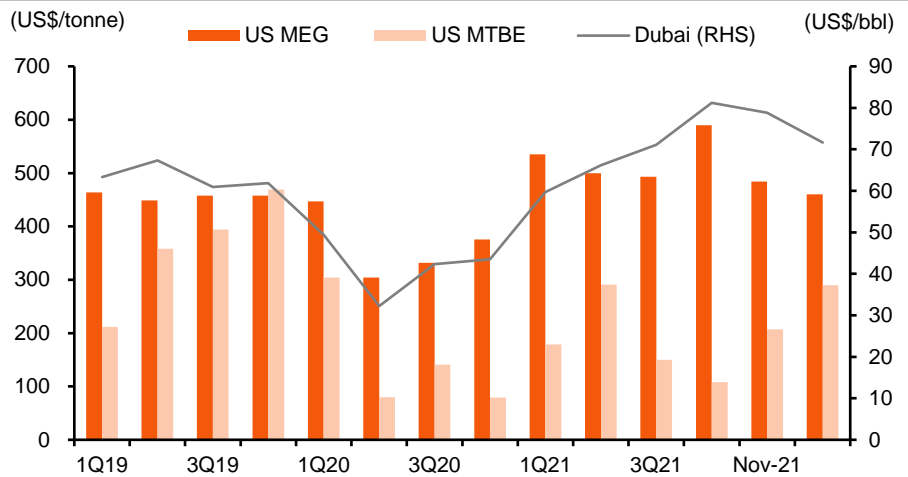
Source: Company data

Ex 12: IOD's And Oxiteno's EBITDA Contribution



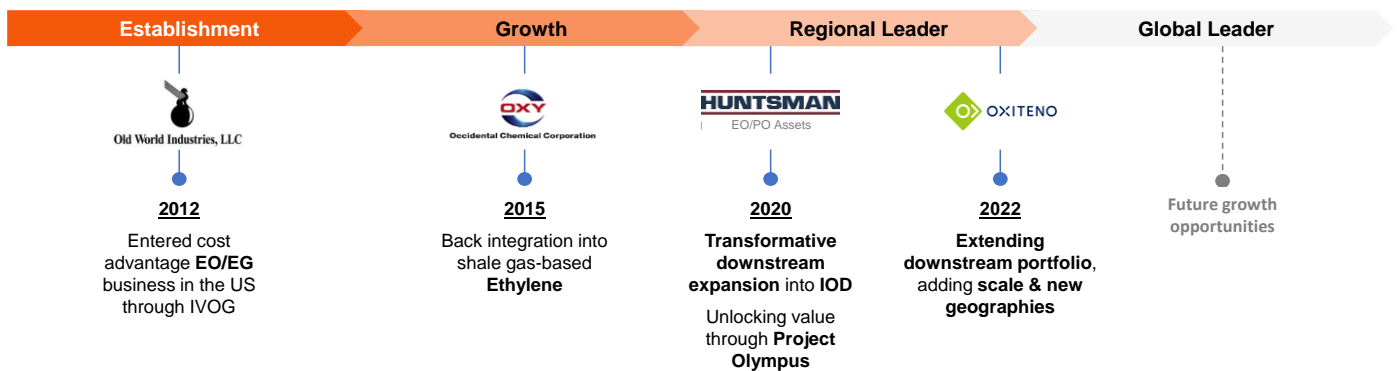
Sources: Company data, Thanachart estimates

Ex 13: MTBE And MEG Spreads Up With Oil Prices



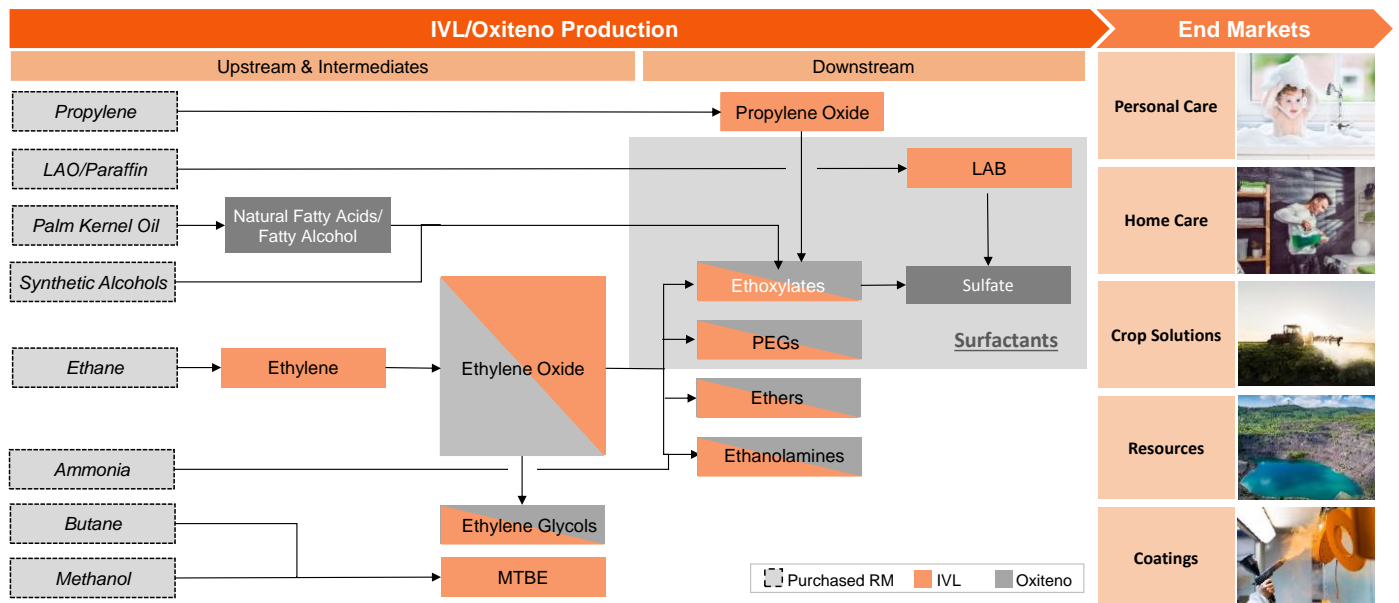
Source: Company data

Ex 14: Evolution Of IOD Segment



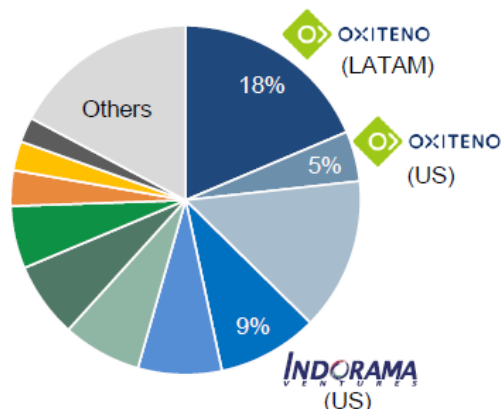
Source: Company data

Ex 15: IVL's Integrated Oxide (IOD) Value Chain



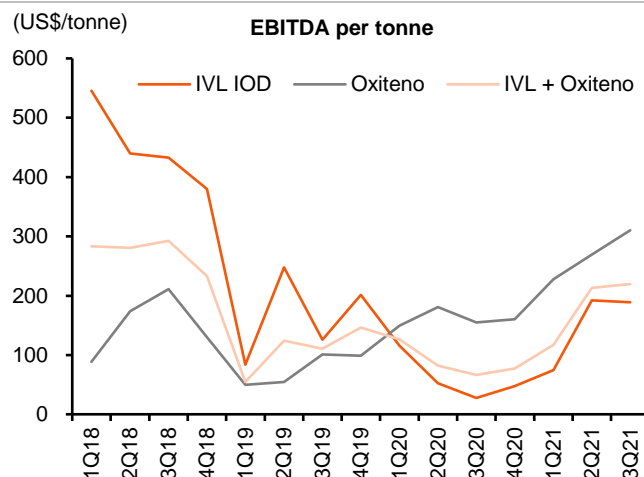
Source: Company data

Ex 16: Americas' Nonionic Surfactants Capacity



Source: Company data

Ex 17: Oxiteno Will Likely Enhance IVL's Margin



Sources: Company data, Thanachart estimates

Ex 18: IVL's IOD Capacity Breakdown

Kta	IVL's existing	Huntsman	Oxiteno	Total
Upstream (gas based)				
Ethylene	420	218		638
Propylene	20	25		45
Intermediate				
MEG	350	400	325	1,075
MTBE		740		740
Downstream				
Surfactants		360	1,200	1,560
Purified EO (PEO)	170	100		270
PO		250		250
Ethanolamine (EOA, MEA,DEA,TEA,LAB)		180		180
Lab		180	100	280
Total	990	3,147	1,625	4,577
Crude EO capacity*	420	690	440	1,550

Sources: Company data, Thanachart estimates

Note: *Ethylene Oxide is produced from ethylene and it is a feedstock used to produce downstream and intermediate products such as surfactant, EOA, MEA,DEA,TEA,LAB, and MEG.

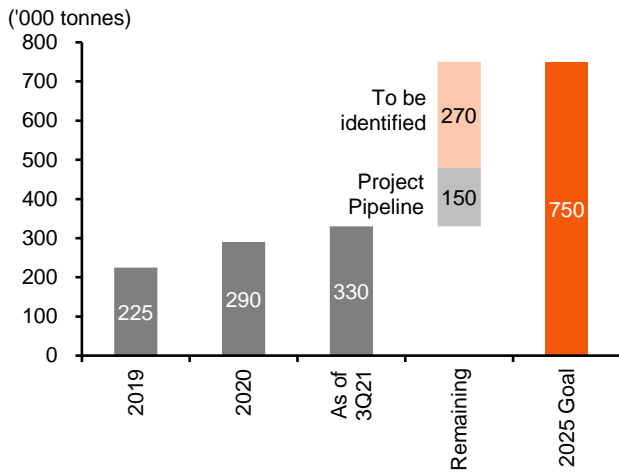
Recycled PET offers extra growth

On track to ride rising rPET demand

IVL looks to be on the road to realizing the benefits of its recycled PET (rPET) business in the wake of higher pricing power and rising demand for rPET products after the COP26 meeting. IVL achieved 330kt of rPET production in 3Q21 (3% of total capacity) and it looks to be on track to meet its 2025 target of 750kta with a capex budget of US\$1.5bn. Recycled PET prices are commanding a significant premium to virgin PET in all regions, showing the commitment from brand owners. Many of IVL's clients, mostly in the food & beverage and FMCG industries, have already mandated several requirements. Hence, we think IVL is ahead of the industry curve by not only complying with greener mega-trends but also by benefitting from the rising premiums of recycled PET.

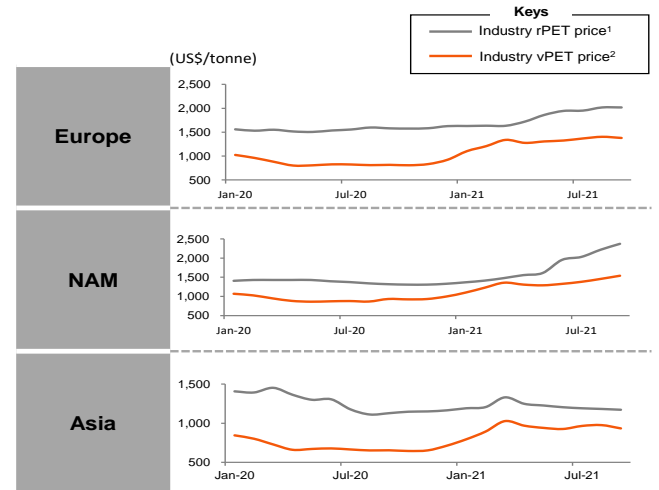
Meanwhile, we still think the virgin PET business is growing with expected industry demand growth of 4% p.a. Unlike other plastics and packaging materials such as aluminum, paper and glass, PET has some unique advantages over its substitutable materials, including 1) its lowest price per bottle compared to aluminum and glass bottles; 2) its lowest greenhouse gas emission ratio; 3) its highest recyclability of up to 100%; and 4) its lightest weight for cost savings.

Ex 19: IVL's rPET capacity



Source: Company data

Ex 20: rPET's Price Premium To Virgin PET's



Source: Company data

Ex 21: PET Is The Preferred Choice In The Packaging Sector

Price ratio (cents per bottle, PET = 1X)

1X

1.6X

Aluminum can

1.7X

Glass bottle

GHG ratio (GHG per 100 Koz liquid, PET = 1X)

1X

1.5X

Aluminum can

2.3X

Glass bottle

Demand growth (2010-2020 CAGR)

4%

2%

Aluminum can

0%

Glass bottle

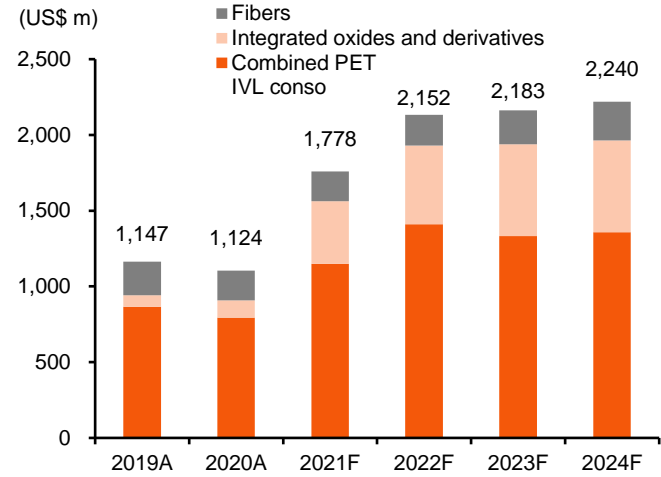
Sources: Company data, Thanachart

Note: GHG is greenhouse gas

Valuations still attractive, in our view

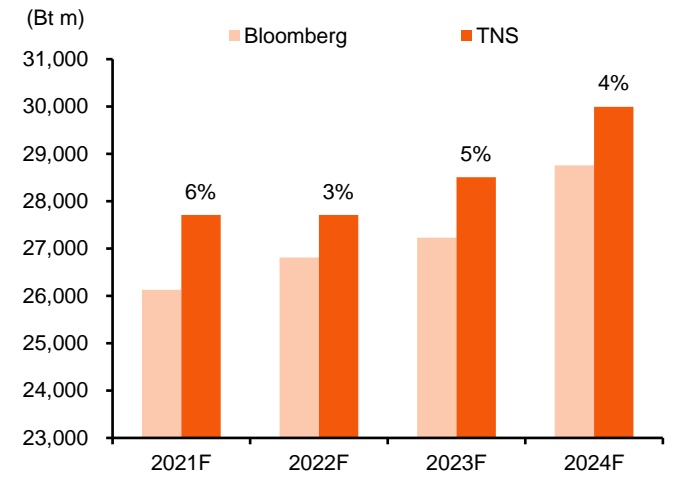
We expect IVL to deliver core profit growth of 23% in 2022F, mainly due to its IOD business turnaround and the higher West PET margin contract price. It is trading at 7x EV/EBITDA and at 9x PE, which is below its historical averages of 10x and 15x, respectively. IVL is the only company in the sector where we see potential earnings upside to the Street's forecasts.

Ex 22: Core EBITDA Breakdown



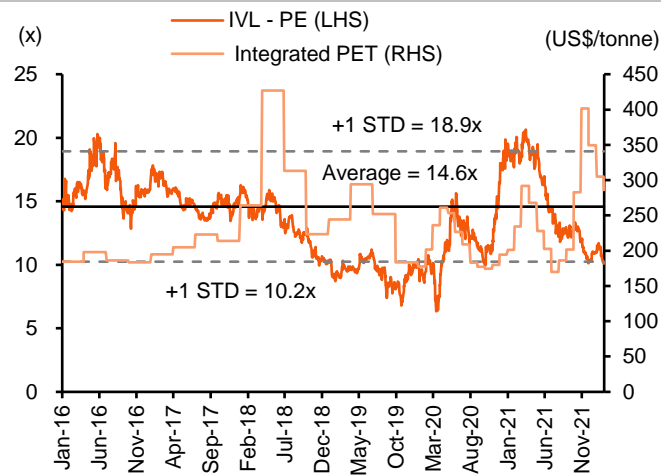
Sources: Company data, Thanachart estimates

Ex 23: TNS's Profit Forecasts Vs. Consensus



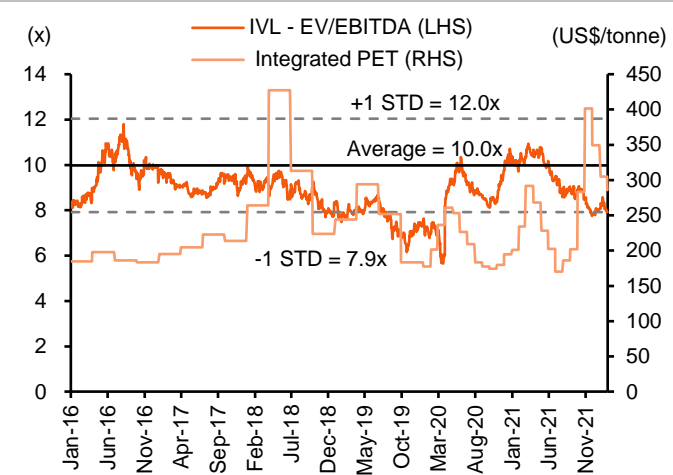
Sources: Bloomberg, Thanachart estimates

Ex 24: PE STD Chart



Sources: Bloomberg, Thanachart estimates

Ex 25: EV/EBITDA STD Chart



Sources: Bloomberg, Thanachart estimates

Ex 26: Our Key Spread Assumptions

	2019A	2020A	2021F	2022F	2023F	2024F
Combined PET	866	794	1,149	1,411	1,333	1,357
Integrated oxides and derivatives	75	115	414	520	606	606
Fibers	222	195	195	201	224	257
Holdings	(16)	20	20	20	20	20
IVL conso	1,147	1,124	1,778	2,152	2,183	2,240
Key assumptions						
EBITDA per tonne (US\$/t)	93	82	117	135	133	133
Industry margin (US\$/t)						
Asia PTA	137	80	100	90	90	90
Asia PET	126	137	137	150	150	150
Industry spread: Asia Integrated PET	243	206	223	227	227	227
West PTA	238	191	376	350	300	250
West PET	234	233	320	300	280	280
Industry spread: West Integrated PET	439	397	643	601	538	495
US MEG Over Ethane	457	365	500	460	460	460
US MTBE (C-Factor)	358	151	200	230	300	300

Sources: Company data, Thanachart estimates

Ex 27: 12-month DCF-based TP Calculation, Using A Base Year Of 2022F

(Bt m)	2022F	2023F	2024F	2025F	2026F	2027F	2028F	2029F	2030F	2031F	2032F	Terminal value
EBITDA	71,011	72,047	73,911	75,927	78,020	80,194	82,451	84,794	87,228	89,754	92,378	
Free cash flow	(17,866)	35,852	43,786	45,534	47,345	49,219	51,156	53,161	55,234	57,380	59,601	767,098
PV of free cash flow	(16,392)	30,175	33,797	31,707	30,116	28,600	27,147	25,770	24,459	22,268	21,036	270,748
Risk-free rate (%)	2.5											
Market risk premium (%)	8.0											
Beta	1.5											
WACC (%)	9.0											
Terminal growth (%)	2.0											
Enterprise value - add investments	529,431											
Net debt	183,550											
Minority interest	10,442											
Equity value	335,439											
# of shares	5,615											
Equity value/share (Bt)	60											

Sources: Company data, Thanachart estimates

COMPANY DESCRIPTION

Indorama Ventures Pcl (IVL) manufactures and distributes polyethylene terephthalate (PET), polyester fibers and yarns, purified terephthalic acid (PTA) and monoethylene glycol (MEG). It is one of the largest vertically integrated polyester chain producers in the world. Its global sales and manufacturing presence can be seen in major markets such as the US, Europe and Asia, serving major players in diversified end-user markets, including food, beverages, personal and home care, health care, automotive, textiles and industrial. We believe IVL is now at an inflection point for its third growth phase, via expanding into a packaging, olefin-integrated company.

Source: Thanachart

THANACHART'S SWOT ANALYSIS

S — Strength

- Large scale and efficient facilities are helping IVL to become one of the lowest-cost producers in the world.
- Large scale and good relationships with customers help IVL to keep its utilization rate high and improve economies of scale.
- Setting up plants in many major markets helps IVL to save on transportation costs and avoid trade barriers.

O — Opportunity

- IVL still has room for further growth potential from expanding its IOD portfolio via horizontal and vertical integration.
- Potential upside from rPET business.
- Market consolidation in the US and Europe is helping to sustain product spreads.

CONSENSUS COMPARISON

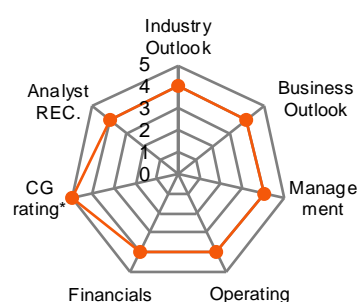
	Consensus	Thanachart	Diff
Target price (Bt)	56.61	60.00	6%
Net profit 21F (Bt m)	26,811	27,707	3%
Net profit 22F (Bt m)	27,227	28,510	5%
Consensus REC	BUY: 20	HOLD: 2	SELL: 0

HOW ARE WE DIFFERENT FROM THE STREET?

- Our 2021-22F net profits are above consensus as we assume higher West PET margin.
- Therefore, our target price is higher than the Bloomberg consensus.

Sources: Bloomberg consensus, Thanachart forecasts

COMPANY RATING



Rating Scale

Excellent	5
Good	4
Fair	3
Weak	2
Very Weak	1
None	0

Source: Thanachart; *CG Rating

W — Weakness

- IVL relies heavily on the PET/polyester product value chain and its investment US ethane crackers make its vulnerable to oil price fluctuation.
- For PET, IVL's customers are major food & beverage companies, and they could have very strong bargaining power.

T — Threat

- Threat on higher environmental awareness that would lead to lower virgin PET demand.
- New technology to lower production costs would require existing players to invest more capex to improve efficiency.
- Overpaying for acquisitions and limited synergies

RISKS TO OUR INVESTMENT CASE

- Lower-than-expected spreads and/or poor cost controls represent the key downside risks to our view.
- Collapse in oil price that would lead to lower MTBE and MEG spreads is a secondary downside risk to our call.
- Unsuccessful integration of the recent acquisitions would be a secondary downside risk.

Source: Thanachart

INCOME STATEMENT

FY ending Dec (Bt m)	2019A	2020A	2021F	2022F	2023F
Sales	352,692	331,513	490,610	545,124	538,287
Cost of sales	309,345	282,538	396,164	435,448	427,139
Gross profit	43,348	48,975	94,446	109,676	111,148
% gross margin	12.3%	14.8%	19.3%	20.1%	20.6%
Selling & administration expenses	34,221	39,092	57,853	64,281	63,475
Operating profit	9,127	9,883	36,593	45,395	47,672
% operating margin	2.6%	3.0%	7.5%	8.3%	8.9%
Depreciation & amortization	17,040	20,487	22,080	25,616	24,375
EBITDA	26,168	30,370	58,673	71,011	72,047
% EBITDA margin	7.4%	9.2%	12.0%	13.0%	13.4%
Non-operating income	2,367	3,224	0	0	0
Non-operating expenses	0	0	0	0	0
Interest expense	(5,615)	(7,674)	(7,234)	(7,840)	(8,287)
Pre-tax profit	5,879	5,432	29,359	37,555	39,385
Income tax	1,534	(1,243)	4,819	7,541	7,907
After-tax profit	4,345	6,676	24,540	30,014	31,478
% net margin	1.2%	2.0%	5.0%	5.5%	5.8%
Shares in affiliates' Earnings	5	143	151	151	151
Minority interests	888	(386)	(1,489)	(1,654)	(1,634)
Extraordinary items	14	(4,018)	4,506	0	0
NET PROFIT	5,252	2,414	27,707	28,510	29,995
Normalized profit	5,239	6,433	23,202	28,510	29,995
EPS (Bt)	0.9	0.4	4.9	5.1	5.3
Normalized EPS (Bt)	0.9	1.1	4.1	5.1	5.3

We foresee a sharp earnings turnaround in 2022F

BALANCE SHEET

FY ending Dec (Bt m)	2019A	2020A	2021F	2022F	2023F
ASSETS:					
Current assets:	118,757	119,835	159,709	179,835	177,293
Cash & cash equivalent	10,454	19,390	15,442	20,442	20,442
Account receivables	34,305	33,422	49,461	54,957	54,268
Inventories	62,165	53,938	75,631	83,130	81,544
Others	11,833	13,084	19,176	21,307	21,039
Investments & loans	2,548	3,229	3,229	3,229	3,229
Net fixed assets	212,423	264,291	272,811	321,995	324,820
Other assets	46,840	65,817	76,720	80,457	79,988
Total assets	380,568	453,172	512,470	585,516	585,330
LIABILITIES:					
Current liabilities:	112,991	117,161	145,297	181,211	188,399
Account payables	57,173	57,783	81,021	89,055	87,355
Bank overdraft & ST loans	30,379	20,726	20,488	24,549	23,196
Current LT debt	10,271	16,503	19,635	38,500	50,526
Others current liabilities	15,167	22,150	24,154	29,108	27,322
Total LT debt	105,611	164,073	158,869	175,388	151,577
Others LT liabilities	23,799	36,329	52,392	56,895	56,330
Total liabilities	242,401	317,564	356,558	413,494	396,306
Minority interest	8,455	8,953	10,442	12,096	13,730
Preferreds shares	0	0	0	0	0
Paid-up capital	5,615	5,615	5,615	5,615	5,615
Share premium	60,331	60,331	60,331	60,331	60,331
Warrants	0	0	0	0	0
Surplus	(6,731)	(6,852)	(6,852)	(6,852)	(6,852)
Retained earnings	70,497	67,561	86,376	100,832	116,201
Shareholders' equity	129,712	126,655	145,470	159,926	175,295
Liabilities & equity	380,568	453,172	512,470	585,516	585,330

Sources: Company data, Thanachart estimates

CASH FLOW STATEMENT

FY ending Dec (Bt m)	2019A	2020A	2021F	2022F	2023F
Earnings before tax	5,879	5,432	29,359	37,555	39,385
Tax paid	(3,459)	1,643	(4,466)	(7,151)	(8,029)
Depreciation & amortization	17,040	20,487	22,080	25,616	24,375
Chg In working capital	13,860	9,719	(14,493)	(4,961)	576
Chg In other CA & CL / minorities	4,748	9,035	(4,417)	2,584	(1,247)
Cash flow from operations	38,069	46,317	28,062	53,643	55,061
Capex	(21,584)	(69,625)	(30,600)	(74,800)	(27,200)
Right of use	0	(11,865)	0	0	0
ST loans & investments	(3)	48	127	0	0
LT loans & investments	2,789	(682)	0	0	0
Adj for asset revaluation	(9,796)	(141)	0	0	0
Chg In other assets & liabilities	(3,850)	(4,945)	9,665	767	(96)
Cash flow from investments	(32,444)	(87,210)	(20,808)	(74,033)	(27,296)
Debt financing	9,700	55,160	(2,310)	39,445	(13,138)
Capital increase	0	0	(0)	0	0
Dividends paid	(7,860)	(3,930)	(8,892)	(14,054)	(14,626)
Warrants & other surplus	(2,722)	(1,400)	0	0	0
Cash flow from financing	(883)	49,830	(11,202)	25,390	(27,764)
Free cash flow	16,485	(23,309)	(2,538)	(21,157)	27,861

VALUATION

FY ending Dec	2019A	2020A	2021F	2022F	2023F
Normalized PE (x)	51.4	41.9	11.6	9.5	9.0
Normalized PE - at target price (x)	64.3	52.4	14.5	11.8	11.2
PE (x)	51.3	111.6	9.7	9.5	9.0
PE - at target price (x)	64.1	139.5	12.2	11.8	11.2
EV/EBITDA (x)	15.5	14.9	7.7	6.9	6.6
EV/EBITDA - at target price (x)	18.1	17.1	8.9	7.8	7.5
P/BV (x)	2.1	2.1	1.9	1.7	1.5
P/BV - at target price (x)	2.6	2.7	2.3	2.1	1.9
P/CFO (x)	7.1	5.8	9.6	5.0	4.9
Price/sales (x)	0.8	0.8	0.5	0.5	0.5
Dividend yield (%)	2.6	1.5	5.1	5.3	5.6
FCF Yield (%)	6.1	(8.6)	(0.9)	(7.9)	10.3
(Bt)					
Normalized EPS	0.9	1.1	4.1	5.1	5.3
EPS	0.9	0.4	4.9	5.1	5.3
DPS	1.2	0.7	2.5	2.5	2.7
BV/share	23.1	22.6	25.9	28.5	31.2
CFO/share	6.8	8.2	5.0	9.6	9.8
FCF/share	2.9	(4.2)	(0.5)	(3.8)	5.0

Sources: Company data, Thanachart estimates

IVL trades well below its long-term average PE multiple

FINANCIAL RATIOS

FY ending Dec	2019A	2020A	2021F	2022F	2023F
Growth Rate					
Sales (%)	1.6	(6.0)	48.0	11.1	(1.3)
Net profit (%)	(80.2)	(54.0)	1,047.7	2.9	5.2
EPS (%)	(80.7)	(54.0)	1,047.7	2.9	5.2
Normalized profit (%)	(78.2)	22.8	260.7	22.9	5.2
Normalized EPS (%)	(78.8)	22.8	260.7	22.9	5.2
Dividend payout ratio (%)	131.0	162.8	50.0	50.0	50.0
Operating performance					
Gross margin (%)	12.3	14.8	19.3	20.1	20.6
Operating margin (%)	2.6	3.0	7.5	8.3	8.9
EBITDA margin (%)	7.4	9.2	12.0	13.0	13.4
Net margin (%)	1.2	2.0	5.0	5.5	5.8
D/E (incl. minor) (x)	1.1	1.5	1.3	1.4	1.2
Net D/E (incl. minor) (x)	1.0	1.3	1.2	1.3	1.1
Interest coverage - EBIT (x)	1.6	1.3	5.1	5.8	5.8
Interest coverage - EBITDA (x)	4.7	4.0	8.1	9.1	8.7
ROA - using norm profit (%)	1.4	1.5	4.8	5.2	5.1
ROE - using norm profit (%)	3.8	5.0	17.1	18.7	17.9
DuPont					
ROE - using after tax profit (%)	3.2	5.2	18.0	19.7	18.8
- asset turnover (x)	0.9	0.8	1.0	1.0	0.9
- operating margin (%)	3.3	4.0	7.5	8.3	8.9
- leverage (x)	2.8	3.3	3.5	3.6	3.5
- interest burden (%)	51.1	41.4	80.2	82.7	82.6
- tax burden (%)	73.9	122.9	83.6	79.9	79.9
WACC (%)	9.0	9.0	9.0	9.0	9.0
ROIC (%)	2.4	4.6	9.9	11.0	10.1
NOPAT (Bt m)	6,745	12,144	30,586	36,279	38,101
invested capital (Bt m)	265,520	308,567	329,021	377,921	380,152

Sources: Company data, Thanachart estimates

Leverage remains manageable despite a major acquisition

BUY (Unchanged)

Transfer of Coverage

TP: Bt 46.00 (From: Bt 50.00)**Upside : 18.7%****4 FEBRUARY 2022**

PTT Public Co Ltd (PTT TB)

A big-cap value play

We reaffirm our BUY rating on PTT with a TP of Bt46. We see PTT as a big-cap value oil play in the elevated oil price environment. The stock is trading at a de-rated valuations of 1.0x P/BV, 11.0x PE and a 5% dividend yield.

**YUPAPAN POLPORNPRASERT**

662-779-9110

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A mega-cap value stock

We reaffirm our BUY call on PTT seeing it as a big-cap value oil play. We believe PTT's stock price has been de-rated enough to reflect its holding company structure at 1.0x P/BV (vs. its pre-COVID five-year average of 1.3x in 2015-19), and 5% yield (vs. 4%). We lower our SOTP-based TP to Bt46 (from Bt50). It is another BUY choice in the currently elevated oil price environment with potential oil spike from a concern over the Russian factor. With valuations having been de-rated to reflect a holding company structure, PTT's diversification away from its fossil-based business is a positive move in our view. So far, it has ventured into the retail, consumer, pharmaceutical, EV and parts and renewable energy areas.

High dividend and strong cash flow

Despite headwinds of higher gas costs and lower profits by its subsidiaries, we still expect PTT to generate profit in the range of Bt100bn over the next three years. Its integrated business allows the company's profit to be more resilient relative to its subsidiaries. PTT has the strongest balance sheet in the sector with net D/E of only 0.3x and generating positive free cash flow over the next two years. We also estimate to company to offer decent dividend yields of 5-6.4% over 2022-24F vs. peers' average of 3.9%.

Business transformation

PTT is diversifying away from its fossil-based energy business. Its five-year capex plan is Bt238bn with a profit target of "Future Energy and Beyond" investments at 30% of total profit by 2030. Its new businesses include EV and parts, renewable energy (from 2.6GW to 12GW), and life sciences (pharmaceuticals, medical devices and nutrition). In the EV value chain, PTT is forming a JV with Foxconn to make EVs using Foxconn's MIH platform with 2023 production in the first phase targeted at 50,000 a year. Estimated capex is US\$0.7bn-1.0bn with an expected IRR of 9.5-10%. We still leave this as potential upside to our numbers.

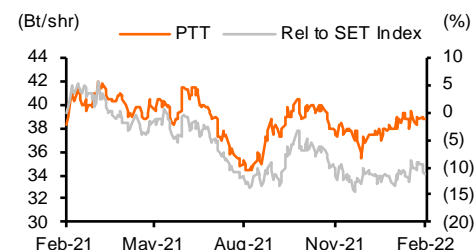
Subsidy risk looks manageable

Despite all the segmental diversification of its energy business, PTT is still a net beneficiary of the high oil price environment. Exhibit 3 shows its profit breakdown. As a national oil company, PTT is subject to risk from national service obligations via energy price subsidization. However, we foresee much lower risk than in the past. This is because the NGV and LPG markets have been partially liberalized, and their prices are on a cost-plus basis. We estimate LPG and NGV subsidization at Bt1.2bn p.a., vs. Bt30bn p.a. in 2013-15.

COMPANY VALUATION

Y/E Dec (Bt m)	2020A	2021F	2022F	2023F
Sales	1,615,665	1,977,624	2,188,754	2,110,815
Net profit	37,766	105,132	101,252	94,758
Consensus NP	—	106,767	110,665	113,126
Diff frm cons (%)	—	(1.5)	(8.5)	(16.2)
Norm profit	38,053	116,669	101,252	94,758
Prev. Norm profit	—	107,325	112,935	125,265
Chg frm prev (%)	—	8.7	(10.3)	(24.4)
Norm EPS (Bt)	1.3	4.1	3.5	3.3
Norm EPS grw (%)	(51.0)	206.6	(13.2)	(6.4)
Norm PE (x)	29.1	9.5	10.9	11.7
EV/EBITDA (x)	6.9	4.1	4.2	4.1
P/BV (x)	1.3	1.1	1.0	1.0
Div yield (%)	2.6	5.2	5.2	6.5
ROE (%)	4.3	12.3	9.7	8.8
Net D/E (%)	25.3	34.3	33.4	29.7

PRICE PERFORMANCE

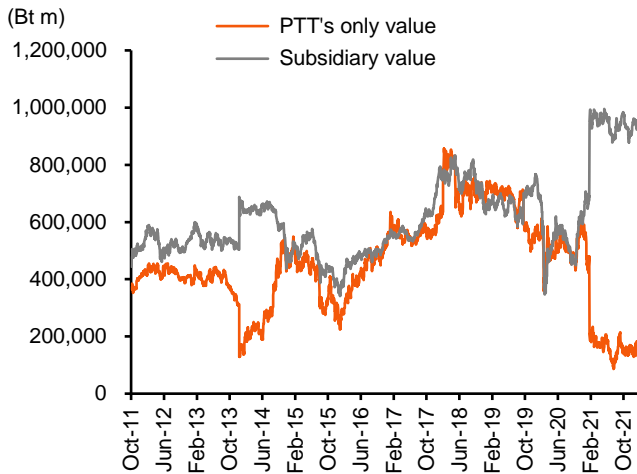


COMPANY INFORMATION

Price as of 3-Feb-22 (Bt)	38.75
Market Cap (US\$ m)	33,376.0
Listed Shares (m shares)	28,563.0
Free Float (%)	48.9
Avg Daily Turnover (US\$ m)	64.3
12M Price H/L (Bt)	42.00/34.50
Sector	Energy
Major Shareholder	Ministry of Finance 51.11%

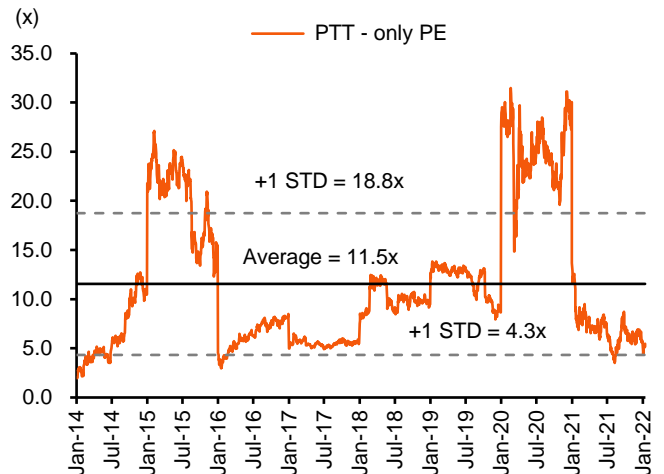
Sources: Bloomberg, Company data, Thanachart estimates

Ex 1: PTT-only's Value Has De-rated...



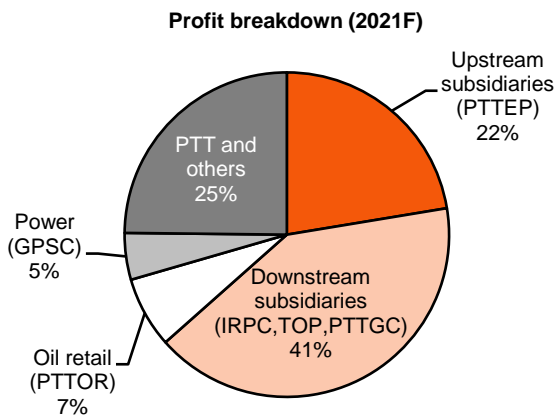
Sources: Bloomberg, Thanachart estimates

Ex 2: ...Due To Concern Over Lower Gas Returns



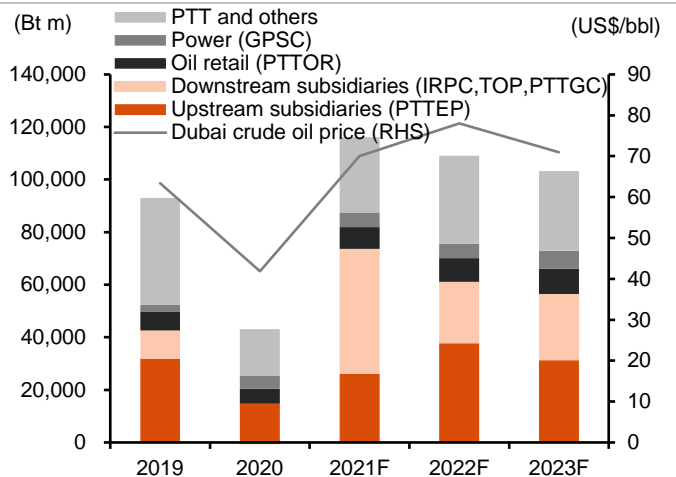
Sources: Bloomberg, Thanachart estimates

Ex 3: PTT's Profit Breakdown



Sources: Thanachart estimates

Ex 4: Higher Oil Price Lead To Higher Profit For PTT



Sources: Company, Thanachart estimates

Ex 5: 12-month DCF-derived SOTP-based TP Calculation Using A Base Year Of 2022F

(Bt m)	2022F	2023F	2024F	2025F	2026F	2027F	2028F	2029F	2030F	2031F	2032F	Terminal Value
EBITDA	87,876	88,454	85,286	84,399	83,518	82,644	81,776	80,915	80,060	79,211	78,369	
Free cash flow	35,181	73,872	81,852	83,573	73,070	74,032	73,356	72,706	72,004	71,412	70,750	766,711
PV of free cash flow	32,131	61,603	62,308	57,248	45,536	41,972	37,826	34,107	30,729	26,737	24,005	260,136
Risk-free rate (%)	2.5											
Market risk premium (%)	8.0											
Beta	1.1											
WACC (%)	9.5											
Terminal growth (%)	1.0											
Enterprise value - add investments	714,337											
Net debt	(18,306)											
Minority interest	0											
Equity value	732,643											
# of shares (m)	28,563											
Equity value/sh (Bt)	26											

Sum-of-the-parts valuation	Value (Bt m)	Per share (Bt/shr)	% of total	Methodology
Gas and other core operations	732,643	26	56%	DCF
Oil & retail	212,471	7	16%	EV/EBITDA
Upstream	392,235	14	30%	DCF
Refining & chemical	209,927	7	16%	DCF
Power	58,613	2	4%	DCF
Other investments	26,424	1	2%	Earnings multiples
Holding discount		20%		
Total equity value	1,313,898	46	100%	SOTP

Sources: Thanachart estimates

COMPANY DESCRIPTION

PTT Pcl (PTT) is a fully integrated oil and gas company and has the biggest market capitalization on the Stock Exchange of Thailand (SET). The government owns directly and indirectly 66% in PTT. Its businesses can be mainly grouped into seven segments: 1) Exploration & Production – operated by its key subsidiary, 65%-owned PTTEP; 2) petrochemicals with its flagship PTTGC; 3) refinery via SET-listed ie, TOP and IRPC; 4) oil marketing business through its 75%-owned PTTOR; 5) power flagship through its 43%-owned GPSC; 6) gas pipeline and GSP businesses operated by PTT, the parent firm, and 7) coal and international trading.

Source: Thanachart

THANACHART'S SWOT ANALYSIS

S — Strength

- Sole gas distributor in Thailand that operates Thailand's gas pipeline and gas separation plants.
- Integrated business model: upstream E&P, gas processing, chemical, refining and retailing.

O — Opportunity

- Strong free cash to expand into new products and abroad.
- M&As within the group or overseas to strengthen business structure.

CONSENSUS COMPARISON

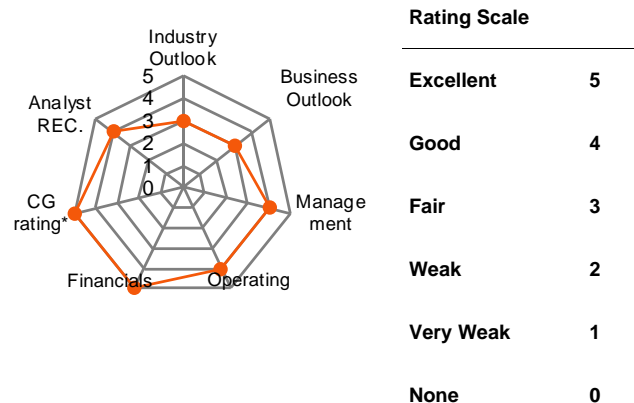
	Consensus	Thanachart	Diff
Target price (Bt)	48.97	46.00	-6%
Net profit 21F (Bt m)	106,767	105,132	-2%
Net profit 22F (Bt m)	110,665	101,252	-9%
Consensus REC	BUY: 25	HOLD: 2	SELL: 0

HOW ARE WE DIFFERENT FROM THE STREET?

- Our 2021-22F earnings are 2-9% lower than consensus due to our lower profit assumptions in downstream subsidiaries.
- Our TP is marginally lower with consensus as well.

Sources: Bloomberg consensus, Thanachart estimates

COMPANY RATING



Source: Thanachart; *CG Rating

W — Weakness

- PTT is heavily reliant on the Thailand market which has limited growth opportunities for its legacy O&G businesses.
- PTT, being a state-owned enterprise, is heavily regulated and the company may from time to time be called upon to do national service (i.e., provide energy price subsidies).

T — Threat

- Government is allowing third-party imports of LNG and could soon deregulate PTT's exclusive gas distributorship.
- Depleting domestic gas reserves which could be a threat to its gas separation plants' earnings.
- Potential investments that could lead to value destruction.

RISKS TO OUR INVESTMENT CASE

- Lower-than-expected oil prices would be the key downside risk to our call.
- High oil price could trigger the implementation of adverse regulatory measures.
- Another secondary downside risk would come from lower-than-expected refining/chemical margins.

Source: Thanachart

INCOME STATEMENT

FY ending Dec (Bt m)	2019A	2020A	2021F	2022F	2023F
Sales	2,219,739	1,615,665	1,977,624	2,188,754	2,110,815
Cost of sales	1,967,529	1,437,093	1,595,972	1,824,000	1,761,847
Gross profit	252,210	178,572	381,652	364,754	348,968
% gross margin	11.4%	11.1%	19.3%	16.7%	16.5%
Selling & administration expenses	110,458	109,389	133,896	148,190	142,913
Operating profit	141,751	69,183	247,756	216,563	206,054
% operating margin	6.4%	4.3%	12.5%	9.9%	9.8%
Depreciation & amortization	133,204	139,880	149,058	169,286	182,365
EBITDA	274,955	209,063	396,814	385,849	388,419
% EBITDA margin	12.4%	12.9%	20.1%	17.6%	18.4%
Non-operating income	19,980	20,579	22,415	24,808	23,925
Non-operating expenses	0	0	(31,858)	0	0
Interest expense	(27,971)	(28,536)	(32,211)	(38,455)	(38,115)
Pre-tax profit	133,760	61,225	206,103	202,917	191,864
Income tax	32,989	25,166	61,162	63,667	60,351
After-tax profit	100,771	36,059	144,941	139,250	131,513
% net margin	4.5%	2.2%	7.3%	6.4%	6.2%
Shares in affiliates' Earnings	6,008	4,178	9,306	9,306	9,306
Minority interests	(29,141)	(2,184)	(37,578)	(47,304)	(46,061)
Extraordinary items	15,313	(287)	(11,537)	0	0
NET PROFIT	92,951	37,766	105,132	101,252	94,758
Normalized profit	77,638	38,053	116,669	101,252	94,758
EPS (Bt)	3.3	1.3	3.7	3.5	3.3
Normalized EPS (Bt)	2.7	1.3	4.1	3.5	3.3

Profit set to decline due to weaker gas profit in 2022F

BALANCE SHEET

FY ending Dec (Bt m)	2019A	2020A	2021F	2022F	2023F
ASSETS:					
Current assets:	717,099	720,930	807,996	851,131	837,197
Cash & cash equivalent	330,806	416,921	450,990	450,990	450,990
Account receivables	167,641	110,528	135,290	149,733	144,401
Inventories	152,126	129,779	144,127	164,719	159,107
Others	66,526	63,703	77,589	85,689	82,699
Investments & loans	87,657	85,312	85,312	85,312	85,312
Net fixed assets	1,294,979	1,292,717	1,642,799	1,761,147	1,799,885
Other assets	387,230	445,224	488,066	504,805	498,626
Total assets	2,486,965	2,544,183	3,024,173	3,202,395	3,221,019
LIABILITIES:					
Current liabilities:	379,785	298,026	330,177	368,533	353,586
Account payables	160,669	108,189	120,150	137,317	132,637
Bank overdraft & ST loans	44,441	4,223	5,416	5,516	5,320
Current LT debt	50,440	73,778	94,624	96,367	92,938
Others current liabilities	124,236	111,837	109,987	129,334	122,691
Total LT debt	562,746	664,732	852,553	868,259	837,362
Others LT liabilities	243,394	295,579	377,404	410,134	398,052
Total liabilities	1,185,925	1,258,338	1,560,134	1,646,927	1,588,999
Minority interest	422,436	403,805	441,383	488,687	534,747
Preferreds shares	0	0	0	0	0
Paid-up capital	28,563	28,563	28,563	28,563	28,563
Share premium	29,211	29,211	29,211	29,211	29,211
Warrants	0	0	0	0	0
Surplus	(52,287)	(49,116)	29,211	29,211	29,211
Retained earnings	873,117	873,383	935,671	979,796	1,010,288
Shareholders' equity	878,604	882,040	1,022,656	1,066,782	1,097,273
Liabilities & equity	2,486,965	2,544,183	3,024,173	3,202,395	3,221,019

Sources: Company data, Thanachart estimates

CASH FLOW STATEMENT

FY ending Dec (Bt m)	2019A	2020A	2021F	2022F	2023F
Earnings before tax	133,760	61,225	206,103	202,917	191,864
Tax paid	(49,340)	(36,073)	(55,198)	(61,893)	(60,869)
Depreciation & amortization	133,204	139,880	149,058	169,286	182,365
Chg In working capital	9,335	26,980	(27,149)	(17,869)	6,266
Chg In other CA & CL / minorities	(32,924)	(20,069)	(14,090)	18,780	6,171
Cash flow from operations	194,035	171,943	258,725	311,220	325,796
Capex	(314,009)	(137,617)	(499,140)	(287,633)	(221,104)
Right of use	0	(70,831)	0	0	0
ST loans & investments	(886)	951	0	0	0
LT loans & investments	(8,109)	2,345	0	0	0
Adj for asset revaluation	0	0	0	0	0
Chg In other assets & liabilities	(14,705)	59,277	40,750	15,991	(5,903)
Cash flow from investments	(337,709)	(145,875)	(458,390)	(271,642)	(227,006)
Debt financing	129,304	94,377	198,252	17,549	(34,523)
Capital increase	0	0	(0)	0	0
Dividends paid	(81,351)	(51,624)	(42,844)	(57,126)	(64,267)
Warrants & other surplus	(8,079)	17,295	78,328	0	0
Cash flow from financing	39,874	60,047	233,735	(39,577)	(98,790)
Free cash flow	(119,973)	34,325	(240,416)	23,587	104,693

Free cash flows positive despite heavy capex for downstream subsidiaries

VALUATION

FY ending Dec	2019A	2020A	2021F	2022F	2023F
Normalized PE (x)	14.3	29.1	9.5	10.9	11.7
Normalized PE - at target price (x)	16.9	34.5	11.3	13.0	13.9
PE (x)	11.9	29.3	10.5	10.9	11.7
PE - at target price (x)	14.1	34.8	12.5	13.0	13.9
EV/EBITDA (x)	5.2	6.9	4.1	4.2	4.1
EV/EBITDA - at target price (x)	6.0	7.8	4.6	4.8	4.6
P/BV (x)	1.3	1.3	1.1	1.0	1.0
P/BV - at target price (x)	1.5	1.5	1.3	1.2	1.2
P/CFO (x)	5.7	6.4	4.3	3.6	3.4
Price/sales (x)	0.5	0.7	0.6	0.5	0.5
Dividend yield (%)	5.2	2.6	5.2	5.2	6.5
FCF Yield (%)	(10.8)	3.1	(21.7)	2.1	9.5
(Bt)					
Normalized EPS	2.7	1.3	4.1	3.5	3.3
EPS	3.3	1.3	3.7	3.5	3.3
DPS	2.0	1.0	2.0	2.0	2.5
BV/share	30.8	30.9	35.8	37.3	38.4
CFO/share	6.8	6.0	9.1	10.9	11.4
FCF/share	(4.2)	1.2	(8.4)	0.8	3.7

Sources: Company data, Thanachart estimates

FINANCIAL RATIOS

FY ending Dec	2019A	2020A	2021F	2022F	2023F
Growth Rate					
Sales (%)	(5.0)	(27.2)	22.4	10.7	(3.6)
Net profit (%)	(22.3)	(59.4)	178.4	(3.7)	(6.4)
EPS (%)	(22.3)	(59.4)	178.4	(3.7)	(6.4)
Normalized profit (%)	(31.5)	(51.0)	206.6	(13.2)	(6.4)
Normalized EPS (%)	(31.5)	(51.0)	206.6	(13.2)	(6.4)
Dividend payout ratio (%)	61.5	75.6	54.3	56.4	75.4
Operating performance					
Gross margin (%)	11.4	11.1	19.3	16.7	16.5
Operating margin (%)	6.4	4.3	12.5	9.9	9.8
EBITDA margin (%)	12.4	12.9	20.1	17.6	18.4
Net margin (%)	4.5	2.2	7.3	6.4	6.2
D/E (incl. minor) (x)	0.5	0.6	0.7	0.6	0.6
Net D/E (incl. minor) (x)	0.3	0.3	0.3	0.3	0.3
Interest coverage - EBIT (x)	5.1	2.4	7.7	5.6	5.4
Interest coverage - EBITDA (x)	9.8	7.3	12.3	10.0	10.2
ROA - using norm profit (%)	3.2	1.5	4.2	3.3	3.0
ROE - using norm profit (%)	8.9	4.3	12.3	9.7	8.8
DuPont					
ROE - using after tax profit (%)	11.5	4.1	15.2	13.3	12.2
- asset turnover (x)	0.9	0.6	0.7	0.7	0.7
- operating margin (%)	7.3	5.6	12.1	11.0	10.9
- leverage (x)	2.8	2.9	2.9	3.0	3.0
- interest burden (%)	82.7	68.2	86.5	84.1	83.4
- tax burden (%)	75.3	58.9	70.3	68.6	68.5
WACC (%)	9.5	9.5	9.5	9.5	9.5
ROIC (%)	10.9	3.4	14.4	9.7	8.9
NOPAT (Bt m)	106,791	40,745	174,234	148,615	141,240
invested capital (Bt m)	1,205,425	1,207,853	1,524,259	1,585,934	1,581,902

ROE to drop in 2022F due to the absence of one-off gains in 2021F

Sources: Company data, Thanachart estimates

BUY (Unchanged)

Transfer of Coverage

TP: Bt 152.00 (From: Bt 140.00)**Upside : 17.8%****4 FEBRUARY 2022**

PTT Exp & Production Pcl (PTTEP TB)

A momentum play

We expect oil prices to still enjoy near-term support factors in 1H22F and PTTEP is the most direct play in the sector. We maintain our BUY rating with a higher TP of Bt152 to reflect our higher oil price assumptions.

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Tactical trade on oil price rally

We maintain our BUY call on PTTEP seeing it as a tactical trade on short-term strong oil price momentum. Short-term oil price drivers are; multi-year low inventories; limited supply growth amid weak investment, falling OPEC spare capacity and supply disruption risk; and normalizing demand post-COVID crisis. This report is a part of *Energy Sector – Lifeline stretched out, dated 4 February 2022*, in which we revise up our Brent assumptions to USD80/73/71 per barrel (from USD65/66/68) in 2022-24F. We lift PTTEP's earnings by 39/17% and our DCF-based 12-month TP, using a 2022F base year, to Bt152 (from Bt140). PTTEP traded at 1.5-1.6x P/BV (vs. 1.1x now) during 2018, when oil prices were near the current level of USD80-90/bbl. The current stock price implies Brent at USD65-70/bbl and our sensitivity analysis indicates a USD5/bbl rise in oil prices would lift our valuation on PTTEP by Bt10.

Volume can grow despite Erawan shortfall

PTTEP foresees Erawan's gas output at 250-300 mmscfd by the time it takes over operations from Chevron under a new production-sharing contract (PSC) in April 2022 vs. 607 mmscfd in November 2021 and 1,322 mmscfd in 2019. PTTEP expects to ramp up production to 800 mmscfd in two years. Despite the fall in Erawan's output, we still expect PTTEP to grow its total volume by 12% this year from stake increases in Bongkot (from 67% to 100%) and Erawan (from 0% to 60%).

ASP rises on both oil and gas prices

We expect PTTEP to still enjoy a rise in ASP by 8% this year before our assumptions of 10/1% declines in 2023-24F following the normalization of energy prices. The increase in ASP is due to both higher oil prices and a 5% rise in the gas price, which follows the oil price trend with six to nine months' lag time.

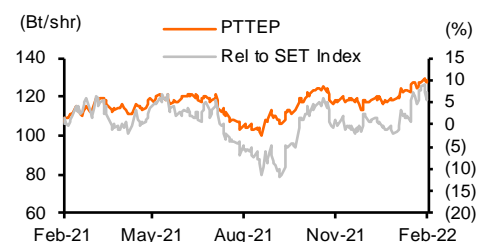
Risks are with the longer-term outlook

We see PTTEP as a short-term momentum play as we have concerns on its longer-term outlook. One factor is that we see limited potential oil price upside from here over the long run. Secondly, we see a risk of further impairment from the Mozambique project if the project's operation is delayed from 2025 while the project operator Total Energies (Total) has officially postponed the start-up date to 2026. PTTEP reviews this project every year end. Another risk is higher-than-expected costs for its new PSC contract given that Chevron doesn't seem to be injecting enough capex to maintain production. Lastly, Total's pullout from the Yadana field could intensify operational risk of Myanmar assets. PTTEP holds a 25.5% stake in Yadana.

COMPANY VALUATION

Y/E Dec (Bt m)	2021A	2022F	2023F	2024F
Sales	219,068	274,681	246,589	248,432
Net profit	38,864	58,083	49,469	45,414
Consensus NP	—	50,977	48,972	49,239
Diff frm cons (%)	—	13.9	1.0	(7.8)
Norm profit	43,989	58,083	49,469	45,414
Prev. Norm profit	—	41,656	42,151	46,528
Chg frm prev (%)	—	39.4	17.4	(2.4)
Norm EPS (Bt)	11.1	14.6	12.5	11.4
Norm EPS grw (%)	105.6	32.0	(14.8)	(8.2)
Norm PE (x)	11.6	8.8	10.4	11.3
EV/EBITDA (x)	3.5	2.8	3.0	3.1
P/BV (x)	1.2	1.1	1.1	1.0
Div yield (%)	3.9	4.7	5.4	5.4
ROE (%)	11.4	13.2	10.4	9.2
Net D/E (%)	7.2	5.6	6.4	8.6

PRICE PERFORMANCE

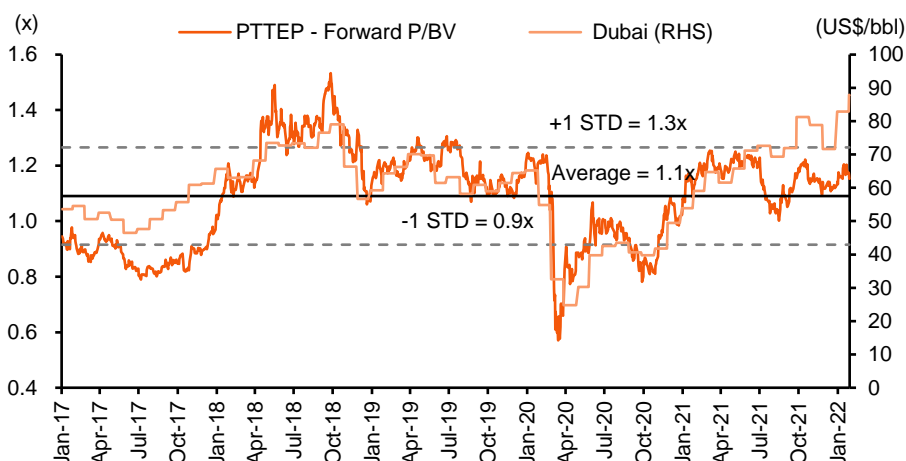


COMPANY INFORMATION

Price as of 3-Feb-22 (Bt)	129.00
Market Cap (US\$ m)	15,443.2
Listed Shares (m shares)	3,970.0
Free Float (%)	34.7
Avg Daily Turnover (US\$ m)	34.7
12M Price H/L (Bt)	129.50/100.50
Sector	Energy
Major Shareholder	PTT Pcl 63.79%

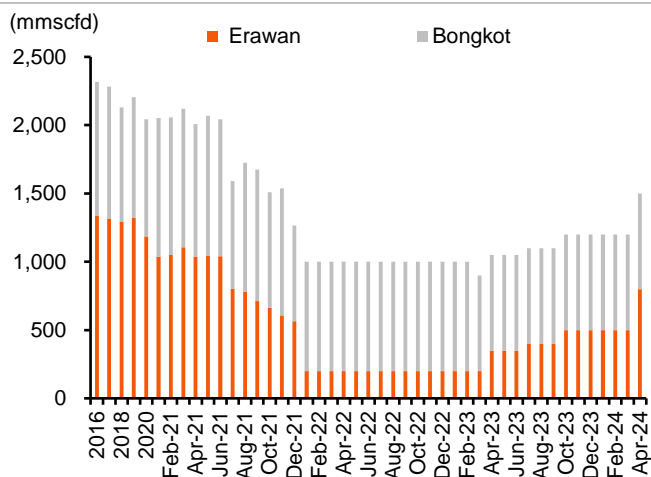
Sources: Bloomberg, Company data, Thanachart estimates

Ex 1: PTTEP's Share Price Lag Reflects Concern Over Erawan Output Shortfall



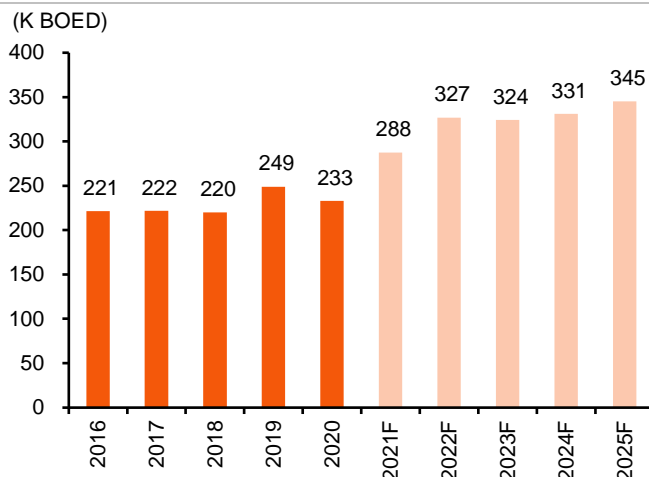
Sources: Bloomberg, Thanachart estimates

Ex 2: Erawan, Bongkot Volume Will Have A Lower Base



Sources: Company data, Thanachart estimates

Ex 3: But PTTEP Volume Still Trend Higher in 2022F



Sources: Company data, Thanachart estimates

Ex 4: 12-month DCF-based TP Calculation, Using A Base Year Of 2022F

(Bt m)	2022F	2023F	2024F	2025F	2026F	2027F	2028F	2029F	2030F	2031F	2032F	Terminal Value
EBITDA	193,979	178,641	179,187	186,637	206,127	195,971	186,322	177,155	168,447	160,174	152,315	144,849
Free cash flow	34,693	27,369	20,418	31,047	60,663	92,058	88,259	84,902	81,801	78,943	76,319	73,920
PV of free cash flow	34,598	22,728	15,446	21,400	37,301	51,359	44,664	38,983	34,078	29,839	24,982	21,862
Risk-free (%)	2.5											
Market risk premium (%)	8.0											
Beta	1.2											
Wacc (%)	9.8											
Terminal growth (%)	2.0											
Enterprise value	634,146											
Net debt	29,871											
Minority interest	0											
Equity value	604,275											
# of shares	3,970											
Equity value / share	152											

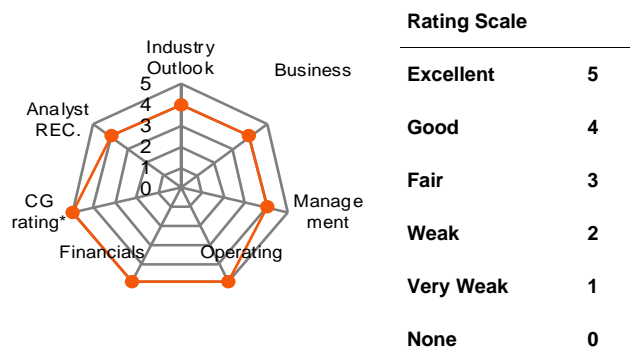
Sources: Company data, Thanachart estimates

COMPANY DESCRIPTION

PTT Exploration and Production (PTTEP) is a pure upstream exploration and production (E&P) company with production of c.300,000 barrels of oil equivalent (boe) per day. Some 70% of its production is natural gas and almost all of its production comes from fields in Thailand and other Southeast Asian countries. It has proven and probable reserves of 2,123m boe with reserve life of 11.7 years. PTTEP is the upstream arm of PTT Pcl, which owns 65% of PTTEP.

Source: Thanachart

COMPANY RATING



Source: Thanachart; *CG Rating

THANACHART'S SWOT ANALYSIS

S — Strength

- The parent company PTT is the country's sole gas buyer and PTTEP's biggest client.
- Secured off-take agreements limit downside risks to production volume.

O — Opportunity

- Significant resources on its balance sheet are still undeveloped.
- Potential investment overseas or expansion into new businesses.

W — Weakness

- Reserves in the Gulf of Thailand are being depleted with a reserve life index of only eight years.
- Limited experience and a lack of technical skills in running operations abroad compared to major international peers.

T — Threat

- Threat of low-cost LNG imports.
- Potential impairment risk on overseas business.
- Competition from international peers for projects abroad.
- Political and regulatory risks concerning its concessions, especially those about to expire.
- Overpaying for acquisitions, leading to a lower ROI.

CONSENSUS COMPARISON

	Consensus	Thanachart	Diff
Target price (Bt)	146.02	152.00	4%
Net profit 22F (Bt m)	50,977	58,083	14%
Net profit 23F (Bt m)	48,972	49,469	1%
Consensus REC	BUY: 24	HOLD: 4	SELL: 1

RISKS TO OUR INVESTMENT CASE

- The key downside risk to our call would come from lower oil and/or gas prices.
- A secondary downside risk would be higher-than-expected operating costs.

HOW ARE WE DIFFERENT FROM THE STREET?

- Our 2021-22F EPS are higher than the Bloomberg consensus numbers, mainly on our higher oil price assumptions
- Our DCF-based TP is therefore higher than consensus.

Sources: Bloomberg consensus, Thanachart estimates

Source: Thanachart

INCOME STATEMENT

FY ending Dec (Bt m)	2020A	2021A	2022F	2023F	2024F
Sales	160,401	219,068	274,681	246,589	248,432
Cost of sales	106,143	121,020	145,760	134,370	141,444
Gross profit	54,258	98,048	128,921	112,219	106,988
% gross margin	33.8%	44.8%	46.9%	45.5%	43.1%
Selling & administration expenses	9,754	11,416	16,875	16,731	17,092
Operating profit	44,503	86,631	112,046	95,488	89,896
% operating margin	27.7%	39.5%	40.8%	38.7%	36.2%
Depreciation & amortization	65,250	69,192	81,933	83,153	89,291
EBITDA	109,753	155,824	193,979	178,641	179,187
% EBITDA margin	68.4%	71.1%	70.6%	72.4%	72.1%
Non-operating income	2,306	4,869	1,620	1,706	1,858
Non-operating expenses	0	0	0	0	0
Interest expense	(7,956)	(6,472)	(8,360)	(7,551)	(9,483)
Pre-tax profit	38,854	85,029	105,306	89,643	82,271
Income tax	18,764	41,528	47,522	40,474	37,157
After-tax profit	20,090	43,500	57,783	49,169	45,114
% net margin	12.5%	19.9%	21.0%	19.9%	18.2%
Shares in affiliates' Earnings	1,307	489	300	300	300
Minority interests	0	0	0	0	0
Extraordinary items	1,267	(5,125)	0	0	0
NET PROFIT	22,664	38,864	58,083	49,469	45,414
Normalized profit	21,397	43,989	58,083	49,469	45,414
EPS (Bt)	5.7	9.8	14.6	12.5	11.4
Normalized EPS (Bt)	5.4	11.1	14.6	12.5	11.4

Despite Erawan volume shortfall, we foresee a strong earnings turnaround in 2022F

BALANCE SHEET

FY ending Dec (Bt m)	2020A	2021A	2022F	2023F	2024F
ASSETS:					
Current assets:	152,716	139,584	156,911	180,473	211,623
Cash & cash equivalent	114,261	85,528	90,000	120,000	150,000
Account receivables	23,752	33,430	41,917	37,630	37,911
Inventories	10,156	14,069	16,772	15,462	16,276
Others	4,547	6,557	8,222	7,381	7,436
Investments & loans	15,774	15,795	15,815	15,836	15,857
Net fixed assets	295,491	380,307	404,535	432,824	463,884
Other assets	211,656	247,850	283,566	265,524	266,708
Total assets	675,637	783,536	860,827	894,656	958,071
LIABILITIES:					
Current liabilities:	56,257	104,502	101,052	84,368	100,764
Account payables	26,844	36,660	44,154	40,704	42,846
Bank overdraft & ST loans	0	12,738	0	0	0
Current LT debt	4,069	0	15,840	6,053	19,800
Others current liabilities	25,344	55,105	41,058	37,612	38,118
Total LT debt	102,878	102,661	100,136	145,267	173,462
Others LT liabilities	162,091	161,022	196,123	177,842	179,041
Total liabilities	321,226	368,186	397,311	407,477	453,267
Minority interest	0	0	0	0	0
Preferreds shares	0	0	0	0	0
Paid-up capital	3,970	3,970	3,970	3,970	3,970
Share premium	105,418	105,418	105,418	105,418	105,418
Warrants	0	0	0	0	0
Surplus	(21,049)	18,955	30,873	30,873	30,873
Retained earnings	266,073	287,007	323,255	346,918	364,543
Shareholders' equity	354,411	415,350	463,516	487,179	504,804
Liabilities & equity	675,637	783,536	860,827	894,656	958,071

Sources: Company data, Thanachart estimates

CASH FLOW STATEMENT

FY ending Dec (Bt m)	2020A	2021A	2022F	2023F	2024F
Earnings before tax	38,854	85,029	105,306	89,643	82,271
Tax paid	(29,624)	(30,528)	(44,300)	(41,945)	(37,722)
Depreciation & amortization	65,250	69,192	81,933	83,153	89,291
Chg In working capital	3,691	(3,775)	(3,696)	2,147	1,048
Chg In other CA & CL / minorities	14,082	15,904	(18,633)	(835)	1,315
Cash flow from operations	92,254	135,822	120,609	132,163	136,203
Capex	(39,239)	(154,009)	(106,161)	(111,441)	(120,351)
Right of use	(14,501)	(2,867)	0	0	0
ST loans & investments	0	0	0	0	0
LT loans & investments	480	(21)	(21)	(21)	(21)
Adj for asset revaluation	0	0	0	0	0
Chg In other assets & liabilities	5,074	(36,873)	(615)	(240)	16
Cash flow from investments	(48,186)	(193,769)	(106,796)	(111,702)	(120,356)
Debt financing	4,352	7,139	577	35,344	41,943
Capital increase	0	(0)	0	0	0
Dividends paid	(20,986)	(19,325)	(21,835)	(25,805)	(27,790)
Warrants & other surplus	(4,326)	41,400	11,918	0	0
Cash flow from financing	(20,960)	29,214	(9,340)	9,539	14,153
Free cash flow	53,015	(18,187)	14,448	20,722	15,852

PTTEP continues to generate high cash flows from operations

VALUATION

FY ending Dec	2020A	2021A	2022F	2023F	2024F
Normalized PE (x)	23.9	11.6	8.8	10.4	11.3
Normalized PE - at target price (x)	28.2	13.7	10.4	12.2	13.3
PE (x)	22.6	13.2	8.8	10.4	11.3
PE - at target price (x)	26.6	15.5	10.4	12.2	13.3
EV/EBITDA (x)	4.6	3.5	2.8	3.0	3.1
EV/EBITDA - at target price (x)	5.4	4.1	3.2	3.6	3.6
P/BV (x)	1.4	1.2	1.1	1.1	1.0
P/BV - at target price (x)	1.7	1.5	1.3	1.2	1.2
P/CFO (x)	5.6	3.8	4.2	3.9	3.8
Price/sales (x)	3.2	2.3	1.9	2.1	2.1
Dividend yield (%)	3.3	3.9	4.7	5.4	5.4
FCF Yield (%)	10.4	(3.6)	2.8	4.0	3.1
(Bt)					
Normalized EPS	5.4	11.1	14.6	12.5	11.4
EPS	5.7	9.8	14.6	12.5	11.4
DPS	4.3	5.0	6.0	7.0	7.0
BV/share	89.3	104.6	116.8	122.7	127.2
CFO/share	23.2	34.2	30.4	33.3	34.3
FCF/share	13.4	(4.6)	3.6	5.2	4.0

Sources: Company data, Thanachart estimates

FINANCIAL RATIOS

FY ending Dec	2020A	2021A	2022F	2023F	2024F
Growth Rate					
Sales (%)	(16.0)	36.6	25.4	(10.2)	0.7
Net profit (%)	(53.6)	71.5	49.5	(14.8)	(8.2)
EPS (%)	(53.6)	71.5	49.5	(14.8)	(8.2)
Normalized profit (%)	(56.2)	105.6	32.0	(14.8)	(8.2)
Normalized EPS (%)	(56.2)	105.6	32.0	(14.8)	(8.2)
Dividend payout ratio (%)	74.4	51.1	41.0	56.2	61.2
Operating performance					
Gross margin (%)	33.8	44.8	46.9	45.5	43.1
Operating margin (%)	27.7	39.5	40.8	38.7	36.2
EBITDA margin (%)	68.4	71.1	70.6	72.4	72.1
Net margin (%)	12.5	19.9	21.0	19.9	18.2
D/E (incl. minor) (x)	0.3	0.3	0.3	0.3	0.4
Net D/E (incl. minor) (x)	(0.0)	0.1	0.1	0.1	0.1
Interest coverage - EBIT (x)	5.6	13.4	13.4	12.6	9.5
Interest coverage - EBITDA (x)	13.8	24.1	23.2	23.7	18.9
ROA - using norm profit (%)	3.2	6.0	7.1	5.6	4.9
ROE - using norm profit (%)	6.0	11.4	13.2	10.4	9.2
DuPont					
ROE - using after tax profit (%)	5.6	11.3	13.1	10.3	9.1
- asset turnover (x)	0.2	0.3	0.3	0.3	0.3
- operating margin (%)	29.2	41.8	41.4	39.4	36.9
- leverage (x)	1.9	1.9	1.9	1.8	1.9
- interest burden (%)	83.0	92.9	92.6	92.2	89.7
- tax burden (%)	51.7	51.2	54.9	54.8	54.8
WACC (%)	9.8	9.8	9.8	9.8	9.8
ROIC (%)	6.2	12.8	13.8	10.7	9.5
NOPAT (Bt m)	23,011	44,320	61,482	52,375	49,295
invested capital (Bt m)	347,097	445,221	489,491	518,499	548,066

Sources: Company data, Thanachart estimates

We see room for ROE improvement on higher gearing and margin expansion

HOLD (From: BUY)

Transfer of Coverage

TP: Bt 56.00 (From: Bt 92.00)**Downside: 1.8%****4 FEBRUARY 2022**

PTT Global Chemical Pcl (PTTGC TB)

Losing gas competitive edge

We downgrade our call on PTTGC to HOLD. We expect lots of plant maintenance this year hitting earnings and we see the company losing its low gas cost competitive edge with a higher mix of expensive naphtha/LPG feedstock. We assign a TP of Bt56 for PTTGC.

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Losing its charm

We downgrade PTTGC to HOLD (from Buy). **First**, PTTGC is enjoying fewer benefits from high oil prices. Due to lower domestic gas supply, PTTGC is running its plants more on naphtha feedstock, implying lower product margin. Exhibit 2 shows its feedstock mix. This limits oil-gas spread benefit for PTTGC. **Secondly**, profit from the HVS (mainly BPA spread) business, which posted strong profit growth last year, is weaker. **Lastly**, PTTGC has many plant maintenance activities this year (see Exhibit 5). We cut our earnings by 34/33% in 2022-23F and DCF-based 12-month TP (2022F base year) to Bt56 (from Bt92). This report is a part of *Energy Sector – Lifeline stretched out, dated 4 February 2022* and it marks a coverage transfer.

Less of a gas-based play

We expect PTTGC to be much less of a competitive gas-based petrochemical play for two reasons. The first is rising costs from a more expensive LPG mix and the second is its increasing exposure to naphtha feedstock due to depleting domestic gas supply. PTTGC also has to bear increasing operating costs. This is because, due to lower gas supply, the company had to build a new 0.5mtpa naphtha-based cracker, the Olefins Reconfiguration Project (ORP), in 2Q21 to produce olefins to supply to its polyolefins production. The gas/naphtha and LPG feedstock mix look set to rise from 45/55% in 2021F to 35/65% in 2022F vs. the historical average of 56/44% over 2018-20. Note that both naphtha and LPG are linked closely to oil prices.

Unattractive growth outlook

We estimate unexciting normalized EPS growth for PTTGC of -21% in 2022F and flattish growth in 2023F. On the growth driver side, there is the consolidation of recently acquired 100%-owned Allnex Holdings GmbH (Allnex), which we expect to add 7% to PTTGC's normalized profit this year. On the profit drag side, we expect falling product spreads from rising gas costs and a higher naphtha feedstock proportion, lower profit from the high value-added (HVS) downstream business segment, and weak aromatics contribution due to oversupply. We expect HVS's profit contribution to fall from 31% of total profit in 2021F to 13% this year. Aromatics' contribution will likely drop from 14% to 3%.

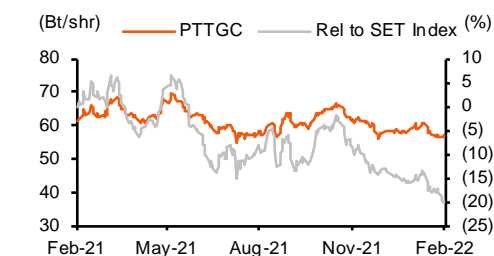
But valuation isn't expensive, in our view

PTTGC share price has underperformed peers', up by only 4% since end 2020 despite the Dubai crude oil price surging by 65%. The company is trading at 0.8x P/BV which is already at -1STD. The stock is also trading below peers' average of 1.1x P/BV.

COMPANY VALUATION

Y/E Dec (Bt m)	2020A	2021F	2022F	2023F
Sales	329,291	414,276	564,750	520,860
Net profit	200	47,020	23,442	23,380
Consensus NP	—	46,161	28,010	29,663
Diff frm cons (%)	—	1.9	(16.3)	(21.2)
Norm profit	7,634	29,480	23,442	23,380
Prev. Norm profit	—	34,795	35,409	35,045
Chg frm prev (%)	—	(15.3)	(33.8)	(33.3)
Norm EPS (Bt)	1.7	6.5	5.2	5.2
Norm EPS grw (%)	(6.5)	286.2	(20.5)	(0.3)
Norm PE (x)	33.7	8.7	11.0	11.0
EV/EBITDA (x)	13.2	8.6	8.7	8.2
P/BV (x)	0.9	0.8	0.8	0.8
Div yield (%)	1.8	7.0	4.6	4.5
ROE (%)	2.7	9.9	7.3	7.1
Net D/E (%)	30.3	65.2	61.9	51.8

PRICE PERFORMANCE

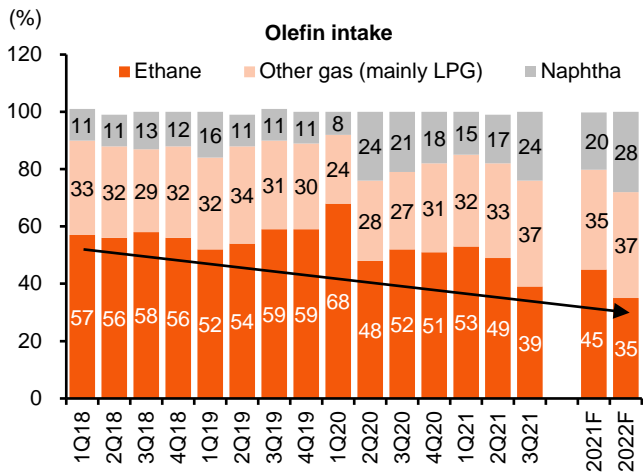


COMPANY INFORMATION

Price as of 3-Feb-22 (Bt)	57.00
Market Cap (US\$ m)	7,750.0
Listed Shares (m shares)	4,508.8
Free Float (%)	54.3
Avg Daily Turnover (US\$ m)	33.7
12M Price H/L (Bt)	69.50/54.75
Sector	PETRO
Major Shareholder	PTT Pcl 45.18%

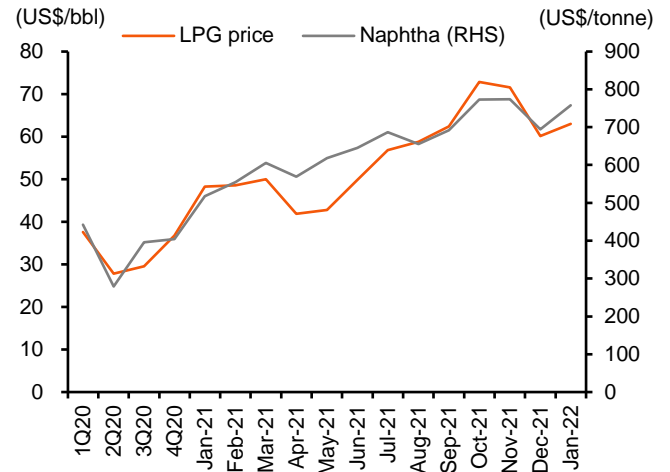
Sources: Bloomberg, Company data, Thanachart estimates

Ex 1: PTTGC Depends More On Naphtha



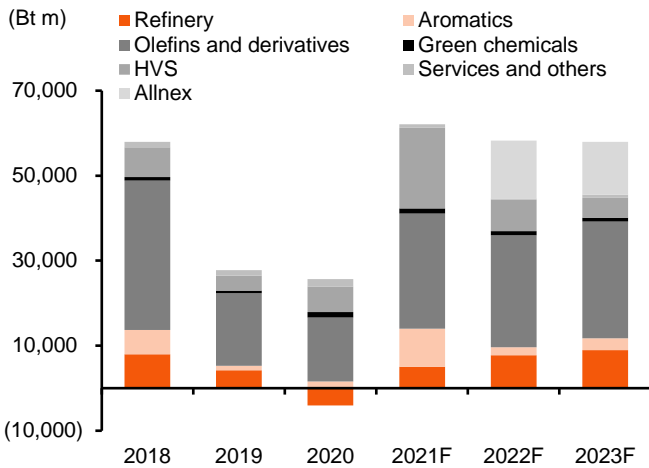
Source: Company data, Thanachart estimate

Ex 2: Both LPG And Naphtha Links Closely To Oil



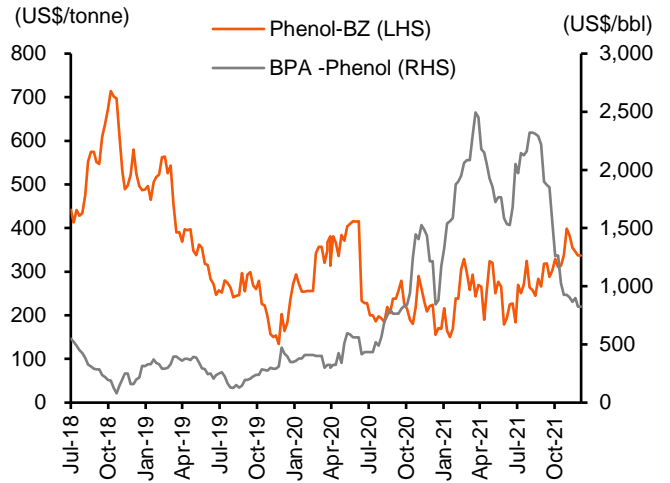
Source: Bloomberg

Ex 3: EBITDA Drop Despite Allnex Contribution



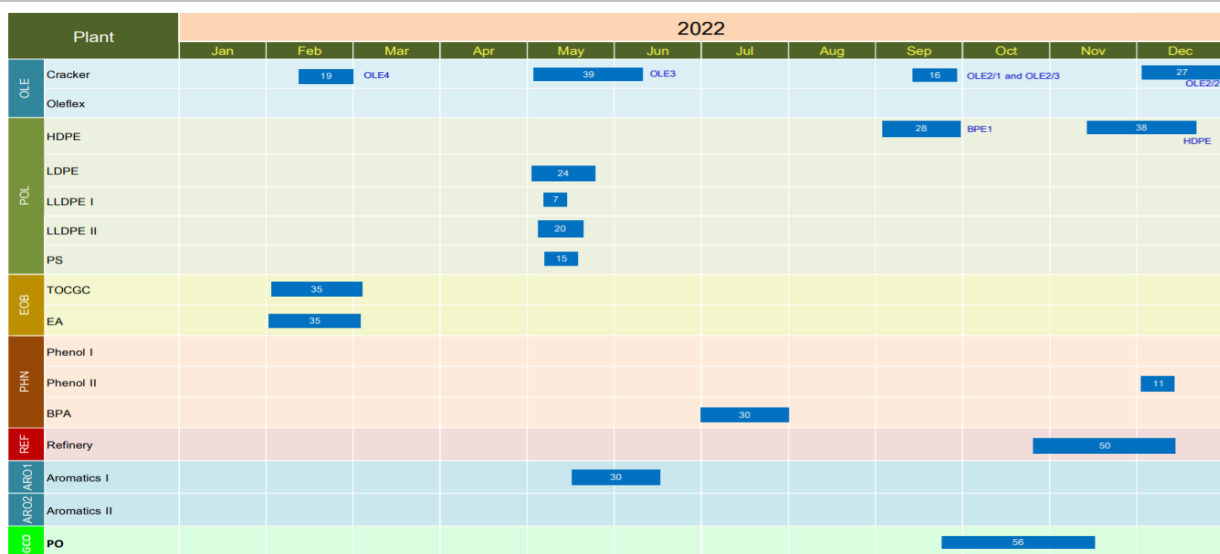
Sources: Company data, Thanachart estimates

Ex 4: BPA Spread, 2021F Driver, Slumps



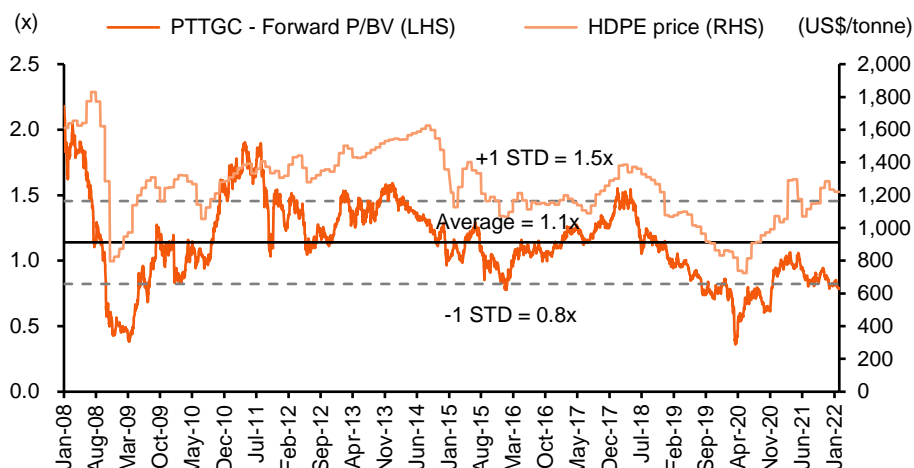
Source: Bloomberg

Ex 5: PTTGC's Maintenance Schedule



Source: Company data

Ex 6: P/BV Vs. HDPE Price



Sources: Bloomberg, Thanachart estimates

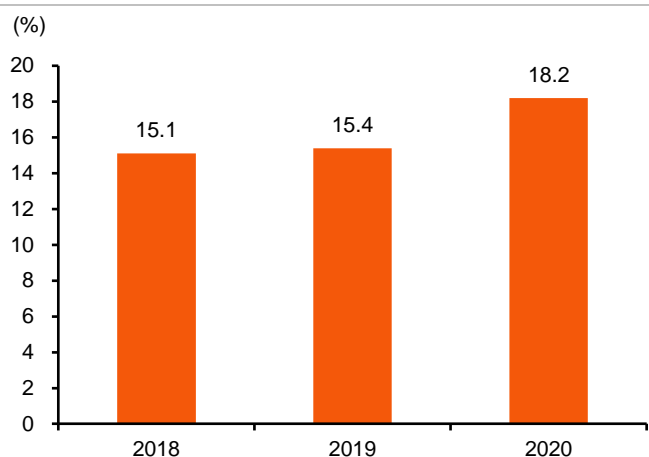
Ex 7: Sensitivity Of Allnex EBITDA Margin To PTTGC's Profit

EBITDA margin (%)	14%	15%	16%	17%	18%	19%	20%
Allnex EBITDA (m Euro)	311	333	356	378	400	422	444
PTTGC expense	(156)	(167)	(178)	(189)	(200)	(211)	(222)
Allnex's profit at 40-50% EBITDA	156	167	178	189	200	211	222
Depreciation and interest expense	(135)	(135)	(135)	(135)	(135)	(135)	(135)
Net profit to PTTGC (m Euro)	21	32	43	54	65	76	87
Net profit to PTTGC (Btm)	781	1,203	1,626	2,048	2,470	2,892	3,314

Source: Thanachart estimates

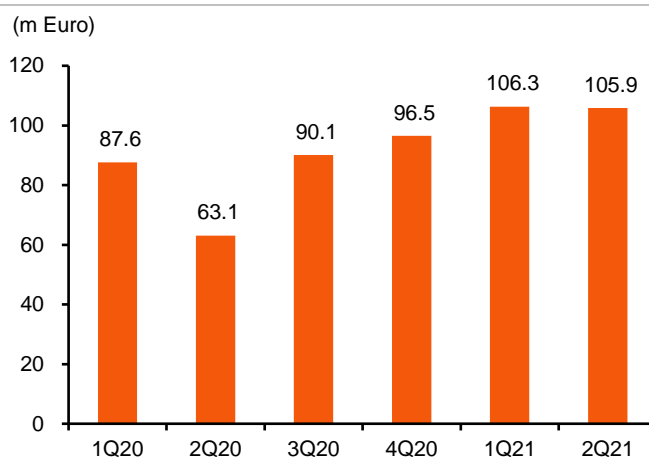
Note: Allnex's historical upcycle of EBITDA margin was 18%.

Ex 8: Allnex's Adjusted EBITDA Margin



Sources: Company data

Ex 9: Allnex's EBITDA



Sources: Company data

Ex 10: 12-month DCF-based TP Calculation, Using A Base Year Of 2022F

(Bt m)	2022F	2023F	2024F	2025F	2026F	2018F	2028F	2029F	2030F	2031F	2032F	Terminal Value
EBITDA & equity income	53,357	53,036	58,840	58,419	58,730	58,793	58,104	58,295	58,433	58,474	58,619	
Free cash flow	8,088	42,787	47,142	44,631	45,455	44,972	44,493	44,616	44,783	44,745	44,921	582,945
PV of free cash flow	7,426	36,061	36,462	31,158	29,006	26,232	23,717	21,739	19,946	17,468	15,958	207,094
Risk-free rate (%)	2.5											
Market risk premium (%)	8.0											
Beta	1.4											
WACC (%)	8.9											
Terminal growth (%)	2.0											
Enterprise value - add investments	472,269											
Net debt (end-2021F)	212,227											
Minority interest	8,548											
Equity value	251,494											
# of shares (m)	4,509											
Equity value/share (Bt)	56											

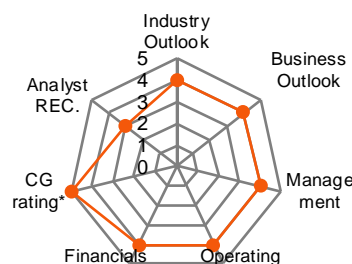
Source: Thanachart estimates

COMPANY DESCRIPTION

PTT Global Chemical (PTTGC) became a fully integrated petrochemical and refining company after the amalgamation of PTTCH (PTT Chemicals) and PTTAR (PTT Aromatics & Refining) in late 2011. The company produces olefins and derivatives, and its key products are ethylene, propylene, HDPE, LDPE, LLDPE and MEG. Together, the olefin value chain made up about half of 2022 EBITDA. PTTGC is one of the few gas-based crackers in Asia and it has a competitive cost structure compared with other naphtha-based crackers. The company also has fully integrated refinery and aromatics plants which produce mainly paraxylene and benzene. The company also recently moved into the specialty coating business with its investment in Allnex Holdings GmbH (Allnex).

Source: Thanachart

COMPANY RATING



Source: Thanachart; *CG Rating

Rating Scale

Excellent	5
Good	4
Fair	3
Weak	2
Very Weak	1
None	0

THANACHART'S SWOT ANALYSIS

S — Strength

- It is a low-cost producer that is leveraging on its gas-based and flexible cracker.
- Large economies of scale due to synergies from its fully integrated facilities.
- Being a PTT group company helps ensure feedstock and raises its franchise value.

O — Opportunity

- Significant growth potential in terms of chemical demand in the region.
- Value enhancement from synergies, debottlenecking of its units, and further downstream integration.
- M&A activity that could lead to higher return to investors.

W — Weakness

- Cyclical business with volatile earnings and cash flow.
- Potential impact of stock losses (due mainly to oil price movements) on earnings.
- Reliance on bulk chemicals and limited exposure to specialty chemicals.

T — Threat

- Depleting low-cost domestic gas supply would reduce its competitive edge of being a low-cost producer.
- Low oil prices erode its competitive advantage.
- Increasing competition from lower-cost producers in the Middle East and US-based crackers.
- Overpaying for acquisitions and limited synergies.

CONSENSUS COMPARISON

	Consensus	Thanachart	Diff
Target price (Bt)	71.71	56.00	-22%
Net profit 21F (Bt m)	46,161	47,020	2%
Net profit 22F (Bt m)	28,010	23,442	-16%
Consensus REC	BUY: 16	HOLD: 10	SELL: 1

HOW ARE WE DIFFERENT FROM THE STREET?

- Our 2022F net profit is lower than consensus likely given our lower GRM assumption.
- Therefore, our target price is also lower than Bloomberg consensus.

RISKS TO OUR INVESTMENT CASE

- Higher-than-expected oil prices and/or chemical spreads would be the key upside risk to our call.
- Hiccups in the gas supply from its parent company PTT or any unplanned outages at the complex would be the key downside risk.

Sources: Bloomberg consensus, Thanachart estimates

Source: Thanachart

INCOME STATEMENT

FY ending Dec (Bt m)	2019A	2020A	2021F	2022F	2023F
Sales	412,810	329,291	414,276	564,750	520,860
Cost of sales	390,619	308,527	366,364	516,029	474,288
Gross profit	22,191	20,764	47,912	48,721	46,572
% gross margin	5.4%	6.3%	11.6%	8.6%	8.9%
Selling & administration expenses	16,469	14,881	16,647	22,694	20,931
Operating profit	5,722	5,883	31,265	26,027	25,641
% operating margin	1.4%	1.8%	7.5%	4.6%	4.9%
Depreciation & amortization	19,198	20,292	23,163	27,330	27,395
EBITDA	24,920	26,174	54,428	53,357	53,036
% EBITDA margin	6.0%	7.9%	13.1%	9.4%	10.2%
Non-operating income	2,319	2,283	4,942	4,942	4,942
Non-operating expenses	0	0	0	0	0
Interest expense	(3,119)	(3,511)	(4,882)	(6,111)	(5,888)
Pre-tax profit	4,922	4,654	31,324	24,858	24,696
Income tax	649	(109)	8,796	6,215	6,174
After-tax profit	4,272	4,763	22,529	18,644	18,522
% net margin	1.0%	1.4%	5.4%	3.3%	3.6%
Shares in affiliates' Earnings	4,559	3,323	7,520	5,574	5,574
Minority interests	(667)	(452)	(569)	(776)	(715)
Extraordinary items	3,518	(7,434)	17,540	0	0
NET PROFIT	11,682	200	47,020	23,442	23,380
Normalized profit	8,164	7,634	29,480	23,442	23,380
EPS (Bt)	2.6	0.0	10.4	5.2	5.2
Normalized EPS (Bt)	1.8	1.7	6.5	5.2	5.2

Earnings likely to remain flattish in the next two years

BALANCE SHEET

FY ending Dec (Bt m)	2019A	2020A	2021F	2022F	2023F
ASSETS:					
Current assets:	104,494	129,911	114,088	146,429	152,203
Cash & cash equivalent	25,560	60,658	30,000	30,000	45,000
Account receivables	34,157	29,277	36,833	50,211	46,309
Inventories	36,252	33,445	39,715	55,939	51,414
Others	8,525	6,531	7,540	10,279	9,480
Investments & loans	65,901	65,675	65,675	65,675	65,675
Net fixed assets	264,564	269,177	430,538	427,067	414,159
Other assets	17,556	24,620	24,620	24,620	24,620
Total assets	452,514	489,383	634,921	663,790	656,657
LIABILITIES:					
Current liabilities:	53,033	59,041	78,401	95,453	88,389
Account payables	25,479	20,114	23,885	33,642	30,921
Bank overdraft & ST loans	2,021	19	0	0	0
Current LT debt	8,149	22,017	36,334	35,555	33,711
Others current liabilities	17,384	16,892	18,182	26,256	23,757
Total LT debt	96,918	126,261	205,893	201,478	191,029
Others LT liabilities	8,968	15,086	25,315	32,209	30,198
Total liabilities	158,919	200,389	309,610	329,140	309,616
Minority interest	7,765	7,979	8,548	9,324	10,039
Preferreds shares	0	0	0	0	0
Paid-up capital	45,088	45,088	45,088	45,088	45,088
Share premium	36,937	36,937	36,937	36,937	36,937
Warrants	0	0	0	0	0
Surplus	(3,005)	(3,618)	(3,618)	(3,618)	(3,618)
Retained earnings	206,810	202,608	238,355	246,919	258,594
Shareholders' equity	285,830	281,015	316,763	325,327	337,001
Liabilities & equity	452,514	489,383	634,921	663,790	656,657

Sources: Company data, Thanachart estimates

CASH FLOW STATEMENT

FY ending Dec (Bt m)	2019A	2020A	2021F	2022F	2023F
Earnings before tax	4,922	4,654	31,324	24,858	24,696
Tax paid	(1,190)	203	(8,814)	(6,091)	(6,223)
Depreciation & amortization	19,198	20,292	23,163	27,330	27,395
Chg In working capital	1,910	2,322	(10,055)	(19,845)	5,706
Chg In other CA & CL / minorities	(1,318)	4,056	7,282	10,785	3,922
Cash flow from operations	23,521	31,527	42,901	37,038	55,496
Capex	(38,740)	(24,905)	(184,524)	(23,859)	(14,487)
Right of use	0	(7,039)	0	0	0
ST loans & investments	(2,681)	2,144	537	0	0
LT loans & investments	(8,995)	226	0	0	0
Adj for asset revaluation	0	0	0	0	0
Chg In other assets & liabilities	(8,979)	(3,192)	31,634	6,894	(2,011)
Cash flow from investments	(59,395)	(32,766)	(152,353)	(16,965)	(16,498)
Debt financing	14,806	41,352	90,066	(5,194)	(12,293)
Capital increase	(1,387)	0	0	0	0
Dividends paid	(16,336)	(5,024)	(11,272)	(14,878)	(11,706)
Warrants & other surplus	(4,175)	9	0	0	0
Cash flow from financing	(7,092)	36,338	78,794	(20,073)	(23,998)
Free cash flow	(15,219)	6,622	(141,623)	13,179	41,009

With a lack of capacity expansion, we expect positive FCF over the next two years

VALUATION

FY ending Dec	2019A	2020A	2021F	2022F	2023F
Normalized PE (x)	31.5	33.7	8.7	11.0	11.0
Normalized PE - at target price (x)	30.9	33.1	8.6	10.8	10.8
PE (x)	22.0	1,287.6	5.5	11.0	11.0
PE - at target price (x)	21.6	1,265.0	5.4	10.8	10.8
EV/EBITDA (x)	13.6	13.2	8.6	8.7	8.2
EV/EBITDA - at target price (x)	13.4	13.0	8.5	8.6	8.1
P/BV (x)	0.9	0.9	0.8	0.8	0.8
P/BV - at target price (x)	0.9	0.9	0.8	0.8	0.7
P/CFO (x)	10.9	8.2	6.0	6.9	4.6
Price/sales (x)	0.6	0.8	0.6	0.5	0.5
Dividend yield (%)	3.5	1.8	7.0	4.6	4.5
FCF Yield (%)	(5.9)	2.6	(55.1)	5.1	16.0
(Bt)					
Normalized EPS	1.8	1.7	6.5	5.2	5.2
EPS	2.6	0.0	10.4	5.2	5.2
DPS	2.0	1.0	4.0	2.6	2.6
BV/share	63.4	62.3	70.3	72.2	74.7
CFO/share	5.2	7.0	9.5	8.2	12.3
FCF/share	(3.4)	1.5	(31.4)	2.9	9.1

Sources: Company data, Thanachart estimates

FINANCIAL RATIOS

FY ending Dec	2019A	2020A	2021F	2022F	2023F
Growth Rate					
Sales (%)	(20.4)	(20.2)	25.8	36.3	(7.8)
Net profit (%)	(70.8)	(98.3)	23,456.8	(50.1)	(0.3)
EPS (%)	(70.8)	(98.3)	23,456.8	(50.1)	(0.3)
Normalized profit (%)	(79.9)	(6.5)	286.2	(20.5)	(0.3)
Normalized EPS (%)	(79.9)	(6.5)	286.2	(20.5)	(0.3)
Dividend payout ratio (%)	77.2	2,258.9	38.4	50.0	50.0
Operating performance					
Gross margin (%)	5.4	6.3	11.6	8.6	8.9
Operating margin (%)	1.4	1.8	7.5	4.6	4.9
EBITDA margin (%)	6.0	7.9	13.1	9.4	10.2
Net margin (%)	1.0	1.4	5.4	3.3	3.6
D/E (incl. minor) (x)	0.4	0.5	0.7	0.7	0.6
Net D/E (incl. minor) (x)	0.3	0.3	0.7	0.6	0.5
Interest coverage - EBIT (x)	1.8	1.7	6.4	4.3	4.4
Interest coverage - EBITDA (x)	8.0	7.5	11.1	8.7	9.0
ROA - using norm profit (%)	1.8	1.6	5.2	3.6	3.5
ROE - using norm profit (%)	2.8	2.7	9.9	7.3	7.1
DuPont					
ROE - using after tax profit (%)	1.5	1.7	7.5	5.8	5.6
- asset turnover (x)	0.9	0.7	0.7	0.9	0.8
- operating margin (%)	1.9	2.5	8.7	5.5	5.9
- leverage (x)	1.6	1.7	1.9	2.0	2.0
- interest burden (%)	61.2	57.0	86.5	80.3	80.7
- tax burden (%)	86.8	102.3	71.9	75.0	75.0
WACC (%)	8.9	8.9	8.9	8.9	8.9
ROIC (%)	1.5	1.6	6.1	3.7	3.6
NOPAT (Bt m)	4,967	6,021	22,486	19,520	19,231
invested capital (Bt m)	367,357	368,653	528,990	532,360	516,742

Sources: Company data, Thanachart estimates

Net D/E to creep up due to an acquisition though it remains relatively low

SELL (From: HOLD)

Transfer of Coverage

TP: Bt 8.40

(From: Bt 8.80)

Downside : 13.0%**4 FEBRUARY 2022**

Star Petroleum Refining (SPRC TB)

Fully exposed to GRM downside

We downgrade SPRC to SELL seeing it fully exposed to the refinery market's weak outlook from new supply cycle. The company doesn't have key strategy to create future growth and there is also downside risk from oil spill repercussion.

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Downgraded to SELL

We downgrade SPRC to SELL (from Hold). **First**, SPRC looks expensive to us at 1.4x P/BV which is at a 41% premium over peers. This is also above historical average. **Second**, SPRC is a pure refinery play exposing to weakening refinery outlook from the industry's new supply cycle in 2022-24F. **Third**, while long-term refinery product demand is being threatened by growing EV adoption, SPRC itself doesn't have a strategy to create new growth drivers. Note that we upgrade our earnings by 254/56% over 2022-23F due to an unexpected jump of GRM in 4Q21 back above pre-COVID level. This report is a part of *Energy Sector – Lifeline stretched out, dated 4th February 2022* and it marks a coverage transfer.

GRM has fully recovered in our view

We forecast SPRC's GRM at USD5.2/5.1/4.8 per barrel in 2022-24F, vs. USD3.6 in 2021F. We believe Singapore GRM has already fully recovered in 4Q21-1Q22 and consider the current spike as a spike from the Russian factor and winter demand. Fundamentally, we expect it to fall from this year due to the industry's new round of capacity additions over the next few years. One area of GRM that demand hasn't recovered fully is jet fuel. However, SPRC has lower exposure of jet fuel, at 2% of total volume, than its peers, at 5%. Exhibit 2 shows SPRC's refined product breakdown vs. peers.

Rising crude premium

Rising crude premium should hit SPRC more than peers as a pure refinery. Exhibit 4 shows rising crude premium throughout 2021 which is due to demand recovery. Murban crude premium which is 60% of SPRC's total crude source has increased by USD1.9 per barrel to USD3.7 YTD. This is comparing to product crack spread increase of USD3.2 per barrel. There could be risk that the premium should remain high if OPEC output fail to reach its target while demand continue to improve.

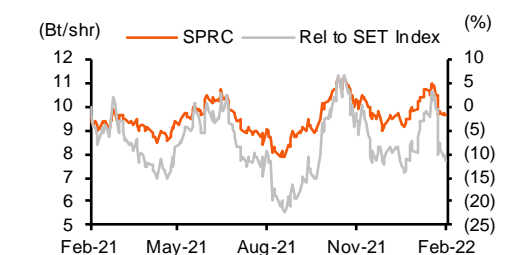
Oil spill insurance coverage

On 25 Jan 2022, SPRC reported an oil spill in the Gulf of Thailand. The oil spill is estimated to be in the range of 22,000-60,000 liters. This is compared to PTT Global Chemical's (PTTGC TB, Bt57.00, HOLD) oil spill amount of 54,000 liters in 2013. Back then PTTGC paid a compensation of Bt1bn. Management said their compensation could be lower than PTTGC and it should be covered by its third-party insurance coverage of USD100m. We factor in oil spill damage of Bt700m in 2022F and expect insurance to be claimed next year.

COMPANY VALUATION

Y/E Dec (Bt m)	2020A	2021F	2022F	2023F
Sales	130,163	180,793	206,426	205,289
Net profit	(12,280)	4,688	2,467	3,431
Consensus NP	—	3,597	3,642	4,492
Diff frm cons (%)	—	30.3	(32.3)	(23.6)
Norm profit	(6,325)	(1,104)	3,167	2,764
Prev. Norm profit	—	(992)	896	1,772
Chg frm prev (%)	—	na	253.7	56.0
Norm EPS (Bt)	(1.5)	(0.3)	0.7	0.6
Norm EPS grw (%)	na	na	na	(12.7)
Norm PE (x)	na	na	13.2	15.1
EV/EBITDA (x)	na	16.3	7.2	6.8
P/BV (x)	1.6	1.4	1.4	1.3
Div yield (%)	0.0	5.0	2.9	4.1
ROE (%)	na	na	10.4	8.7
Net D/E (%)	32.6	26.6	22.7	9.2

PRICE PERFORMANCE

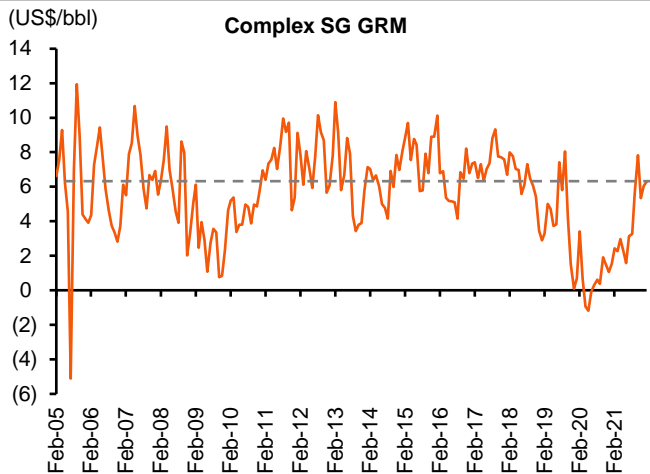


COMPANY INFORMATION

Price as of 3-Feb-22 (Bt)	9.65
Market Cap (US\$ m)	1,261.7
Listed Shares (m shares)	4,335.9
Free Float (%)	39.4
Avg Daily Turnover (US\$ m)	8.3
12M Price H/L (Bt)	11.20/7.85
Sector	Energy
Major Shareholder	Chevron Asia Holdings 60.56%

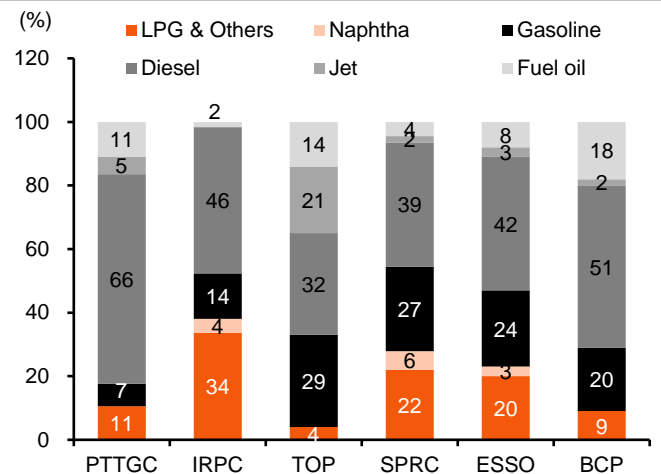
Sources: Bloomberg, Company data, Thanachart estimates

Ex 1: GRM Fully Recovered



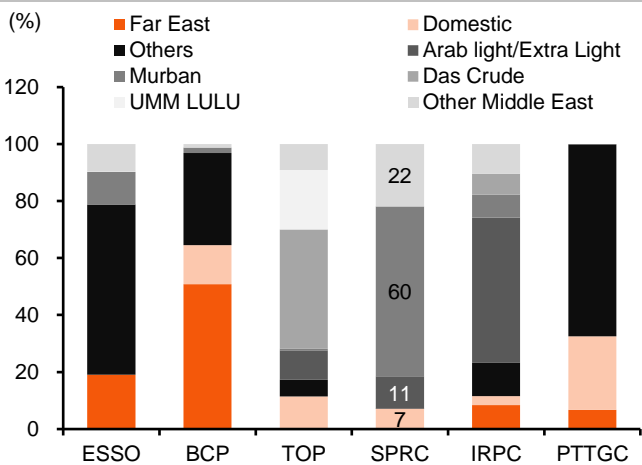
Sources: Bloomberg, TOP, Thanachart estimate

Ex 2: Thai Refineries' Yield



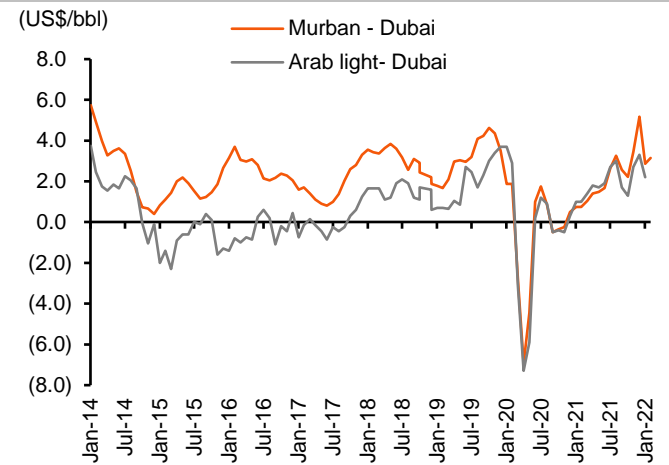
Sources: Company data

Ex 3: SPRC's And Peer's Crude Source



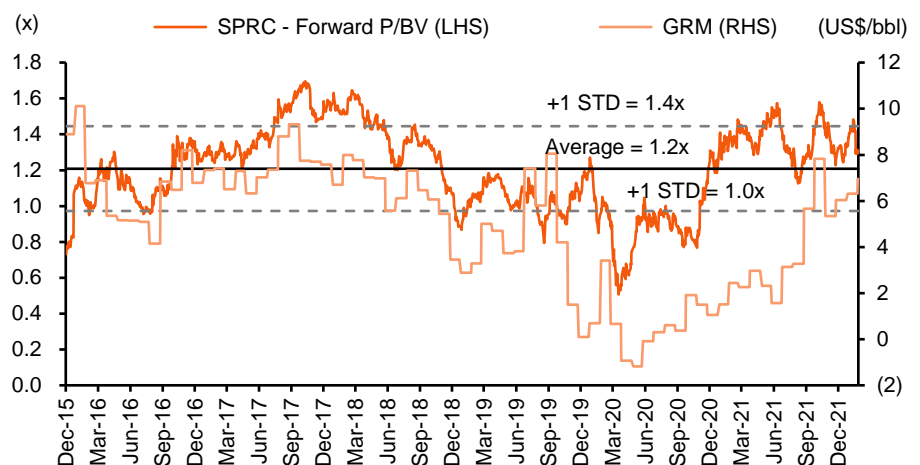
Sources: Department of Energy Business, (DOEB)

Ex 4: Murban And Arab Light Crude Premium



Sources: Bloomberg

Ex 5: P/BV Vs. GRM



Sources: Bloomberg, TOP, Thanachart estimates

Ex 6: 12-month DCF-based TP Calculation, Using A Base Year Of 2022F

(Bt m)	2022F	2023F	2024F	2025F	2026F	2027F	2028F	2029F	2030F	2031F	2032F	Terminal Value
EBITDA + dividend	6,821	6,631	7,279	5,503	7,462	7,486	7,502	7,507	7,534	5,537	7,689	
Free cash flow	3,436	5,255	5,145	3,513	2,413	5,806	5,825	5,835	5,863	4,448	2,661	36,806
PV of free cash flow	3,169	4,469	4,034	2,497	1,575	3,479	3,204	2,947	2,719	1,815	993	13,728
Risk-free rate (%)	2.5											
Market risk premium (%)	8.0											
Beta	1.2											
WACC (%)	8.4											
Terminal growth (%)	2.0											
Enterprise value - add	44,629											
Investments												
Net debt (2021F)	8,006											
Minority interest	0											
Equity value	36,623											
# of shares (m)	4,336											
Equity value/sh (Bt)	8.4											

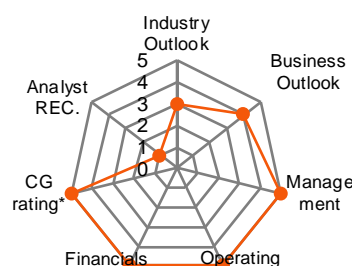
Sources: Thanachart estimates

COMPANY DESCRIPTION

Star Petroleum Refining Plc's (SPRC) refinery produces petroleum products, which include LPG, premium and regular grades of unleaded gasoline, high-speed diesel, jet fuel and fuel oil, as well as petrochemical feedstocks used in the petrochemical industry, which include PGP, LPG, chemical-grade naphtha, mixed C4 and reformate. The company has refining capacity of 175K b/d.

Source: Thanachart

COMPANY RATING



Rating Scale

Excellent	5
Good	4
Fair	3
Weak	2
Very Weak	1
None	0

Source: Thanachart; *CG Rating

THANACHART'S SWOT ANALYSIS

S — Strength

- Strong operator with a very high utilization rate and high plant reliability.
- Procurement, distribution, and technical support from parent Chevron.

O — Opportunity

- Opportunities to upgrade and/or expand its refinery to meet higher local demand.
- Expansion into new businesses or securing its own retail channel.

W — Weakness

- Volatile earnings due to its pure refinery exposure.
- Lack of company-owned retail channel limits upside from domestic product placement and higher marketing margin.
- Limited growth potential to expand its refinery business given that Thailand is a net export country for refined oil products.

T — Threat

- High oil prices could slow local demand and force it to sell in the lower-margin export market.
- Threat of substitutes such as electric vehicles may lower demand for oil products.

CONSENSUS COMPARISON

	Consensus	Thanachart	Diff
Target price (Bt)	11.42	8.40	-26%
Net profit 21F (Bt m)	3,597	4,688	30%
Net profit 22F (Bt m)	3,642	2,467	-32%
Consensus REC	BUY: 15	HOLD: 3	SELL: 1

HOW ARE WE DIFFERENT FROM THE STREET?

- We are significantly below the Bloomberg consensus with our 2022F earnings, likely as we assume lower GRM.
- Our DCF-based TP is consequently lower than the consensus number.

RISKS TO OUR INVESTMENT CASE

- A sharply higher Singapore GRM may affect SPRC's operating results and represents the key upside risk to our call.
- Prolonged low oil prices would decrease SPRC's cash costs and positively affect its profits, posing a secondary upside risk to our call.

Sources: Bloomberg consensus, Thanachart estimates

Source: Thanachart

INCOME STATEMENT

FY ending Dec (Bt m)	2019A	2020A	2021F	2022F	2023F
Sales	168,840	130,163	180,793	206,426	205,289
Cost of sales	172,051	137,169	179,611	201,502	200,583
Gross profit	(3,211)	(7,006)	1,182	4,923	4,706
% gross margin	-1.9%	-5.4%	0.7%	2.4%	2.3%
Selling & administration expenses	1,690	911	881	881	881
Operating profit	(4,901)	(7,916)	301	4,043	3,825
% operating margin	-2.9%	-6.1%	0.2%	2.0%	1.9%
Depreciation & amortization	2,565	2,832	2,751	2,778	2,806
EBITDA	(2,336)	(5,084)	3,052	6,821	6,631
% EBITDA margin	-1.4%	-3.9%	1.7%	3.3%	3.2%
Non-operating income	36	71	18	22	32
Non-operating expenses	(46)	143	0	0	0
Interest expense	(7)	(177)	(301)	(289)	(244)
Pre-tax profit	(4,919)	(7,880)	19	3,776	3,613
Income tax	(885)	(1,555)	1,123	609	849
After-tax profit	(4,034)	(6,325)	(1,104)	3,167	2,764
% net margin	-2.4%	-4.9%	-0.6%	1.5%	1.3%
Shares in affiliates' Earnings	0	0	0	0	0
Minority interests	0	0	0	0	0
Extraordinary items	2,340	(5,955)	5,792	(700)	667
NET PROFIT	(1,694)	(12,280)	4,688	2,467	3,431
Normalized profit	(4,034)	(6,325)	(1,104)	3,167	2,764
EPS (Bt)	(0.4)	(2.8)	1.1	0.6	0.8
Normalized EPS (Bt)	(0.9)	(1.5)	(0.3)	0.7	0.6

We expect a core earnings recovery from 2022F.

BALANCE SHEET

FY ending Dec (Bt m)	2019A	2020A	2021F	2022F	2023F
ASSETS:					
Current assets:	25,524	19,323	27,418	31,161	32,550
Cash & cash equivalent	20	1,635	2,000	2,426	3,958
Account receivables	7,192	8,515	10,839	12,376	12,308
Inventories	17,856	9,052	14,410	16,166	16,092
Others	456	121	169	193	192
Investments & loans	0	0	0	0	0
Net fixed assets	26,686	24,156	22,105	20,027	17,921
Other assets	2,084	3,062	4,217	4,802	4,776
Total assets	54,294	46,541	53,740	55,990	55,247
LIABILITIES:					
Current liabilities:	21,334	10,740	14,557	16,350	15,770
Account payables	13,567	7,821	11,553	12,961	12,902
Bank overdraft & ST loans	6,819	0	0	0	0
Current LT debt	0	1,380	1,501	1,415	1,047
Others current liabilities	949	1,539	1,503	1,974	1,822
Total LT debt	0	8,857	8,505	8,021	5,934
Others LT liabilities	484	517	618	763	730
Total liabilities	21,818	20,114	23,680	25,134	22,434
Minority interest	0	0	0	0	0
Preferreds shares	0	0	0	0	0
Paid-up capital	30,004	30,004	30,004	30,004	30,004
Share premium	978	978	978	978	978
Warrants	0	0	0	0	0
Surplus	(7,674)	(7,447)	(7,447)	(7,447)	(7,447)
Retained earnings	9,168	2,892	6,525	7,321	9,277
Shareholders' equity	32,476	26,427	30,061	30,856	32,813
Liabilities & equity	54,294	46,541	53,740	55,990	55,247

Sources: Company data, Thanachart estimates

CASH FLOW STATEMENT

FY ending Dec (Bt m)	2019A	2020A	2021F	2022F	2023F
Earnings before tax	(4,919)	(7,880)	19	3,776	3,613
Tax paid	753	1,555	(1,123)	(609)	(849)
Depreciation & amortization	2,565	2,832	2,751	2,778	2,806
Chg In working capital	1,754	1,736	(3,951)	(1,885)	83
Chg In other CA & CL / minorities	(2,962)	847	(87)	444	(154)
Cash flow from operations	(2,809)	(910)	(2,391)	4,505	5,499
Capex	(506)	(253)	(700)	(700)	(700)
Right of use	0	0	0	0	0
ST loans & investments	0	0	0	0	0
LT loans & investments	0	0	0	0	0
Adj for asset revaluation	0	0	0	0	0
Chg In other assets & liabilities	(425)	(7,191)	4,742	(1,137)	663
Cash flow from investments	(931)	(7,444)	4,042	(1,837)	(37)
Debt financing	8,044	3,738	(231)	(569)	(2,456)
Capital increase	0	0	0	0	0
Dividends paid	(521)	(271)	(1,055)	(1,672)	(1,475)
Warrants & other surplus	(3,837)	6,502	0	0	0
Cash flow from financing	3,686	9,969	(1,286)	(2,241)	(3,930)
Free cash flow	(3,315)	(1,163)	(3,091)	3,805	4,799

We expect a FCF improvement next year

VALUATION

FY ending Dec	2019A	2020A	2021F	2022F	2023F
Normalized PE (x)	na	na	na	13.2	15.1
Normalized PE - at target price (x)	na	na	na	11.5	13.2
PE (x)	na	na	8.9	17.0	12.2
PE - at target price (x)	na	na	7.8	14.8	10.6
EV/EBITDA (x)	na	na	16.3	7.2	6.8
EV/EBITDA - at target price (x)	na	na	14.6	6.4	5.9
P/BV (x)	1.3	1.6	1.4	1.4	1.3
P/BV - at target price (x)	1.1	1.4	1.2	1.2	1.1
P/CFO (x)	(14.9)	(46.0)	(17.5)	9.3	7.6
Price/sales (x)	0.2	0.3	0.2	0.2	0.2
Dividend yield (%)	1.9	0.0	5.0	2.9	4.1
FCF Yield (%)	(7.9)	(2.8)	(7.4)	9.1	11.5
(Bt)					
Normalized EPS	(0.9)	(1.5)	(0.3)	0.7	0.6
EPS	(0.4)	(2.8)	1.1	0.6	0.8
DPS	0.2	0.0	0.5	0.3	0.4
BV/share	7.5	6.1	6.9	7.1	7.6
CFO/share	(0.6)	(0.2)	(0.6)	1.0	1.3
FCF/share	(0.8)	(0.3)	(0.7)	0.9	1.1

We believe a GRM recovery looks priced in

Sources: Company data, Thanachart estimates

FINANCIAL RATIOS

FY ending Dec	2019A	2020A	2021F	2022F	2023F
Growth Rate					
Sales (%)	(19.3)	(22.9)	38.9	14.2	(0.6)
Net profit (%)	na	na	na	(47.4)	39.0
EPS (%)	na	na	na	(47.4)	39.0
Normalized profit (%)	na	na	na	na	(12.7)
Normalized EPS (%)	na	na	na	na	(12.7)
Dividend payout ratio (%)	(46.8)	0.0	45.0	50.0	50.0
Operating performance					
Gross margin (%)	(1.9)	(5.4)	0.7	2.4	2.3
Operating margin (%)	(2.9)	(6.1)	0.2	2.0	1.9
EBITDA margin (%)	(1.4)	(3.9)	1.7	3.3	3.2
Net margin (%)	(2.4)	(4.9)	(0.6)	1.5	1.3
D/E (incl. minor) (x)	0.2	0.4	0.3	0.3	0.2
Net D/E (incl. minor) (x)	0.2	0.3	0.3	0.2	0.1
Interest coverage - EBIT (x)	na	na	1.0	14.0	15.7
Interest coverage - EBITDA (x)	na	na	10.2	23.6	27.2
ROA - using norm profit (%)	na	na	na	5.8	5.0
ROE - using norm profit (%)	na	na	na	10.4	8.7
DuPont					
ROE - using after tax profit (%)	na	na	na	10.4	8.7
- asset turnover (x)	3.1	2.6	3.6	3.8	3.7
- operating margin (%)	na	na	0.2	2.0	1.9
- leverage (x)	1.5	1.7	1.8	1.8	1.7
- interest burden (%)	100.1	102.3	5.9	92.9	93.7
- tax burden (%)	na	na	na	83.9	76.5
WACC (%)	8.4	8.4	8.4	8.4	8.4
ROIC (%)	(12.7)	(20.2)	0.7	8.5	8.1
NOPAT (Bt m)	(4,901)	(7,916)	243	3,243	3,066
invested capital (Bt m)	39,275	35,029	38,067	37,866	35,835

ROE to remain in low territory despite an improving outlook

Sources: Company data, Thanachart estimates

SELL (From: HOLD)

Transfer of Coverage

TP: Bt 46.00 (From: Bt 57.00)

Downside : 11.1%

4 FEBRUARY 2022

Thai Oil Public Co Ltd (TOP TB)

Still in the doldrums

We downgrade TOP to SELL expecting lower profits across all businesses in 2022F. While the Singapore GRM has recovered from the COVID crisis, the refinery sector is facing large new capacities in 2022F and a structural fall in demand. We value TOP at Bt46/share.

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Low valuation looks justified

We downgrade TOP to SELL (from Hold) with a new SOTP-based TP of Bt46 (from Bt57). **First**, we are bearish on the refinery industry outlook expecting a weak GRM trend in 2022-24F from sizeable new capacity additions. **Second**, there is dilution risk from TOP's potential capital increase, which we believe is to fund its Clean Fuel Project (CFP). **Third**, we are not positive about its 15% stake acquisition in Chandra Asri Petrochemical (CAP), which was funded by the sale of its 10.8% stake in GPSC (GPSC TB, Bt78.25, BUY). **Lastly**, we believe TOP's low P/BV valuation of 0.9x looks justified due to the factors above while its 16.9x PE looks expensive in our view.

GRM normalization is over

The Singapore complex GRM has already recovered to above pre-COVID level of USD6/bbl and we see limited upside from here given substantial supply additions ahead. Beyond 2022F, we expect GRM to stay below its historical average. We estimate TOP's GRM at USD4/barrel in 2022-23F, below its 10-year pre-COVID historical average of USD5.4/barrel. Its CFP project is scheduled to come on stream in 2023 with its key benefit of improving TOP's crude slate to be able to use more cheap heavy crude. However, we see the economic return of the project declining substantially due to the narrowing spread of the heavy-light crude differential. The Maya-Murban spread was at -USD11/bbl back when TOP announced its CFP investment in 2018, but now the spread has narrowed to USD6/bbl.

Lube base margin peaks out

Lube base accounted for around 38% of TOP's gross integrated margin (GIM) in 9M21 vs. the 13% pre-COVID level. We consider the surge in the lube base margin, caused by a feedstock shortage from low refinery run rates during the COVID crisis, as a windfall that supported TOP's GIM last year. The lube base-HSFO spread has already fallen 46% to USD569/tonne from 2021's peak. The trend reversal from last year is due to rising refinery utilization providing enough feedstock for lube production.

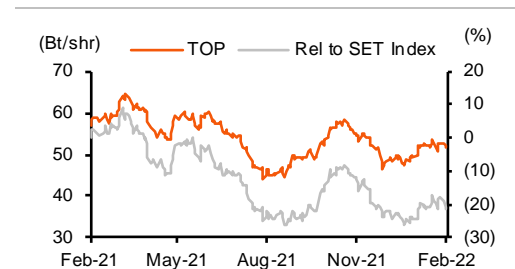
Chandra Asri unlikely to improve profit

TOP completed its 15% acquisition of CAP in September last year and it plans to book CAP's contribution under its equity income. TOP plans to sell a 10.8% stake in GPSC to fund the acquisition in 2H22 and its stake in GPSC would therefore fall to 10% from 20.8% currently. TOP then would change from the equity income booking of GPSC to the dividend income method. Net-net, combined contributions from these two companies look unlikely to increase materially.

COMPANY VALUATION

Y/E Dec (Bt m)	2020A	2021F	2022F	2023F
Sales	247,913	347,890	374,352	351,198
Net profit	(3,301)	11,177	6,363	6,621
Consensus NP	—	11,011	10,269	10,200
Diff frm cons (%)	—	1.5	(38.0)	(35.1)
Norm profit	(10,421)	3,850	6,363	6,621
Prev. Norm profit	—	5,360	4,735	5,212
Chg frm prev (%)	—	(28.2)	34.4	27.0
Norm EPS (Bt)	(5.1)	1.9	3.1	3.2
Norm EPS grw (%)	na	na	65.3	4.1
Norm PE (x)	na	27.4	16.6	15.9
EV/EBITDA (x)	na	15.6	16.9	15.2
P/BV (x)	0.9	0.9	0.9	0.8
Div yield (%)	1.4	4.2	2.4	2.5
ROE (%)	na	3.3	5.3	5.4
Net D/E (%)	61.2	104.4	129.8	125.1

PRICE PERFORMANCE

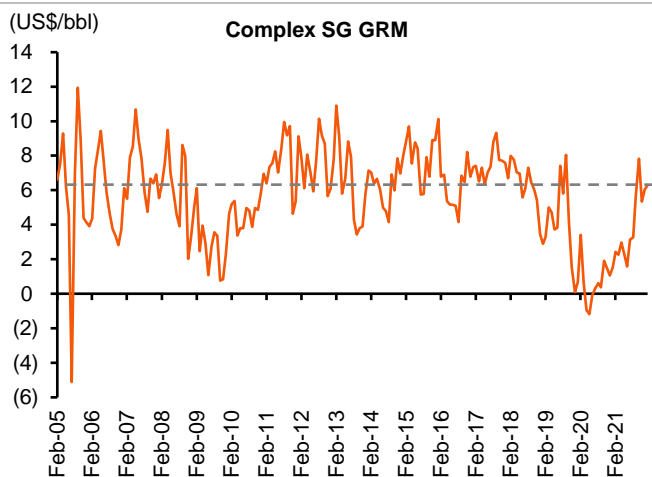


COMPANY INFORMATION

Price as of 3-Feb-22 (Bt)	51.75
Market Cap (US\$ m)	3,183.5
Listed Shares (m shares)	2,040.0
Free Float (%)	52.0
Avg Daily Turnover (US\$ m)	20.8
12M Price H/L (Bt)	64.50/44.00
Sector	Energy
Major Shareholder	PTT Pcl 45.03%

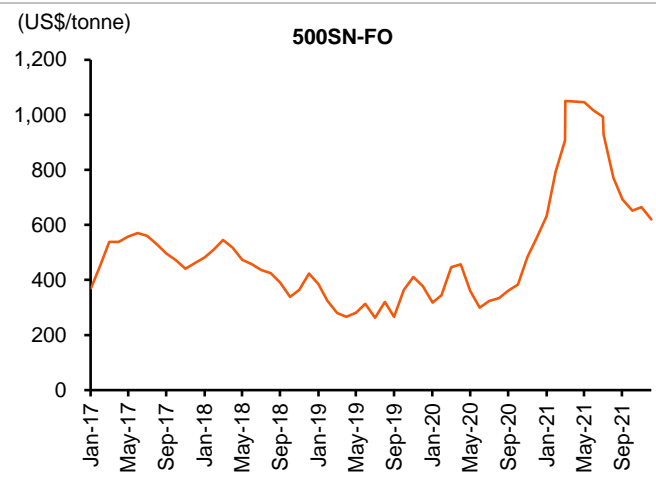
Sources: Bloomberg, Company data, Thanachart estimates

Ex 1: GRM Fully Recovers



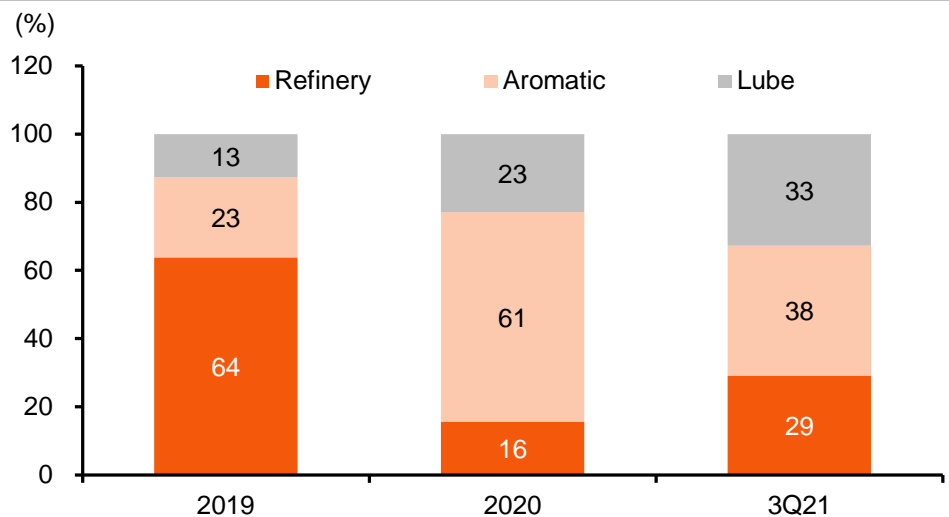
Source: Bloomberg, TOP, Thanachart estimate

Ex 2: Lube Base Margin Starts To Fall Back Down



Source: Bloomberg

Ex 3: TOP's Gross Integrated Margin (GIM) Breakdown



Sources: Company data

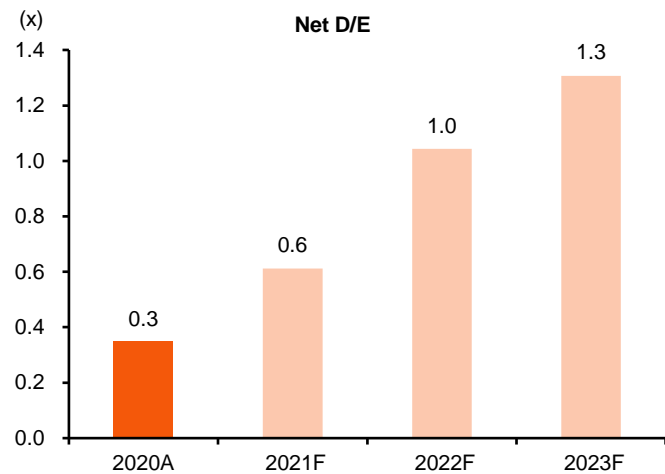
Ex 4: Expected Small Contribution From Chandra Asri

Btm	2020	2021F	2022F	2023F	2024F
Chandra Asri's profit	1,606	7,319	7,419	9,215	9,215
% stake			15%	15%	15%
To TOP			1,113	1,382	1,382
GPSC's profit	7,508	8,314	8,344	10,514	11,096
% stake	21%	21%	12%	10%	10%
To TOP	1,783	1,729	993	315*	333
Net income to TOP	2,566	2,029	2,406	1,998	2,015

Sources: Company data, Thanachart estimates

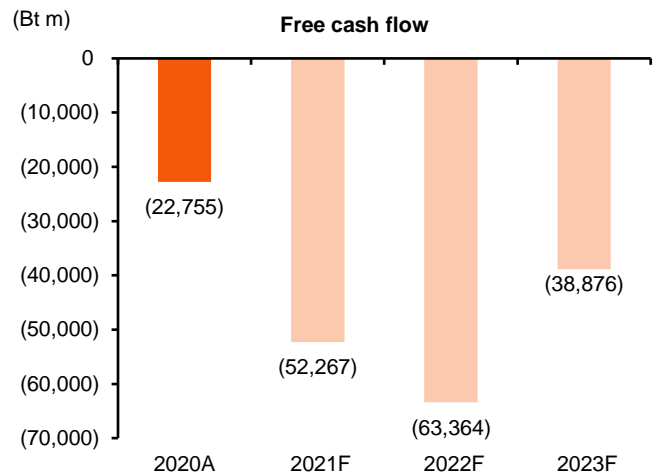
Note: *Change to dividend income post GPSC divestment in 2H22

Ex 5: Net D/E Is On A Rising Trend



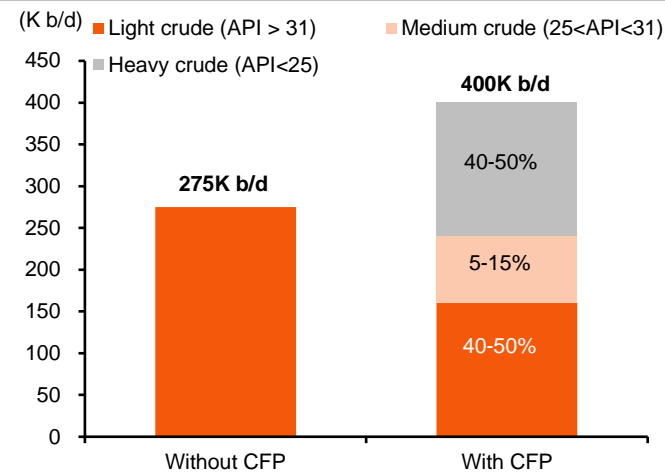
Sources: Company data, Thanachart estimates

Ex 6: FCF Remains Negative Despite New Acquisition



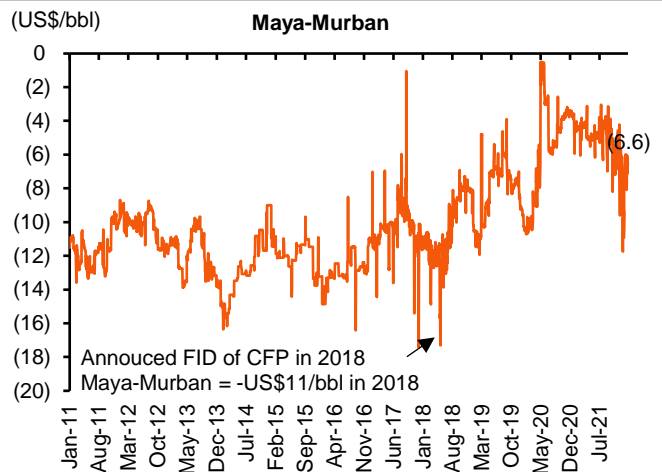
Sources: Company data, Thanachart estimates

Ex 7: Crude Flexibility Post CFP



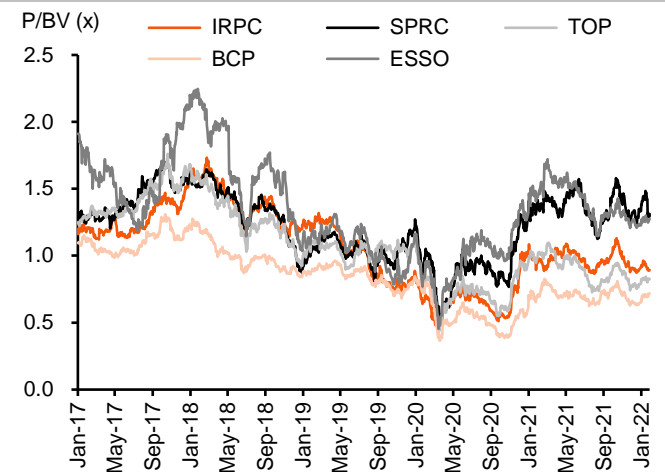
Sources: Company data

Ex 8: But Heavy-Light Differential Appears Lower



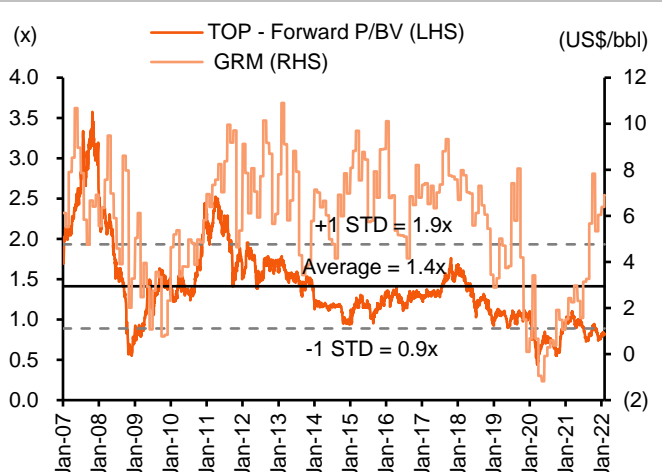
Sources: Bloomberg

Ex 9: P/BV Vs. Peers'



Sources: Bloomberg, Thanachart estimates

Ex 10: P/BV Vs. GRM



Sources: TOP, Bloomberg, Thanachart estimates

Ex 11: 12-month DCF-based TP Calculation For Downstream Business, Using A Base Year Of 2022F

(Bt m)	2022F	2023F	2024F	2025F	2026F	2027F	2028F	2029F	2030F	2031F	2032F	Terminal Value
EBITDA	15,990	17,709	23,211	26,937	26,229	26,229	26,229	26,229	24,579	26,229	26,229	
Free cash flow	(32,777)	5,873	19,540	21,847	21,042	21,148	21,217	21,280	19,852	21,466	21,452	287,150
PV of free cash flow	(30,160)	4,971	15,214	15,386	13,576	12,499	11,485	10,553	9,019	8,566	7,807	104,497
Risk-free rate (%)	2.5											
Market risk premium (%)	8.0											
Beta	1.3											
WACC (%)	8.7											
Terminal growth (%)	2.0											
Enterprise value - add investments	183,412											
Net cash/(debt) (2021F)	128,717											
Minority interest	4,478											
Equity value	50,216											
# of shares (m)	2,040											
Equity value/share (Bt)	25											

Sum-of-the-parts valuation	Value (Bt m)	Per share (Bt/shr)	% of total	Methodology
Downstream	50,216	25	55%	DCF
Power (GPSC)	13,782	7	15%	DCF
Chandra Asri	28,291	14	30%	BBG consensus
Total value per share	92,289	46		

Sources: Thanachart estimates

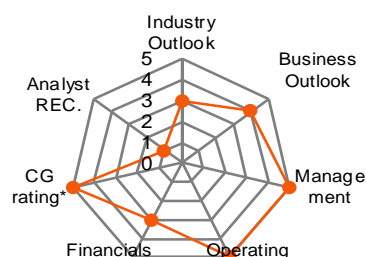
Note: Net debt position is for all businesses except GPSC, which is not consolidated

COMPANY DESCRIPTION

Thai Oil Pcl (TOP) is the flagship refinery under the PTT group which owns a 49% stake in the company. Its capacity of 275kbd makes up 25% of Thailand's total. With a Nelson complexity of 9.8, TOP produces 0.8m tpa of aromatics and 0.3m tpa of lube base oil and bitumen. The company also recently purchased a 15% stake in listed company Chandra Asri, one of the leading petrochemical complexes in Indonesia, which is also owned by SCC with a 30.5% stake. Its other businesses include power, marine transport and ethanol production.

Source: Thanachart

COMPANY RATING



Rating Scale

Excellent	5
Good	4
Fair	3
Weak	2
Very Weak	1
None	0

Source: Thanachart; *CG Rating

THANACHART'S SWOT ANALYSIS

S — Strength

- Some of the lowest operating costs in the region.
- Being part of the PTT group gives TOP secured off-take agreements.

O — Opportunity

- Potential further chemical expansion following investment in Chandra Asri.
- Ability to upgrade derivatives into value-added plastic products.

W — Weakness

- Volatile earnings due to commodity exposure especially in the refining business where demand outlook is weak.
- Weak balance sheet with substantial capex over the next two years due to the USD4bn investment in clean fuel project (CFP).

T — Threat

- High oil prices could slow local demand and force it to sell in the lower-margin export market.
- Overpaying for acquisitions and higher-than-expected expansion costs.

CONSENSUS COMPARISON

	Consensus	Thanachart	Diff
Target price (Bt)	60.90	46.00	-24%
Net profit 21F (Bt m)	11,011	11,177	2%
Net profit 22F (Bt m)	10,269	6,363	-38%
Consensus REC	BUY: 16	HOLD: 8	SELL: 3

HOW ARE WE DIFFERENT FROM THE STREET?

- Our 2021-22F earnings are well below consensus as we likely assume slower GRM improvements and factor in lower equity income.
- Consequently, our DCF-based target price is also lower than the street.

Sources: Bloomberg consensus, Thanachart forecasts

RISKS TO OUR INVESTMENT CASE

- The key upside risk to our call is a higher-than-expected GRM or aromatics spread (chiefly PX) and a lower-than-expected light sweet crude premium would be secondary upside risks to our call.
- The secondary upside risk to our call would be lower oil prices, which would serve to decrease cash costs and raise profits.

Source: Thanachart

INCOME STATEMENT

We expect earnings to decline in 2022F on weaker chemical margins

FY ending Dec (Bt m)	2019A	2020A	2021F	2022F	2023F
Sales	363,916	247,913	347,890	374,352	351,198
Cost of sales	355,113	255,300	337,001	361,871	337,802
Gross profit	8,802	(7,387)	10,890	12,481	13,396
% gross margin	2.4%	-3.0%	3.1%	3.3%	3.8%
Selling & administration expenses	2,546	2,650	3,719	4,002	3,755
Operating profit	6,256	(10,037)	7,170	8,479	9,642
% operating margin	1.7%	-4.0%	2.1%	2.3%	2.7%
Depreciation & amortization	7,085	7,554	7,894	7,511	8,067
EBITDA	13,341	(2,483)	15,065	15,990	17,709
% EBITDA margin	3.7%	-1.0%	4.3%	4.3%	5.0%
Non-operating income	1,728	1,115	1,564	1,683	1,579
Non-operating expenses	0	0	0	0	0
Interest expense	(3,224)	(4,292)	(4,249)	(4,323)	(4,839)
Pre-tax profit	4,760	(13,215)	4,485	5,839	6,381
Income tax	1,240	(647)	2,076	1,332	1,374
After-tax profit	3,519	(12,568)	2,409	4,506	5,007
% net margin	1.0%	-5.1%	0.7%	1.2%	1.4%
Shares in affiliates' Earnings	1,276	2,566	2,029	2,489	2,208
Minority interests	(240)	(419)	(588)	(633)	(594)
Extraordinary items	1,721	7,120	7,327	0	0
NET PROFIT	6,277	(3,301)	11,177	6,363	6,621
Normalized profit	4,556	(10,421)	3,850	6,363	6,621
EPS (Bt)	3.1	(1.6)	5.5	3.1	3.2
Normalized EPS (Bt)	2.2	(5.1)	1.9	3.1	3.2

BALANCE SHEET

Balance sheet looks stretched with a major capex and an acquisition

FY ending Dec (Bt m)	2019A	2020A	2021F	2022F	2023F
ASSETS:					
Current assets:	134,676	114,229	71,981	81,627	77,355
Cash & cash equivalent	76,611	71,354	10,000	15,000	15,000
Account receivables	22,466	12,702	21,022	22,621	21,222
Inventories	30,292	22,461	30,148	32,373	30,220
Others	5,307	7,712	10,810	11,632	10,913
Investments & loans	33,645	24,521	24,521	24,521	24,521
Net fixed assets	106,559	145,225	200,031	227,885	234,975
Other assets	8,564	22,213	24,731	25,765	25,798
Total assets	283,445	306,188	321,263	359,798	362,649
LIABILITIES:					
Current liabilities:	38,667	28,620	37,906	45,181	44,102
Account payables	25,015	9,517	19,239	9,914	10,180
Bank overdraft & ST loans	1,576	713	683	885	883
Current LT debt	2,754	7,952	6,902	21,457	21,423
Others current liabilities	9,322	10,438	11,082	12,925	11,614
Total LT debt	115,287	136,237	131,133	157,354	157,105
Others LT liabilities	5,568	21,212	28,873	30,424	29,986
Total liabilities	159,521	186,069	197,912	232,960	231,192
Minority interest	3,951	3,889	4,478	5,111	5,705
Preferreds shares	0	0	0	0	0
Paid-up capital	20,400	20,400	20,400	20,400	20,400
Share premium	2,456	2,456	2,456	2,456	2,456
Warrants	0	0	0	0	0
Surplus	(3,165)	(2,557)	(8,141)	(8,141)	(8,141)
Retained earnings	100,281	95,930	104,157	107,012	111,036
Shareholders' equity	119,973	116,229	118,873	121,728	125,752
Liabilities & equity	283,445	306,188	321,263	359,798	362,649

Sources: Company data, Thanachart estimates

CASH FLOW STATEMENT

*FCF to remain negative
for many years due to a
heavy capex schedule*

FY ending Dec (Bt m)	2019A	2020A	2021F	2022F	2023F
Earnings before tax	4,760	(13,215)	4,485	5,839	6,381
Tax paid	(4,897)	871	(2,104)	(1,191)	(1,460)
Depreciation & amortization	7,085	7,554	7,894	7,511	8,067
Chg In working capital	3,510	2,096	(6,285)	(13,149)	3,818
Chg In other CA & CL / minorities	503	(3,353)	(4,654)	(1,916)	(4,212)
Cash flow from operations	10,960	(6,047)	(664)	(2,906)	12,595
Capex	(33,715)	(46,220)	(62,700)	(35,366)	(15,157)
Right of use	0	(14,729)	(500)	(500)	(500)
ST loans & investments	45	(8)	8	0	0
LT loans & investments	(17,564)	9,124	0	0	0
Adj for asset revaluation	0	0	0	0	0
Chg In other assets & liabilities	3,304	25,995	22,337	6,301	5,944
Cash flow from investments	(47,930)	(25,838)	(40,855)	(29,565)	(9,713)
Debt financing	14,335	27,070	(11,303)	40,979	(285)
Capital increase	0	0	0	0	0
Dividends paid	(4,626)	(1,020)	(2,949)	(3,508)	(2,597)
Warrants & other surplus	(3,336)	578	(5,583)	0	0
Cash flow from financing	6,373	26,628	(19,835)	37,471	(2,882)
Free cash flow	(22,755)	(52,267)	(63,364)	(38,272)	(2,562)

VALUATION

*GRM recovery looks
priced in, in our view*

FY ending Dec	2019A	2020A	2021F	2022F	2023F
Normalized PE (x)	23.2	na	27.4	16.6	15.9
Normalized PE - at target price (x)	20.6	na	24.4	14.7	14.2
PE (x)	16.8	na	9.4	16.6	15.9
PE - at target price (x)	15.0	na	8.4	14.7	14.2
EV/EBITDA (x)	11.1	na	15.6	16.9	15.2
EV/EBITDA - at target price (x)	10.3	na	14.8	16.2	14.6
P/BV (x)	0.9	0.9	0.9	0.9	0.8
P/BV - at target price (x)	0.8	0.8	0.8	0.8	0.7
P/CFO (x)	9.6	(17.5)	(159.0)	(36.3)	8.4
Price/sales (x)	0.3	0.4	0.3	0.3	0.3
Dividend yield (%)	2.9	1.4	4.2	2.4	2.5
FCF Yield (%)	(21.6)	(49.5)	(60.0)	(36.3)	(2.4)
(Bt)					
Normalized EPS	2.2	(5.1)	1.9	3.1	3.2
EPS	3.1	(1.6)	5.5	3.1	3.2
DPS	1.5	0.7	2.2	1.2	1.3
BV/share	58.8	57.0	58.3	59.7	61.6
CFO/share	5.4	(3.0)	(0.3)	(1.4)	6.2
FCF/share	(11.2)	(25.6)	(31.1)	(18.8)	(1.3)

Sources: Company data, Thanachart estimates

FINANCIAL RATIOS

*ROE to remain in low
single-digit territory for
many years*

FY ending Dec	2019A	2020A	2021F	2022F	2023F
Growth Rate					
Sales (%)	(6.5)	(31.9)	40.3	7.6	(6.2)
Net profit (%)	(38.2)	na	na	(43.1)	4.1
EPS (%)	(38.2)	na	na	(43.1)	4.1
Normalized profit (%)	(56.0)	na	na	65.3	4.1
Normalized EPS (%)	(56.0)	na	na	65.3	4.1
Dividend payout ratio (%)	48.8	(43.3)	40.0	40.0	40.0
Operating performance					
Gross margin (%)	2.4	(3.0)	3.1	3.3	3.8
Operating margin (%)	1.7	(4.0)	2.1	2.3	2.7
EBITDA margin (%)	3.7	(1.0)	4.3	4.3	5.0
Net margin (%)	1.0	(5.1)	0.7	1.2	1.4
D/E (incl. minor) (x)	1.0	1.2	1.1	1.4	1.4
Net D/E (incl. minor) (x)	0.3	0.6	1.0	1.3	1.3
Interest coverage - EBIT (x)	1.9	na	1.7	2.0	2.0
Interest coverage - EBITDA (x)	4.1	na	3.5	3.7	3.7
ROA - using norm profit (%)	1.7	na	1.2	1.9	1.8
ROE - using norm profit (%)	3.8	na	3.3	5.3	5.4
DuPont					
ROE - using after tax profit (%)	2.9	na	2.0	3.7	4.0
- asset turnover (x)	1.3	0.8	1.1	1.1	1.0
- operating margin (%)	2.2	na	2.5	2.7	3.2
- leverage (x)	2.3	2.5	2.7	2.8	2.9
- interest burden (%)	59.6	148.1	51.4	57.5	56.9
- tax burden (%)	73.9	na	53.7	77.2	78.5
WACC (%)	8.7	8.7	8.7	8.7	8.7
ROIC (%)	3.8	(6.2)	2.0	2.6	2.6
NOPAT (Bt m)	4,626	(10,037)	3,851	6,544	7,565
invested capital (Bt m)	162,978	189,777	247,591	286,424	290,164

Sources: Company data, Thanachart estimates

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