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Sustainability Award
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S&P Global



Thai Oil Public Company Limited

Presentation to Investors

December 2022



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Presentation Agenda

TOP GROUP BUSINESS OVERVIEW

KEY HIGHLIGHTS

FINANCIAL HIGHLIGHTS

STRATEGIC INVESTMENT PLANS

OUTLOOK





TOP GROUP BUSINESS OVERVIEW



Strategic Relationship and Operational Integration with PTT

Thai Oil's strong shareholder base

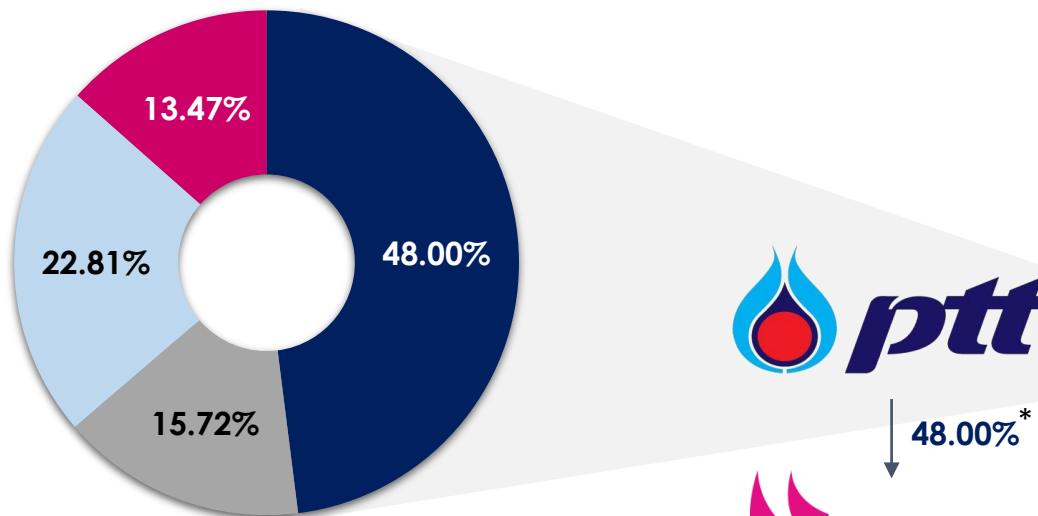


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ตลาดหลักทรัพย์แห่งประเทศไทย

# of Listed Shares	2,233.8 mil. shares
Free Float Shares	51.96 %



- PTT*
- Foreign Investors
- Local Investors
- NVDR

As of 11 Nov 2022



48.00%*



- Benefits from PTT's dual role as our major shareholder and key business partner
- All transactions take place at arm's length and in adherence with strong corporate governance principles

Key strategic benefits for Thai Oil

1. Long-term strategic partnership
 - Thai Oil is PTT's principal refiner
 - Long-term strategic shareholder and joint investment

2. Business partnership
 - Product offtake
 - Crude procurement

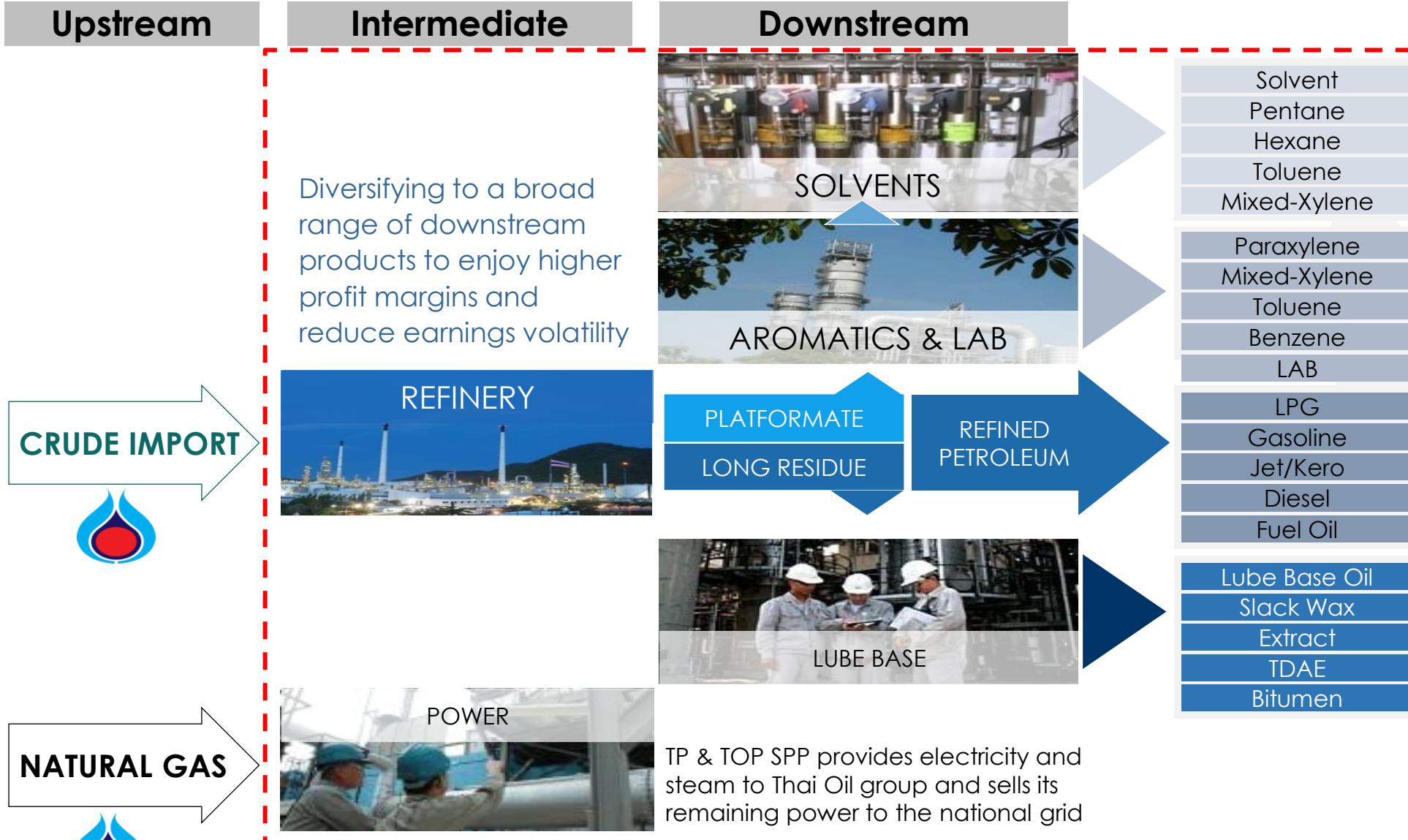
3. Operational synergies
 - Freight costs reduction
 - Knowledge transfer and shared services
 - Close management collaboration and secondment of trained staff

Remark
* PTT holds total of 48.00 % both direct and indirect.

TOP Group Synergy & Strategic Role in PTT Group Value Chain



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Diversifying to a broad range of downstream products to enjoy higher profit margins and reduce earnings volatility



The majority of refined petroleum products are sold domestically to PTT



PTT is our principal domestic customer for our lube base products

Thai Oil's Businesses

Key Milestones: 61 Years, A Long Track Record of Success



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1961 – 1997
Capacity expansion and initial stage of business diversification

2004 – 2011
Listing, expansion and diversification

Today
A leading integrated refining and petrochemical group in Asia Pacific

1961
• Incorporated

1964
• Commenced operation with distillation capacity of 35 kbd
• Simple refinery with Nelson complexity Index ~ 4¹

1970
• Refining capacity expanded to 65 kbd

1989
• Increased refining capacity to 90 kbd

2004
• IPO and listed on the SET
• Acquired remaining shares in Thai Paraxylene and Thai Lube Base which became our wholly-owned subsidiaries

• 275 kbd refinery (approximately 22% of Thailand's total refining capacity)
• Nelson index 9.8¹
• Diversified business through 16 subsidiaries

★ 1961 – 1964

● 1970-1989

● 1993-1997

● 2004

● 2007 -2008

● 2010-2016

● 2017-2022

1993
• We expanded our refining capacity to 190 kbd

1994 – 1997
• Increased total refining capacity to 220 kbd
• Initial investment in Thai Paraxylene ("TPX") and Thai Lube Base ("TLB")
• IPT became the first IPP to enter into a PPA with EGAT² with 700 MW capacity ; separately, Thaioil Power ("TP") constructed the power generation plant under the SPP with 118 MW capacity

2007
• Increased refining capacity to 275 kbd

2008
• The first refinery in Thailand with diesel production to comply with the sulfur content requirements of Euro IV
• Capacity expansion of Thai Paraxylene with total aromatics capacity of 900,000 tons p.a.
• Invested in Solvents business in Thailand and Vietnam

2010-2011
• Established Thaioil Ethanol
• Manufactured diesel and ULG in compliance with the sulfur and BZ aromatics content requirements of the Euro IV

2013-2014
• Established LABIX
• Invested in power biz via GPSC & TOP SPP
• Completed Emission Improvement, HVU-2 Debottlenecking & CDU-3 Preheat Train project

2015-2016
• Completed LABIX & TOP SPP

2017-2018
• 2017 Record High net profit 24,856 MB
• Completed lorry expansion project (10 to 15 mml/day)
• Established Thaioil Treasury center (TTC)
• CFP Investment (\$4.8 bn)

2019
• ERU Carve-out to reduce CFP project cost (CFP cost \$4.1 bn)

2021-2022
• Olefins investment in Chandra Asri (CAP) \$1.183 bn
• Capital increase (Q3-Q4/22)

Thai Oil Group Business Structure



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OIL REFINERY

PETROCHEMICAL & LUBE BASE

POWER GENERATION


OTHERS



Thai oil (TOP)


Capacity :
275,000 barrels/day

100.0%



Thai Paraxylene (TPX)

100.0%



Thai Lube Base (TLB)

Aromatics Capacity:
Paraxylene 527,000 tons/annum
Mixed Xylene 52,000 tons/annum
Benzene 259,000 tons/annum
Total 838,000 tons/annum

Lube Base Oil Capacity :
Base Oil 267,015 tons/annum
Bitumen 350,000 tons/annum
TDAE 67,520 tons/annum

75.0% Mitsui 25.0%

LABIX Company Limited (LABIX)

LAB producer and distributor
Capacity: 120 KTA COD: 2016

100.0%



Thai oil Solvent Through TOP Next

100.0%


PT TOP Investment Indonesia (TII)

15.0%

PT Chandra Asri Petrochemical Tbk (CAP)

The Largest Integrated Petrochemical in Indonesia
Total Capacity 4.2 Mtons/annum
Ethylene 900,000 tons/annum
Propylene 490,000 tons/annum

100.0%



TOP SPP

Sells Electricity/Steam to Group
2 Small Power Producers
Total capacity: 239 MW
Steam capacity 497 T/H
COD 2016


PTT 47.8%
PTTGC 10.0% 10%



Global Power Synergy Public Company Limited (GPSC)

Principal power plant of PTT
Total Equity Capacity 7,122 MW of electricity
2,946 tons/hour of steam
7,372 Cu.m./hour of Industrial water
15,400 RT of Chilled water
141 MWh of battery

100.0%



Thai oil Ethanol (TET)

50.0%

Sapthip (SAP)

Cassava Based Ethanol
Capacity : 200,000 lts/day


Others 75.2%
BBGI 12.4%

12.4%

Ubon Bio Ethanol (UBE)

Cassava/Molasses Based Plant
Capacity : 400,000 lts/day

100.0%



Thai oil Treasury Center (TTC)

Enhance financial efficiency,
Investment in CVC/Start-up

100.0%

Thai oil Energy Services (TES)

Proceeds the business on various professional of management services

PTT Group 80.0% 20.0%

PTT Digital Solutions (PTT Digital)

Provides engineering technique consulting services

PTT Group 85.0% 15.0%

Sarn Palung Social Enterprise

Supports execution of social enterprise of PTT group

PTTOR 40.4%
Others 50.4% 9.2%

Thapline (THAP)

Multi-product Pipeline
Capacity:26,000 m.lts/y

80.5%

Production Sak Chaisidhi (SAKC)

Solvent manufacturer
Capacity : 141,000 tons/annum

Sales & Distribution TOP Next Thailand

60.0%

JSKEM

100.0%

TSCHEM India

100.0%

TOP Solvent Vietnam

77.7%

PT. Tirta Surya Raya (TSR)

Core Business

Value Enhancement

Earning Stability

Marketing / IT Support



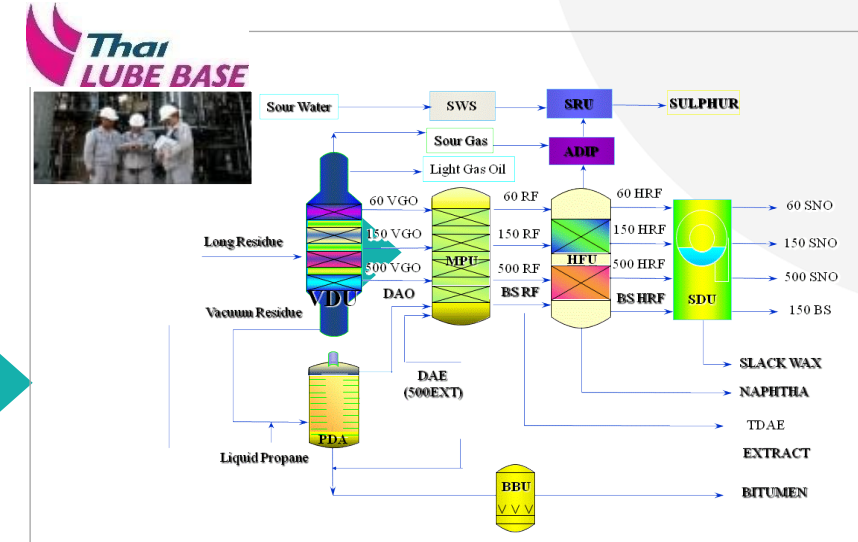
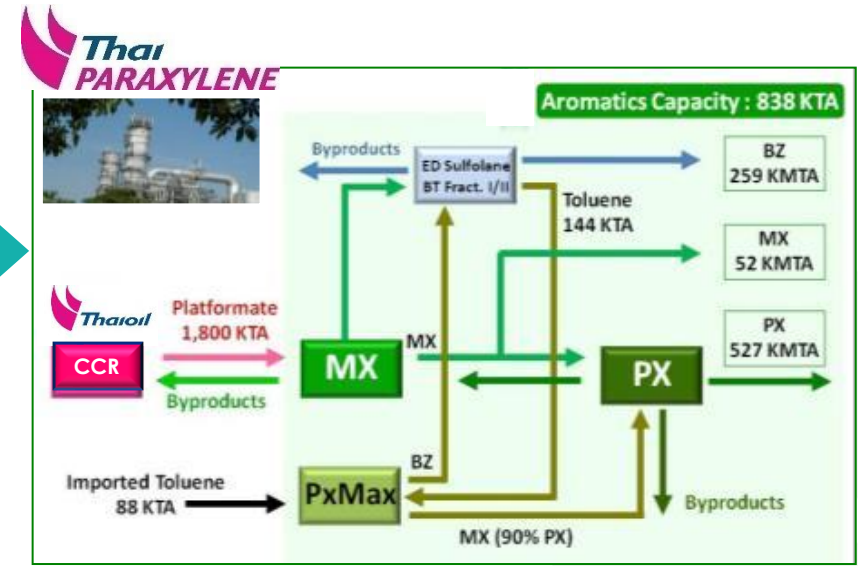
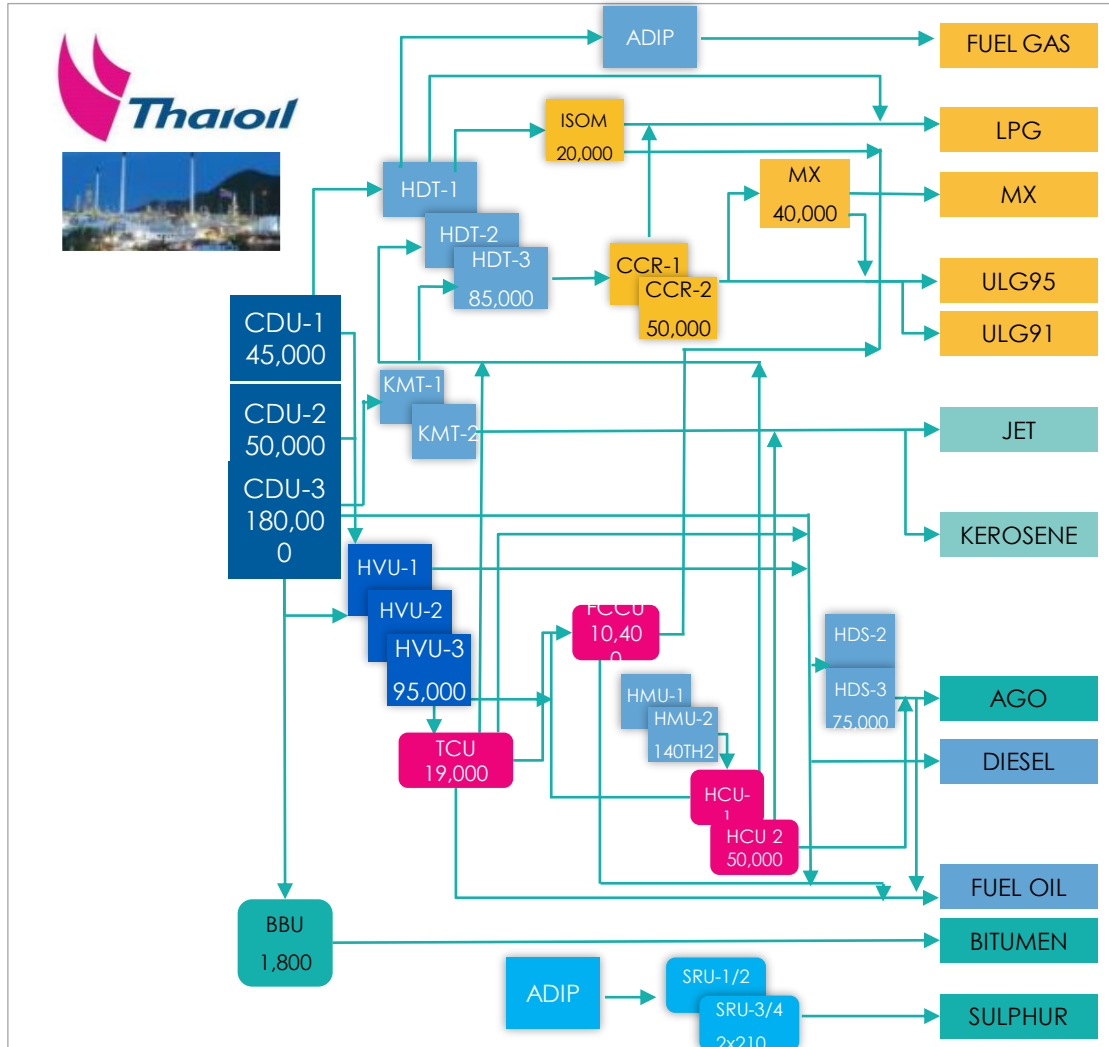
(Avg. 2006 – Q3/22)

■ Refinery ■ Petrochemical
■ Lube Base ■ Others

Process Linkage: Beauty of Integration



PROCESS FLOWCHART

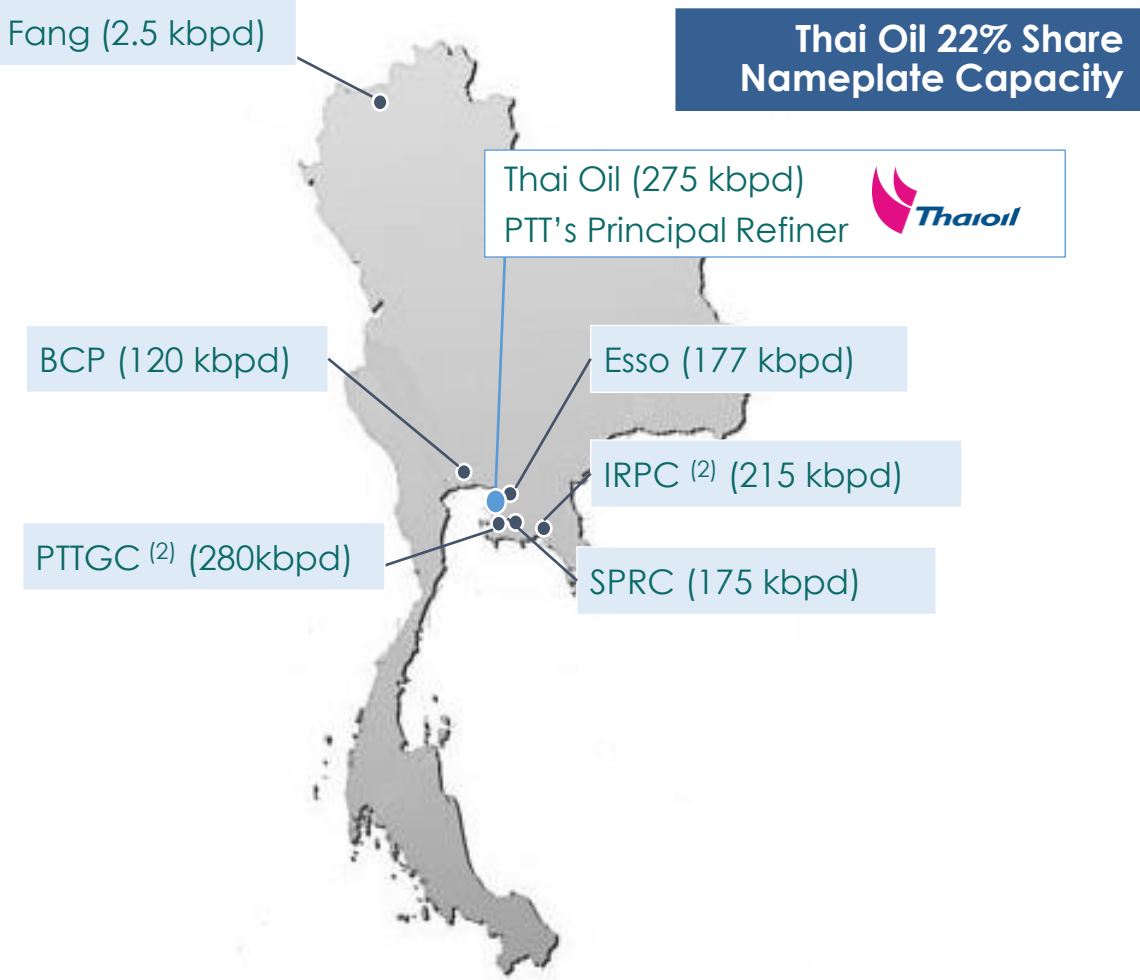


One of Region's Leading Refineries

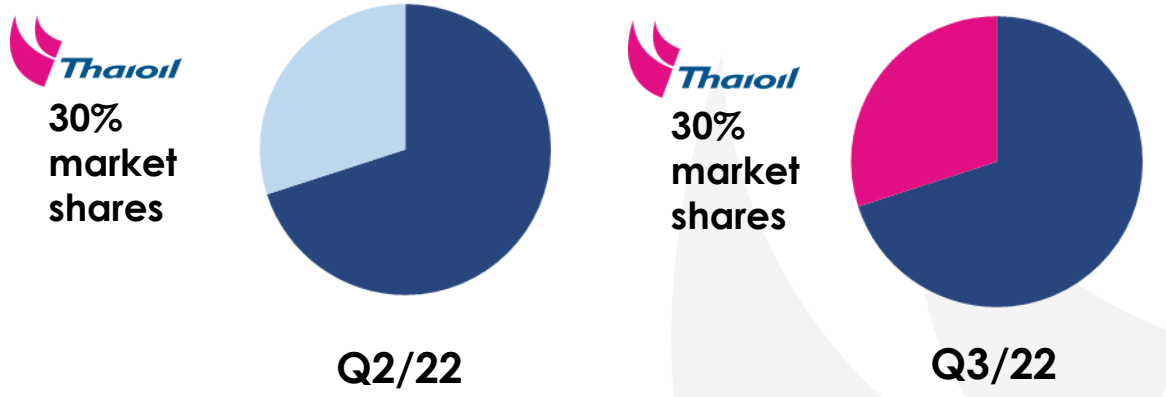


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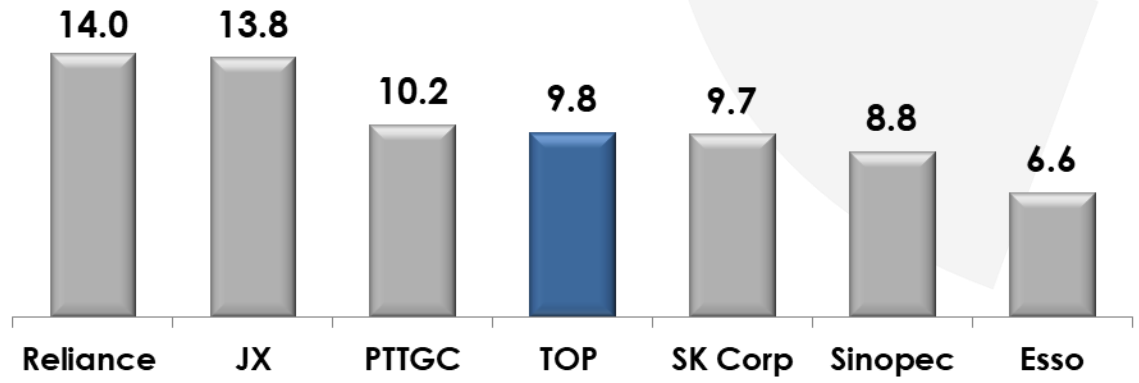
Total Thailand crude refining capacity 1,244.5 kbd ⁽¹⁾



Market shares for refined petroleum product ⁽³⁾



Nelson Index - Regional Comparison ⁽⁴⁾



- Remarks:
- Nelson Complexity Index measures refinery's upgrading capability for comparison
 - It is the ratio of complexity barrels divided by crude distillation capacity

Note: 1. Source: Energy Policy and Planning Office (EPPO), Ministry of Energy Thailand as of Jul 2020
 2. PTT holds a 47.6% interest in IRPC, a 47.7% interest in PTTGC as at 4 Aug 2020
 3. Calculate by total domestic sales of refined petroleum products (excluding by product & LPG) of Thai Oil divided by total sales of petroleum products in Thailand excl LPG. Source from EPPO
 4. Source: Worldwide Refinery Survey and Complexity Analysis 2019 from Oil & Gas Journal and company information

Strategic Location with Competitive Advantages in Access to Key Markets

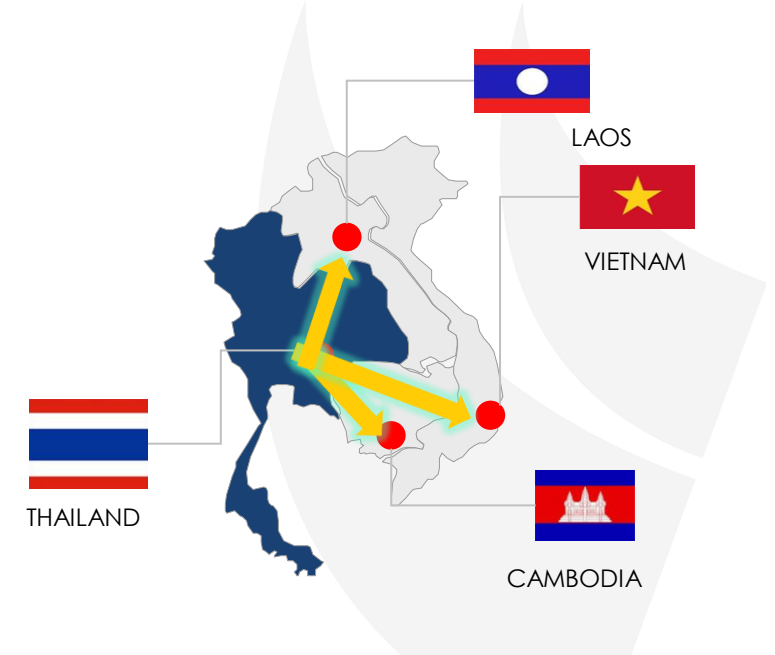


Close proximity to the key domestic markets

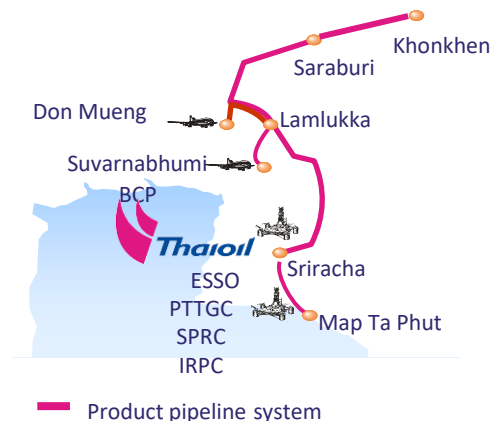
Access to Indochina markets through deep water ports and trucks

Our strategic location provide us with

1. Close proximity with the key domestic markets and Indochina
2. Direct access to deep water ports
3. Direct connection with multi-product pipelines



Direct connection with product pipeline system



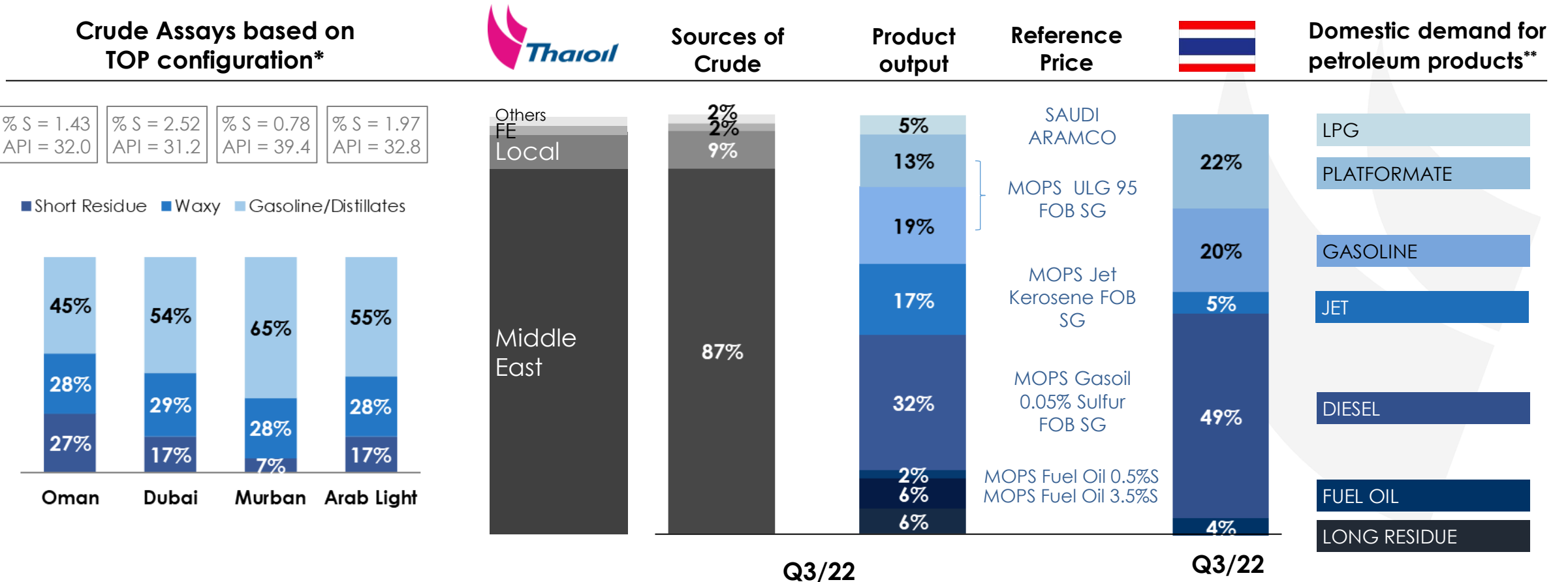
- ✓ Our plants are located within the Sriracha Complex
- ✓ SBM provides direct access to deep water ports, and ability to receive feedstock directly from VLCC
- ✓ We also enjoy available connections to delivery networks such as multi-product pipelines, including Thappline

Optimized & Flexible Operations

Superior Performance



Thai Oil is able to diversify its type of crude intake and product outputs to maximize demand and margin



*Crude yield as per assay in Spiral as of Feb 2016

** Source: Energy Policy and Planning Office, Ministry of Energy Thailand

- Flexibility in crude intake allows diversification of crude types to source cheaper crude
- Flexibility in product outputs by maximizing middle distillates (jet and diesel) by adjusting production mode to capture domestic demand and price premium
- Maximize Platformate production to capture higher margin on aromatics
- Minimize fuel oil output to avoid lower margin products

Refinery: High & Reliable Utilization

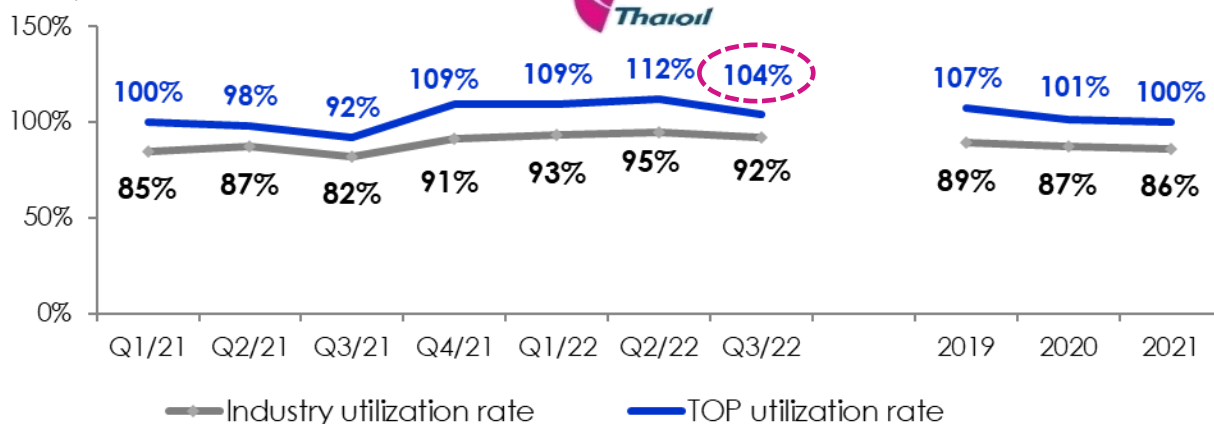
To Capture Strong Domestic Demand



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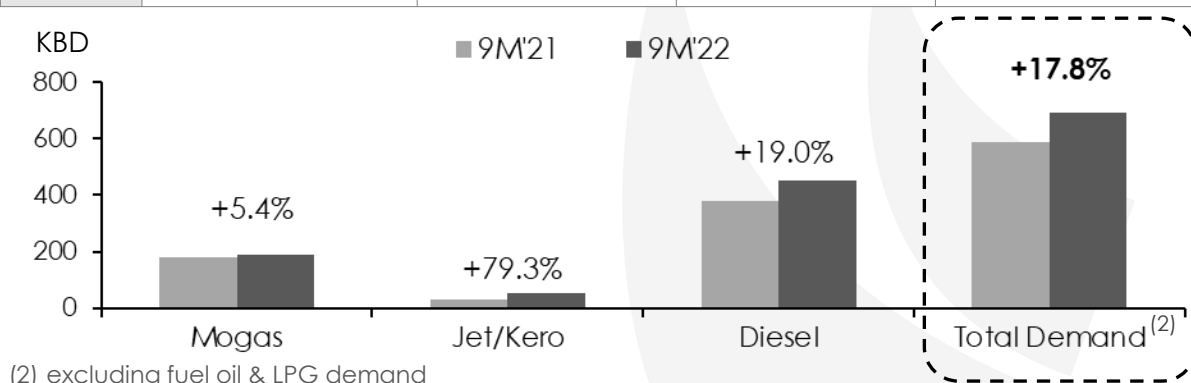
TOP/ Domestic Refinery Utilization Rate

Unit: % Utilization Rate



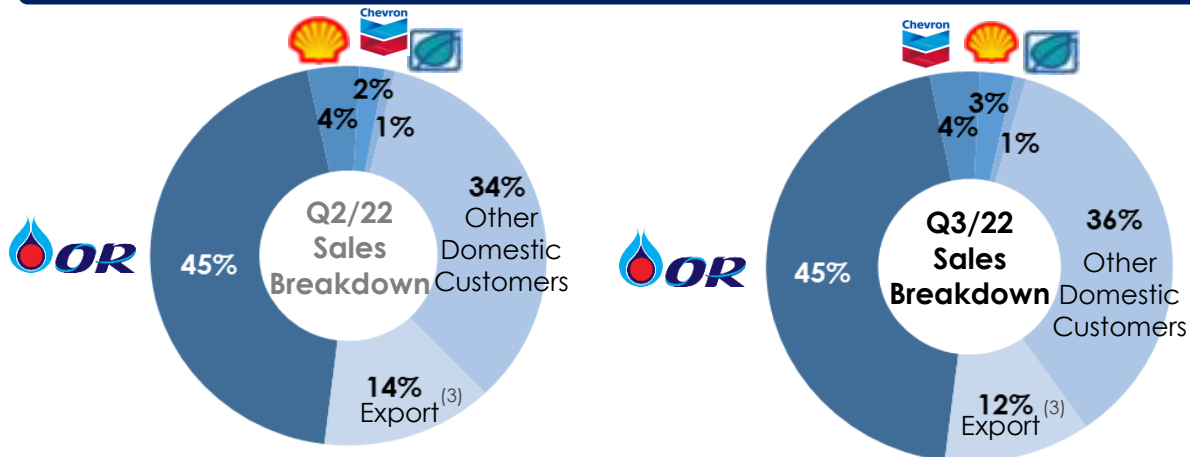
Domestic Oil Demand

Sep'21 vs Sep'22	Mogas	Jet/Kero	Gasoil	Total
	+13.3%	+109.8%	+27.6%	+27.2%



(2) excluding fuel oil & LPG demand

Sales Breakdown by Customers

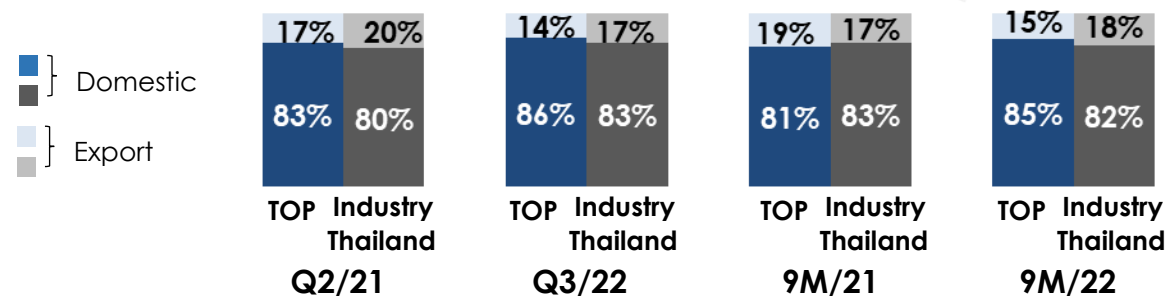


(3) Excluding export sale through PTT

(4) Source: Department of Energy Business, Ministry of Energy

TOP's Domestic Sales vs Industry

Export	Q2/22		Q3/22		9M/21		9M/22	
	TOP	Ind.	TOP	Ind.	TOP	Ind.	TOP	Ind.
CLMV	11%	7%	11%	9%	13%	9%	12%	9%
Others	6%	13%	3%	8%	6%	8%	4%	9%





KEY HIGHLIGHTS



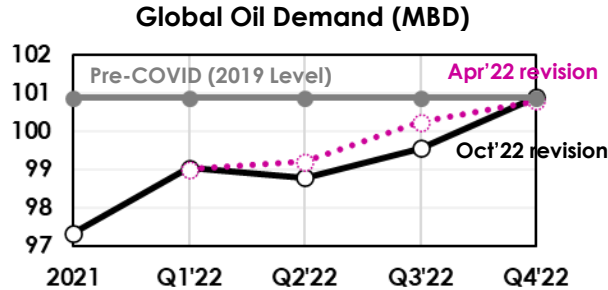
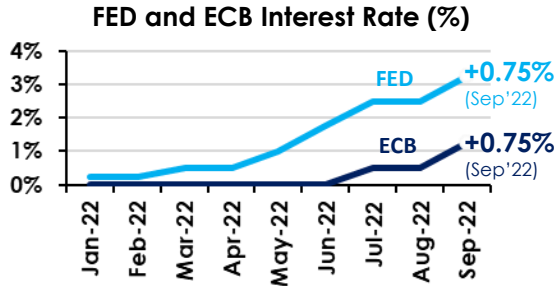
Positive Net Profit in Q3'22

From Normalized GRM and Stock Loss



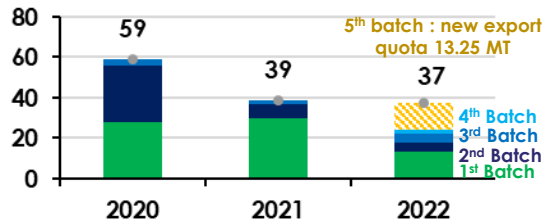
A Market Factors

Slower Demand Growth on Recession Fears and China's COVID Policy



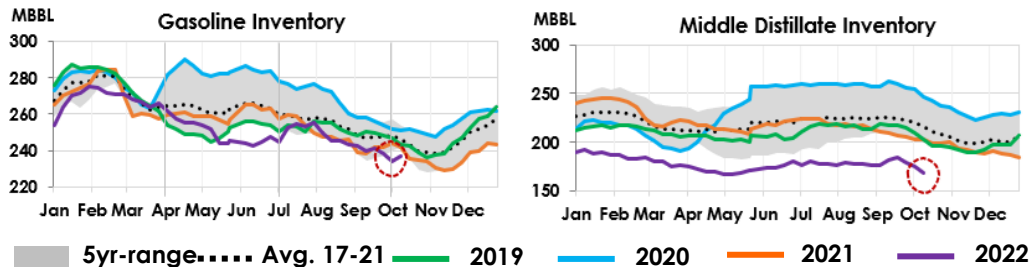
Concerns over New Chinese Export Quota

China's Export Quota for Gasoline/Jet/Gasoil (MT)



- China announced a new batch of refined products export quota of 13.25 MT, including Gasoline, Gasoil and Jet fuel, during Q4'22-Q1'23

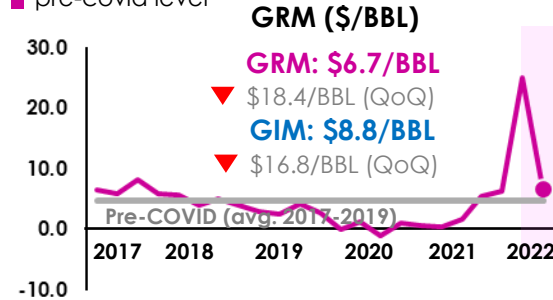
Global Low Inventories with Stock Below 5-year Average



B Decline in Net Profit from 2 Major Factors

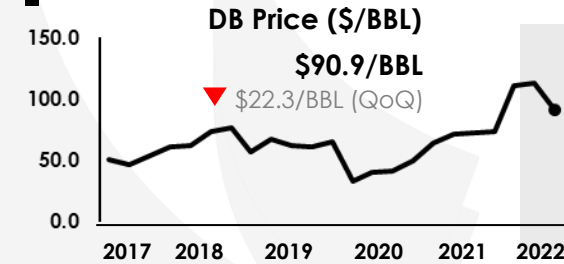
Normalized GRM

From slower demand growth, but still above pre-covid level



Stock Loss

From sharp drop in crude oil price



Refinery

Softer GRM from slower demand growth on concerns over global economic slowdown



Lube

Higher contribution from Lube on lower HSFO price



Aromatics

Higher contribution from Petrochemical on softer gasoline price and limited supply from maintenance



Slower oil demand growth on global economic concerns and China's COVID policy



Limited increase in OPEC production amid low OPEC spare capacity



Higher non-OPEC production from US

C Successful Recapitalization Plan

Successful on Equity Offering



Q3 & 9M/22 Key Business Highlights



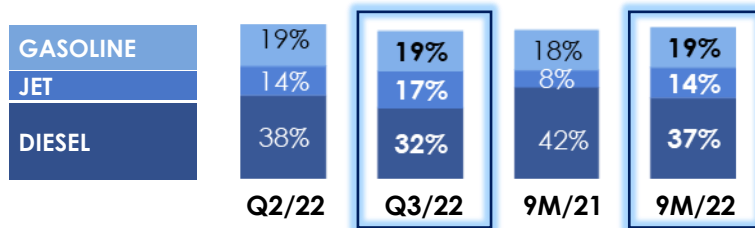
Key Business Highlight

Operational

- High and reliable refinery production to fulfill domestic oil demand

U-Rate %	Q2/22	Q3/22	9M/21	9M/22
Refinery	112%	104%	97%	108%
Aromatics	75%	70%	86%	73%
LAB	122%	113%	109%	119%
Base Oil	90%	86%	92%	88%

- Optimized production by shifting to produce more jet yield from shutdown in some upgrading unit and to capture recovering domestic oil demand and improving margins

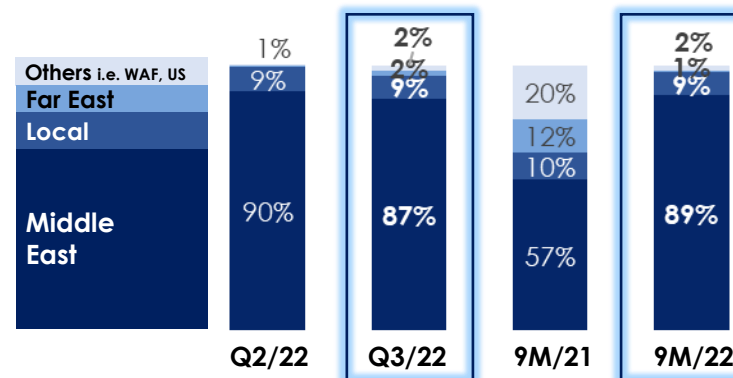


Commercial

- Capture high local & Indochina sales

	Q2/22	Q3/22	9M/21	9M/22
Local	83%	86%	81%	85%
Indochina	11%	11%	13%	12%
Other exports	6%	3%	6%	3%

- Capture gas-to-oil switching demand by maximizing domestic Gasoil and Fuel oil supply to power plants
- Crude optimization by maintaining high crude intake from ME with high middle distillates yield to capture recovering demand



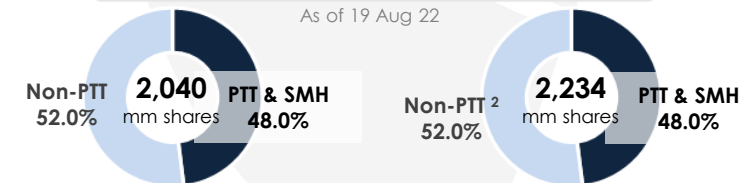
Financial

- Recapitalization plan

Successful on Equity Offering THB 10,368 million

- Final price: THB 53.5/share
- Newly issued 193,807,693 shares
 - Base offering 192,307,693 shares (Sep'22)
 - OA 1,500,000 shares (Oct'22)
- PO & OA Coverage: 14.4x
- Total proceed used for repay bridging loan

Shareholding Structure



Pre-EO Transaction

Post-EO Transaction¹

- Improving financial ratio

Credit Ratios³

	2021	Q322
Net Debt/Equity	1.2x	0.9x

- Enhance Working Capital by Extending 90-Day Trade Credit Term from PTT
- Interim Dividend: THB 2.0/Share, Payment date: 25 Nov

Note: 1 Based on newly issued shares of base offering of 192.3 and greenshoe of 1.5 mm shares
2 Subject to book closing
3 Excluding lease liabilities

Achievement: 3Vs Strategy



Value Maximization Integrated Crude to Chemical

CFP

- Progress 88% as of Sep'22
- Re-accelerate CFP progress in accordance with New Project Execution Plan

Olefins platform (CAP)

- Perform TOP & CAP business integration
 - Production integration
 - Sales and marketing Integration
- Ensure CAP2 project FID by Q4'22 & COD in 2026

High Value Products (HVP)

- Set up new dedicated responsibilities (RHVP)
- Established HVP Chemicals roadmap
- Strengthen collaboration with partners e.g. H&R, Mitsui, Kao, IVL



Value Enhancement Integrated Value Chain Mgmt.

- Reposition Top Solvent in Oct'22 as Thaioil's international marketing arm



- In preparation for increased volume & expanded scope of product portfolio
- Identified Indonesia, Vietnam & India as our prioritized countries
- Project ONE : continue on 4 areas collaboration (ETC crude, product export, chartering, hedging)



Value Diversification

Power

- Own use & growth along with GPSC/PTT
- TOP SPP expansion on track

CVC/Startups & Step-out

- Dual approaches of CVC/Startups & Step-out
- New Startups: IncreBio (JuiceInnov8)

Potential new S-Curve biz

- Identified 2 focus areas
 1. Bio : BioJet, BioChemical & BioPlastics
 2. New Energy & Mobility: Hydrogen



FINANCIAL HIGHLIGHTS



Q3 & 9M/22 Key Performance Highlights

Softer GRM Amid Strong Contribution from Aromatics & LAB, and Lube



Market Highlight

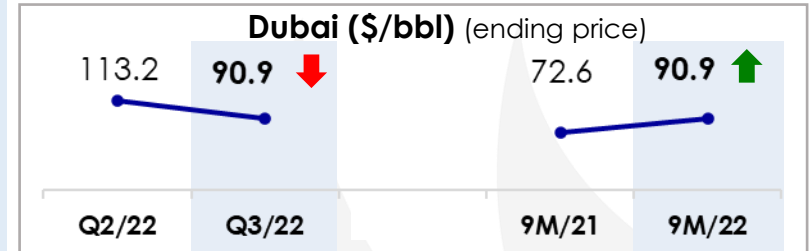
Contribution (\$/bbl)

Crude

QoQ *Dubai declined from \$113.2/bbl to \$90.9/bbl*

YoY *Dubai rose from \$72.6/bbl to \$90.9/bbl*

- **Concerns over global economic slowdown impacting oil demand growth** following a massive interest rate hike from Central banks around the world
- **Weak Chinese demand** from COVID restriction
- +
- **Lower OPEC+ supply** after OPEC+ decided to cut its oil production quota by 2 mbd from Nov

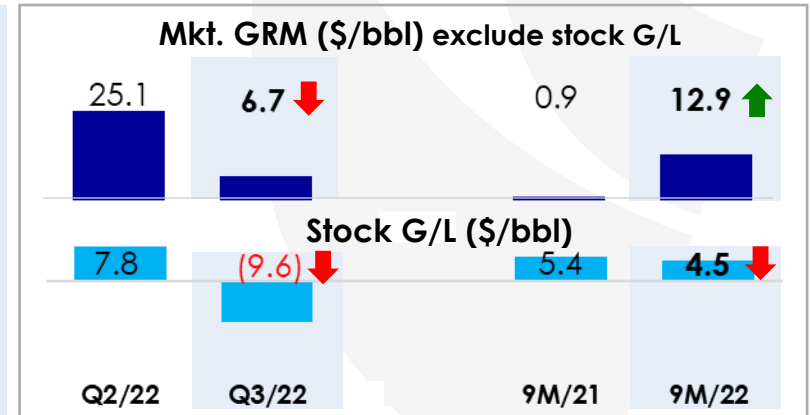


Refinery

QoQ *Mkt GRM softened from \$25.1/bbl to \$6.7/bbl*

YoY *Mkt GRM improved from \$0.9/bbl to \$12.9/bbl*

- **Weak Gasoline spread** due to softer demand Indonesia and China following Indonesia's subsidy cuts and China's zero-Covid policy
- **Softer Middle Distillate spreads** from higher supply after refineries switch to product more middle distillate because the spreads are higher than gasoline spread. However, low global middle distillate inventory remained support middle distillate spread
- **Decreasing LSFO spread** from softer demand on concerns over global economic slowdown
- **Declining HSFO spread** as Russia's supply continued to flow to market via Middle East

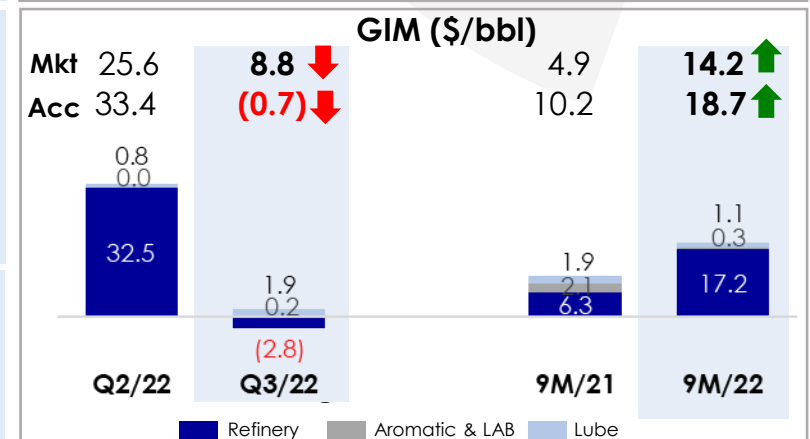


Aromatic & LAB

QoQ *Contributions rose from \$0.0/bbl to \$0.2/bbl*

YoY *Contributions dropped from \$2.1/bbl to \$0.3/bbl*

- +
- +
- +
- **Increasing PX margin** on softer gasoline price and limited supply from maintenance
- **Improving BZ margins** on softer gasoline price and improving styrene monomer margins
- **Strong LAB Contribution** on softer feedstock price amid weak demand during monsoon season



Lube

QoQ *Contribution increase from \$0.8/bbl to \$1.9/bbl*

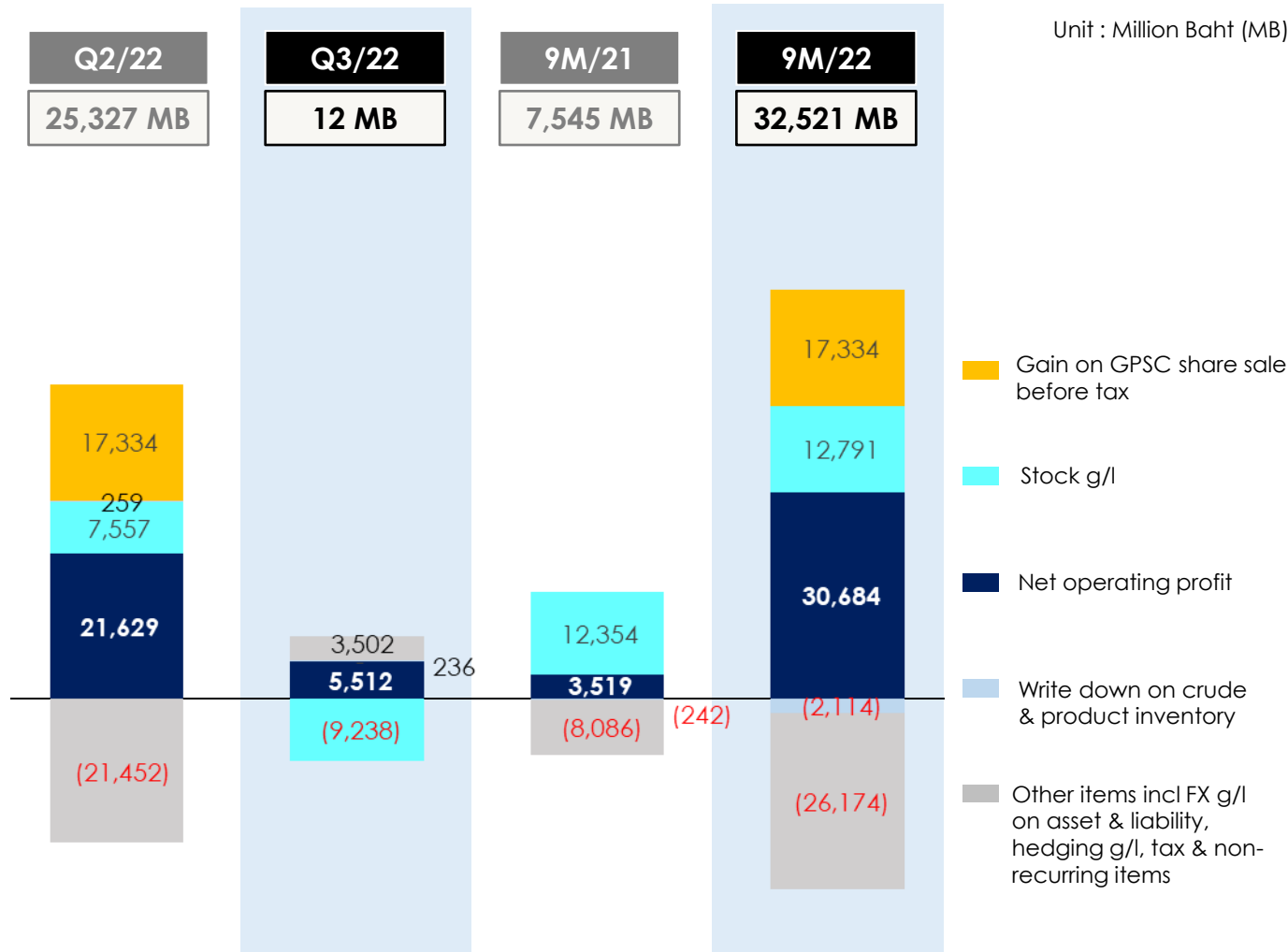
YoY *Contribution dropped from \$1.9/bbl to \$1.1/bbl*

- +
- **Increasing Base Oil & Bitumen margins** on lower HSFO price amid weak demand during rainy season

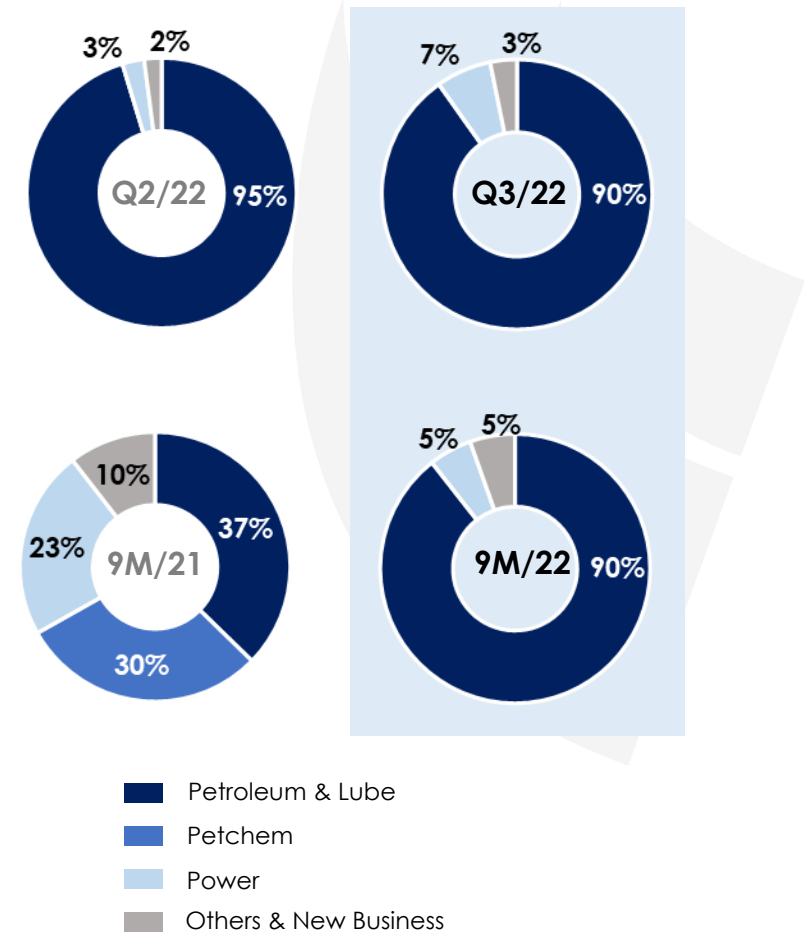
Q3 & 9M/22 Financial Performance



TOP Group Net Profit



Net Profit Contributions*



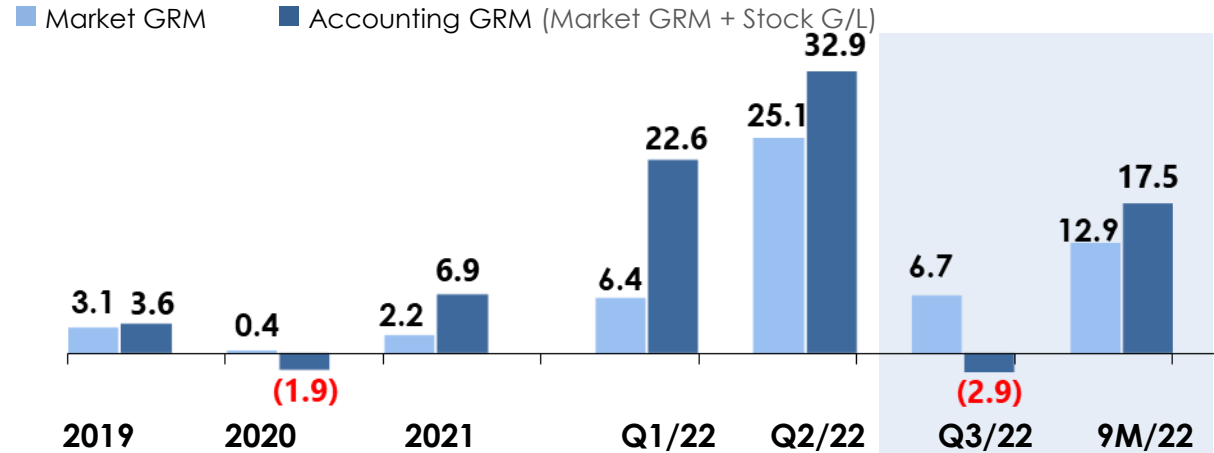
*Excluding Stock g/(l) & one-time items

Integrated Margin & Competitive Cash Cost



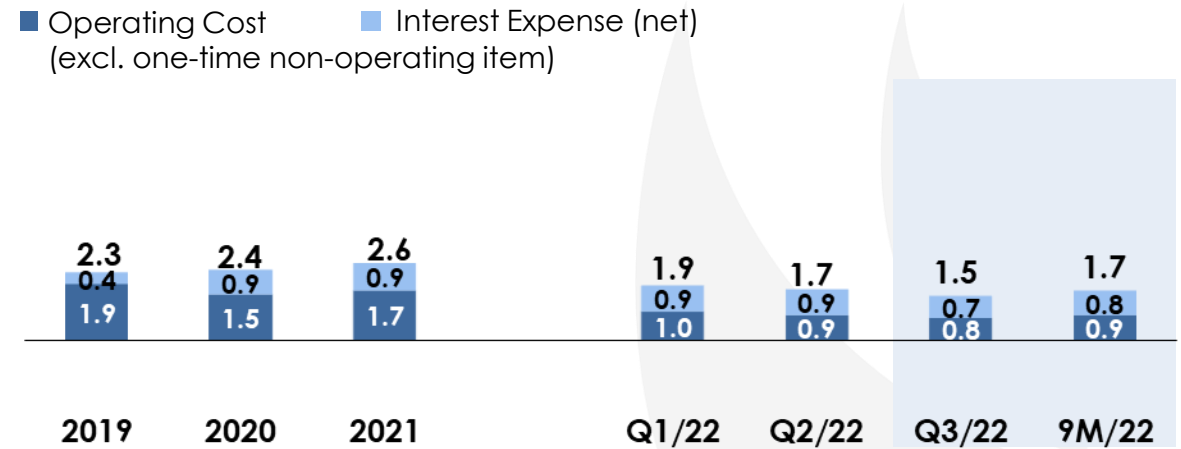
Gross Refining Margin

(Unit: US\$/bbl)



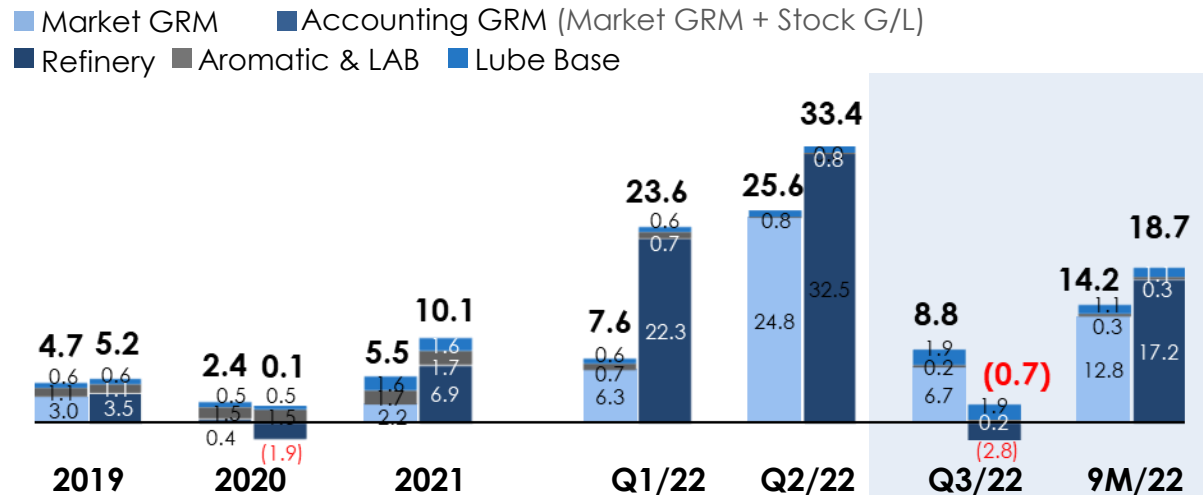
Refinery's Cash Cost

(Unit: US\$/bbl)



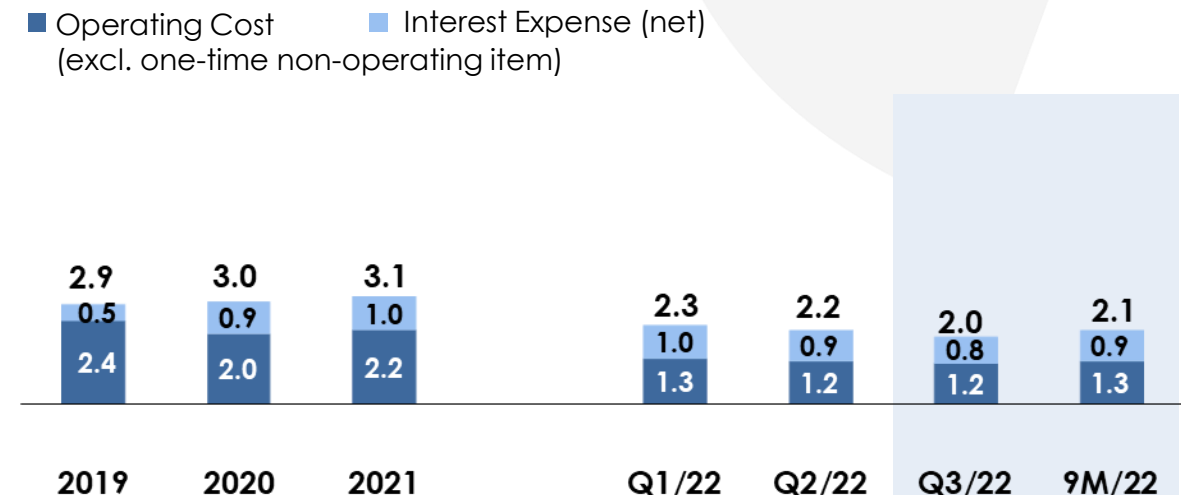
Gross Integrated Margin

(Unit: US\$/bbl)



Group's Cash Cost

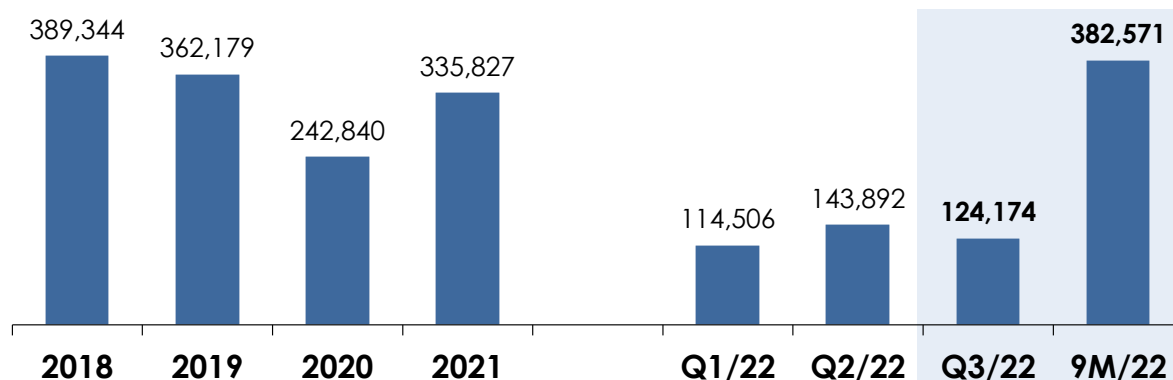
(Unit: US\$/bbl)



Financial Performance

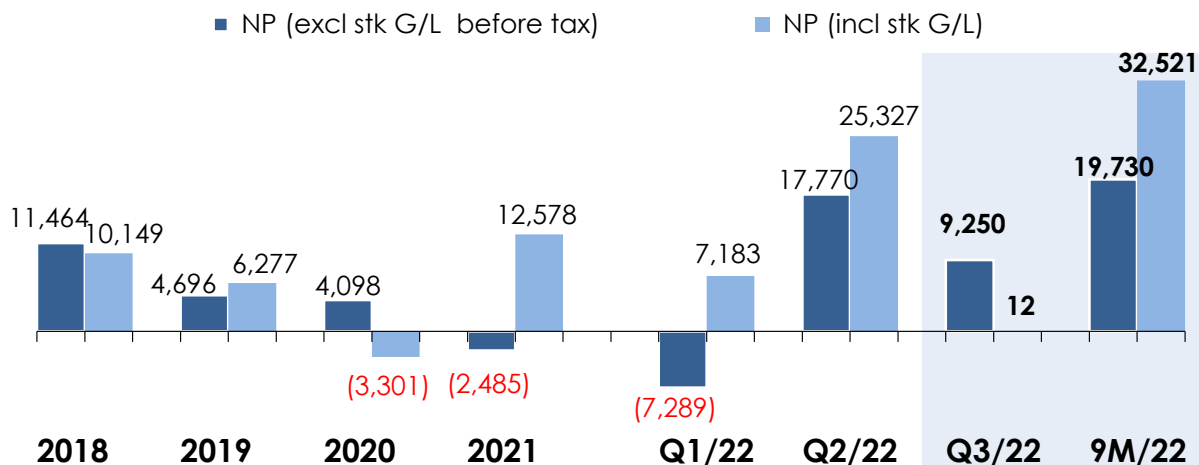
Sales Revenue

Unit: Million THB



Net Profit

Unit: Million THB

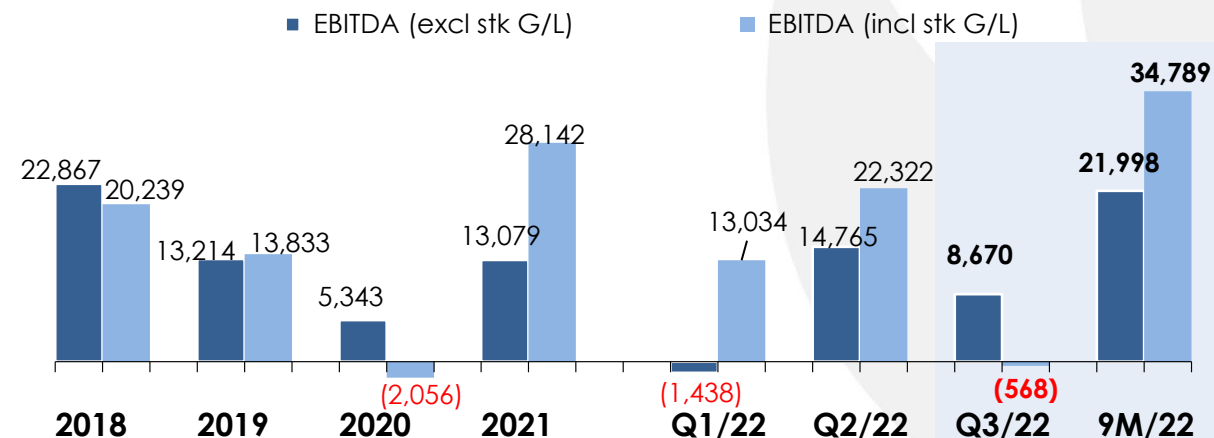


^R Restated financial statement

* Free Cash Flow (FCF) = Operating cash flow – Net CAPEX(PP&E)

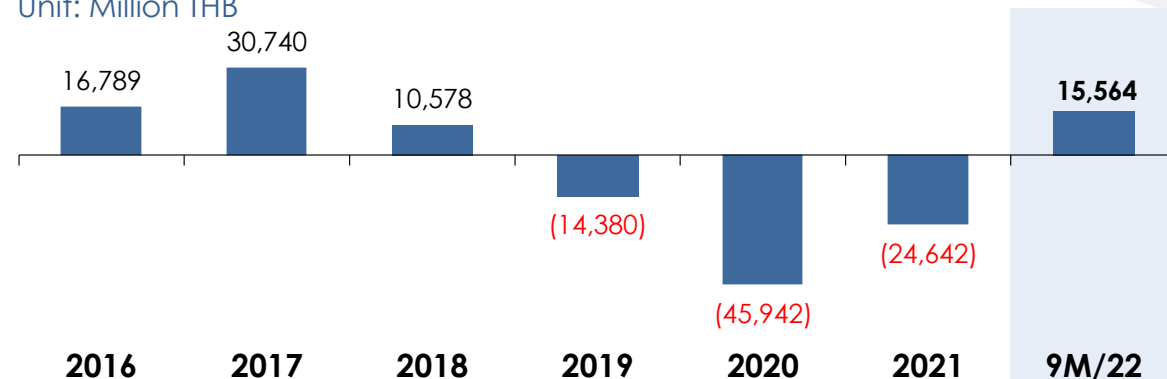
EBITDA

Unit: Million THB



Free Cash Flow*

Unit: Million THB



Net CAPEX (PP&E)

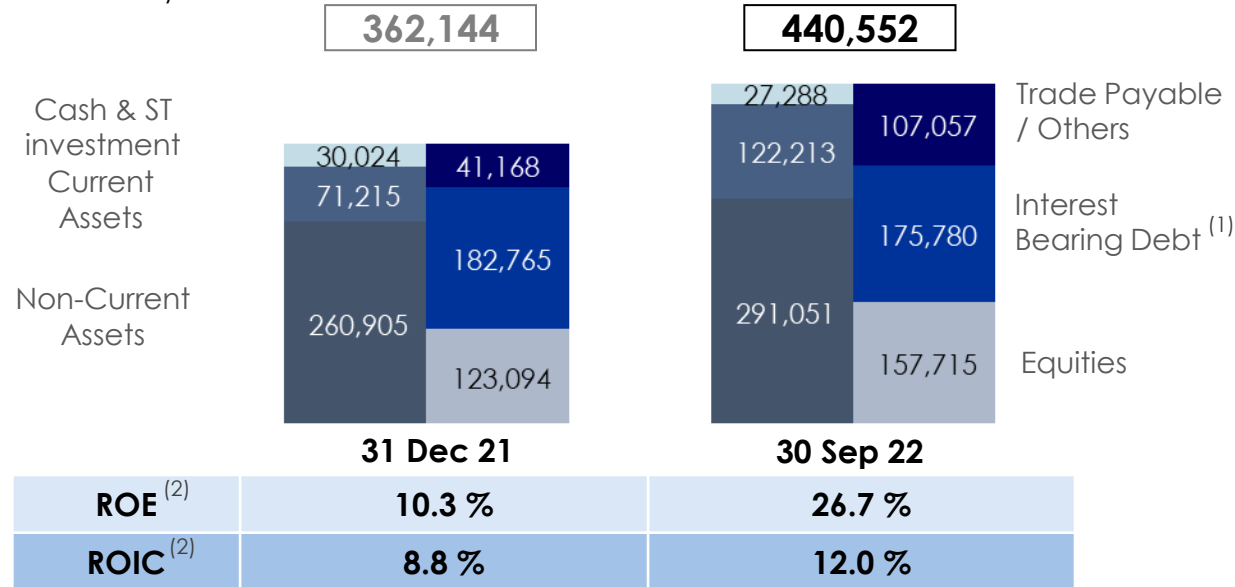
6,392	3,677	7,735	27,467	48,377	26,679
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Q3/22 TOP Group Financial Position & Financial Ratios



Statements of Financial Position

(Unit: million THB)



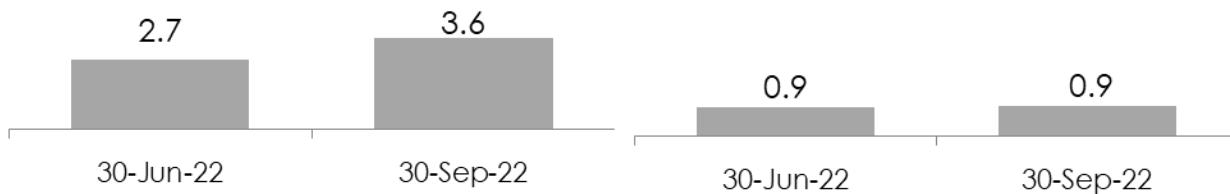
(1) Including current portion of Long-Term Debt

(2) Based on actual performance in the past 12 months

Financial Ratios

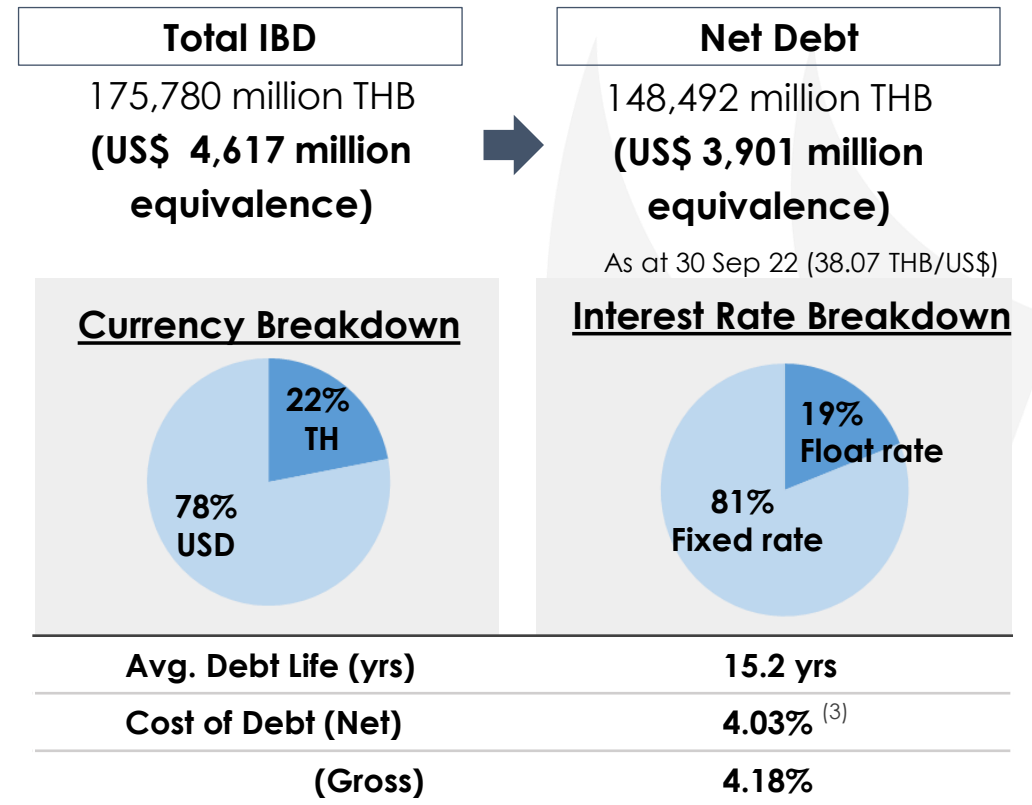
Net Debt ⁽⁴⁾ / EBITDA

Net Debt ⁽⁴⁾ / Equity



(4) As of 30 Sep 22 Net Debt 148,492 MB excluding lease liabilities 22,725 MB

Consolidated Long-Term Debt as at 30 Sep 22



(3) Due to yield enhancement



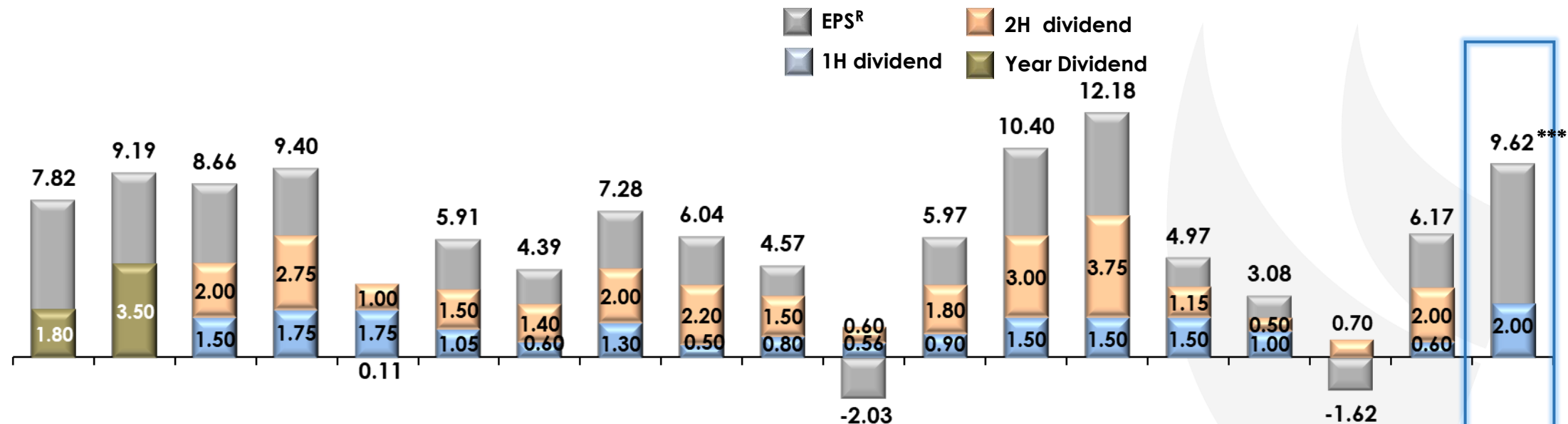
Dividend Payment



Dividend Policy :

Not less than 25% of consolidated net profit after deducting reserves, subject to cash flow and investment plan

Unit : THB/share



	FY/04	FY/05	FY/06	FY/07	FY/08	FY/09	FY/10	FY/11	FY/12	FY/13	FY/14	FY/15	FY/16	FY/17	FY/18	FY/19	FY/20	FY/21	1H/22
Annual DPS (Baht/share)	1.80	3.50	3.50	4.50	2.75	2.55	2.00	3.30	2.70	2.30	1.16	2.70	4.50	5.25	2.65	1.50	0.70	2.60	2.00
Dividend Payout	23% ^{**}	38%	40% ^{**}	48%	N/A	43%	45%	45%	45%	50% ^{**}	N/A	45%	43%	43%	53%	49%	N/A	42%	20% ^{***}
Dividend Yield*	4.0%	5.6%	5.6%	6.2%	5.2%	7.1%	4.0%	4.7%	4.2%	3.6%	2.3%	5.0%	6.7%	6.2%	3.1%	2.2%	1.6%	4.8%	3.9%
Avg TOP price	44.7	63.0	62.7	72.7	53.3	35.9	49.9	69.8	65.1	64.6	50.4	53.5	66.7	84.2	86.9	68.3	44.0	54.4	51.5

^R Based on restated financial statement

^{**} Dividend payout before restated ; 2004 = 25% , 2006 = 43% , 2013 = 45%

* Based on average TOP share price in each year

^{***} Based on net profit excluding gain on GPSC sale

TOP Group Strategic Investment Plan



Member of
Dow Jones
Sustainability Indices
Powered by the S&P Global CSA

CAPEX Plan (Unit US\$ million)

Updated as of Oct 2022

Project	Actual 9M/22	Estimated Budgeting for Investment Plan Q4/2022 - 2025
CFP project *	633	644
Total Ongoing CAPEX	35	132
Reliability, Efficiency and Flexibility Improvement	7	46
Infrastructure Improvement (i.e. New Bangphra Raw Water Line, Jetty 7&8, Site office preparation for fire water & fire water improvement)	10	8
Other Investments (i.e. Corporate Venture Capital - CVC , Digital Transformation)	18	78
TOP SPP Expansion	36	61
Olefins Investment	-	270
Total CAPEX	704	1,107

* CAPEX of CFP Project including the disposal of asset to transfer ownership in the Energy Recovery Unit (ERU) which is a part of the CFP Project

Notes: Excluding approximately 40 M\$/year for annual maintenance



STRATEGIC INVESTMENT PLANS



Thaioil Strategic Direction



Vision


**Empowering Human Life
through Sustainable Energy and Chemicals**

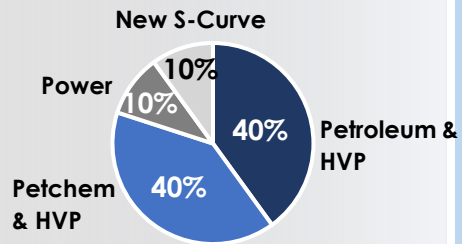
Strategic Objective

To be a competitive Energy & Chemicals company that delivers sustainable returns & better quality of life to all stakeholders

Measurement

Growth / Earnings Diversity / Returns / Sustainability / Stakeholders

Portfolio Strategic Direction



Effective Execution



People + Patronage + Partnership + Platform

Drive for Sustainability

Environment + Social + Governance

Thaioil's 2022 Strategic Direction



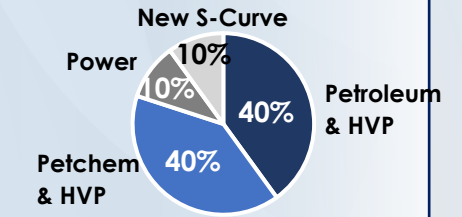
Needs to transform



Thaioil's Strategic Transformation Journey

Vision "Empowering Human Life through Sustainable Energy and Chemicals"

2030 Net profit aspiration



2018 – 2021
Accelerate the Reform

we are here

2022 – 2025
Building on Our Strong Foundation : IC2C

2026 – 2030
Post CFP : New Round of Growth

• Key strategic investment made

- 2018 : FID CFP
- 2021 : CAP Investment



3V's Strategy

Value Maximization

- **Petroleum:** CFP as a strong foundation
- **Petchem:** Aromatic/Olefins & to emphasize downstream
- **HVP:** Through own development & partnership

Value Enhancement

- To capitalize regional & investment playground, create marketing platform for Thaioil Group's today & tomorrow product portfolio

Value Diversification

- **Other New S-Curve:** Defensive strategy to step up effort on new ventures (bio, new energy)
- **Power:** Own use & growth along with GPSC/PTT

- Leveraged on 4P's (People, Patronage, Partnership, Platform)
- Sustainability as our license to grow

• Deliveries of investment : CFP & CAP2

• Renew growth

- IC2C
- PetChem downstream/HVP/ specialties
- New S-curve ventures



Clean Fuel Project (CFP) : Rationale & Timeline

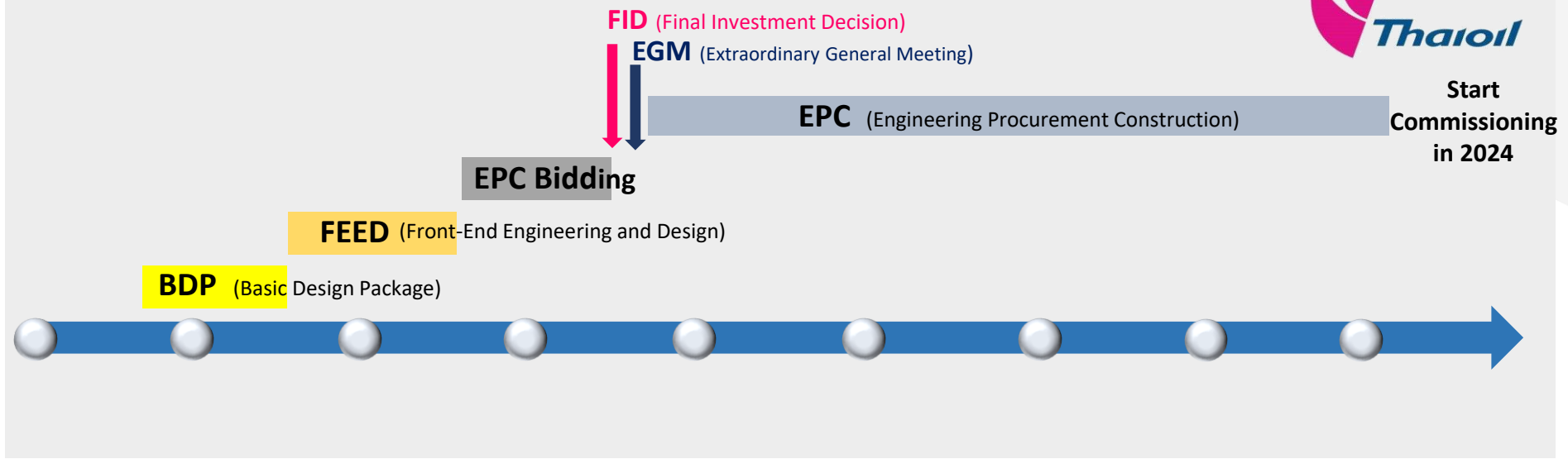
Project Rationale

- Risk of losing competitiveness to others regional refineries as more new refineries with higher capacity and more advanced technologies are on stream.
- Adjust product portfolio by producing high demand and clean product to serve customer needs and country's energy stability.
- Replace units i.e. CDU 1,2 which have been operating more than 50 and 40 years respectively.

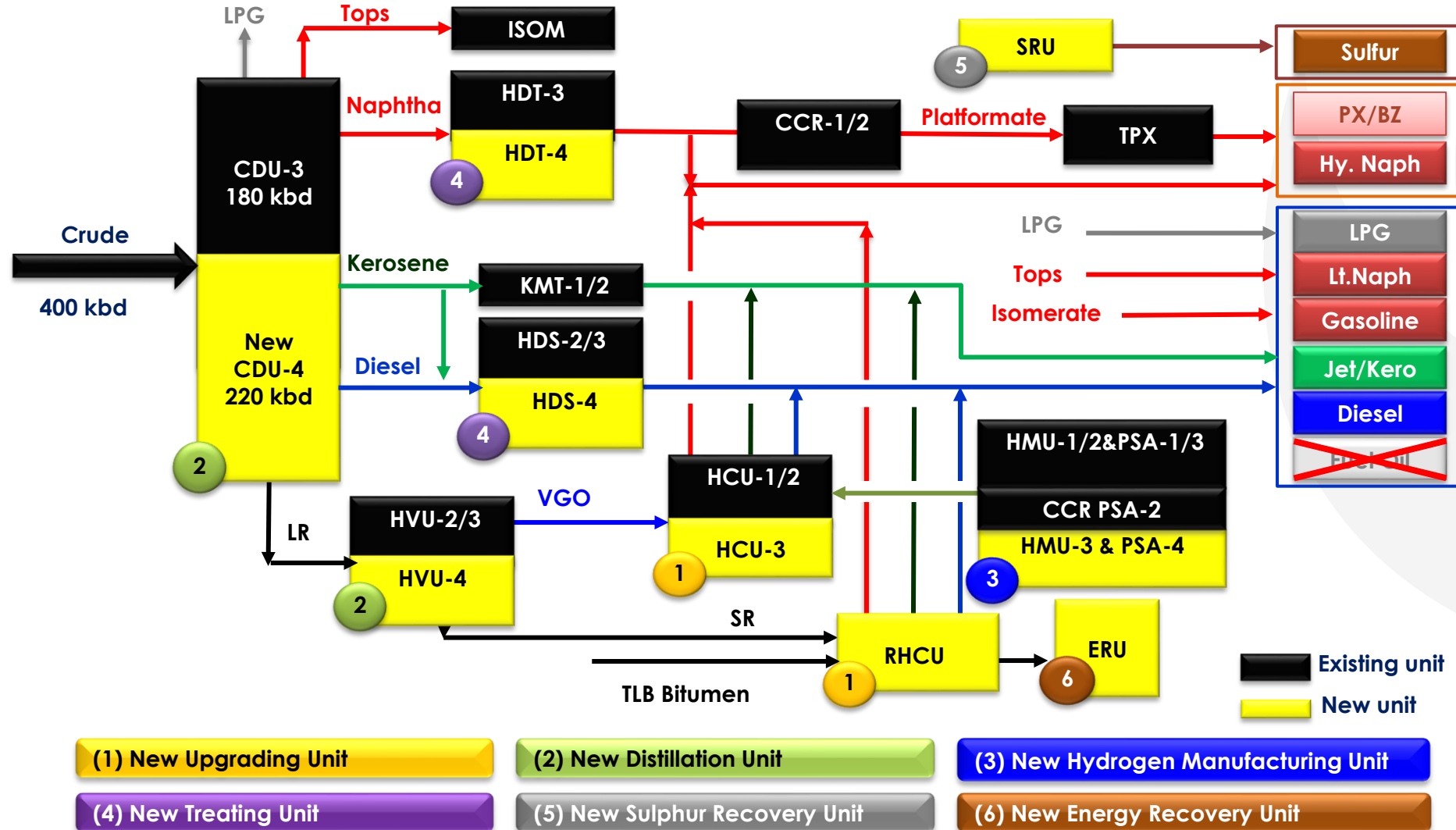
Project Cost

USD 4.825 billion. However, in order to lessen the Company's burden in CFP cost, company will seek a potential partner who is interested in investing in the Energy Recovery Unit (ERU) and will reduce the cost to not exceeding USD 4.174 billion

CFP Timeline



Scope of CFP & Technical Aspect



Clean Fuel Project (CFP)

Strengthen The Core



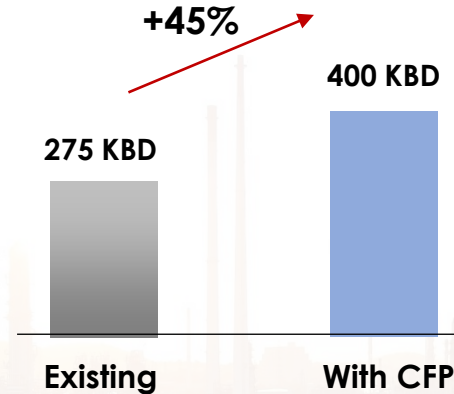
Project Description

- **Investment size:** 4,825 MUSD and with ERU (Power plant) carve out investment cost will be reduced to not exceed 4,174 MUSD

Going Forward in 2022-2024

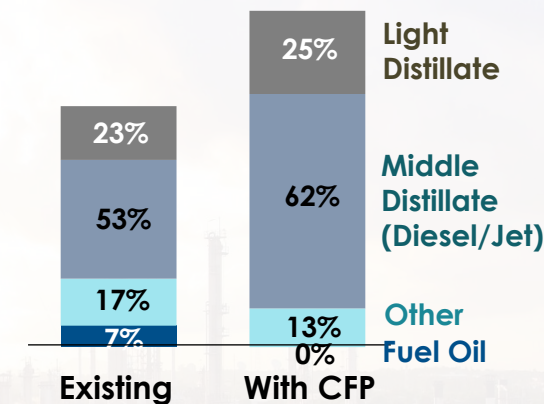
- Focus on construction at site i.e., equipment and module installation works amid COVID-19 control measures in 2022
- Implement measures to support CFP optimization & margin improvement and speed up progress
- Commence pre-commissioning and testing activities in 2023
- Gradually start operation in 2024

Capacity Growth



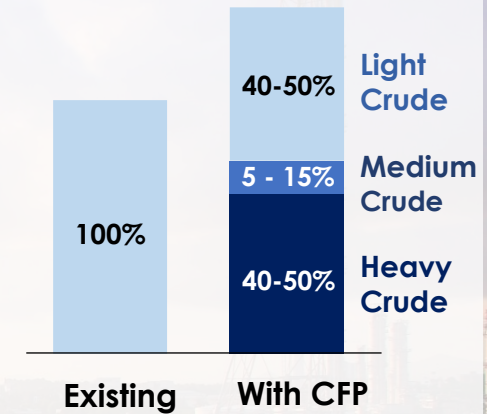
Upgrading Product Mix

Unit : % vol by grade

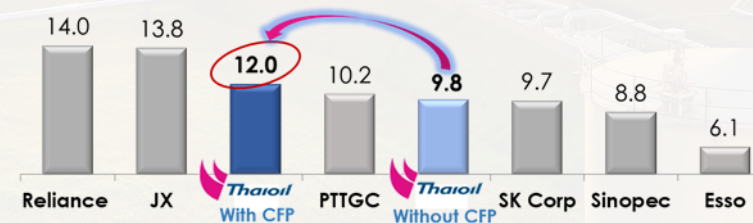


Feedstock Flexibility

Unit : % vol

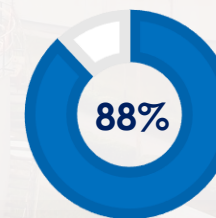


Overall CFP Progress

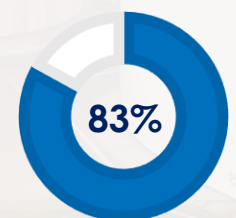


Overall CFP Progress

Project Progress
2018 - Q3 2022



Budget Utilization
2018 - Q3 2022

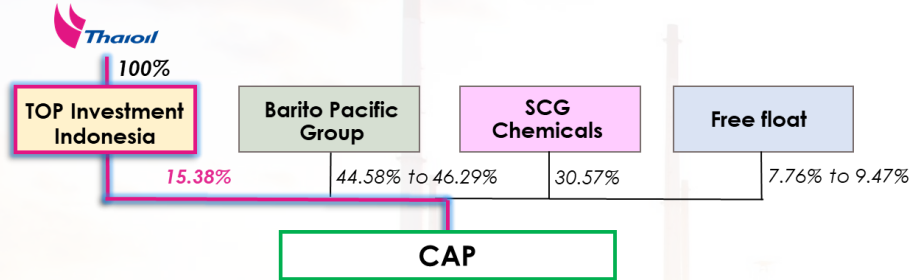


Olefins Investment in Indonesia (Chandra Arsi Petrochemical - CAP)



Transaction Summary

Investment Structure (Tranche 1&2)



Strategic Direction to IC2C Strategy

Execute our post-acquisition plan

Value Maximization:

Further extend Hydro-Carbon value chain to Olefins PetChem, in addition to existing Aromatics

Value Enhancement:

- Geographic expansion
- Platform for international growth

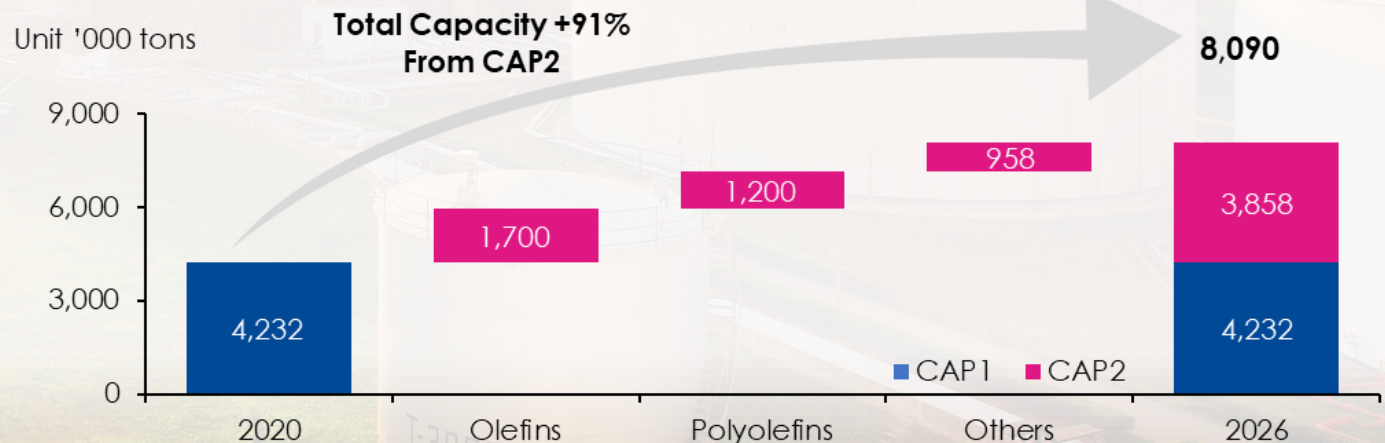
- ✓ Nominate 3 out of 15 BOCs in CAP
- ✓ Secondment 3 BoDs from TOP to CAP
- ✓ Assign CAP2 Package C Project Manager



Investment US\$ 1,183 mn

- 1st Tranche US\$ 913 mn 15.0%
- 2nd Tranche US\$ 270 mn 0.38% on CAP2 FID

CAP2 INTENDED TO DOUBLE THE CAPACITY OF CAP



Timeline



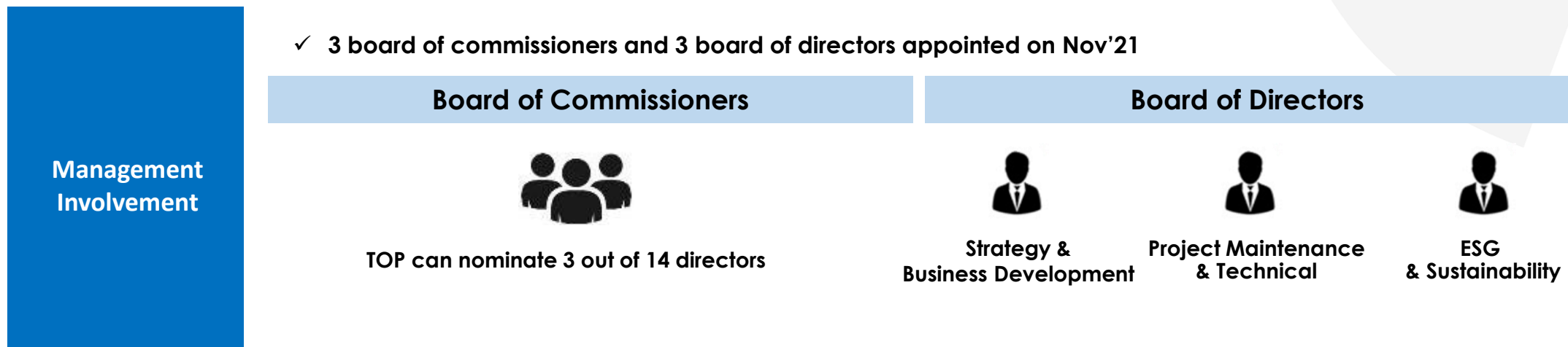
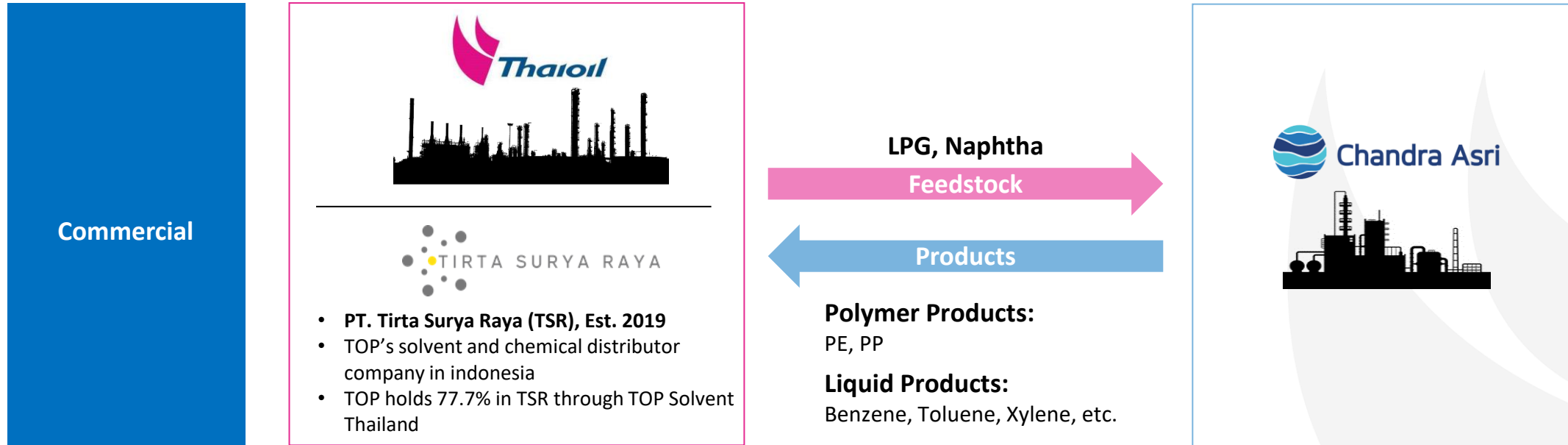
- First tranche completion by 14 Sep 21
- Realize contribution in Q4/21 onwards

Total capacity

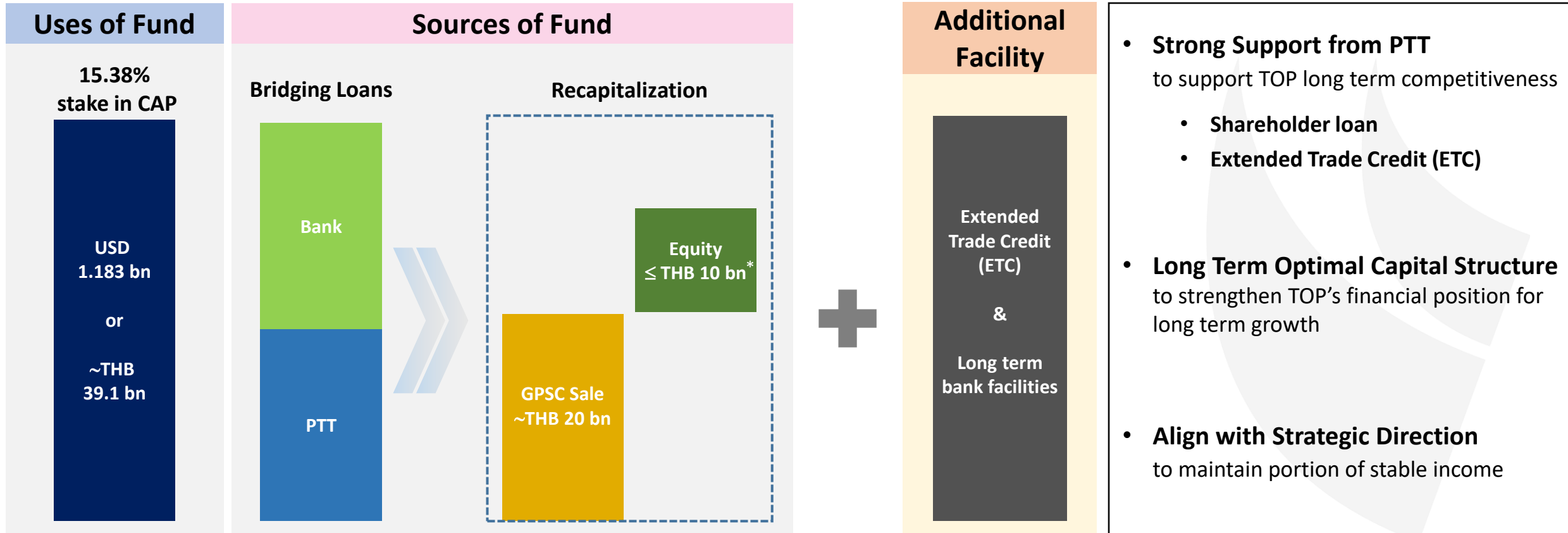


- CAP1 4.2 mtpa
- CAP1+2 8.1 mtpa

Key Partnership Arrangements



Funding Plan for the Transaction



*Excluding greenshoes

- **Strong Support from PTT** to support TOP long term competitiveness
 - Shareholder loan
 - Extended Trade Credit (ETC)
- **Long Term Optimal Capital Structure** to strengthen TOP's financial position for long term growth
- **Align with Strategic Direction** to maintain portion of stable income

Long-Term Recapitalization Plan and Short-term Liquidity Support



Objectives

- ✓ Return **Optimal Capital Structure** With Net D/E ~ 1.0x ⁽¹⁾
- ✓ Maintain **Investment Grade Credit Rating** in Short-term and **Credit Rating Upgrade** in Long-term ⁽²⁾
- ✓ Minimize **Impact to Shareholders**

Recapitalization

-  Sale of up to **10.8% GPSC Shares**⁽³⁾
-  Equity Offering of up to **~ THB 10,000 mm**⁽⁴⁾

Short-term Liquidity Support

-  **90-Day Extended Trade Credit Term from PTT**

Recapitalization Plan will Strengthen TOP's Capital Structure and Provide a Strong Foundation for the Next Stage of TOP's Growth Journey

(1) In line with internal policy and refinery and petrochemical peers

(2) RCF net debt to recover to over 10% after CFP COD

(3) Further details of the transaction to be announced and approved by the board of directors meeting and EGM (if required)

(4) Further details of the offering structure to be announced and approved by the board of directors meeting and EGM

Recapitalization Plan



<p>Transaction</p>	<p>Recapitalization plan for CAP investment funded by bridging loan, will consist of:</p> <ol style="list-style-type: none"> GPSC Share Sale at 10.78% or 304,098,630 shares to PTT and/or Siam Management Holdings Company Limited (“SMH”) (100% subsidiary of PTT) Equity Offering of up to 239.2 mm shares with Greenshoe of up to 35.9 mm shares (if any) 												
<p>Objectives</p>	<ul style="list-style-type: none"> ✓ Main objective is to repay bridging loan for the strategic investment in CAP ✓ Maintain optimal capital structure with expected net debt/equity of less than or equal to 1 time ✓ Maintain investment grade of company crediting rating 												
<p>Completion</p>	<p>Within 2022</p>												
<p>Timeline</p>	<p>The timeline consists of a horizontal blue line with five key milestones marked by green checkmarks and yellow stars. Below the line, a grey arrow labeled 'Approval Process' spans from the first two milestones. Two detailed process boxes are located below the timeline: 'GPSC Share Sale Process' and 'Public Offering Process'.</p> <table border="1"> <thead> <tr> <th>Date</th> <th>Event</th> </tr> </thead> <tbody> <tr> <td>17 Feb 22</td> <td>BoD Approval for Recap Plan</td> </tr> <tr> <td>7 Apr 22</td> <td>AGM Approval for Recap plan</td> </tr> <tr> <td>In Jun 22</td> <td>GPSC Share Sale Execution</td> </tr> <tr> <td>19 Aug'22</td> <td>Record Date for equity offering</td> </tr> <tr> <td>9-19 Sep'22</td> <td>Equity Offering Execution</td> </tr> </tbody> </table> <p>GPSC Share Sale Process</p> <ul style="list-style-type: none"> GPSC share transfer to PTT and/ or SMH <p>Public Offering Process</p> <ul style="list-style-type: none"> Filing submission: after AGM Offering & subscription process Newly issued shares to be listed in the SET 	Date	Event	17 Feb 22	BoD Approval for Recap Plan	7 Apr 22	AGM Approval for Recap plan	In Jun 22	GPSC Share Sale Execution	19 Aug'22	Record Date for equity offering	9-19 Sep'22	Equity Offering Execution
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17 Feb 22	BoD Approval for Recap Plan												
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Recapitalization Plan

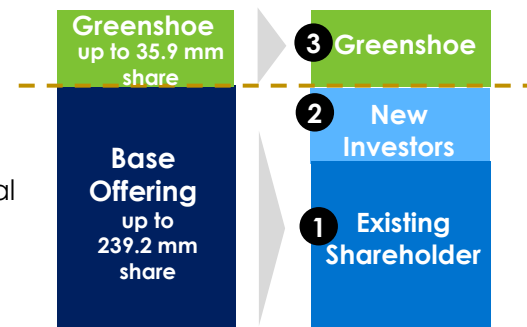


Equity Offering

Offering Structure

1. Structure

- Existing shareholders tranche**
to eligible domestic & foreign existing shareholders
- New investors tranche**
to new retail (domestic) and institutional investors (domestic and international - RegS & 144A)
- Greenshoe** (if any) for price stabilization. (PTT will be shares lender)



2. Minimum % of PPO PPO > 80%

3. Maximum number of shares up to 275.12 mm shares, inclusive of Greenshoe (if any)

Key Benefits of Structure



Highest fund-raising certainty through PO's extensive investor reach and allocation flexibility



Optimal offering price determination through concurrent offering and book building



Minimize dilution to existing shareholders

Completion

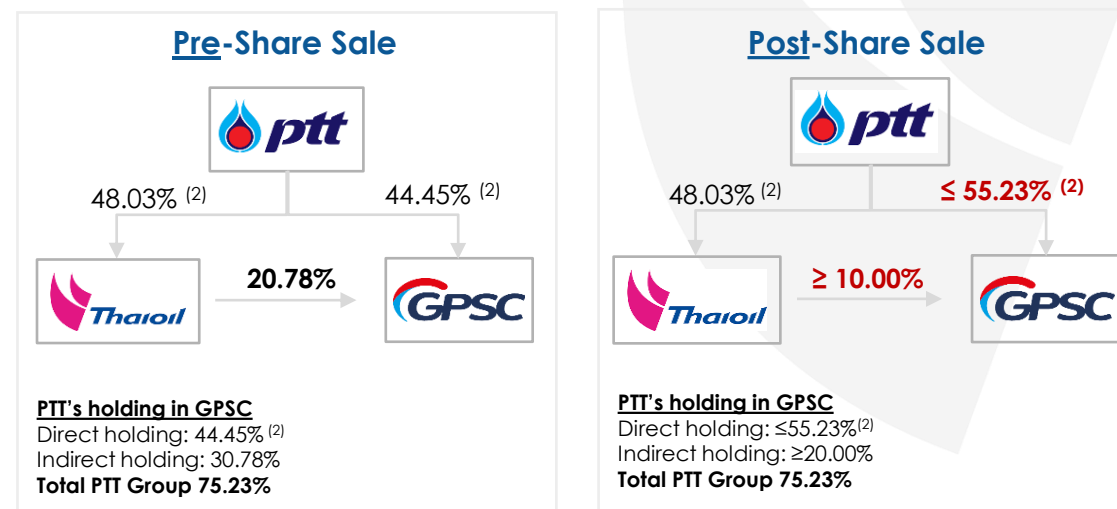
Q3 - Q4/22

GPSC Share Sale

Transaction Details

- TOP sells GPSC shares 10.78% or 304.1 million shares to PTT and /or SMH (100% subsidiary of PTT)
- Total proceeds from GPSC share sale of ~ 22,351 MB⁽¹⁾
- Book gain from share sale and reclassification on P&L

Holding Structure in GPSC



Completion

Q2/22

(1) Before deduction of GPSC's dividend

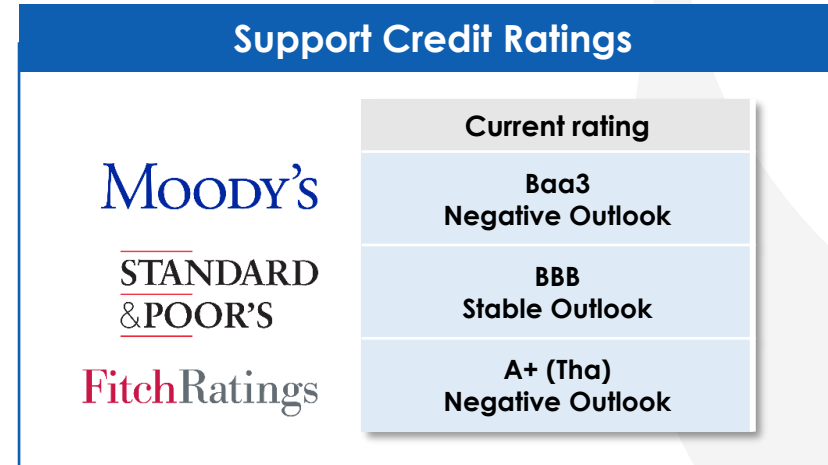
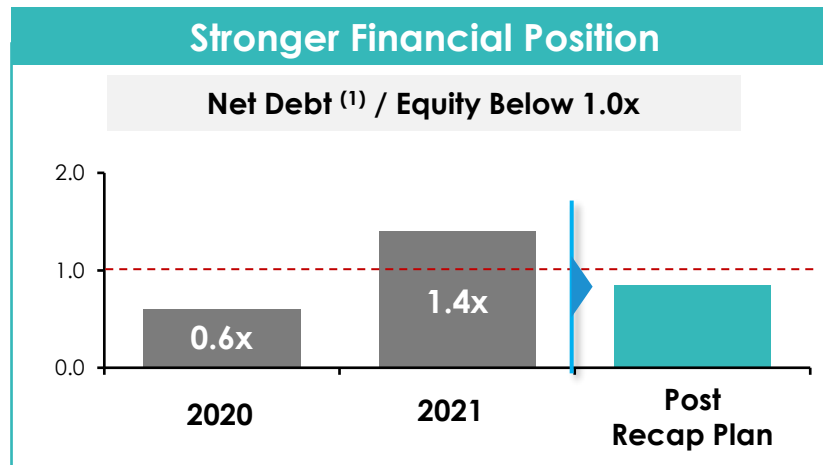
(2) Include shares held via Siam Management Holding Company Limited (SMH)

Key Benefits of Recapitalization Plan



Stronger Financial Position

- Maintain optimal capital structure with expected net debt/equity of less than or equal to 1.0x post recapitalization
- Maintain investment grade of company credit rating



Positive financial impact of P&L from GPSC Shares Sale



Allows TOP to be in the best position to achieve strategic direction of future business expansion plans

(1) Net debt includes lease liabilities

New S-Curve

“ **Defensive move** for new ventures & support CO2 reduction ”



1 Step-out (JV/M&A)



1.1 Bio

- Biojet
- Biochem/Bioplastic



1.2 Hydrogen/CCUS

2 CVC

- Discover new trend/technology & flown back to support HVB, New S-Curve & BAU/Existing Business

Power

“Provide **stable earnings** ”

1 Own use

- Reliable support for **Thaioil Group**

2 Growth along PTT Group (GPSC)

- Support GPSC to achieve **20 GW** by 2030



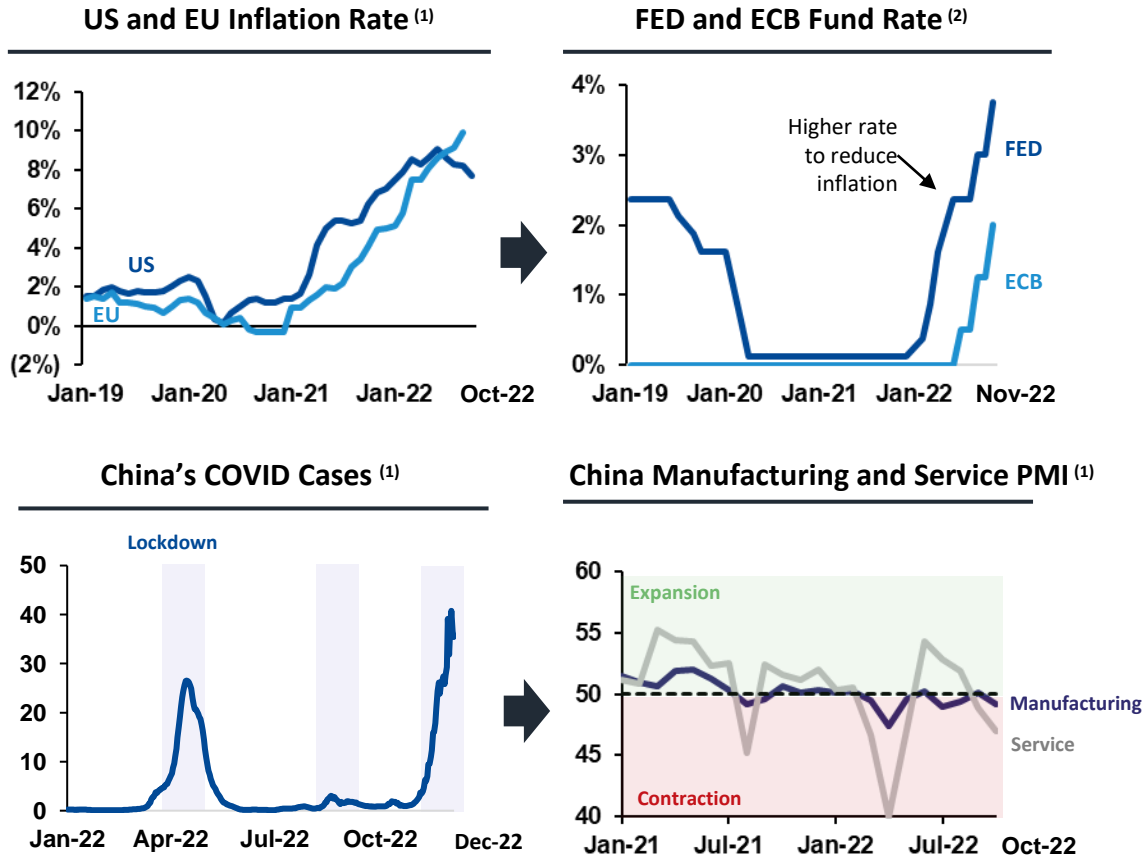


2023 OUTLOOK

- Crude Oil
- Refinery
- Petrochemical
- Base Oil & Bitumen



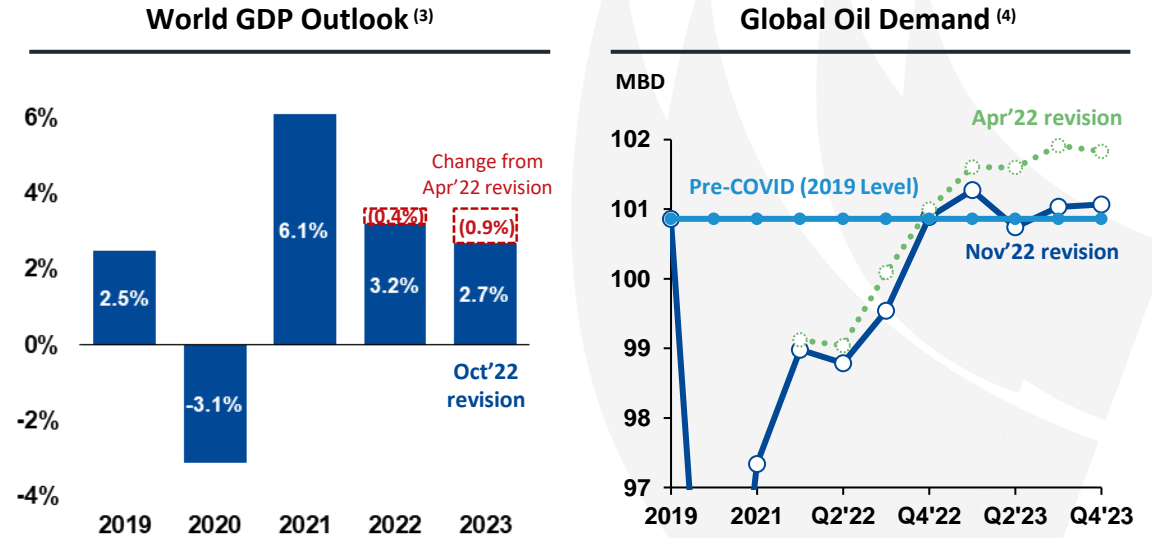
A High Inflation and China's Dynamic Zero-COVID Policy to Pressure Economic Growth



(1) Source : Reuters (Nov'22)
(2) Source : FED, ECB and Reuters (Sep'22)

(3) Source ; IMF (Apr'22), (Oct'22)
(4) Source : EIA (Apr'22 and Nov'22)

B Slower Demand Growth on Softer GDP



Base Case

	GDP Growth	Demand Growth, YoY
2022	+3.2	+2.2
2023	+2.7	+1.5

Recession Case

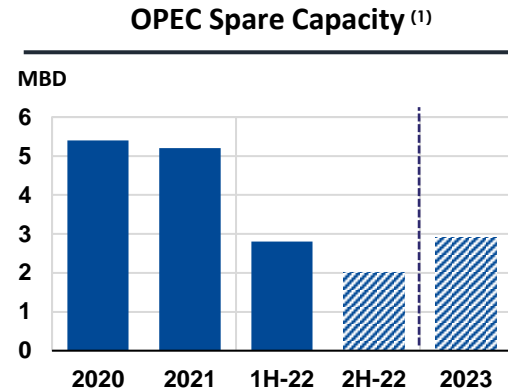
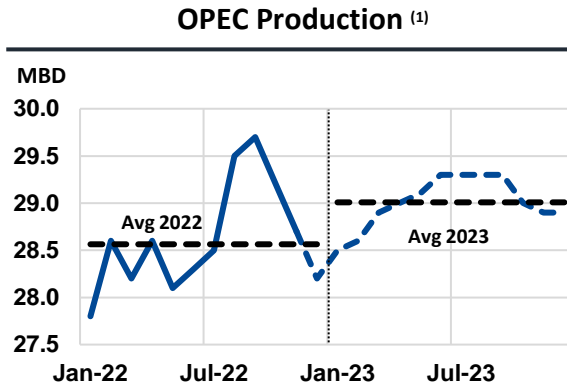
	GDP Growth	Demand Growth, YoY
2022	+2.9	+2.0
2023	+1.0	+0.9

Demand growth led by Asia, but weighted down by US and EU

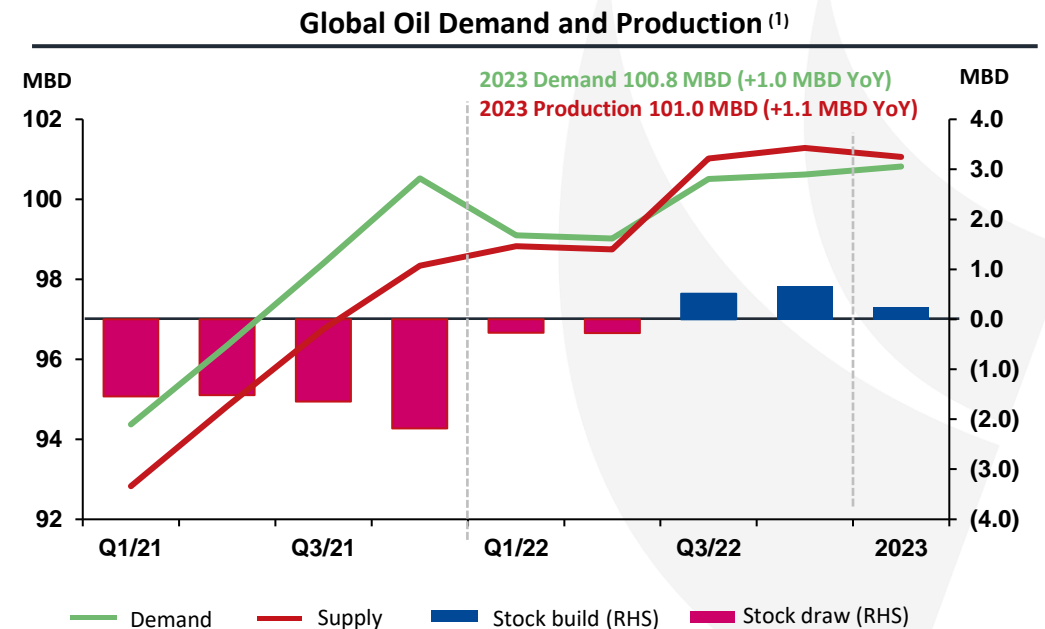
Balancing Market with Uncertainties on Demand Growth



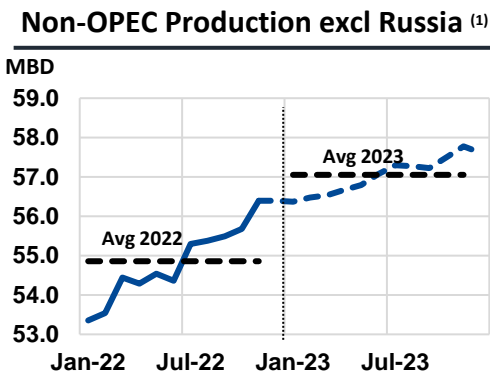
A Limited Increase in OPEC Production amid Low OPEC Spare Capacity



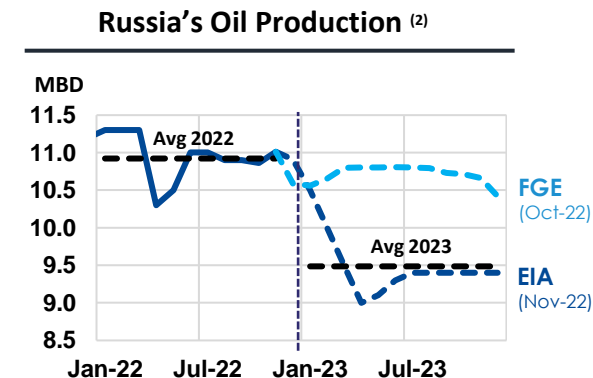
Balancing Market with Uncertainties on Demand Growth



B Higher Non-OPEC Production Mainly from U.S.



C Limited Russia Supply Disruption following Price Cap Agreement



Key Factor to Watch in 2023

- Global Economic Growth
- Russia's Oil Supply

(1) Source : EIA (Nov-22)

(2) Source : EIA (Nov-22), FGE (Oct-22)

Normalizing Refinery Margin to Slightly Above Pre-Covid Level



Singapore Cracking GRM (\$/BBL)

Avg. 2017: \$7.1/BBL

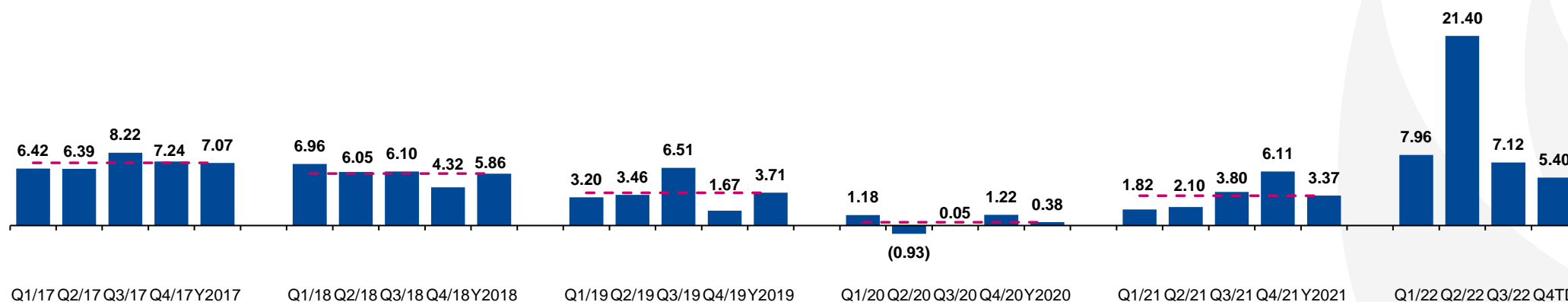
Avg. 2018: \$5.9/BBL

Avg. 2019: \$3.7/BBL

Avg. 2020: \$0.4/BBL

Avg. 2021: \$3.4/BBL

2022TD⁽¹⁾: \$10.5/BBL



2023 Key Highlights (vs. 2022)

Gasoline : Steady Demand amid Low Inventory

Jet/Kero : Resuming Air Travelling Demand

Gasoil : Steady Demand and Lower Russian Supply

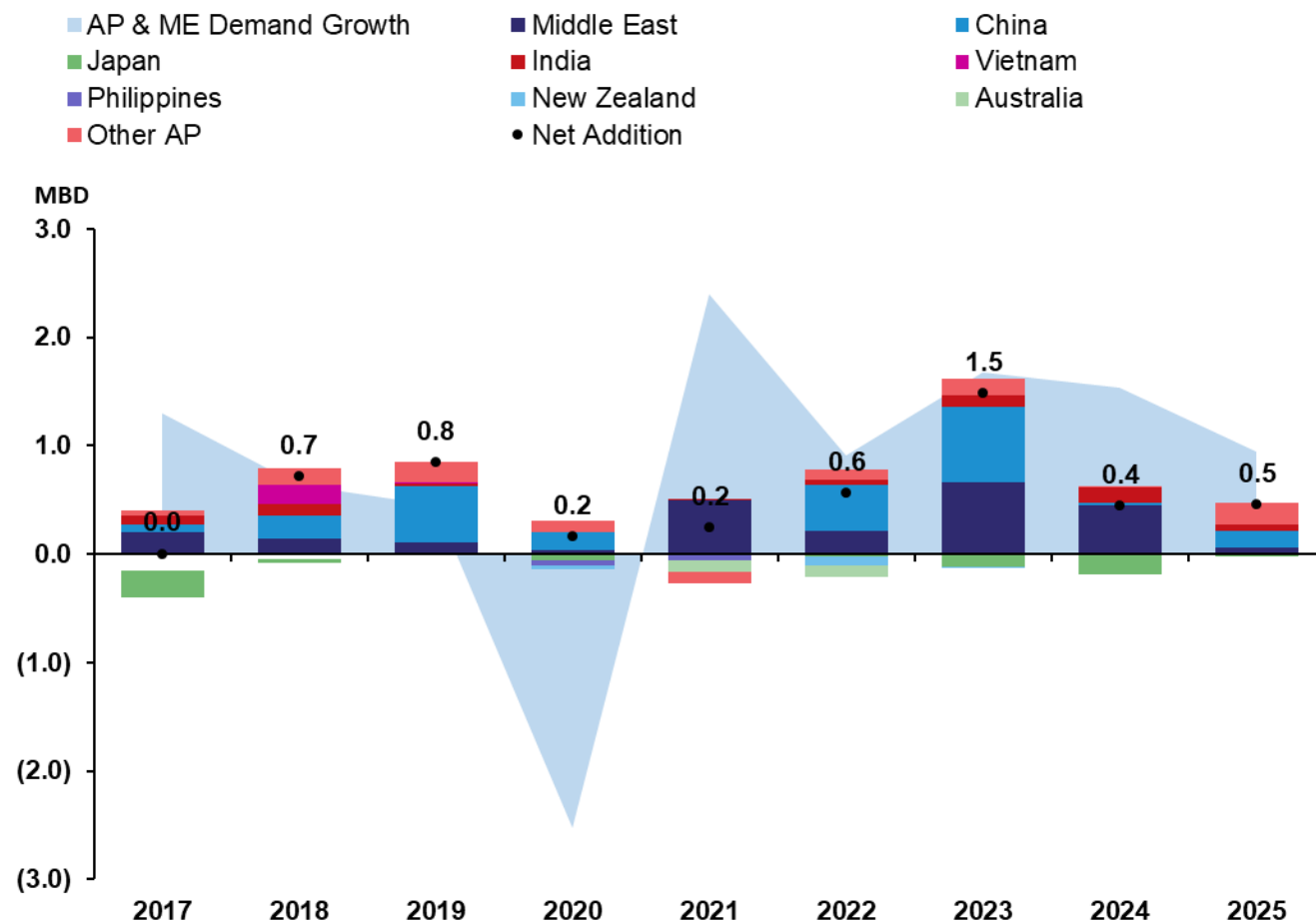
Fuel Oil : Higher Demand and Lower Russian Supply

(1) QTD as of 8 Dec 22

High Demand Growth to Offset New Capacity Addition in 2023



AP/ME Effective CDU Addition VS Additional Demand



Source: FACTs Semi Annual Reports, Spring 2022 (Oct'22)
Note: Adjusted capacity based on start-up period (effective additional capacity)

Key Projects : New Addition

Country	Company	CDU (KBD)	Start-up
Saudi Arabia	Jizan ¹ Delay from Q2'20	400	Q2'21
China	Rongsheng II ² Delay from Q3'21	400	Q1'22
Malaysia	Petronas ³	300	Q3'22
India	Hindustan Petroleum Delay from Q4'20	125	Q3'22
China	Local Shenghong Petrochemical Delay from Q4'21	320	Q4'22
China	CNPC/PDVSA Delay from Q3'21	400	Q4'22
China	Local Hebei	160	Q1'23
Oman	Al-Duqm Delay from Q1'23	230	Q2'23
Kuwait	Al Zour Delay from Q4'20	615	Q2'23
China	Sinopec Hainan	100	Q3'23

1. Runs at its 50% and expect to reach full capacity in 2H'22
2. Received crude quotas in Q4'21 and expected to run at full capacity in Q2'22
3. Resuming production after shut in 2020 due to explosion

Key Projects : Closure

Country	Company	CDU (KBD)	Closure
Malaysia	Petronas	-300	Q3'22
China	Local Refineries	-100	Q3'22
Japan	ENEOS	-112	Q4'22
Japan	ENEOS	-119	Q4'23
Japan	Idemitsu	-112	Q4'24

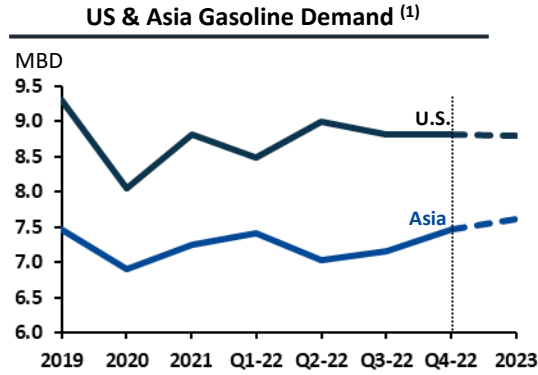
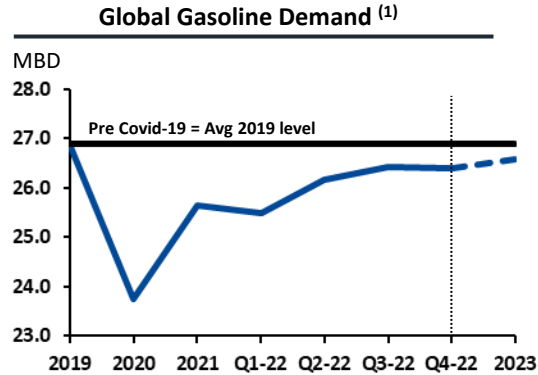
Gasoline : Steady Demand amid Low Inventory

Jet/Kero : Resuming Air Travelling Demand



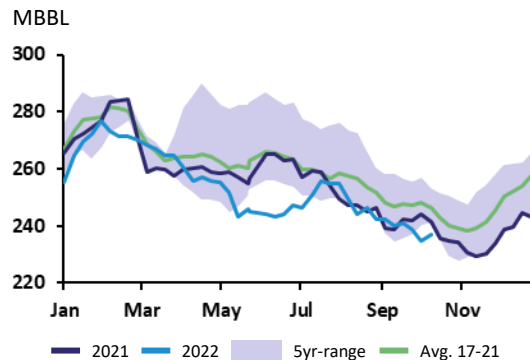
Gasoline Market

1 Steady Demand Growth, Pressured by Recession Fears especially in U.S.



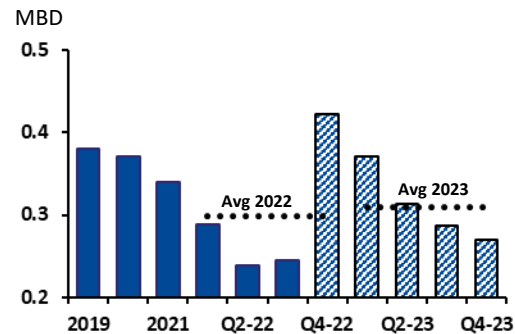
2 Low Inventories with Stock Below 5-Year Average

Weekly US/ARA/Sing Gasoline Stock (2)



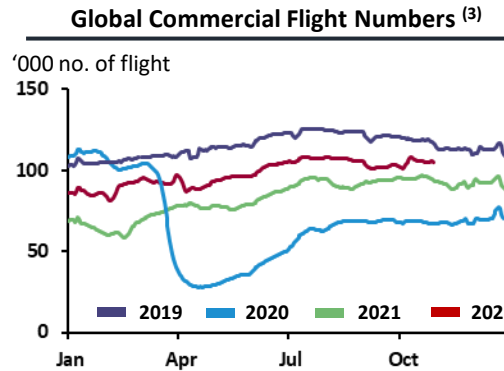
3 Higher Supply from China with Massive Export Quota

China's Gasoline Export (1)

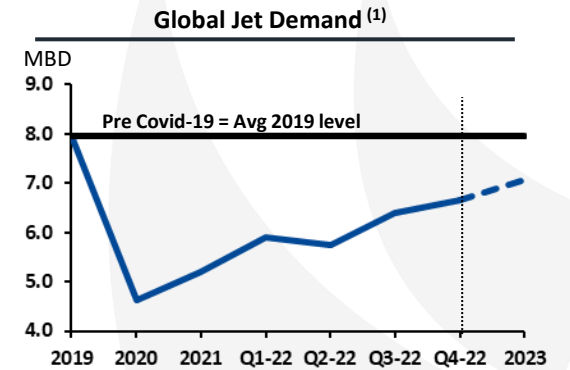


Jet/Kero Market

1 Higher Travelling Activity after Easing Travel Regulation

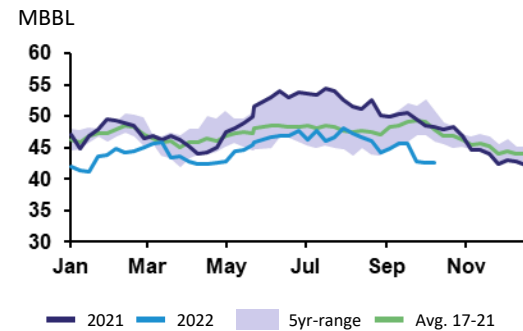


2 Increasing Demand from Travelling and Winter



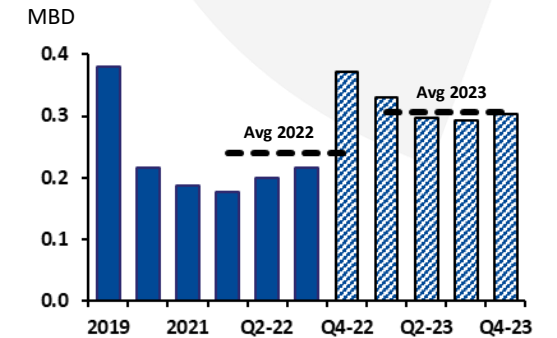
3 Low Inventories with Stock Below 5-Year Average

Weekly US & ARA Jet/Kero Stock (2)



4 Higher Supply from China with Massive Export Quota

China's Jet/Kero Export (1)



(1) Source: FGE (Oct'22)

(3) Source: Flightradar24 (Aug'22)

(2) Source: Reuters (Oct'22)

Gasoil : Steady Demand and Lower Russian Supply

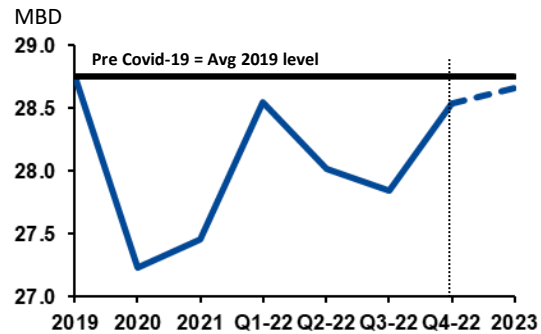
Fuel Oil : Higher Demand and Lower Russian Supply



Gasoil Market

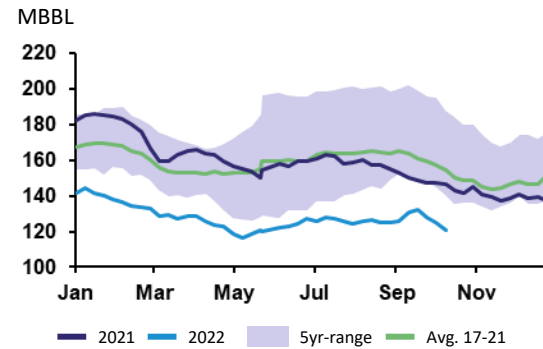
1 Steadily High Demand following GDP Growth

Global Gasoil Demand (1)



2 Low Inventories with Stock Below 5-Year Average

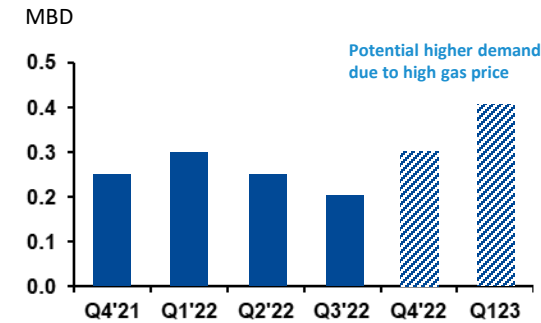
Weekly US/ARA/Sing Middle Distillate Inventory (2)



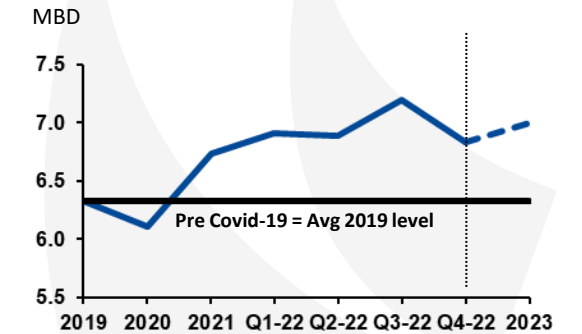
Fuel Oil Market

1 Higher Fuel Oil Demand, with Potential Upside from Gas-to-Oil Switching Demand from High Gas Price

Gas-to-Oil Switch Demand for FO (4)

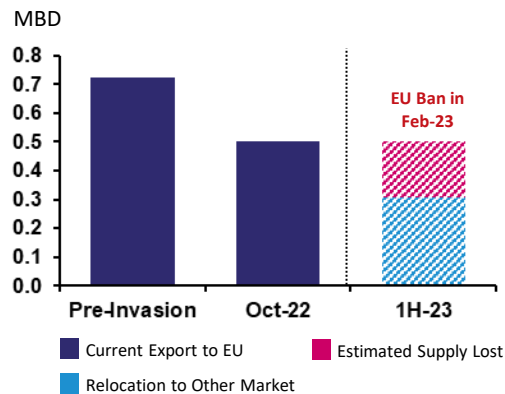


Global Fuel Oil Demand (1)



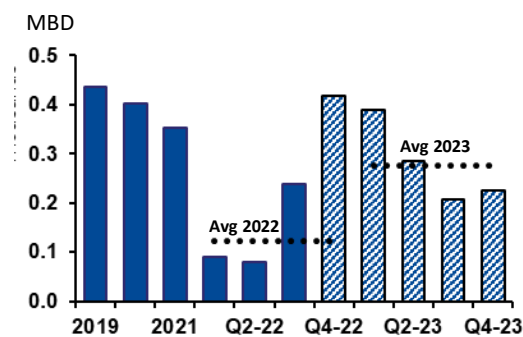
3 Lower Russia Supply after EU ban import from Feb-23 onwards

Russia's Export Volume to EU Market (3)



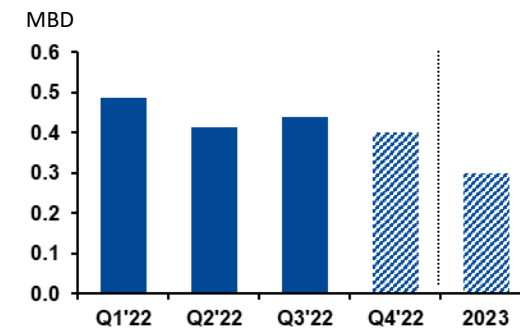
4 Higher Supply from China New Massive Export Quota

China's Gasoil Export (1)



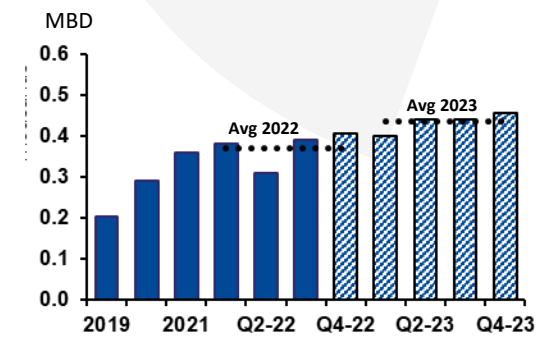
2 Slightly Lower Russia's Supply after EU ban

Russia's Fuel Oil Export (3)



3 Higher Supply from China New Massive Export Quota

China's Fuel Oil Export (1)



(1) Source: FGE (Oct'22)

(2) Source: Reuters (Oct'22)

(3) Source: Energy Aspect (Oct-22)

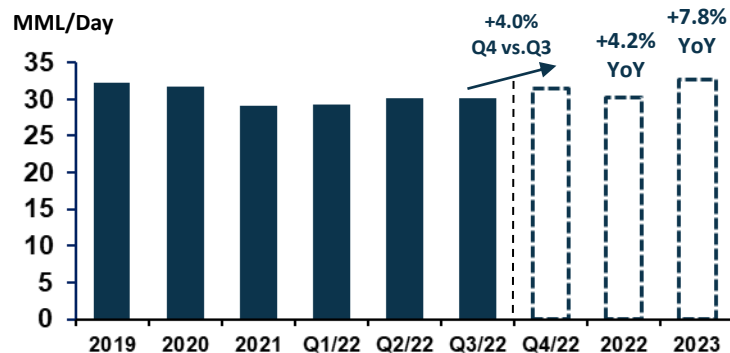
(4) Source: Platts (Oct'22)

Recovering Domestic Gasoline, Gasoil, and Jet Demand in 2023 while Fuel Oil Slowdown



A Higher Gasoline Demand from Higher Travel Mobility

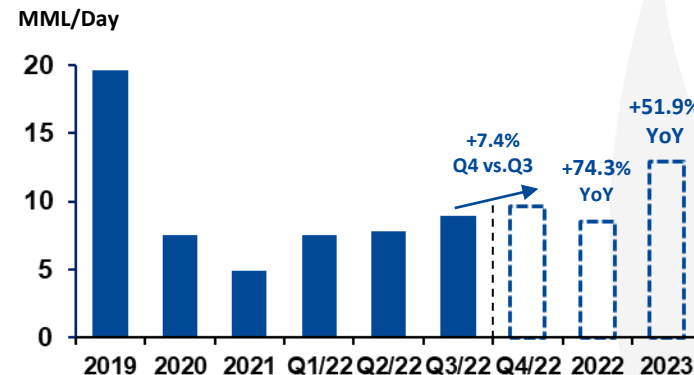
Gasoline Demand ⁽¹⁾



- Estimate GDP 3.8% (+)
- Higher passenger car sales (+)
- Higher travel mobility compared to 2022 (+)

B Higher Jet Demand from Fully Opening the Country

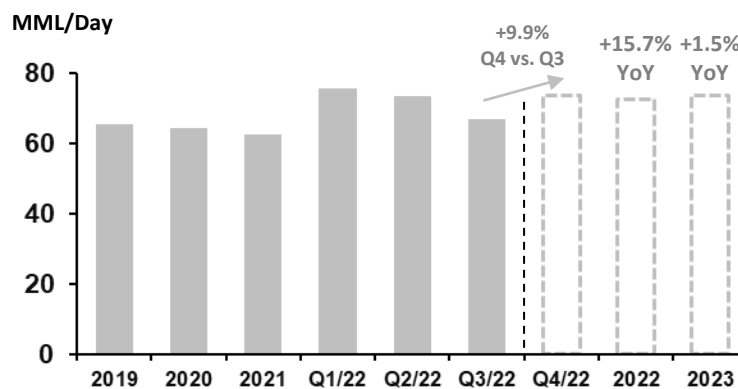
Jet Demand ⁽²⁾



- Higher tourist numbers to 21.5 million (110 % YoY) or 54% of pre-covid level (+)
- Higher flight numbers (+)

C Higher Gasoil Demand from Transportation and Power Plant

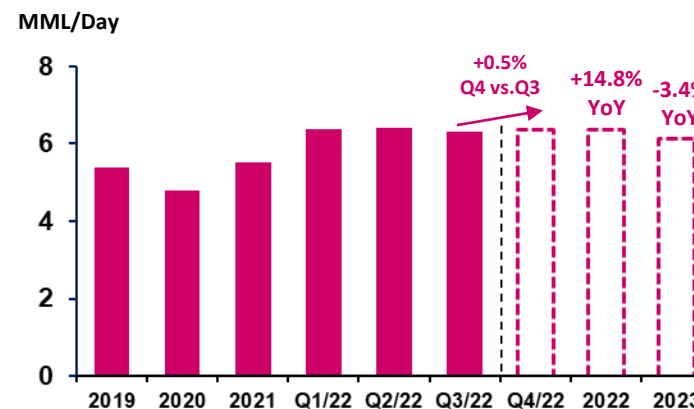
Diesel Demand ⁽³⁾



- Improving domestic economic activities and transportation.
- Higher demand of power plants by 4% YoY, due to high LNG prices (+)
- Higher commercial car sales (+)

D Slower Demand in 2023 from Slower Export Growth

Fuel Oil Demand ⁽⁴⁾



- Export volume growth by 2.5-3.0% in 2023 due to slowdown of world economic activity (-)

(1,3) Source : DOEB , FTI, PTT and TOP estimation (Oct'22) , (2,4) Source : DOEB , MOF, TNSC, PTT and TOP estimation (Oct'22)

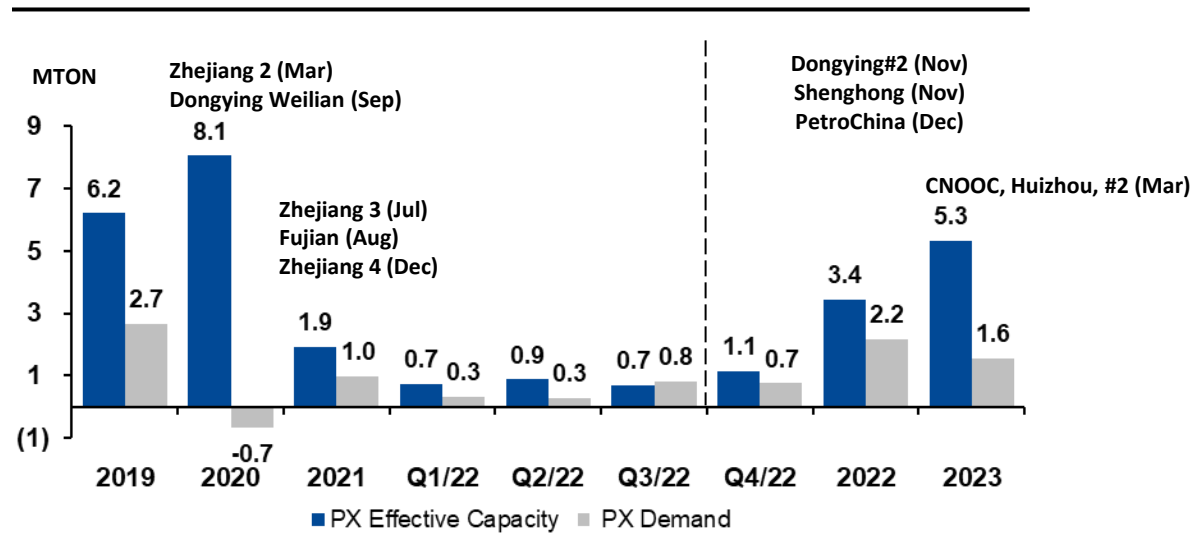
Challenging Aromatics Market from Over Built Capacity



Member of
Dow Jones
Sustainability Indices
Powered by the S&P Global CSA

A High Capacity Start-up to Pressure PX Market amid Improved Textile Demand

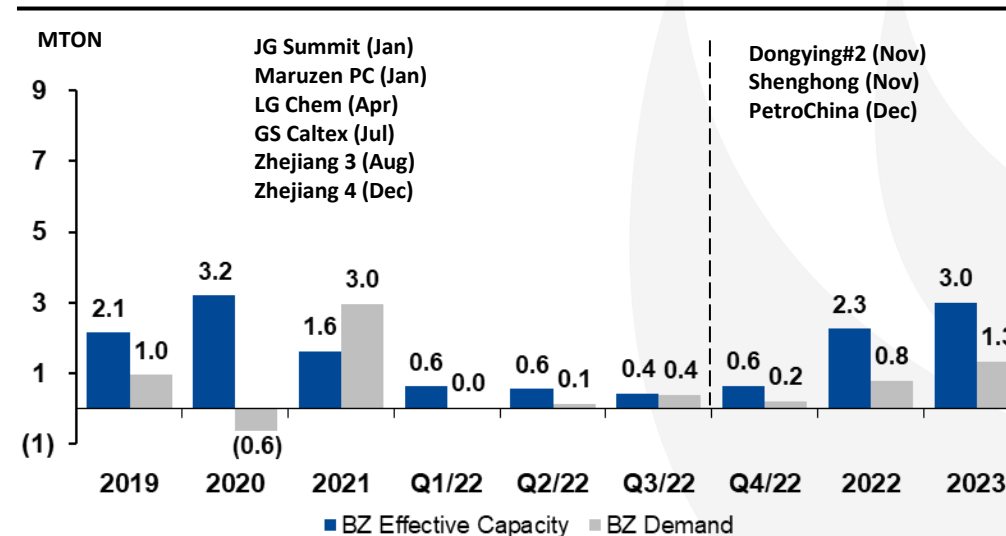
AP/ME PX Capacity Addition vs. Demand Growth



Country	PX Company	Nameplate Capacity (KTON)	Start-up Period
China	Sinopec Jiujiang Petrochemical	890	Jun'22<Dec'22
China	Dhonying Weilian #2	1000	Sep'22>Nov'22
China	Shenghong Refinery (Lianyungang)	2800	Sep'22>Nov'22
China	PetroChina Guangdong	2600	Dec'22
China	CNOOC, Huizhou #2	1500	Mar'23

B High BZ Capacity Addition to Limit Market amid Stronger Demand Growth from Possible Easing COVID-19 Lockdown in China

AP/ME BZ Capacity Addition vs. Demand Growth



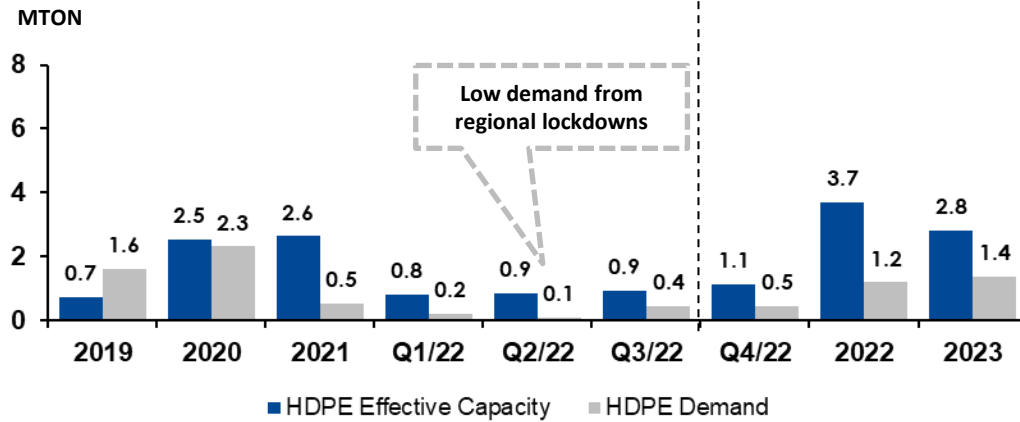
Country	BZ Company	Nameplate Capacity (KTON)	Start-up Period
China	Sinopec Jiujiang Petrochemical	300	Jun'22<Dec'22
India	HPCL/Mittal Energy	240	Aug'22
China	Dhonying Weilian #2	330	Sep'22>Nov'22
China	Shenghong Refinery (Lianyungang)	1000	Sep'22>Nov'22
China	PetroChina Guangdong	870	Dec'22
China	CNOOC, Huizhou #2	500	Mar'23
Vietnam	Long Son PC	200	Mar'23

Soft Olefins Market from Continuing Large Capacity Addition and Economic Uncertainties amid Recovering Demand Growth



A Large HDPE Capacity Start-up, with Improving Demand from Possible Easing COVID-19 Lockdown in China

AP/ME HDPE Capacity Addition vs. Demand Growth ⁽¹⁾

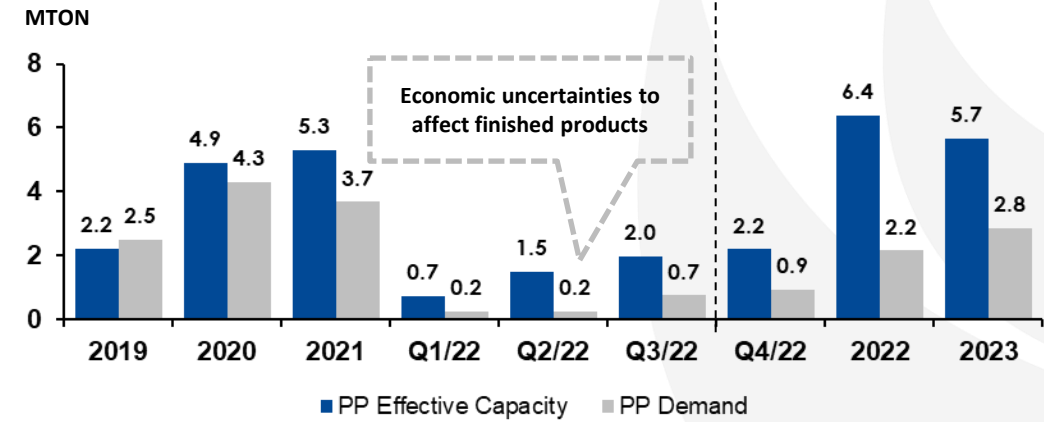


Major HDPE Plant Start-up in Q4/22 - 2023

Country	HDPE Company	Nameplate Capacity (KTON)	Start-up Period
India	HPCL/Mittal Energy	850	Dec'22
China	PetroChina	800	Jan'23
Philippines	JG Summit	250	Mar'23
Vietnam	Long Son PC	450	Mar'23
China	Shangdong Jinghai	400	Apr'23
China	Sinopec Hainan	300	Apr'23

B Continuing PP Capacity Addition mainly from China amid Demand Recovery from Possible Easing COVID-19 Lockdown in China

AP/ME PP Capacity Addition vs. Demand Growth ⁽¹⁾



Major PP Plant Start-up in Q4/22 - 2023

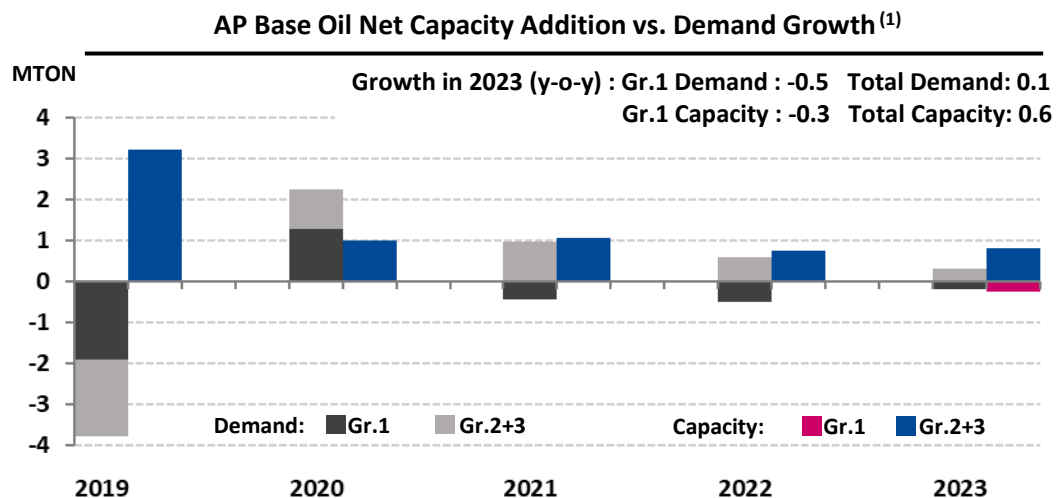
Country	PP Company	Nameplate Capacity (KTON)	Start-up Period
China	Guangxi Huayi	300	Dec'22
China	PetroChina Guangdong	500	Dec'22
China	Zhongjing 2	600	Dec'22
China	Zhongjing 3	600	Jan'23
Thailand	HMC	250	Feb'23
China	Sinochem Hongrun	450	Feb'23
Vietnam	Long Son PC	400	Mar'23
India	Bharat	450	Aug'23
India	HPCL Rajasthan	490	Aug'23

(1) Source : CMA Fall 2022 and ICIS (Oct'22)

Softer Base Oil Market on More Supply from New Capacity and Higher Feedstock Price



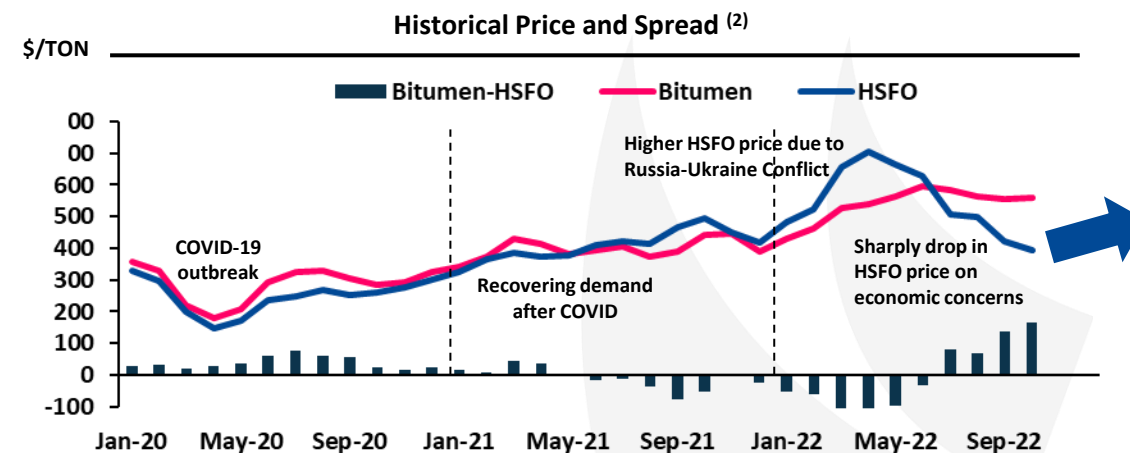
A Pressured by Gr.2/3 Capacity Addition but Permanent Closure Of Gr.1 Plant to Limit Downside



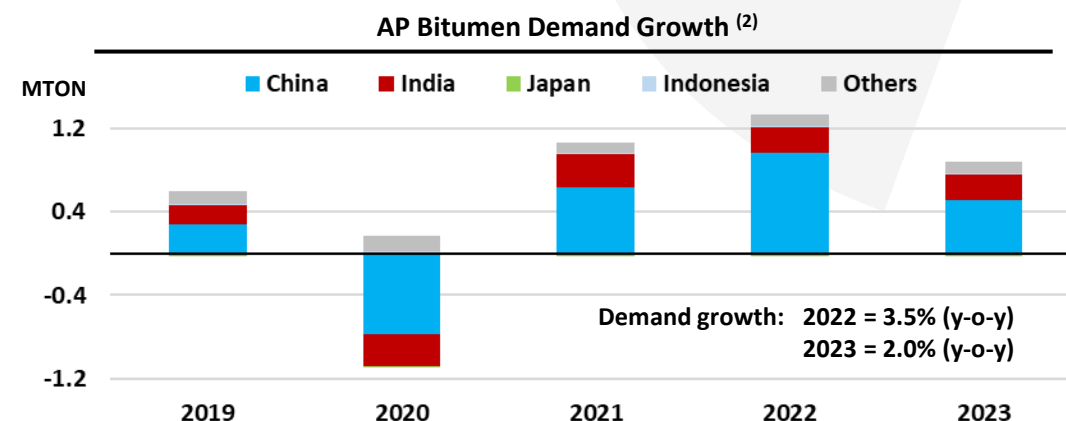
Plant Start-up and Closure in Q4/22 - 2023

Country	Company	Base Oil Group	Nameplate Capacity (KTON)	Period
China	Xinji-Feitian	2/3	250	Sep'22
China	Hainan Handi Sunshine	2/3	800	Oct'22
Japan	Eneos (Wakayama)	1	-360	Oct'23
India	IOC (Gujarat)	2/3	235	2023

B Higher Feedstock Price to Pressure Bitumen Spread



C Stable Bitumen Market on Remaining Growth in Bitumen Demand

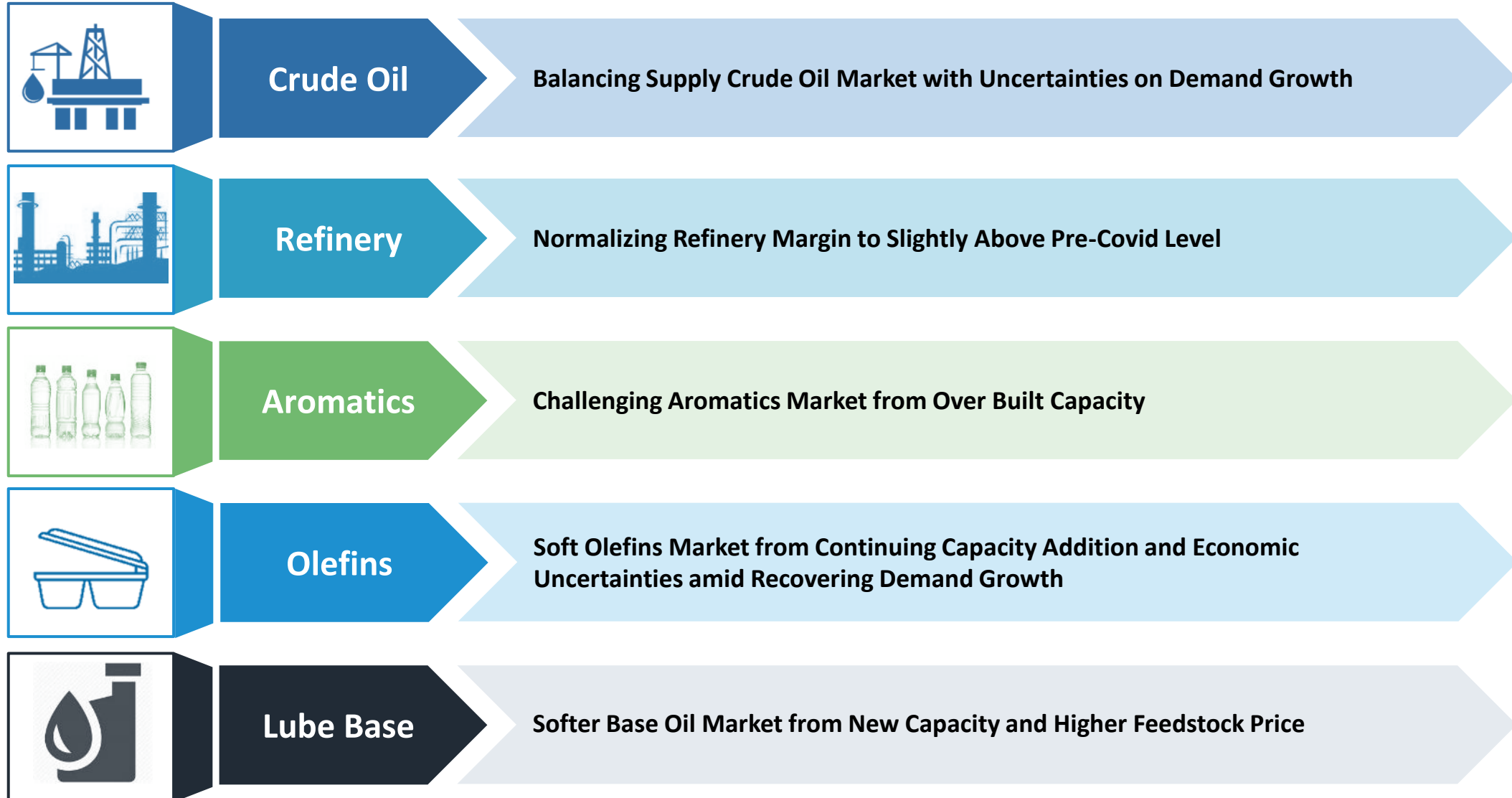


(1) Source : Argus (Oct'22)

(2) Source : ICIS (Oct'22)

2023 Outlook Conclusion

(vs. 2022)





APPENDIX

- CAPEX Plan
- Financial Performance
- Optimised & Flexible Operations...Superior Performance
- World GRM / Inventories
- Thailand petroleum demand by products

TOP Group Strategic Investment Plan



CAPEX Plan (Unit US\$ million)

Updated as of October 2022

Project	Actual 9M/22	Q4/22	2023	2024	2025
CFP project *	633	192	588	296	(432)
Total Ongoing CAPEX	35	60	45	13	13
Reliability, Efficiency and Flexibility Improvement	7				
Infrastructure Improvement (i.e. New Bangphra Raw Water Line, Jetty 7&8, Site office preparation for fire water & fire water improvement)	10				
Other Investments (i.e. Corporate Venture Capital - CVC , Digital Transformation)	18				
TOP SPP Expansion	36	36	26	-	-
Olefins Investment	-	270	-	-	-
Total CAPEX	704	558	659	309	(419)

* CAPEX of CFP Project including the disposal of asset to transfer ownership in the Energy Recovery Unit (ERU) which is a part of the CFP Project

Notes: Excluding approximately 40 M\$/year for annual maintenance

Refinery: Softer Mkt GRM

On Concerns over Global Economic Slowdown

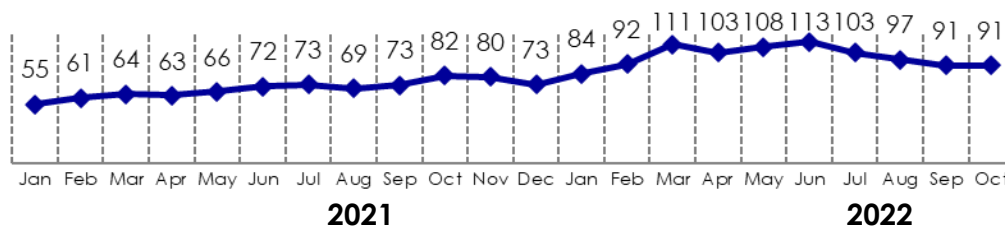


Dubai Crude Price & Key Petroleum Product Spreads

	2021				2022					2021 FY
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	9M	Q4TD*	
\$/bbl										
DUBAI (DB)	60.0	66.9	71.7	78.3	95.6	108.0	96.9 ▼	100.2	91.0	69.2
ULG95 - DB	7.1	9.9	11.8	15.5	17.8	35.0	13.2 ▼	22.0	7.1	11.1
JET - DB	3.3	4.5	5.4	10.2	16.2	39.2	32.4 ▼	29.3	33.1	5.8
GO - DB	4.7	5.3	5.4	11.4	19.5	43.1	35.2 ▼	32.6	42.2	6.7
VLSFO - DB	7.6	5.0	4.9	7.0	11.8	21.9	1.7 ▼	15.1	6.6	6.1
HSFO - DB	(3.5)	(5.8)	(3.4)	(6.9)	(8.3)	(3.2)	(22.3) ▼	(11.3)	(26.0)	(4.9)

*Q4TD as of 11 Nov 22

Dubai Price
(US\$/bbl)



Refinery Utilization

	Q2/22	Q3/22	9M/21	9M/22
	112%	104%	97%	108%

% MB Intake/ MB-DB (\$/bbl)

	Q2/22	Q3/22	9M/21	9M/22
	29%/ 7.4	27%/ 10.5	11%/ 1.5	27%/ 7.3

% Middle East Crude Intake

	Q2/22	Q3/22	9M/21	9M/22
	90%	87%	57%	89%

Q3/22 Market GRM

- **Weak Gasoline spread** due to softer demand in Indonesia and China following Indonesia's subsidy cuts and China's zero-Covid policy
- **Softer Middle Distillate spreads** from higher supply after refineries switch to product more middle distillate because the spreads are higher than gasoline spread. However, low global middle distillate inventory remained support middle distillate spreads
- **Decreasing LSFO spread** from softer demand on concerns over global economic slowdown
- **Declining HSFO spread** as Russia's supply continued to flow to market via Middle East

Gross Refinery Margins - GRM

	2021				2022				2021 FY
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	9M	
\$/bbl									
Market GRM	0.7	0.4	1.6	5.4	6.4	25.1	6.7	12.9	2.2
Stock G/(L)	6.2	4.9	5.1	2.9	16.2	7.8	(9.6)	4.5	4.7
Accounting GRM	6.9	5.3	6.7	8.3	22.6	32.9	(2.9)	17.5	6.9

Q3/22 Performance

- **Slightly lower refinery run rate to 104%** following shutdown in some upgrading unit

Aromatics: Higher Contribution

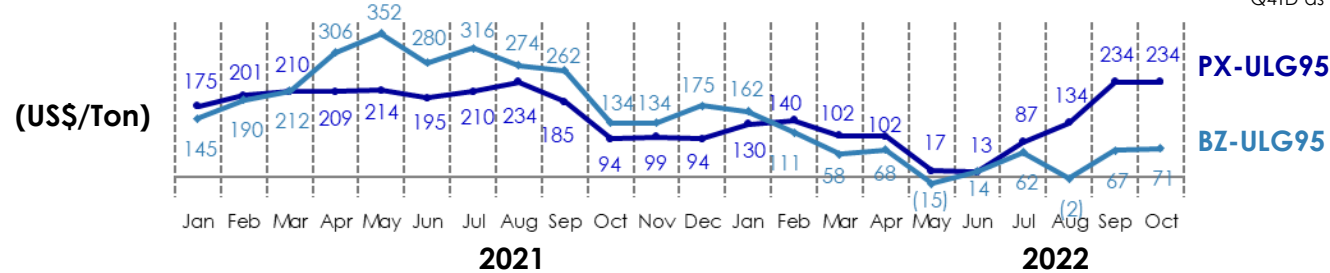
From Improved Aromatics & Strong LAB Margins



Aromatic Spreads and Margins

	2021				2022				2021	
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	9M	Q4TD*	FY
\$/ton										
PX-ULG95	195	206	212	96	124	44	152 ▲	107	185	177
BZ-ULG95	182	313	287	148	110	23	42 ▲	58	6	232

*Q4TD as of 11 Nov 22



Aromatics Production

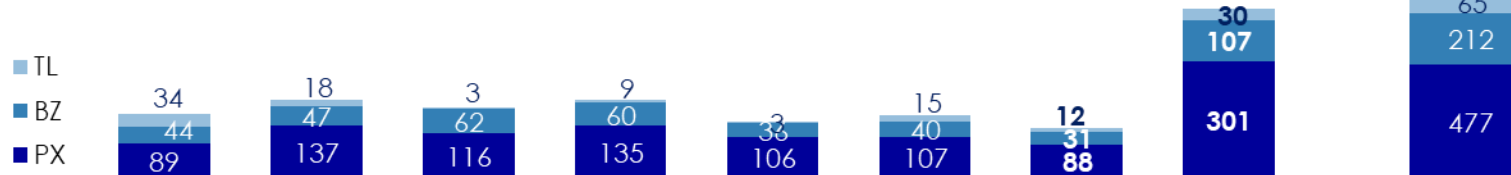
Q2/22	Q3/22	9M/21	9M/22
77%	70%	86%	73%

Q3/22 Market Highlight

- + **Improving PX & BZ margin** on softer gasoline price and limited supply from maintenance
- + **Strong LAB Contribution** on softer feedstock price amid weak demand during monsoon season

Aromatic's Sales (excluding by product) & Product-To-Feed Margin (P2F)

(Unit : KTon)



	2021				2022				2021
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	9M	FY
P2F -\$/ton	106	112	90	19	27	(27)	7	2	80
P2F -\$/bbl	13.9	14.8	12.1	2.5	3.6	(3.6)	1.0	0.3	10.6
GIM -\$/bbl ⁽¹⁾	2.0	2.4	2.1	0.8	0.7	0.0	0.2	0.3	1.7

(1) Including LAB contribution

Q3/22 Performance

- **Lower TPX and LAB utilization rate at 70% and 113%, respectively** from group optimization

Base Oil: Higher Contribution

Supported by Stronger Lube and Bitumen Spread

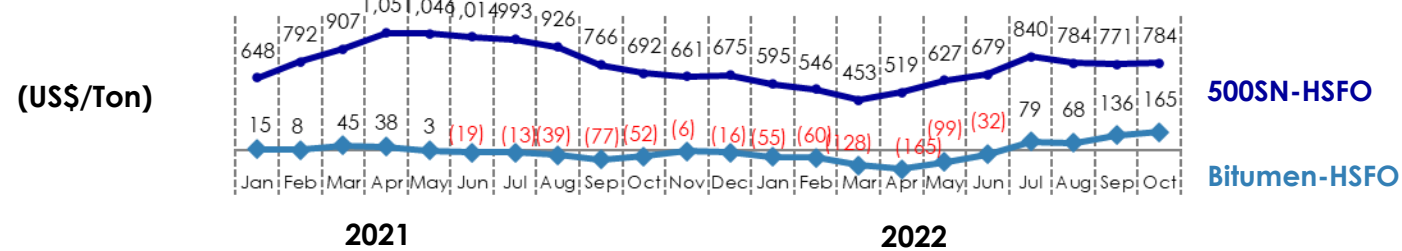


Base Oil & Bitumen Spreads & Margins

	2021				2022				
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	9M	Q4TD*
\$/ton									
500SN-HSFO	783	1,037	896	673	531	608	798 ▲	643	764
BITUMEN-HSFO	23	7	(43)	(29)	(81)	(99)	96 ▲	(28)	150

2021
FY
847
(10)

*Q4TD as of 11 Nov 22



Q3/22 Market Highlight

+ **Increasing Base Oil and Bitumen margins** on lower HSFO price amid weak demand during rainy season

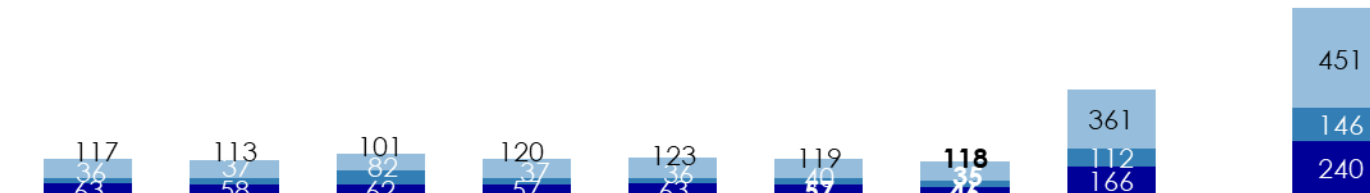
Q3/22 Performance

- **Slightly lower utilization rate at 86%** from group optimization

TLB's Sales (excluding by product) & Product-To-Feed Margin (P2F)

(Unit : KTon)

■ Bitumen
■ Specialty
■ Base Oil



	2021				2022				2021
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	9M	
P2F -\$/ton	170	231	187	118	97	133	209	146	176
P2F -\$/bbl	25.7	34.9	28.4	17.9	14.6	20.0	31.8	22.1	26.7
GIM -\$/bbl	1.5	2.4	1.8	0.8	0.6	0.8	1.9	1.1	1.6

Power : Higher Contribution

From higher NG price

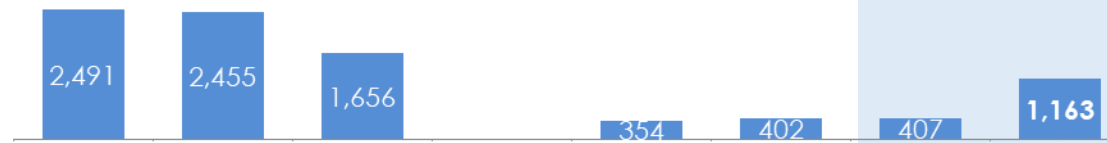


Power Business Sector

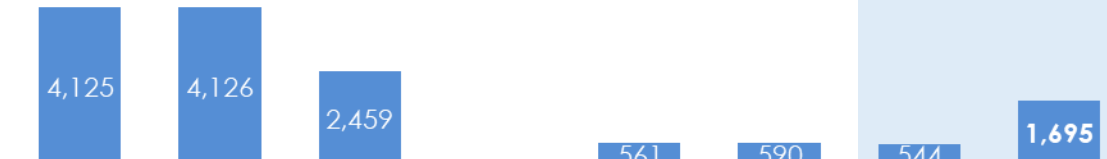


Power & Steam Sales

Electricity⁽¹⁾
(GWh)



Steam⁽¹⁾
(kton)



(1) 100% of TP* and TOP SPP

*Thaioil Power (TP) completely transferred whole business to be under TOP in Feb'21

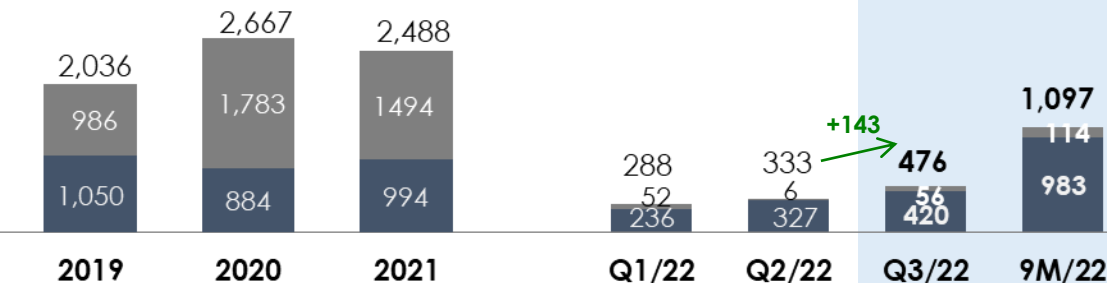
EBITDA & Net Profit

EBITDA⁽²⁾
(THB million)



(2) Consolidated EBITDA of TP and TOP SPP

Net Profit⁽³⁾
(THB million)



(3) Net profit of 74% TP + 100% TOP SPP + 24.29% profit sharing from GPSC

(5) TOP shareholding in GPSC decreased from 24.29% to 15.38% in Nov'20 – Jan'21, and increase to 20.78% in Feb'21 after TP's EBT completion

(6) TOP shareholding in GPSC decreased from 20.78% to 10.0% in Jun'22 after GPSC sale execution according to recapitalization plan

Q3/22 Performance Highlight

+ Higher contribution from TOP SPP from higher NG price

+ Contribution from GPSC from dividend: 56 MB from 10% holding in GPSC

■ Equity income from GPSC*

* TOP shareholding in GPSC changed from 20.78% to 10% end of May'22 and change from equity method to general investment (receive dividend)

■ SPP (TP+TOP SPP)

Olefins : Softening Contribution

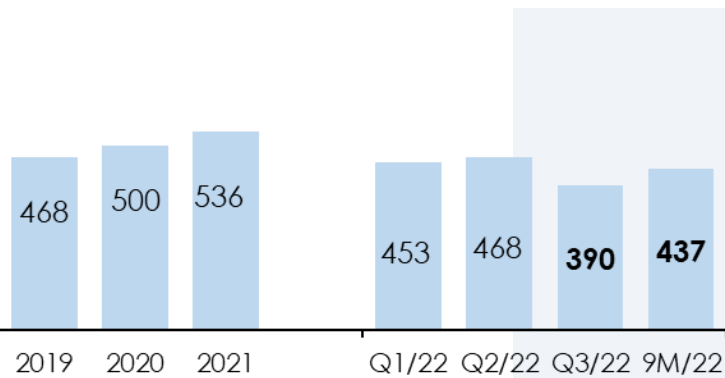
From weak Chinese demand



Olefin Product Spreads

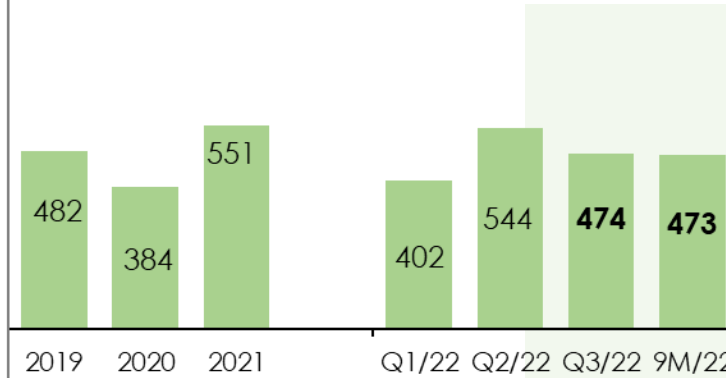
Polymer Spreads

HDPE CFR SEA - NaphJ (\$/TON)

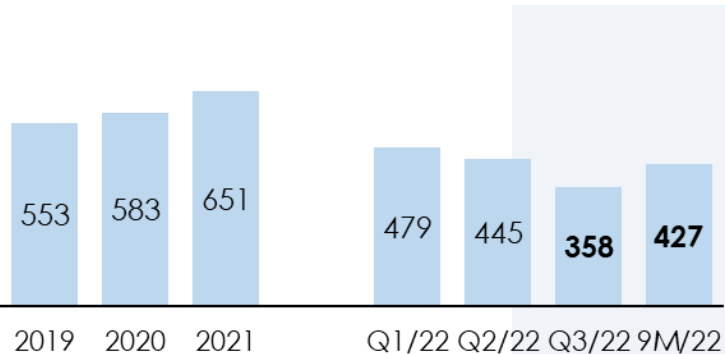


Monomer Spreads

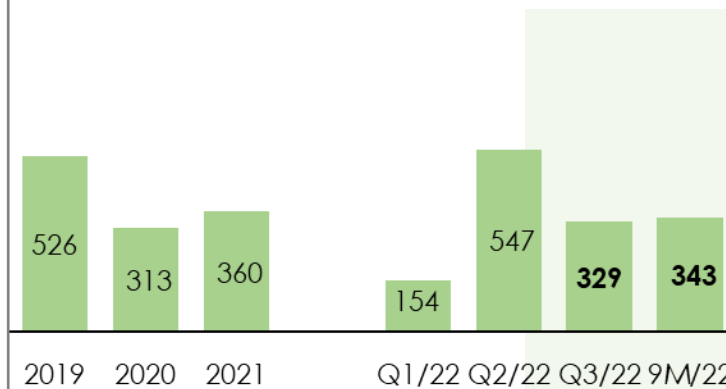
SM - NaphJ (\$/TON)



PP CFR SEA - NaphJ (\$/TON)

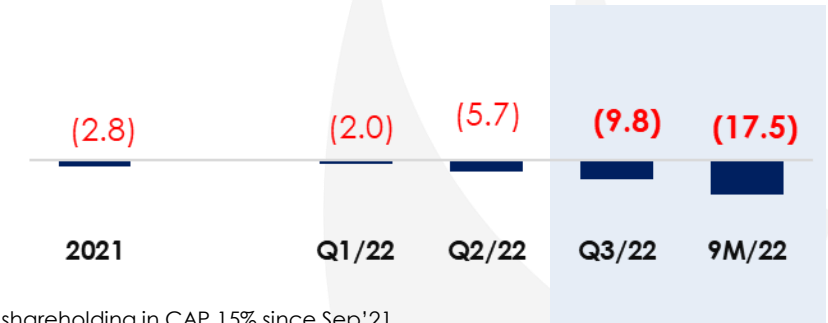


BD - NaphJ (\$/TON)



TOP Investment Indonesia (TII)* Performance

Net Profit (million USD)



*TII shareholding in CAP 15% since Sep'21

Q3/22 Performance Highlight

- **Softer Olefin spreads** due to soften margin as a result of weak Chinese demand following China's zero-Covid policy

Q3/22 Performance Breakdown



Unit : Million Baht (MB)

	Petroleum & Lube Base	Petrochemical ⁽¹⁾	Power ⁽²⁾	Others & New Business ⁽³⁾	Consolidated Net Profit
Q2/22	26,092	(682)	333	326	25,327
Q3/22	41	(664)	476	202	12
9M/21	1,794	2,529	1,963	1,425	7,545
9M/22	32,788	(1,352)	1,097	892	32,521

QoQ	<p>Petroleum Lower contribution from softer GRM on global economics concerns and stock loss</p> <p>Lube Higher contribution lower HSFO price amid weak demand during rainy season</p>	<p>Aromatics & LAB Higher contribution due to stronger PX & BZ margin from lower ULG95 price together with higher LAB contribution</p> <p>Olefins Lower contribution soften margin as a result of weak Chinese demand following China's zero-Covid policy</p>	<p>TOP SPP Higher contribution from higher NG price</p> <p>GPSC Contribution from GPSC from dividend: 56 MB from 10% holding in GPSC</p>	<p>Solvent & Chemical Lower contribution from oversupply situation and high product cost</p> <p>Ethanol Higher contribution from higher ethanol price</p>
YoY	<p>Petroleum Stronger contribution from improving GRM and higher stock gain</p> <p>Lube Lower contribution on lower lube spread from increasing supply</p>	<p>Aromatics & LAB Lower contribution significantly lower PX and BZ spread from higher ULG95 price following COVID-19 situation and Russia-Ukraine crisis.</p>	<p>TOP SPP Higher contribution on higher average selling prices following higher NG price</p> <p>GPSC Softening contribution on lower IU contribution margin from higher gas & coal cost and lower GPSC share</p>	<p>Solvent & Chemical Higher contribution following rising crude oil prices</p> <p>Ethanol Lower contribution pressured by narrower gross profit margins on higher cost</p>

(1) Petrochemical: Including Aromatics business from 100% of TPX, Olefin business from 15% of CAP net profit and 75% of LAB net profit

(2) Power: TOP shareholding in GPSC changed from 20.78% to 10 % end of May'22 and change from equity method to general investment (receive dividend)

(3) Others & New Business: Consisting of Solvent, Ethanol and other business

9M/22 Consolidated Cash Flow



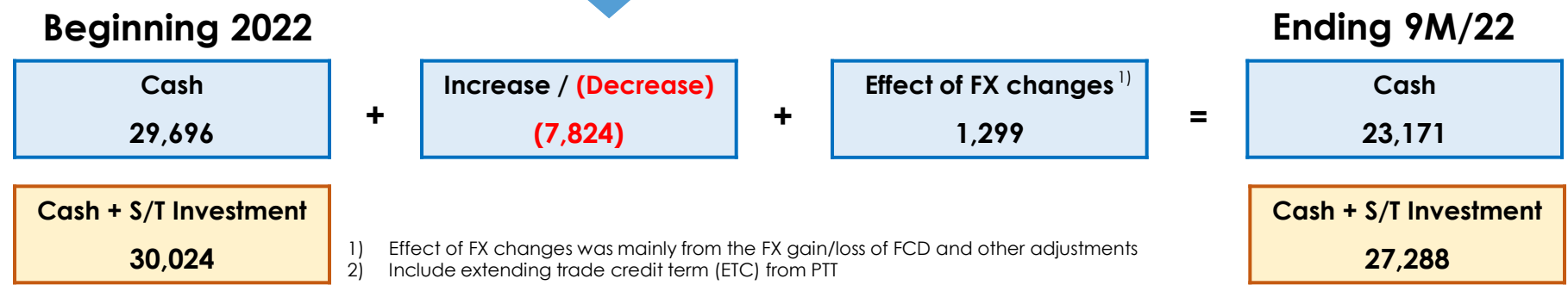
(Unit: MB)

	9M'21	9M'22
Operating Cash Flow (CFO)	4,840	22,778
Net income	8,871	41,922
Depreciation & NRV	5,487	8,669
Other adj.	7,733	(20,888)
Change in working capital ²⁾	(17,252)	(6,925)

	9M'21	9M'22
Investing Cash Flow (CFI)	(35,415)	(7,213)
Dividend income	1,110	841
Short term investment	19,161	(3,423)
Sell / (Invest) in a associate	(29,571)	22,047
CAPEX (PP&E) & others	(26,115)	(26,679)

Free Cash Flow (CFO +CFI)	(30,576)	15,564
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	9M'21	9M'22
Financing Cash Flow (CFF)	1,425	(23,388)
Loans proceeding	28,564	24,497
Loans repayment	(9,101)	(45,182)
Bond issue / (Paid)	(3,000)	(3,000)
Equity injection	-	10,059
Interest	(4,749)	(5,079)
Dividend& Others	(10,290)	(4,682)



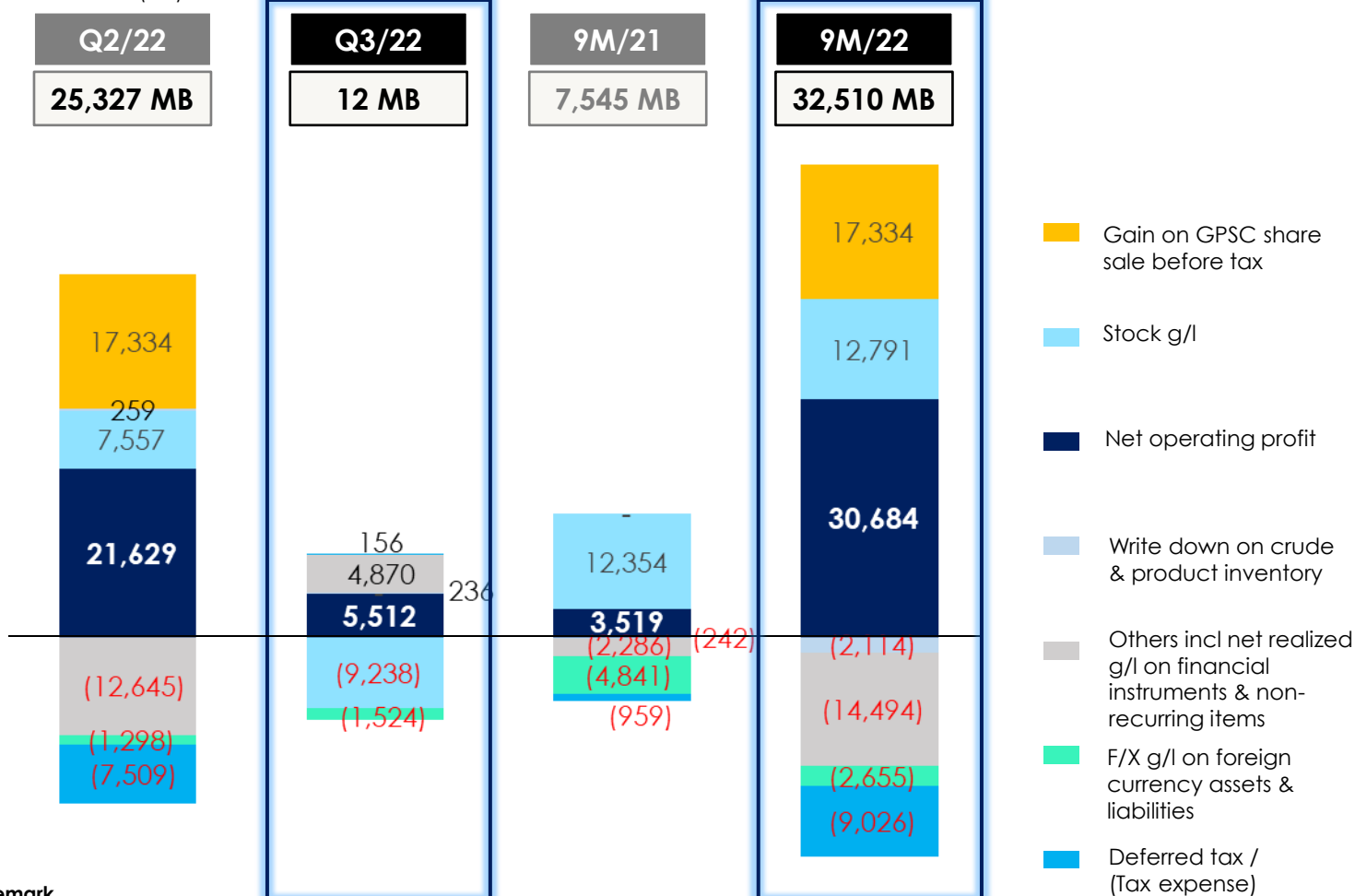
1) Effect of FX changes was mainly from the FX gain/loss of FCD and other adjustments
 2) Include extending trade credit term (ETC) from PTT

Q3/22 - Financial Performance



TOP Group Net Profit

Unit : Million Baht (MB)



Remark

- Stock gain/(loss) : Q2/22 7,557 MB, Q3/22 (9,238) MB, 9M/21 12,354 MB, 9M/22 12,791 MB
- Reversal/ (write-down) on crude and petroleum product inventory : Q2/22 259 MB, Q3/22 236 MB, 9M/21 (242 MB), 9M/22 (2,114) MB
- F/X gain/(loss) on gain on foreign currency assets & liabilities : Q2/22 (1,298) MB, Q3/22 (1,524) MB, 9M/21 (4,841) MB, 9M/22 (2,655) MB
- (Tax expense)/Reversal of Tax expense : Q2/22 (7,509) MB, Q3/22 156 MB, 9M/21 (959) MB, 9M/22 (9,026) MB
- Net realized gain/(loss) on financial instruments : Q2/22 (10,263) MB, Q3/22 (220) MB, 9M/21 (654) MB, 9M/22 (16,210) MB
- Other items: Net gain/(loss) on FV of financial instrument Q2/22 (2,383) MB, Q3/22 5,090 MB, 9M/21 (2,256) MB, 9M/22 1,082 MB

Gross Refining Margin - GRM

	\$/bbl	Q2/22	Q3/22	9M/21	9M/22
Market GRM		25.1	6.7	0.9	12.9
Stock Gain/(Loss)		7.8	(9.6)	5.4	4.5
Accounting GRM		32.9	(2.9)	6.3	17.5

Gross Integrated Margin - GIM

Aromatics & LAB		0.0	0.2	2.1	0.3
Lube base		0.8	1.9	1.9	1.1
Market GIM		25.6	8.8	4.9	14.2
Accounting GIM		33.4	(0.7)	10.2	18.7

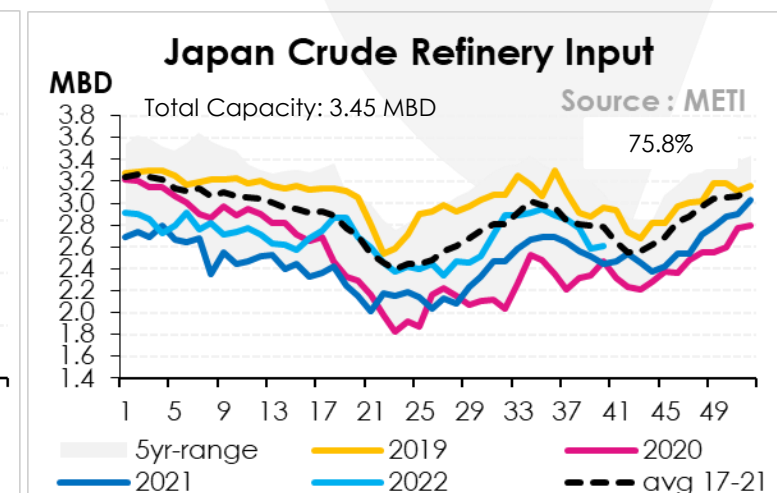
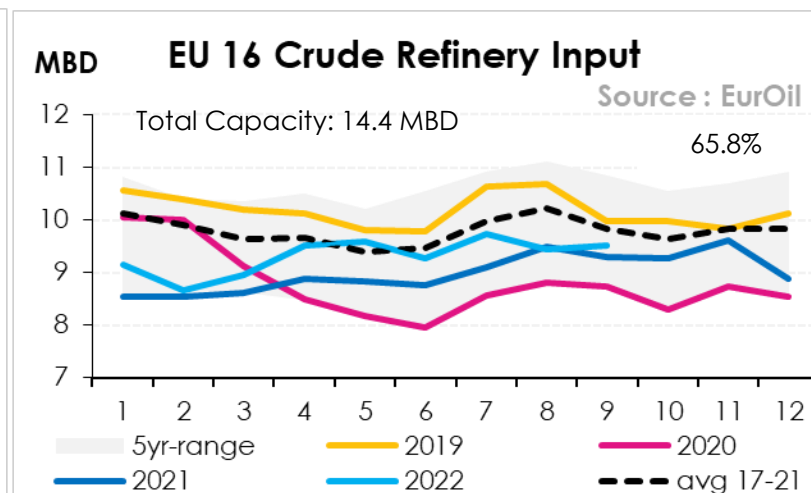
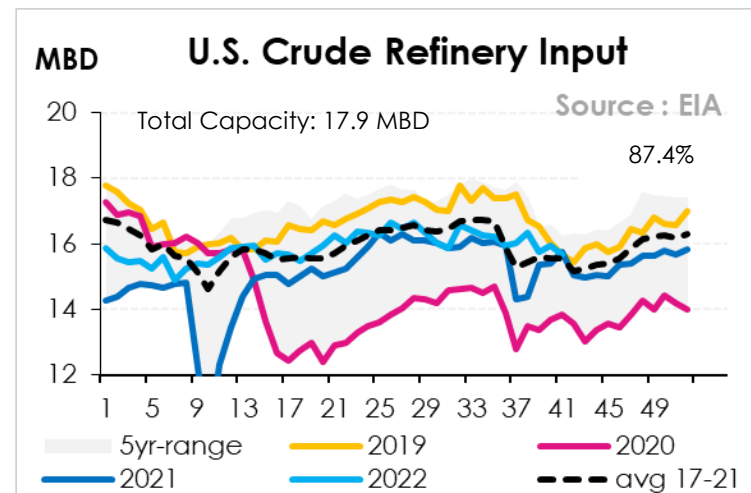
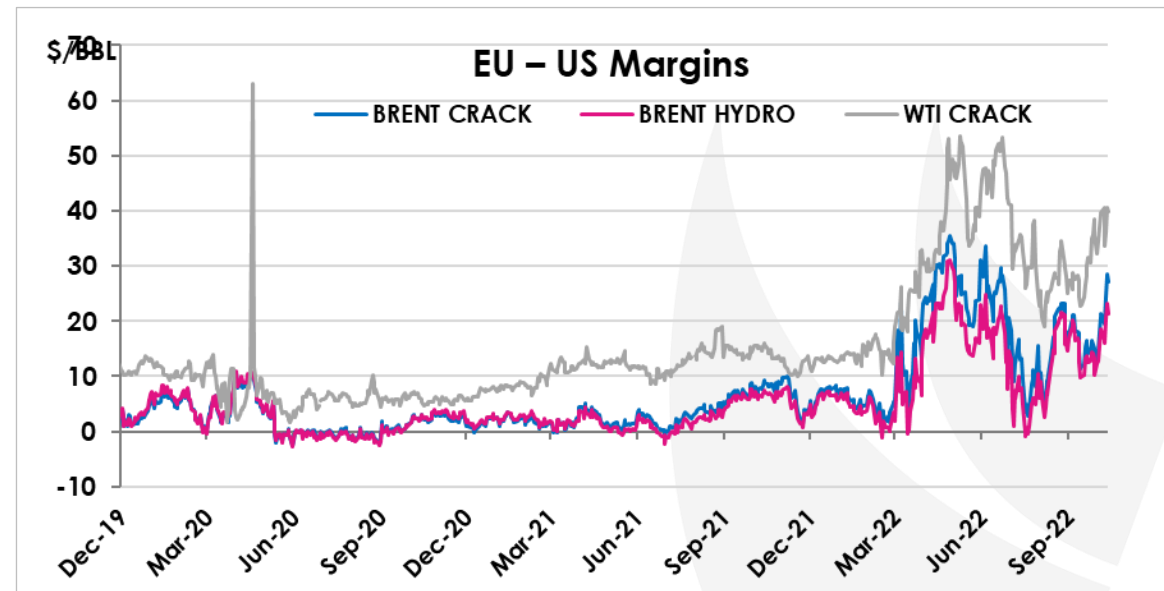
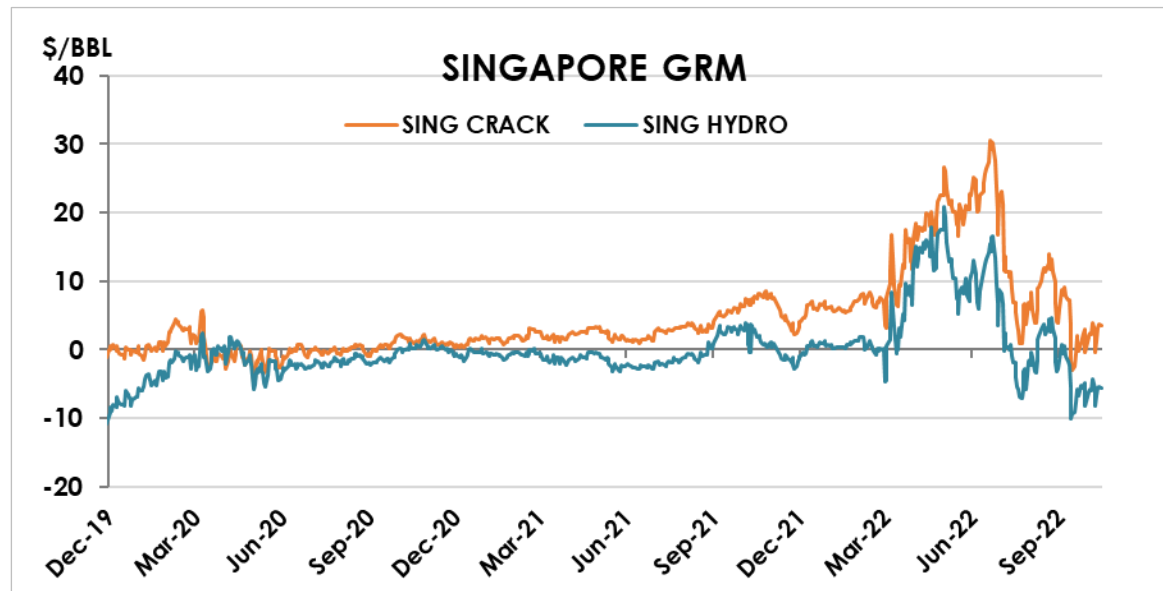
Utilization / Production Rate

Refinery		112%	104%	97%	108%
Aromatics		77%	70%	86%	73%
LAB		122%	113%	109%	119%
Base Oil		90%	86%	92%	88%

Asian Margin Vs. US-EU margin



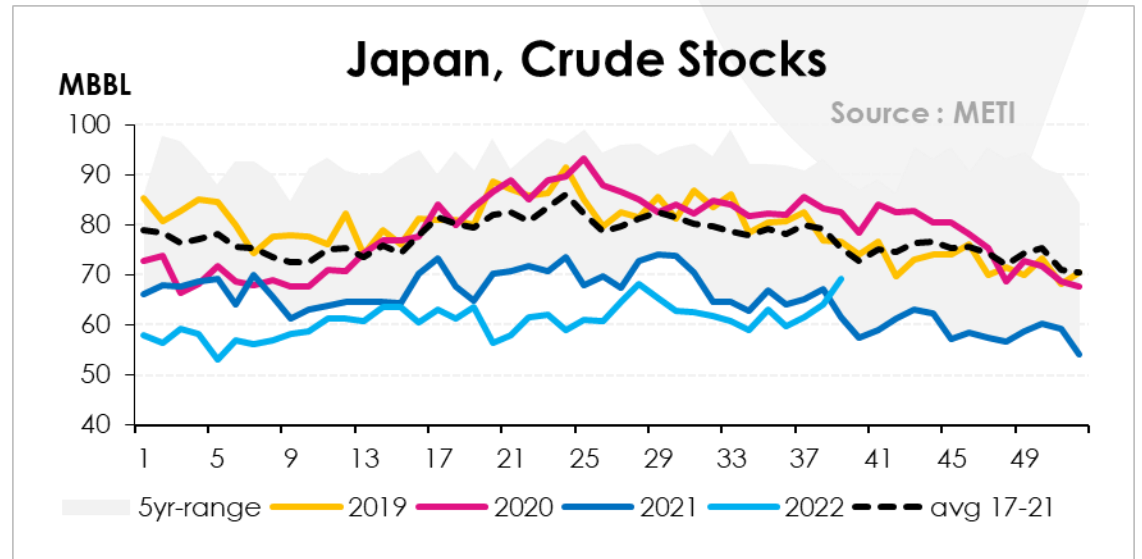
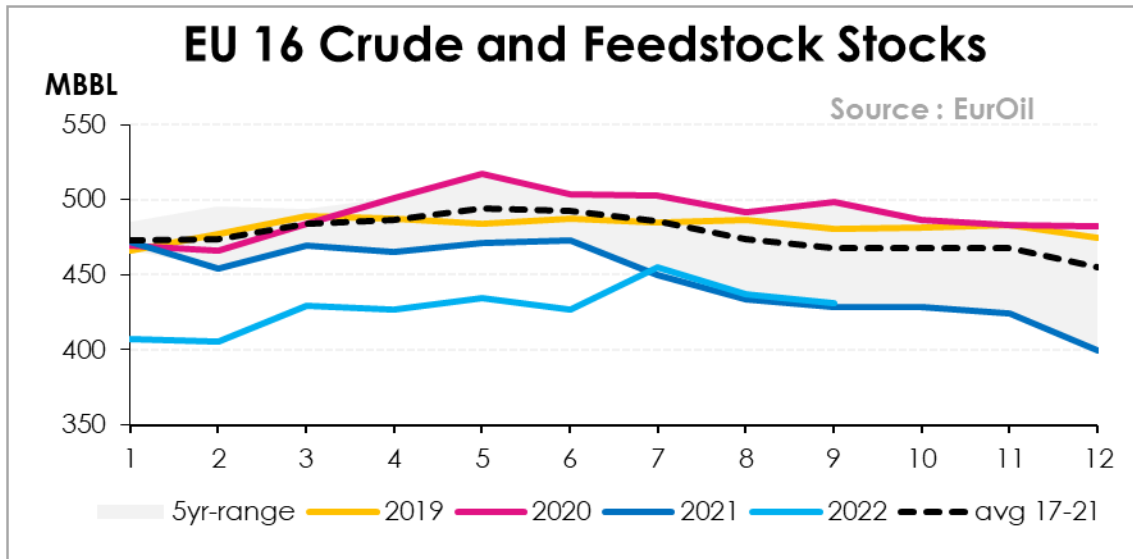
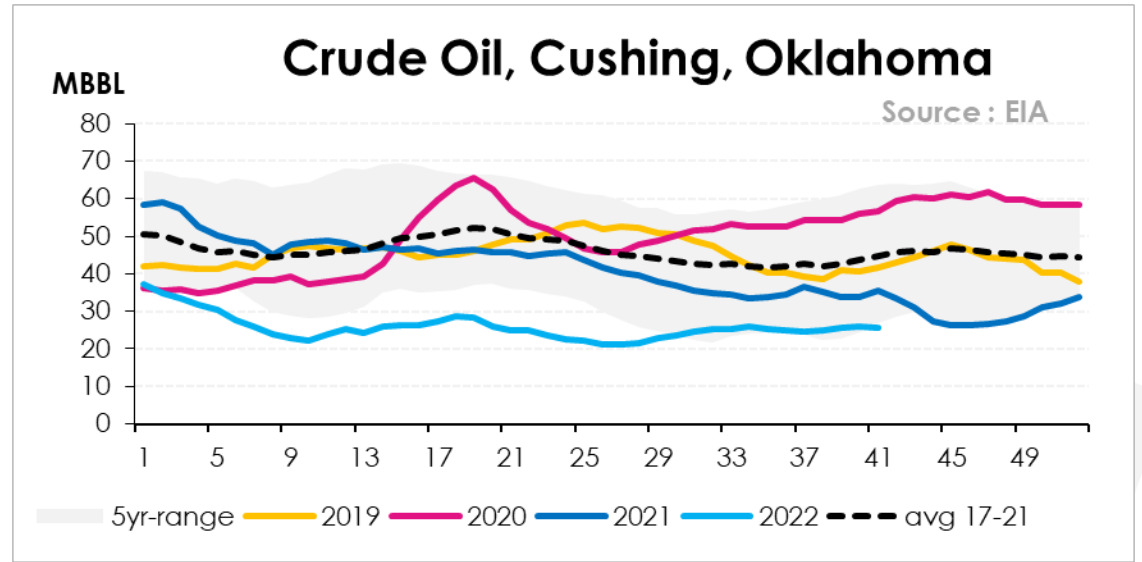
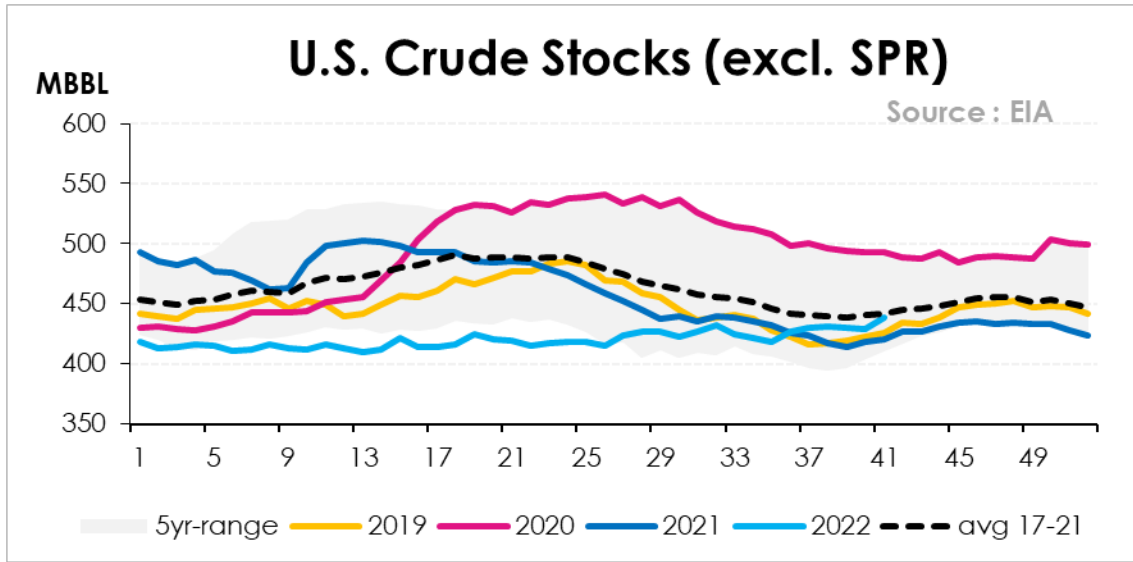
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Global Crude Oil Inventories



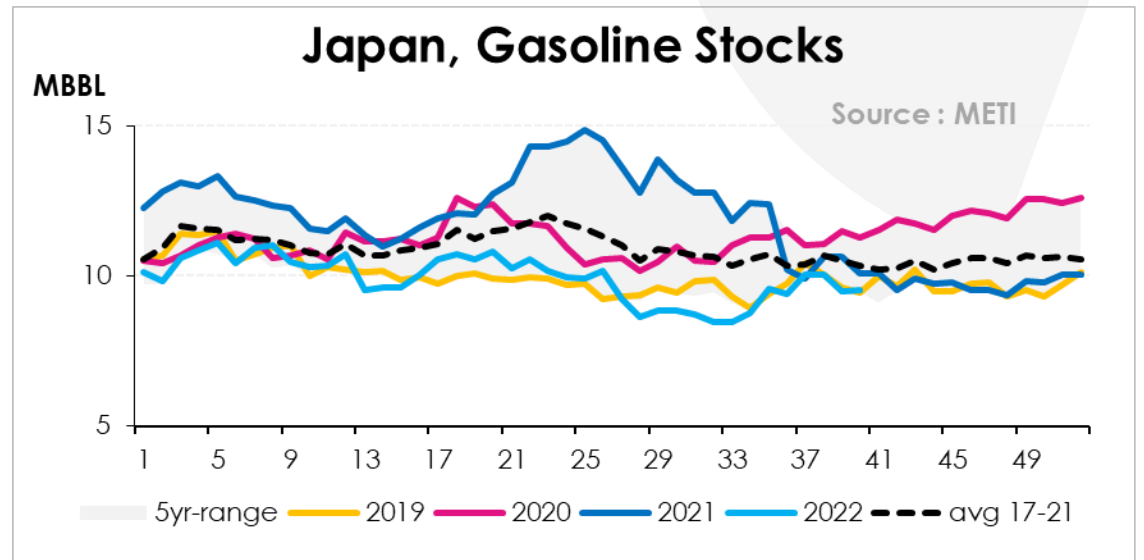
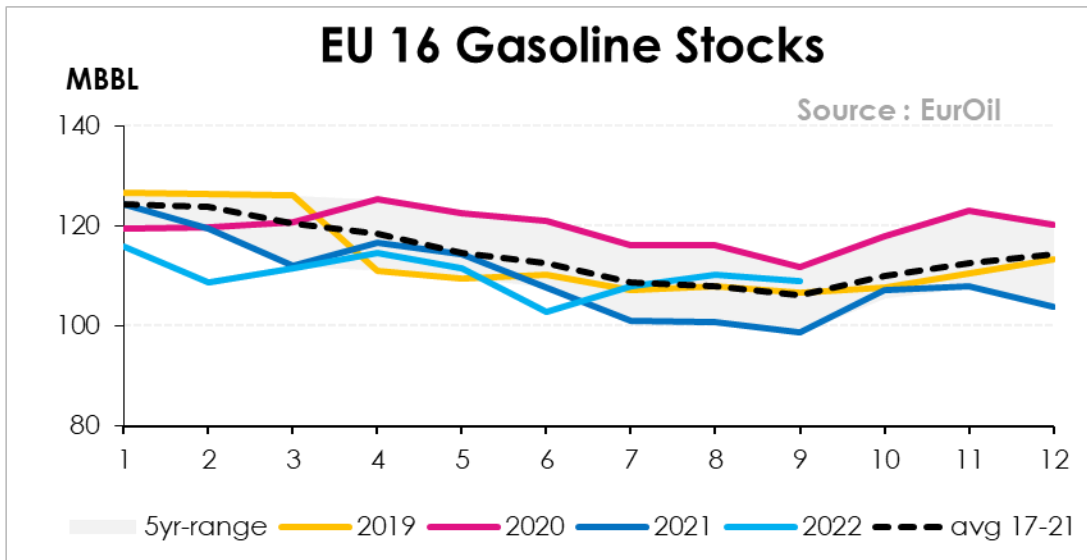
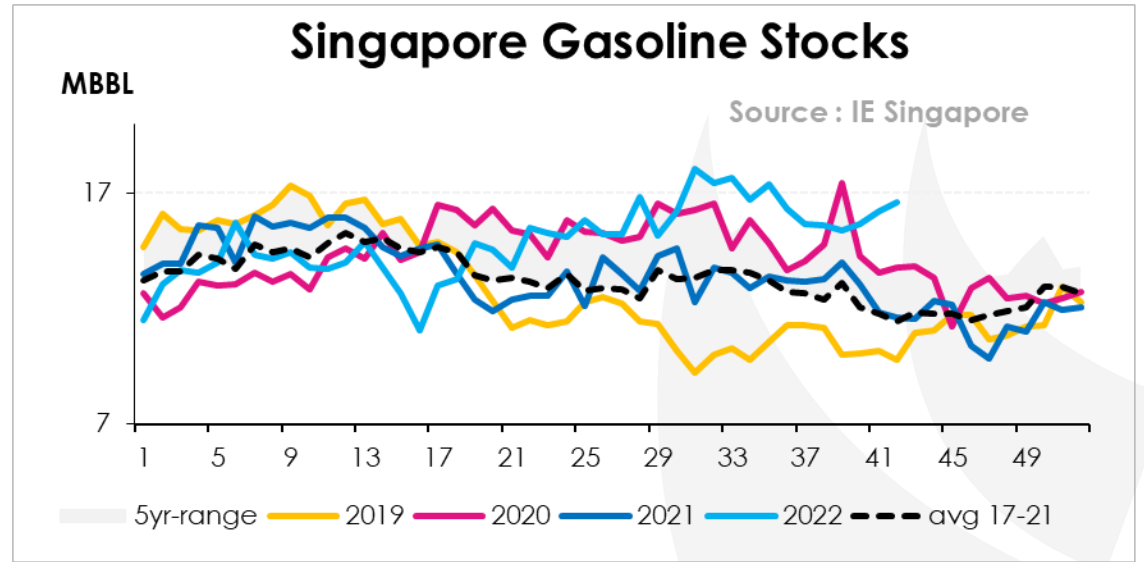
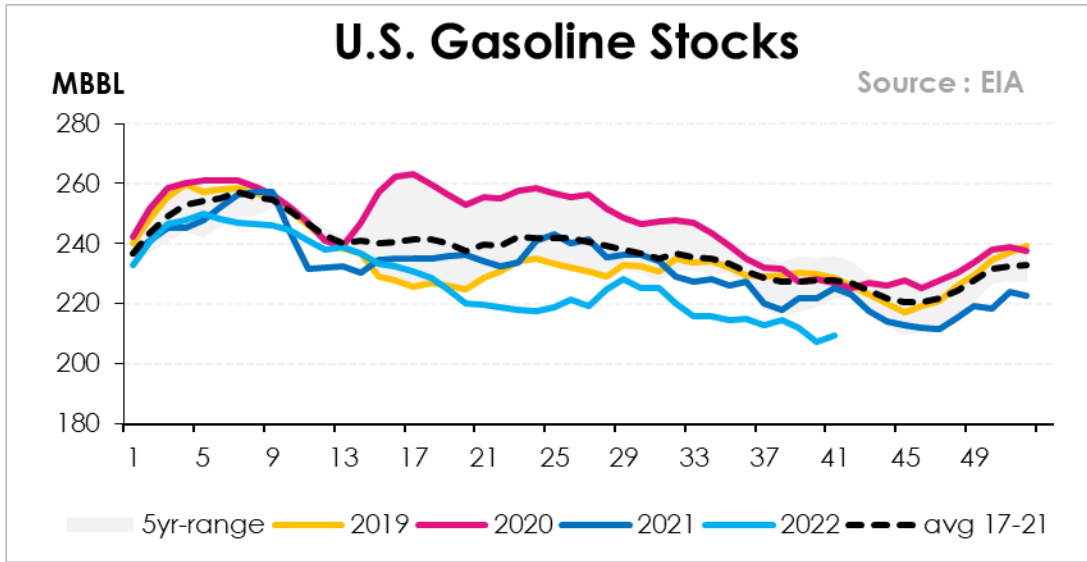
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Global Gasoline Inventories



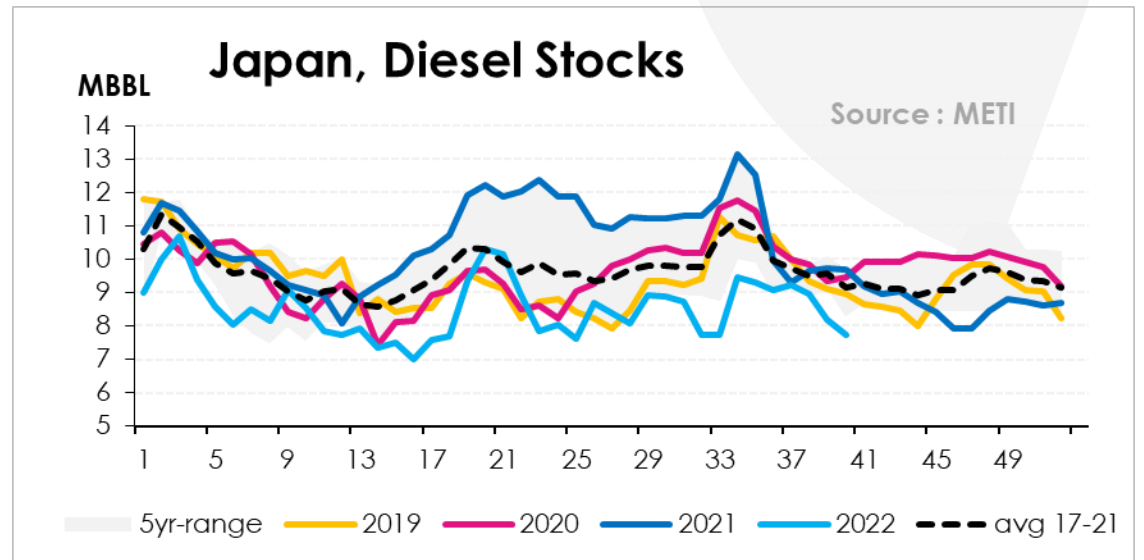
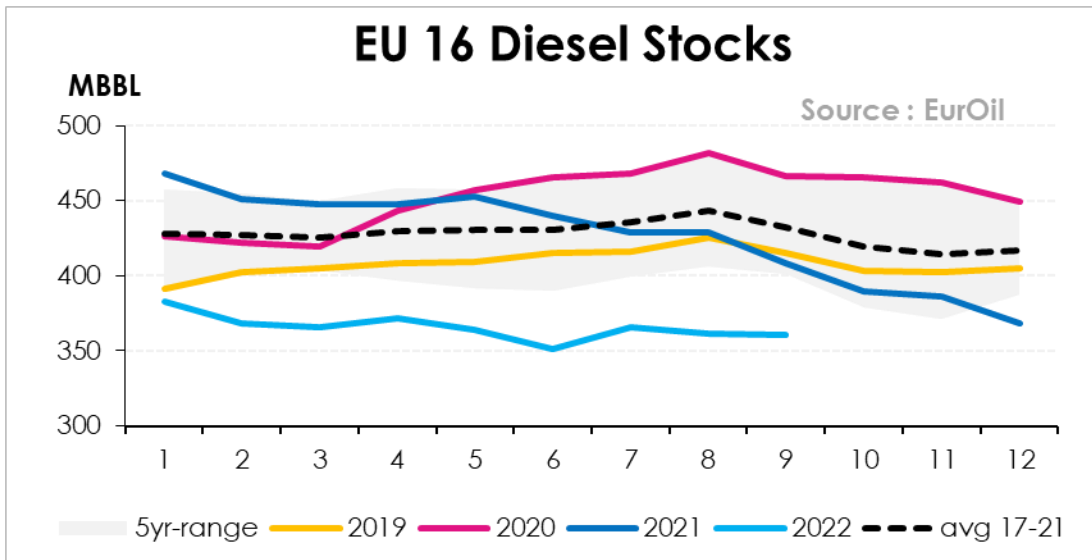
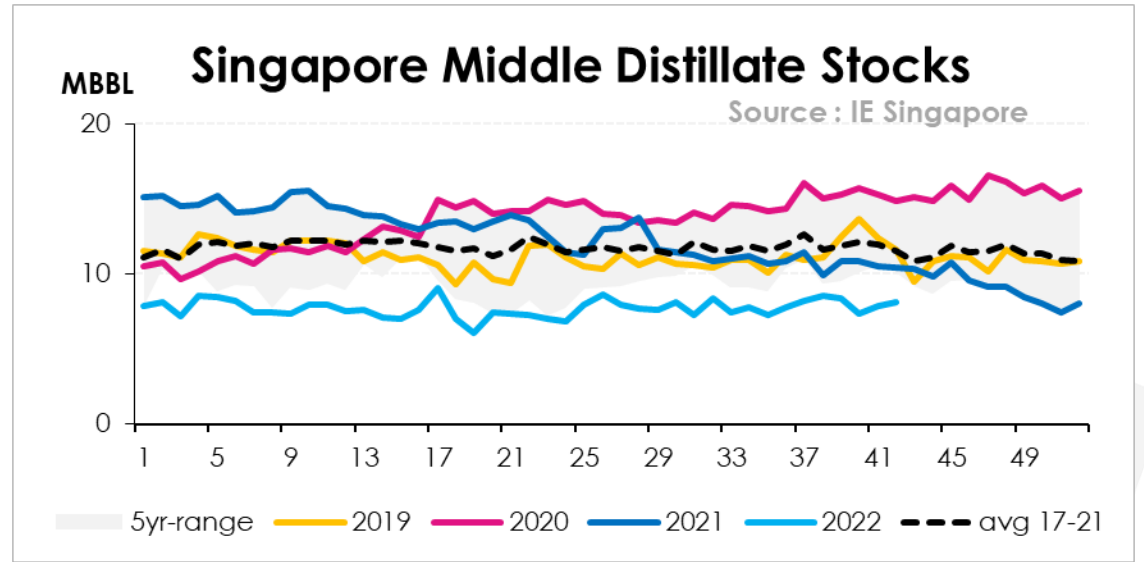
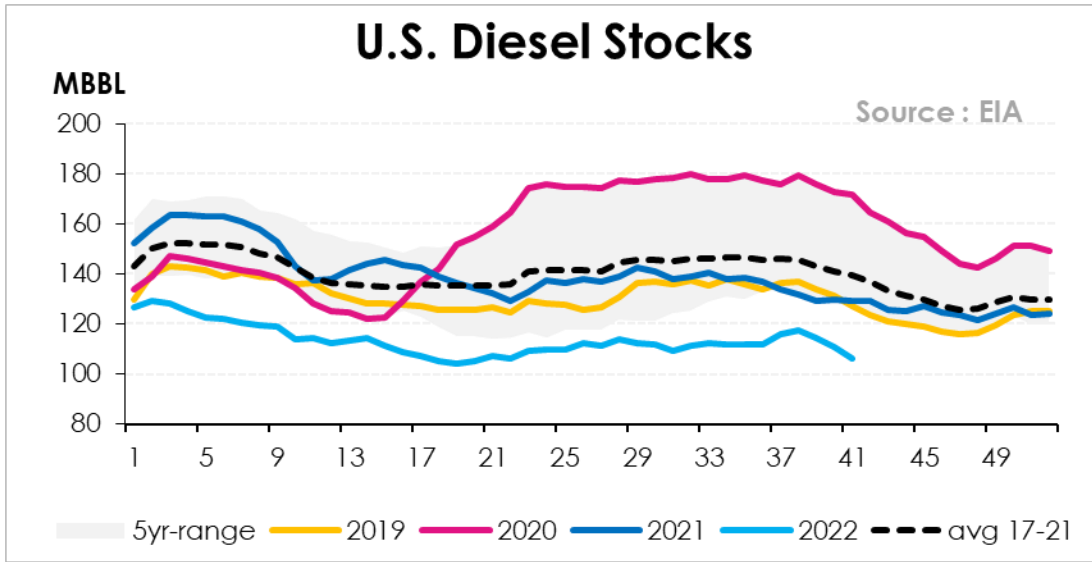
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Global Middle Distillate Inventories



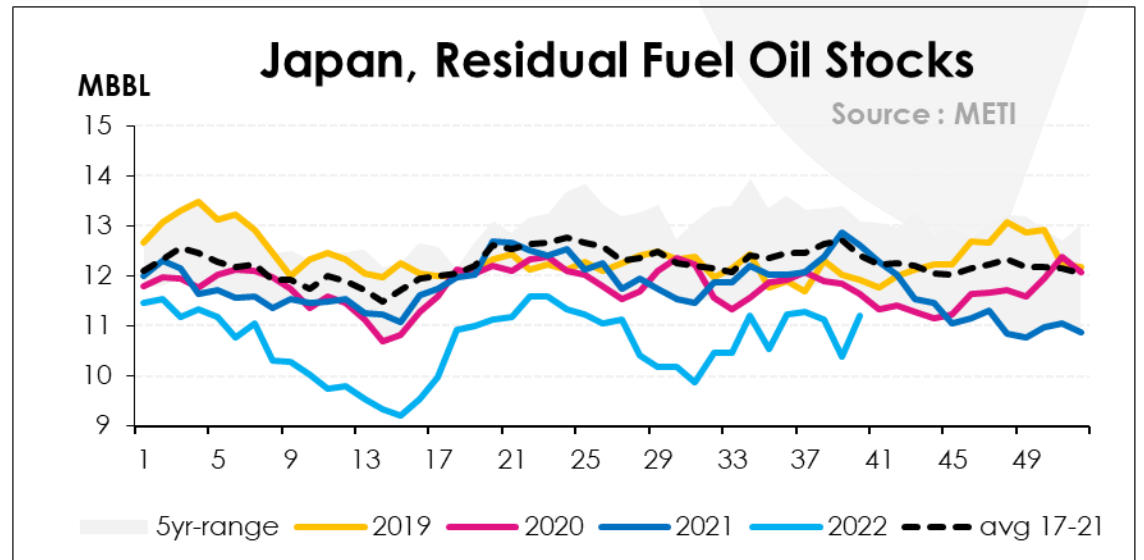
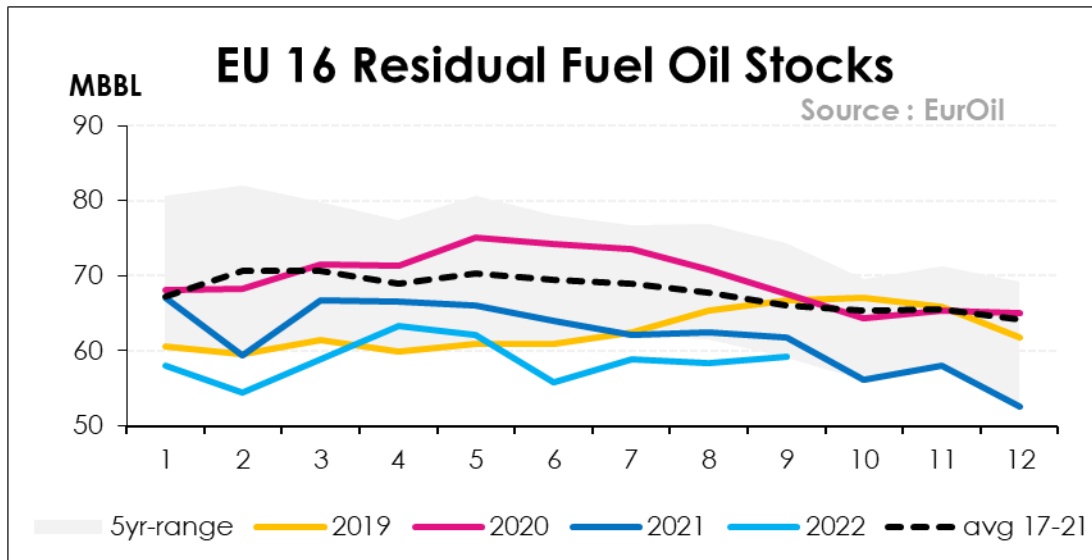
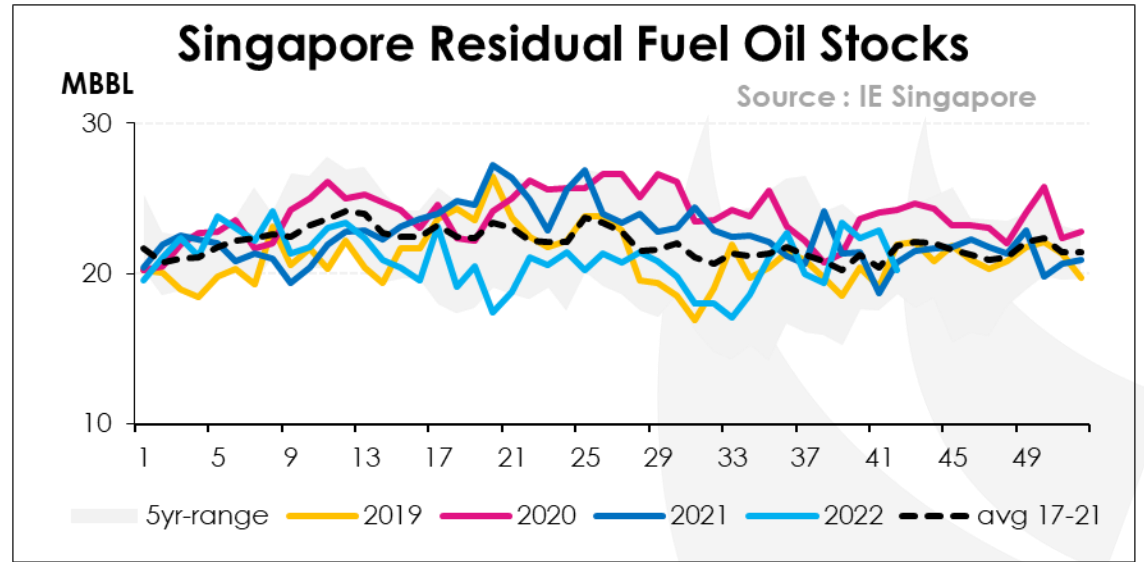
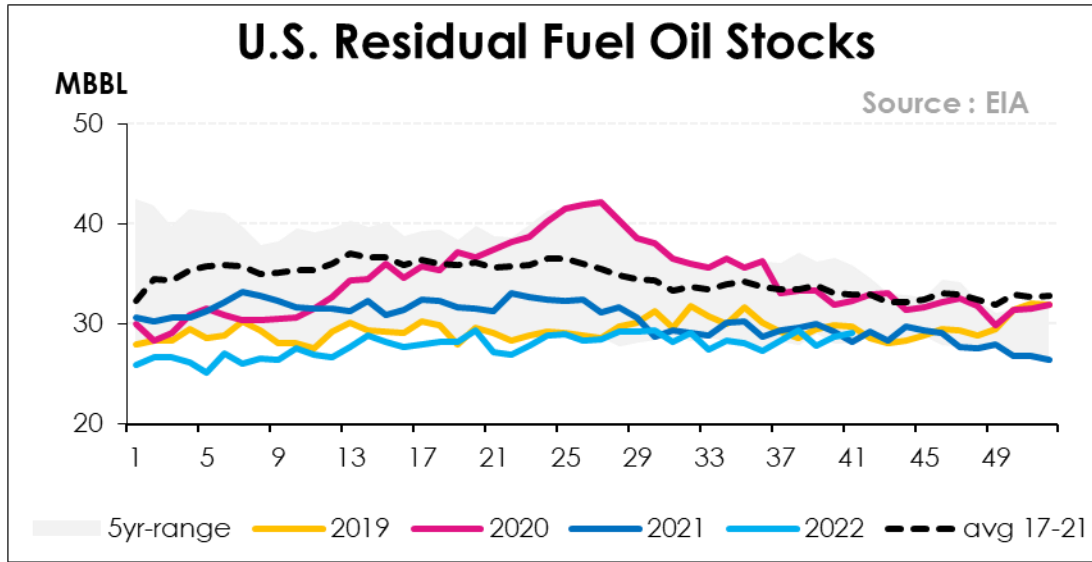
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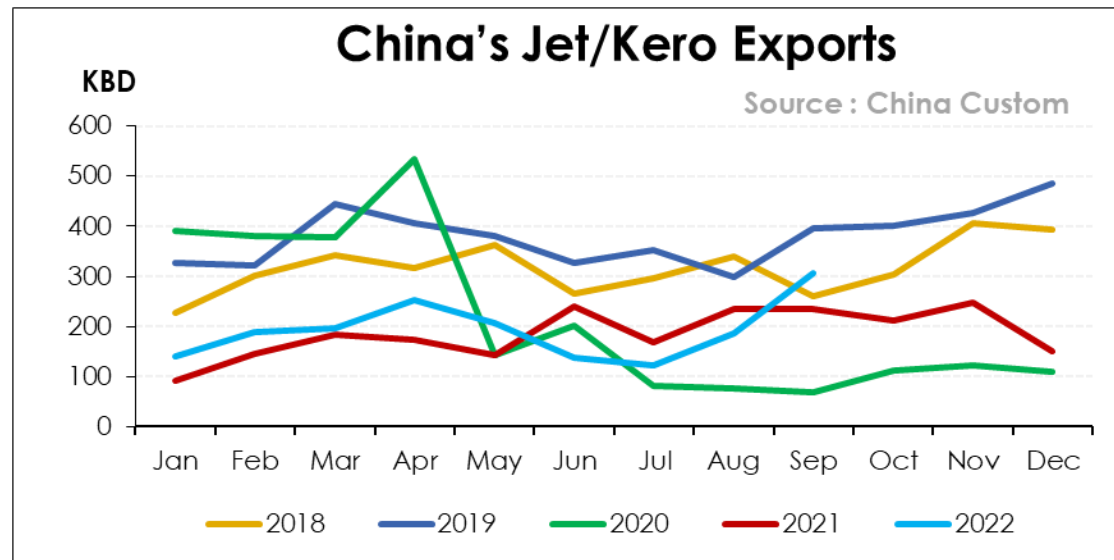
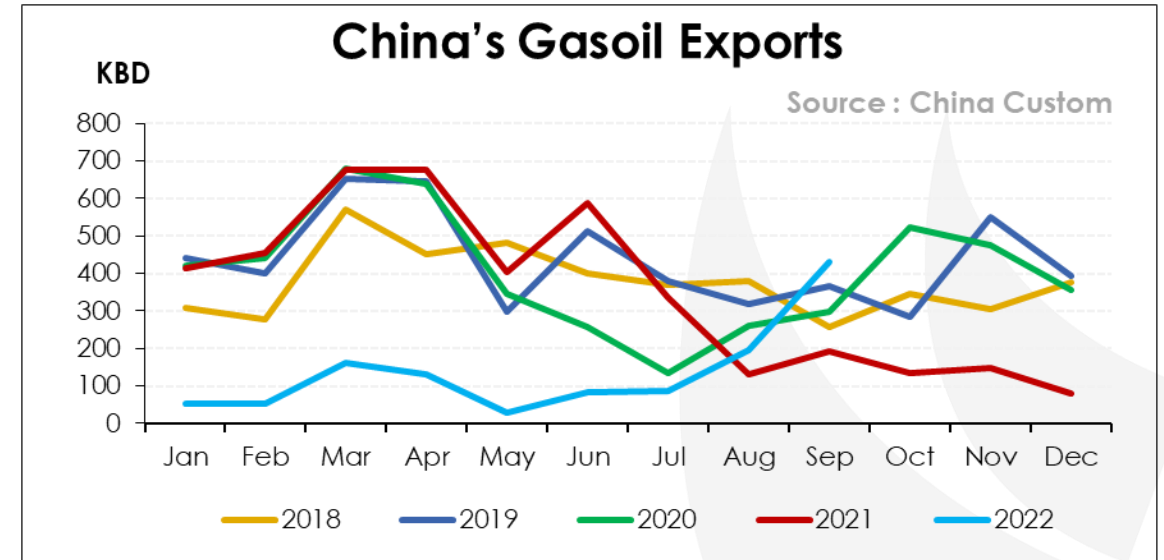
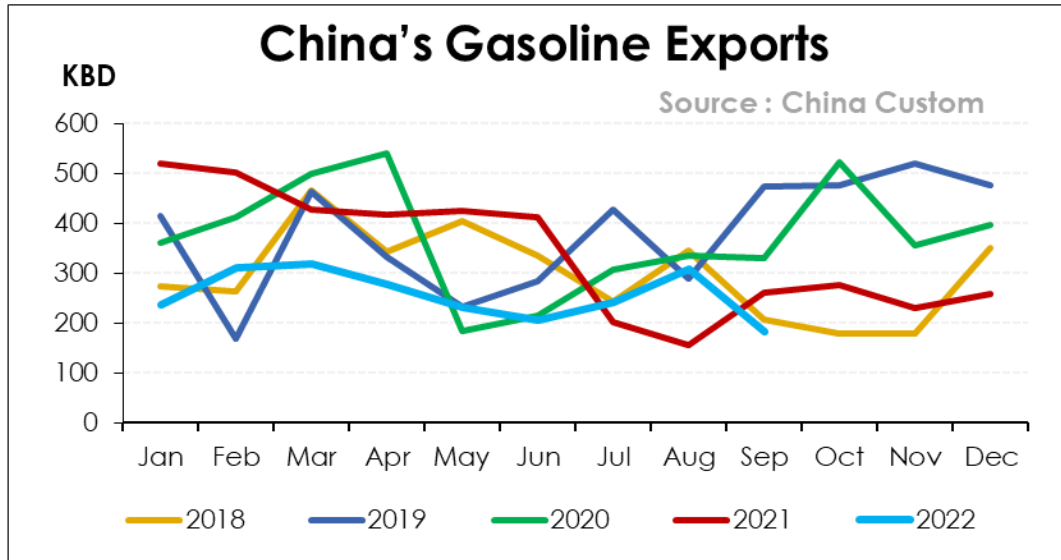
Global Fuel Oil Inventories



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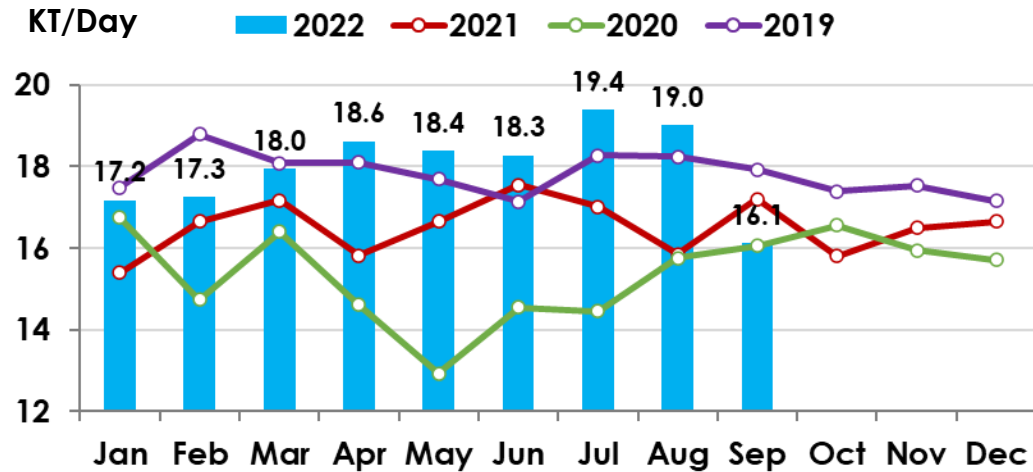


China's Refined Product Exports



Domestic LPG Demand

Thailand LPG Demand

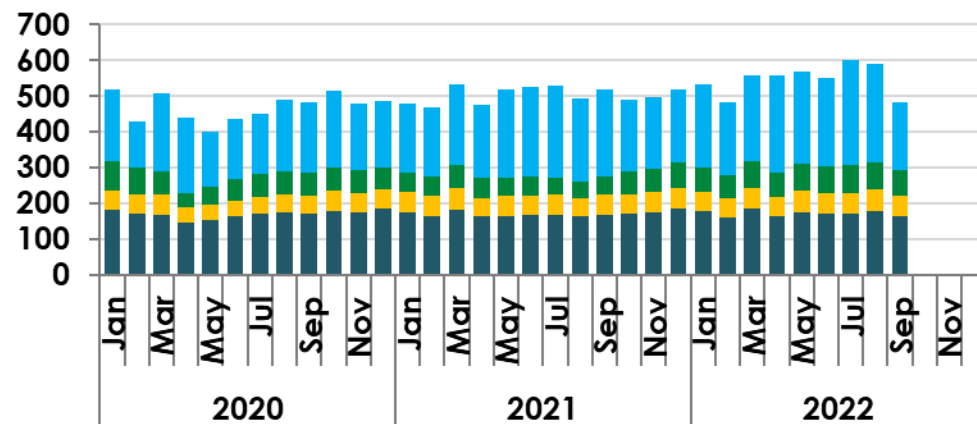


Remark : LPG demand includes Petrochemical consumption

LPG Demand by Sector

KT/MTH

■ Cooking ■ Industrial ■ Automobile ■ Petrochemical



LPG Demand Highlight

- In 9M'22, LPG demand increased by 8.6% YoY mainly following the increase in automobile and petrochemical sectors by 37.8% and 8.6% YoY, respectively. It is resulted from the Russian-Ukraine conflict and price competitiveness compared to gasoline, led to switching demand to LPG. In addition, LPG demand 9M'22 in industrial and cooking sector increased by 3.1% and 1.7% YoY, respectively, as the better of COVID-19 situation.

Outlook for 2023

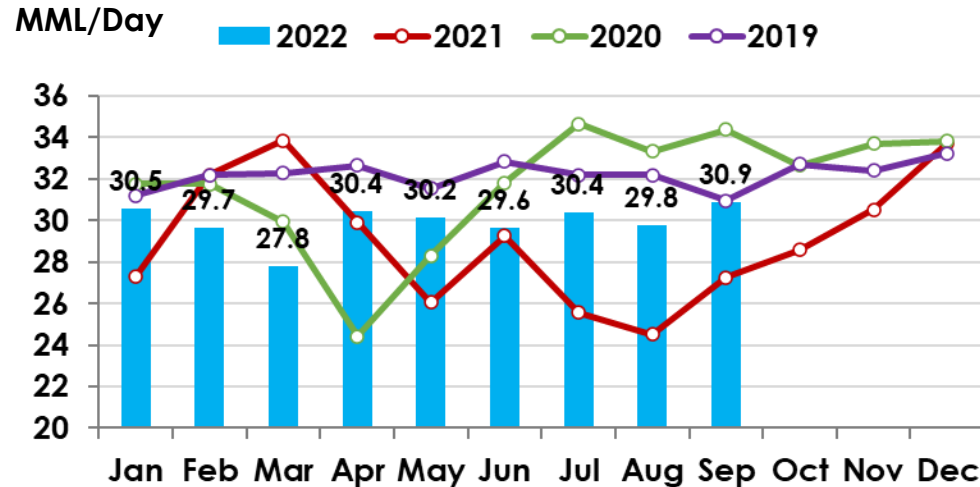
- In 2023, LPG demand is expected to slightly decrease by 0.5% YoY. The demand tends to be dropped from automobile sector around 7%, as lower LPG vehicles and lower LPG stations. However, the demand from industrial and cooking is expected to be increased by 1-1.3%.

Domestic Gasoline/Gasohol Demand

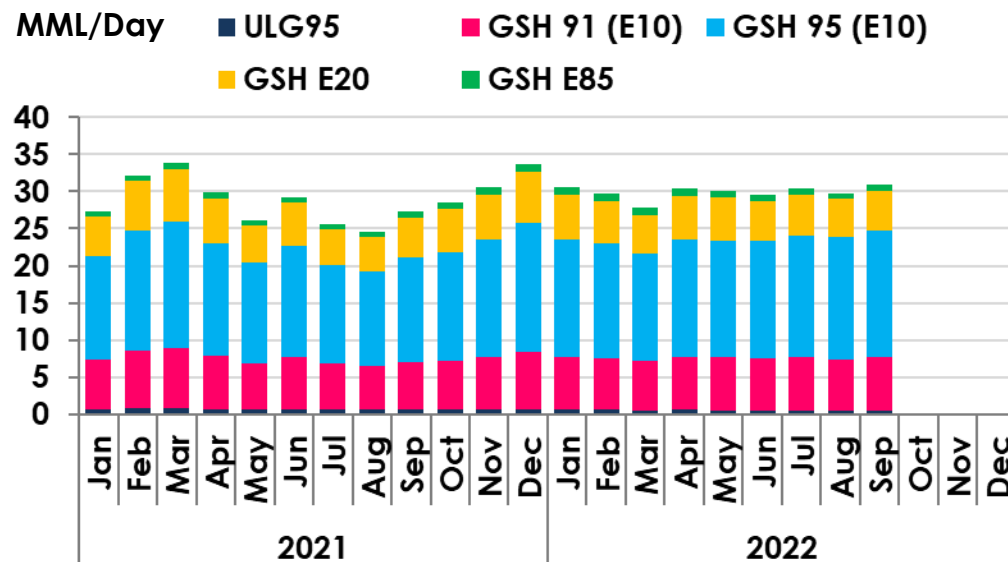


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Thailand Gasoline/Gasohol Demand



Gasoline/Gasohol Demand by Grade



GASOLINE/GASOHOL Demand Highlight

- In 9M'22, Gasoline demand was increased by 5.4% YoY to an average of 29.9 MML/day. The demand was supported by higher transportation activities. In addition, passenger car sales in 9M'22 were increased by 25.4% YoY. However, the Omicron variant outbreak and higher retail price of gasoline from Russia-Ukraine war still pressured to gasoline demand.

Outlook for 2023

- Gasoline consumption is expected to increase by 7.8% YoY, which is mainly supported by the recovery of the transportation activities that encourages people have higher spending and results to higher passenger car sales as well.

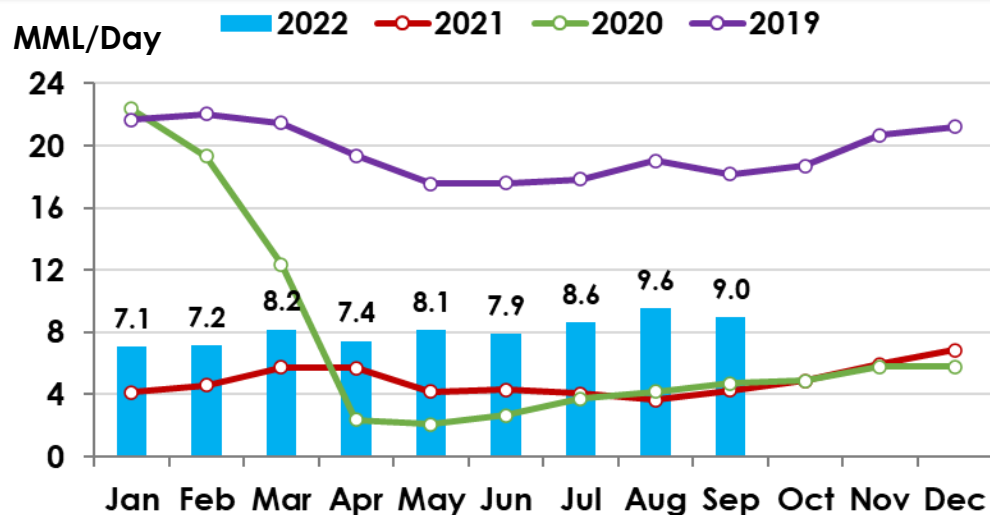
Source: DOEB (As of Nov 2022)

Domestic JET Demand

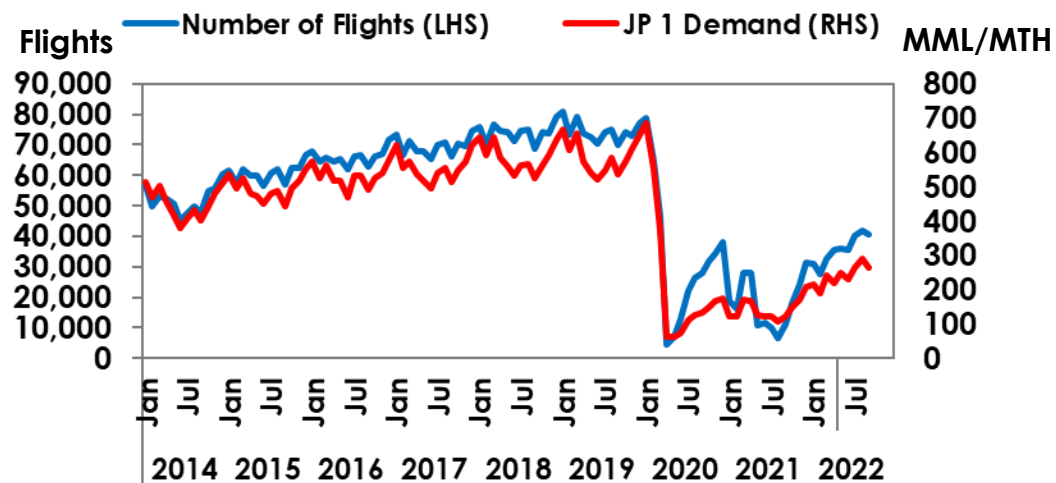


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Thailand JET Demand



JET-A1 Demand and Number of Flights



JET Demand Highlight

- In 9M'22, Jet consumption increased by 80.1% YoY. The demand was recovered from fully opening the country by canceling of Test & Go program for fully vaccinated travelers since 1 May'22. Moreover, since 1 Jun'22, vaccinated and unvaccinated/not fully-vaccinated travelers from all countries were able to enter country with specific requirements for each group. These led to higher in both international and domestic flight movements.

Outlook for 2023

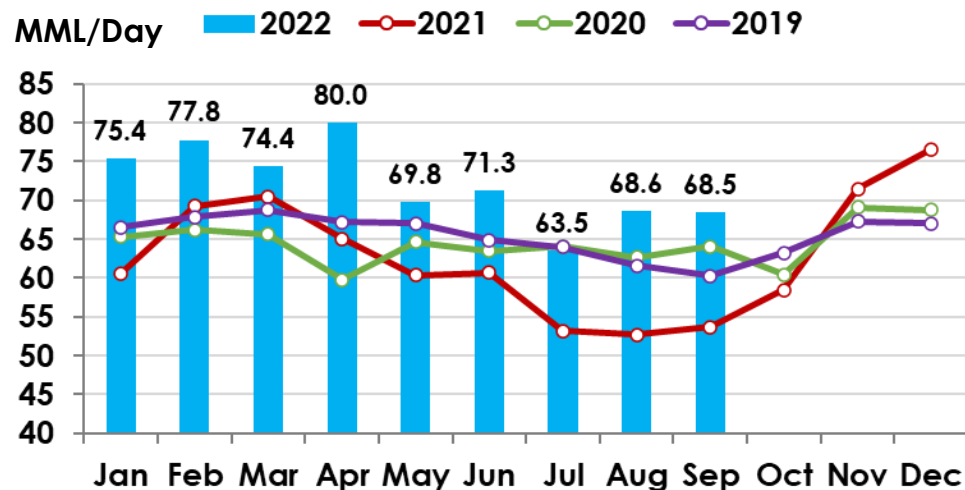
- Jet-A1 demand growth is expected to be increased by 51.9% YoY because Thailand dropped all remaining Covid-19 requirements, including proof of vaccination or rapid test results, this will lead to higher tourist numbers in 2023. In addition, Tourism Council of Thailand (TCT) expects tourist numbers around 21.5 million in 2023 (110% YoY), due to relaxation measure from many countries.

Source: DOEB, AOT, Department of Tourism (As of Nov 2022)

Domestic Gasoil and NGV Demand

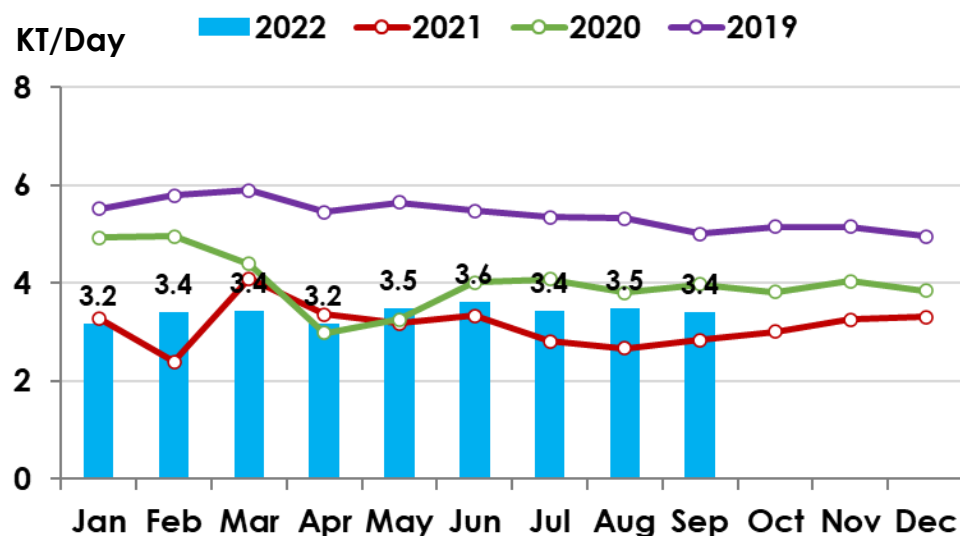


Thailand Gasoil Demand



*Exclude Marine Gasoil

NGV Demand



Gasoil Demand Highlight

- In 9M'22, Gasoil demand increased by 19.0% YoY. The demand was supported by the improve of economic activities and also supported by government that capped diesel price not to be more than 32 baht per liter in May'22 and not more than 35 baht per liter since Jun'22. In addition, gasoil was higher used for power sector at average 4.3 MML/Day in 9M'22 (1,461.9% YoY, 9M'22 vs. 9M'21).

Outlook for 2023

- Gasoil demand is expected to increased by 1.5% YoY, supported by improving economic activities and transportation.
- Higher demand for power plant by 4.0% YoY, due to high LNG price.

NGV Demand Highlight

- In 9M'22, NGV demand increased by 9.3% YoY, since PTT provides assistance during Covid-19 situation by maintaining NGV price at 15.59 baht/kg. On 16th Sep'22, the NGV retail price was increased by 1 baht/kg. to 16.59 baht/kg., due to high demand of natural gas. However, PTT is still providing assistance by maintaining NGV price at 13.62 baht/kg. for helps taxi drivers under 'Lom Hai Jai Diow Gun (Breathe Together) project to buy lower prices of NGV. (This project will be extended from ending on 15 Sep'22 to 15 Dec'22)

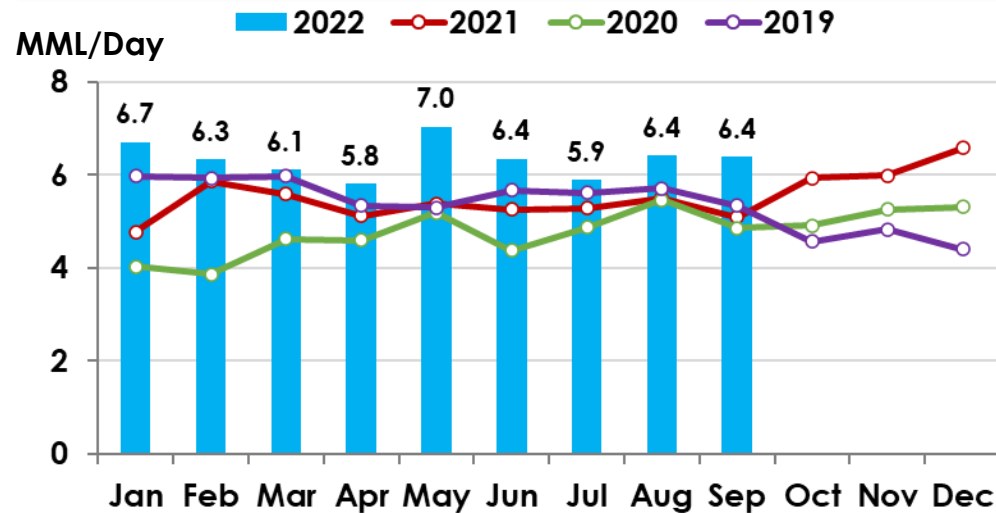
Source : EPPO, DOEB (As of Nov 2022)

Domestic Fuel Oil Demand

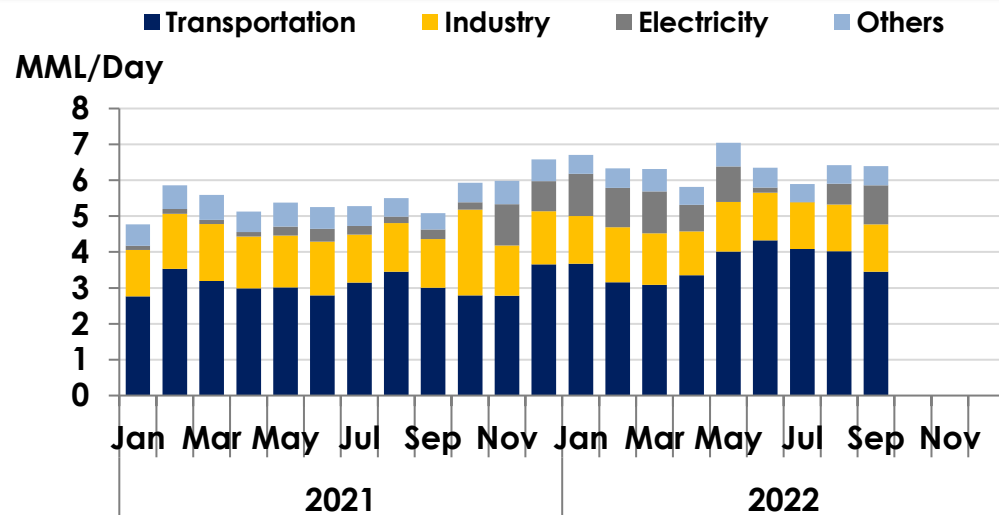


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Thailand Fuel Oil Demand



Thailand Fuel Oil Demand by Sector



Fuel Oil Demand Highlight

- In 9M'22, Fuel Oil consumption rose by 19.4% YoY, as the demand in the transportation sector, which accounted for 56.0% of total Fuel Oil demand, rose by 19.0% YoY, align with higher export volume. In addition, the demand was supported by power sector at average 0.8 ML/Day in 9M'22, which increased by 290.0% YoY (9M'22 vs. 9M'21). However, the demand in industrial sector, which accounted for 21.2%, dropped by 5.6% YoY, due to the impact of Russia-Ukraine situation.

Outlook for 2023

- Fuel Oil demand is expected to decrease by 3.4% YoY, due to slower export volume in 2023 from slowdown of world economic activity, which export volume is expected to increase only by 2.5-3% YoY, while 2022 is expected to increase by 6-8% YoY.

Source : DOEB (As of Nov 2022)

Thank You

Any queries, please contact:



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