



# Thai Oil Public Company Limited

## Q4 & FY/21

### Analyst Presentation

24 February 2022

Time : 10:00 - 12:00 hrs.

Online Channel : TOP IR Application, Facebook Live, MST



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# Presentation Agenda (Q4 & FY/21)

**KEY HIGHLIGHTS**

**PERFORMANCE ANALYSIS**

**OUTLOOK**

**FINAL REMARKS**





## KEY HIGHLIGHTS

# 2021 – A Continue Challenging Year

## Key Highlight

### Key Highlight

Towards Net Zero

## Performance

Favorable 2022

## Outlook

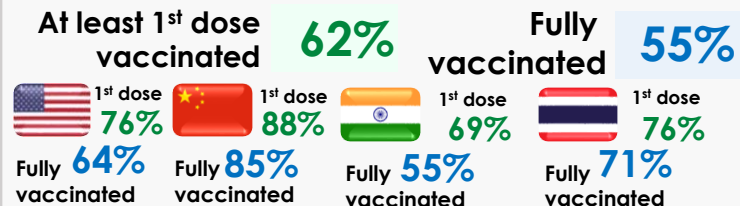
Recapitalization Plan

## Final Remark

## COVID-19 Recovery

- **Accelerated widespread immunization**, 62% of the world population has received at least 1 dose of COVID-19 vaccine
- **Easing COVID border restrictions** in many country including the U.S., Europe and Asia

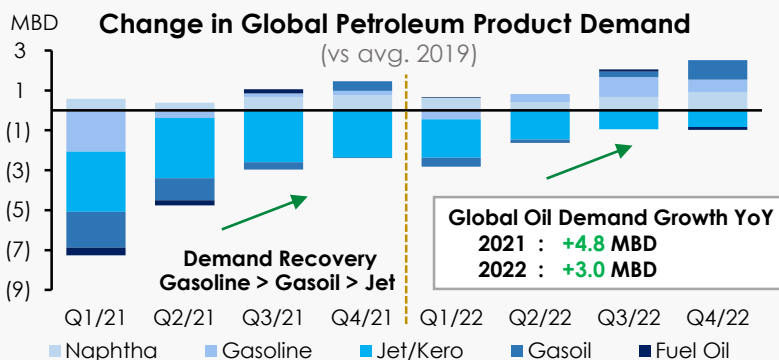
### Vaccination rate As of Feb 17, 2022



Source: WHO (Feb'22), OMS & GCDL & University of Oxford (Feb'22)

## Improving Global Oil Demand

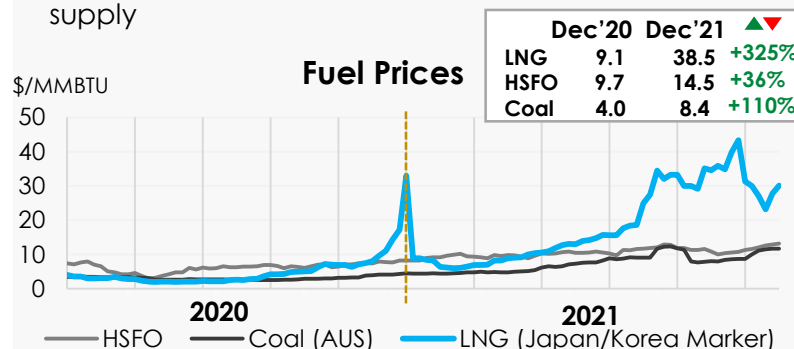
- **Improving gasoline demand** after easing lockdown in major economies
- **Recovering jet demand** on reopening borders



Source: Energy Aspect (Dec'21), FGE, Vortexa, Platts (Dec'21)

## Energy Crisis

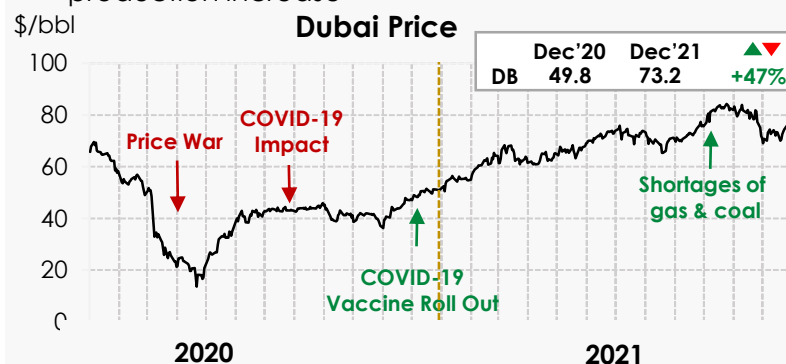
- **Natural gas and coal prices skyrocket and reach record level**, reflecting a sharp increase in demand for electricity generation amid constrained supply



Source: Bloomberg, Reuters (Feb'22)

## Rising Crude Oil Prices

- **Crude oil prices hit multi-year high** as increasing gas to oil substitution amid limited OPEC production increase



Source: Reuters (Feb'22)

## Geopolitical Risks



### Russia & US on Ukraine Invasion

Potential oil & gas supply disruption



### Houthi Attack in Middle East

Drone & missiles attacked near oil storage tanks and downtown



### The Kirkuk-Ceyhan Pipeline Explosion

Explosion at key export pipeline from Iraq to the Turkish port



### Libyan Political Uncertainty

Libyan oil output reduction due to blockage at oil fields caused an armed forces

## Potential Impact on Energy Market

- **Continue rising crude prices** on fears that a possible invasion of Ukraine by Russia could trigger U.S. and European sanctions that would disrupt exports from one of the world's top producers
- With current geopolitical tensions continue and OPEC+ members cannot deliver on their 400 KBD increase, could see oil prices push toward triple figure prices

# Key Performance Highlight

## Key Highlight

## Performance

## Outlook

## Final Remark

### Key Highlight

### Towards Net Zero

### Favorable 2022

### Recapitalization Plan

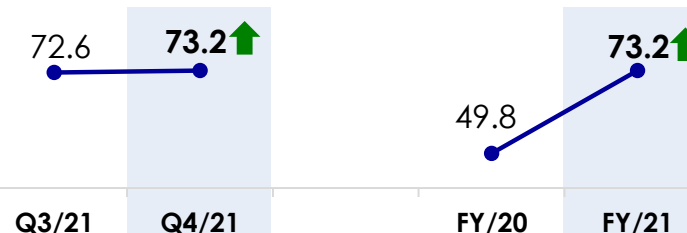
## Crude

QoQ **Dubai rose from \$72.6/bbl to \$73.2/bbl**

YoY **Dubai rose from \$49.8/bbl to \$73.2/bbl**

- + Shortages of natural gas and coal driving demand for oil in power generation
- + Oil demand recovery on easing concern over COVID-19 boosting economic activities
- + Limited OPEC+ production tightening crude market

Dubai (\$/bbl) (ending price)



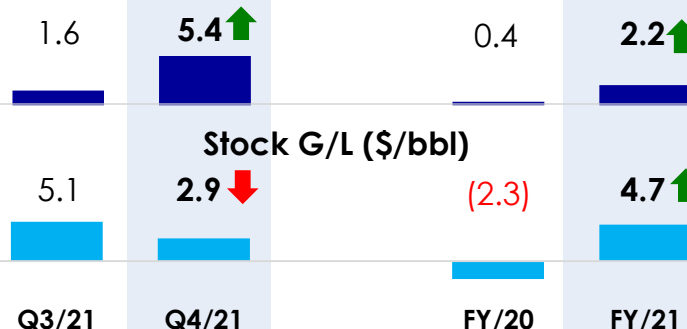
## Refinery

QoQ **Mkt GRM improved from \$1.6/bbl to \$5.4/bbl**

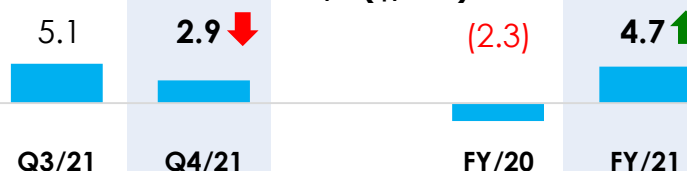
YoY **Mkt GRM improved from \$0.4/bbl to \$2.2/bbl**

- + Improving Gasoline spread due to improving demand on easing restrictions in many countries amid supply tightness and low inventory in the US
- + Strong Middle Distillate spreads on improving demand from the reopening of economies especially in Asia and seasonal heating oil demand during winter
- + Increasing LSFO spread from tight supply following unplanned maintenance SD in Kuwait
- Softening HSFO spread following higher supply from increasing refinery production

Mkt. GRM (\$/bbl) exclude stock G/L



Stock G/L (\$/bbl)



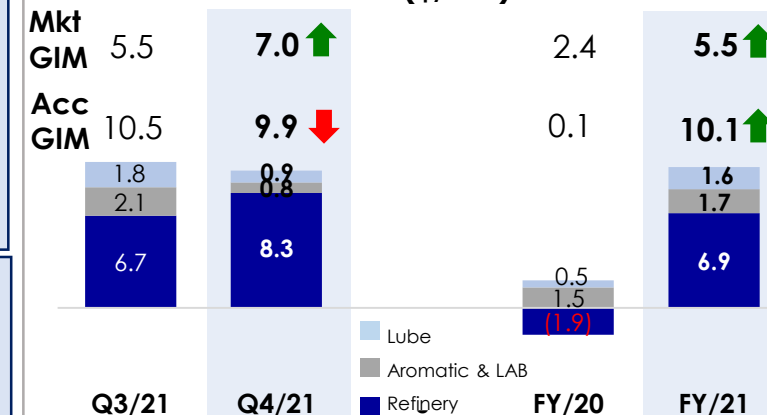
## Aromatic & LAB

QoQ **Contributions softened from \$2.1/bbl to \$0.8/bbl**

YoY **Contributions improved from \$1.5/bbl to \$1.7/bbl**

- Softening PX and BZ margins from weakening downstream (PTA, polyester, SM) demand from power rationing amid new supply addition in China
- + Robust LAB Contribution due to improving regional demand after monsoon season amid limited supply from LAB plant unplanned SD in North Asia

GIM (\$/bbl)



## Lube

QoQ **Contribution softened from \$1.8/bbl to \$0.9/bbl**

YoY **Contribution improved from \$0.5/bbl to \$1.6/bbl**

- Softening Base Oil margins due to higher regional supply from increasing refinery run and resumption from maintenance SD

# Extraordinary Achievement - Biggest Profit Turnaround

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Key Highlight

Performance

Outlook

Final Remark

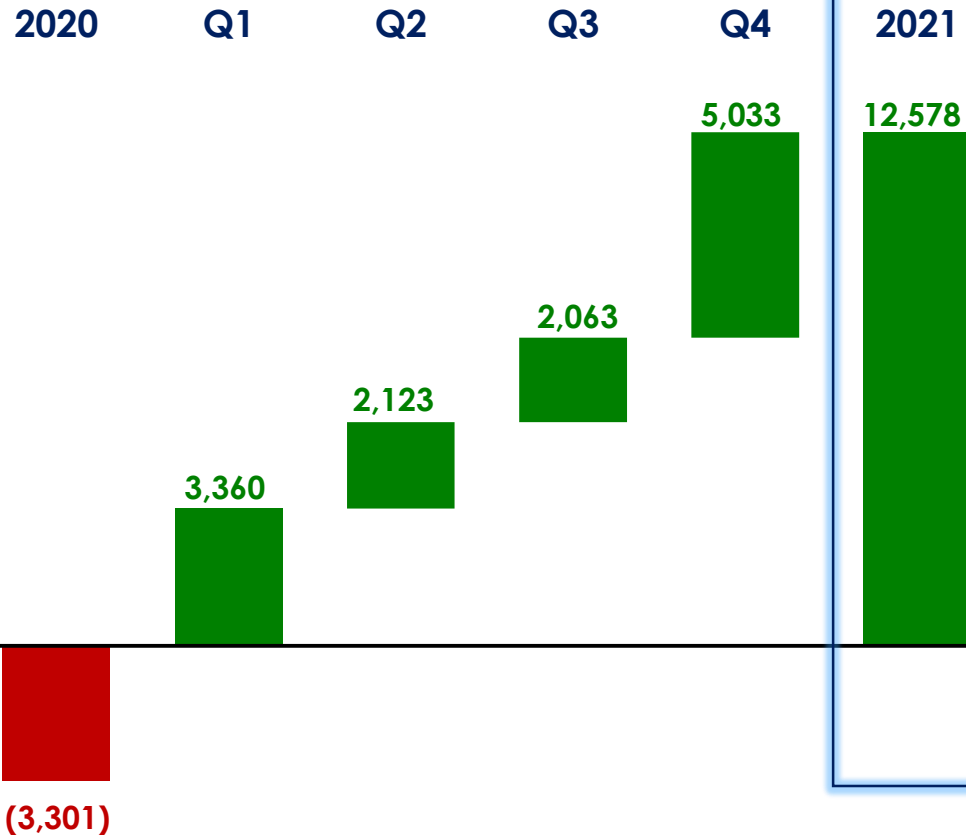
Key Highlight

Towards Net Zero

Favorable 2022

Recapitalization Plan

## NET PROFIT 12,578 MB



**Biggest net profit comeback 12,578 MB**  
from net loss of ~ THB 3.3 bn in 2020



### Optimization Flexibility

- Minimize jet production
- Maximize subsidiaries and HVP



### Crude optimization

- Feedstock optimization



### Operation & Commercial optimization

- Capture market opportunity to manage product sale



### Stringent cost reduction

- Cost management



### Innovative Financial Instrument

- Revenue hedge accounting



# Extraordinary Effort : 3-Pronged Strategy

## Key Highlight

## Performance

## Outlook

## Final Remark

### Key Highlight

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Recapitalization Plan

## 1 People First COVID-19 Response

### Employee & Family Protection

- **Vaccination and booster dose** for staffs and staff's family members
- Comprehensive **preventive, proactive & response measures**



**Achievement : 99% of staff are vaccinated**

### Business Continuity Protection

- **Working area clustering** for MCA staff
- **Active case finding** with Antigen Test Kit (ATK)
- **Safehouse** for operators
- Enforcing ๑ด - ๑ะ - ๑ก for all staffs



**Achievement : No Business Discontinuity**



## 2 Short-term Maximize Profitability

### Operational & Commercial

- **Optimized** overall **value-chain utilization** & production
- Stretched **operational boundaries**
- Capture **high margin markets**
- **Crude & feedstock optimization**
- Excellent **productivity improvement**

### Financial

- Proactive **financial liabilities & FX management**
- **Cost management**
- **Funding readiness**

## 3 Long-term Strategy Execution

### Value Maximization

- **CFP on progress 81%** amid COVID-19 situation

**81%**  
Project Progress  
as of 31 Dec 21

- Completed **olefins investment** in Indonesia (CAP)

**Chandra Asri**

### Value Enhancement

- **Regional expansion** Singapore & India (JSKem, TSCChem)



### Value Diversification

- Successful **restructuring power business and marine**
- Successful **UBE IPO**
- Invested in **2 startups and 1 VC**

**unabiz**  
Massive IoT service  
provider

**MINEED**  
Microneedle for  
Drug Delivery

**ALIBABA**  
ENTREPRENEURS FUND  
China Greater Bay  
Area VC



# Towards Net Zero

Key Highlight

Performance

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Key Highlight

Towards Net Zero

Favorable 2022

Recapitalization Plan

## Strategy to Achieve Net Zero

### Business Portfolio Transformation

- Seek investment opportunities in renewable energy and environmentally friendly businesses
- Increase green revenue growth to 25% of all sales revenue

### Decarbonization Operation

- Improve energy efficiency
- Control the proportion of low-emission fuels in production
- Implement highly efficient technology and stop operating older units
- Study carbon capture and storage technology



### Low Carbon Society

- Support natural rehabilitation through nature-based solutions

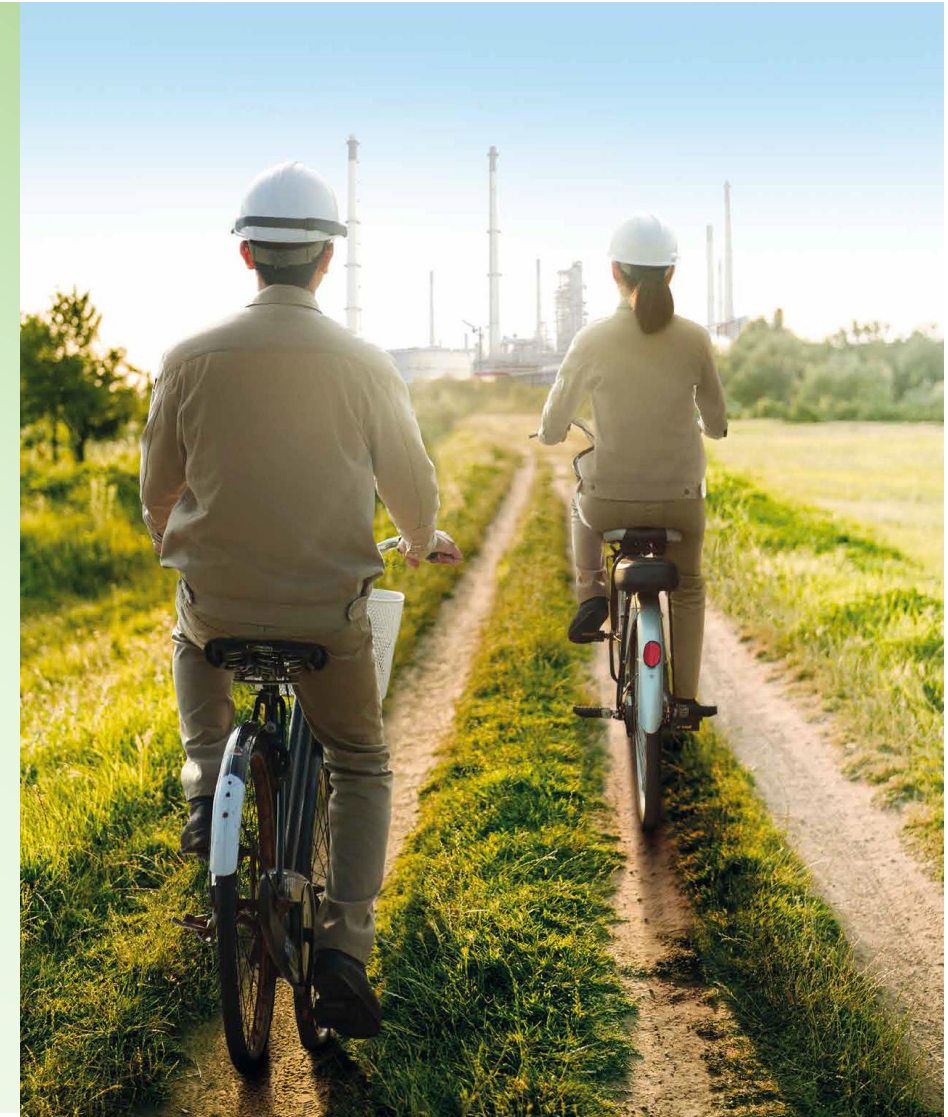


## Net Zero GHG emission by 2060

Through Decarbonization and Nature Based Solution



## 25% Green Revenue



# Favorable 2022 On Promising Fundamental Recovery

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Key Highlight

Performance

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Key Highlight

Towards Net Zero

Favorable 2022

Recapitalization Plan

## 2022 Key Market Highlights

- **Synchronising recovery** from economic re-opening across all regions as well as increasing vaccination rate, boosts up demand to pre-COVID levels
- Increasing oil prices amid rising **global political risks** tightening supplies
- Energy crisis encouraging **Gas-to-Oil switching** and providing upside potential
- Border re-opening is expected to **refuel jet demand**
- **Continuing expanding economic growth** driving fuel demand amid supply tightness

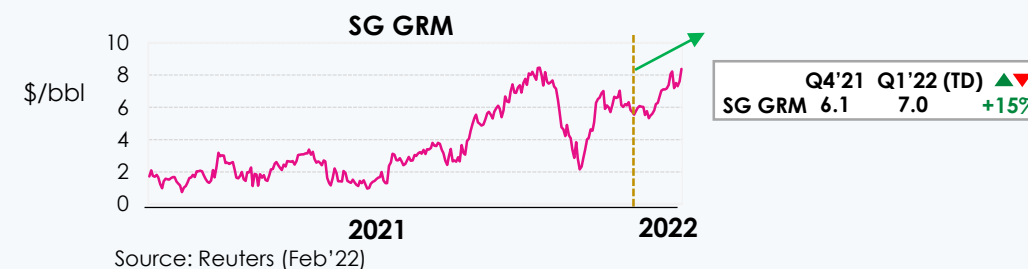


## Q1/22 Expected Stronger on Core Business

- **More stock gain** from rising crude oil prices



- **Stronger market GRM** on robust product spreads from improving oil demand amid supply tightness



- **Maintain high utilization rate** to capture recovering domestic & CLMV demand
- **Improving domestic sale** from reopening country and resuming economic activities

# Recapitalization Plan

Key Highlight	Performance	Outlook	Final Remark
Key Highlight	Towards Net Zero	Favorable 2022	Recapitalization Plan
Transaction	<p><b>Recapitalization plan for CAP investment</b> funded by bridging loan, will consist of:</p> <ol style="list-style-type: none"> <li><b>GPSC Share Sale</b> at 10.78% or 304,098,630 shares to PTT and/or Siam Management Holdings Company Limited ("SMH") (100% subsidiary of PTT)</li> <li><b>Equity Offering</b> of up to 239.2 mm shares with <b>Greenshoe</b> of up to 35.9 mm shares (if any)</li> </ol>		
Objectives	<ul style="list-style-type: none"> <li>✓ <b>Main objective is to repay bridging loan</b> for the strategic investment in CAP</li> <li>✓ <b>Maintain optimal capital structure with expected net debt/equity</b> of less than or equal to 1 time</li> <li>✓ <b>Maintain investment grade</b> of company crediting rating</li> </ul>		
Completion	Within 2022		
Timeline	<p><b>Timeline Milestones:</b></p> <ul style="list-style-type: none"> <li><b>17 Feb 22:</b> BoD Approval for Recap Plan</li> <li><b>7 Apr 22:</b> AGM Approval for Recap plan</li> <li><b>Target Completion By Q2/22:</b> GPSC Share Sale Execution</li> <li><b>Target Completion By Q3 - Q4/22:</b> Equity Offering Execution</li> </ul> <p><b>Approval Process:</b> (Covering the period from 17 Feb 22 to 7 Apr 22)</p> <p><b>GPSC Share Sale Process:</b></p> <ul style="list-style-type: none"> <li>GPSC share transfer to PTT and/ or SMH</li> </ul> <p><b>Public Offering Process:</b></p> <ul style="list-style-type: none"> <li>Filing submission: after AGM</li> <li>Offering &amp; subscription process</li> <li>Newly issued shares to be listed in the SET</li> </ul>		

# Key Benefits of Recapitalization Plan

Key Highlight

Performance

Outlook

Final Remark

Key Highlight

ESG Strategy

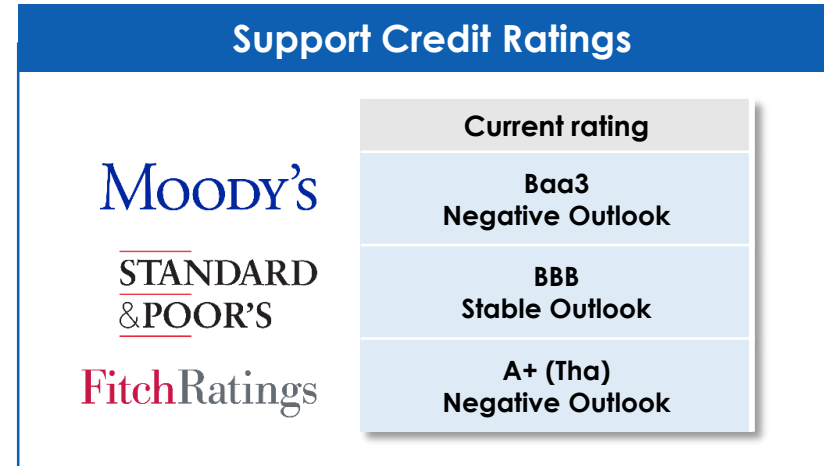
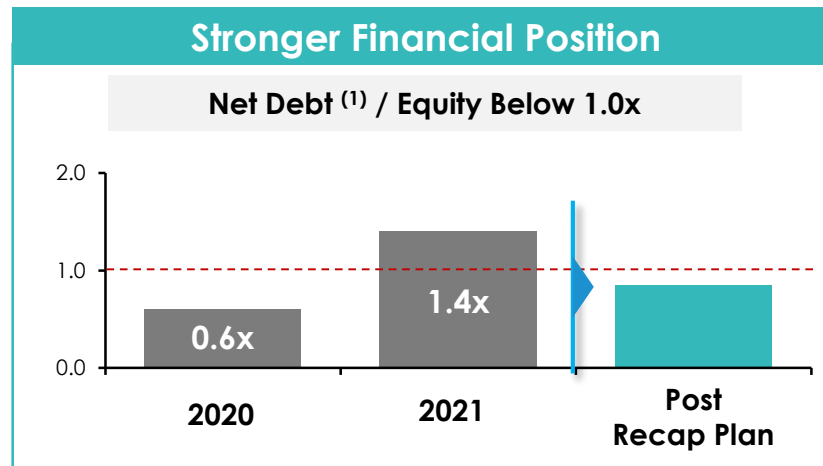
Favorable 2022

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



# PERFORMANCE ANALYSIS

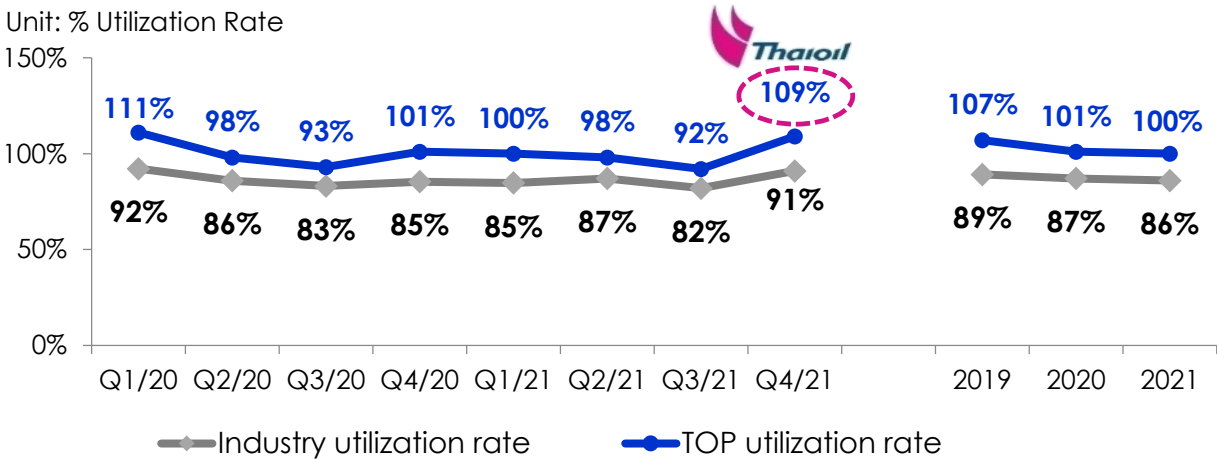


# Refinery: Higher Utilization to Capture Strong Product Margins

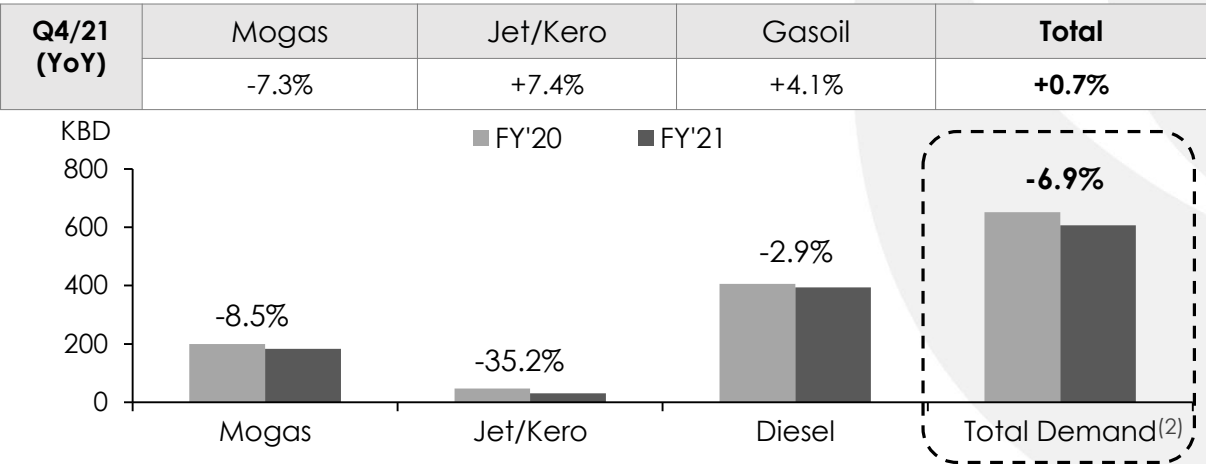
Key Highlight	Performance				Outlook	Final Remark	
Refinery	Aromatic & LAB	Base Oil	GIM	Power	Olefin	All business	F/S & others

## TOP/ Domestic Refinery Utilization Rate

Unit: % Utilization Rate

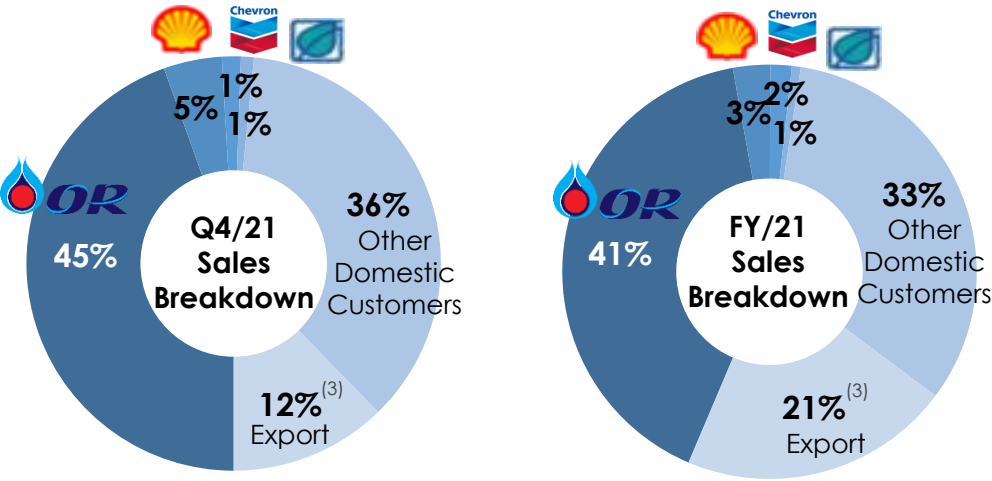


## Domestic Oil Demand

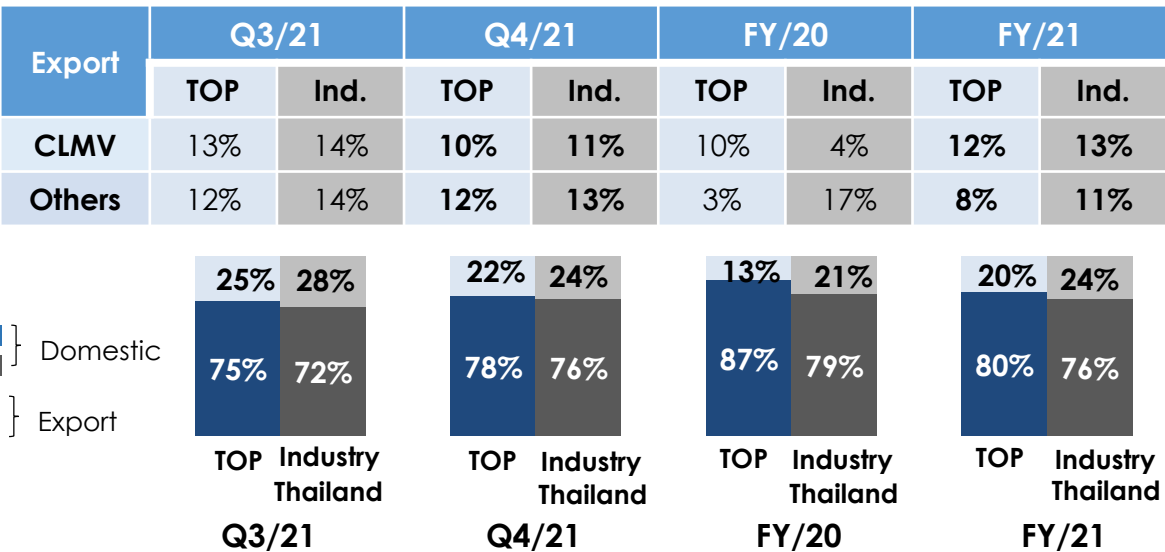


(2) excluding fuel oil & LPG demand

## Sales Breakdown by Customers



## TOP's Domestic Sales vs Industry



(3) Excluding export sale through PTT  
(4) Source: Department of Energy Business, Ministry of Energy

# Refinery: Strong Mkt GRM on Improving Petroleum Demand

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## Key Highlight

## Performance

## Outlook

## Final Remark

### Refinery

### Aromatic & LAB

### Base Oil

### GIM

### Power

### Olefin

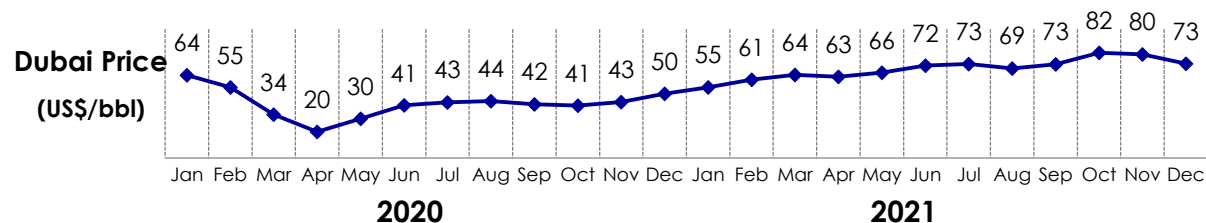
### All business

### F/S & others

## Dubai Crude Price & Key Petroleum Product Spreads

	2020				2021				2022
\$/bbl	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1TD*
DUBAI (DB)	50.9	30.6	42.9	44.6	60.0	66.9	71.7	78.3 ↑	87.1
ULG95 - DB	6.7	2.6	4.4	4.1	7.1	9.9	11.8	15.5 ↑	16.5
JET - DB	8.6	(0.1)	(0.7)	2.4	3.3	4.5	5.4	10.2 ↑	13.2
GO - DB	11.1	5.7	4.2	3.7	4.7	5.3	5.4	11.4 ↑	16.1
VLSFO - DB	13.8	5.3	3.2	5.5	7.6	5.0	4.9	7.0 ↑	10.4
HSFO - DB	(7.5)	(1.6)	(2.5)	(0.6)	(3.5)	(5.8)	(3.4)	(6.9) ↓	(8.4)

\*Q1TD as of 21 Feb 22



## Gross Refinery Margins - GRM

	2020				2021			
\$/bbl	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Market GRM	0.1	1.4	(1.1)	1.2	0.7	0.4	1.6	5.4
Stock G/(L)	(12.3)	(1.8)	4.0	2.3	6.2	4.9	5.1	2.9
Accounting GRM	(12.2)	(0.4)	2.9	3.4	6.9	5.3	6.7	8.3

## 2020

## 2021

## FY

## FY

## 42.2

## 69.2 ↑

## 4.5

## 11.1 ↑

## 2.5

## 5.8 ↑

## 6.2

## 6.7 ↑

## 7.0

## 6.1 ↓

## (3.0)

## (4.9) ↓

## Refinery Utilization

Q3/21	Q4/21	FY/20	FY/21
92%	109%	101%	100%

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

8%/2.5	4%/2.7	23%/(0.4)	9%/1.8
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## % Middle East Crude Intake

67%	82%	57%	64%
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## Q4/21 Market GRM

- + **Improving Gasoline spread** due to improving demand on easing restrictions in many countries amid supply tightness and low inventory in the US
- + **Strong Middle Distillate spreads** on improving demand from the reopening of economies especially in Asia and seasonal heating oil demand during winter
- + **Increasing LSFO spread** from tight supply following unplanned maintenance SD in Kuwait
- **Softening HSFO spread** following higher supply from increasing refinery production

## Q4/21 Performance

- + **Higher refinery run rate to 109%** following domestic oil demand recovery to capture strong product margins

## 2020

## 2021

## FY

## FY

## 0.4

## 2.2

## (2.3)

## 4.7

## (1.9)

## 6.9

# Aromatic: Softening Contribution from Weakening PX & BZ Margins

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## Key Highlight

## Performance

## Outlook

## Final Remark

Refinery

Aromatic & LAB

Base Oil

GIM

Power

Olefin

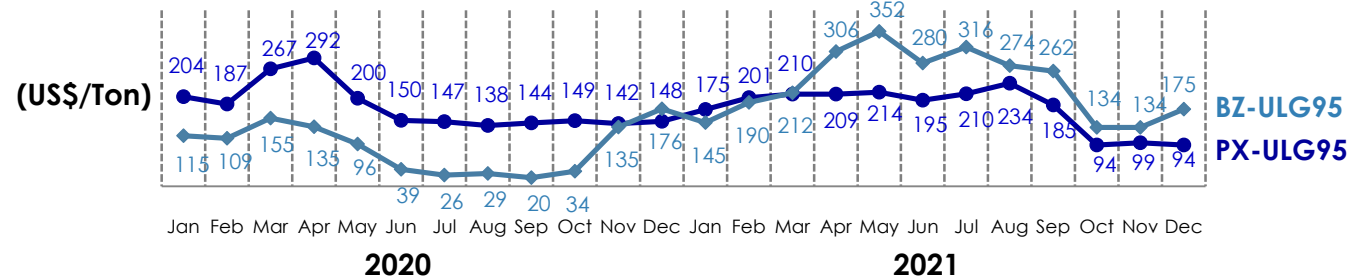
All business

F/S & others

## Aromatic Spreads and Margins

	2020				2021				2022
\$/ton	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1TD*
PX-ULG95	218	214	143	146	195	206	212	96 ↓	138
BZ-ULG95	126	90	25	115	182	313	287	148 ↓	137

\*Q1TD as of 21 Feb 22



## Aromatics Production

Q3/21	Q4/21	FY/20	FY/21
88%	81%	71%	87%

## Q4/21 Market Highlight

- **Softening PX & BZ margin** due to weakening downstream (PTA, polyester) demand from power rationing amid new supply addition in China
- + **Robust LAB Contribution** due to improving regional demand after monsoon season amid limited supply from LAB plant unplanned SD in North Asia

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

(Unit : KTon)

TL  
BZ  
PX

	2020				2021				2020	2021
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	FY	FY
P2F -\$/ton	85	77	68	76	106	112	90	19	77	80
P2F -\$/bbl	11.1	10.0	8.9	9.9	13.9	14.8	12.1	2.5	10.0	10.6
GIM -\$/bbl <sup>(1)</sup>	1.5	1.6	1.2	1.6	2.0	2.4	2.1	0.8	1.5	1.7

(1) Including LAB contribution

## Q4/21 Performance

- **Lower utilization rate at 81%** as weakening aromatic margins
- + **Increasing LAB utilization rate to 120%**



# Base Oil: Softening Contribution Pressured by Lower Lube Spread

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## Key Highlight

## Performance

## Outlook

## Final Remark

Refinery

Aromatic & LAB

Base Oil

GIM

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Olefin

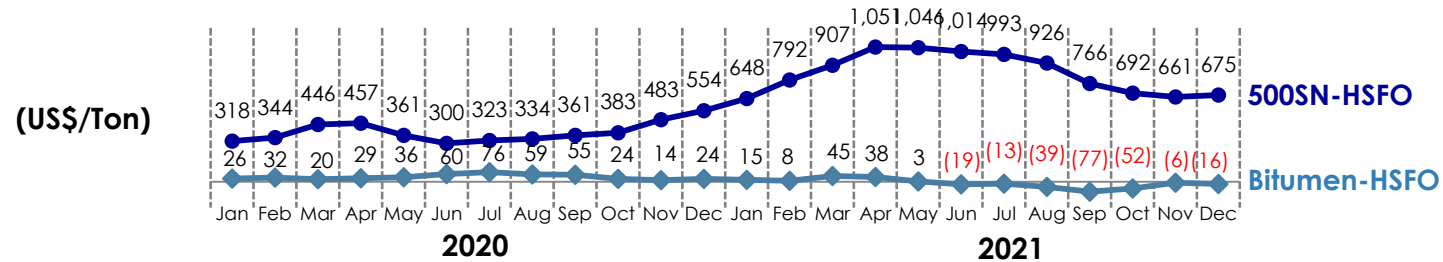
All business

F/S & others

## Base Oil & Bitumen Spreads & Margins

	2020				2021				2022
\$/ton	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1TD*
500SN-HSFO	369	372	340	474	783	1,037	896	673 ↓	575
BITUMEN-HSFO	26	42	63	21	23	7	(43)	(29) ↑	(54)

\*Q1TD as of 21 Feb 22



## Base oil Production

Q3/21	Q4/21	FY/20	FY/21
88%	88%	88%	91%

## Q4/21 Market Highlight

- **Softening Base Oil margins** due to higher regional supply from increasing refinery run and resumption from maintenance SD

## Q4/21 Performance

- + **Maintain utilization rate at 88%**

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

(Unit : KTon)

■ Bitumen  
■ Specialty  
■ Base Oil

	2020				2021				2020	2021
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	FY	FY
P2F -\$/ton	86	24	100	105	170	231	187	118	79	176
P2F -\$/bbl	13.1	3.6	15.1	15.9	25.7	34.9	28.4	17.9	11.9	26.7
GIM -\$/bbl	0.6	0.0	0.8	0.8	1.5	2.4	1.8	0.8	0.5	1.6

# Integrated Margin & Competitive Cash Cost

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Key Highlight

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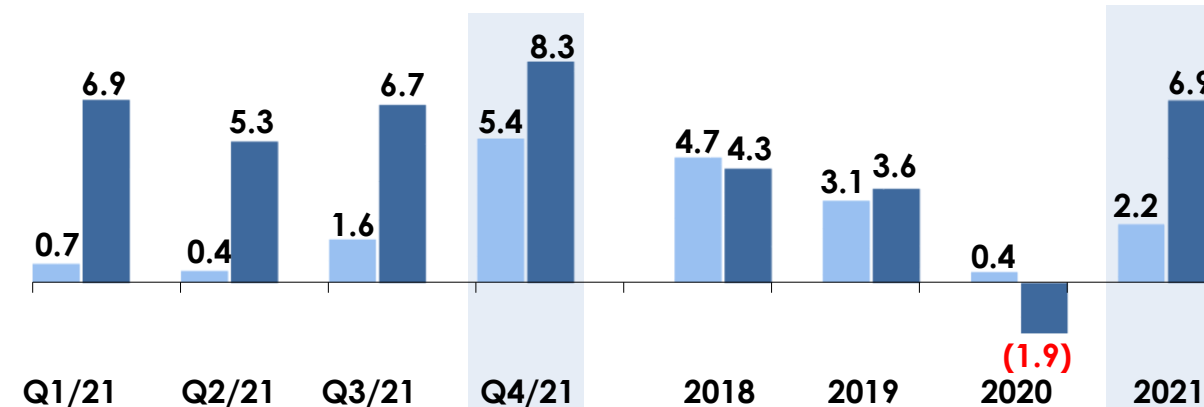
All business

F/S & others

## Gross Refining Margin

(Unit: US\$/bbl)

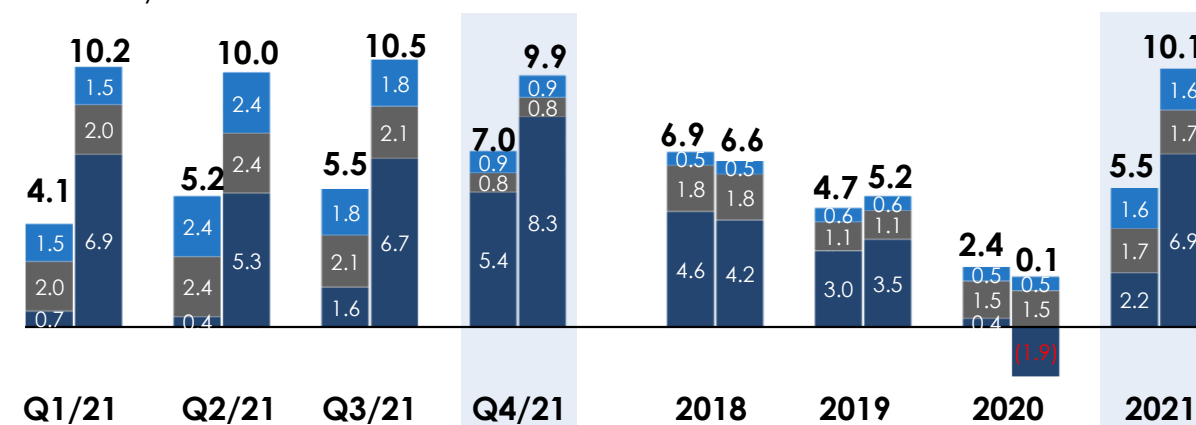
■ Market GRM ■ Accounting GRM (Market GRM + Stock G/L)



## Gross Integrated Margin

(Unit: US\$/bbl)

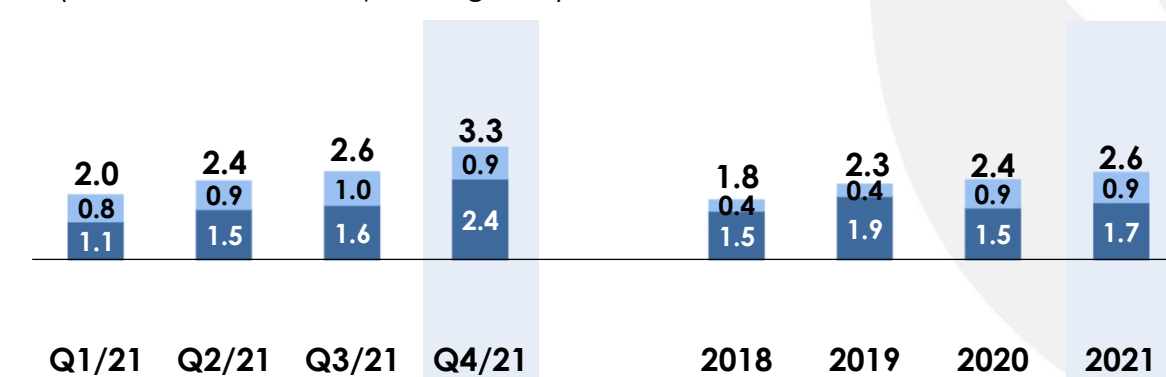
■ Market GRM ■ Accounting GRM (Market GRM + Stock G/L)  
■ Refinery ■ Aromatic & LAB ■ Lube Base



## Refinery's Cash Cost

(Unit: US\$/bbl)

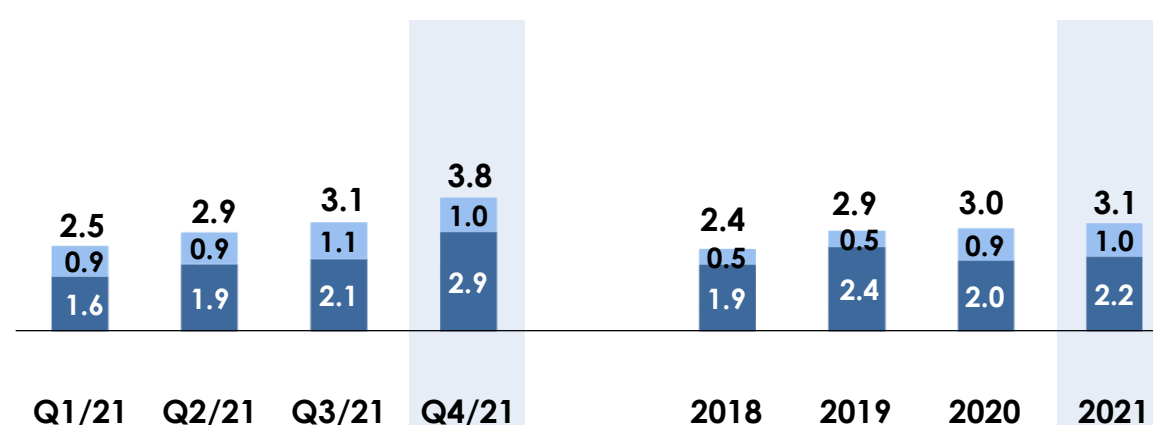
■ Operating Cost ■ Interest Expense (net)  
(excl. one-time non-operating item)



## Group's Cash Cost

(Unit: US\$/bbl)

■ Operating Cost ■ Interest Expense (net)  
(excl. one-time non-operating item)

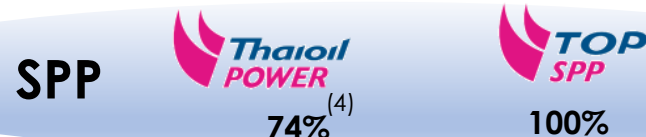


# Power Sector Performance...Stable Contribution to the Group

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Key Highlight		Performance			Outlook		Final Remark
Refinery	Aromatic & LAB	Base Oil	GIM	Power	All business	F/S & others	

## Power Business Sector



### Power & Steam Sales

**Electricity<sup>(1)</sup>**  
(GWh)

**Steam<sup>(1)</sup>**  
(kton)

(1) 100% of TP and TOP SPP

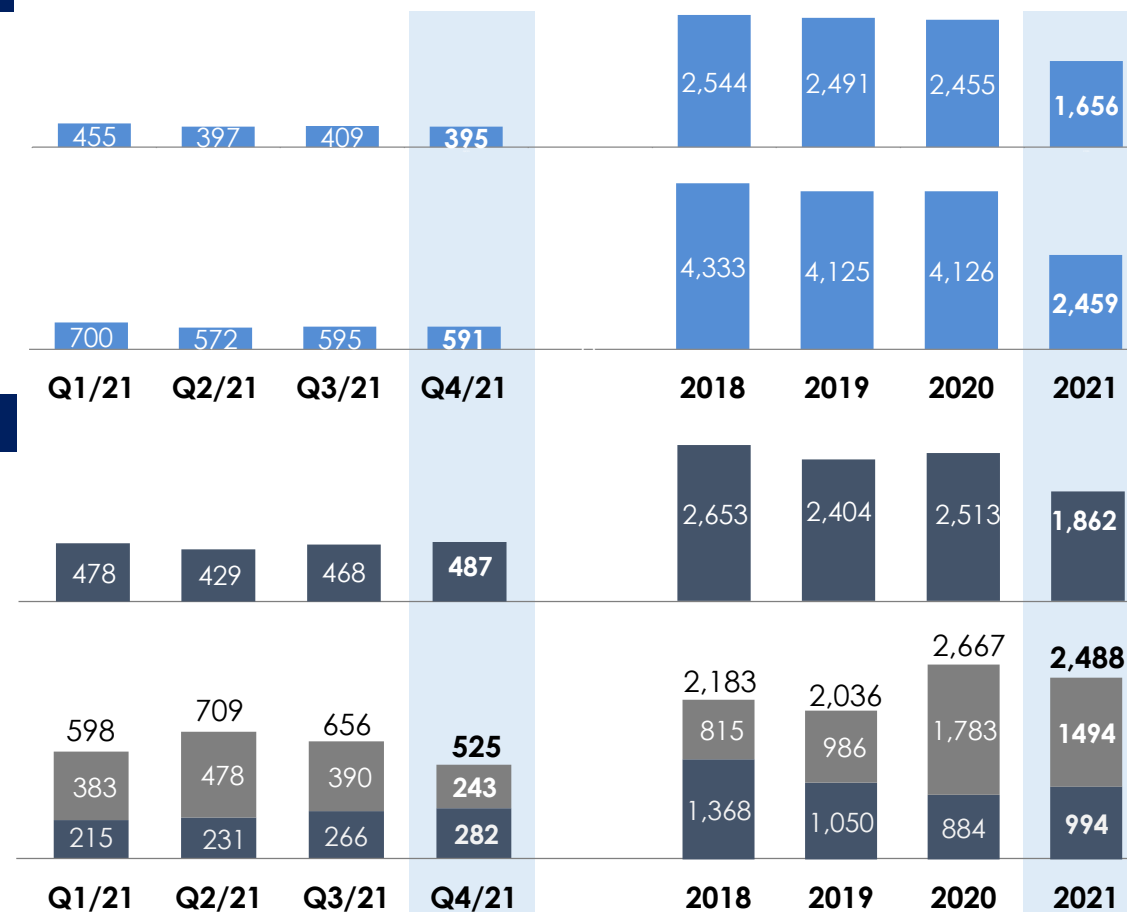
### EBITDA & Net Profit

**EBITDA<sup>(2)</sup>**  
(THB million)

(2) Consolidated EBITDA of TP and TOP SPP

**Net Profit<sup>(3)</sup>**  
(THB million)

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



(4) Thai Oil Power (TP) completely transferred whole business to be under TOP in Feb'21

(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

### Q4/21 Performance Highlight

- **Lower power business contribution** mainly from the decrease in share profit from GPSC due to lower IU contribution
- + **Improving contribution from TOP SPP** due to higher average selling prices following rising natural gas prices

■ Equity income from GPSC  
■ SPP (TP+TOP SPP)

# Olefins Business : Softening Petrochemical Contribution

-20-

## Key Highlight

## Performance

## Outlook

## Final Remark

Refinery

Aromatic & LAB

Base Oil

GIM

Power

Olefin

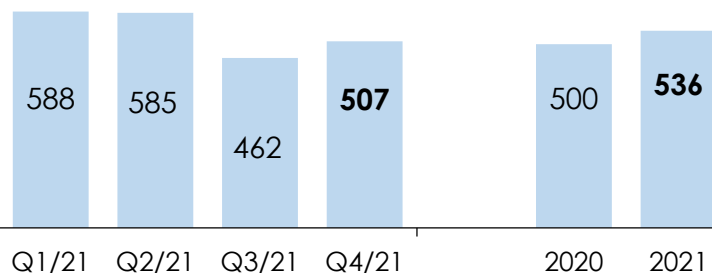
All business

F/S & others

## Olefin Product Spreads

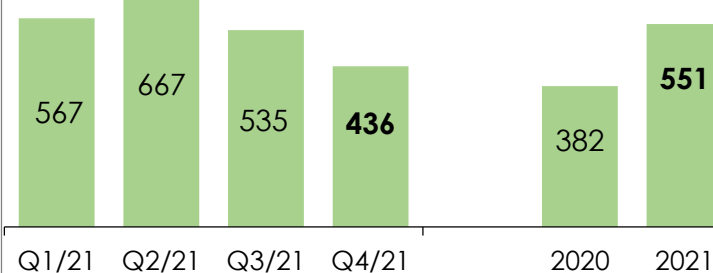
### Polymer Spreads

#### HDPE CFR SEA - NaphJ (\$/TON)

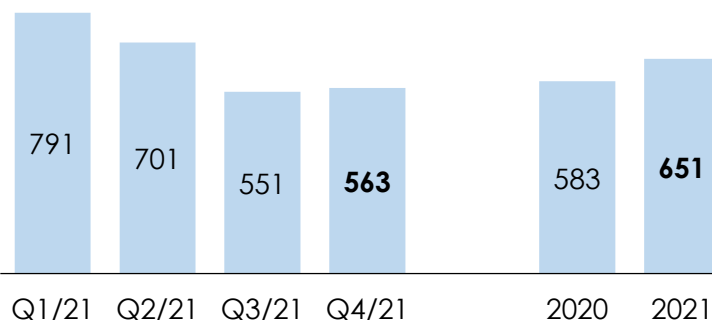


### Monomer Spreads

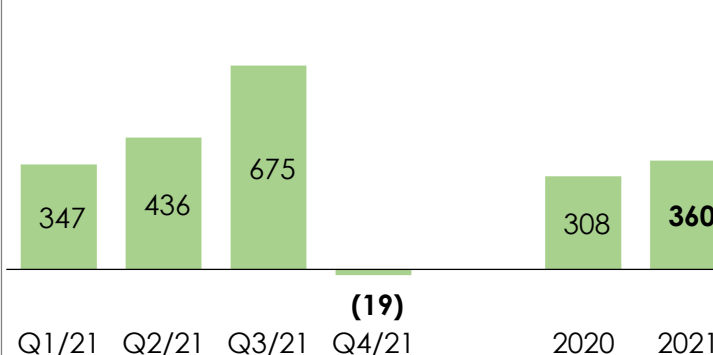
#### SM - NaphJ (\$/TON)



#### PP CFR SEA - NaphJ (\$/TON)

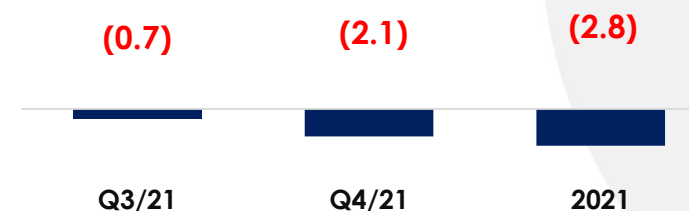


#### BD - NaphJ (\$/TON)



## TOP Investment Indonesia (TII) Performance

### Net Profit (million USD)



### Q4/21 Performance Highlight

- + **Improving Polymer spread** due to delayed new Chinese capacities and supply shortage in China from power outage, amid pandemic concerns
- **Soften Butadiene spread** due to regional supply to increase from Philippines's JG Summit Petrochemical Group start-up and semiconductor shortage situation
- **Booked special items in Q4'21** i.e. deferred tax expense from the government of Indonesia has scrapped its plans to reduce their CIT to 20% from 2022 onwards and has opted the CIT to remain at 22% and bond buy back activity



# TOP Group Net Profit

-21-

## Key Highlight

## Performance

## Outlook

## Final Remark

Refinery

Aromatic & LAB

Base Oil

GIM

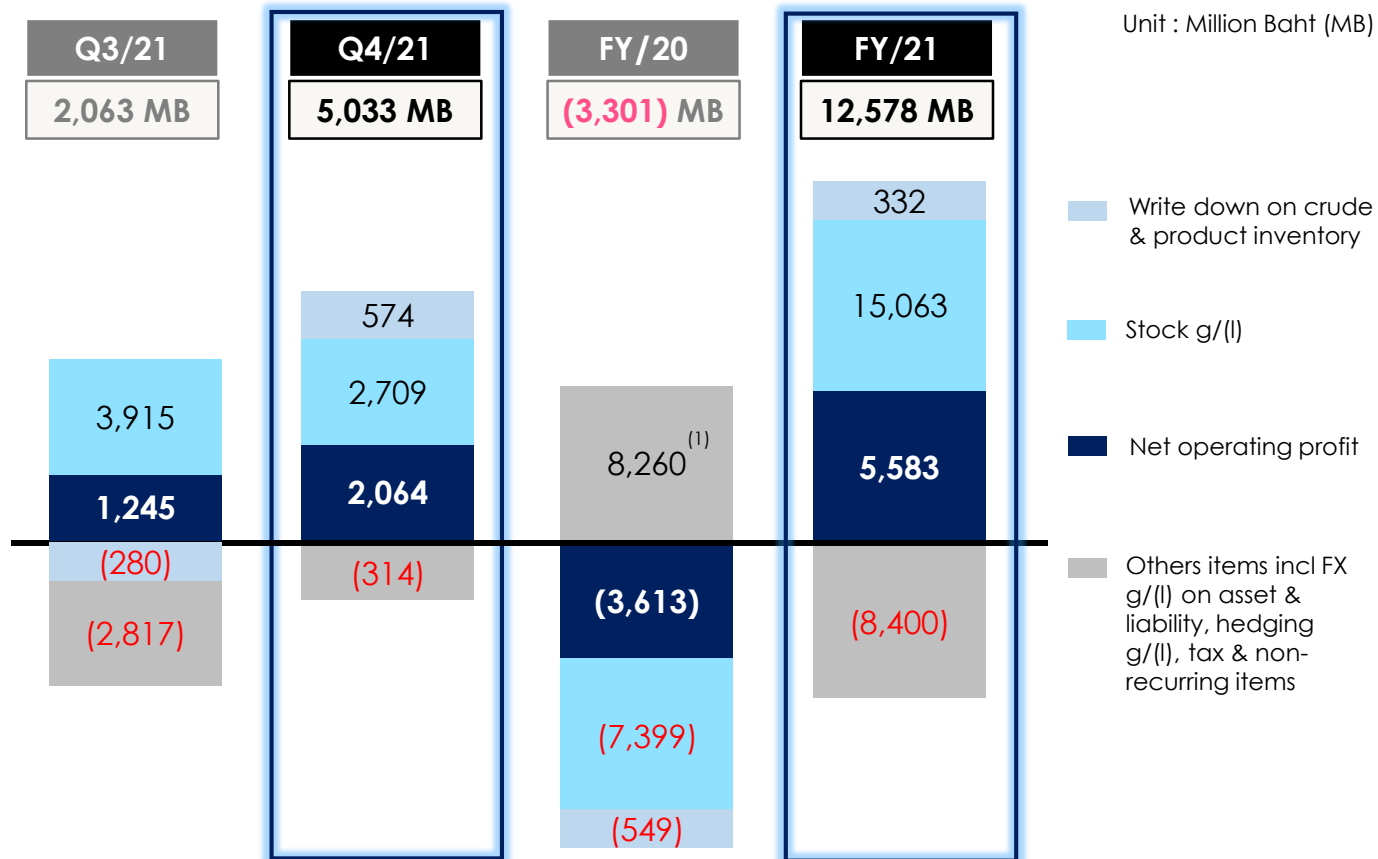
Power

Olefin

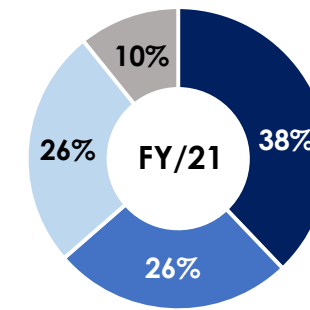
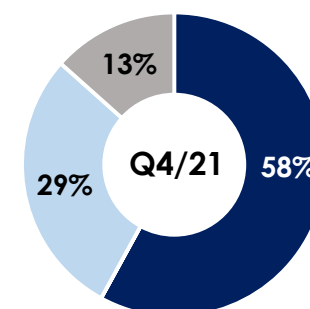
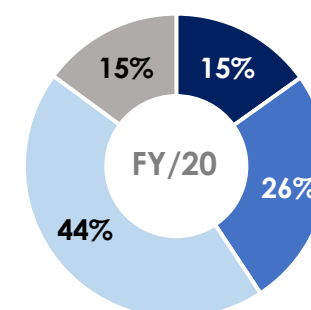
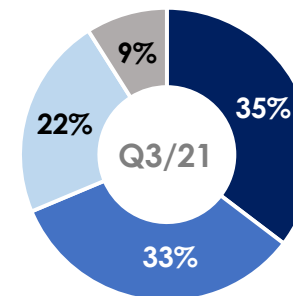
All business

F/S & others

## TOP Group Net Profit



## Net Profit Contribution<sup>(2)</sup>



- Petroleum & Lube
- Petrochemical
- Power
- Others & New Business

(1) Including gain on GPSC share sale 5,801 MB

(2) excluding stock g/(l) and one-time item

# Performance Breakdown

-22-

Key Highlight		Performance			Outlook		Final Remark	
Refinery	Aromatic & LAB	Base Oil	GIM	Power	Olefin	All business	F/S & others	
	Petroleum & Lube Base	Petrochemical <sup>(1)</sup>		Power <sup>(2)</sup>		Others & New Business <sup>(3)</sup>		Consolidated Net Profit
Q3/21	(274)	979		656		786		2,063
Q4/21	4,347	(32)		525		246		5,033
FY/20	(3,658)	1,535		2,667		897		(3,301)
FY/21	6,140	2,496		2,488		1,671		12,578
QoQ	<p><b>Petroleum</b> <b>Higher contribution</b> from stronger GRM and stock gain as rising crude oil prices</p> <p><b>Lube</b> <b>Softening contribution</b> pressured by weakening lube spread from higher regional supply from increasing refinery run</p>	<p><b>Aromatics &amp; LAB</b> <b>Lower contribution</b> pressured by softening PX and BZ margins due to weakening demand</p> <p><b>Olefins</b> <b>Softening contribution</b> from CAP due to one-time expense i.e. deferred tax expense</p>	<p><b>TOP SPP</b> <b>Higher contribution</b> due to higher average selling prices following rising natural gas prices</p> <p><b>GPSC</b> <b>Lower contribution</b> from GPSC mainly from lower IU contribution from higher gas and coal cost</p>	<p><b>Solvent</b> <b>Slightly lower contribution</b> due to narrower gross margin from abundant supply in the market</p> <p><b>Ethanol</b> <b>Lower contribution</b> from higher expense in Q4/21</p>				
YoY	<p><b>Petroleum</b> <b>Stronger contribution</b> from improving GRM and stock gain</p> <p><b>Lube</b> <b>Robust contribution</b> supported by record high lube spread from limited supply due to lower refinery run</p>	<p><b>Aromatics &amp; LAB</b> <b>Higher contribution</b> supported by stronger BZ margin and robust LAB contribution</p>	<p><b>TOP SPP</b> <b>Higher contribution</b> on increasing natural gas prices as well as higher sale volume</p> <p><b>GPSC</b> <b>Lower contribution</b> from GPSC mainly from Glow incident and lower IU contribution</p>	<p><b>Solvent</b> <b>Higher contribution</b> supported by improving gross margin from higher HVP and supply-shortage-product</p> <p><b>Ethanol</b> <b>Higher contribution</b> mainly from gain on selling UBE shares during IPO and reclassification</p>				

(1) Including Olefin business from 15% of CAP net profit and 75% of LAB net profit

(2) Apply on equity basis in the consolidated financial statement

(3) Consisting of Solvent, Ethanol and other business

# Q4 & FY/21 TOP Group Consolidated P&L

-23-

Key Highlight		Performance				Outlook		Final Remark	
Refinery	Aromatic & LAB	Base Oil	GIM	Power	Olefin	All business	F/S & others		
(Unit : million baht)									
	Q3/21	Q4/21	QoQ+ / (-)	Q4/20 Represented	YoY+ / (-)	2020 Represented	2021	YoY+ / (-)	
Sales Revenue	79,960	104,298	24,338 <sup>(A)</sup>	59,908	44,390	242,840	335,827	92,987 <sup>(C)</sup>	
Net Realized G/(L) on Financial Instrument	(479)	(1,807)	(1,328)	(254)	(1,553)	(174)	(2,461)	(2,287)	
<b>EBITDA</b>	<b>6,784</b>	<b>6,082</b> ↓	<b>(702)</b> <sup>(B)</sup>	<b>3,492</b>	<b>2,590</b>	<b>(2,056)</b>	<b>28,142</b> ↑	<b>30,198</b> <sup>(D)</sup>	
<b>EBITDA excl. Stk G/(L) &amp; NRV</b>	<b>3,149</b>	<b>2,799</b>	<b>(350)</b>	<b>1,618</b>	<b>1,181</b>	<b>5,892</b>	<b>12,747</b>	<b>6,855</b>	
Net G/(L) on FV of Financial Instrument	(1,429)	2,311	3,740	(50)	2,361	(5)	55	60	
FX G/(L) & CCS	(1,228)	522	1,750	2,538	(2,016)	1,784	(4,595)	(6,379)	
Financial cost	(934)	(958)	(24)	(1,039)	81	(4,292)	(3,595)	697	
Tax Expense	(213)	(1,075)	(862)	(2,384)	1,309	647	(2,034)	(2,681)	
<b>Net Profit</b>	<b>2,063</b>	<b>5,033</b> ↑	<b>2,970</b>	<b>7,257</b>	<b>(2,224)</b>	<b>(3,301)</b>	<b>12,578</b> ↑	<b>15,879</b>	
EPS (THB/Share)	1.01	2.47	1.46	3.56	(1.09)	(1.62)	6.17	7.79	
Stock G/(L) and NRV	3,635	3,283	(352)	1,874	1,409	(7,948)	15,395	23,343	
THB/US\$ - average selling	33.10	33.54	0.44	30.79	2.75	31.46	32.17	0.71	
THB/US\$ - ending	34.09	33.59	(0.50)	30.21	3.38	30.21	33.59	3.38	

## Analysis

### QoQ

**(A) Higher sales revenue due to improving average selling prices**

**(B) Lower EBITDA from higher net realized loss on financial instrument**

### YoY

**(C) Higher sales revenue due to higher average selling prices**

**(D) Higher EBITDA from improving MKT GIM and stock gain**

# FY/21 Consolidated Cash Flow

-24-

Key Highlight		Performance					Outlook	Final Remark	
Refinery	Aromatic & LAB	Base Oil	GIM	Power	Olefin	All business	F/S & others		

(Unit: MB)

	2020	2021
<b>Operating Cash Flow (CFO)</b>	<b>2,435</b>	<b>10,504</b>

Net income	(2,669)	13,066
Depreciation & NRV	7,769	7,662
Other adj.	(7,188)	6,648
Change in working capital	4,522	(16,873)

	2020	2021
<b>Investing Cash Flow (CFI)</b>	<b>(30,269)</b>	<b>(62,498)</b>

Dividend income	1,281	1,110
Sell / (Invest) in a associate	16,757	(29,573)
CAPEX (PP&E) & others	(48,306)	(34,036)

	2020	2021
<b>Free Cash Flow (CFO +CFI)</b>	<b>(27,834)</b>	<b>(51,995)</b>

	2020	2021
<b>Financing (CFF)</b>	<b>20,575</b>	<b>8,245</b>

Loans proceeding	6,336	39,789
Loans repayment	(7,494)	(10,834)
Bond issue / (Paid)	31,120	(3,000)
Interest	(6,262)	(6,929)
Dividend & others	(3,124)	(10,780)

**Beginning 2021**

Cash + S/T Investment
71,681

+

Increase / (Decrease)
(43,749)

+

Effect of FX changes <sup>(1)</sup>
2,092

=

**Ending 2021**

Cash
30,024

(1) Effect of FX changes mainly from the FX gain/loss of FCD



# Q4/21 TOP Group Financial Position & Financial Ratios

-25-

## Key Highlight

## Performance

## Outlook

## Final Remark

Refinery

Aromatic & LAB

Base Oil

GIM

Power

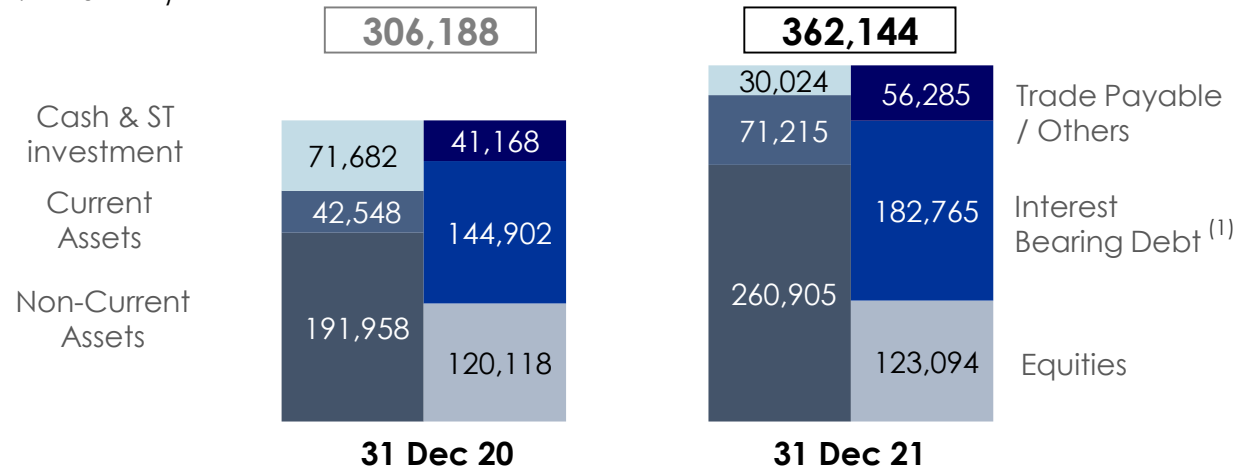
Olefin

All business

F/S & others

## Statements of Financial Position

(Unit: million THB)



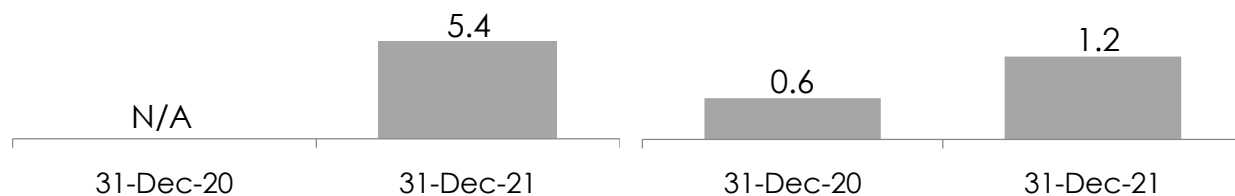
ROE <sup>(2)</sup>	-2.7 %	10.3 %
ROIC <sup>(2)</sup>	-2.3 %	8.8 %

- (1) Including current portion of Long-Term Debt  
 (2) Based on actual performance in the past 12 month

## Financial Ratios

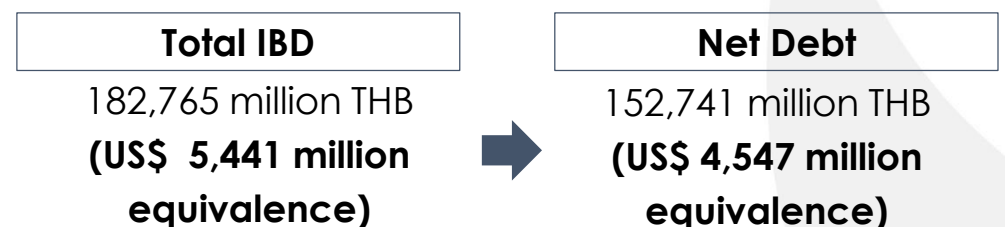
Net Debt <sup>(4)</sup> / EBITDA

Net Debt <sup>(4)</sup> / Equity

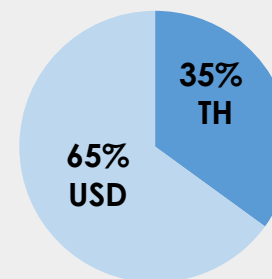


(4) As of 31 Dec 21 Net Debt 152,741 MB excluding lease liabilities 14,135 MB

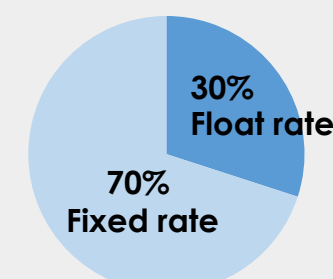
## Consolidated Long-Term Debt as at 31 Dec 21



## Currency Breakdown



## Interest Rate Breakdown



Avg. Debt Life (yrs)	15.38 yrs
Cost of Debt (Net)	4.06% <sup>(3)</sup>
(Gross)	4.18%

(3) Due to yield enhancement

Moody's

STANDARD & POOR'S

FitchRatings

Final rating

Baa3  
Negative Outlook

BBB  
Stable Outlook

A+(Tha)  
Negative Outlook

# Recapitalization Plan

## Key Highlight

## Performance

## Outlook

## Final Remark

Refinery

Aromatic &amp; LAB

Base Oil

GIM

Power

Olefin

All business

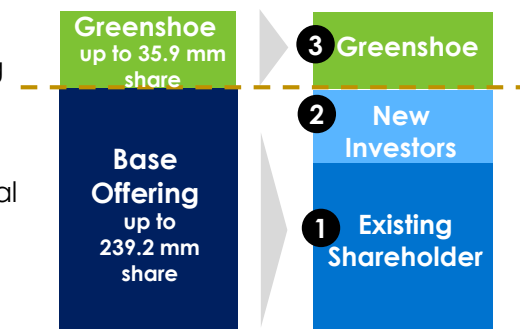
F/S &amp; others

## 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**

### Target Completion

Q3 - Q4/22

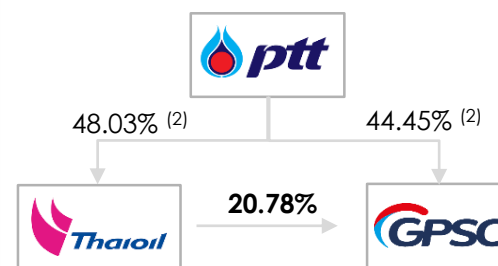
## GPSC Share Sale

### 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<sup>(1)</sup>
- Book gain from share sale and reclassification on P&L

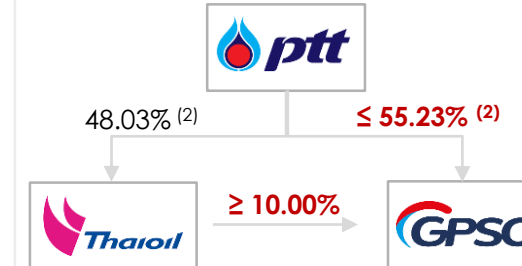
### Holding Structure in GPSC

#### Pre-Share Sale



**PTT's holding in GPSC**  
Direct holding: 44.45%<sup>(2)</sup>  
Indirect holding: 30.78%  
**Total PTT Group 75.23%**

#### Post-Share Sale



**PTT's holding in GPSC**  
Direct holding: ≤ 55.23%<sup>(2)</sup>  
Indirect holding: ≥ 20.00%  
**Total PTT Group 75.23%**

### Target Completion

Q2/22

(1) Before deduction of GPSC's dividend

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



## 2022 OUTLOOK

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

# What is Happening : Supply Concern on Geopolitical Risk and Limited OPEC+ Spare Capacity

-28-

Key Highlight

Performance

Outlook

Final Remark

Crude

Refinery

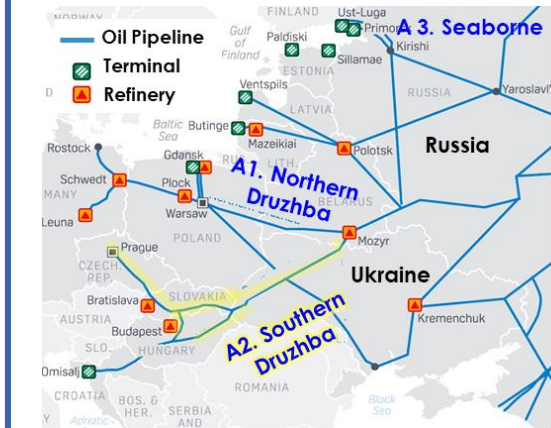
Petrochemical

Lube & Bitumen

Conclusion

## A Russia-Ukraine : Potential for Oil and Gas Disruption

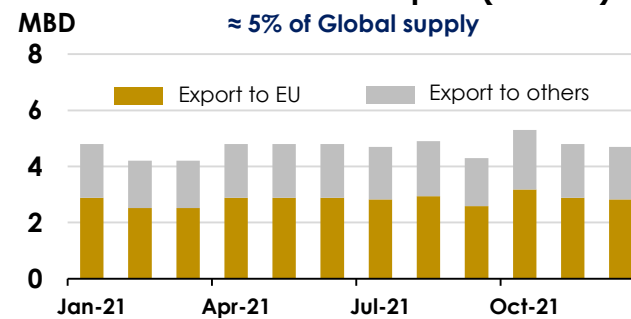
### Russian Crude Oil Pipeline to Europe



source : Platts , Eurostat, EIA

### Russia Crude Oil Export (Global)

≈ 5% of Global supply

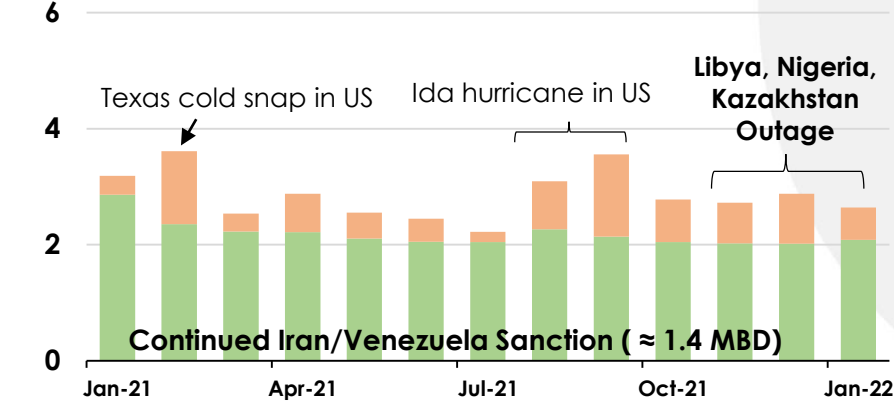


- Europe relies on Russian crude around 25-30% (2021)

source : FGE, Goldman Sachs

## B Production Outage in Key Producers

### Global Supply Outage



Countries with Production Outage

Non-OPEC

Canada  
USA  
Others

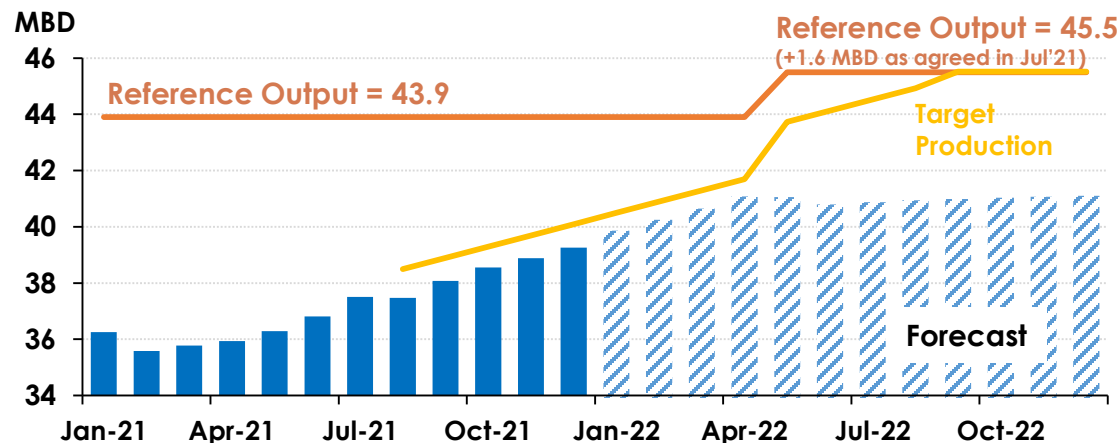
OPEC

Iran  
Libya  
Nigeria  
Iraq  
Kuwait  
Saudi Arabia  
Venezuela

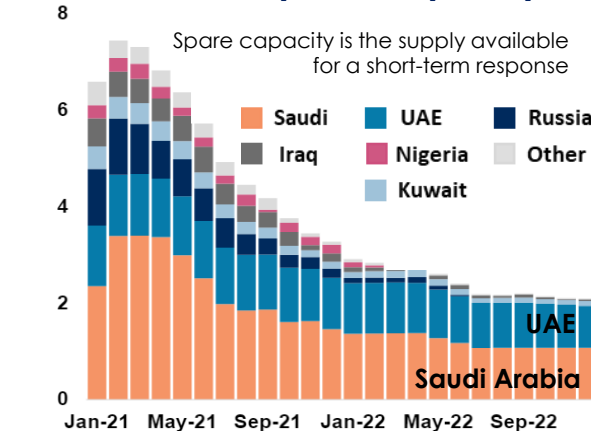
source : EIA (Feb'22)

## C Uncertainty on Incremental OPEC+ Supply due to Limited Spare Capacity

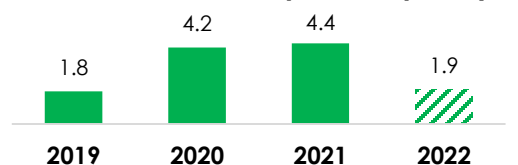
### OPEC+ Crude Output Forecast



### OPEC+ Spare Capacity



### Historical OPEC+ Spare Capacity



- By 2H'22, OPEC+ spare capacity may be insufficient to hit Quota received

- Some Member Countries e.g. Russia become capacity constrained

Source : Platts, FGE Feb'22



# What will Happen : Slightly Surplus Market in 2H/22 due to Potential Non-OPEC+ Supply Increase

-29-

Key Highlight

Performance

Outlook

Final Remark

Crude

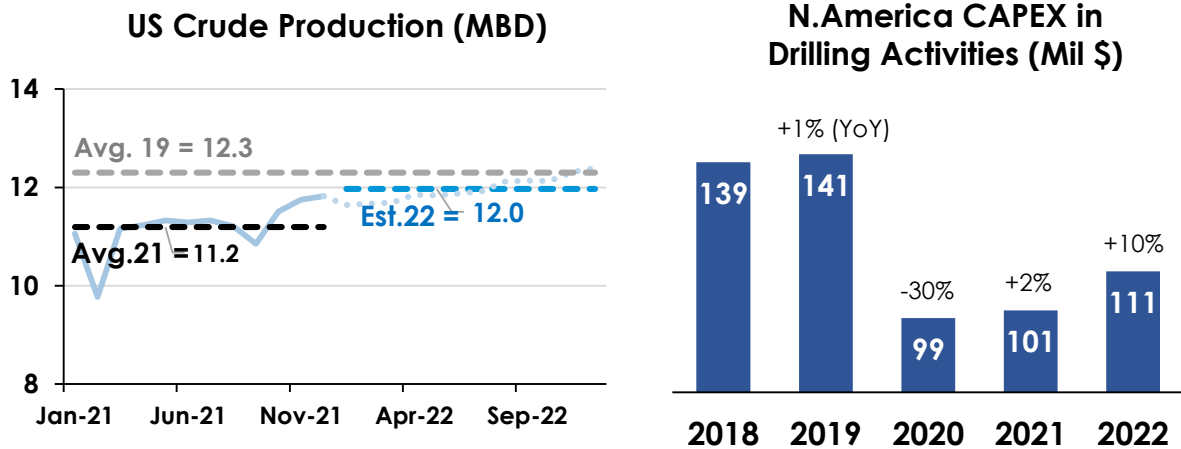
Refinery

Petrochemical

Lube & Bitumen

Conclusion

## A Higher US Output Tracking High Crude Price



Source : EIA Feb'22

Source : Energy Aspect

## B Potential Iranian Sanction Lifting

**Expectation of the agreement btw Iran and World Power to resume Iranian production and export**

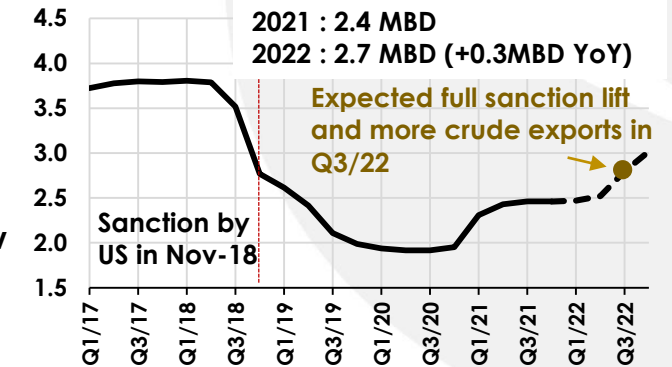
### Current Status

**Apr-21** : Nuclear talks began

**Nov-21** : Talks resumed after new Iran's presidential election

**Feb-22** : Talks resumed

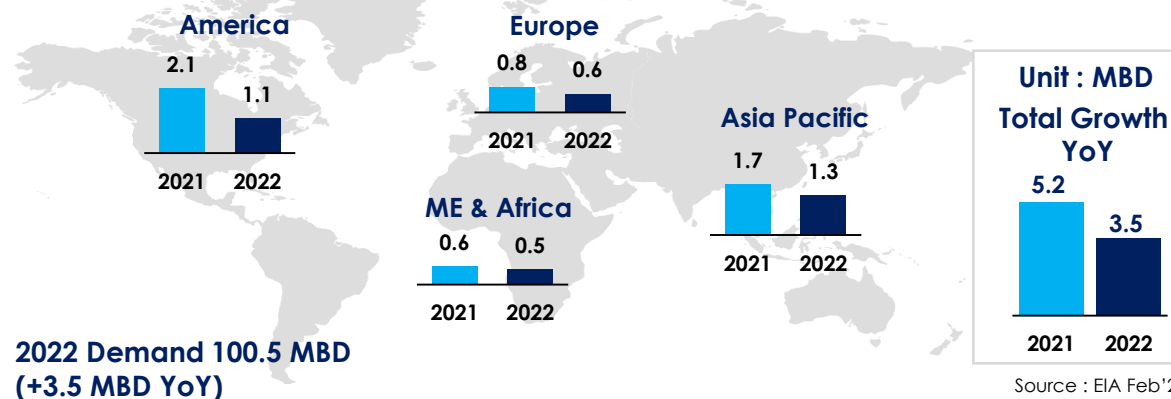
### Iranian Crude Oil Production (MBD)



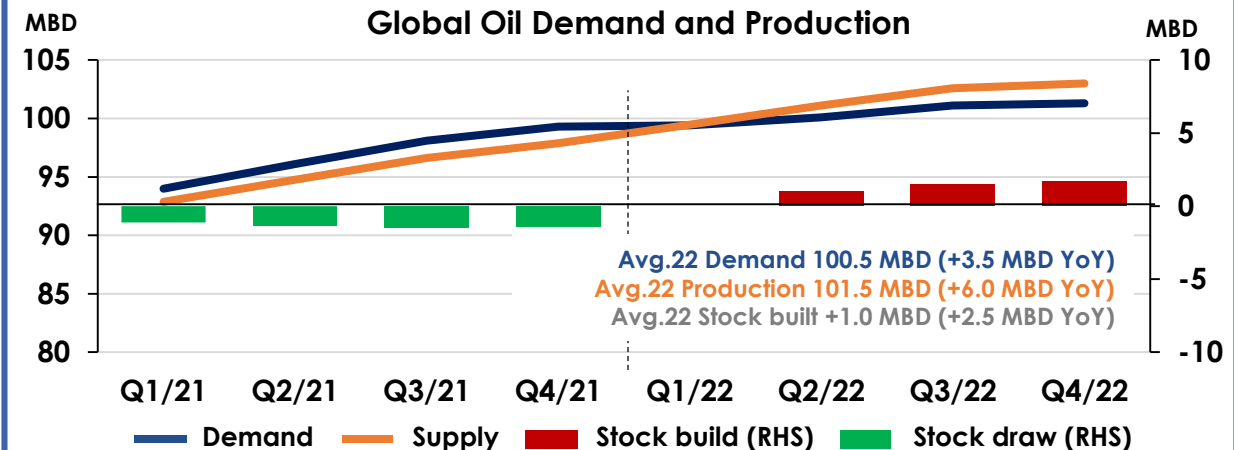
Source : Energy Aspect, FGE Feb'22

## C High Global Demand Growth, Led by America & AP

### Global Demand Growth YoY



## D Expected Slightly Surplus Market in 2H/22



Source : EIA Feb'22 and FGE Feb'22, assume Iran production increase in Q3/22 and OPEC+ cannot hit production target



Key Highlight

Performance

Outlook

Final Remark

Crude

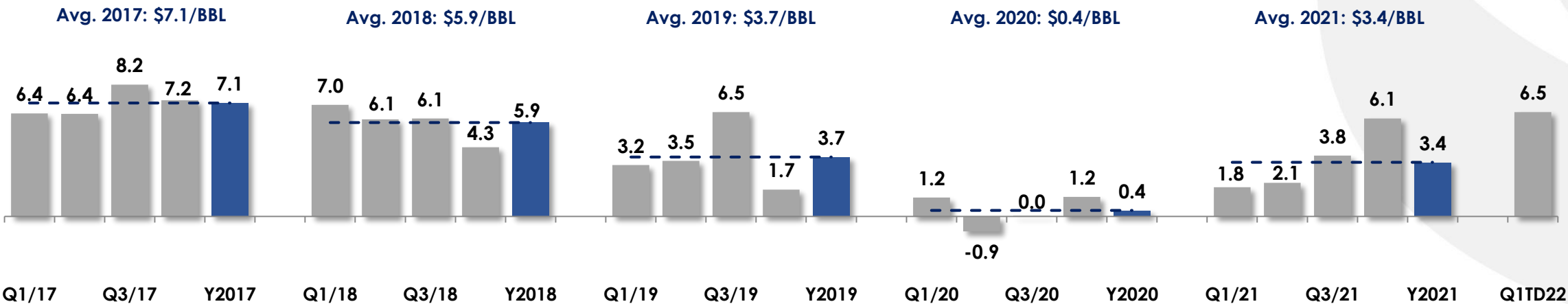
Refinery

Petrochemical

Lube & Bitumen

Conclusion

## Singapore Cracking GRM (\$/BBL)



Source : Reuters Feb'22, Exclude Fuel and Loss

Remark : QTD as of 22 Feb'22

### 2022 Key Highlights: GRM Recovers to Pre-COVID on the Return of Petroleum Demand

Better Gasoline Demand Driven by Higher Mobility Globally

Resuming Jet Demand Recovery after Easing Restrictions

Improving Gasoil Demand on Continuing Expanding Economic Growth

Firmer Fuel Oil Market Led by Rising Asian Demand

# Improving Demand to Pre-COVID on Easing Restrictions

Key Highlight

Performance

Outlook

Final Remark

Crude

Refinery

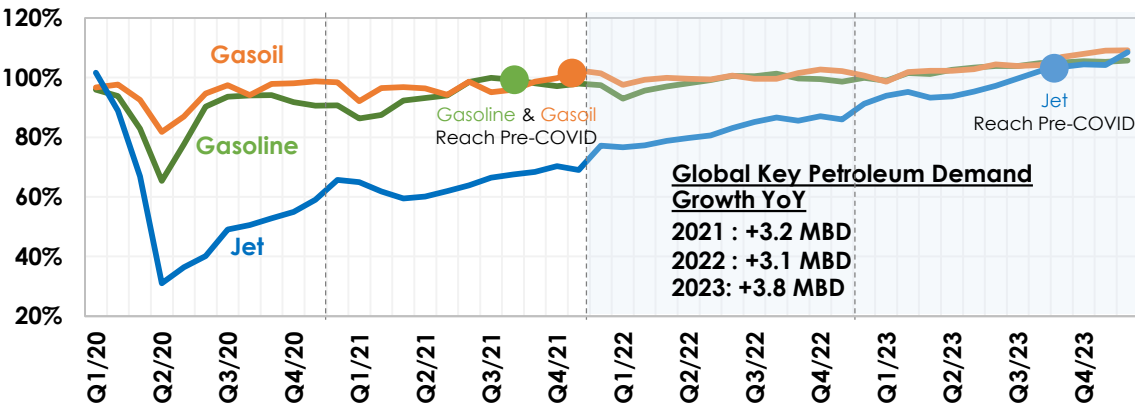
Petrochemical

Lube & Bitumen

Conclusion

## A Global Gasoline & Gasoil Demand Reached Pre-COVID in Q4-21

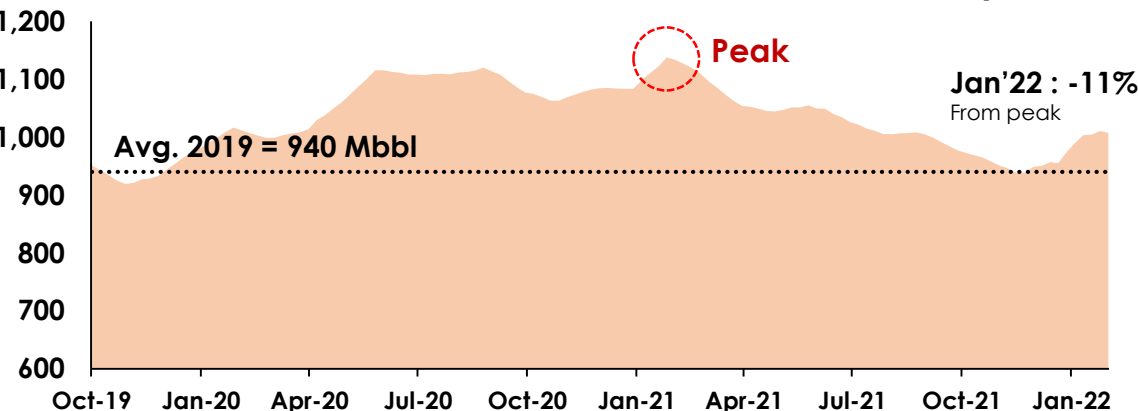
Global Oil Demand Growth (avg.2019 = 100%)



Sources: FGE (Jan'22), FACTs Monthly Report (Jan'22)

## B Global Product Inventory Back to Near Pre-COVID Level

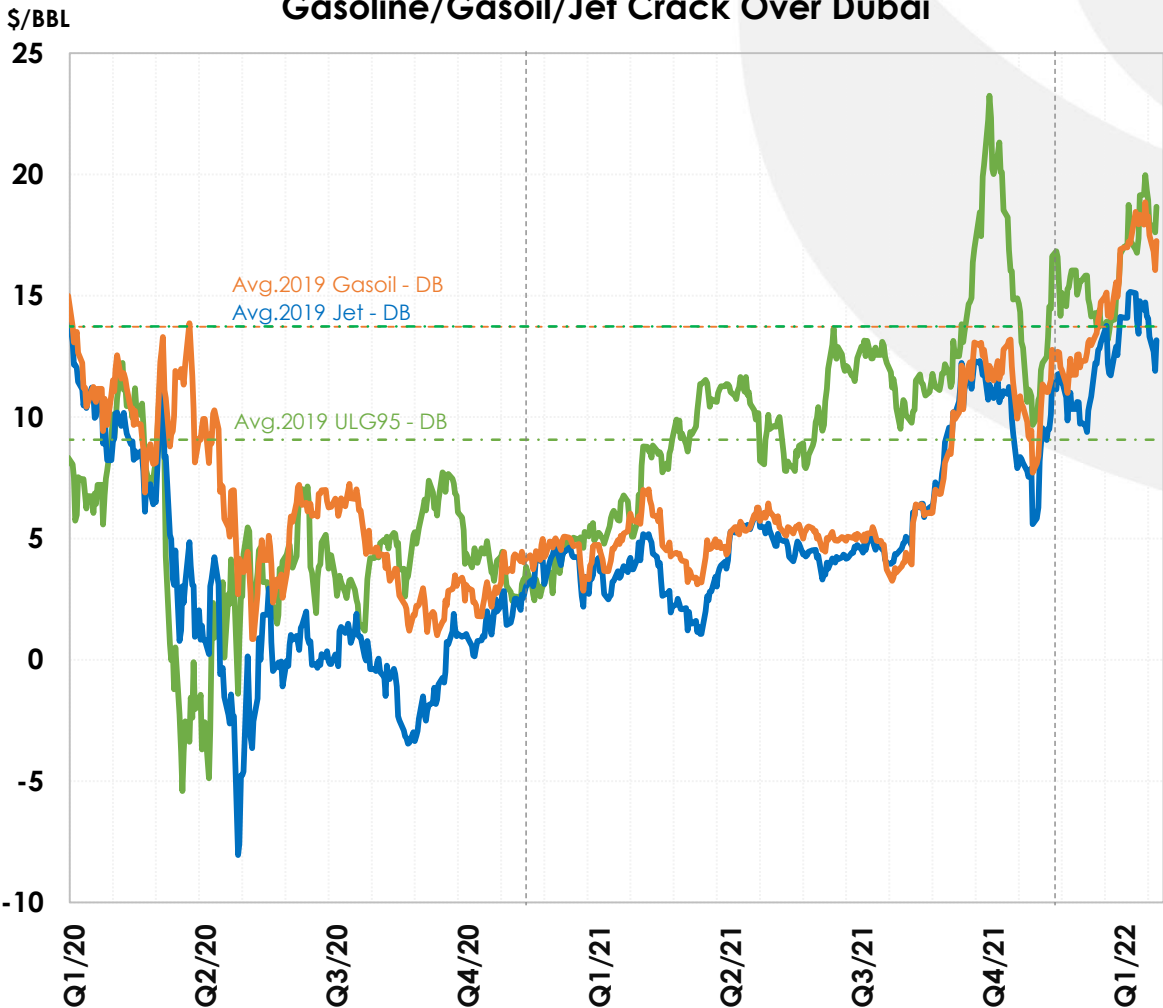
Global Gasoline/Gasoil/Jet Onshore Inventory



Sources: Platt (Feb'22)

## C Petroleum Spreads Reach Pre-COVID

Gasoline/Gasoil/Jet Crack Over Dubai



# Better Gasoline Demand Driven by Higher Mobility Globally Resuming Jet Demand Recovery after Easing Restrictions

-32-

Key Highlight

Performance

Outlook

Final Remark

Crude

Refinery

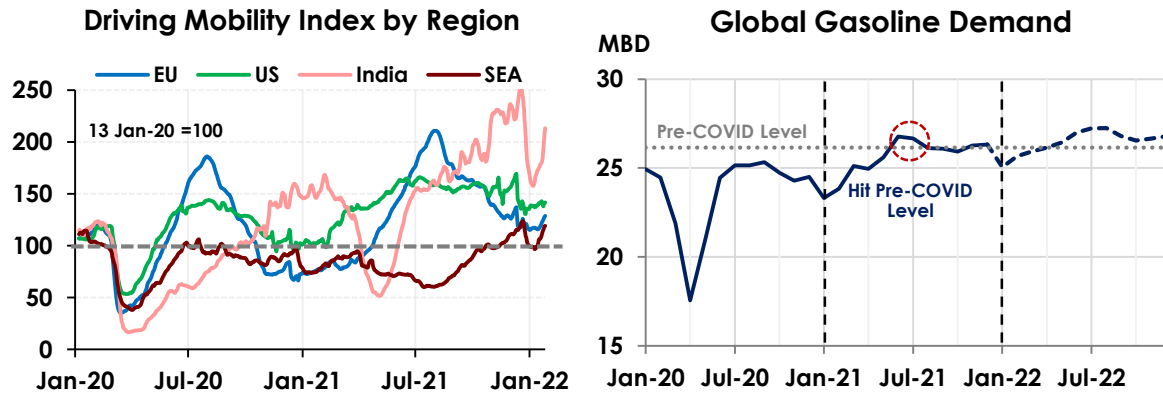
Petrochemical

Lube & Bitumen

Conclusion

## Rising Gasoline Demand Above Pre-COVID on Firm Mobility

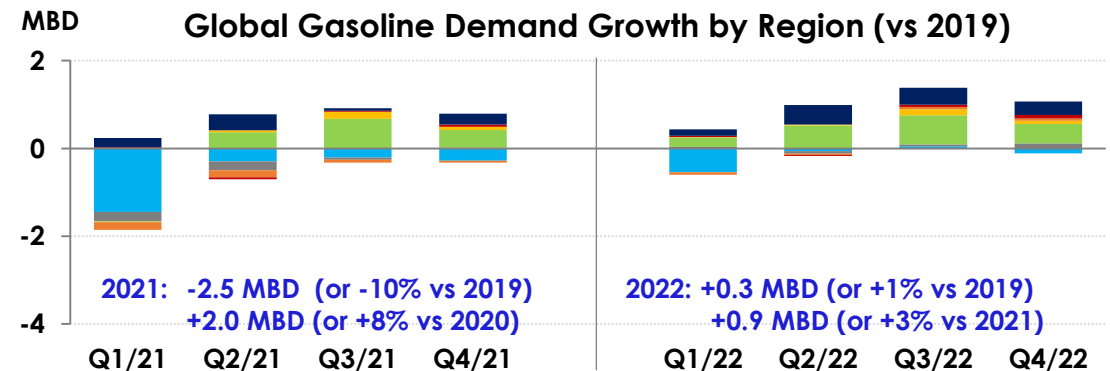
### A Increasing Demand on Higher Driving Activities



Source: Apple Mobility (Feb'22)

Source: Energy Aspects (Jan'22)

### B Demand in All Regions to Hit Pre-COVID by Q3/22

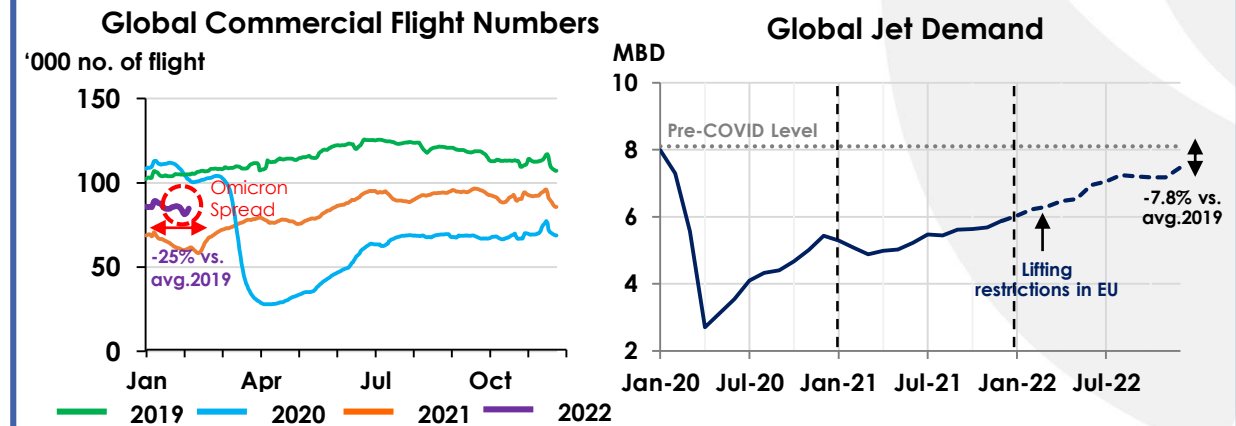


■ North America ■ Latin America ■ Europe ■ FSU ■ Middle East ■ Africa ■ Asia

Source: Energy Aspects (Jan'22)

## Faster Jet Demand Recovery after Easing Restrictions

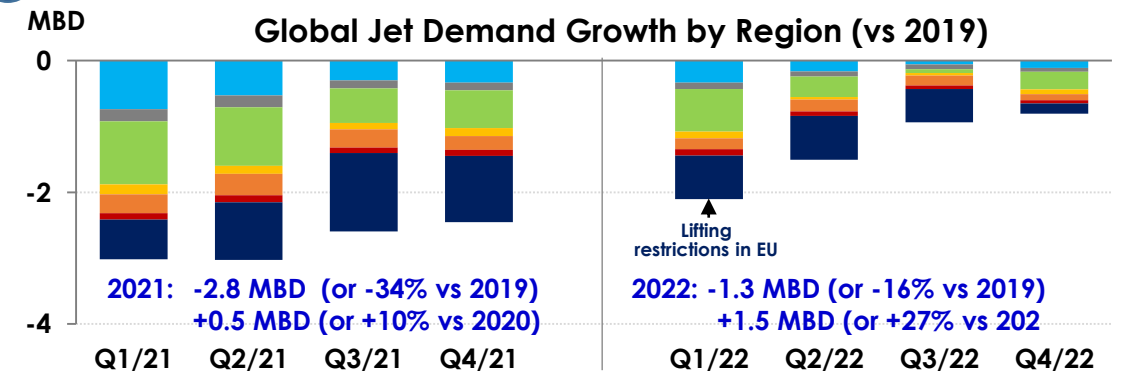
### A Recovering Jet Demand amid Omicron Concern during Early 2022



Source: Flightradar24 (Feb'22)

Source: Energy Aspects and FGE (Jan'22)

### B Continuing Increase in Jet Demand on Easing Restrictions



■ North America ■ Latin America ■ Europe ■ FSU ■ Middle East ■ Africa ■ Asia

Source: Energy Aspects (Jan'22)

# Improving Gasoil Demand on Continuing Expanding Economic Growth

## Firmer Fuel Oil Market Led by Rising Asian Demand

-33-

Key Highlight

Performance

Outlook

Final Remark

Crude

Refinery

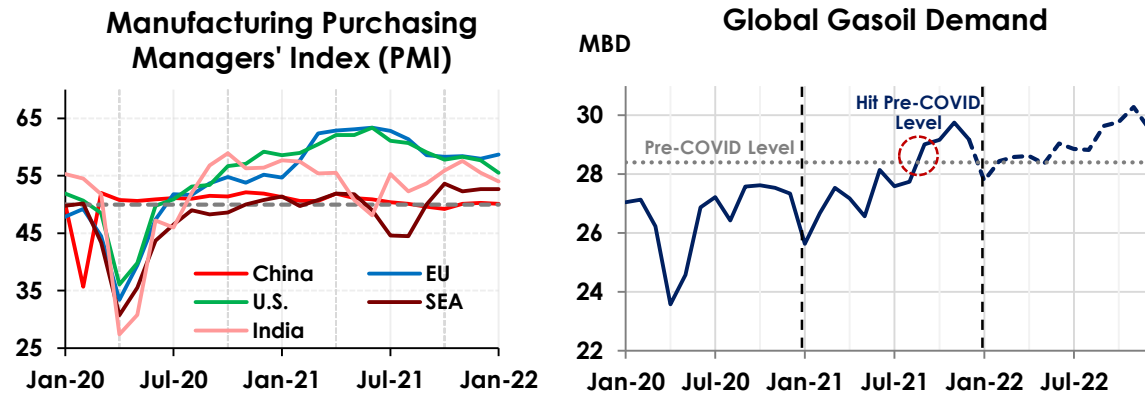
Petrochemical

Lube & Bitumen

Conclusion

### Firm Economic Activities to Support Gasoil Demand Growth

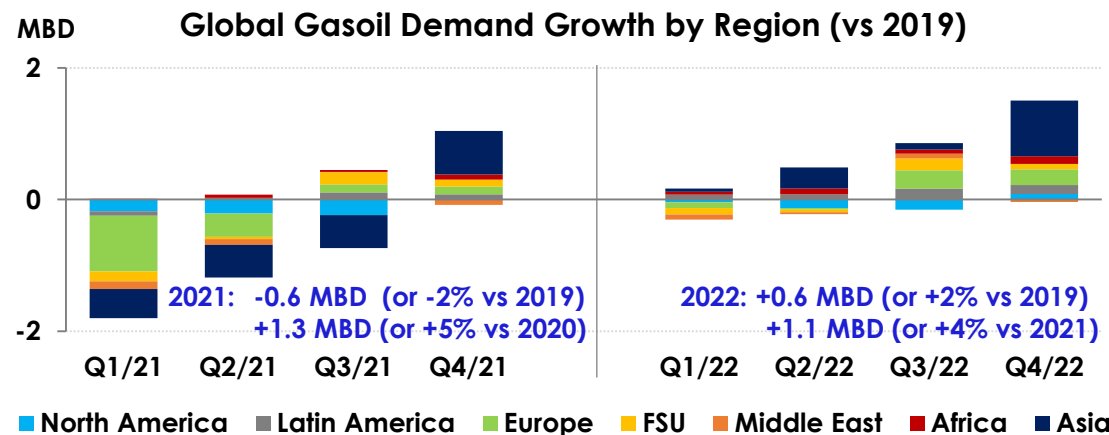
#### A Growing Gasoil Demand above Pre-COVID Level



Source: Markit economics (Jan'22)

Source: Energy Aspects (Jan'22)

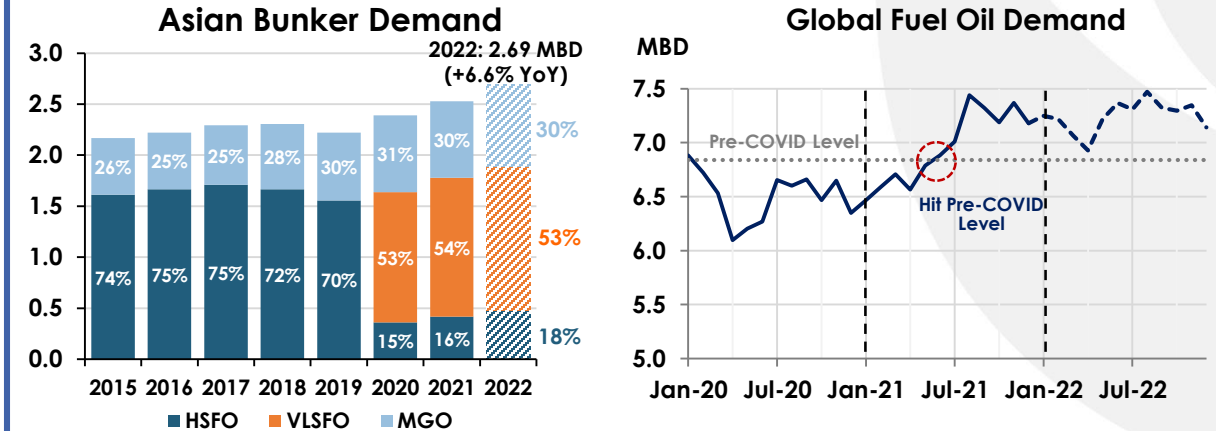
#### B Gasoil Market to Support from Firm Asian Demand



Source: Energy Aspects (Jan'22)

### Higher Fuel Oil Demand from Bunker Sector in Asia

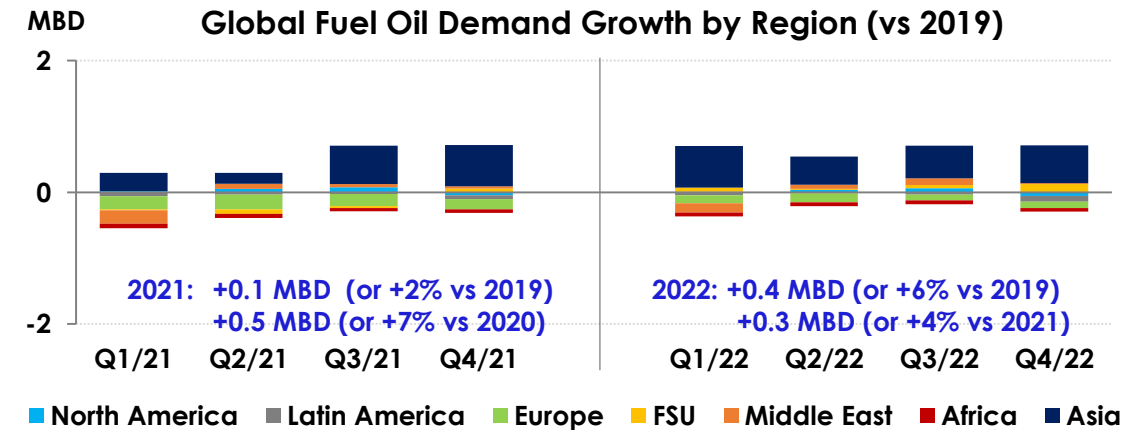
#### A Rising Bunker Demand on Economic Recovery to Support the Market



Source: FGE (Nov'21 and Jan'22)

Source: Energy Aspects (Jan'22)

#### B Increasing Fuel Oil Demand Led by Asian Market



Source: Energy Aspects (Jan'22)

# Demand Growth to Outpace Refining Capacity Addition in Medium Term

Key Highlight

Performance

Outlook

Final Remark

Crude

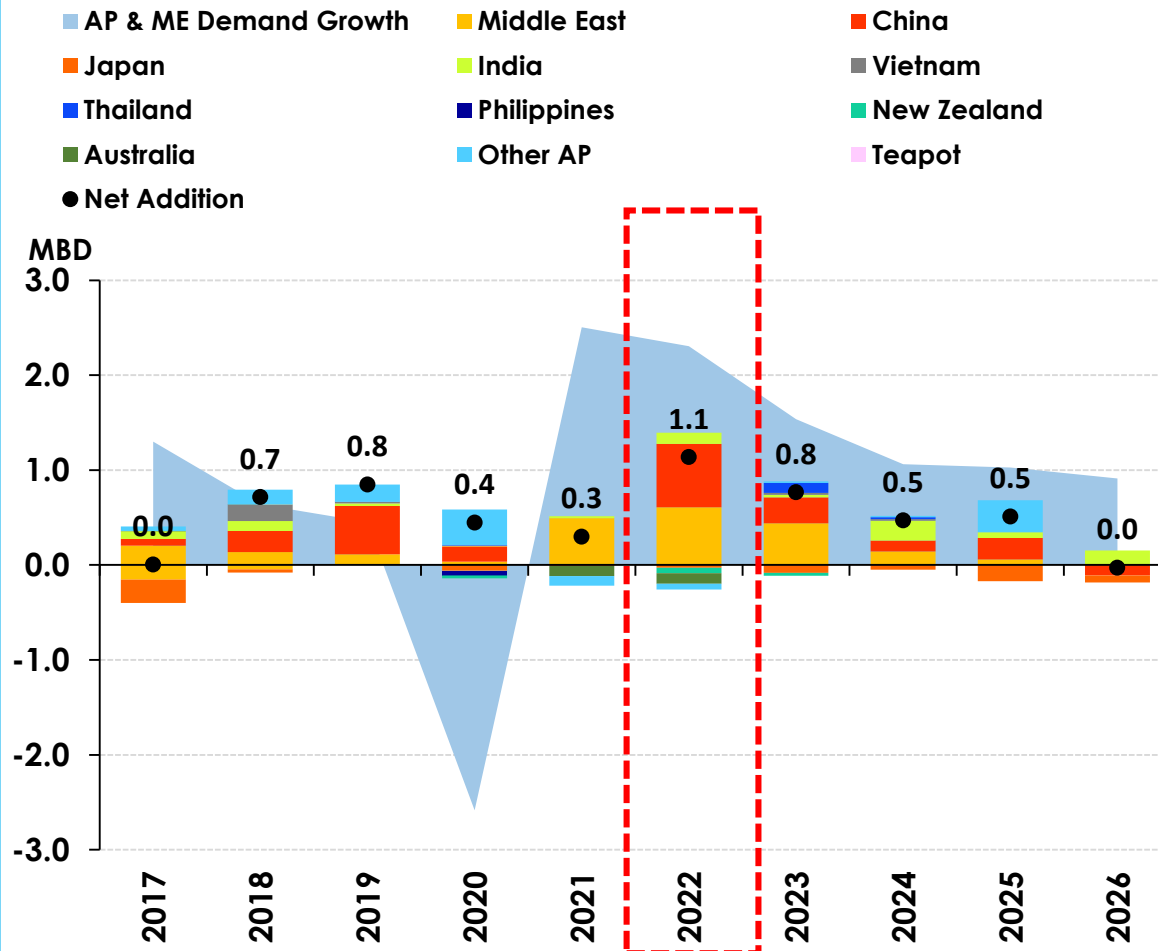
Refinery

Petrochemical

Lube &amp; Bitumen

Conclusion

## Asia Pacific and Middle East Effective CDU Addition VS Additional Demand



Note: Adjusted capacity based on start-up period (effective additional capacity)

## Key Projects : New Addition

Country	Company	CDU (KBD)	Start-up
Saudi Arabia	Jizan <sup>1</sup>	400	Q2'21
China	Rongsheng II <sup>2</sup>	400	Q1'22
China	Local Shenghong Petrochemical	320	Q1'22
Kuwait	Al Zour	615	Q2'22
China	CNPC/PDVSA	400	Q3'22
India	Hindustan Petroleum	125	Q3'22
Thailand	Thai Oil	125	Q1'23
Oman	Al-Duqm	230	Q1'23
China	Sinopec Hainan	100	Q3'23

1. Jizan Refinery Complex is in final commissioning and refining is at 50% its full capacity
2. Rongsheng II gradually increasing run after received crude quotas in Q4'21 and expected to run at full capacity in Q2'22.

## Key Projects : Closure

Country	Company	CDU (KBD)	Closure
China	Local Refineries	-100	Q3'22
Japan	ENEOS	-112	Q4'22
Iran	Abadan	-210	Q3'23
Japan	Various Refineries	-195	Q4'24



# Recovering Domestic Demand Following Improving Economic Activities

-35-

Key Highlight

Performance

Outlook

Final Remark

Crude

Refinery

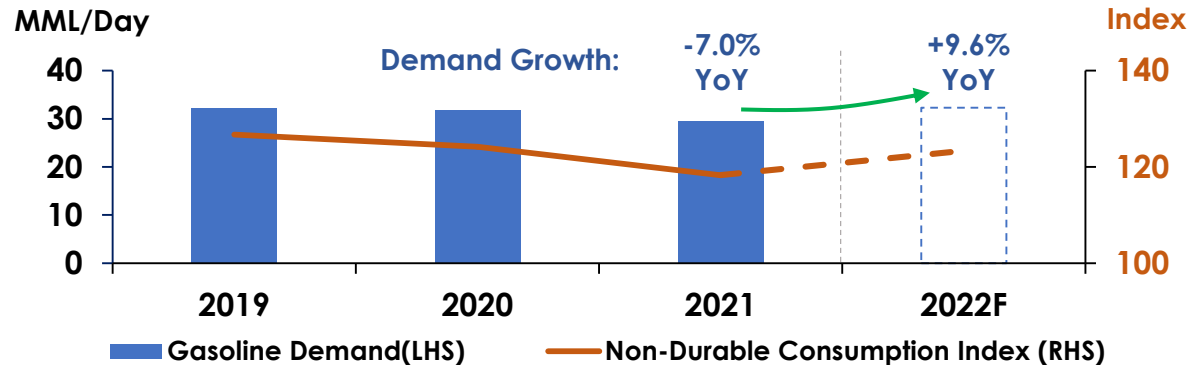
Petrochemical

Lube & Bitumen

Conclusion

## A Increasing Gasoline Demand on Higher Consumer's Spending on Goods

### Gasoline Demand vs. Non-Durable Goods Index\*

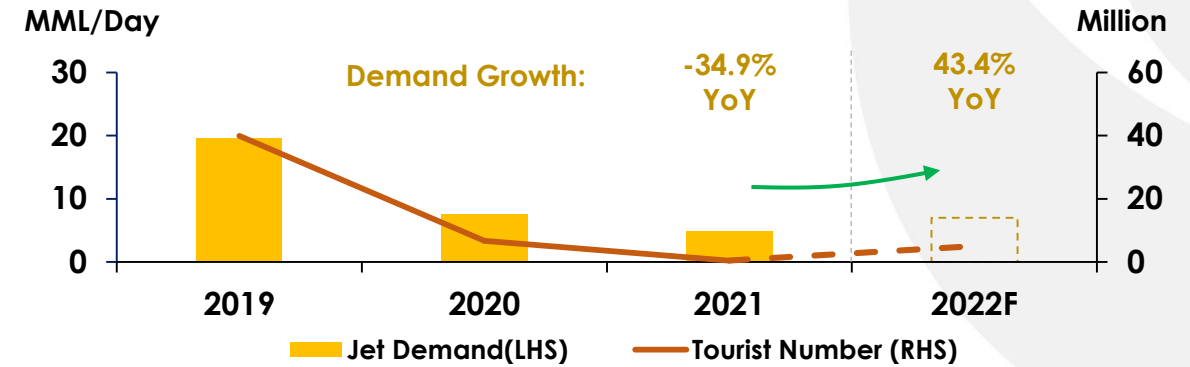


\*Non-durable Index is the index that measure of national spending on consumer goods, which implies to traveling activity  
Source : NESDC, BOT, DOEB, PTT and TOP's Estimation (Feb'22)

\*Based Year 2010

## B Increasing Jet Demand on Higher of Tourist Number

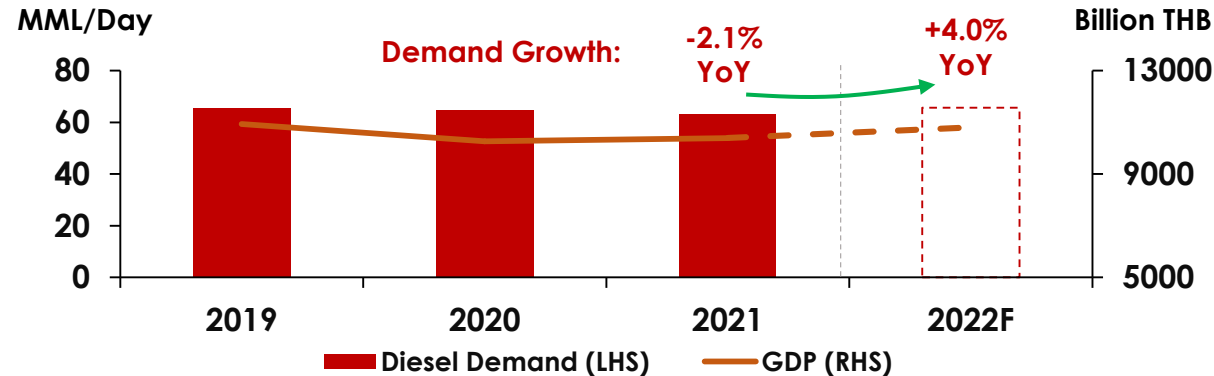
### Jet Demand vs. Tourist Number



Source : NESDC, BOT, DOEB, PTT and TOP's Estimation (Feb'22)

## C Increasing Diesel Demand on a Economic Recovery

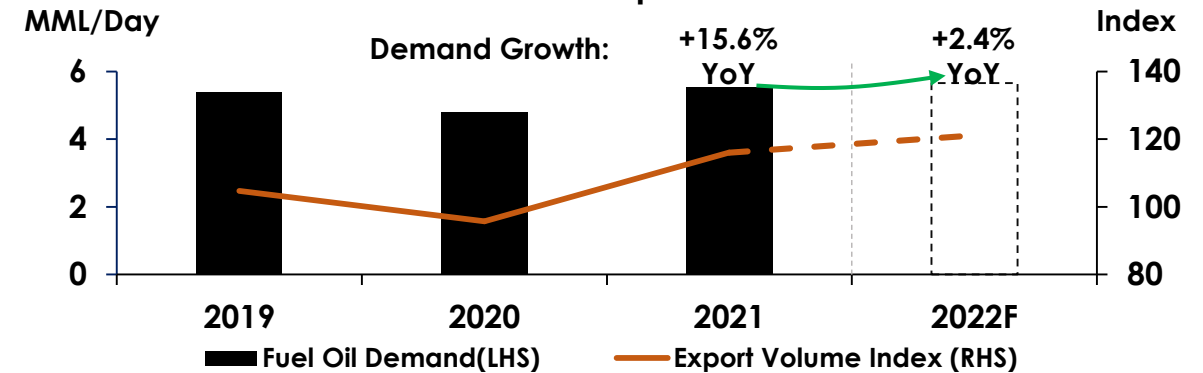
### Diesel Demand vs. GDP



Source : BOT, DOEB, PTT and TOP's Estimation (Feb'22)

## D Increasing Fuel Oil Demand on Higher Global Trade

### Fuel Oil Demand vs. Export Volume Index\*



Source : NESDC, BOT, DOEB, PTT and TOP's Estimation (Feb'22)

\*Based Year 2015

# More Aromatics Supply from Mega Capacity amid Firm Demand Growth

Key Highlight

Performance

Outlook

Final Remark

Crude

Refinery

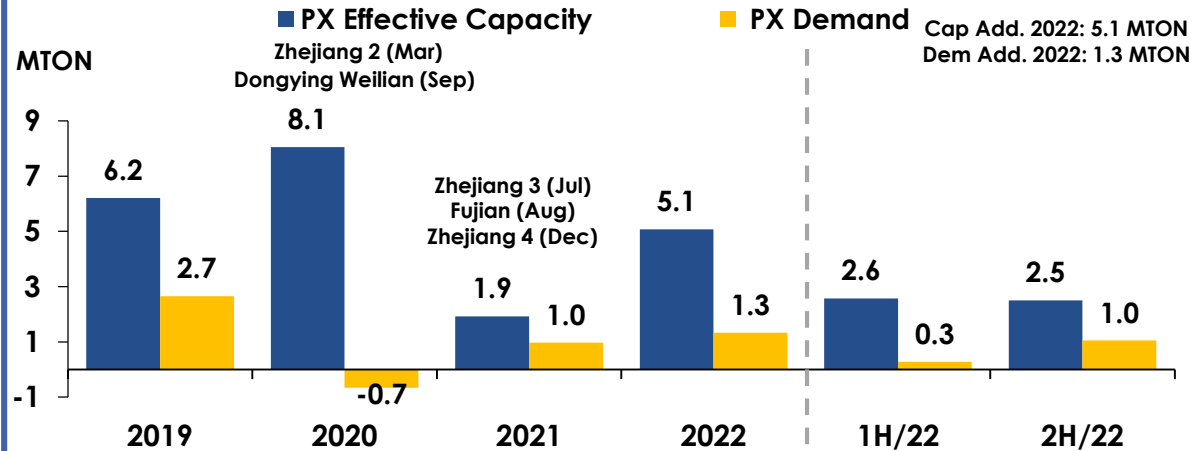
Petrochemical

Lube &amp; Bitumen

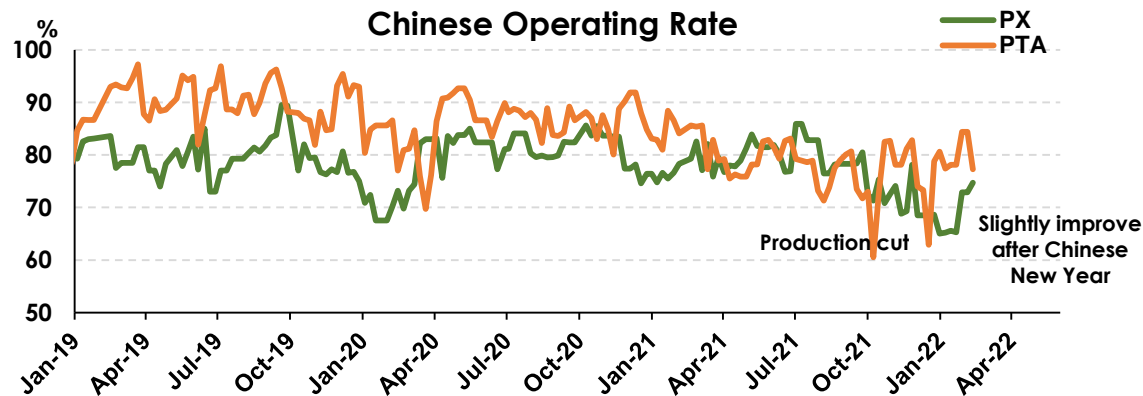
Conclusion

## A More New Capacity Partially Offset by Run Cut from Existing Players

### AP/ME PX Capacity Addition vs. Demand Growth

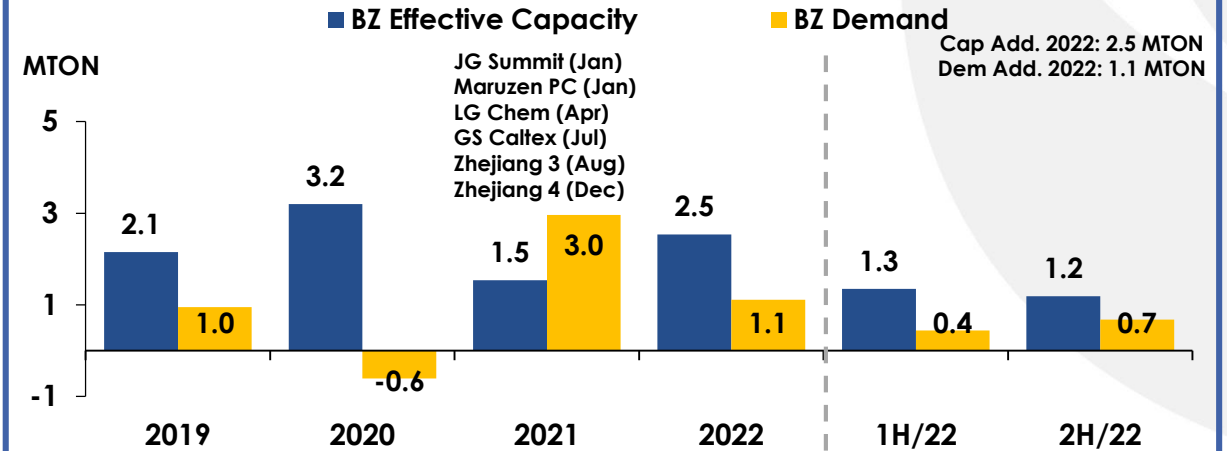


### PX Production Cut due to Thin Margin

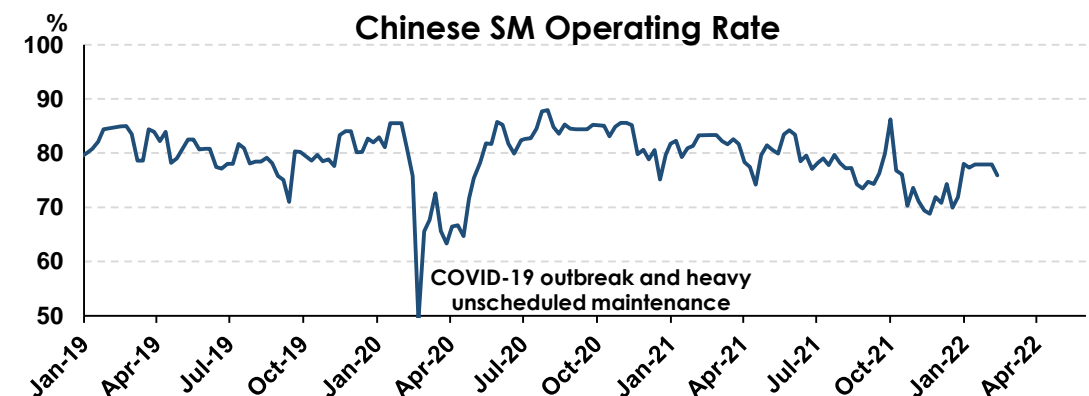


## B More New Plants Start-up amid Firm Downstream Demand

### AP/ME BZ Capacity Addition vs. Demand Growth



### Downstream SM is Still Operated at Quite High Rate



# More Olefins Capacity Addition in 2022 amid Firm Demand Growth

Key Highlight

Performance

Outlook

Final Remark

Crude

Refinery

Petrochemical

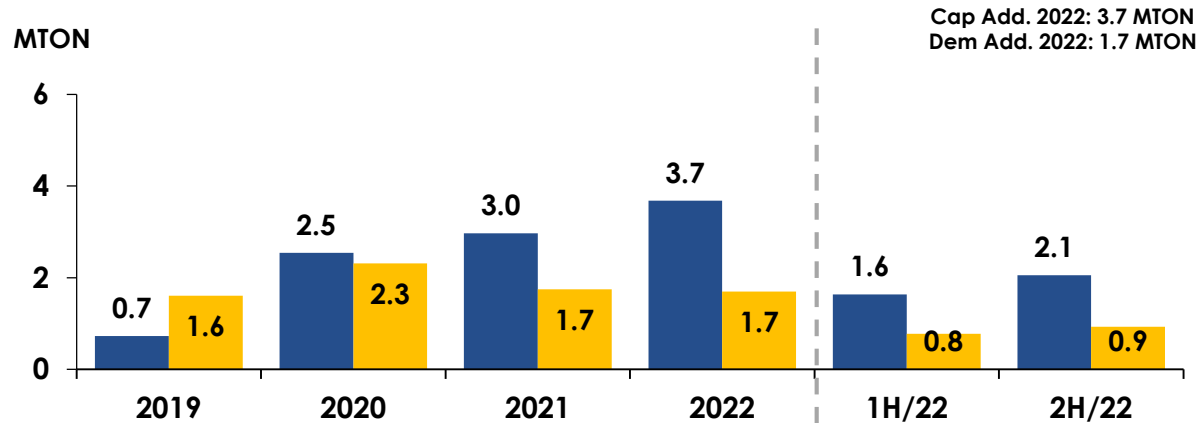
Lube &amp; Bitumen

Conclusion

## A More Capacity Addition from New Plant Start-up esp. China

### AP/ME HDPE Capacity Addition vs. Demand Growth

■ HDPE Effective Capacity ■ HDPE Demand



### Major HDPE Plant Start-up in Dec'21 - 2022

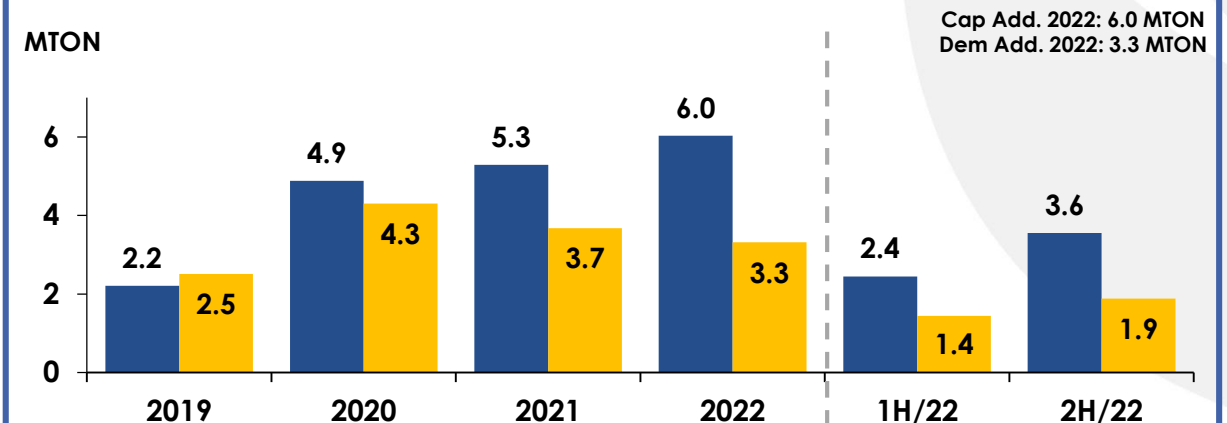
Country	HDPE Company	Nameplate Capacity (KTON)	Startup Period
South Korea	Hyundai Chemical	550	Dec-21
Malaysia	Pengerang Petrochemical	400	Jan-22
China	Sinopec Zhenhai	600	Jan-22
Philippines	JG Summit Petrochemical	250	Feb-22
China	Zhejiang PC	350	Apr-22
China	Qinghai Damei Coal	150	Apr-22
China	CNPC Guangdong	400	Oct-22

Source: IHS Fall 2021 and TOP's Estimate

## B More Capacity Addition from New Plant Start-up esp. China

### AP/ME PP Capacity Addition vs. Demand Growth

■ PP Effective Capacity ■ PP Demand



### Major PP Plant Start-up in Dec'21 - 2022

Country	PP Company	Nameplate Capacity (KTON)	Startup Period
South Korea	Hyundai Chemical	400	Dec-21
China	Shandong Shouguang Luqing PC	350	Jan-22
Malaysia	Pengerang Petrochemical	450	Jan-22
China	Zhejiang PC	450	Apr-22
China	Ningxia Runfeng	300	May-22
China	Zhongjing Petrochemical	1,200	Jun-22
China	Huating Zhongxu Coal Chemical	200	Jul-22

Source: IHS Fall 2021 and TOP's Estimate

# Softer Base Oil Market from Resuming Supply from Higher Refinery Run Rate in Asia

Key Highlight

Performance

Outlook

Final Remark

Crude

Refinery

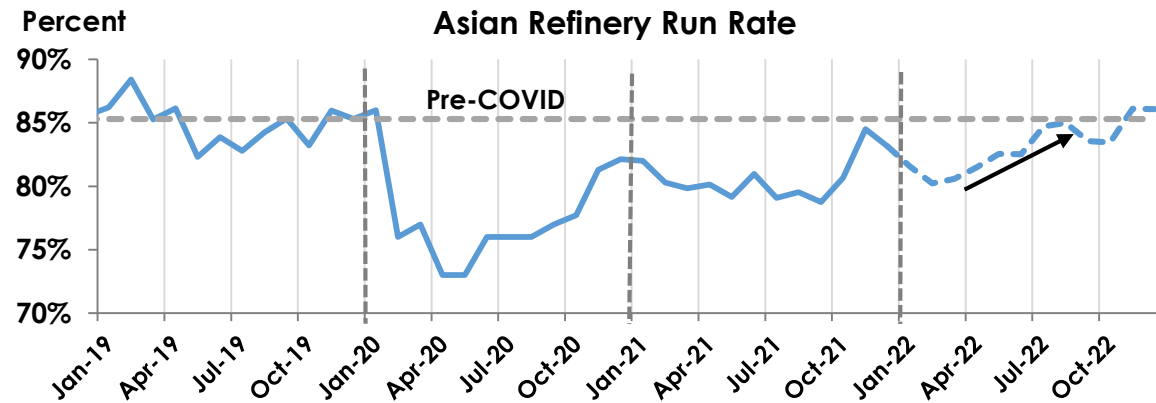
Petrochemical

Lube &amp; Bitumen

Conclusion

A

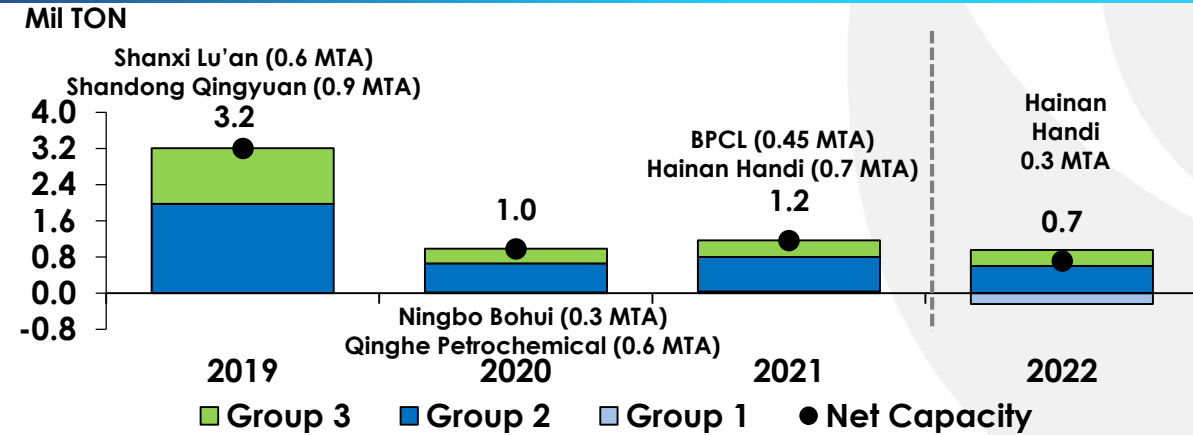
Asian Refinery Run Rate to hit Pre-COVID in 2H/22,  
adding Feedstock Supply to Lube & Bitumen Plants



Source : FGE (Jan'22)

B

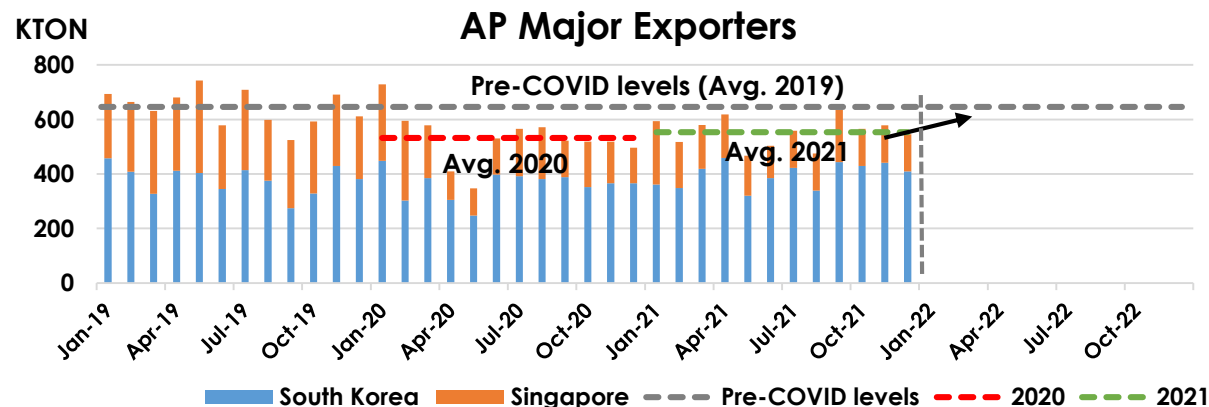
AP Base Oil Effective Capacity Addition



Source : Argus (Feb'22)

C

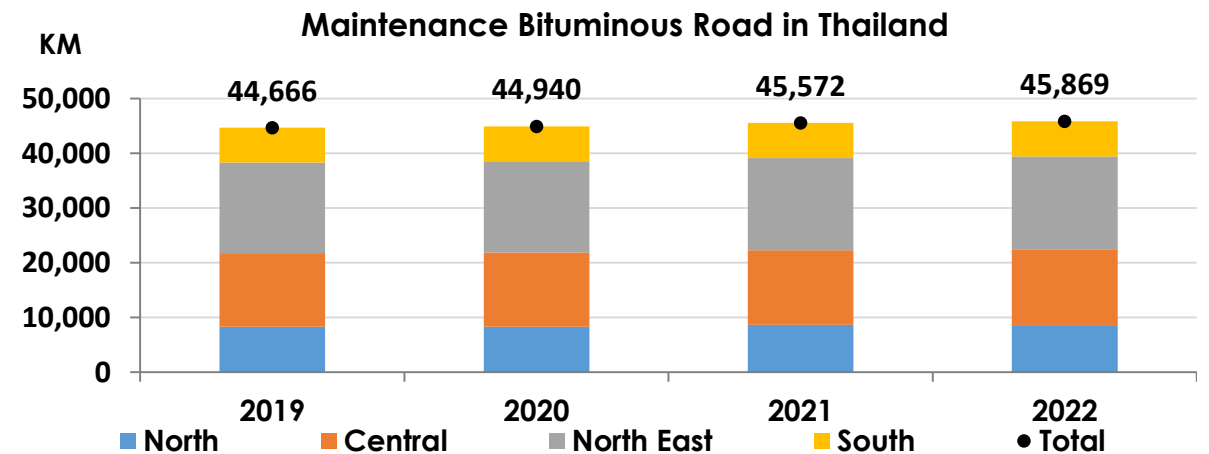
Expected Higher Base Oil Export in the Region



Source : Petrosil (Feb'22) and TOP's Estimate

D

Slightly Improving Thailand Bitumen Demand amid Higher Regional Supply



Source : Bureau of Maintenance (Dec-21)

# 2022 Outlook Conclusion

(vs. 2021)

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Key Highlight

Performance

Outlook

Final Remark

Crude

Refinery

Petrochemical

Lube & Bitumen

Conclusion



## Crude Oil

Continuing Demand Recovery amid Potential Supply Increase from OPEC+/Non-OPEC+



## Refinery

Promising Refinery Margin on Easing Restrictions and Returning Petroleum Demand above Pre-COVID Level



## Aromatic

More Aromatics Supply from Mega Capacity amid Firm Demand Growth



## Olefin

More Olefins Capacity Addition amid Firm Demand Growth



## Lube Base

Softer Base Oil Spread on Higher Lube Supply from Recovering Refinery Run Rate





## FINAL REMARK

# 2022 Stay Focused on Building on our Strong Foundation

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Key Highlight

Performance

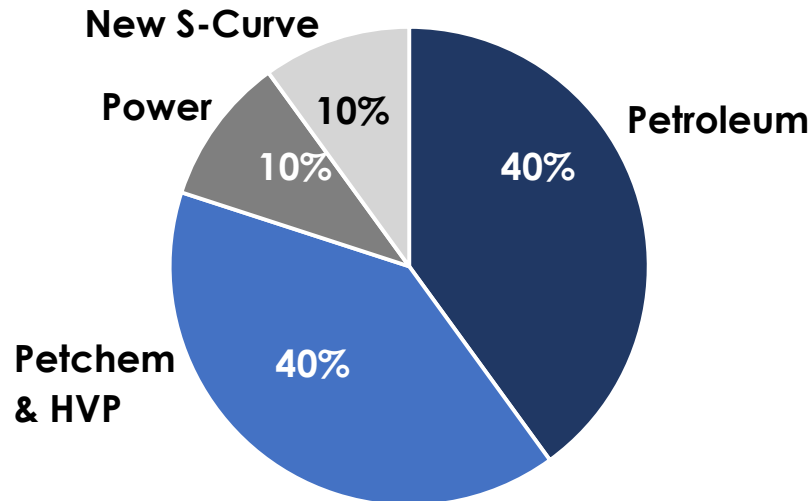
Outlook

Final Remark



## Net Profit Contribution

Target 2030



## Value Maximization

Integrated Crude to Chemicals

- Ensure **CFP** progress
- Execute **CAP1** to integrate to BAU & CAP2 project FID
- Expedite **HVP** roadmap



## Value Enhancement

Integrated Value Chain Management

- Consolidate **TOP** group marketing, sales, distribution and logistics
- Ramp up sale to reach **market share** in target country



## Value Diversification

- Step up effort on **new ventures**
- Window for **new S-curve opportunities** & diversity sources of earnings

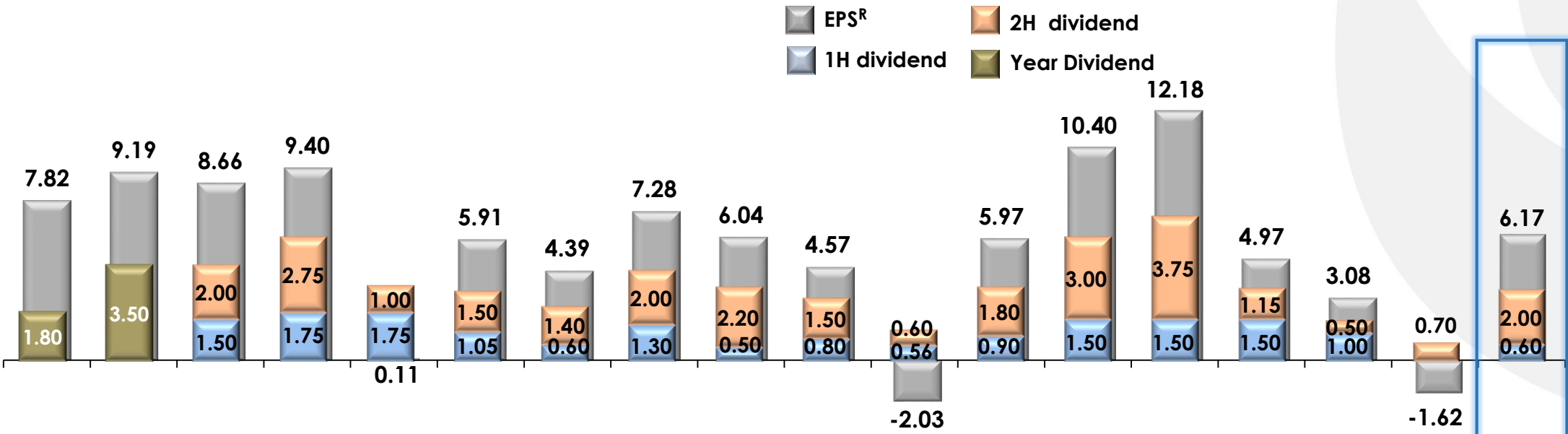
## APPENDIX

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

# 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
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
Dividend Payout	23%**	38%	40%**	48%	N/A	43%	45%	45%	45%	50%	N/A	45%	43%	43%	53%	49%	N/A	42%
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%
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

<sup>R</sup> Based on restated financial statement

\* Based on average TOP share price in each year

\*\* Dividend payout before restated ; 2004 = 25% , 2006 = 43%, 2013 = 45%



# TOP Group Strategic Investment Plan

## CAPEX Plan (Unit US\$ million)

Updated as of January 2022

Project	Actual 2021	Estimated Budgeting for Investment Plan 2022 - 2024
<b>CFP project *</b>	<b>1,015</b>	<b>887</b>
<b>Total Ongoing CAPEX</b>	<b>56</b>	<b>145</b>
Reliability, Efficiency and Flexibility Improvement	10	37
Infrastructure Improvement ( i.e. Jetty 7&8, Office Relocation & New Crude Tank, Site office preparation for fire water & fire water improvement, New Bangphra Raw Water Line )	27	45
Other Investments ( i.e. Corporate Venture Capital - CVC , Digital Transformation )	19	63
<b>TOP SPP Expansion</b>	<b>45</b>	<b>100</b>
<b>Olefins Investment</b>	<b>913</b>	<b>270</b>
<b>Total CAPEX</b>	<b>2,029</b>	<b>1,402</b>

\* 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

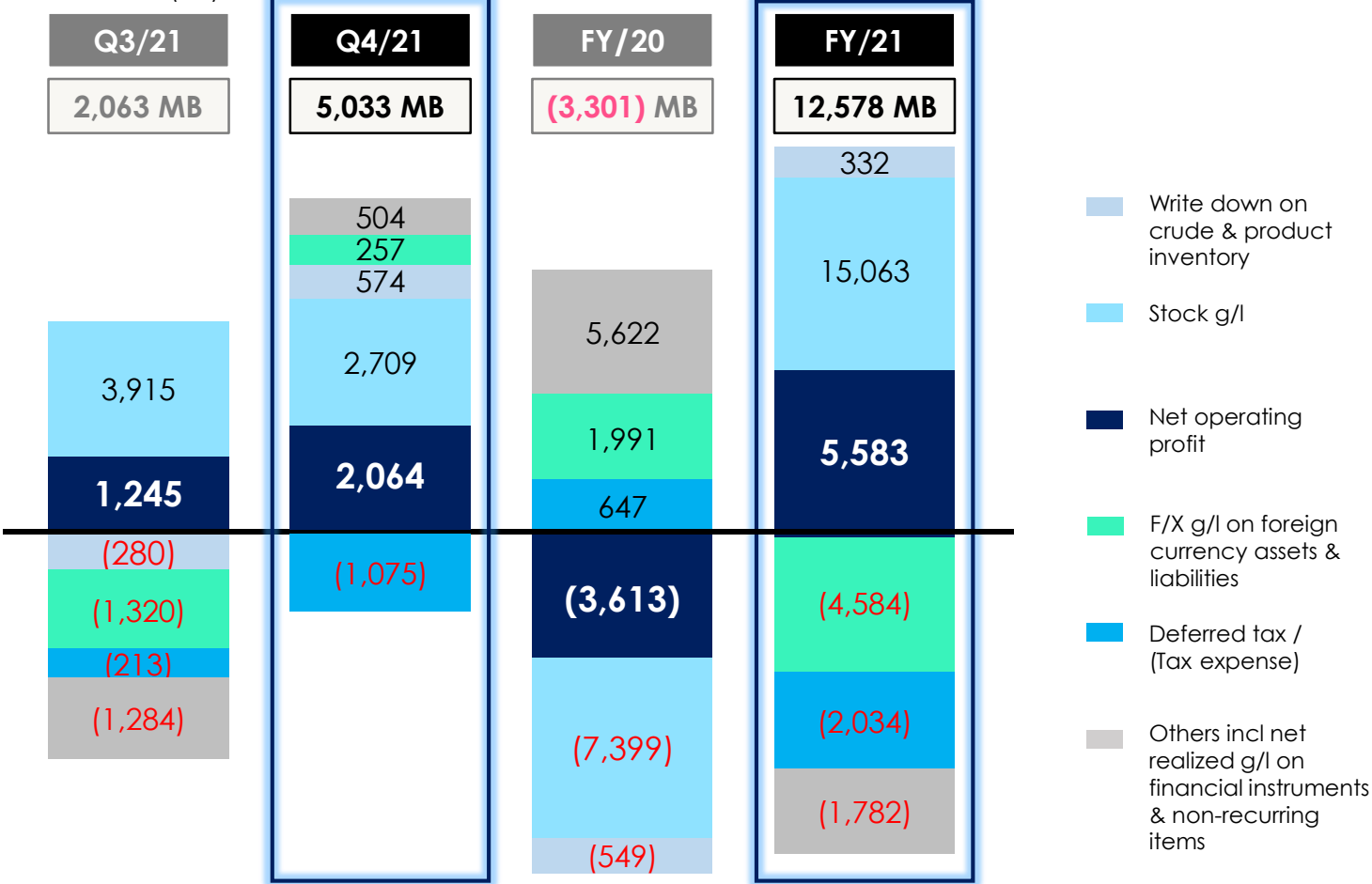
Notes: Excluding approximately 40 M\$/year for annual maintenance



# Q4 & FY/21- Financial Performance

## TOP Group Net Profit

Unit : Million Baht (MB)



**Remark**

- Stock gain/(loss) : Q3/21 3,915 MB, Q4/21 2,709 MB, FY/20 (7,399) MB, FY/21 15,063 MB
- Reversal/ (write-down) on crude and petroleum product inventory : Q3/21 (280) MB, Q4/21 574 MB, FY/20 (549) MB, FY/21 332 MB
- F/X gain/(loss) on gain on foreign currency assets & liabilities : Q3/21 (1,320) MB, Q4/21 257 MB, FY/20 1,991 MB, FY/21 (4,584) MB
- (Tax expense)/Reversal of Tax expense : Q3/21 (213) MB, Q4/21 (1,075) MB, FY/20 647 MB, FY/21 (2,034) MB
- Net realized gain/(loss) on financial instruments : Q3/21 (479) MB, Q4/21 (1,807) MB, FY/20 (174) MB, FY/21 (2,461) MB
- Other items: Net gain/(loss) on FV of financial instrument Q3/21 (1,429) MB, Q4/21 2,311 MB, FY/20 (5) MB, FY/21 55 MB , Gain on GPSC share sale : FY/20 5,801 MB, Gain on UBE shares sales & reclassification FY/21 624 MB

## Gross Refining Margin - GRM

\$/bbl	Q3/21	Q4/21	FY/20	FY/21
Market GRM	1.6	5.4	0.4	2.2
Stock Gain/(Loss)	5.1	2.9	(2.3)	4.7
Accounting GRM	6.7	8.3	(1.9)	6.9

## Gross Integrated Margin - GIM

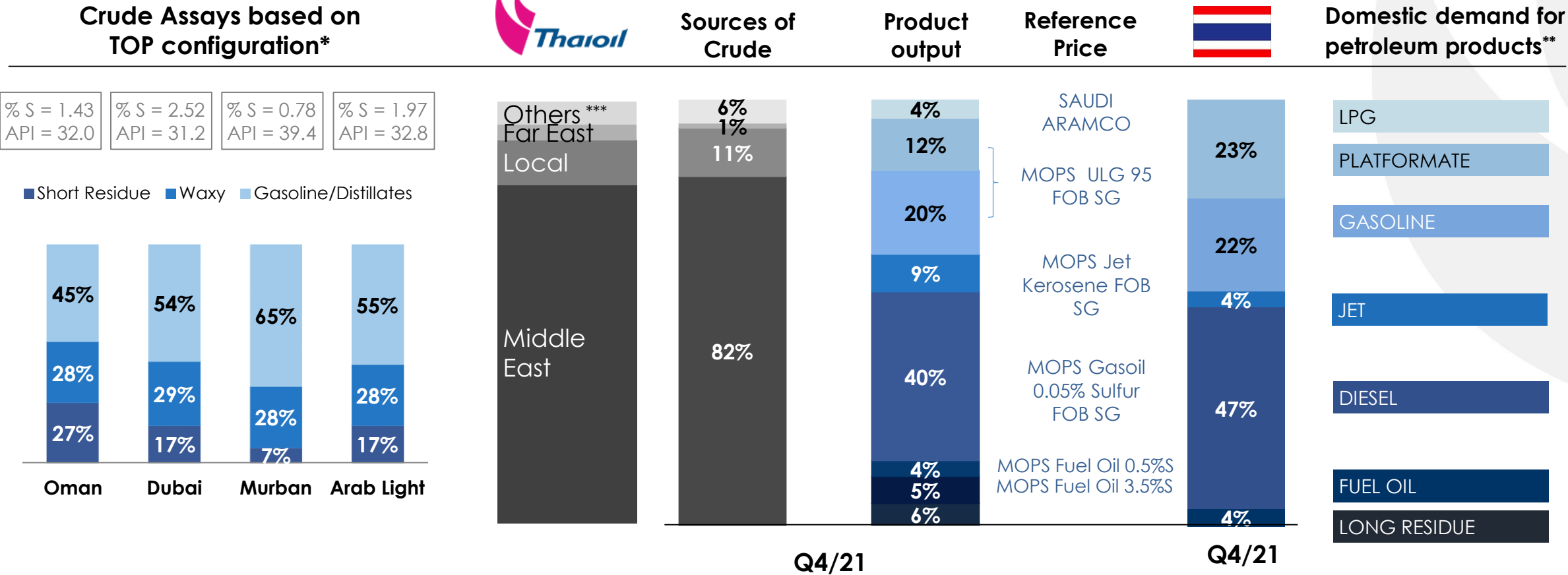
Aromatics & LAB	2.1	0.8	1.5	1.7
Lube base	1.8	0.9	0.5	1.6
Market GIM	5.5	7.0	2.4	5.5
Accounting GIM	10.5	9.9	0.1	10.1

## Utilization / Production Rate

Refinery	92%	109%	101%	100%
Aromatics	88%	81%	71%	87%
LAB	118%	120%	103%	112%
Base Oil	88%	88%	88%	91%

# Optimized & Flexible Operations...Superior Performance

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



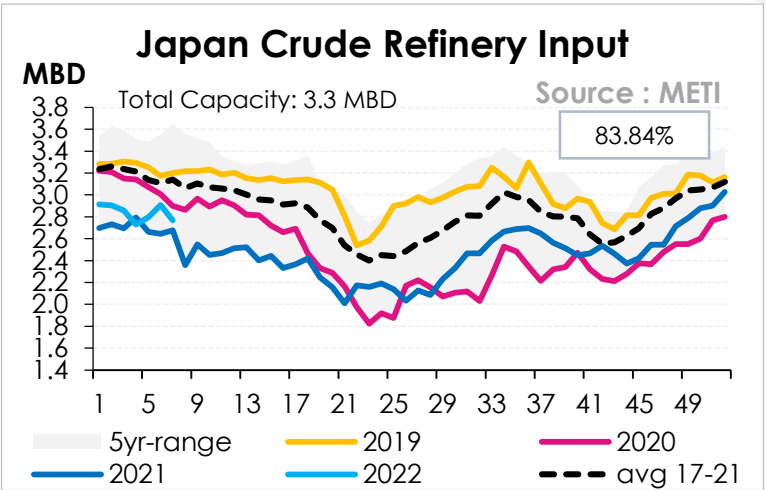
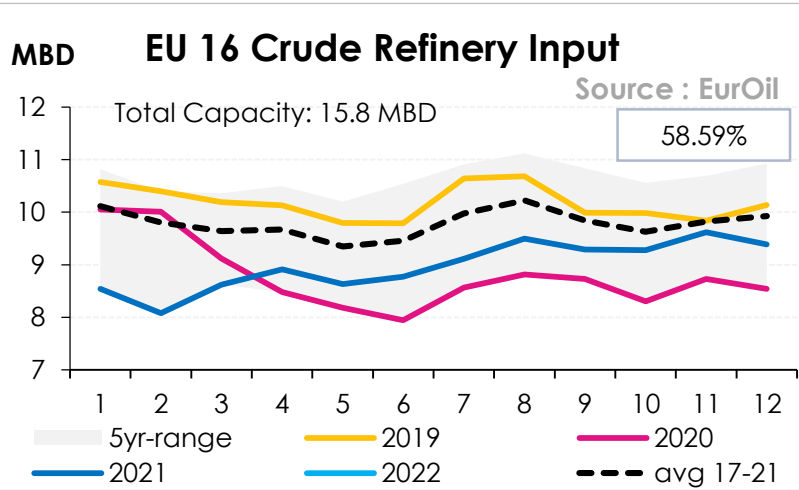
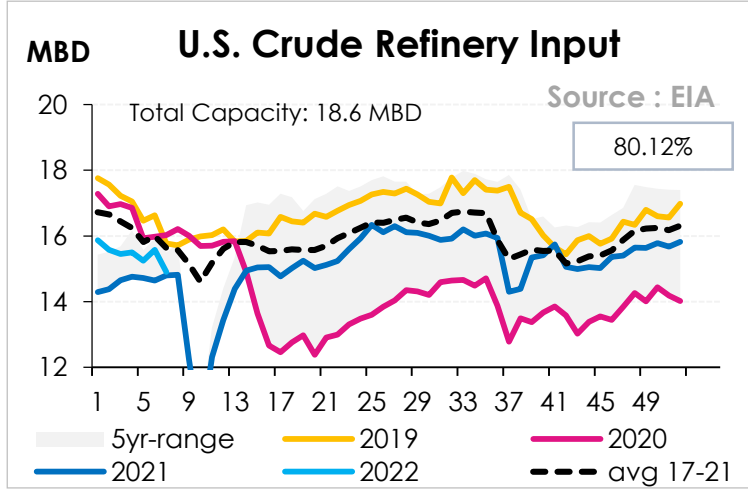
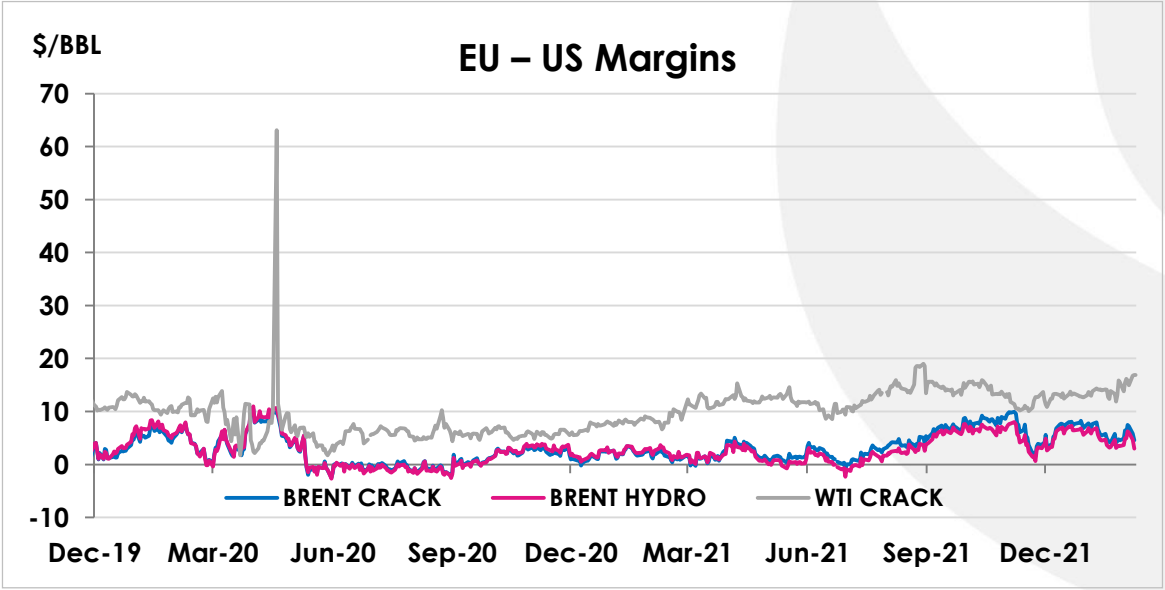
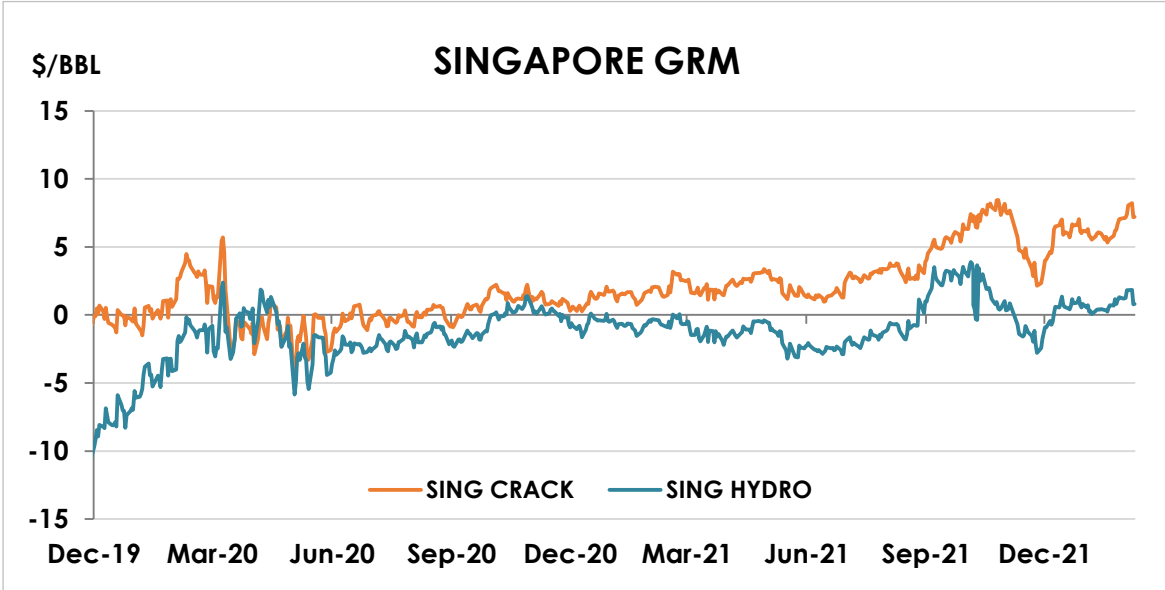
\*Crude yield as per assay in Spiral as of Feb 2016

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

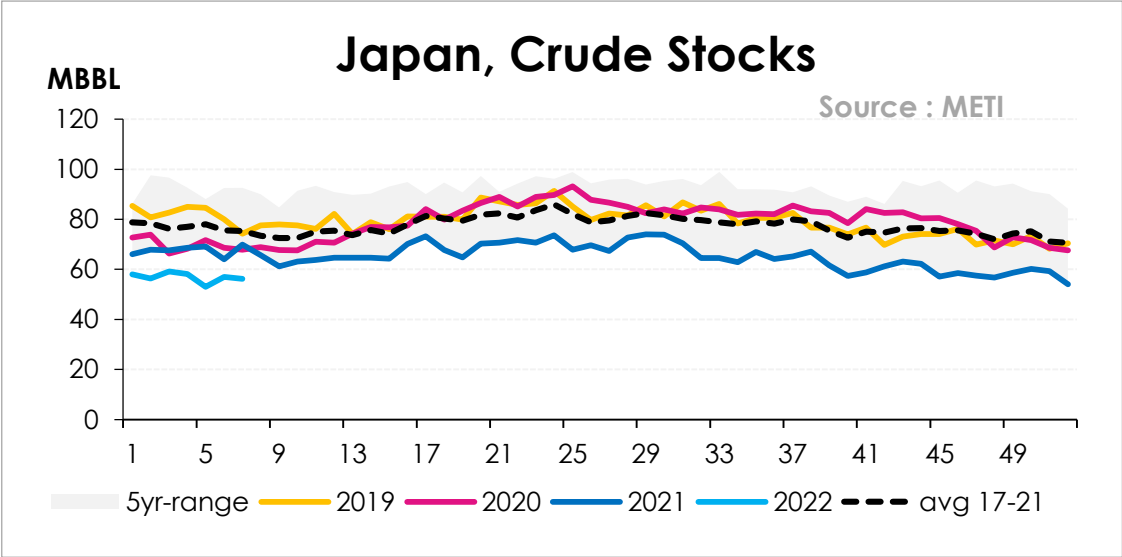
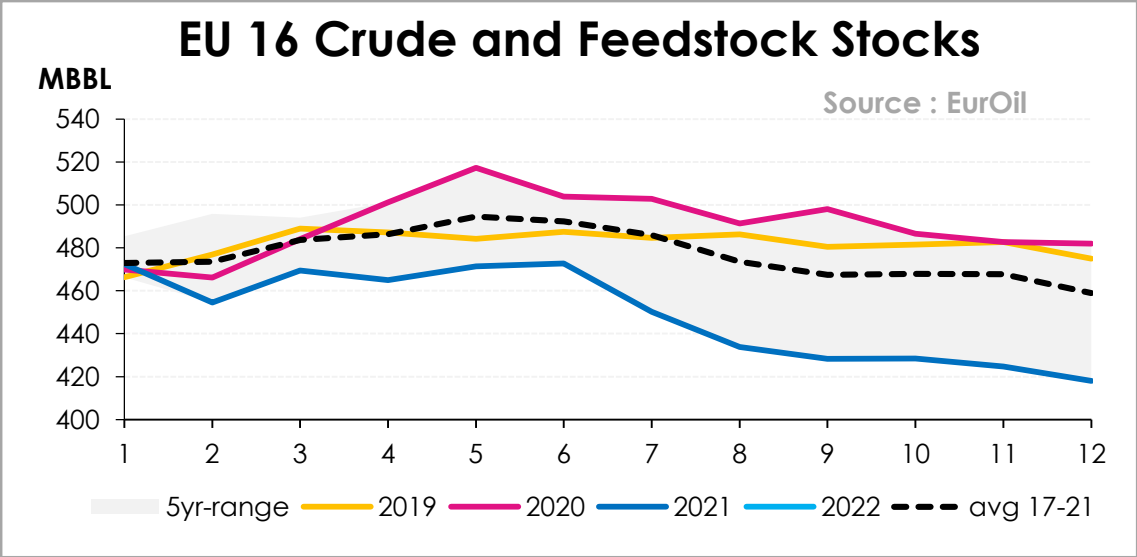
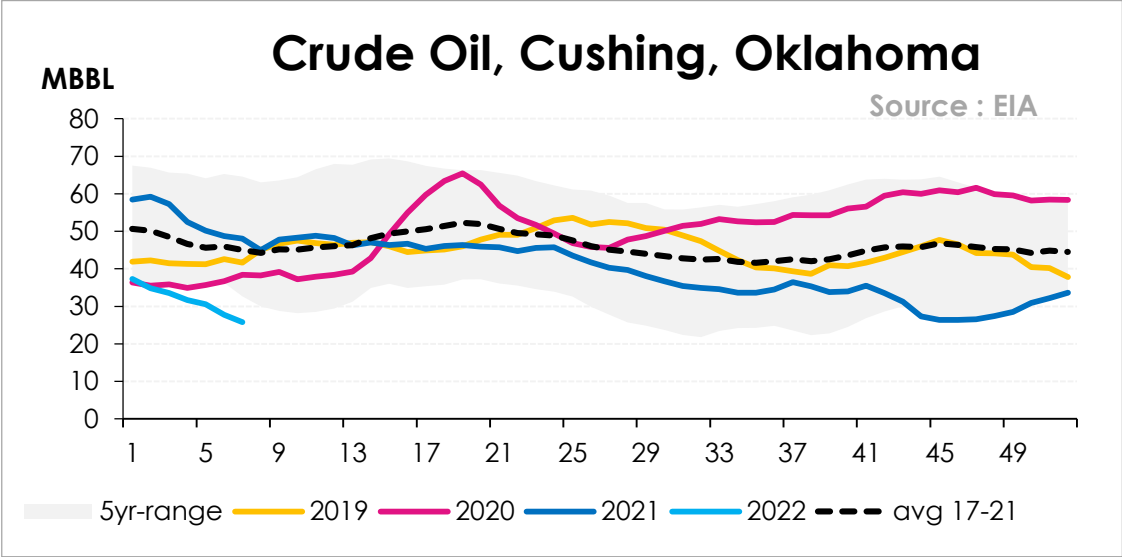
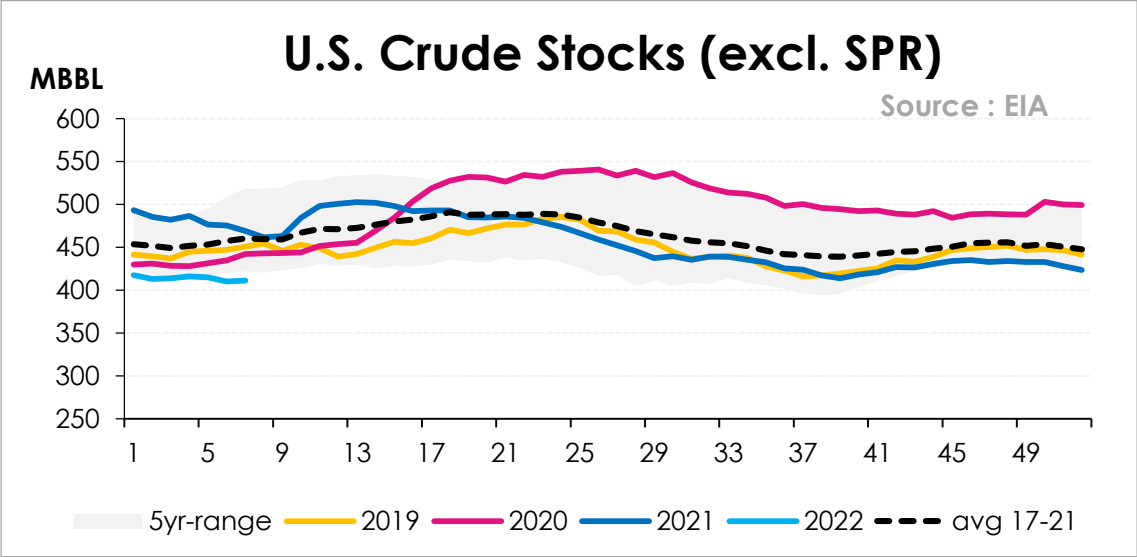
\*\*\* Including Nigeria, Russia and others

- 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

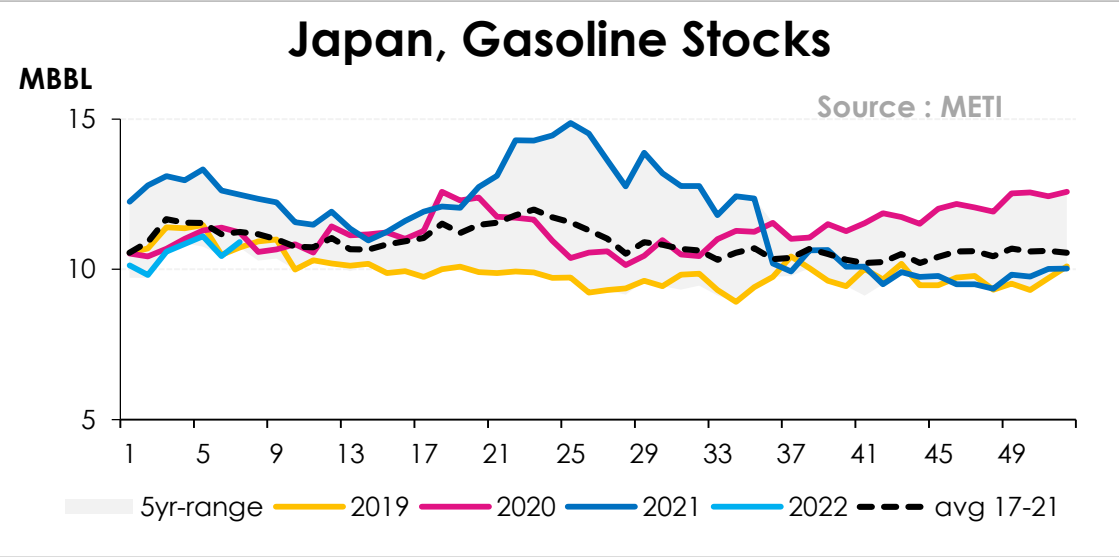
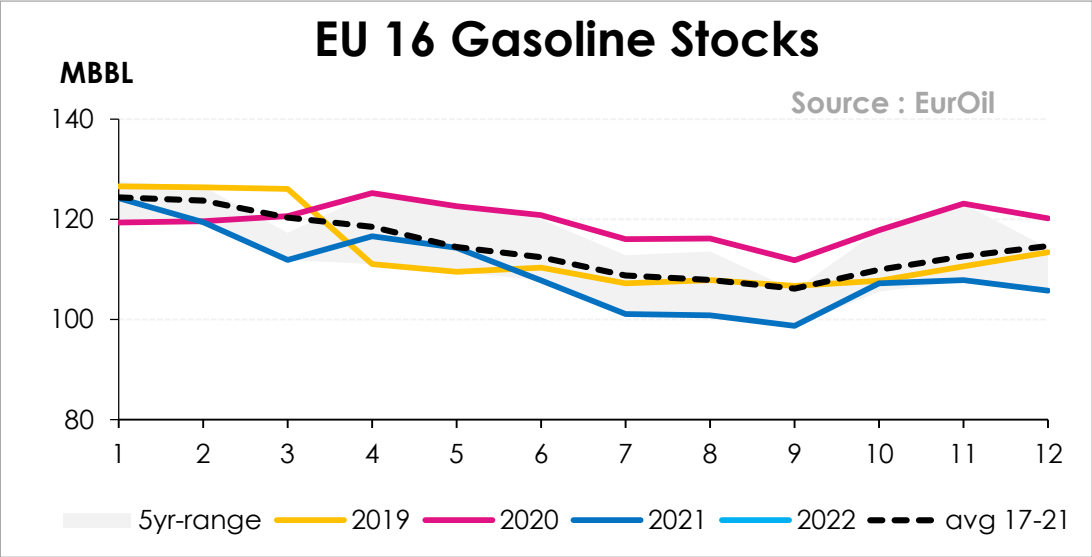
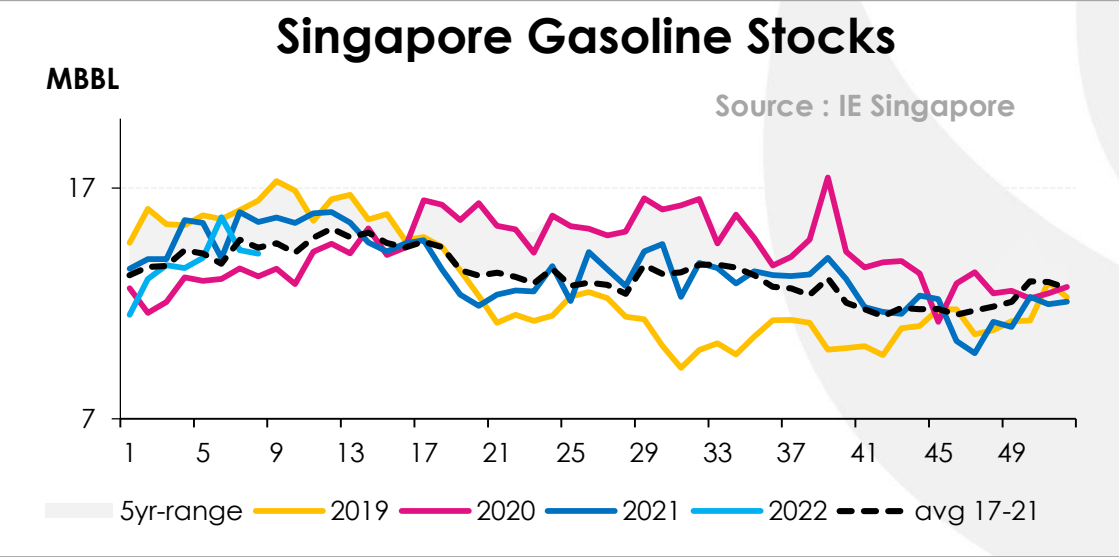
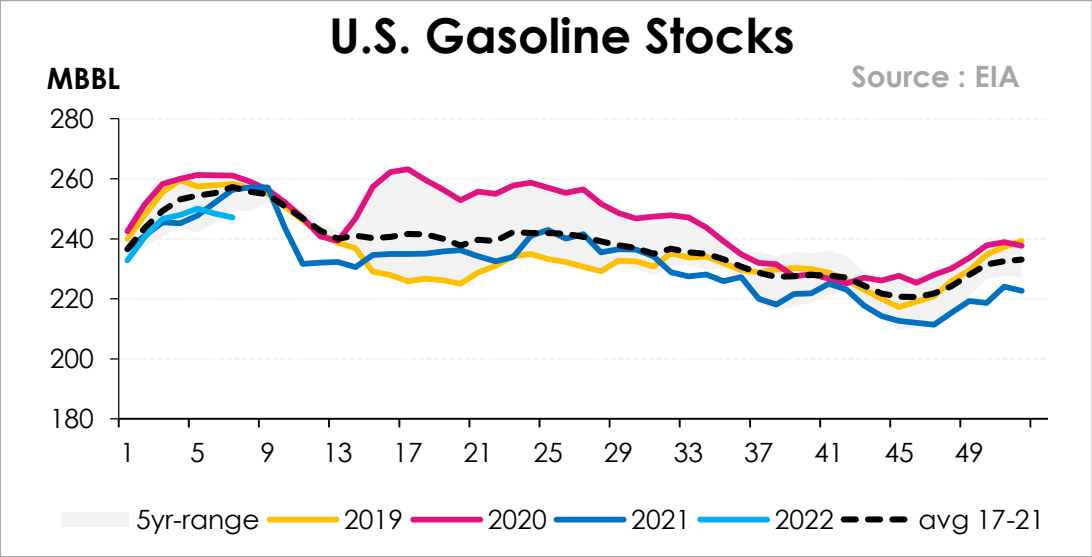
# Asian Margin Vs. US-EU margin



# Global Crude Oil Inventories

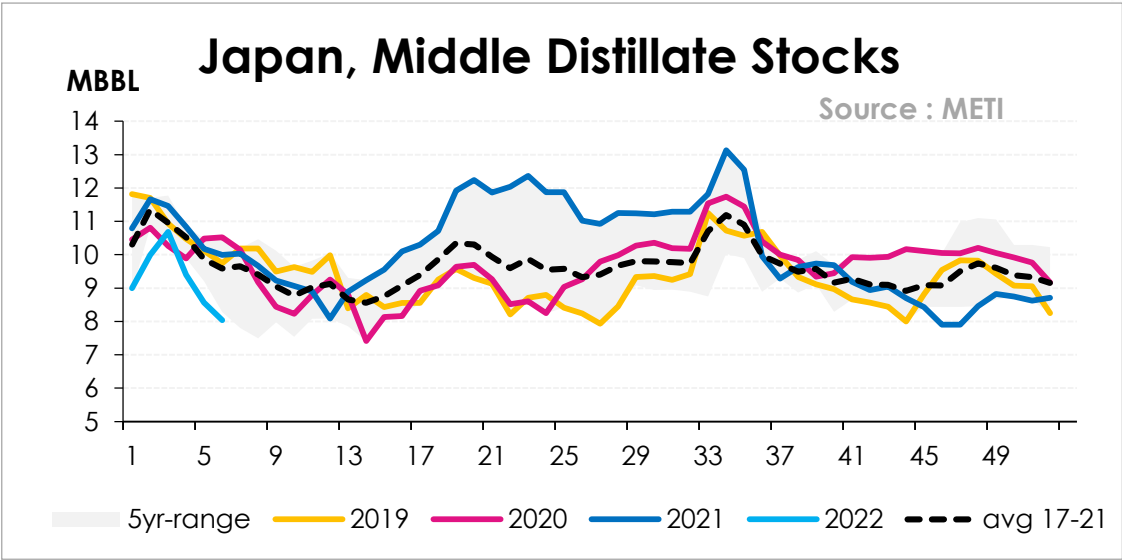
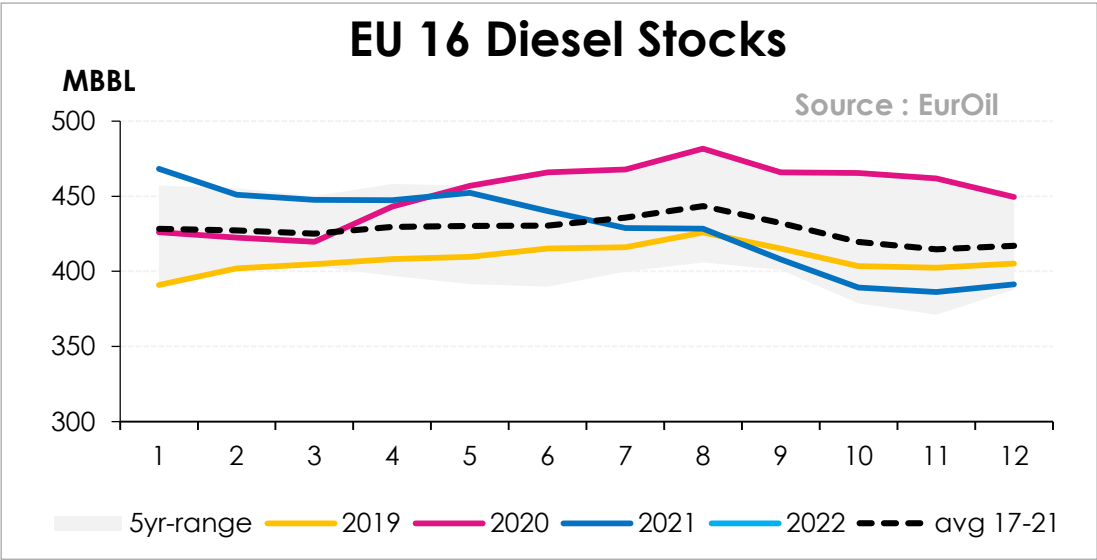
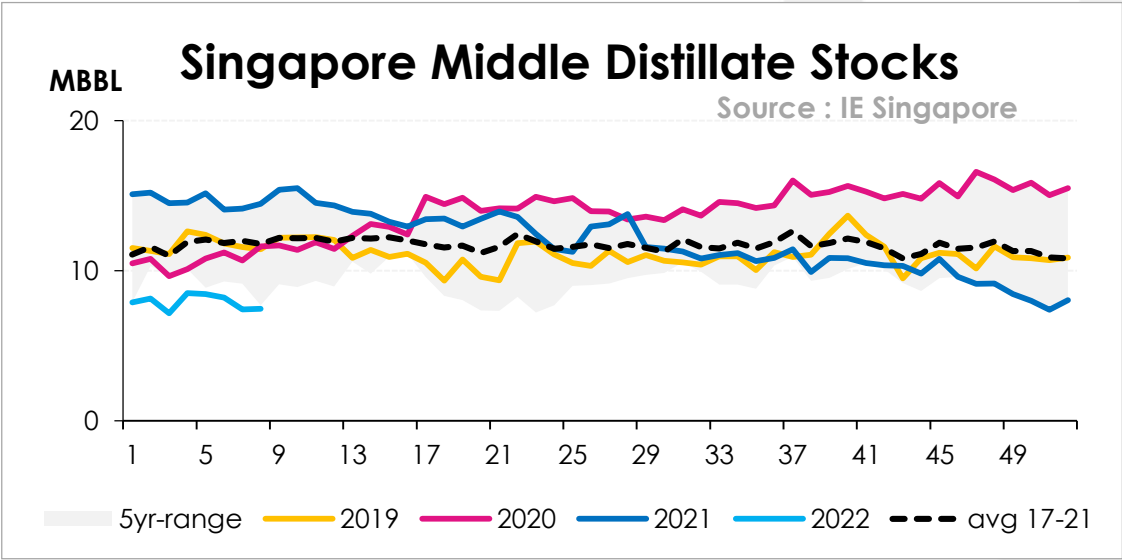
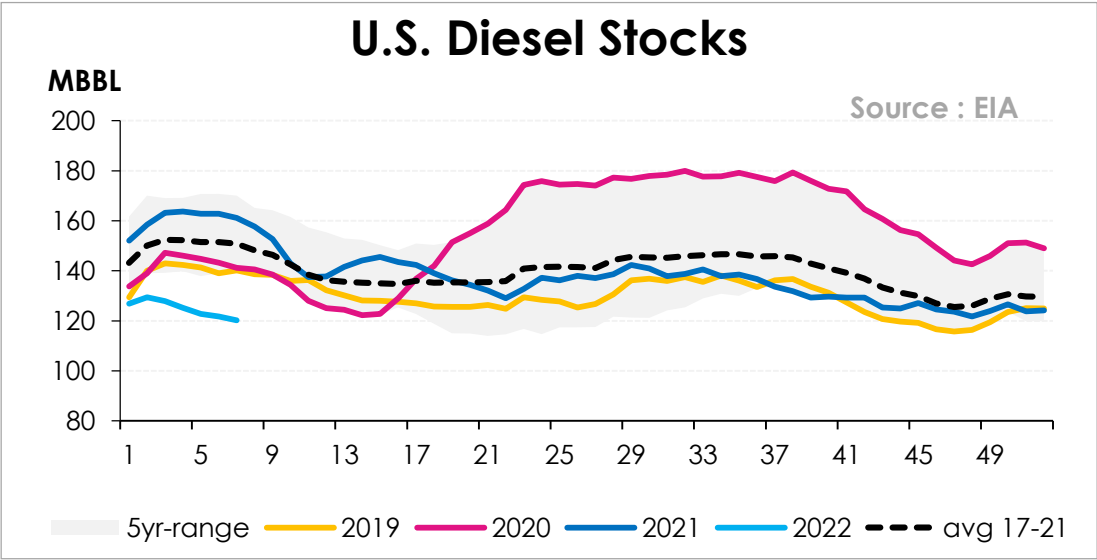


# Global Gasoline Inventories

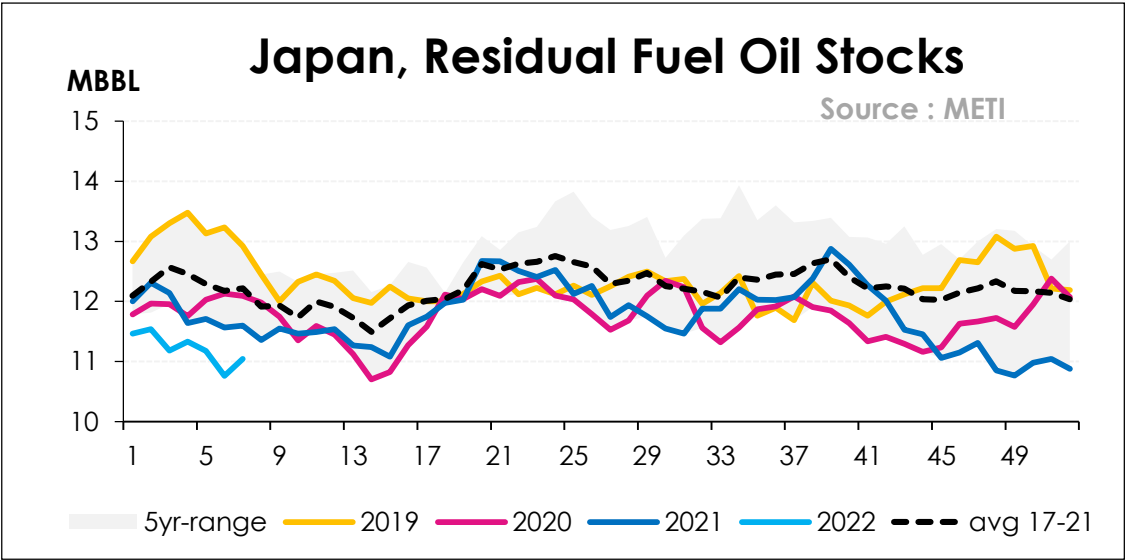
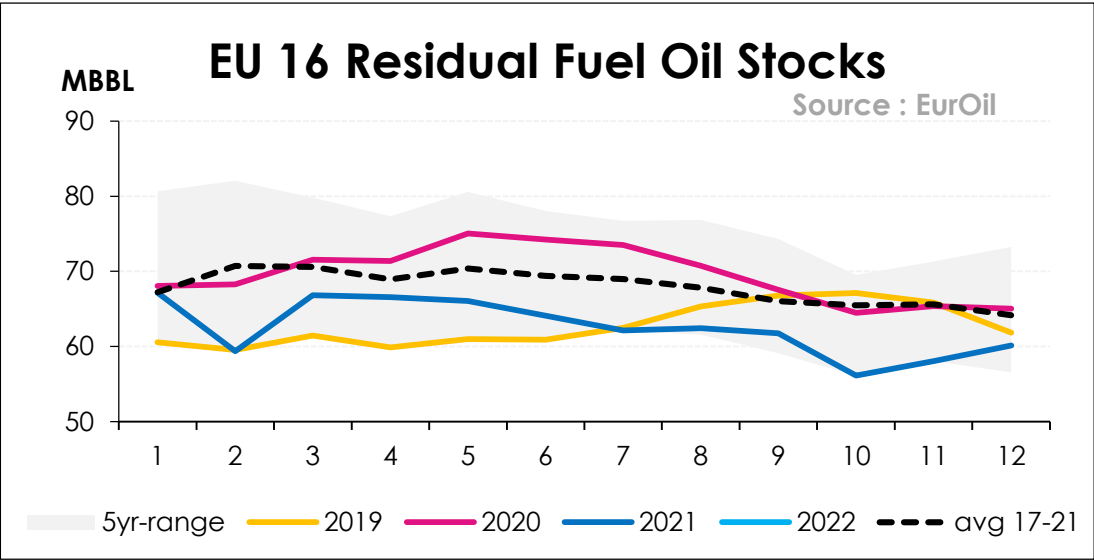
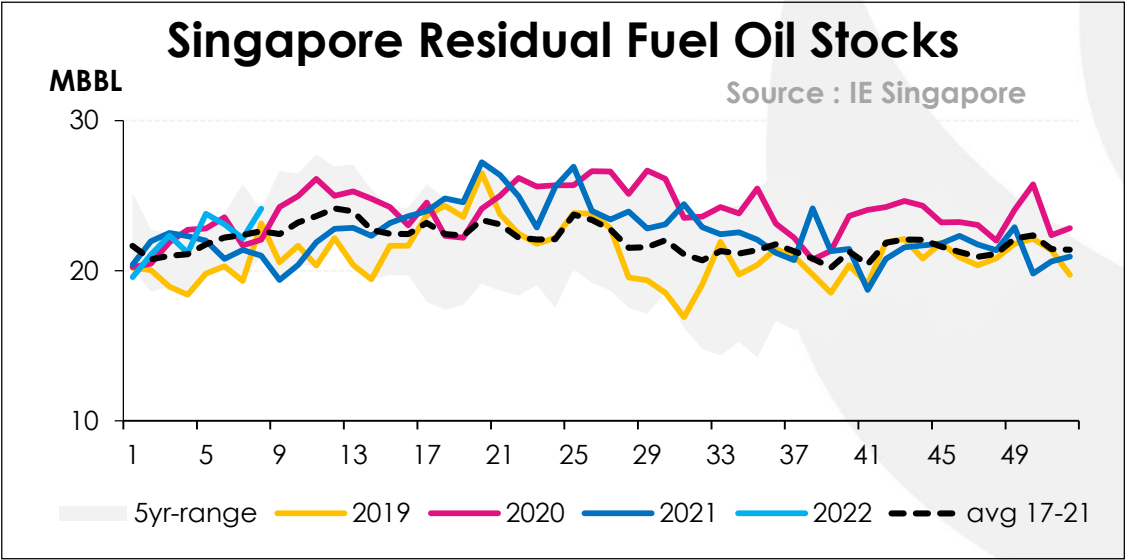
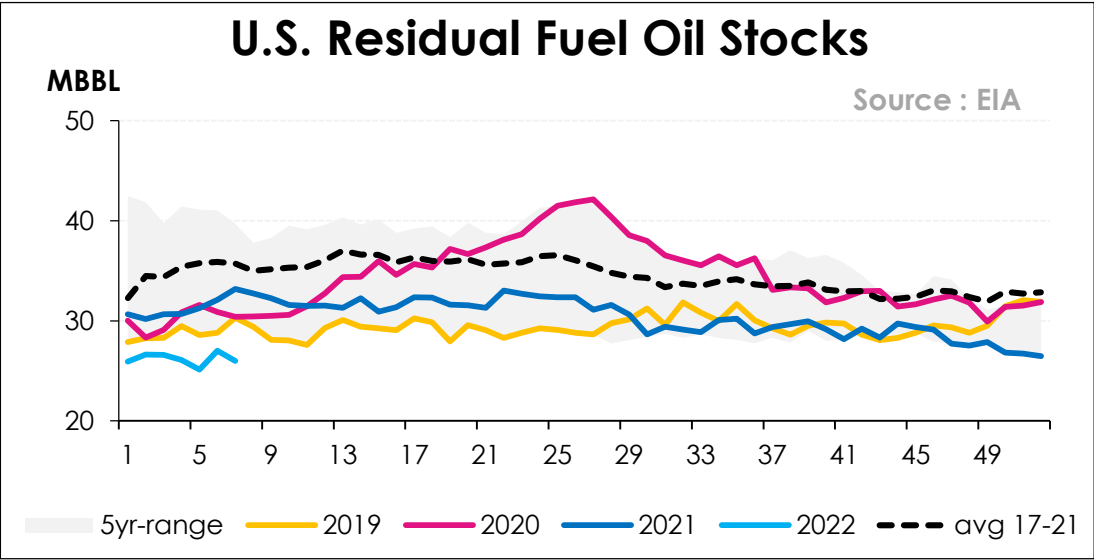




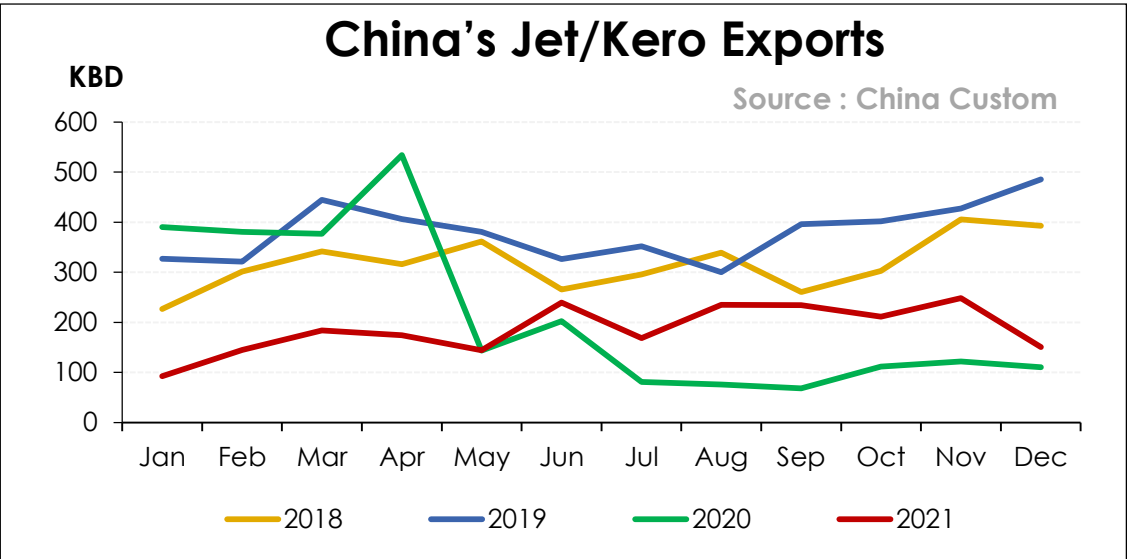
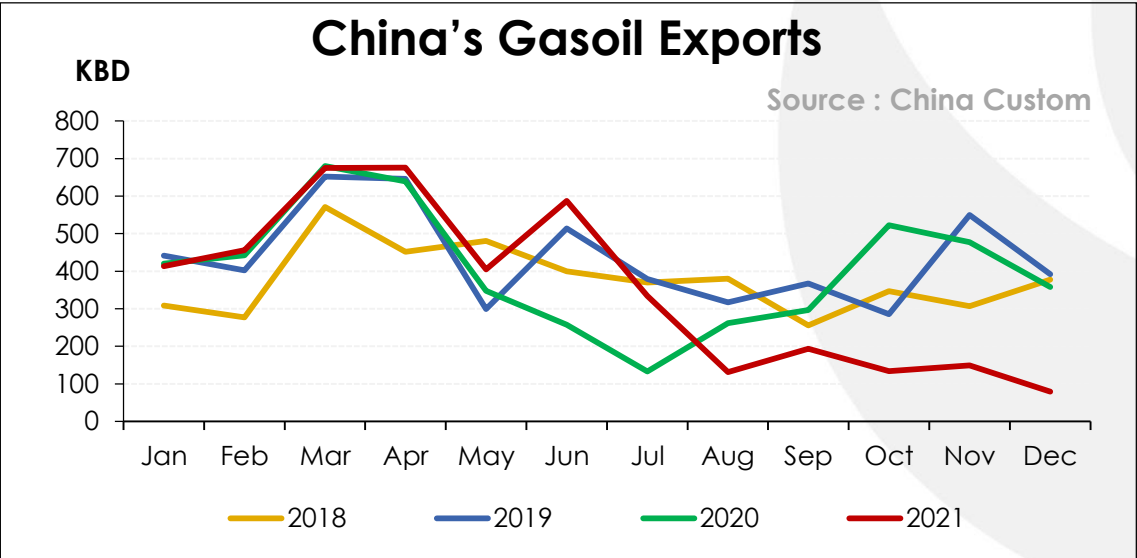
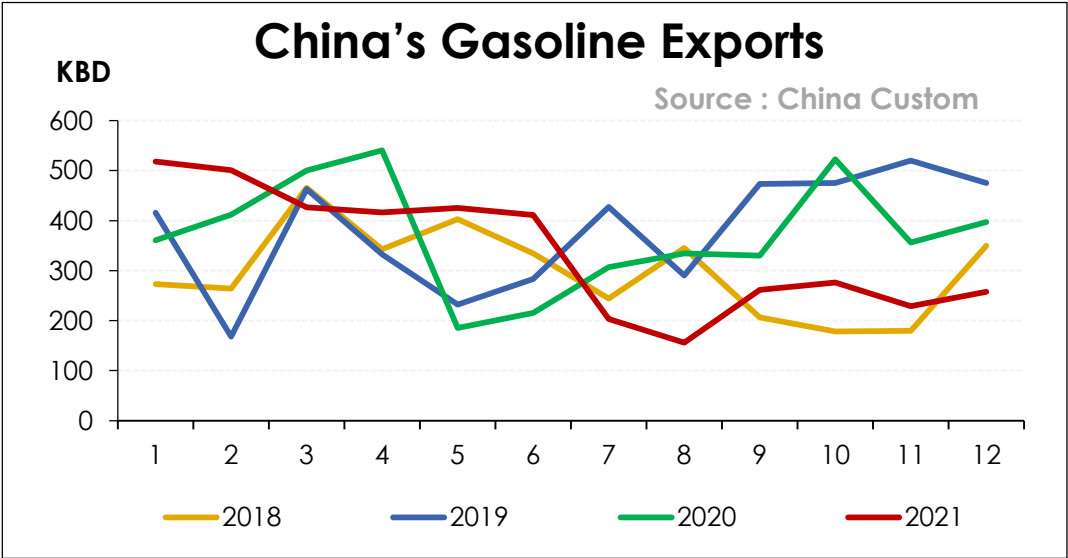
# Global Middle Distillate Inventories



# Global Fuel Oil Inventories

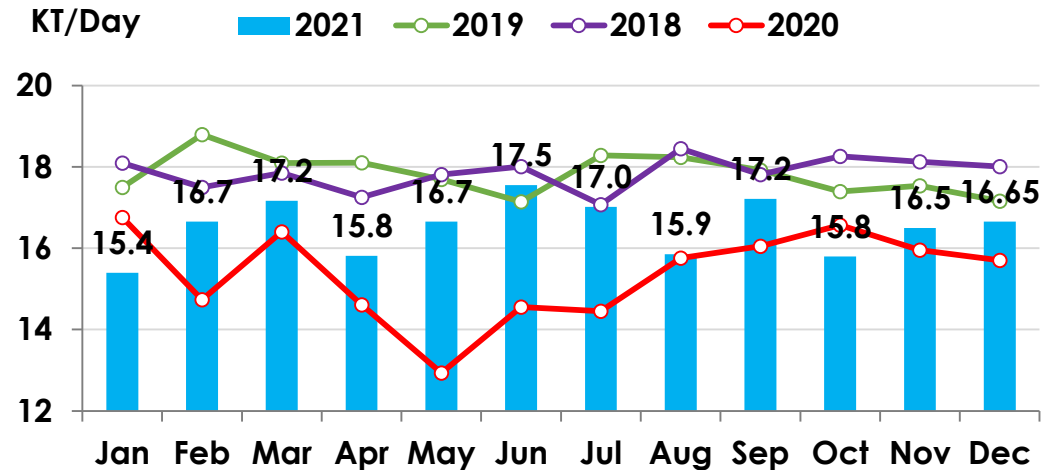


# China's Refined Product Exports



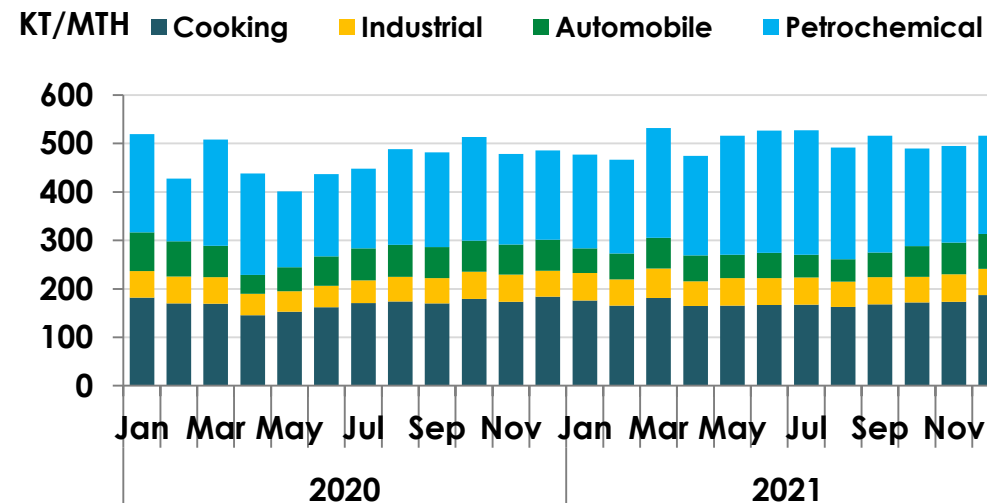
# Domestic LPG Demand

## Thailand LPG Demand



Remark : LPG demand includes Petrochemical consumption

## LPG Demand by Sector



## LPG Demand Highlight

- In 12M'21, LPG demand increased by 7.4% YoY mainly following the increase in petrochemical and industrial sectors. LPG demand in the petrochemical and industrial sector rose by 19.1% and 8.7% YoY, respectively as the manufacturing production started to be recovered following the reopening of factories. In addition, cooking demand also increased by 1.1% YoY from last year. However, the demand in the automobile sector still plunged by 11.0% YoY, as the COVID-19 pandemic pressured the transportation activities especially in Aug'21.

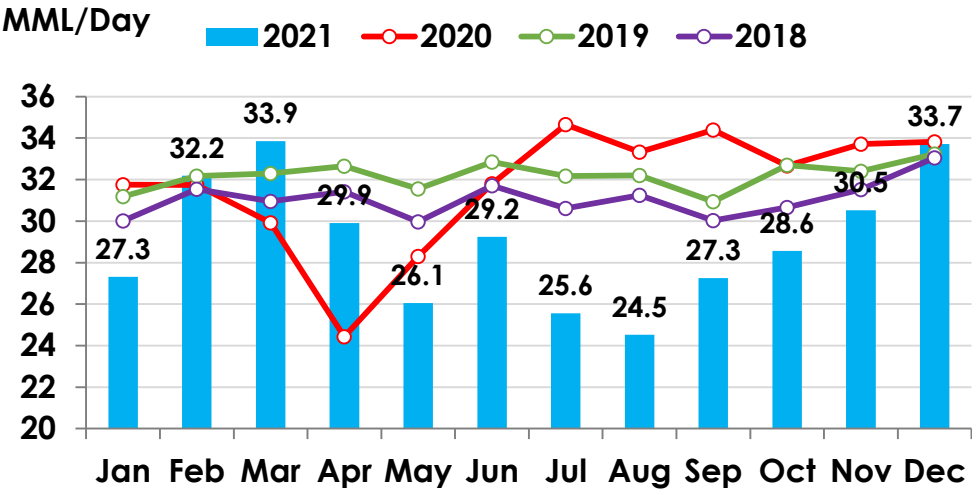
## Outlook for 2022

- In 2022, LPG demand is expected to slightly decline by 0.2% YoY, mainly from the automobile demand. Automobile demand tends to decrease by 14.9% YoY as the demand will be pressured by the lower number of vehicles that run on LPG especially the Taxi. However, the Industrial demand tends to increase by 2.2% YoY as the demand will be supported by the reopening of factories as well as the higher production volume. Besides, Cooking demand tends to increase by 3.8% YoY as the demand would recover from the effect of the COVID-19 pandemic in 2021.

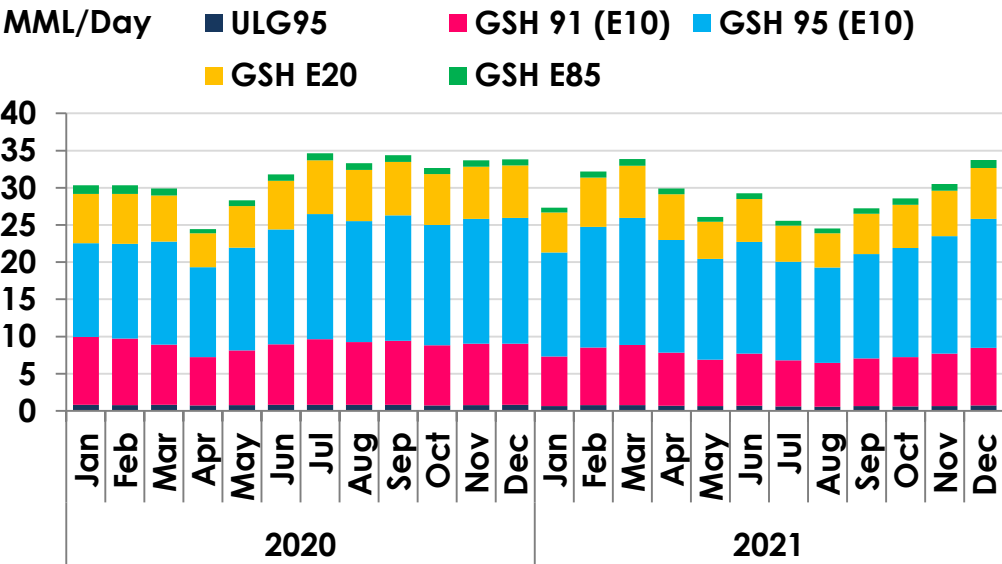
Source: EPPO, DOEB (As of Feb 2022)

# Domestic Gasoline/Gasohol Demand

## Thailand Gasoline/Gasohol Demand



## Gasoline/Gasohol Demand by Grade



### GASOLINE/GASOHOL Demand Highlight

- In 12M'21, Gasoline demand was decreased by 8.5% YoY to an average of 29.0 MML/day while Gasohol demand decreased by 8.9% YoY, settling at 28.4 MML/day. The demand was mainly pressured by the lower transportation activities in most sectors during the second and the third wave of COVID-19 (Jan and Apr'21) and especially in the fourth wave in Jul'21 which was the delta variant outbreak. Besides the effect of the pandemic, the narrow price gap between GSH95 and E20 partly supported the GSH95 demand to decline only by 1.7% YoY while E20 demand dropped by 10.7% YoY. In addition, E85 demand plunged by 9.0% YoY following the lower oil stations providing E85 compared to last year.

### Outlook for 2022

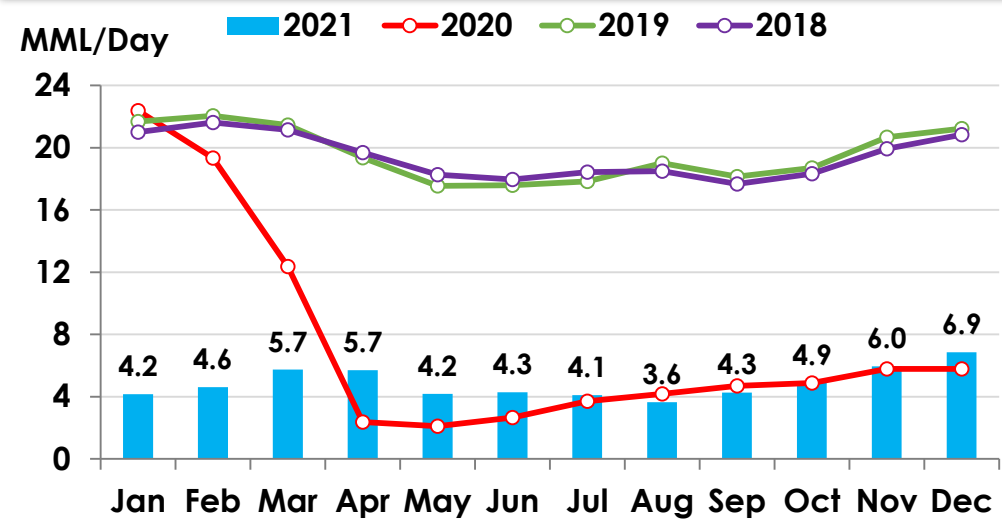
- Gasoline consumption is expected to increase by 9.6% YoY which is mainly supported by the recovery of the transportation activities from milder COVID-19 impact and lockdown easing. Moreover, the economic recovery would encourage people spending resulting in higher passenger car sales.

Source: DOEB (As of Feb 2022)

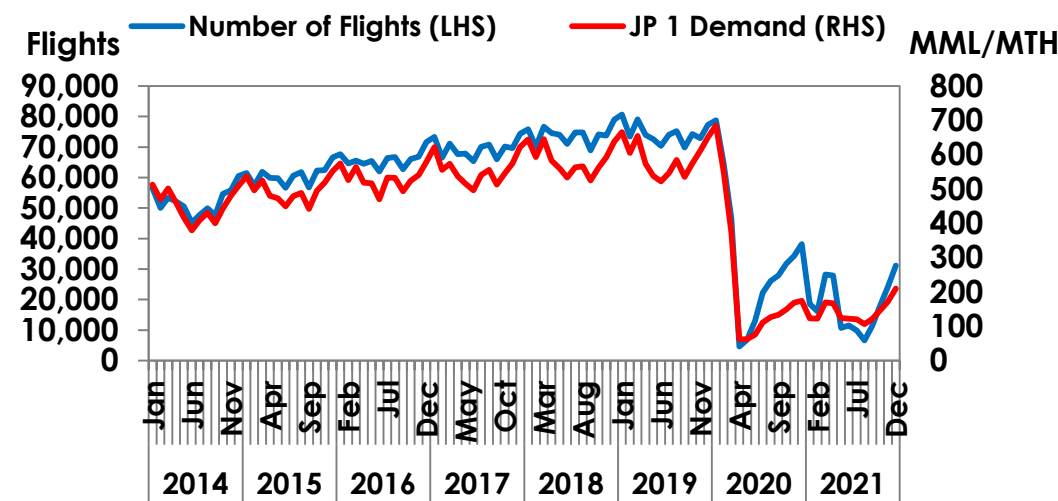


# Domestic Jet Demand

Thailand JET Demand



JET-A1 Demand and Number of Flights



## JET Demand Highlight

- In 12M'21, Jet consumption decreased by 35.2% YoY. The demand still decreased because of Covid-19 pandemic situation and also the new pressure from Omicron variant. However, Jet demand tended to be increased since Sep' 21 due to resuming on travelling on 1 Sep'21. In addition, the country reopening allowed fully vaccinated travelers from low-risk countries since 1 Nov'21, led to higher in both international and domestic flight movements.

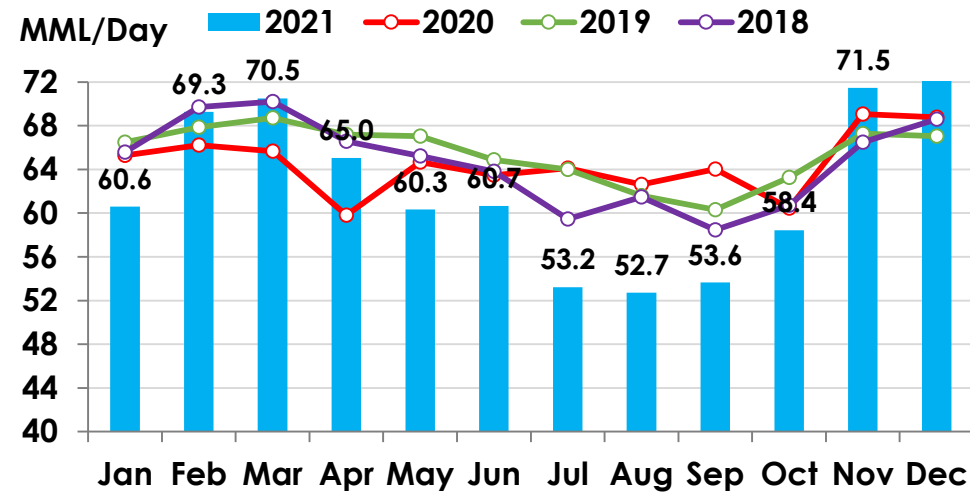
## Outlook for 2022

- Jet-A1 demand growth is expected to increased by 43.4% YoY, since Thailand allowed vaccinated tourists from more than 60 low-risk nations to enter the country. In addition, from 11 Jan'22, International travelers from any country can enter Thailand under the Alternative Quarantine (AQ) entry scheme and also reopen 3 additional Sandbox destinations to all travelers.

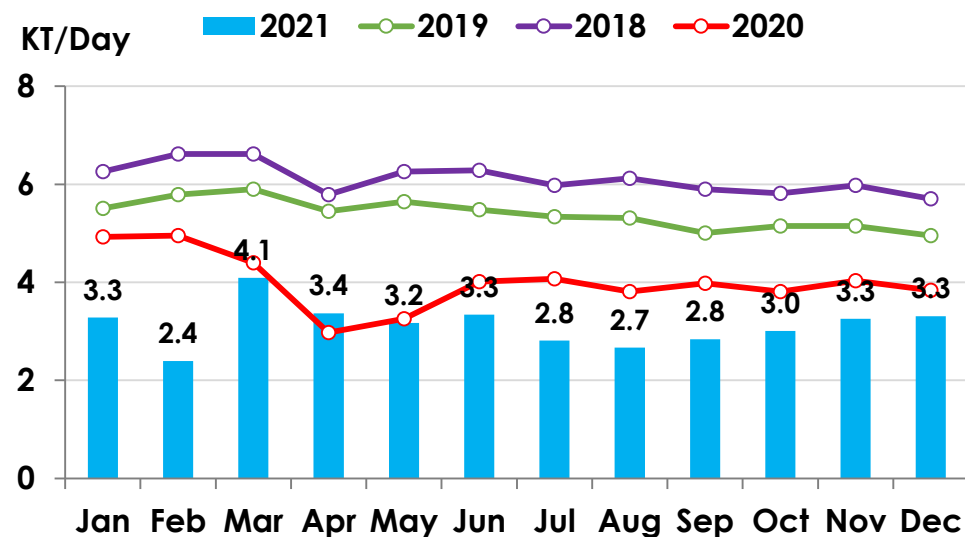
Source: DOEB, AOT, Department of Tourism (As of Feb 2022)

# Domestic Gasoil and NGV Demand

## Thailand Gasoil Demand



## NGV Demand



### Gasoil Demand Highlight

- In 12M'21, Gasoil demand decreased by 2.9% YoY. The demand was still impacted by Covid-19 pandemic situation. However, the restriction areas had been relaxed since Oct'21 and also, in Nov'21, the improve of economic activities and using more Gasoil to generate electricity, led to higher Gasoil demand.

### Outlook for 2022

- Gasoil demand is expected to increased by 4.0% YoY as the demand has recovered after country re-opening since Nov'21 which resulting to higher economic activities and logistic movements.

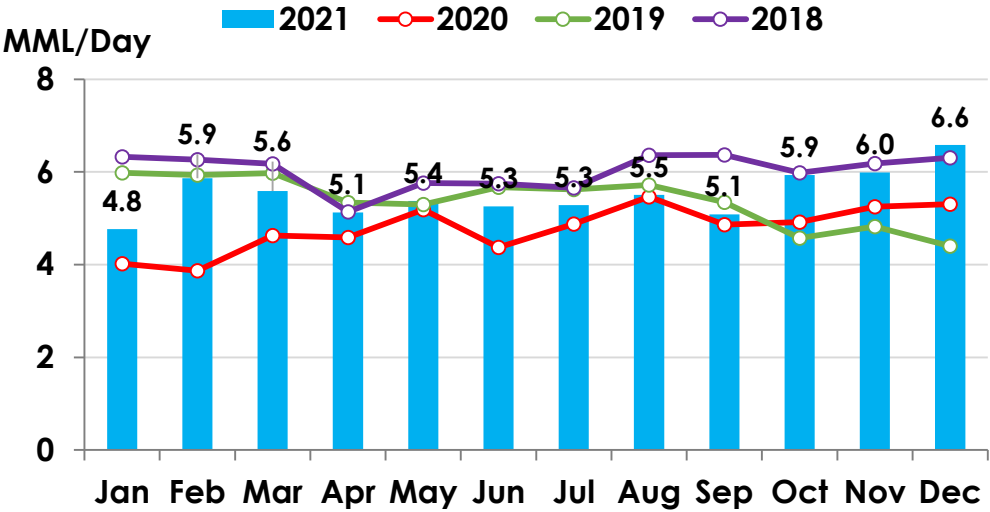
### NGV Demand Highlight

- In 12M'21, NGV demand continually decreased by 22.2% YoY, due to the impact of Covid-19 pandemic since last year, together with the decrease of service stations and NGV vehicles.
- However, the Ministry of Energy plans to maintain NGV's retail price for taxi drives in Bangkok and Vicinity at 13.62 baht per kilogram for 1 month, effective from 16 Feb'22 until 15 Mar'22, which shall support NGV demand.

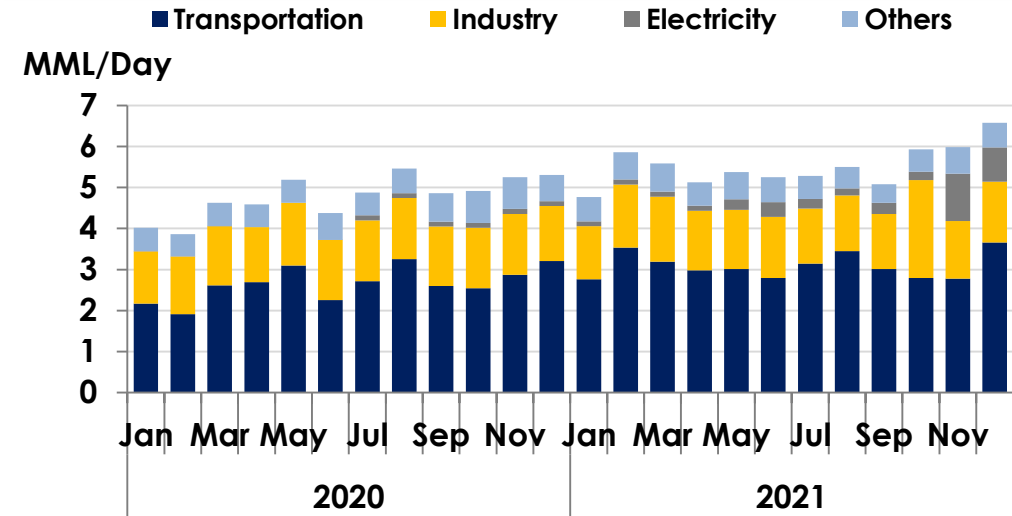
Source: EPPO, DOEB (As of Feb 2022)

# Domestic Fuel Oil Demand

Thailand Fuel Oil Demand



Thailand Fuel Oil Demand by Sector



## Fuel Oil Demand Highlight

- In 12M'21, Fuel Oil consumption rose by 15.6% YoY, as the demand in the transportation sector, which accounted for 55.9% of total Fuel Oil demand, rose by 16.2% YoY due to higher import and export volume. Moreover, the demand of the industrial sector accounted for 27.3% of total Fuel Oil demand, which increased by 5.7% YoY due to the global economic recovery.

## Outlook for 2022

- Fuel Oil demand is expected to increase by 2.4% YoY. Fuel oil consumption level would surpass pre-pandemic 2019 level as Thai economy in 2022 tends to be increased from economic recovery from easing lockdown measures and reopening the country.

Source: DOEB (As of Feb 2022)

# Thank You

Any queries, please contact:



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Thank you for taking our survey.

