



Thai Oil Public Company Limited

Q1/20

Analyst Presentation
13 May 2020

Time : 10:00 - 12:00 hrs.

Channel : Microsoft Team, TOP IR Application, Facebook Live



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Presentation Agenda (Q1/20)

Q1/20 KEY HIGHLIGHTS

Q1/20 PERFORMANCE ANALYSIS

2020 INDUSTRY OUTLOOK

FINAL REMARKS



Q1/20 KEY HIGHLIGHTS

Key Highlights

2020 - A Perfect Storm

Impact on TOP

Performance

Crisis Response Measures

Industry Outlook

Q120 Highlights

Final Remarks

COVID-19 & Global Lockdown

- Global economy expected to shrink to 3% ⁽¹⁾ due to restrictions on the economic activities
- Global oil demand significantly dropped by a record 9.3 mbd in 2020⁽²⁾ with nearly 1/3 of total oil demand disappearing during the peak period in Apr'20
- Global capital market in turmoil due to rising fears and global economic shutdown as a result of the COVID-19



GDP
-5.9%



GDP
1.2%



GDP
-3.5%

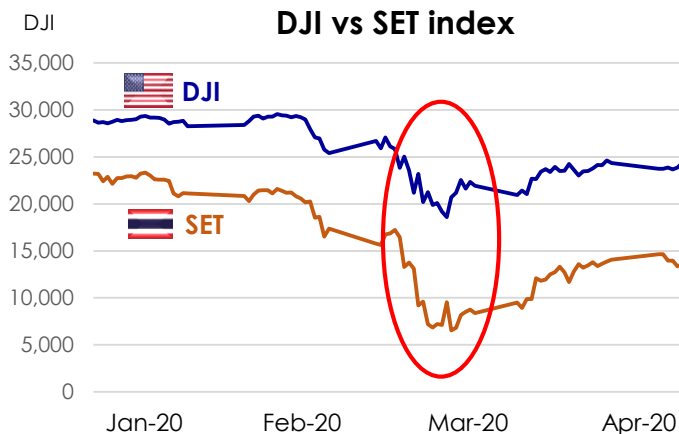


GDP
-6.7%

(1) Source : IMF Apr'20 (2) Source : IEA (Apr'20)

Equity Market in Turmoil

DJI vs SET index



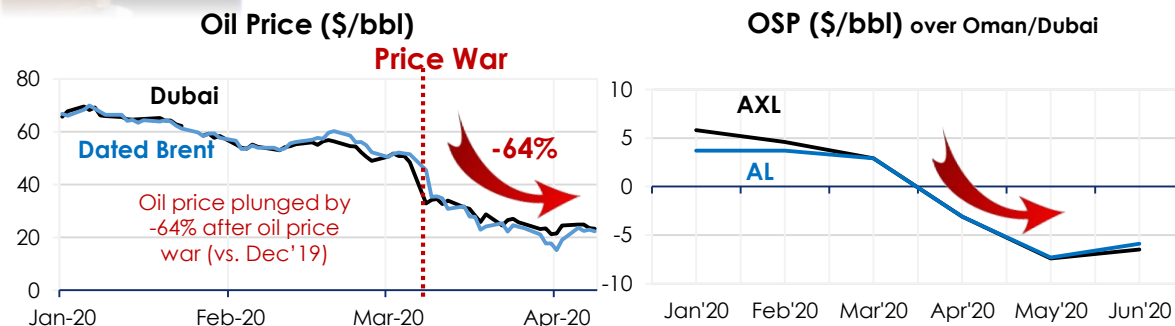
- DJI down by 36% on 17 Mar 20 (lowest in 2020)
- In Thailand, SET down 36% on 23 Mar 20 (lowest in 2020)
- TOP share price hit 11 years recorded low at 27 THB/share (23 Mar 20)

Oil Price War



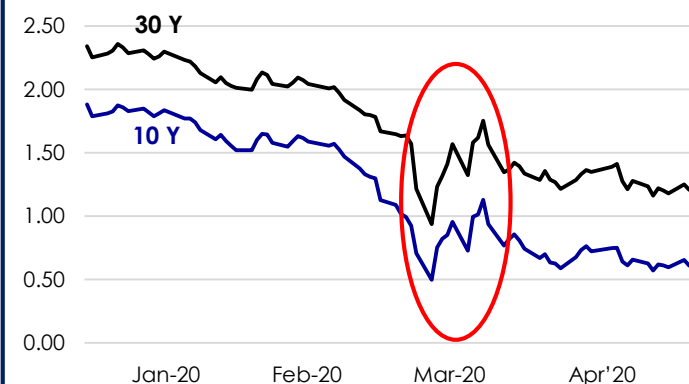
March'20 : Failure of OPEC+ agreement

April'20 : Historic 10 mbd production cut deal



Fixed Income Market Stalled

US Treasury yield 10Y, 30Y



- 10Y, 30Y US Treasury slid sharply and turned historically low since 2008 after FED aggressively announced emergency rate cuts twice in 2020 by 1.5% to near zero rate
- Historically low treasury's yield led to stagnant bond market

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Q120 Highlights

Impact on TOP

- **Huge stock loss from sharp oil price drop**, down 48% from \$65/bbl in Dec'19 to \$34/bbl in Mar'20
- **However, resetting crude cost to low level going forward**, especially from low benchmark prices & OSP discount

- **Lower petroleum demand pressuring GRM/GIM**



* Last 2-month Mar'20 - Apr'20

- **Inability to carry out project** as per original schedule
 - CFP
 - LABIX MTA
- **Inability to raise fund** as per original schedule
 - AGM postponed
 - Bond market jittery
- **Anyway, little impact on financial liquidity**
 - Significantly lower working capital
 - Delayed project payment schedule

Key Highlights

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People First

Care for people (staffs, stakeholders, community)

- Proactive staff & contractors health & safety precaution
- Business continuity management
- Community & social contribution

Business Excellent Management – Last Man Standing

- Operation & commercial optimisation & flexibility
- Productivity improvement & cost control
- Price risk & financial liquidity management
- Proactive project management

Fully Prepared for the Rebound

- **People** : readiness for new normal
- **Business** : crude processing optimisation , proactive product sales strategy
- **Digitalization** : optimised production & maintenance systems, new efficient way of working

Key Highlights

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Employee Health Protection and BCM

Care for Employee Health



- Establish **I-COVID Center**
- **Monitor & communicate** COVID situation with staffs
- **Impose travel restriction & preventive measures**

Ensure BAU & BCM

- Set up **Crisis Management Team**
- Activate **Business Continuity Plan (BCP)**
- Implement **WFH** through digital platform
- Identify **Mission Critical Activities (MCA)** & **safe housing program**



Social Contribution



- **Thaioil CSR program support medical staffs and communities** with hygiene equipment including protective suits PAPR, cloth masks, face shields, and alcohol gel hand sanitizer

Overall Donations by Thaioil Group



Business Excellence - Last Man Standing

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Key Highlights

2020 - A Perfect Storm

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Q120 Highlights

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Operation & Commercial Optimisation & Flexibility



Optimise Intake

Crude procurement

Crude type processing

Optimise CDU intake



Optimise Production

Minimise Jet

Maximise Gasoil

Maximise Aromatics

Optimise Base oil
& Bitumen



Optimise Sales

Maximise export,
outrunning others

Through logistical
advantage

And also through TOP
Solvent

Productivity Improvement & Cost Control

- More **operational efficiency**
- More **Hydrocarbon Management Review (HMR)**
- More **stringent cost control**
- Prioritize and revisit **CAPEX plan**

Price Risk Management & Financial Liquidity

- **Proactive hedging strategies**
- Explore multiple options to **ensure financial liquidity**
- Manage **financial risk** to protect FX translation loss

Proactive Project Management



- **Prevent outbreak in staff & workforce**
- **Expedite design & material of priority**
- **Increase manpower & supply from local sources**
- **Re-sequence to catch up post COVID**

Capitalize on the Rebound – Agile & Flexible

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Business

Crude Processing Optimisation

- Increase crude stock for operational flexibility by utilizing our newly constructed crude tank

Product Sales Strategy

- Export Jet surplus via new Jetty
- Explore Indochina market

Proactive Price Risk Management

People & Digital Platform

People

- **Fully prepared for the new normal**

Digital Platform

- **WFH platform**
 - Redefine future office space/ meeting room
 - Training from home
 - Reduce business travelling
- **Advanced production process & predictive maintenance system**
- **Strengthen cyber security**

Q1/20 Key Market Highlights

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Key Highlights

Performance

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Q120 Highlights

Crude Oil (Dubai fell to \$33.7/bbl from \$64.9/bbl)

- **Saudi-Russia oil price war in March'20 after OPEC+ failed to agree on production cut**
- **A significant drop in global oil demand** due to COVID-19 outbreak
- **Massive Surplus in global crude oil supply** causing concern about rising inventory and insufficient storage capacity

Refinery (Mkt GRM softened to \$0.1/bbl from \$2.7/bbl)

- **Weak Gasoline spread** due to falling demand following lockdowns in various countries.
- **Weak Middle Distillate spread** especially Jet fuel due to weak demand on flight cancellation and halted airline operation due to COVID-19 outbreak.
- ✚ **Improving HSFO spread** due to tight supply from reduced global refinery run due to COVID-19 and shifted production to VLSFO.

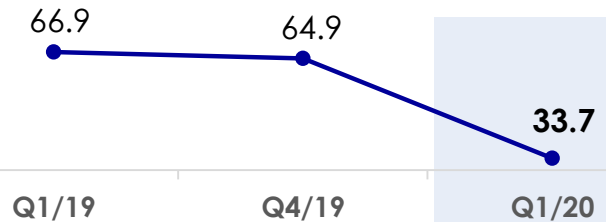
Aromatics & LAB (Contributions improved to \$1.5/bbl from \$0.8/bbl)

- ✚ **Improving PX and BZ margins** due to very low feedstock cost and lower supply from global refinery run cut.
- ✚ **Stable LAB contribution** from limited impact of COVID-19 on end user demand.

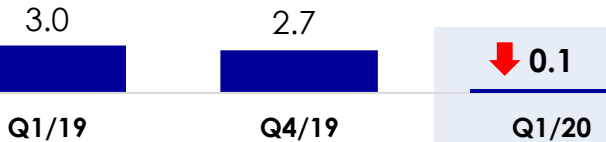
Lube & Bitumen (Contribution softened to \$0.6/bbl from \$0.9/bbl)

- **Lower Base oil and Bitumen margins** due to recovering HSFO spread from Q4/19 and softer demand in China from COVID-19 spread.

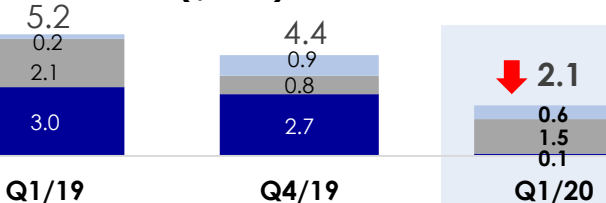
Dubai (\$/bbl) (ending price)



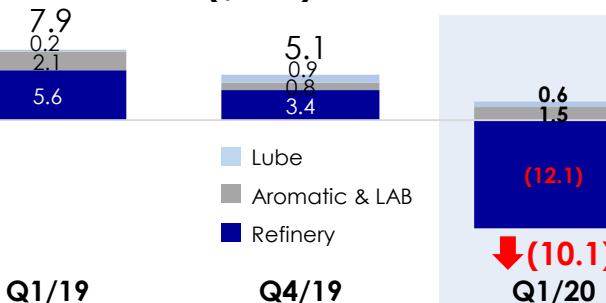
Mkt. GRM (\$/bbl) exclude stock G/L



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



ACC. GIM (\$/bbl) include stock G/L



Q1/20 Key Business Highlight & Financial Performance

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Key Highlights

Performance

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Q120 Highlights

Key Business Highlight

Operational

- Maintain high and reliable production

U-Rate %	Q1/19	Q4/19	Q1/20
Refinery	116%	113%	111%
Aromatics	92%	73%	81%
Base Oil	89%	77%	81%

- Maximise VLSFO production yield 4%

Commercial

- Capture high local & Indochina sales

	Q1/19	Q4/19	Q1/20
Local	87%	89%	89%
Indochina	10%	9%	9%
Other exports	3%	2%	2%

- Thailand domestic demand dropped in Mar'20

(yoy)	Jet	Gasoline	Gasoil
3M/20	▼-17%	▼-2%	▼-3%

Financial

- Credit ratings

- Moody's revised down from Baa1 to Baa2 Negative outlook
- S&P revised down from Stable outlook to Negative outlook
- Fitch revised down from AA to AA- Negative outlook

MOODY'S

STANDARD
& POOR'S

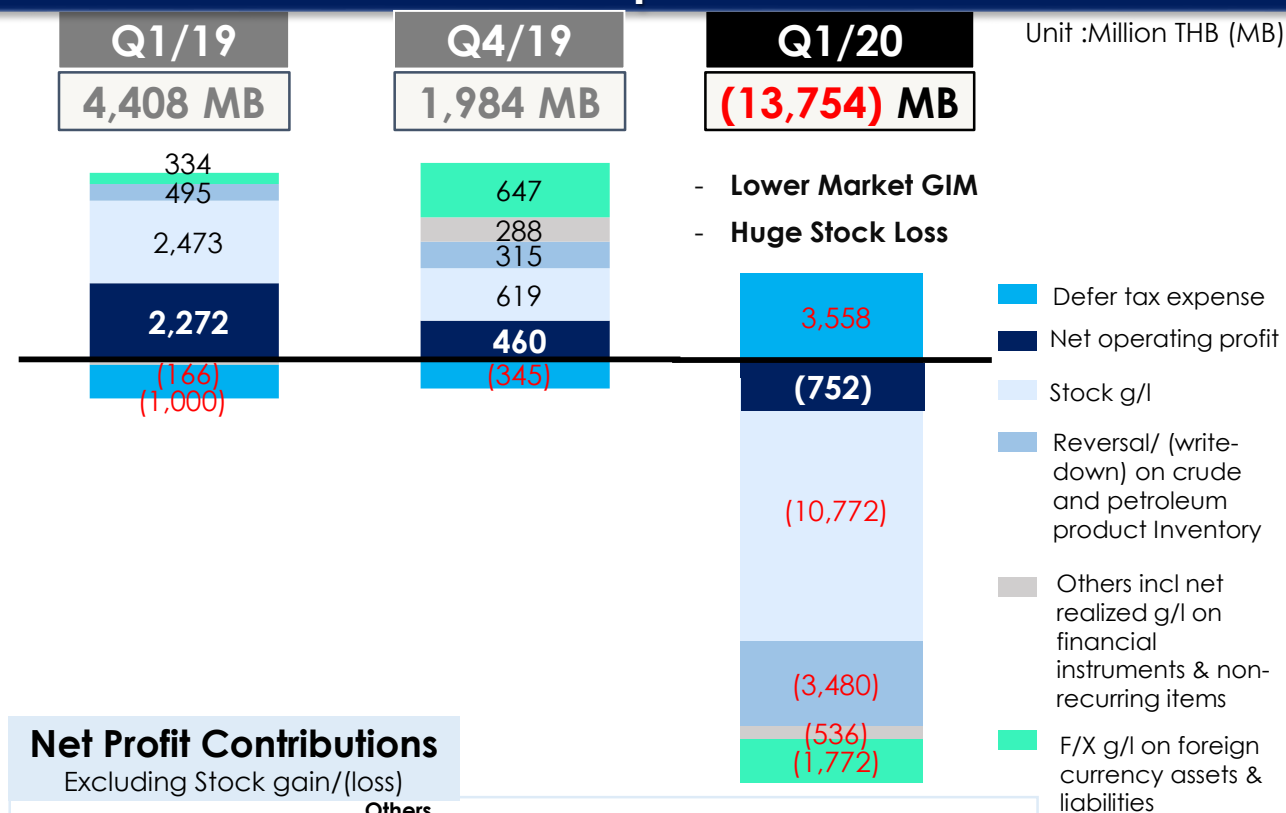
FitchRatings

Baa2
Negative Outlook

BBB+
Negative Outlook

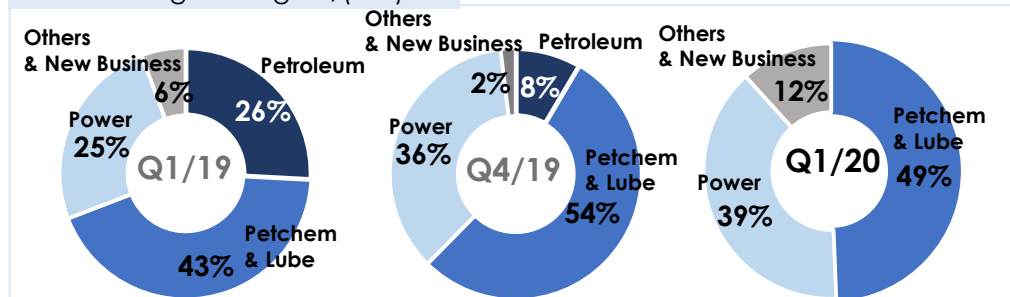
AA- (Tha)
Negative Outlook

TOP Group Net Profit



Net Profit Contributions

Excluding Stock gain/(loss)





Q1/20 PERFORMANCE ANALYSIS

Refinery: High U-Rate and Robust Domestic & CLMV Sales

Key Highlights

Performance

Industry Outlook

Final Remarks

Refinery

Aromatic

Base Oil

GIM

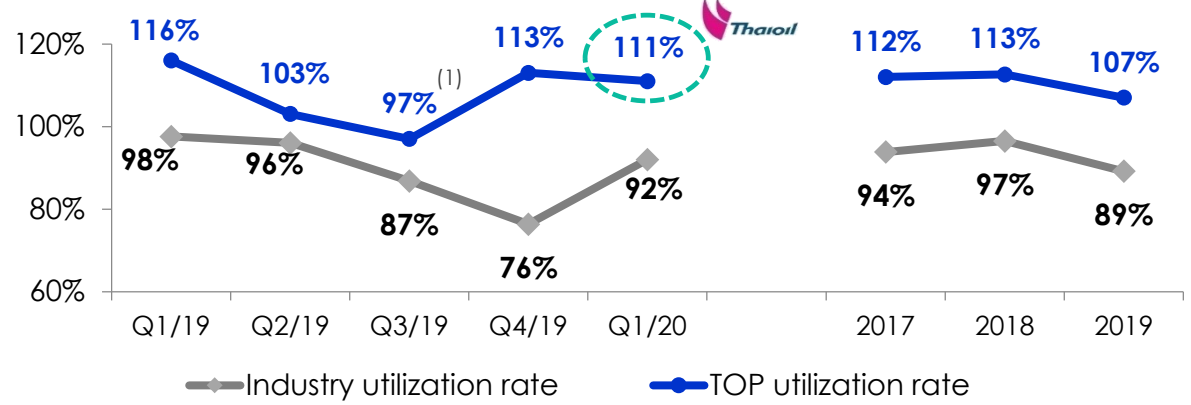
Power

All business

F/S & others

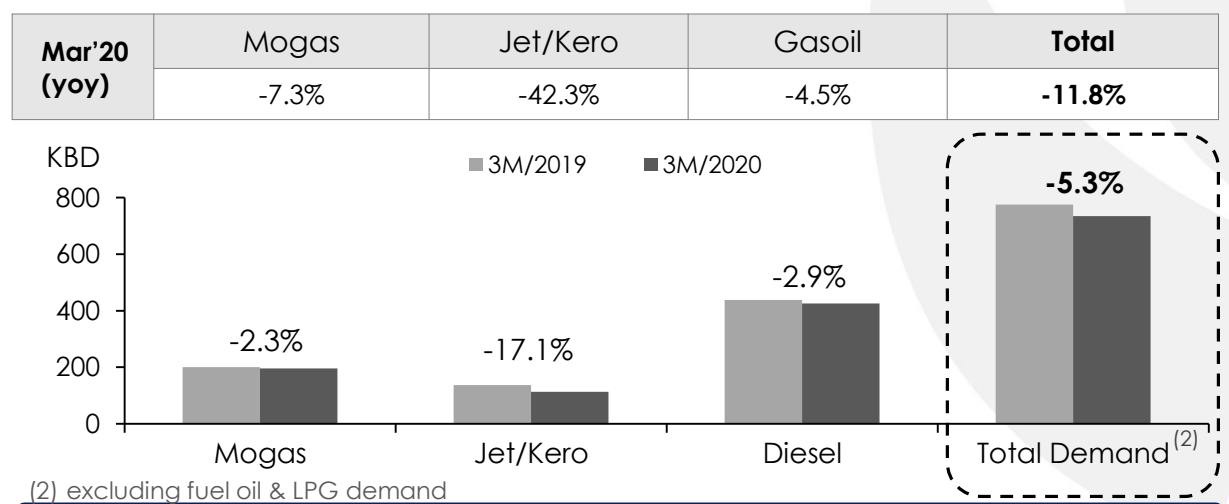
TOP/ Domestic Refinery Utilization Rate

Unit: % Utilization Rate



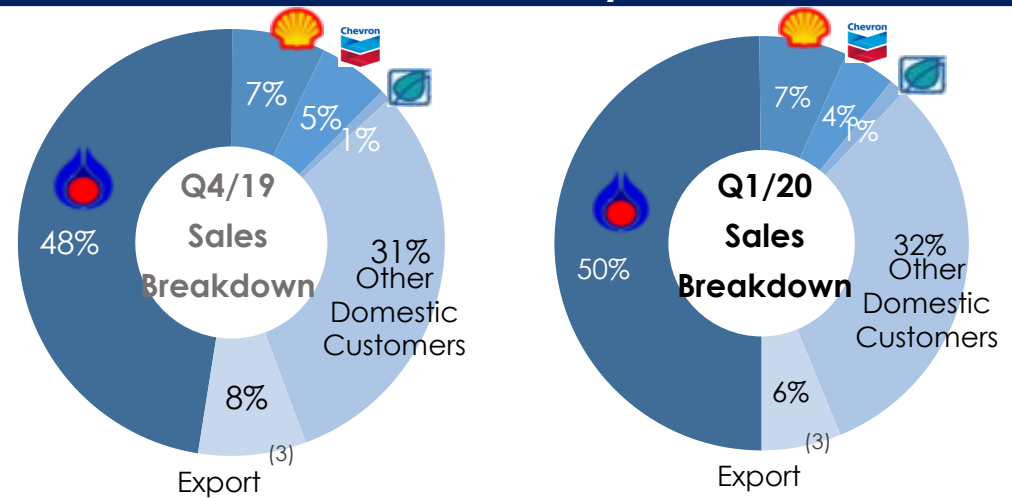
(1) TOP's CDU-3 MTA (Mid June – July 2019)

Domestic Oil Demand



(2) excluding fuel oil & LPG demand

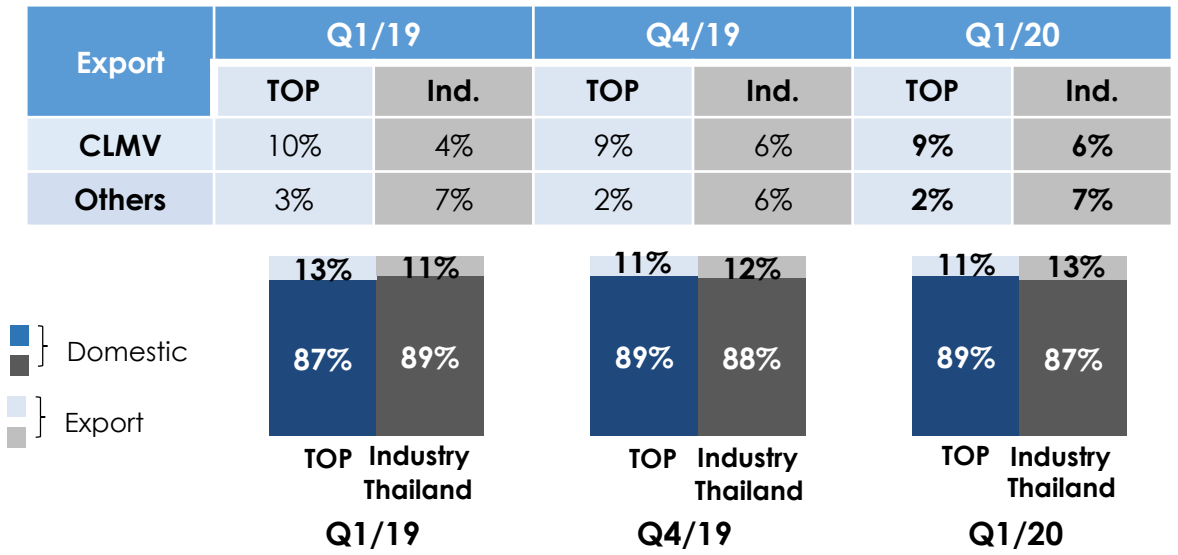
Sales breakdown by customers



(3) excluding export sale through PTT

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

TOP's Domestic Sale vs Industry



Domestic
Export

Refinery: Weak Mkt GRM Pressured by Lower Product Spread

Key Highlights

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Refinery

Aromatic

Base Oil

GIM

Power

All business

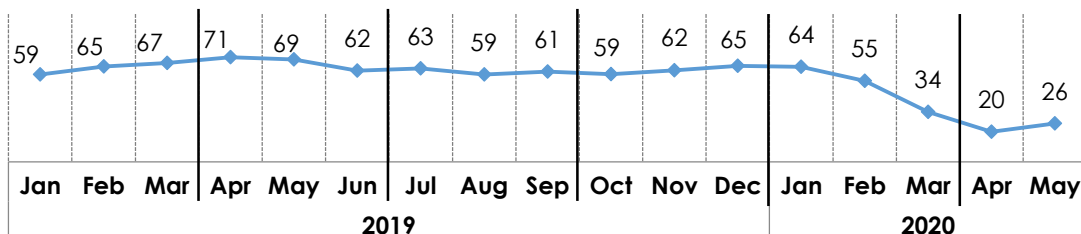
F/S & others

Dubai Crude Price & Key Petroleum Product Spreads

	2019				2020		2019
\$/bbl	Q1	Q2	Q3	Q4	Q1	Q2TD*	FY
DUBAI (DB)	63.5	67.4	61.1	62.1	50.9 ↓	23.2	63.5
ULG95 - DB	3.7	7.5	11.7	12.9	6.7 ↓	1.0	9.0
JET - DB	13.0	12.2	15.7	13.9	8.6 ↓	(2.5)	13.7
GO - DB	12.8	12.4	15.3	14.3	11.1 ↓	6.0	13.7
VLSFO - DB	0.1	3.7	7.8	12.3	13.8 ↑	8.4	6.0
HSFO - DB	0.6	(2.3)	0.9	(18.7)	(7.5) ↑	(0.2)	(4.9)

*As of 7 May 20

Dubai Price
(US\$/bbl)



Gross Refinery Margins - GRM

	2019				2020	2019
\$/bbl	Q1	Q2	Q3	Q4	Q1	FY
Market GRM	3.0	2.6	4.1	2.7	0.1	3.1
Stock G/(L)	2.7	(0.2)	(1.8)	0.7	(12.3)	0.5
Accounting GRM	5.7	2.4	2.3	3.4	(12.2)	3.6

Refinery Utilization

Q1/19	Q4/19	Q1/20
116%	113%	111%

% MB Intake/OSP*

36%/1.8	21%/4.4	14%/2.4
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*Murban OSP over Dubai (\$/bbl)

Q1/20 Market GRM

- **Weak Gasoline spread** due to falling demand following lockdowns in various countries
- **Weak Middle Distillate spread** especially Jet fuel due to weak demand on flight cancellation halted airline operation due to COVID-19 outbreak.
- + **Improving HSFO spread** due to tight supply from reduced global refinery run due to COVID-19 and shifted production to VLSFO.

Q1/20 Performance

- + **Maintain High refinery run rate at 111%**

Aromatic: Improving Contribution due to Low Feedstock Cost

Key Highlights

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Refinery

Aromatic

Base Oil

GIM

Power

All business

F/S & others

Aromatics Spreads and Margins

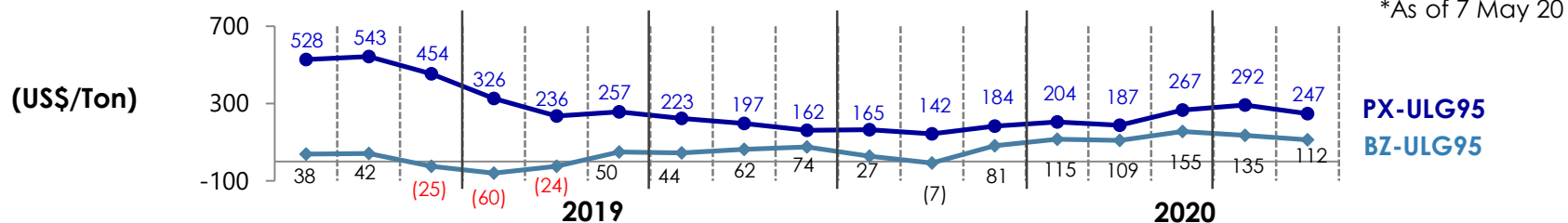
	2019				2020		2019
\$/ton	Q1	Q2	Q3	Q4	Q1	Q2TD*	FY
PX-ULG95	508	273	194	163	218 ↑	270	285
BZ-ULG95	18	(12)	60	33	126 ↑	123	25

Aromatics Production

Q1/19	Q4/19	Q1/20
92%	73%	81%

Q1/20 Market

+ **Improving PX and BZ margins** due to low feedstock cost and lower supply from global refinery run cut.



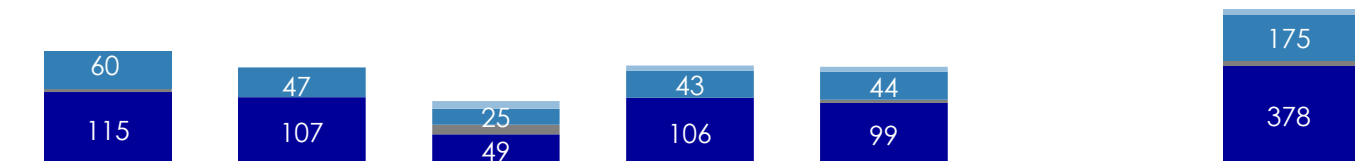
Aromatic's Sales (excluding by product) & Product-To-Feed Margin (P2F)

(Unit : KTon)

TL (1)

BZ

PX



	2019				2020
	Q1	Q2	Q3	Q4	Q1
P2F -\$/ton	143	76	42	52	85
P2F -\$/bbl	18.8	9.9	5.5	6.8	11.1
GIM -\$/bbl ⁽²⁾	2.0	1.0	0.5	0.8	1.5

2019
FY
81
10.6
1.1

Q1/20 Performance

+ **Higher utilization rate at 81%**

Base Oil: Lower Contributions from Softer Lube & Bitumen Spread

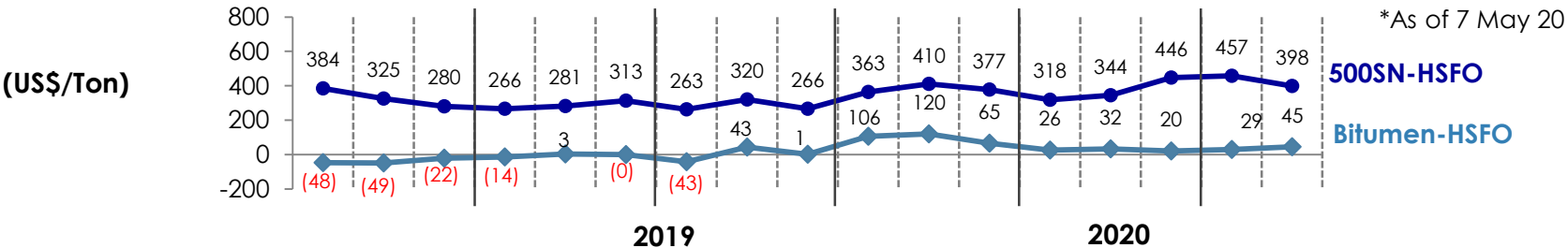
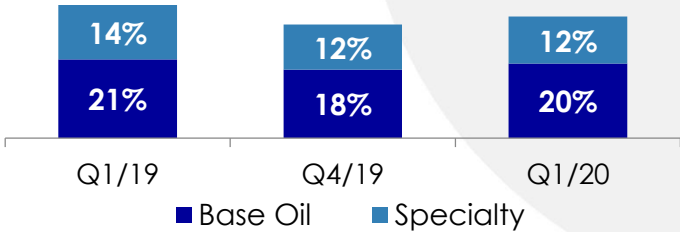


Base Oil & Bitumen Spreads & Margins

	2019				2020		2019
\$/ton	Q1	Q2	Q3	Q4	Q1	Q2TD*	FY
500SN-HSFO	330	287	283	384	369↓	428	321
BITUMEN-HSFO	(40)	(4)	1	97	26↓	37	14

Base oil Production		
Q1/19	Q4/19	Q1/20
89%	77%	81%

% Base Oil & Specialty Sales Volume



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

(Unit : KTon)

	2019				2020
	Q1	Q2	Q3	Q4	Q1
P2F -\$/ton	59	94	83	119	86
P2F -\$/bbl	9.0	14.3	12.6	18.1	13.0
GIM -\$/bbl	0.2	0.7	0.5	0.9	0.6

Q1/20 Market

- **Lower Base oil and Bitumen margins** due to recovering HSFO spread from Q4/19 and softer demand in China from COVID-19 spread.

Q1/20 Performance

2019	FY
89	
13.5	
0.6	



Integrated Margin & Competitive Cash Cost

Key Highlights

Performance

Industry Outlook

Final Remarks

Refinery

Aromatic

Base Oil

GIM

Power

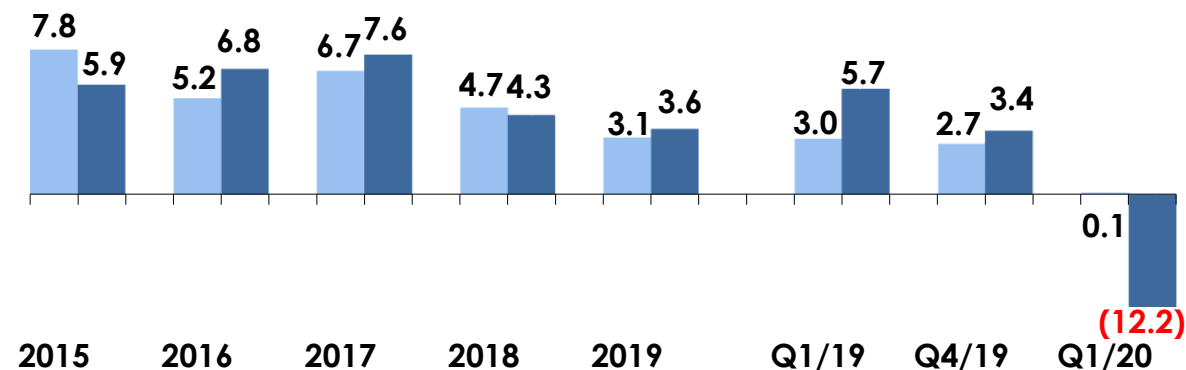
All business

F/S & others

Gross Refining Margin

(Unit: US\$/bbl)

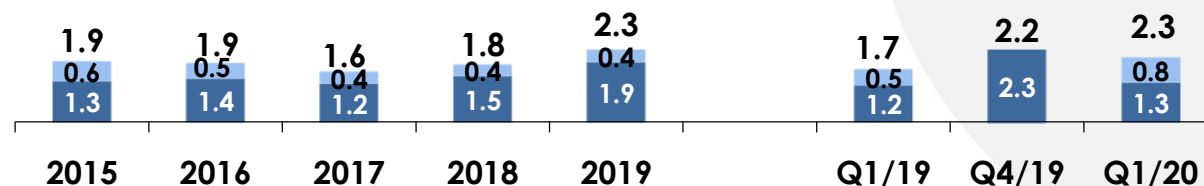
■ Market GRM ■ Accounting GRM (Market GRM + Stock G/L)



Refinery's Cash Cost

(Unit: US\$/bbl)

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

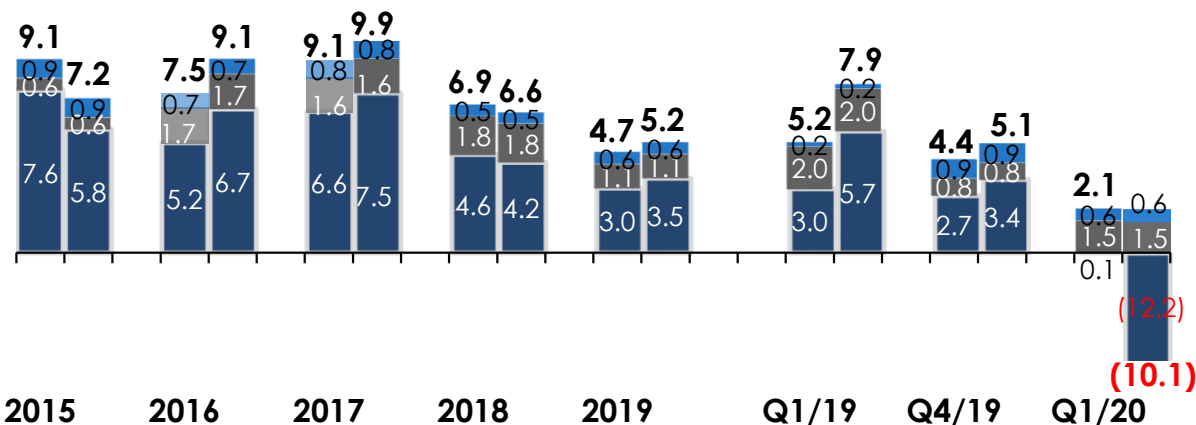


Gross Integrated Margin

(Unit: US\$/bbl)

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

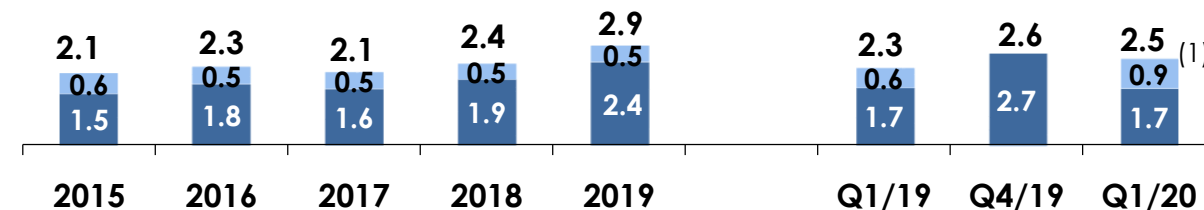
■ Refinery ■ Aromatics+LAB ■ Lube Base



Group's Cash Cost

(Unit: US\$/bbl)

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



(1) Including Interest expense from impact of TFRS16 135 MB or 0.1 \$/bbl

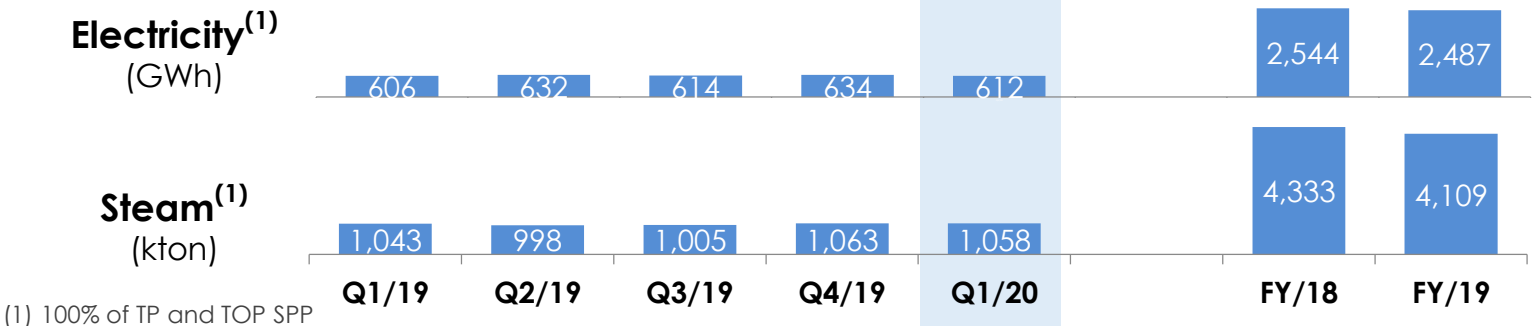
Power Sector Performance...Growing Contribution to the Group



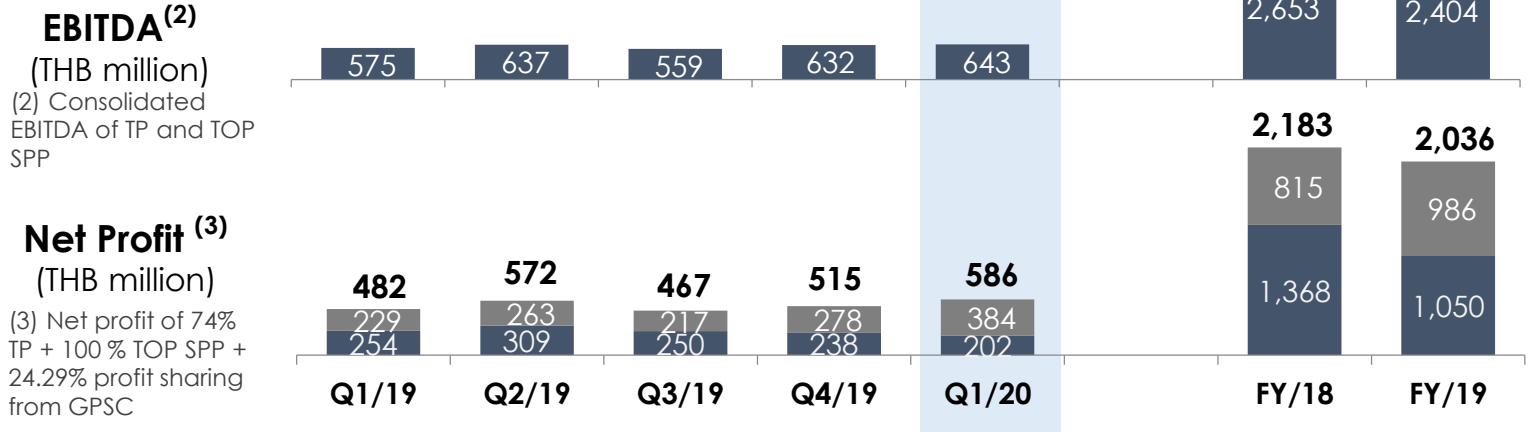
Power Business Sector



Power & Steam Sales



EBITDA & Net Profit



**** TOP shareholding 24.29% (8.91% via TOP and 20.79% via TP)
GPSC is an associate company of TOP.
Equity method is applied to recognize share of profit. (EBITDA calculation excludes profit sharing from GPSC)

Performance Highlight

+ **Higher power section contribution** from increased profit-sharing form GPSC thanks to consolidating net profit from GLOW

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

Performance Breakdown

Key Highlights		Performance			Industry Outlook		Final Remarks	
		Refinery	Aromatic	Base Oil	GIM	Power	All business	F/S & others
	Petroleum	Petrochemical & Lube Base ⁽¹⁾	Power ⁽²⁾	Others & New Business ⁽³⁾	Consolidated Net Profit (excl. Stock G/(L))	Stock Gain/ (Loss)	Consolidated Net Profit (incl. Stock G/(L))	
Q1/19	495	830	482	112	1,935	2,473	4,408	
Q4/19	123	779	516	28	1,365	619	1,984	
Q1/20	(4,488)	743	586	176	(2,982)	(10,772)	(13,754)	

Q1/20 Key Points

Petroleum

- Maintain high utilization at 111%
- Lower contribution due to lower market GRM
- Huge stock loss due to massive drop in crude price

Petrochemical

- **Aromatic & LAB:** higher utilization as well as higher contribution due to improving PX & BZ spread
- **Lube:** higher utilization but lower contribution due to lower Base oil and Bitumen margins

Power

Higher contribution from increasing profit-sharing form GPSC due to consolidating net profit from GLOW

Others & New Business

Ethanol: higher utilization as well as higher contribution due to the rising of ethanol and alcohol demand during COVID-19 pandemic

Remark

(1) Includes 75% of LAB net profit, Q1/19 (64) MB, Q4/19 11MB, Q1/20 (66) MB

(2) Apply on an equity accounted basis in the consolidated financial statement. (GPSC has been held by TOP 8.9% and TP 20.8%,TP has been held by TOP 74% & TOP SPP has been held by TOP 100%)

(3) Consisting of Solvent, Marine, Ethanol and other business

Q1/20 TOP Group Consolidated P&L

Key Highlights		Performance			Industry Outlook		Final Remarks	
		Refinery	Aromatic	Base Oil	GIM	Power	All business	F/S & others
	(MB)	Q1/20	Q4/19	QoQ+ / (-)	Q1/19	YoY+ / (-)		
Sales Revenue		76,652	96,263	(19,611) (A)	91,626	(14,974) (A)		
Net realized gain/(loss) on financial instruments		(19)	288	(307)	(166)	147		
EBITDA		↓ (12,225)	3,927	(16,152) (B)	6,889	(19,114) (B)		
Net gain/(loss) on fair value measurement of financial instruments		(377)	-	(377)	-	(377)		
Financial cost		(1,105)	144	(1,249)	(1,215)	110		
FX G/(L) & CCS		(2,338)	226	(2,564)	652	(2,990)		
Tax expense		↓ 3,558	(345)	3,903	(1,000)	4,558		
Net Profit		(13,754)	1,984	(15,738)	4,408	(18,162)		
EPS (THB/Share)		(6.74)	0.97	(7.71)	2.16	(8.90)		
THB/US\$ - average selling		31.45	30.46	0.99	31.79	(0.34)		
THB/US\$ - ending		32.83	30.33	2.50	31.98	0.85		
Effective Tax Rate (%)		NA	17%	NA	18%	3%		

Analysis

QoQ & YoY

(A) TOP : Lower sales volume and lower selling price from the impact of COVID-19

(B) Mainly from huge stock loss (Stock loss (12.3) \$/bbl in Q1/20, Stock gain 0.7 \$/bbl in Q4/19, Stock gain 2.7\$/bbl in Q1/19) and, **Weakened GIM** due to weak refinery product spread (MKT GIM 2.1 \$/bbl in Q1/20, MKT GIM 4.4 \$/bbl in Q4/19, MKT GIM 5.2\$/bbl in Q1/19)

Q1/20 Consolidated Cash Flow

Key Highlights		Performance				Industry Outlook		Final Remarks	
		Refinery	Aromatic	Base Oil	GIM	Power	All business	F/S & others	
(Unit: MB)		Q1/20	Q1/19					Q1/20	Q1/19
Operating Cash Flow		(4,011)	3,891					(33,218)	7,878
Net income & non-cash adj.		(13,692)	4,472					14	7
Depreciation & NRV		7,303	450	+				(18,599)	11,309
Non-cash adj.		(861) ⁽¹⁾	1,538 ⁽¹⁾					(14,633) ⁽²⁾	(3,438)
Change in working capital		3,240	(2,568)					(2) TOP 14,127 MB, TPX 87 MB, LABIX 267 MB	

Q1/20 TOP Group Strong Financial Position & Financial Ratios

Key Highlights

Performance

Industry Outlook

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Refinery

Aromatic

Base Oil

GIM

Power

All business

F/S & others

Statements of Financial Position

(Unit: million THB)

	283,445	272,366	
Cash & ST investment	76,937	41,322	Trade Payable / Others
Current Assets	57,739	118,199	Interest ⁽¹⁾ Bearing Debt
Non-Current ⁽²⁾ Assets	148,768	123,924	Equities
	31 Dec 19	31 Mar 20	
ROE ⁽³⁾	3.3 %	2.7 %	
ROIC ⁽³⁾	4.5 %	5.1 %	

(1) Including current portion of Long-Term Debt

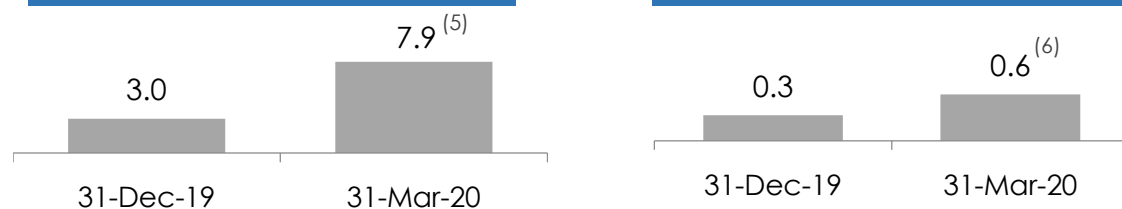
(2) Including investment in EPIF 31 Dec 18 = 361 MB, 31 Mar 20 = 255 MB

(3) Based on actual performance in the past 12 month and excluding stock g/l & NRV

Financial Ratios

Net Debt / adj. EBITDA

Net Debt / Equity



(5) Annualized EBITDA excl Stock G/L and NRV as of 31 Mar 20

(6) As of 31 Mar 20 Net Debt 63,137 MB or 1,923 M\$

Consolidated Long-Term Debt as at 31 Mar 20

Total IBD

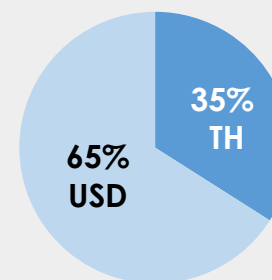
125,642 million THB
(US\$ 3,827 million equivalence)

Net Debt

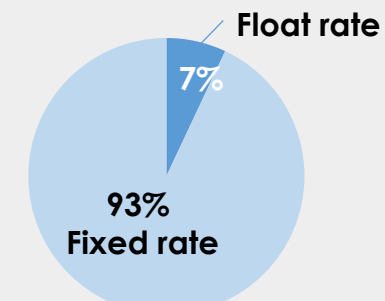
63,137 million THB
(US\$ 1,923 million equivalence)

As at 31 Mar 20 (32.83 THB/US\$)

Currency Breakdown



Interest Rate Breakdown



Avg. Debt Life (yrs)

15.42 yrs

Cost of Debt (Net)

3.33% ⁽⁴⁾

(Gross)

4.38%

(4) Due to yield enhancement

Moody's

STANDARD & POOR'S

FitchRatings

Final rating

Baa2
Negative OutlookBBB+
Negative OutlookAA- (Tha)
Negative Outlook

SACP*

Ba1

BB-

A

* SACP stands for Stand-Alone Credit Profiles

Finance Strategy



Efficiency & Cost Management

- **Pursue more cost control (OPEX)**
 - SG&A & operating cost reduction
- **Profitability Improvement**



**“Shape Cost,
Loss Gone”**

Investment Rationalization

- **Revisit/reprioritize CAPEX**
 - Review CAPEX and payment schedule
 - Reprioritize investment in pipelines

	2020	2021	2022
Total CAPEX Original plan	2,230	1,115	472
Total CAPEX Revised plan	▼ 1,788	1,493	522

Liquidity Management & Fund Raising

- **Ensure short term liquidity**
 - Ample cash at beginning of year still ensure adequate liquidity for 2020
 - Current credit facilities & expansion plan
- **Expedite external fund**
 - Bond raising
 - PTT's crude credit extension
- **Financial risk management**



2020 INDUSTRY OUTLOOK

- Crude Oil
- Refinery
- Aromatic
- Base Oil & Bitumen

Recovering Oil Demand from Easing COVID-19 Concerns and OPEC & Non-OPEC Production Cut

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Key Highlights

Performance

Industry Outlook

Final Remarks

Crude

Refinery

Aromatic

Lube&Bitumen

Conclusion

A OPEC+ and G20 Agreed For Supply Cuts

Period	Proposed Production Cut Level		
	OPEC+	U.S., Brazil, Canada	Other non-OPEC*
May'20 – Jun'20	9.7 MBD	3.7 MBD**	1.6 MBD**
Jul'20 – Dec'20	7.7 MBD	-	-
Jan'21 – Apr'22	5.8 MBD	-	-

- OPEC+ will cut by 23% of reference outputs in Oct'18 except Mexico (6% output cut)
- Expected 15 MBD of total production cuts in May'20

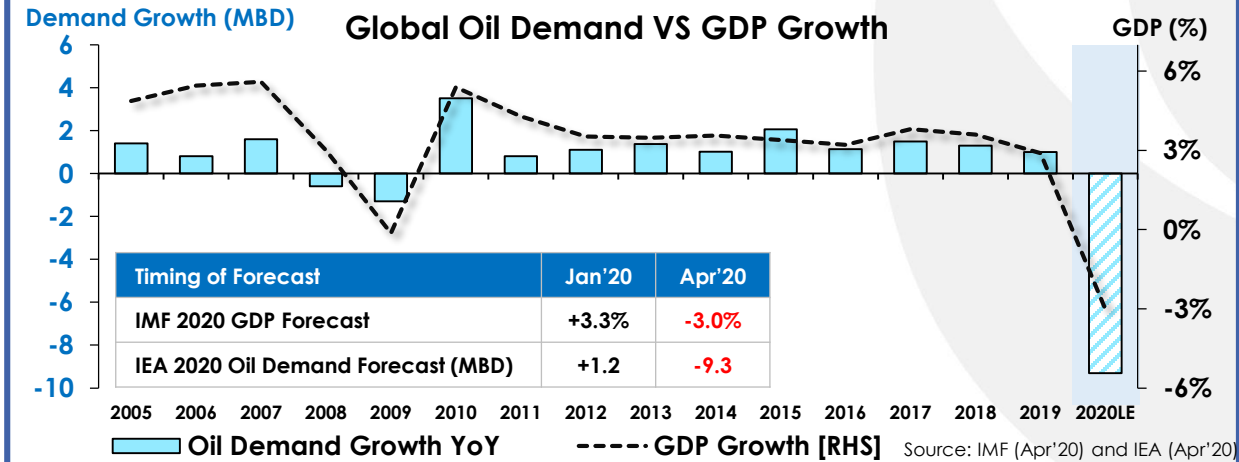
- U.S. plan to add 75 Mil BBL to Strategic Petroleum Reserve (SPR)

Source: FGE (13 Apr'20), Reuters and Bloomberg (Apr'20)

*Others such as China and Norway

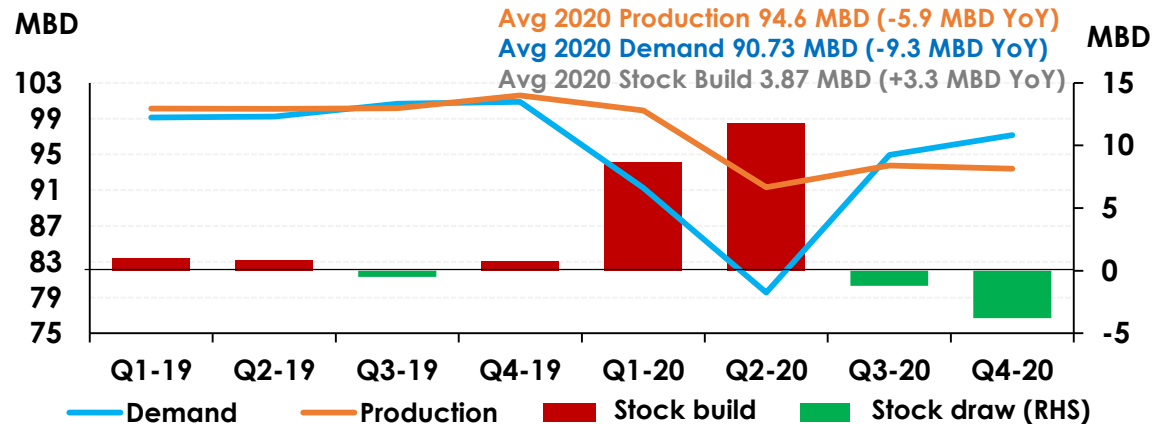
**No baseline and timeline confirmation

B Oil Demand Collapse After COVID-19 Outbreak



C The Cut is Insufficient to Offset Demand Destruction

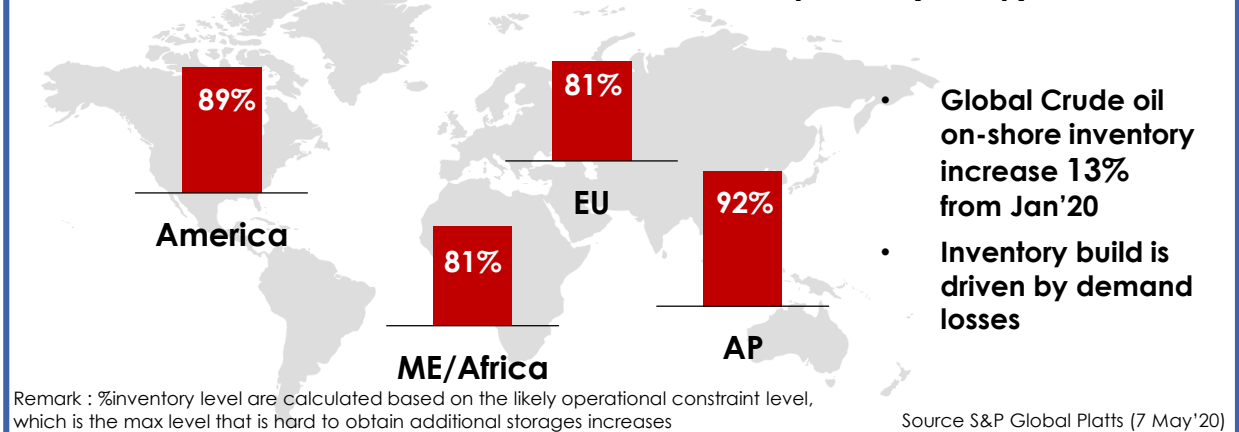
Global Oil Demand/Production*



Source: IEA (Apr'20), JBC (Mar'20), Reuters and Energy Aspects (Apr'20); * include only OPEC+

D Surge of Global Oil Inventory

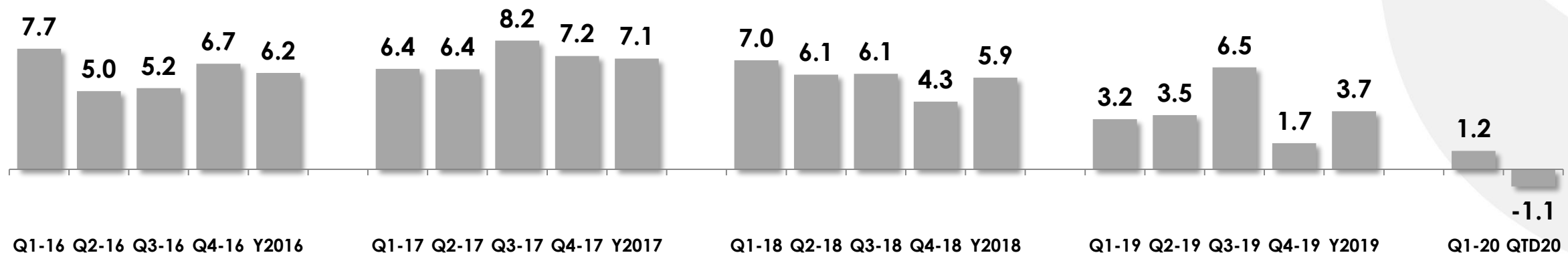
Global Crude Oil On-shore Inventory Level (7 May)



Expected Recovery in Refinery Margin after COVID-19 Reliefs



Singapore Cracking GRM (\$/BBL)



Source : Reuters May'20 Remark : * QTD as of 7 May'20

Key Highlights: GRM to Recover by Low Crude OSP and Resuming Oil Demand amid Rising Product Stocks

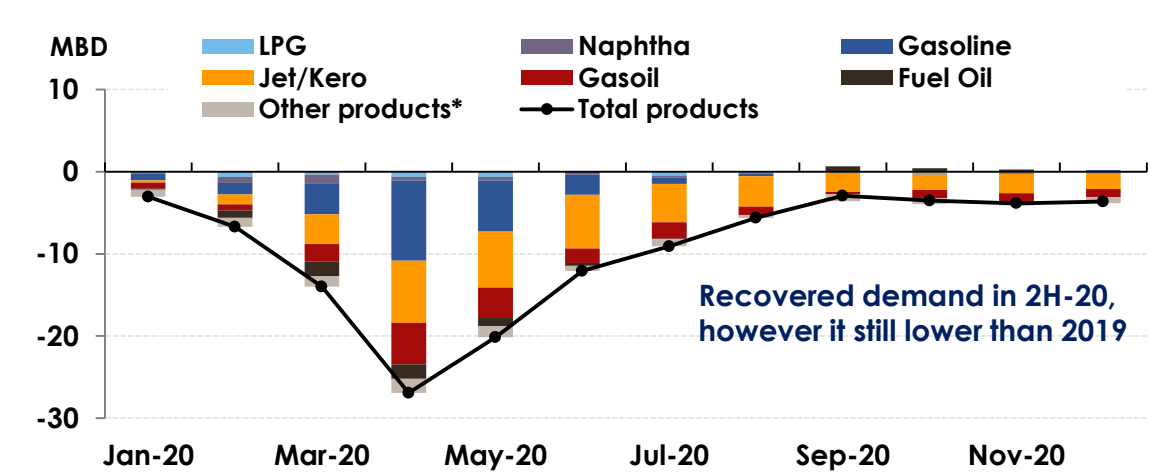
- 1** Rising Product Stocks on Weak Demand despite Refinery Cut Run, especially in Q2-20
- 2** Low Crude OSP to Support Refinery Margin
- 3** Recovering Demand in 2H-20 after Lifting City Lockdown Policy

Rising Product Stocks on Weak Demand despite Refinery Cut Run in Q2-20



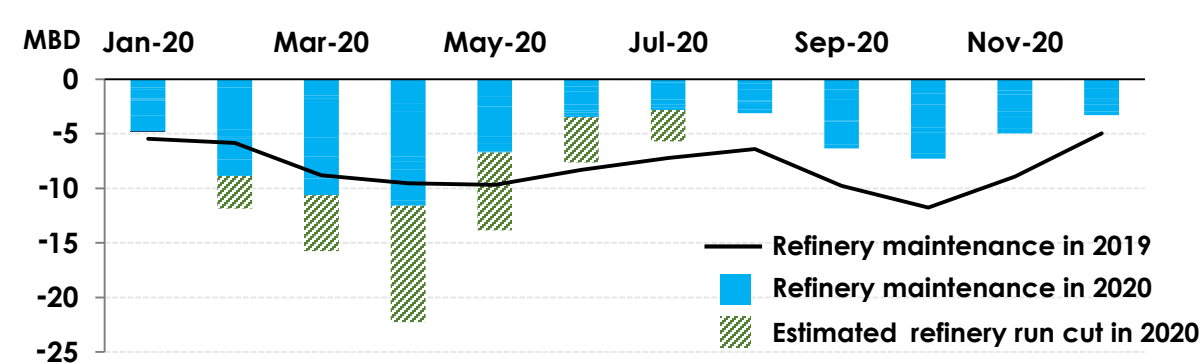
A Weakening Global Oil Demand to Overtake Supply loss

Change in Global Oil Demand by Product (y-o-y)



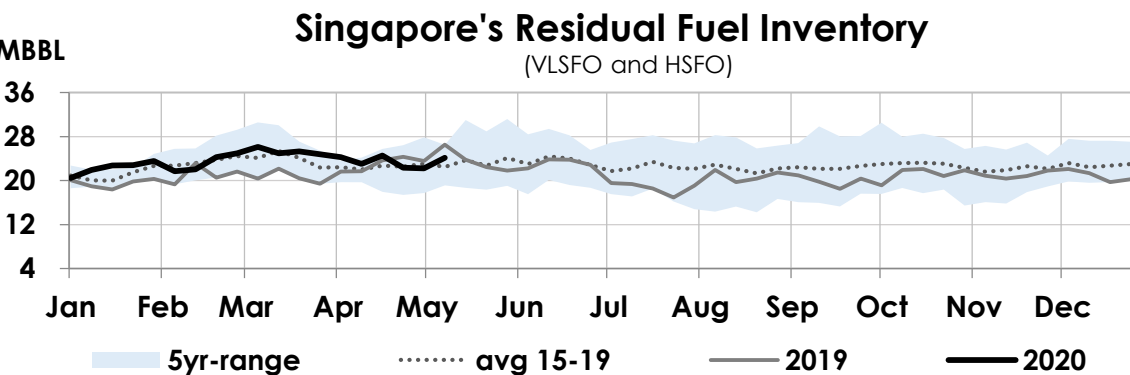
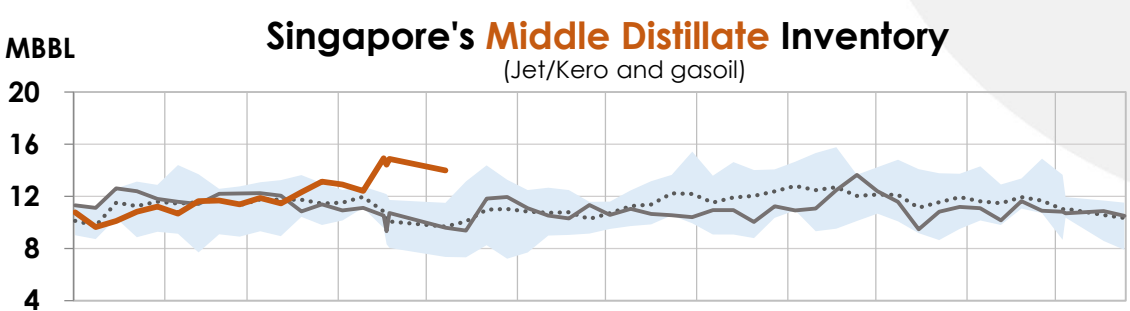
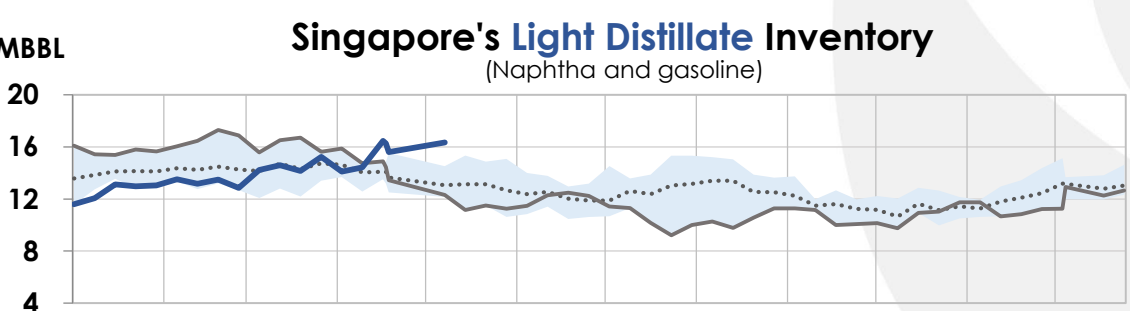
*Other products - white spirit, lubricants, bitumen, paraffin, waxes and petroleum coke

Global Refinery Maintenance and Run Cut



Note: Average estimated refinery cuts in Asia, Europe and U.S. are 10-15%, 15-20% 15-20% respectively
Source: JBC, Energy Aspect, Reuters, FGE, IHS Markit (Apr'20) and TOP's Estimated

B SG Stocks Build due to Weak Demand on COVID-19



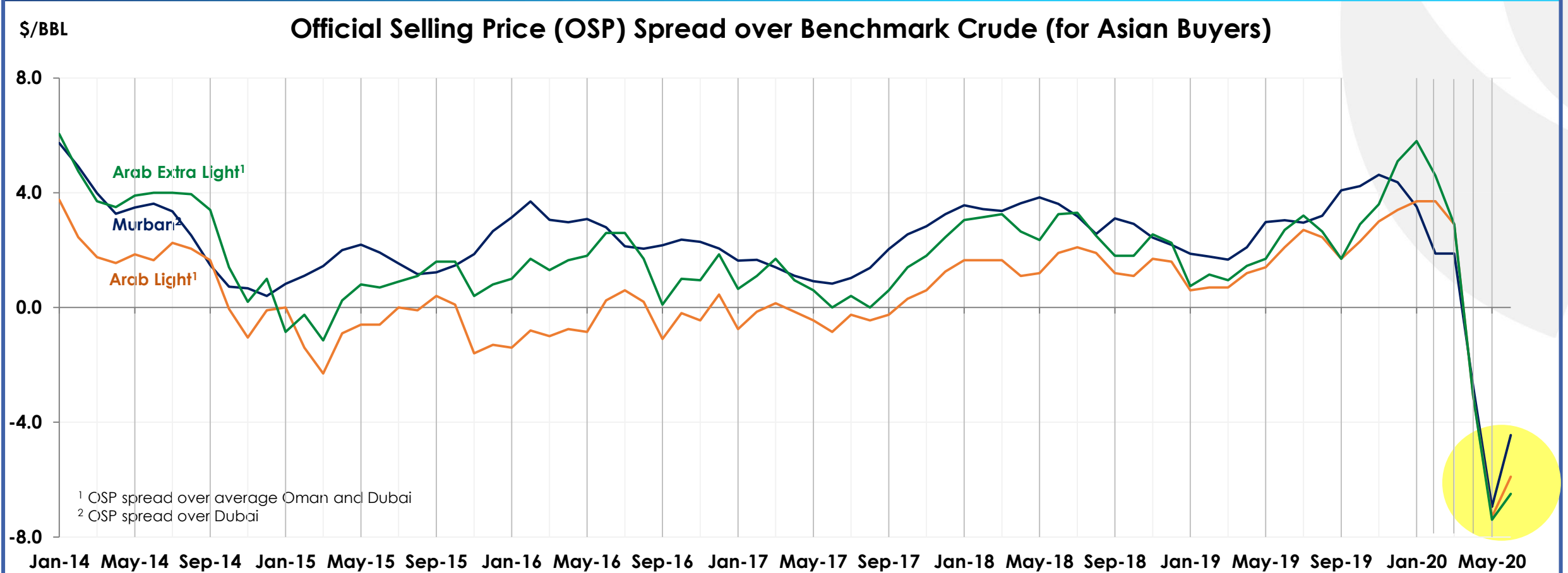
Source: Energy Aspects and EIA (May'20)

Low Crude OSP to Support Refinery Margin



Sharply Dropped in Middle East Crude OSP Price Resulting from Crude Oil Price War

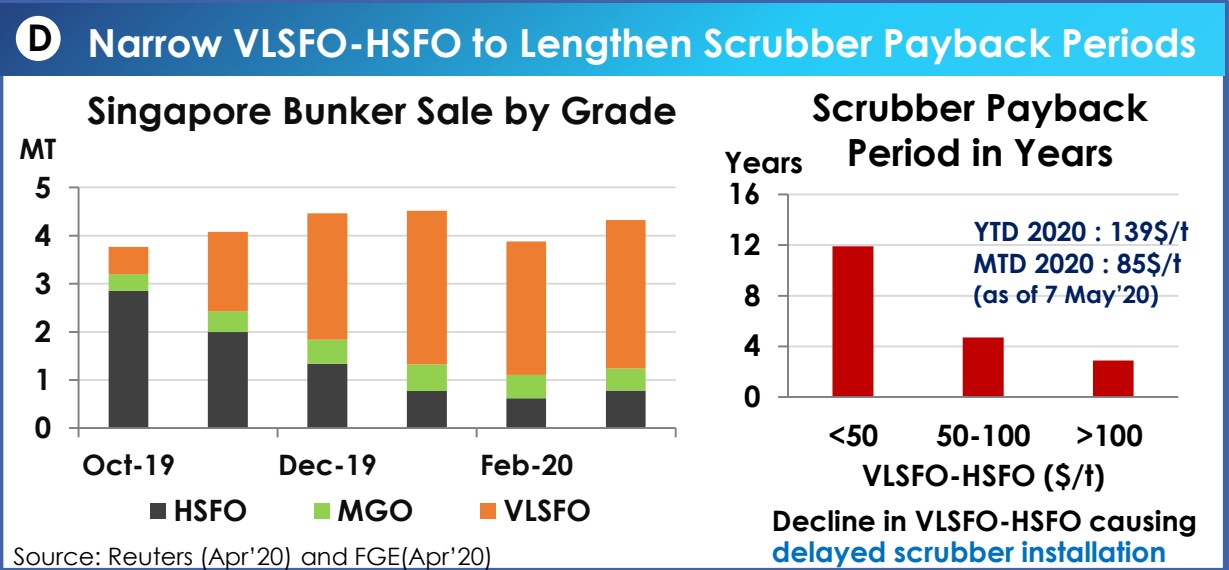
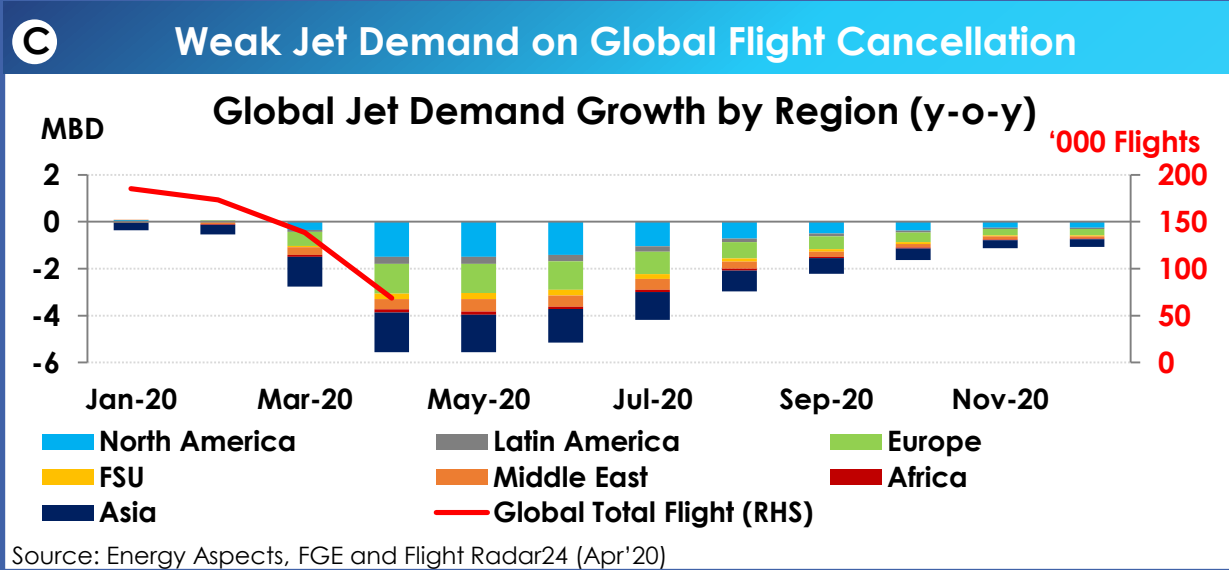
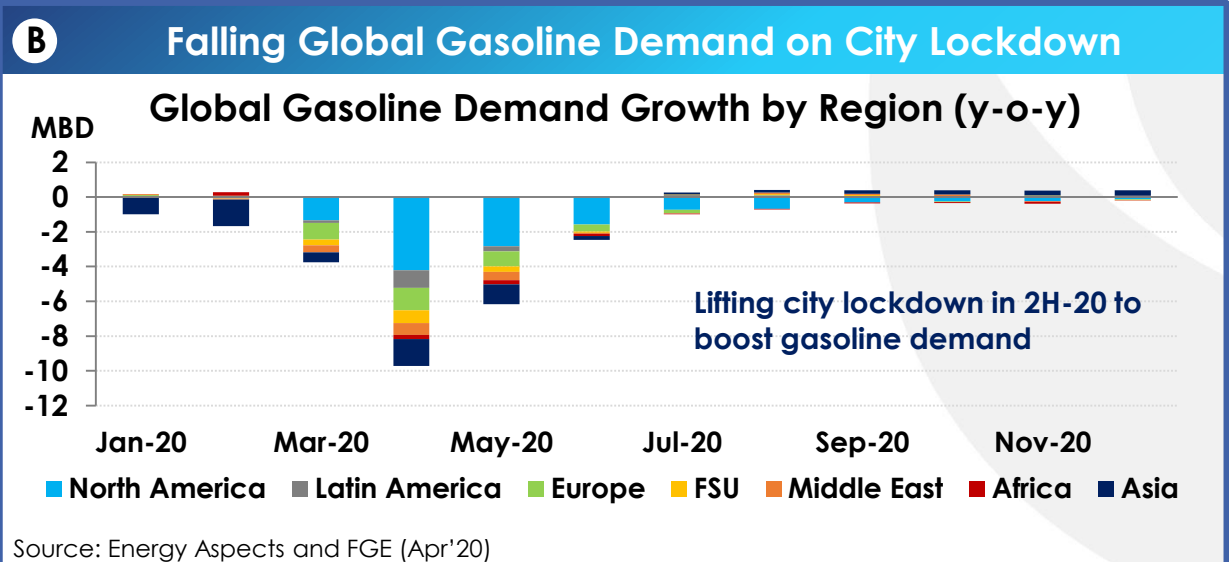
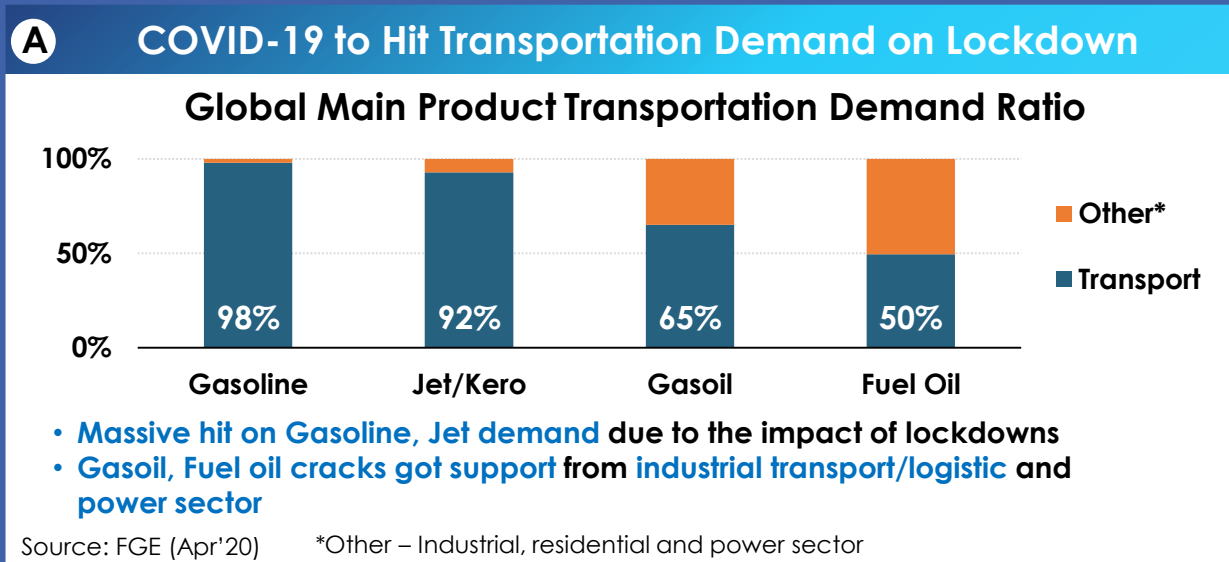
Official Selling Price (OSP) Spread over Benchmark Crude (for Asian Buyers)



➤ Lower OSP announcement helped lift up Refinery Margin amid pressured petroleum demand during COVID-19 pandemic

Source: Reuters (May'20)

Recovering Demand in 2H-20 after Lifting City Lockdown Policy



Recovery of Domestic Demand Growth in 2H-20

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Key Highlights

Performance

Industry Outlook

Final Remarks

Crude

Refinery

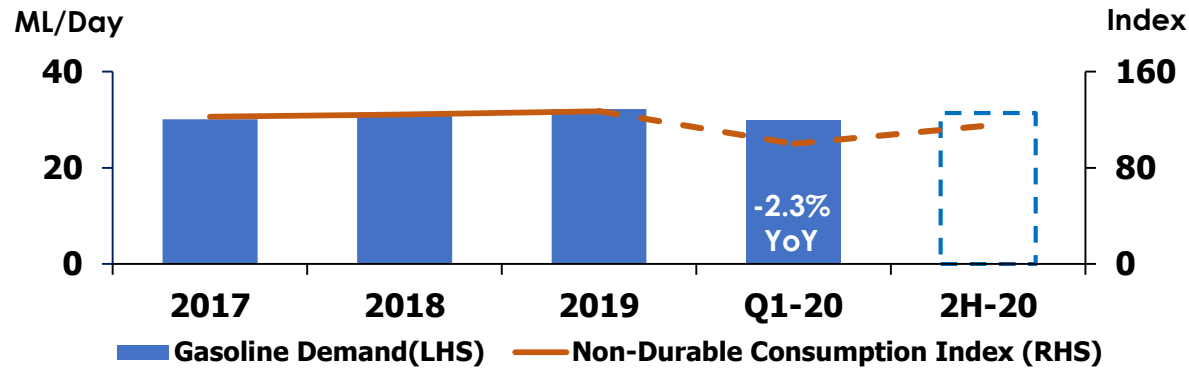
Aromatic

Lube&Bitumen

Conclusion

A Recovery of Gasoline Demand on Higher Consumer Spending in 2H-20

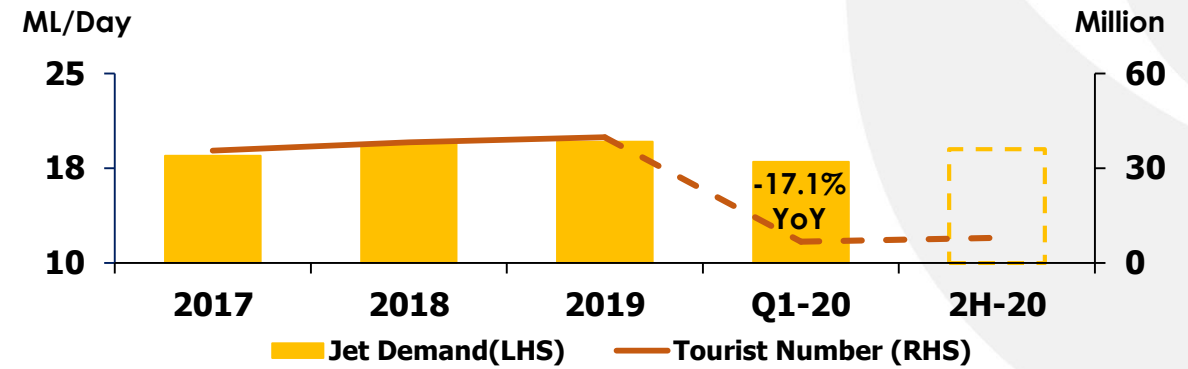
Gasoline Demand vs. Non-Durable Goods Index



*Non-durable Goods Index is a retail sales index implying national spending on goods, which correlates to traveling activity.
Source : BOT, DOEB and TOP's Estimation (Apr'20)

B Recovery of Jet Demand on Higher Tourism in 2H-20

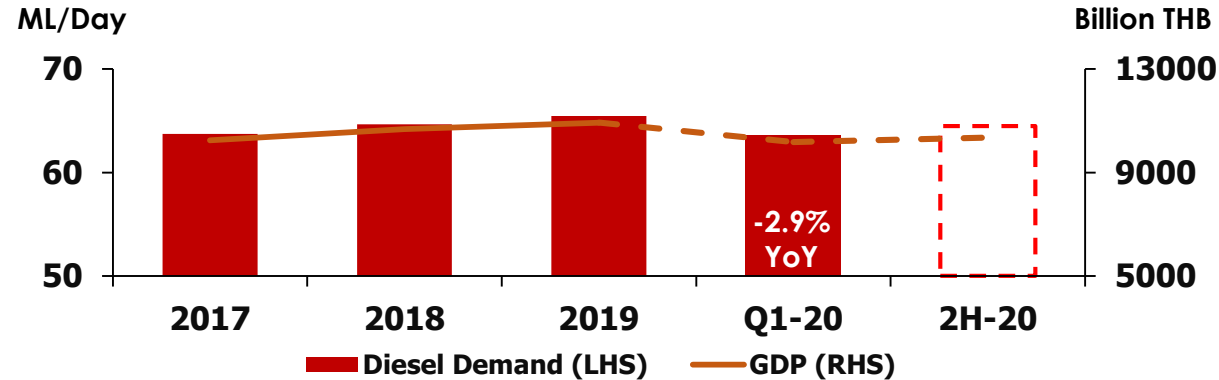
Jet Demand vs. Tourist Number



Source : BOT, DOEB and TOP's Estimation (Apr'20)

C Recovery of Diesel Demand on Restored Economy in 2H-20

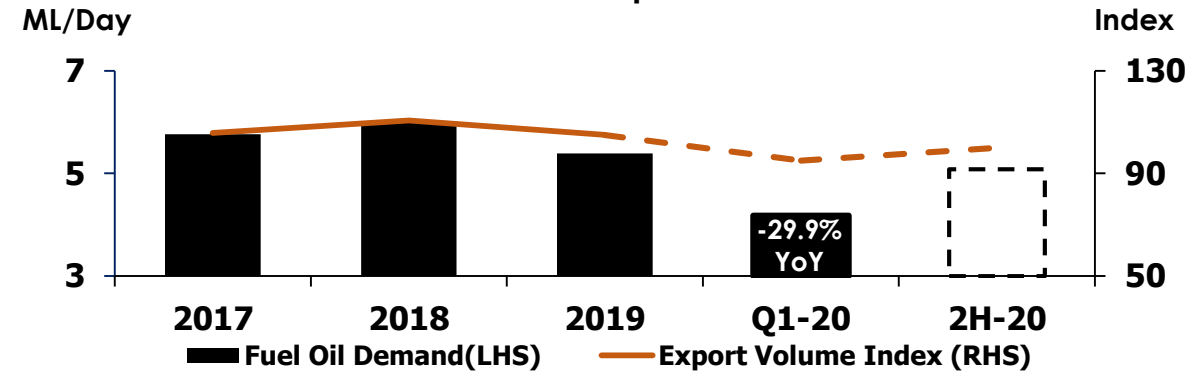
Diesel Demand vs. GDP



Source : BOT, DOEB and TOP's Estimation (Apr'20)

D Recovery of Fuel Oil Demand Supported by Higher Export Volume in 2H-20

Fuel Oil Demand vs. Export Volume Index*



*Export Volume Index is an Export Volume comparing to Y2010 as the base excluding Gold, Weapons and Re-export goods.
Source : BOT, DOEB, TNSC and TOP's Estimation (Apr'20)

Pressured Aromatic Market from New Additional Capacity

Key Highlights

Performance

Industry Outlook

Final Remarks

Crude

Refinery

Aromatic

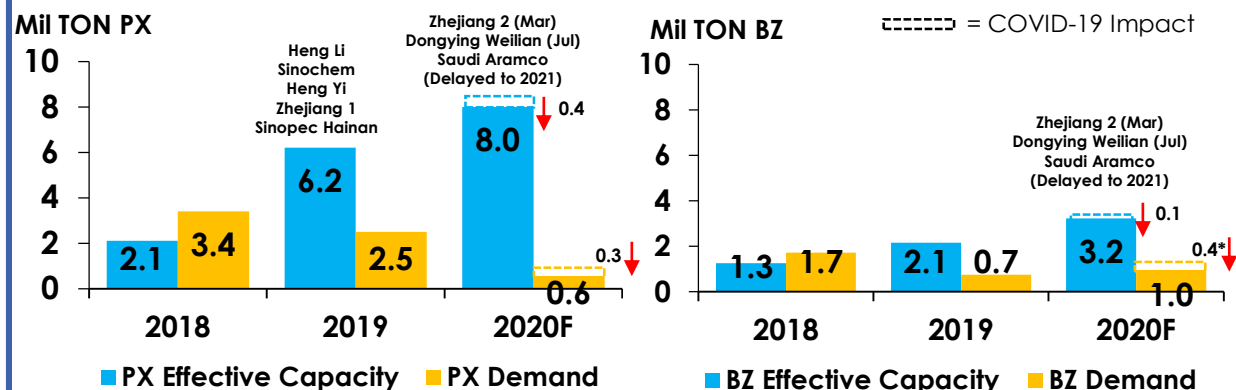
Lube&Bitumen

Conclusion

A

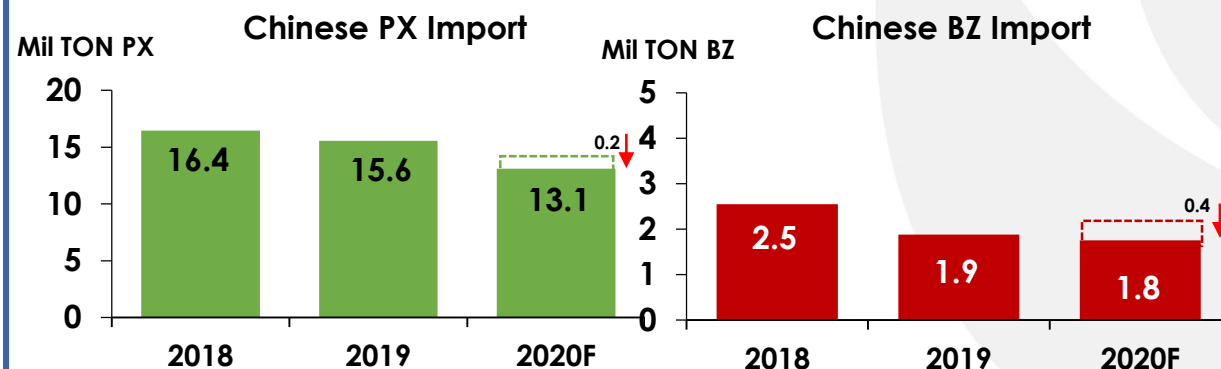
Market Pressured by Surplus Capacity

AP/ME PX and BZ Capacity Addition vs. Demand Growth



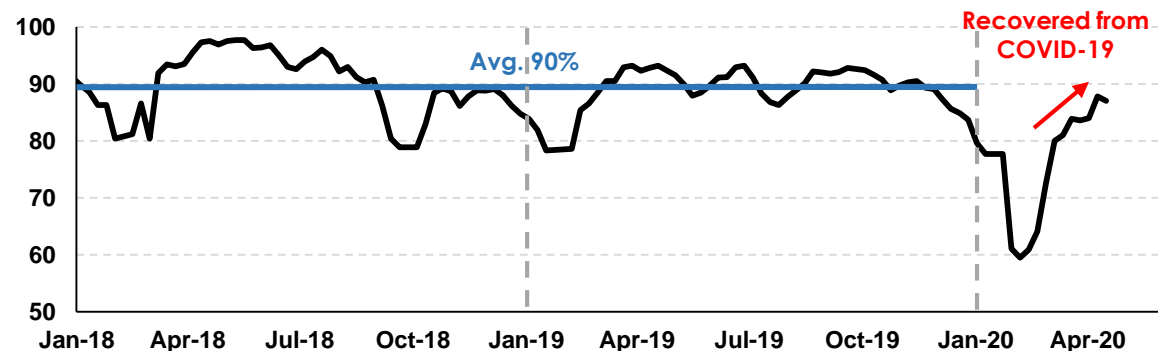
B

Lower Chinese Import due to Additional Capacity in China



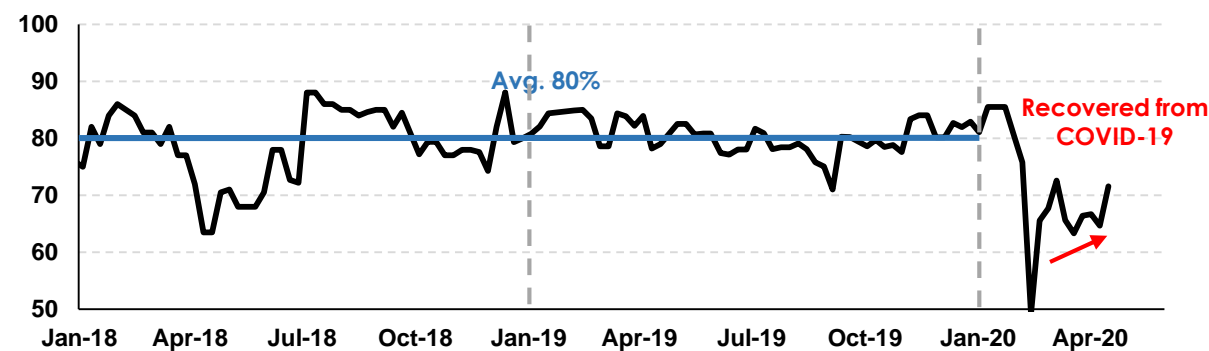
C Rebounded Polyester Run Rates from Easing of Lockdown Measures

Chinese Polyester Operating Rate (%)

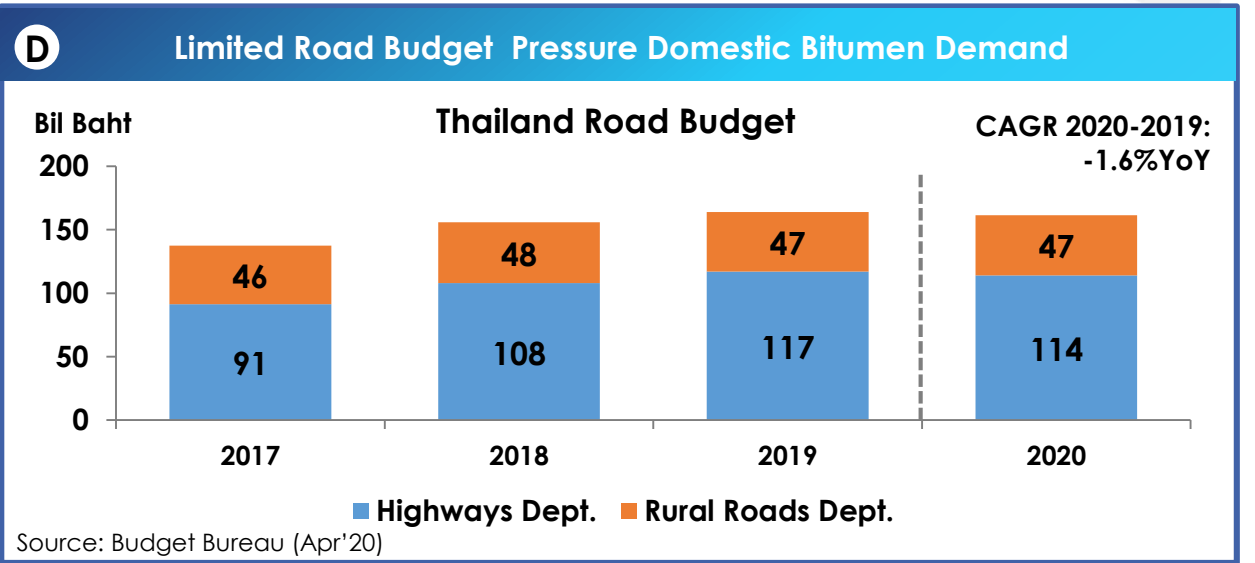
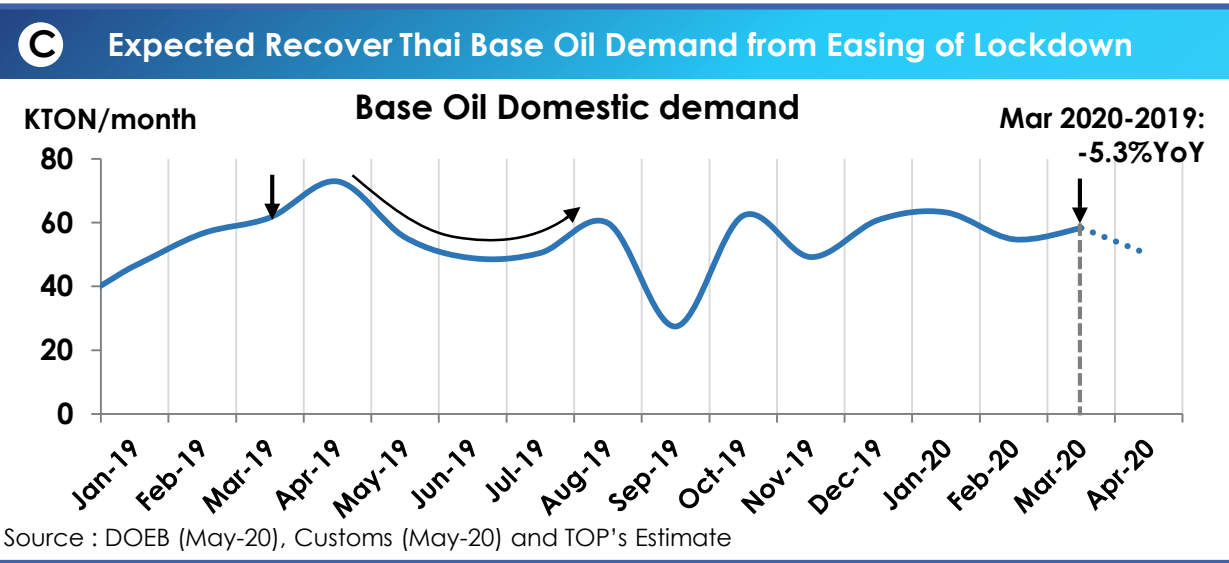
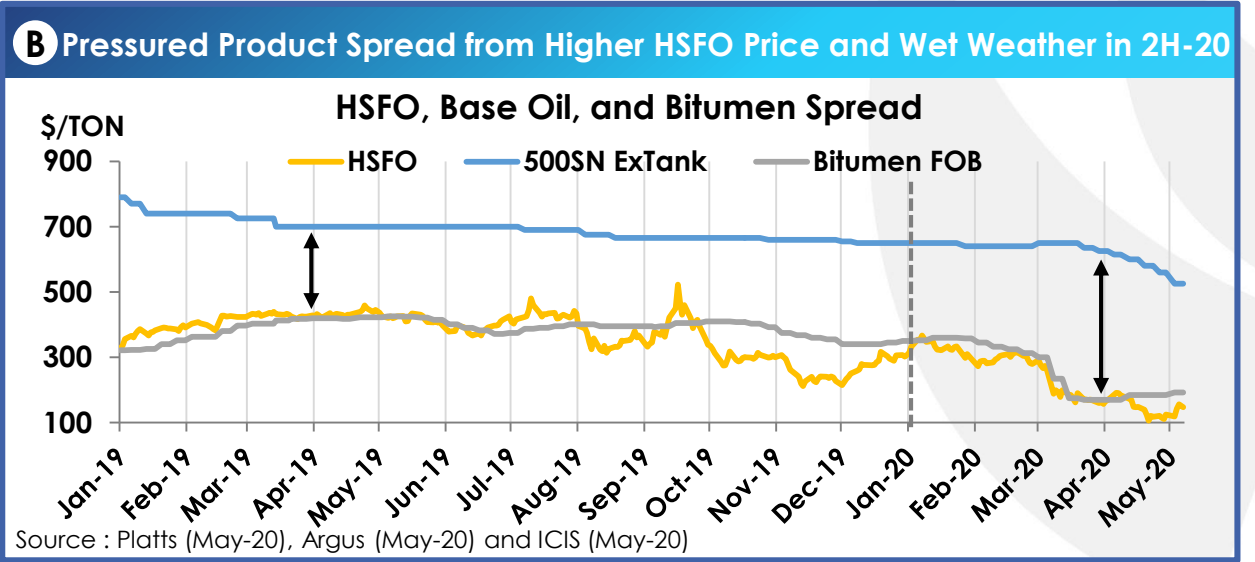
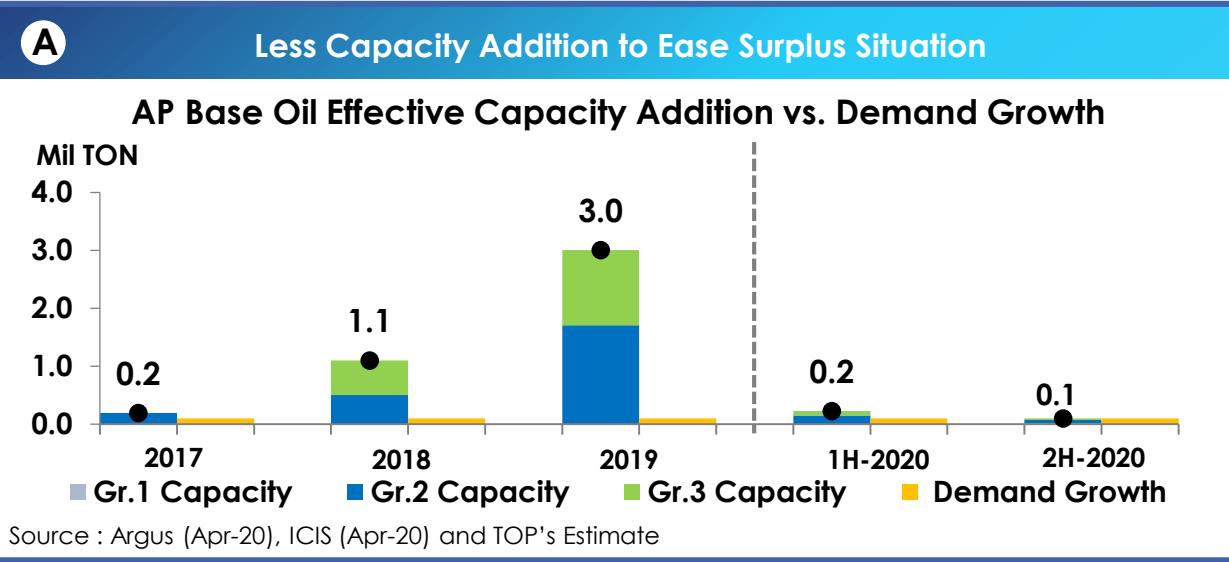


D Slight Recovered SM Run Rates amid Weak Global Economic

Chinese SM Operating Rate (%)



Weaker Base Oil Market amid Less Capacity Addition



2H-20 Industry Outlook Conclusion

(vs. 1H-20)

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Key Highlights

Performance

Industry Outlook

Final Remarks

Crude

Refinery

Aromatic

Lube&Bitumen

Conclusion



Crude Oil

Recovering Oil Demand from Easing COVID-19 Concerns and OPEC & Non-OPEC Production Cut



Refinery

Recovering Refinery Margin on Low Crude Price and Resuming Oil Demand



Aromatic

Pressured Aromatic Market due to Surplus Supply



Lube Base

Weaker Base Oil Market amid Less Capacity Addition

FINAL REMARKS



Key Highlights

Performance

Industry Outlook

Final Remarks

- Crude prices poised to bottom out
 - Recovered demand from lockdown ease & economic stimulus
 - Our planned optimisation & flexibility to capture rebounding market opportunities
 - Ongoing ME OSP crude discount → lower overall crude cost
 - Oil price surge as lockdown ease & price war over
 - CFP project execution
- Stock gain / reversal of NRV
 - Improved GRM / GIM
 - Reversal of unrealized hedging loss / hedging gain
 - Re-sequence works to catch up post-COVID

Way forward to World after COVID-19

- Businesses will be increasingly **complex and fast-moving**
- Market is **more volatile and unpredictable**
- We need to be **extremely efficient, agile and flexible**
- Our business portfolio **competitive and resilient**
- **New efficient way of working**

Thank You

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at email: ir@thaioilgroup.com

Tel: 662-797-2999 / 662-797-2961

Fax: 662-797-2976

APPENDIX

- Strategic Investment Plan
- Dividend Payment
- Optimised & Flexible Operations...Superior Performance
- CDU Addition VS Additional Demand – AP & ME
- World GRM / Inventories
- Thailand petroleum demand by products

TOP Group Strategic Investment Plan

CAPEX Plan (Unit US\$ million)

Updated as of April 2020

Project	Total 2020 - 2024	Estimated Budgeting for Investment Plan				
		2020	2021	2022	2023	2024
CFP project *	<u>3,263</u>	1,660	1,434	492	(323)	
Total Ongoing CAPEX	<u>223</u>	128	58	31	5	1
Reliability, Efficiency and Flexibility Improvement		29	10	3	1	
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)		64	15	1		
Other Investments (i.e. Digital Transformation)		35	33	27	4	1
Total CAPEX	<u>3,486</u>	1,788	1,493	522	(318)	1

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

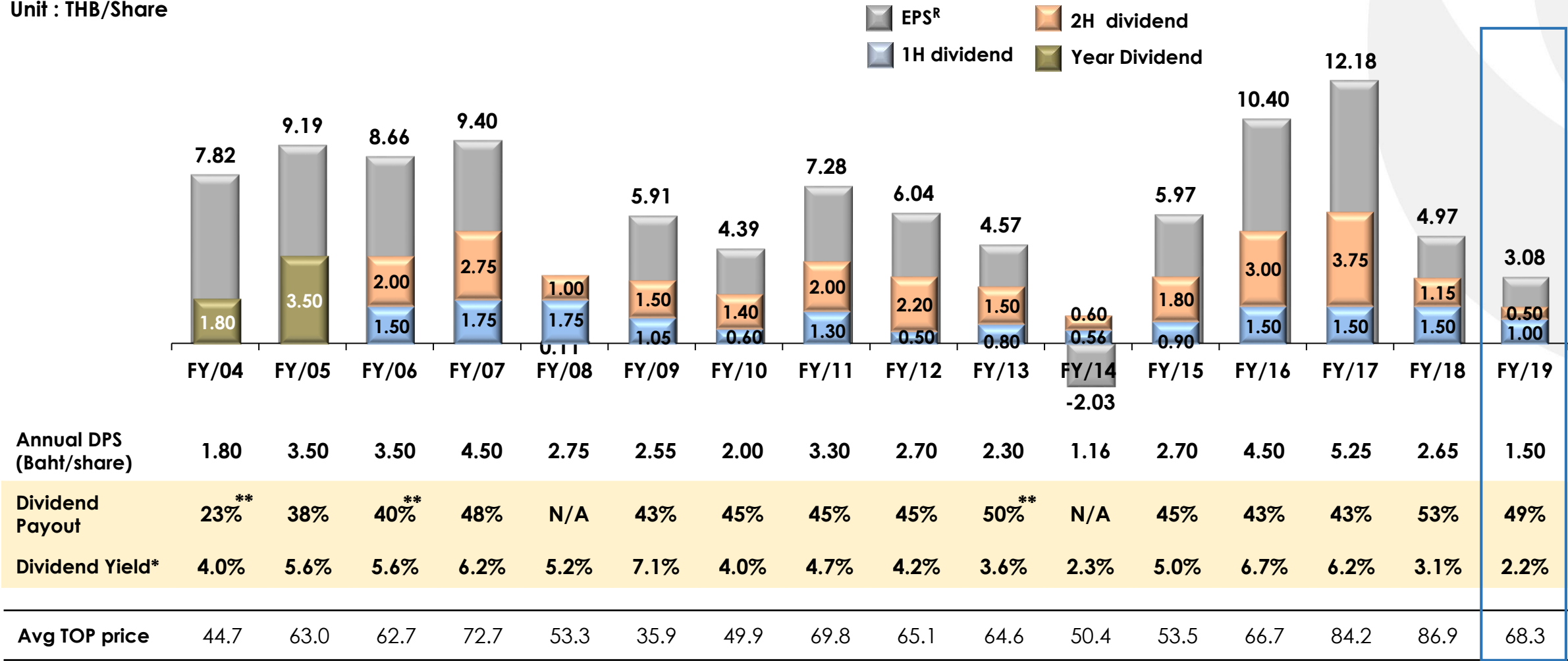
* CAPEX of CFP Project including the disposal of asset to transfer ownership in the Energy Recovery Unit (ERU) which is a part of the CFP Project

Average FX Q1/20 @ 31.50 Baht/USD

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



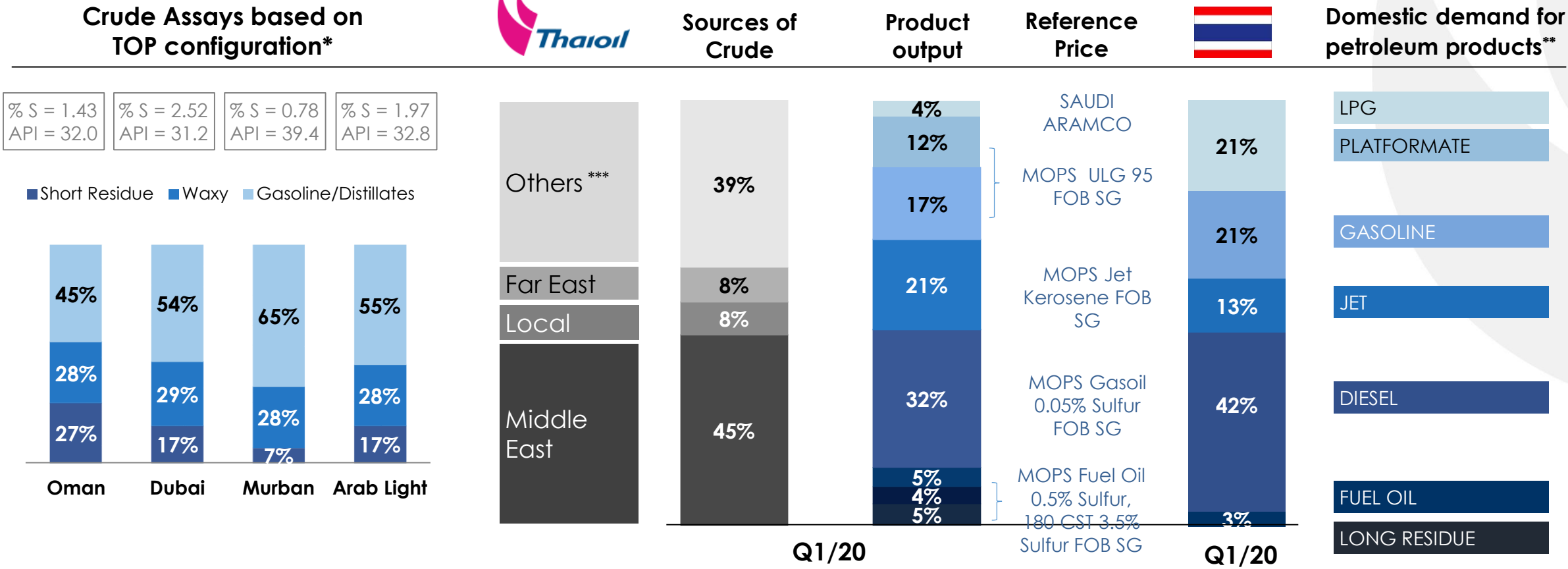
^R Based on restated financial statement

* Based on average TOP share price in each year

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

Optimised & Flexible Operations...Superior Performance

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



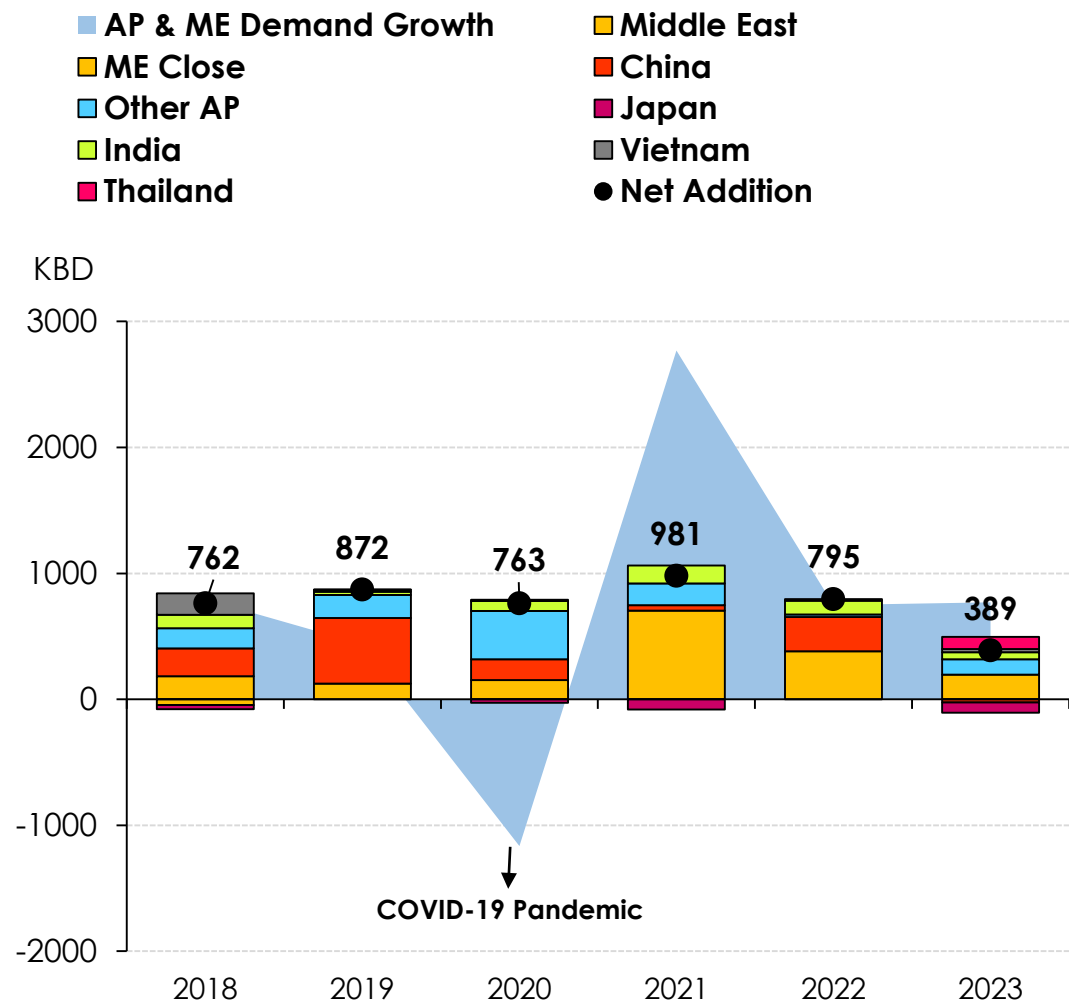
*Crude yield as per assay in Spiral as of Feb 2016

** 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 maximising middle distillates (jet and diesel) by adjusting production mode to capture domestic demand and price premium
- Maximise Platformate production to capture higher margin on aromatics
- Minimise fuel oil output to avoid lower margin products

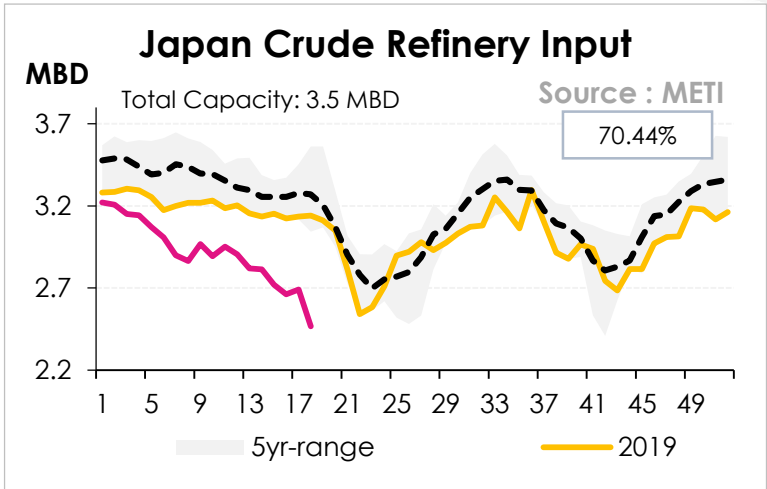
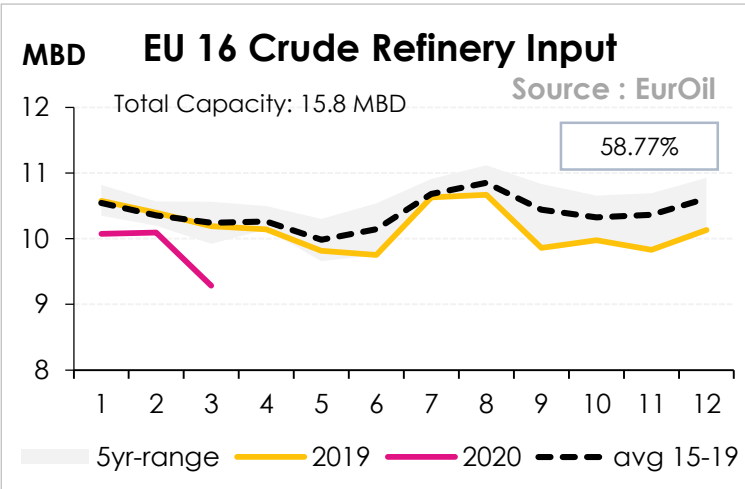
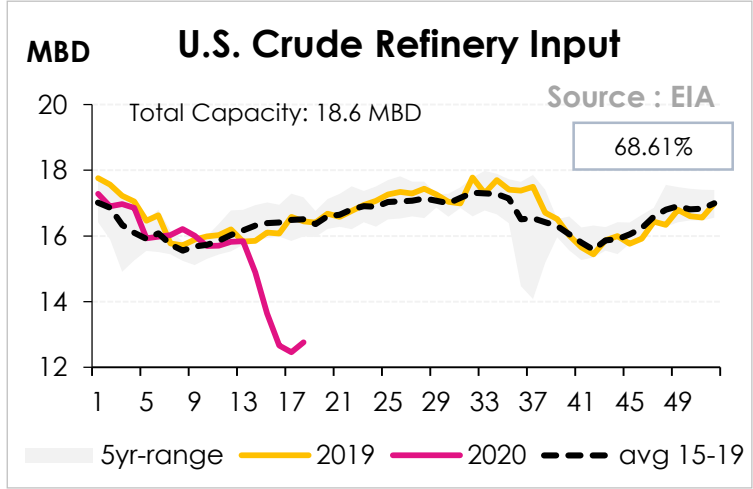
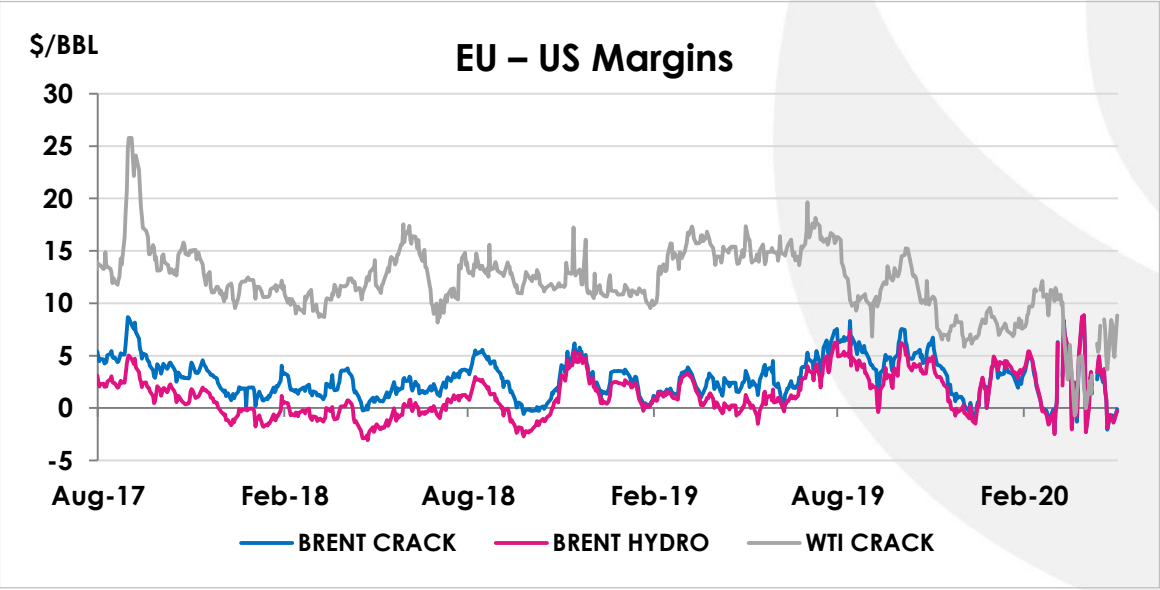
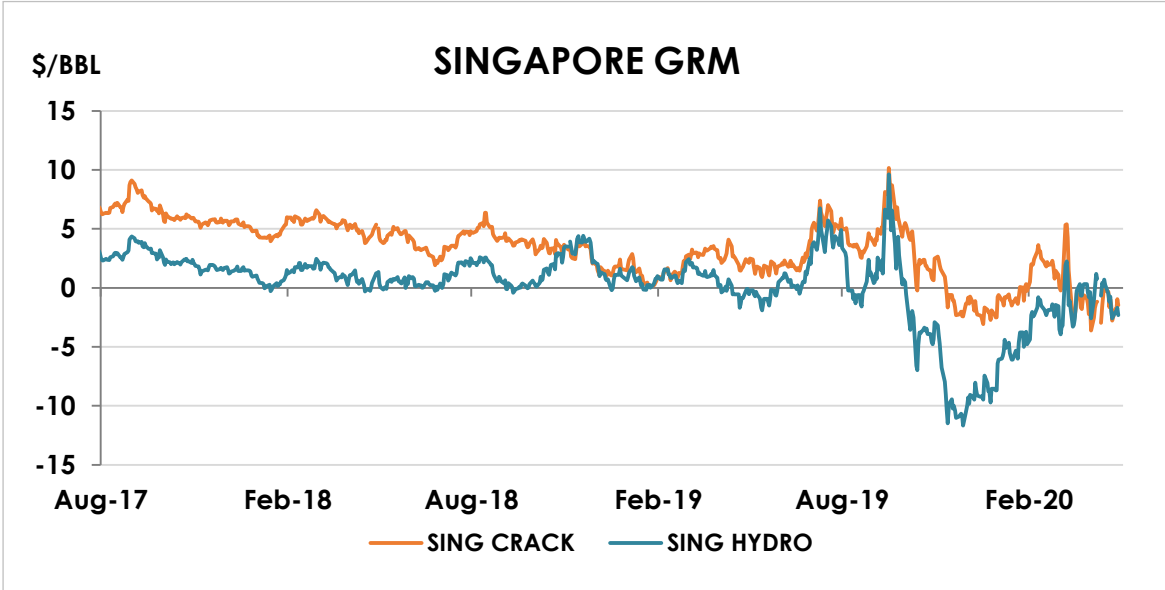
Asia Pacific and Middle East Refinery Addition



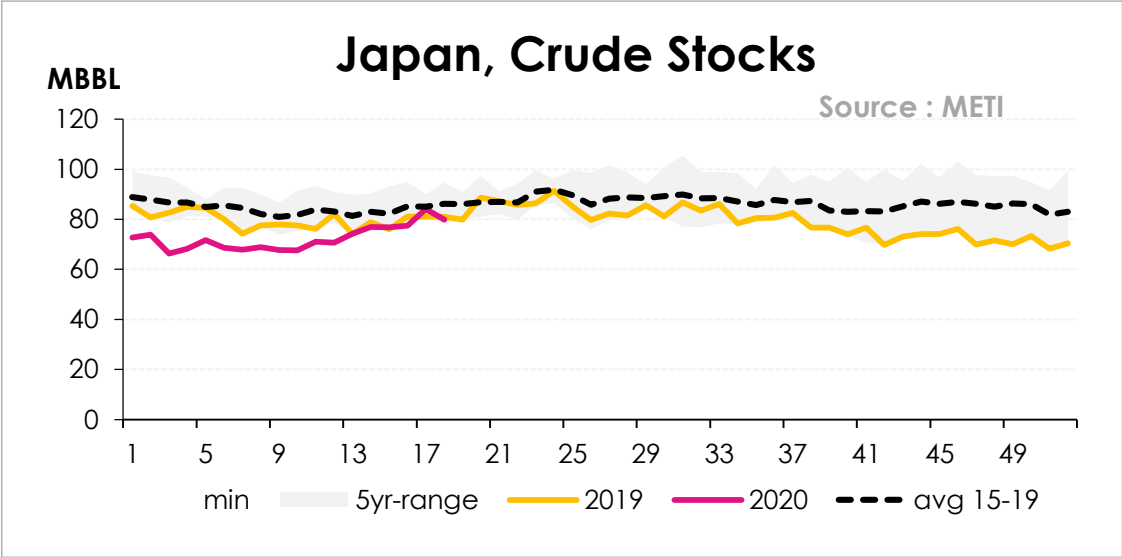
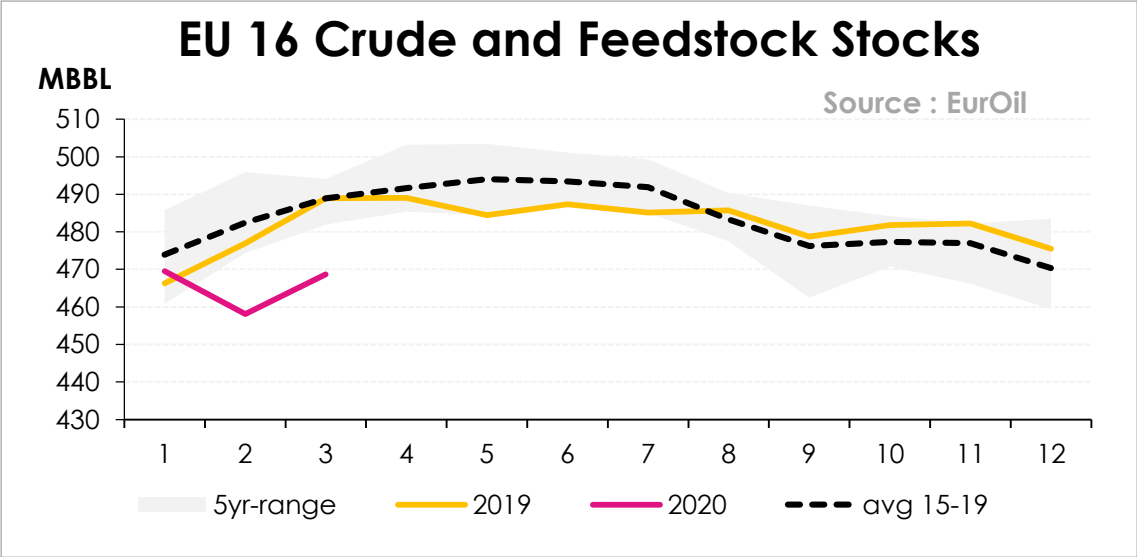
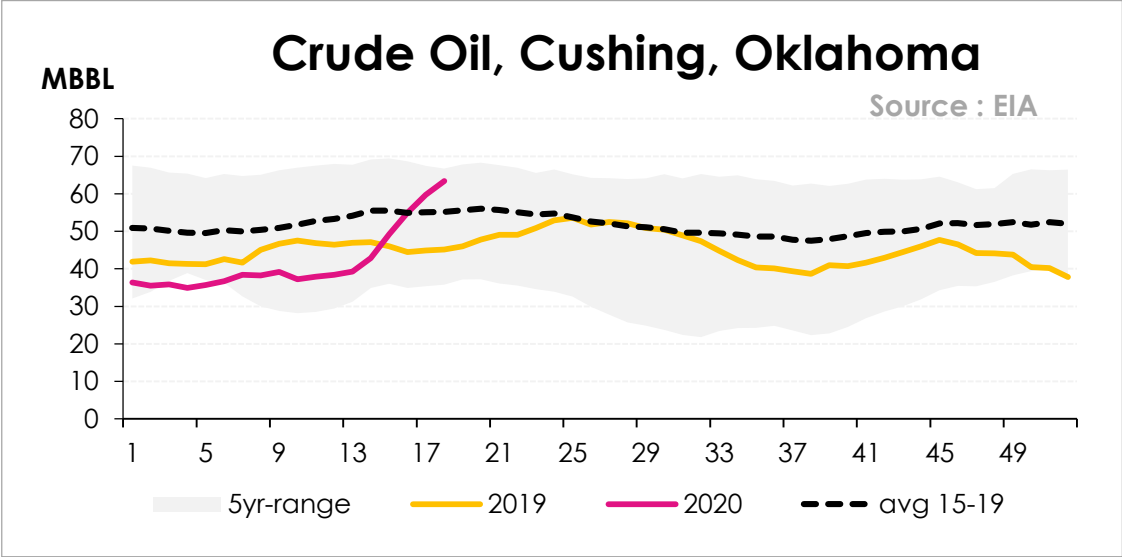
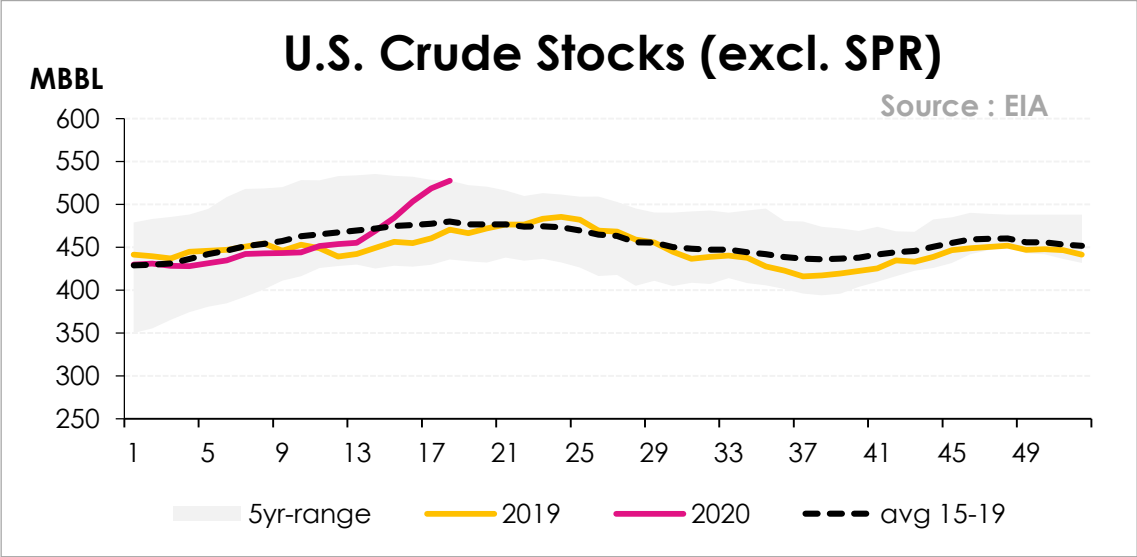
Note: Adjusted capacity based on start-up period (effective additional capacity)

Start-up period)	Country	Nameplate (KBD)	Company
Q1-20	India	56	BPCL Mumbai
Q2-20	Iraq	66	North Refining Company – Baiji
	Iraq	66	South Refining Company – Basra
	Kuwait	60	KPC - Mina Al-Ahmadi
	UAE	65	ENOC – Jebel Ali
Q3-20	China	200	Sinopec Zhanjiang
	India	56	HPCL Mumbai
Q1-21	Saudi Arabia	400	Jazan
	India	125	HPCL Vizaq
Q2-21	Pakistan	27	National Refinery - Karachi
Q4-21	Kuwait	572	Al Zour (GR) - KNPC
Closures			
Q4-20	China	-75	Local refineries
	Japan	-107	JX Group - Osaka
Q4-21	China	-50	Local refineries

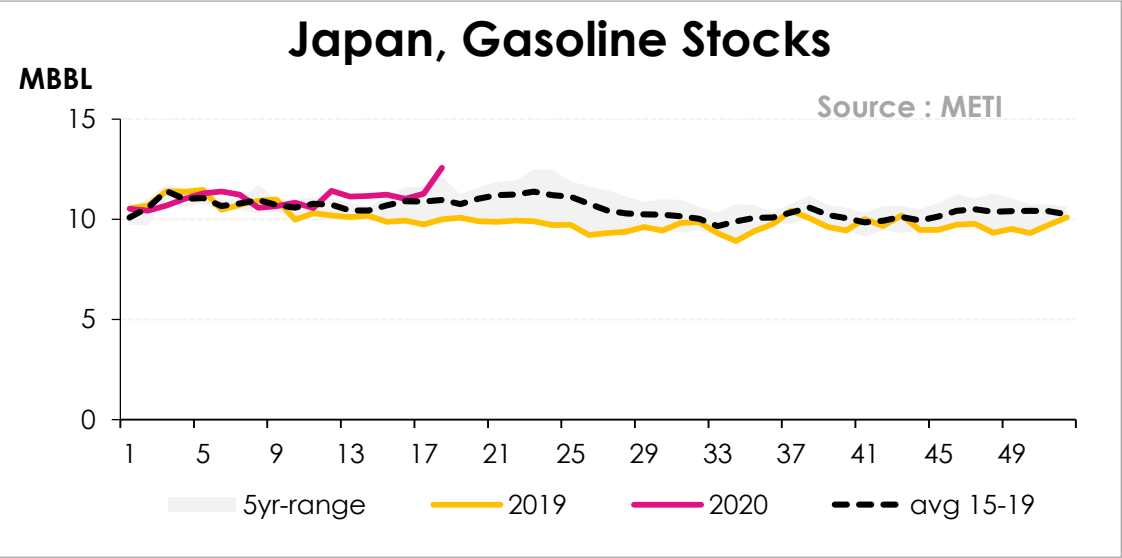
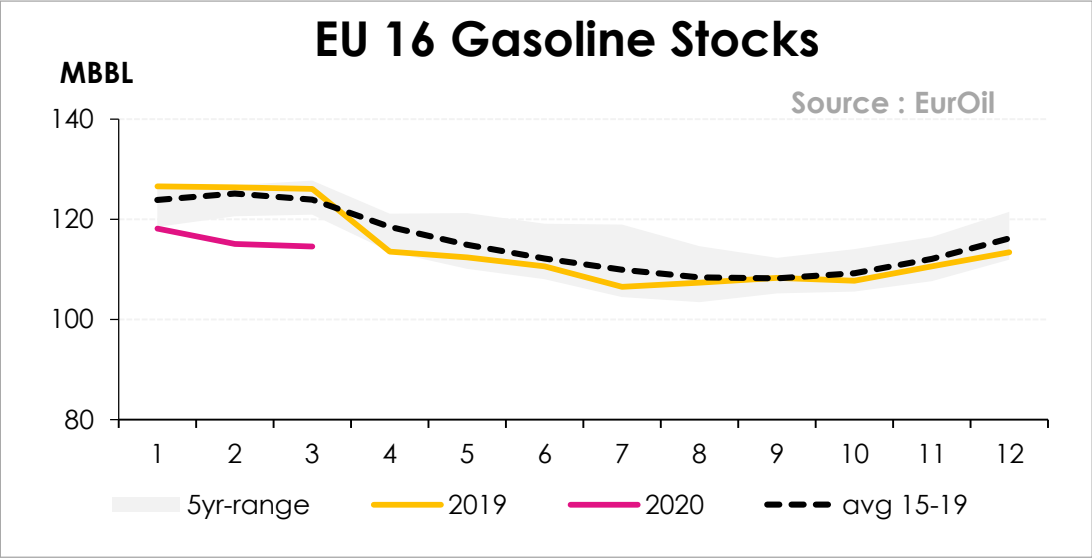
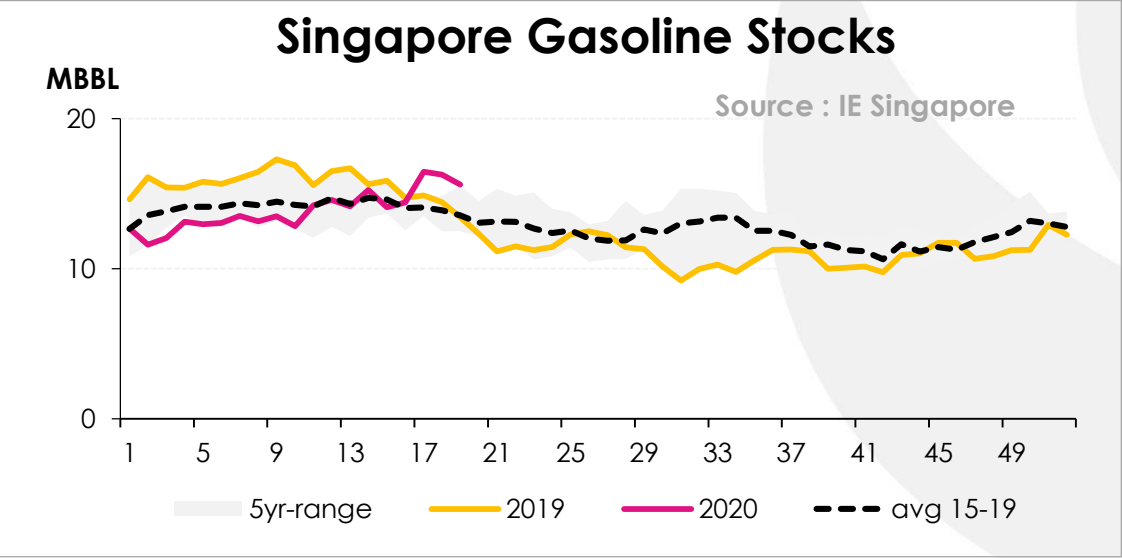
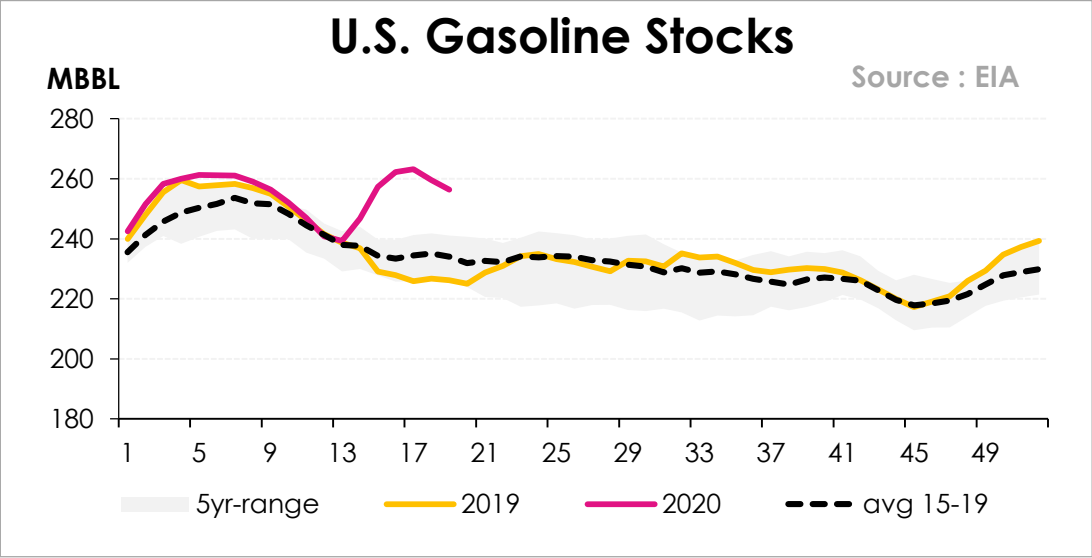
Asian Margin Vs. US-EU margin



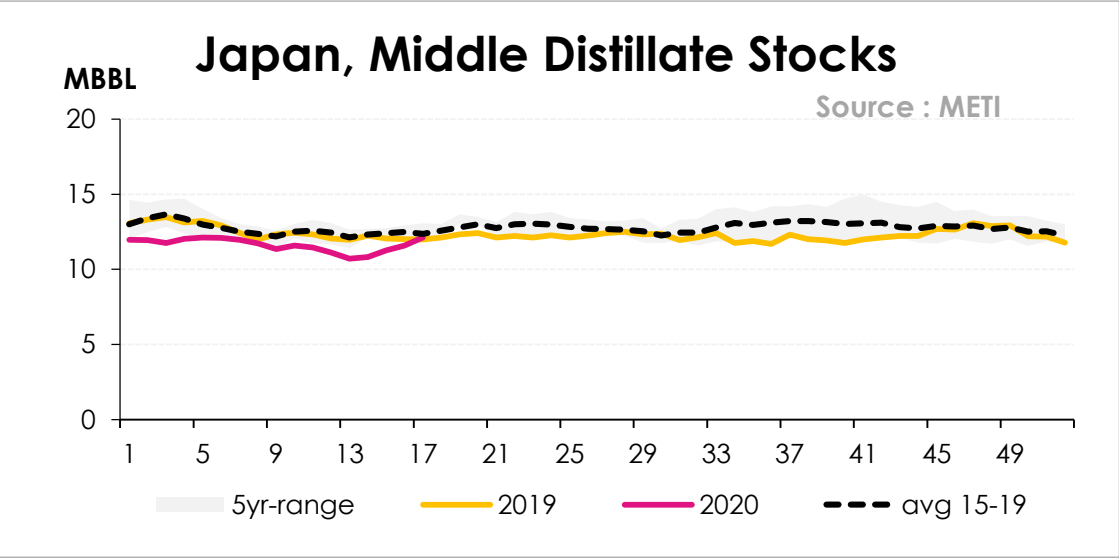
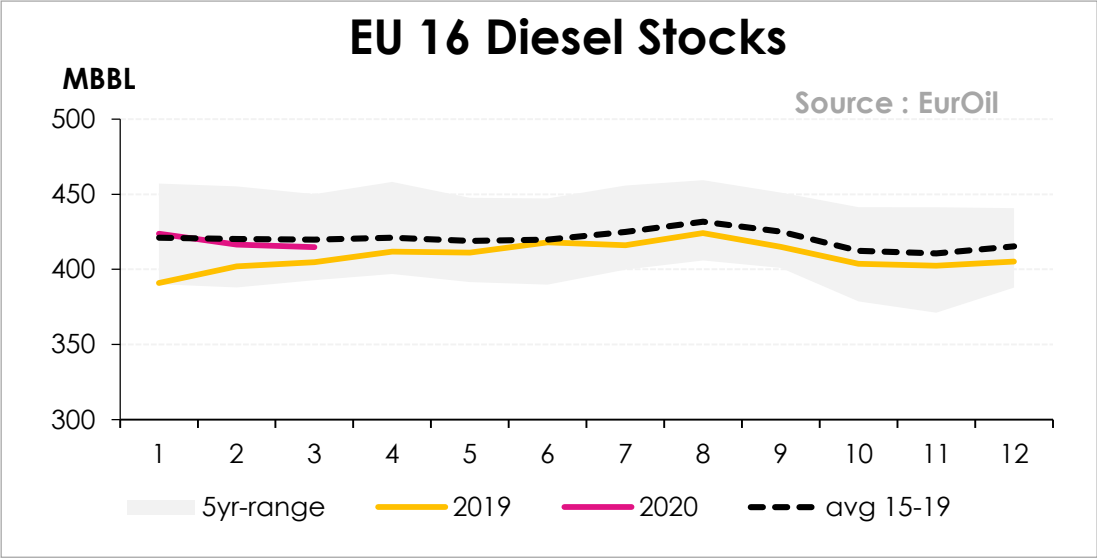
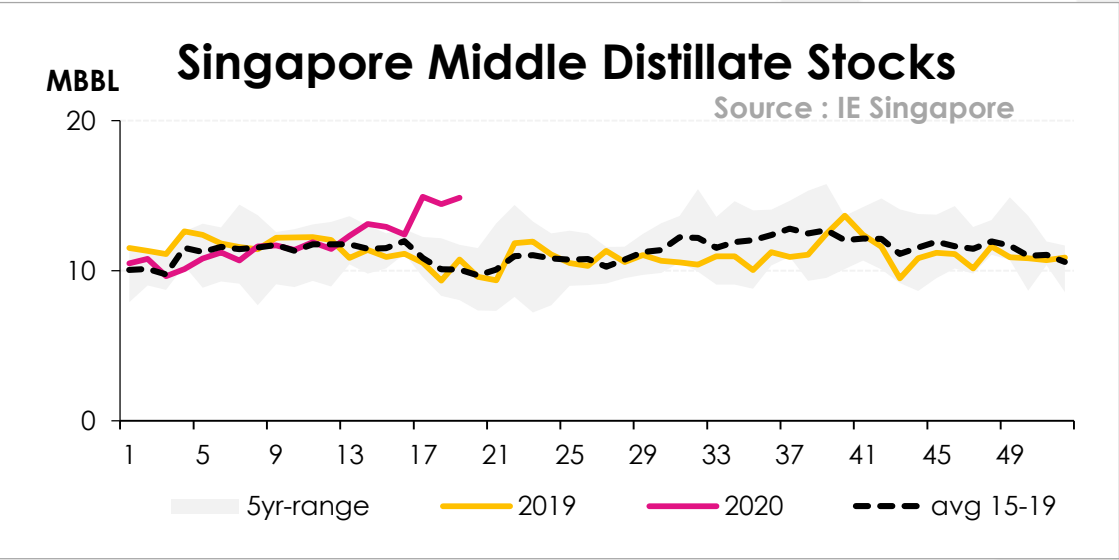
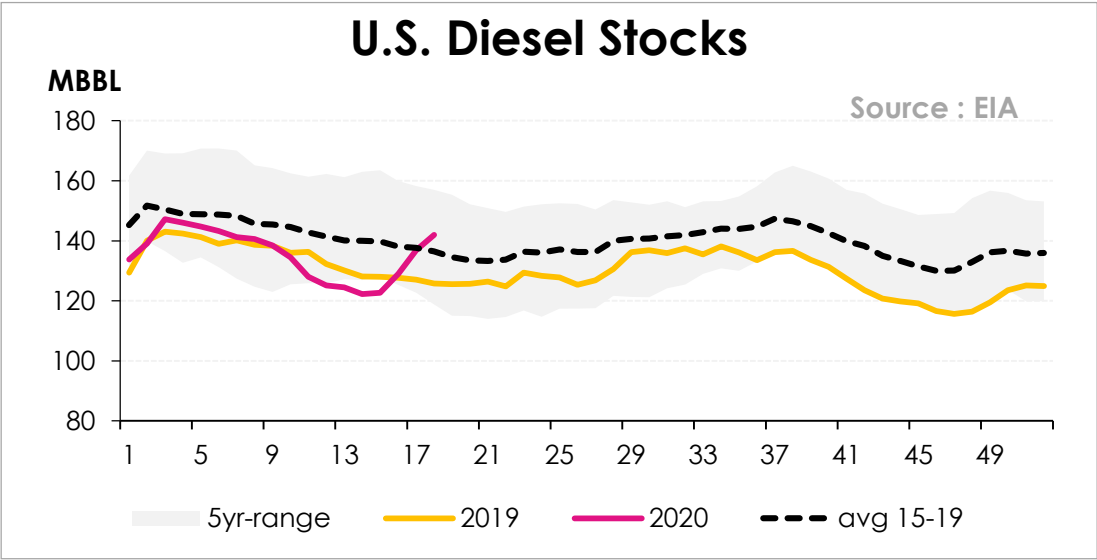
Global Crude Oil Inventories



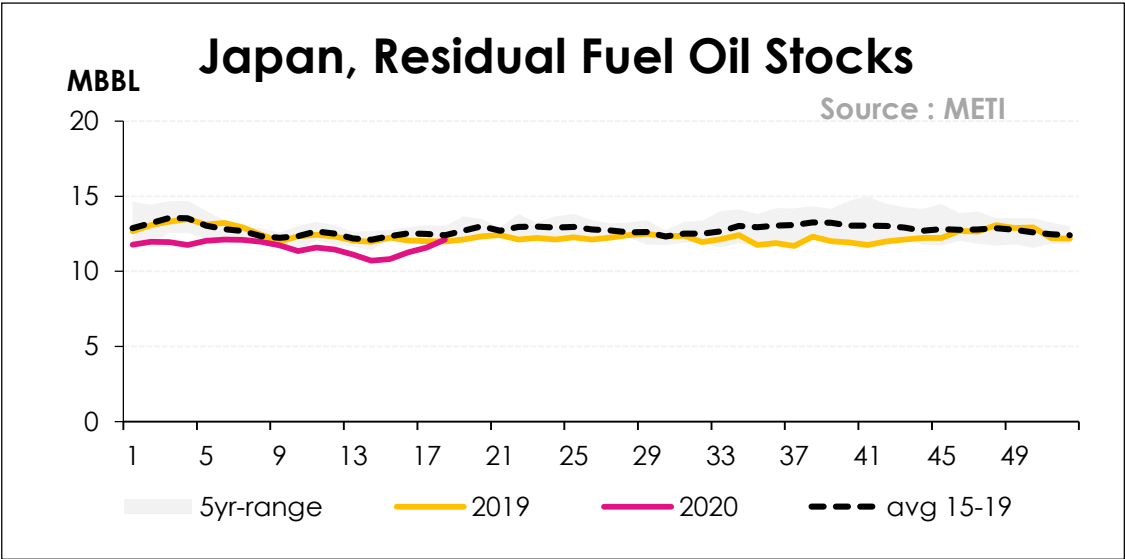
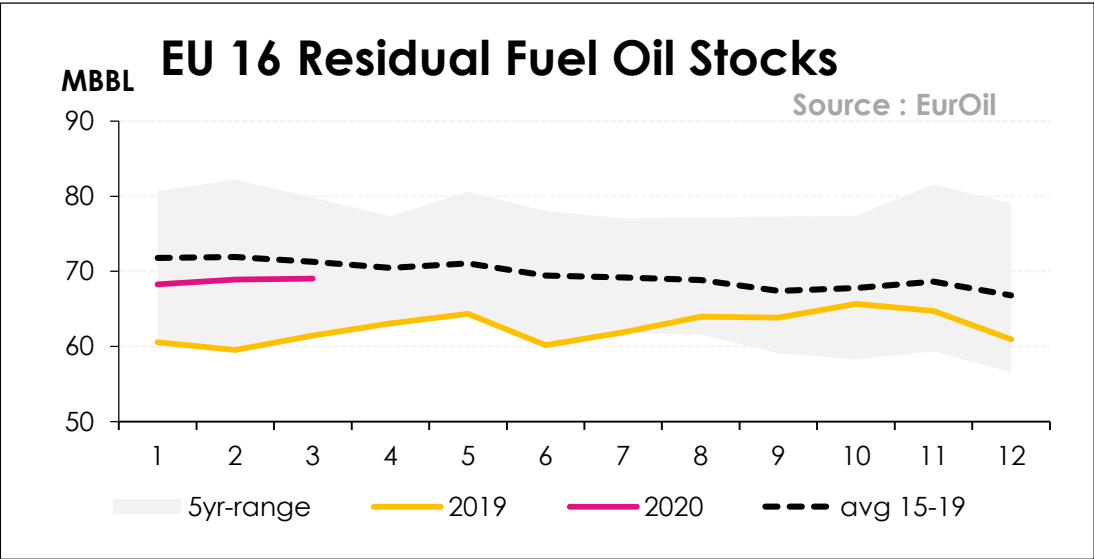
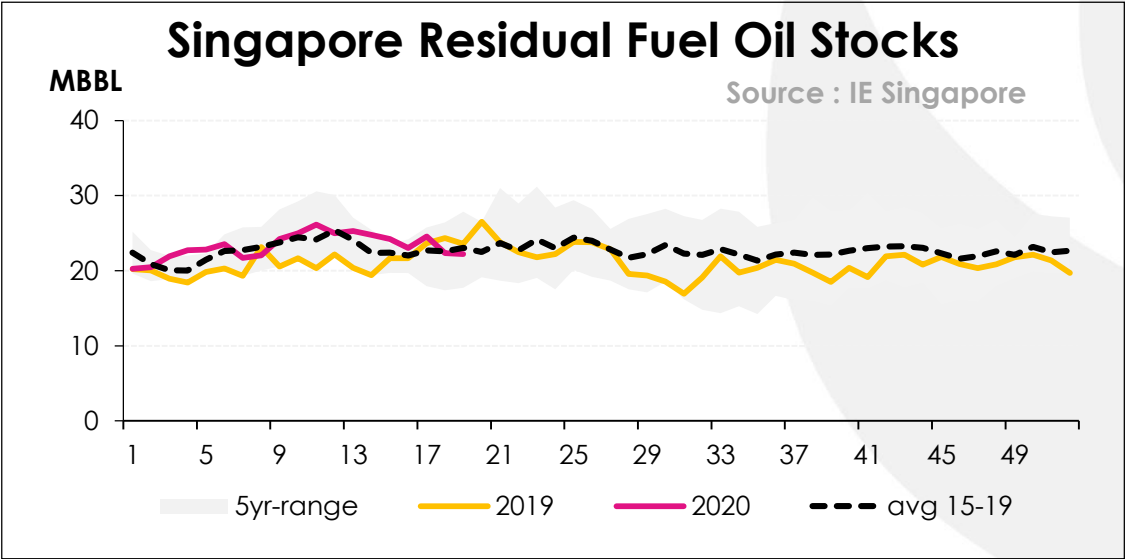
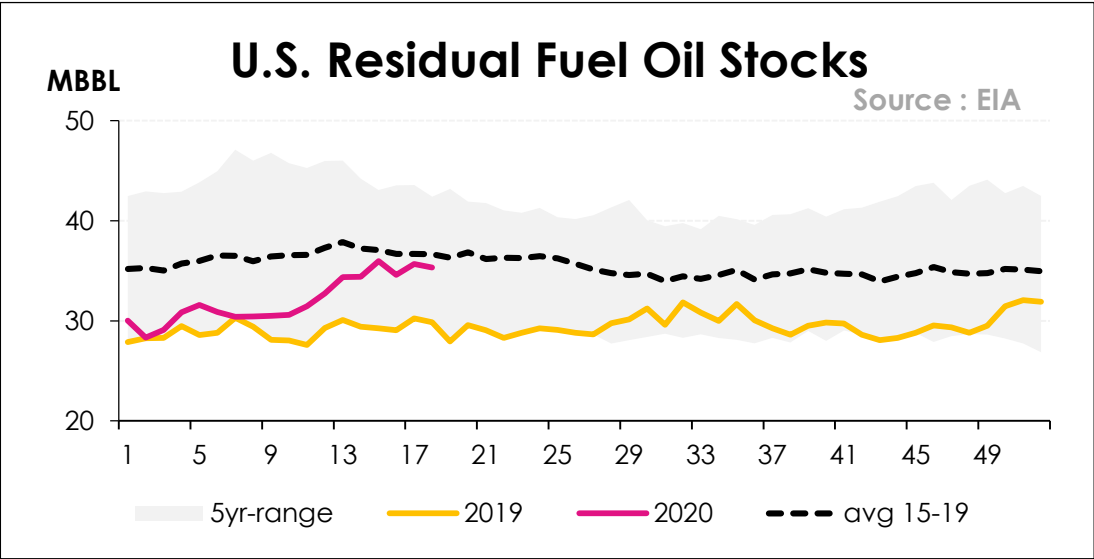
Global Gasoline Inventories



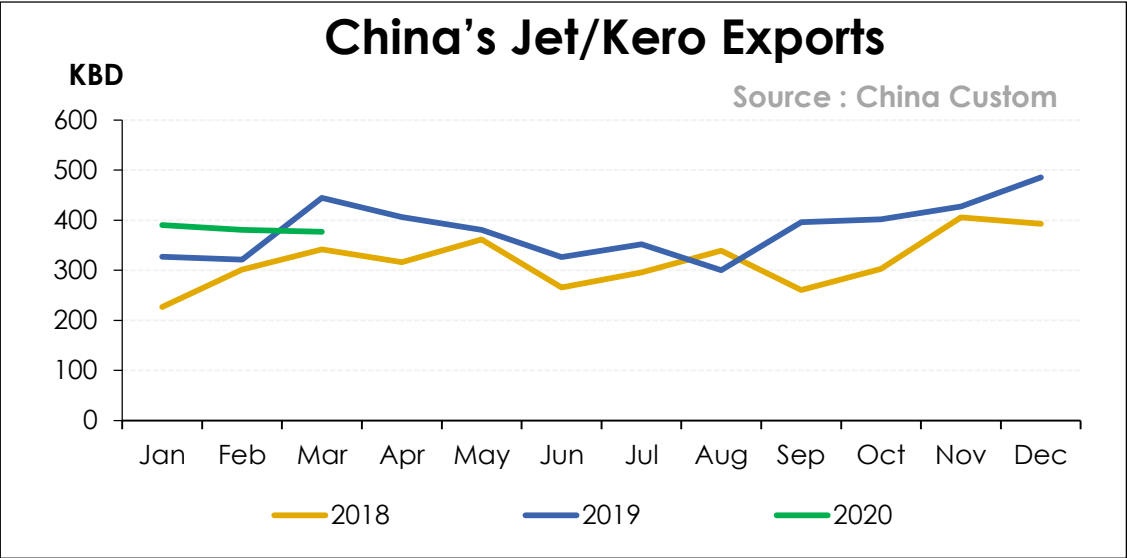
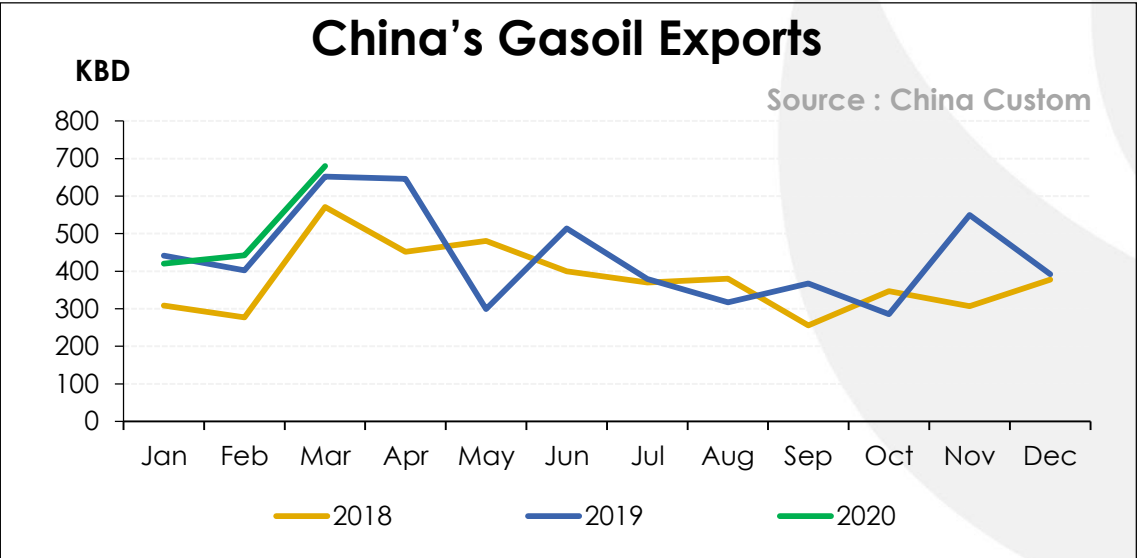
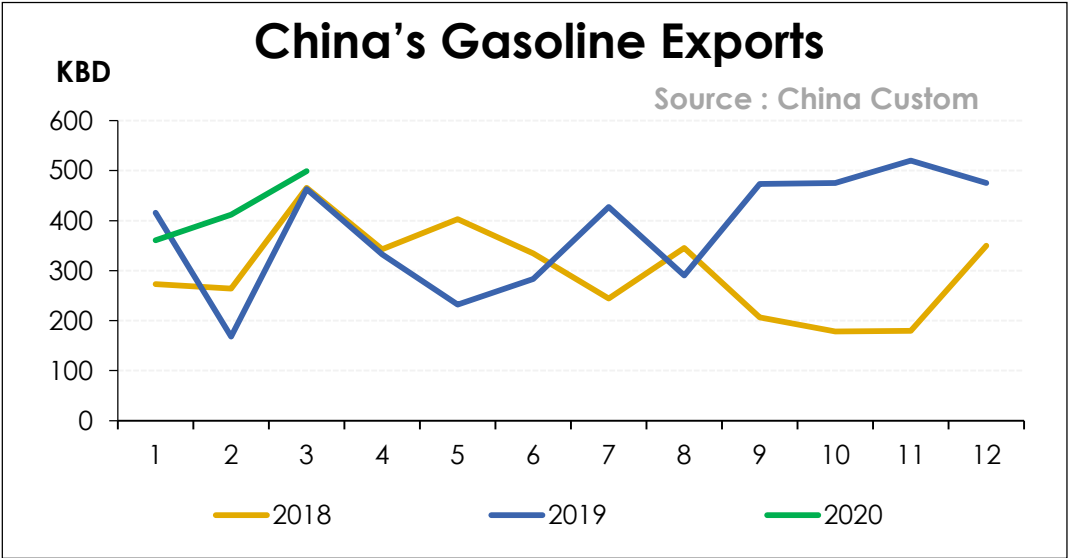
Global Middle Distillate Inventories



Global Fuel Oil Inventories

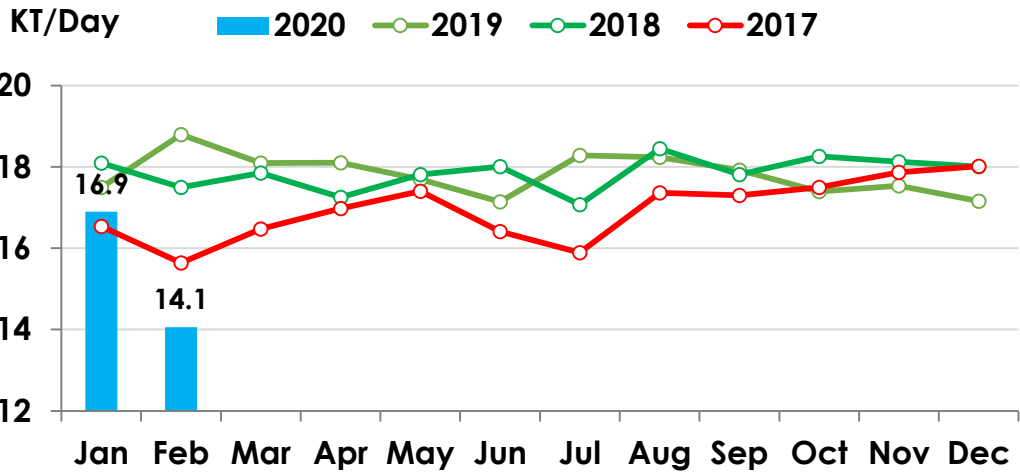


China's Refined Product Exports



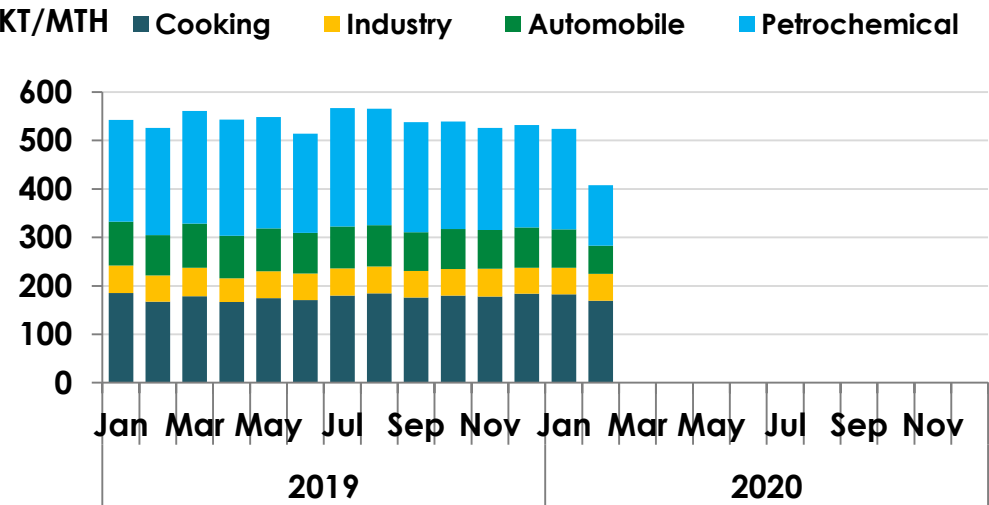
Domestic LPG Demand

Thailand LPG Demand



Remark : LPG demand includes Petrochemical consumption

LPG Demand by Sector



LPG Demand Highlight

- In 2M'20, LPG demand plunged by 12.8% YoY following the decrease in all sectors, especially in the petrochemical sector. LPG demand in the petrochemical sector decreased by 24.5% YoY as Naphtha price, which is the substitute feeds in the sector, has become lower than LPG price to a fresh 18-year low after it was hammered by further declines in crude oil price. Moreover, LPG demand in cooking, industrial and transport decreased by 1.9%, 1.8% and 22.1% YoY, respectively as the price has been higher and become uncompetitive to alternative fuels.

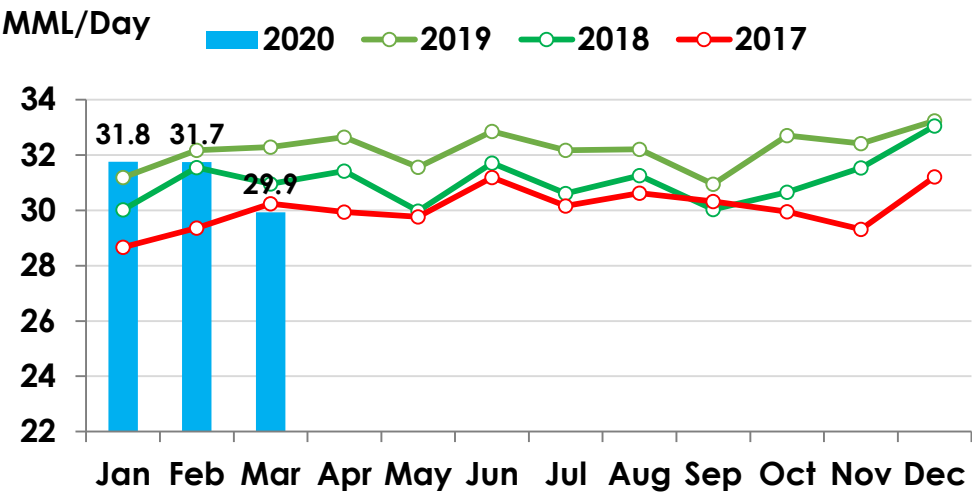
Outlook for 2020

- In 2020, LPG demand is expected to decrease by -21.0% YoY, especially in the transportation and petrochemical sector. Transportation demand tends to fall by 28.2% YoY as lower gasoline prices could make LPG price uncompetitive and encourage users to switch to oil resulting in a decrease of LPG station in Thailand. Besides, most of the registered taxis powered by LPG are gradually expired in 2020 onwards. While demand in the petrochemical sector tends to drop by 40.8% as LPG price has become less preferable than other feedstocks since Feb'19.

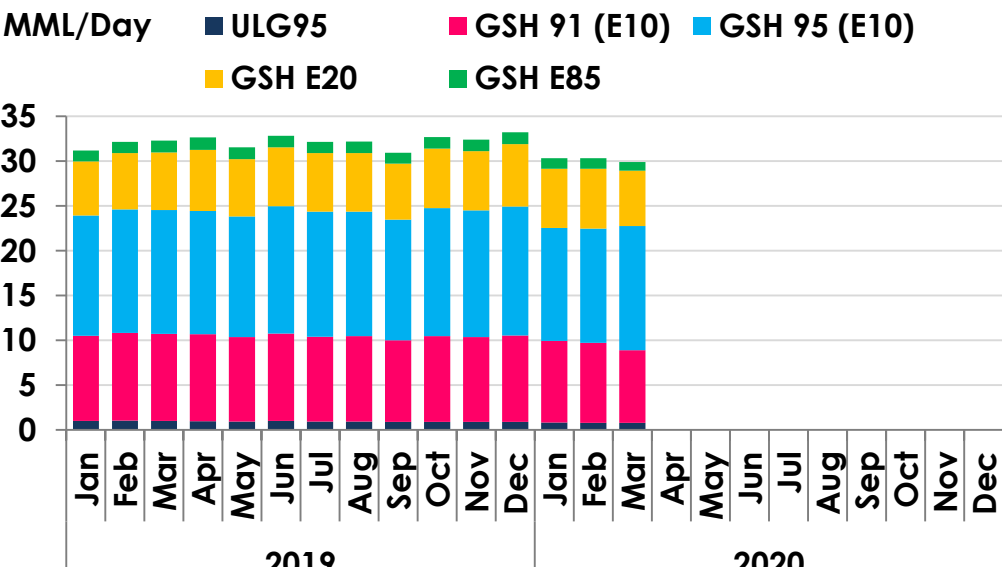
Source: EPPO, DOEB (As of May 2020)

Domestic Gasoline/Gasohol Demand

Thailand Gasoline/Gasohol Demand



Gasoline/Gasohol Demand by Grade



GASOLINE/Gasohol Demand Highlight

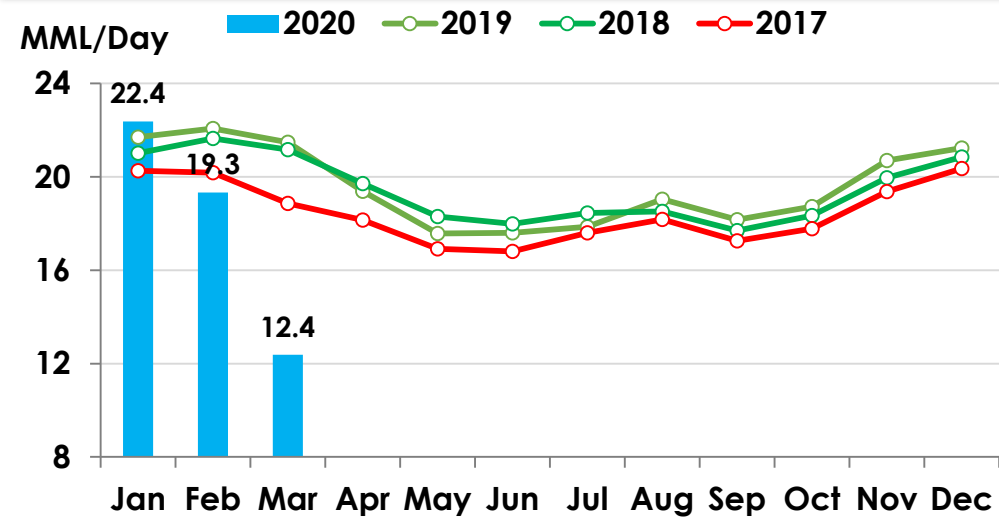
- In 3M'20, Gasoline demand decreased by 2.3% YoY to an average 31.1 MML/day. The demand growth was mainly pressured by the COVID-19 pandemic which has raised concerns on consumer spending and hammered passenger car sales leading to lower transportation activities. However, the cheaper retail price of Gasoline was still a supporter of the demand amid a stagnant economy.
- The level of domestic Ethanol demand, in 3M'20, still decreased by 2.4% YoY from 4.4 to 4.3 MML/day as the GSH91 and E85 demand dropped by 9.8% and 11.4% YoY, respectively from narrower of GSH95-GSH91 and E20-E85 price gap. However, the Gasohol demand of GSH95 and E20 by 3.5% and 3.8% YoY, respectively.

Outlook for 2020

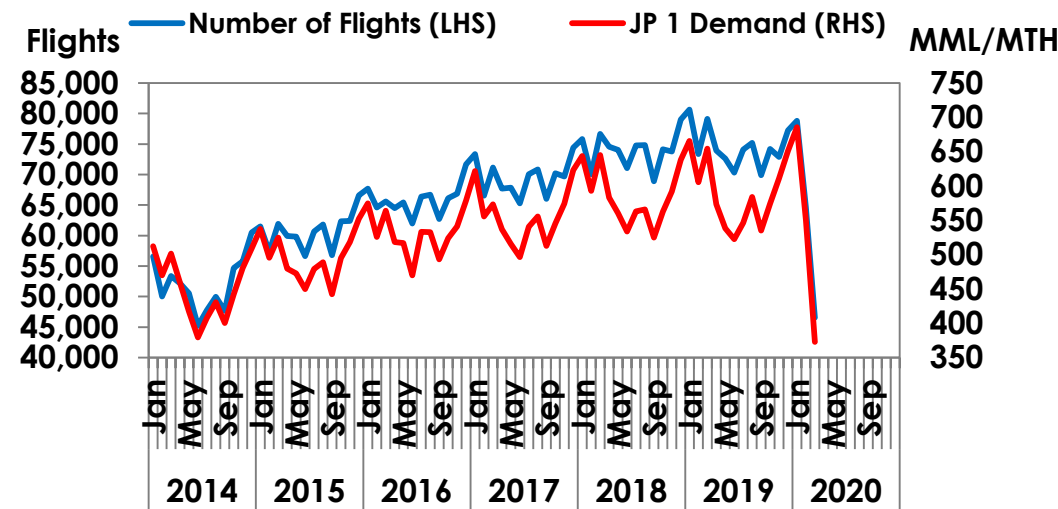
- Gasoline consumption is expected to decrease by 13.5% YoY hammered by temporary lockdown measures for halting the COVID-19 pandemic in Apr'20. Moreover, the stagnant economy would suppress people spending resulting in lower passenger car sales.

Domestic Jet Demand

Thailand JET Demand



JET-A1 demand and Number of flights



JET Demand Highlight

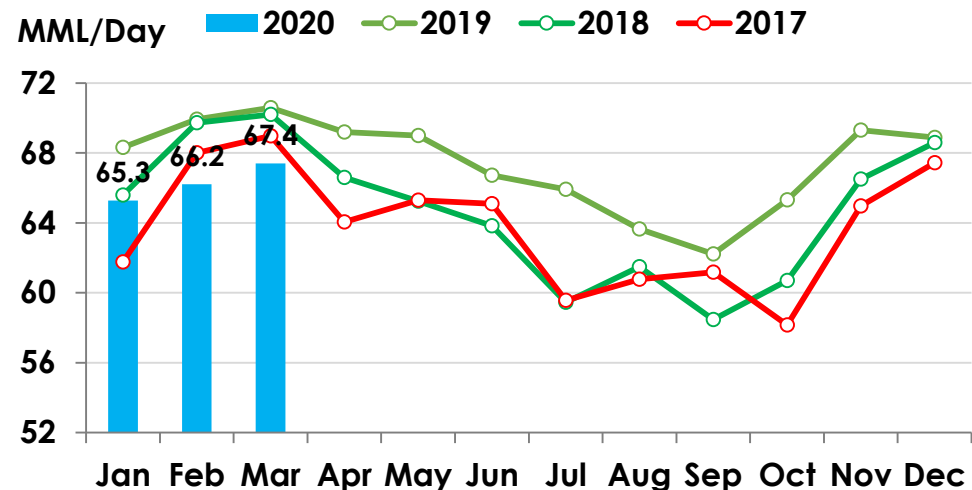
- In 3M'20, Jet consumption decreased by -17.1% YoY as the COVID-19 pandemic had initially started and become more vital since the end of January leading to banning outbound group tours in China for halting the spread. The ban significantly hammered the Chinese tourist numbers in Thailand, which are accountable for 28.9% of overall tourist number in 2019, pressuring on Jet demand. Moreover, the pandemic also has a lot of negative effects on global and domestic economic resulting in lower flight number from other countries.

Outlook for 2020

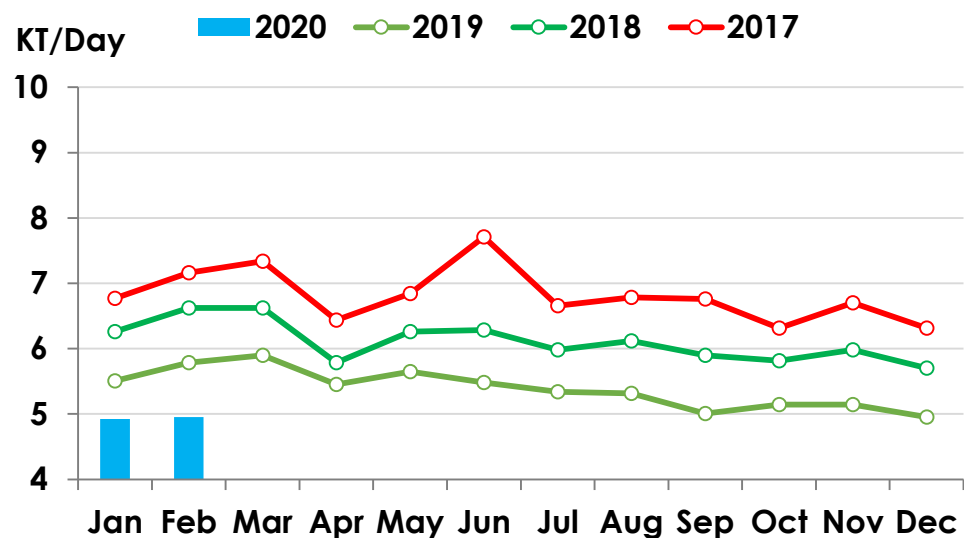
- Jet demand growth is expected to decrease by 47.8% YoY as the COVID-19 pandemic would have highly negative effects on air-transportation in both domestic and international flights from inbound passenger flight ban during Apr-May'20. Even the pandemic could be better after Q3'20, the demand would come back difficultly to a normal level as high expectation of recession in the global economy could pressure the demand for a year.

Domestic Gasoil and NGV Demand

Thailand Gasoil Demand



NGV Demand



Diesel Demand Highlight

- In 3M'20, Diesel demand decreased by 2.9% YoY as it was pressured by 3.8% YoY lower in manufacturing product transportation due to temporary shutdown in some factories from the economic slowdown and COVID-19 pandemic. Besides, agricultural production was also slumped by 6.5% leading to lower agricultural product transportation and pressuring the demand.

Outlook for 2020

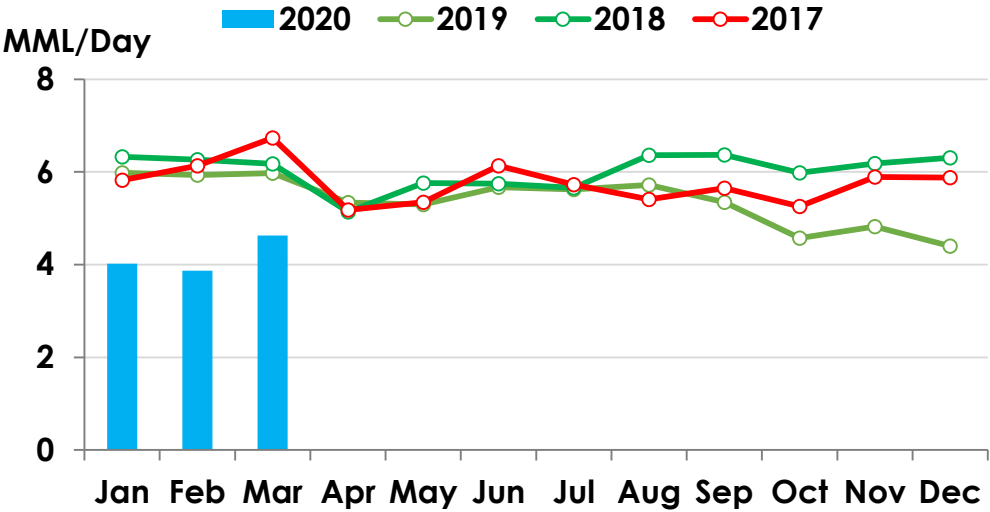
- Diesel demand is expected to drop by 7.0% YoY pressured by lower logistic activities following the drop of Thailand manufacturing and agricultural production from the economic slowdown and COVID-19 pandemic. Moreover, a decreased number of diesel cars and commercial cars would also pressure demand.

NGV Demand Highlight

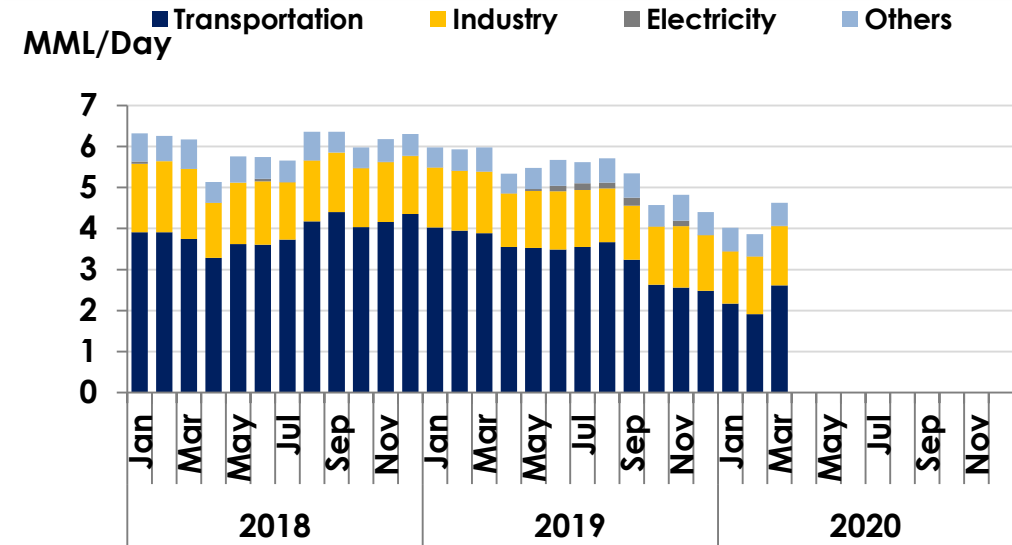
- In 2M'20, NGV demand fell significantly by 12.6% YoY. As the NGV price for personal cars has been adjusted to reflect the actual costs making the price increased. Moreover, the B20 incentive policy for large-size of trucks also pressured the demand. These turned NGV users to use other fuels resulting in a decrease of NGV service stations.

Domestic Fuel Oil Demand

Thailand Fuel Oil Demand



Thailand Fuel Oil Demand by Sector



Fuel Oil Demand Highlight

- In 3M'20, Fuel Oil consumption fell by 29.9% YoY, as the demand for bunker still dropped by 43.6% YoY due to lower goods import and export. Together with, after the IMO 2020 began in Jan'20, some refineries were able to produce less VSFO compared to fuel oils types that had been discontinued due to not meet the IMO 2020 requirements. While the demand for industry and electricity sectors, which accounted for 32.9% and 0.1% of overall Fuel Oil demand, remained low due to uncompetitive price to other feeds.

Outlook for 2020

- Fuel Oil demand is expected to decrease by 5.4% YoY, mainly dropped by lower bunker demand from the economic slowdown and stop production in some uncompliant fuel to IMO 2020. However, the lower fuel oil price is expected to support the demand in the electricity and industrial sector.

Source: DOEB (As of May 2020)

Thank You

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