

MEMBER OF
Dow Jones
Sustainability Indices
In Collaboration with RobecoSAM



Thai Oil Public Company Limited

Q3 & 9M/18

Opportunity Day Presentation

3 December 2018

Time : 9.00 - 10.00 hrs.

Venue : Stock Exchange of Thailand, Building B, Room 603



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Corporate Vision, Mission and Values

VISION	A LEADING FULLY INTEGRATED REFINING & PETROCHEMICAL COMPANY IN ASIA PACIFIC
MISSION	<ul style="list-style-type: none"> • To be in top quartile on performance and return on investment • To create a high-performance organization that promotes teamwork, innovation and trust for sustainability • To emphasis good Corporate Governance and commit to Corporate Social Responsibility
VALUES	<div> <div> Professionalism Ownership & Commitment Social Responsibility </div> <div>  Integrity Teamwork & Collaboration </div> <div> Excellent Striving Vision Focus Initiative </div> </div>

Corporate Governance

Corporate Governance Policy

The board of directors, management and all staff shall commit to moral principles, equitable treatment to all stakeholders and perform their duties for the company's interest with dedication, integrity, and transparency.

Anti-Corruption Policy

The Board, the management, and employees must not corrupt or accept corruption of all forms in any circumstances, covering the business of the Company in every country and in every relevant agency. The Company defines guidelines, operating measures, and roles and duties of responsible persons, as well as regularly monitoring and reviewing the implementation of the anti-corruption policy in compliance with changes in businesses, rules, regulations, and relevant laws.

Roles and Responsibilities for Stakeholders

- Truthfully report company's situation and future trends to all stakeholders equally on a timely manner.
- Shall not exploit the confidential information for the benefit of related parties or personal gains.
- Shall not disclose any confidential information to external parties.

Whistle-Blowing Channels

Should you discover any ethical wrongdoing that is not compliance to CG policies or any activity that could harm the Company's interest, please inform:



Chairman of the Board or
Chairman of the CG Committee or
Chairman of the Audit Committee or
CEO/President or Company Secretary

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CG
Manual

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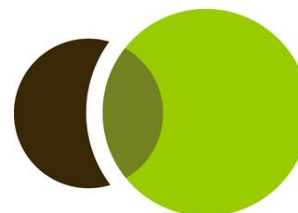


Our Achievement in Sustainable Development



6th Consecutive Year as the Member
of DJSI Emerging Markets

5th Consecutive Year of leading positions:
Oil & Gas Refining & Marketing



ROBECOSAM
Sustainability Award
Gold Class 2018

Presentation Agenda

TOP GROUP BUSINESS OVERVIEW

Q3/18 KEY HIGHLIGHTS

Q3/18 PERFORMANCE ANALYSIS

2019 MARKET OUTLOOK



TOP GROUP BUSINESS OVERVIEW

Thai Oil Group Business Structure

OIL REFINERY



Thaioil (TOP)

Capacity :
275,000 barrels/day

PETROCHEMICAL & LUBE BASE



Thai Paraxylene
(TPX)

Aromatics Capacity:

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



Thai Lube Base
(TLB)

Lube Base Oil

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

75.0% Mitsui 25.0%

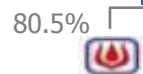
LABIX Company Limited
(LABIX)

LAB producer and distributor
Capacity: 120 KTA COD: 2016

100.0%



Thaioil Solvent
Through TOP Solvent (TS)



Sak Chaisidhi
(SAKC)

Solvent manufacturer
Capacity : 141,000
tons/annum

Solvent distribute
in Thailand



Top Solvent
Vietnam

Solvent distribute in
Vietnam

100.0%

Thaioil &
TP 29.7%
PTT 22.6%
PTTGC 22.7%

POWER GENERATION



Thaioil Power
(TP)

Sells Electricity/Steam to
Group

Small Power Producer Program

3-on-1 Combined Cycle
Electricity 118 MW
Steam 216 tons/hour

TOP SPP

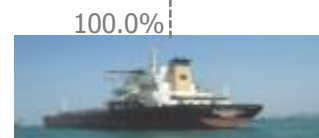
2 Small Power Producers
Total capacity: 239 MW
Steam capacity 498 T/H
COD 2016



Global Power Synergy
Public Company Limited

Principal power plant of PTT
Total Equity Capacity
1,922 MW of electricity
1,582 tons/hour of steam
2,080 Cu.m./hour of Industrial
water
12,000 RT of Chilled water

TRANSPORTATION & OTHER

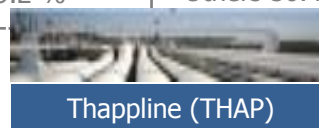


Thaioil Marine
(TM)

- 4 Oil & Chemical Tankers
Capacity : 20,100 DWT
- Crude Tankers: 3VLCCs
Capacity: 881,050 DWT
- 14 crew & utility boats
(120 DWT each)
- 2 Large vessels for crude,
feedstock & product
storage and transportation
services
Capacity: 200,000 DWT
- Ship management services

9.2 %

PTT 40.4%
Others 50.4%



Thapline (THAP)

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

PTT Group 85.0%

15.0%

Sarn Palung Social
Enterprise

Supports execution of social
enterprise of PTT group

PTT Group 80.0%

20.0%

PTT Digital Solutions
(PTT Digital)



Thaioil Ethanol
(TET)

50.0%

Sapthip (SAP)

Cassava Based Ethanol
Capacity : 200,000 lts/day

21.3%

Others BCP
57.4% 21.3%

Ubon Bio Ethanol (UBE)

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

100.0%

Thaioil Energy Services
(TES)

Proceeds the business on
various professional of
management services

100.0%

Thaioil Treasury Center
(TTC)

Increases financial efficiency
of Thaioil group

PTT 40.0%

PTTGC 20.0%

IRPC 20.0%

20.0%

PTT Energy Solutions
(PTTES)

Provides engineering
technique consulting services

Core Business

Value Enhancement

Earning Stability

Marketing / IT Support

Net Profit Contribution

52%

24%

13%

11%


(Avg. from 2006 – Q3/18)

■ Refinery
■ Aromatics
■ Lube Base
■ Others



Q3/18 KEY HIGHLIGHTS

Q3/18 Key Market Drivers Highlights




Refinery

- Improved refinery margins supported by lower crude premium due to more supplies of light crude oil in the market
- Rising crude price driven by supply tightness from 1) decreasing Iran's oil export prior to the deadline of U.S. sanctions 2) continuing downward trend of Venezuela's crude oil production, while global oil demand has been growing strongly, resulting in crude inventories fell below 5-year average

Implication

- Mkt GRM at 5.0 \$/bbl¹⁾
(Q2/18 = 4.0 \$/bbl)
¹⁾ Include Profitability Improvement
- 1.2 \$/bbl inventory gain²⁾
(from stock gain 5.0 \$/BBL in Q2/18)
²⁾ Based on refinery intake




Aromatics & LAB

- Robust aromatics contribution mainly from strong PX spread supported by 1) supply tightness as the start-up of PetroRabigh (1.3 MTA) and Nghi Son (0.7 MTA) were not at full capacity 2) robust demand from downstream product i.e. PTA and polyester

Robust Aromatics & LAB Margins³⁾

(GIM contribution 2.0 \$/bbl from 1.3 \$/bbl in Q2/18)

³⁾ Aromatic contribution including LAB



Lube Base

- Soften Base Oil spread pressured by 1) lower demand during rainy season 2) more supply after resumption from maintenance and additional base oil supply (Gr.I,II) from Saudi Arabia (0.17 MTA) and Korea (0.15 MTA)

Soften Lube Base Contribution

(GIM contribution 0.4 \$/bbl from 0.7 \$/bbl in Q2/18)

Refinery + Aromatics & LAB + Lube Base

\$/BBL	Q2/18	Q3/18	9M/17	9M/18
Market GIM	5.9	7.2	9.3	7.1
Inventory Gains/ (Loss) ⁴⁾	5.0	1.2	-	2.2
Accounting GIM	10.9	8.4	9.3	9.3

⁴⁾ Based on integrated intake

Q3/18 Key Achievements

Key Achievements Q3/18

Operational Excellence



Growth & Profitability Improvement



Sustainability & Awards



Maintain high reliable production

	Q2/18	Q3/18	9M/18
Refinery	108 %*	115 %	112 %
Aromatic	84 %	89 %	88 %
Base Oil	89 %	72 %	83 %

* Planned MTA CDU-1 (May-Jun'18)

Capture high local & Indochina sales

	Q2/18	Q3/18	9M/18
Local	85 %	85 %	85 %
Indochina	9 %	8 %	9 %
Other exports	6 %	7 %	6 %

- On Aug 21, 2018, signing the renewal of land lease agreement with MOF, extending from 2022 to 2052

- On Aug 27, 2018, EGM approved investment in CFP Project, with 99.91% votes. And, on Oct19, 2018, Thaioil signed EPC Contract, with a consortium of companies

- Margin and Productivity Improvement activities Q3'18 1,364 MB** 9M/18 3,036 MB**

- Interim Dividend 2018 at 1.50 Baht per share

- Retail site visit 2018, on 2nd and 4th Jul'18

- Sustainability Member for Oil & Gas Industry for 6th consecutive years of DJSI Emerging Markets

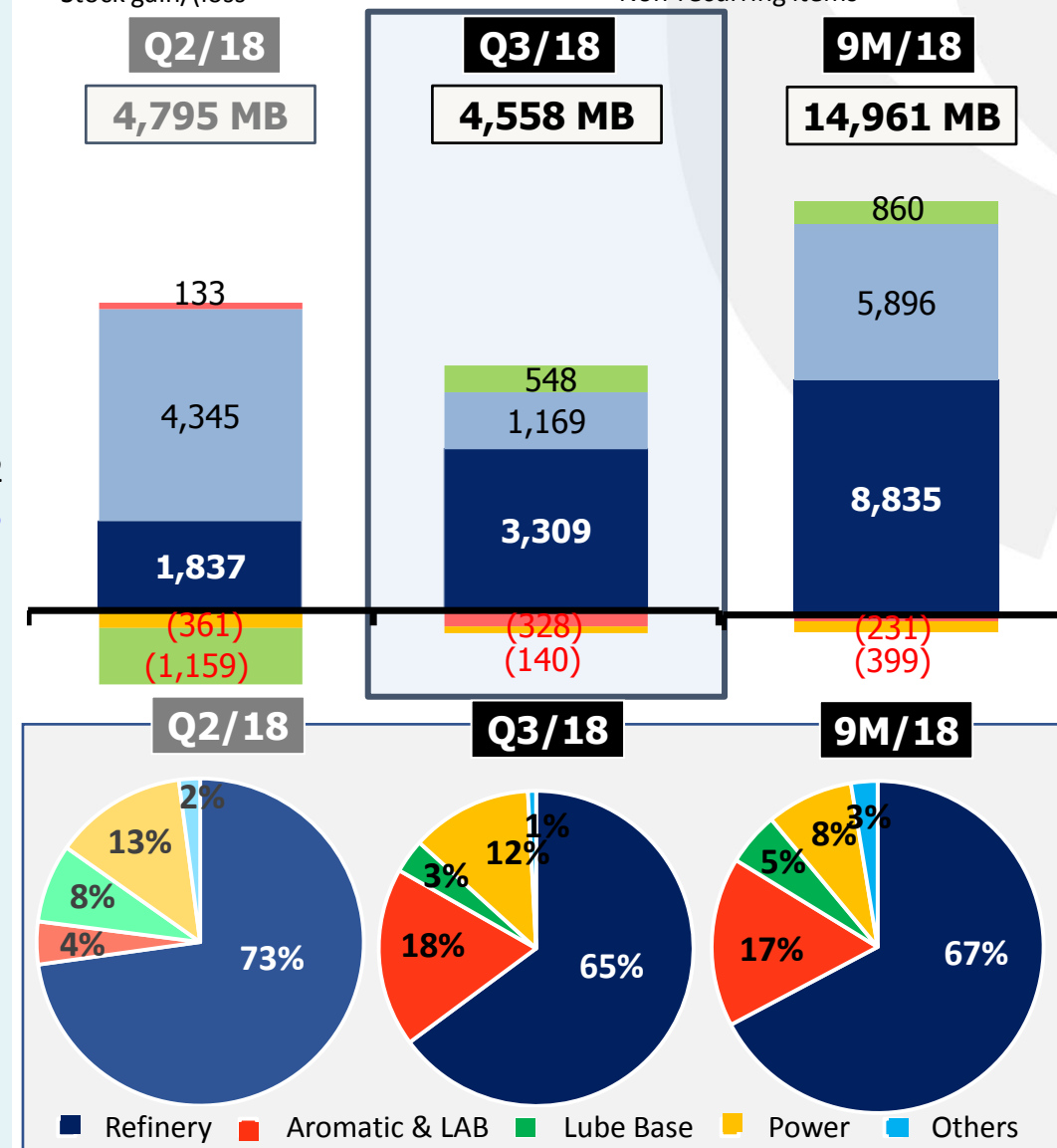
- The Alpha Southeast Asia's Awards 2018

- Best Energy Corporate Governance Thailand 2018, Capital Finance International Magazine

TOP Group Net Profit

Unit : million THB (MB)

- Net Operating Profit
- Reversal of NRV/(NRV) & Adjusted to cost
- Stock gain/(loss)
- F/X gain/(loss)
- Others i.e. Hedging gain/(loss) & Non-recurring items



** Compared with Corp. plan

Included Stock G/L

Q3/18 Margin and Productivity Improvement (VS Corporate Plan)

Margin Improvement

(Hydrocarbon Management : HMR)
and **Productivity Improvement**
(Non HMR)

✓ **31%** Crude Enhancement



✓ **24%** Higher domestic/
better product
premium



✓ **14%** Plant optimization



✓ **4%** VLCC freight &
demurrage saving



✓ **3%** Energy improvement



Energy

✓ **5%** Others

Cost Management

ORCHESTRA

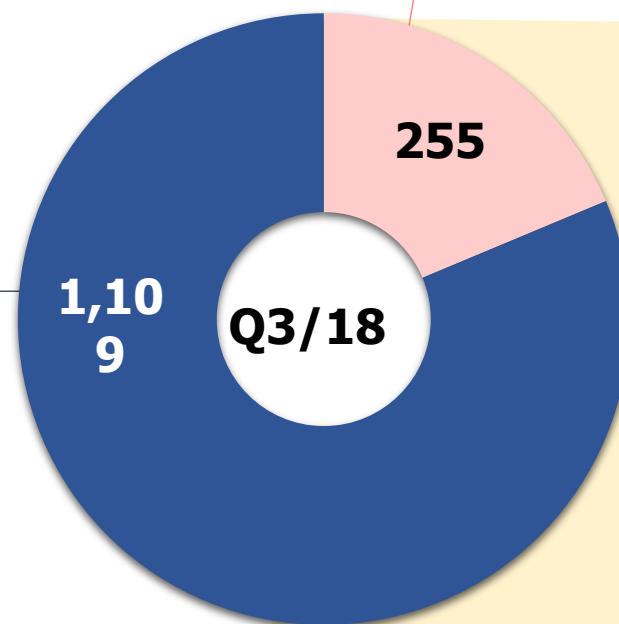
Symphony

✓ **121 MB**

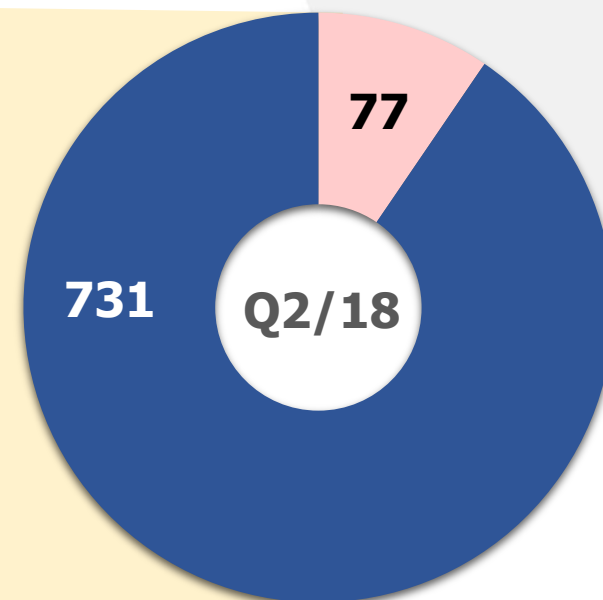
✓ **134 MB**

General & Admin , Procurement & warehouse ,
Operation & Maintenance , Project & Manpower
management

Unit: million THB



THB 1,364 mn *



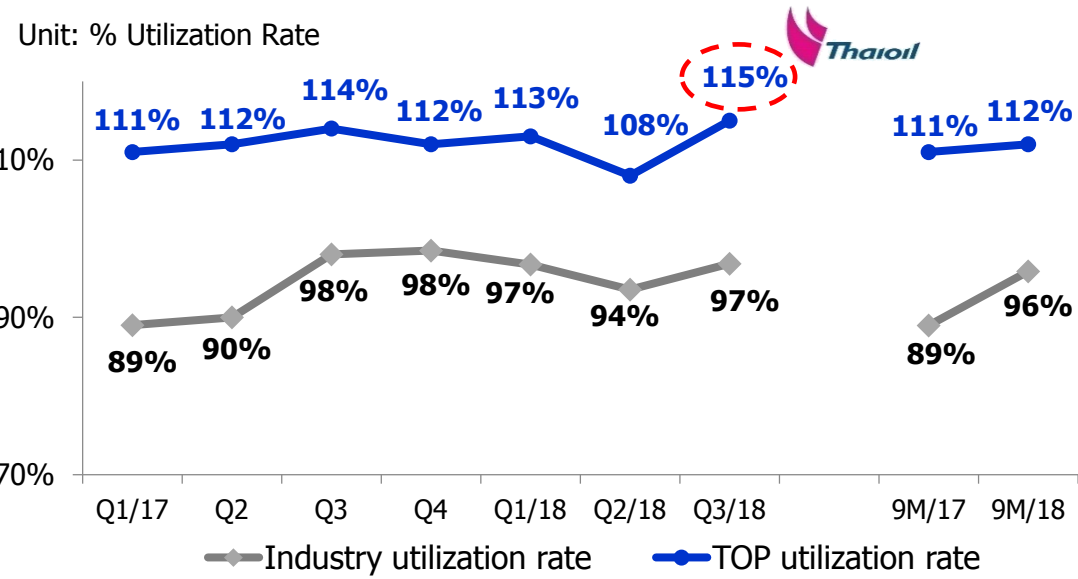
THB 798 mn *



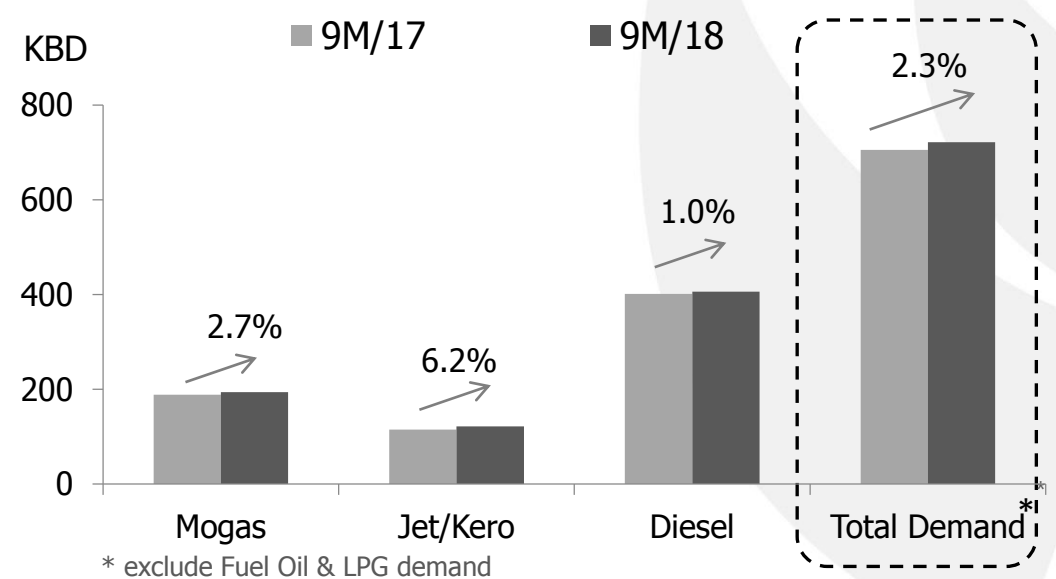
Q3/18 PERFORMANCE ANALYSIS

Refinery: Maintain High Utilization Rate

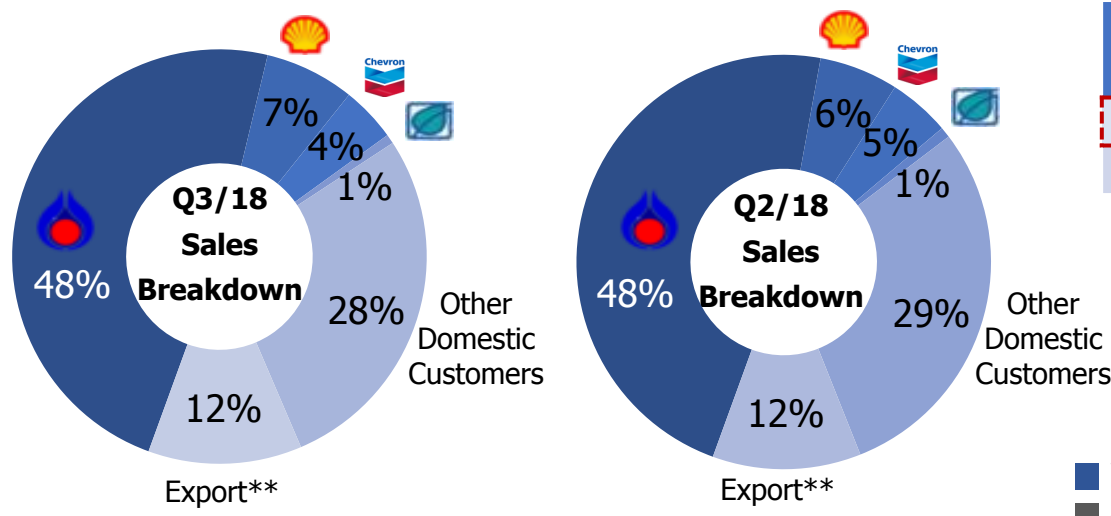
TOP/ Domestic Refinery Utilization Rate



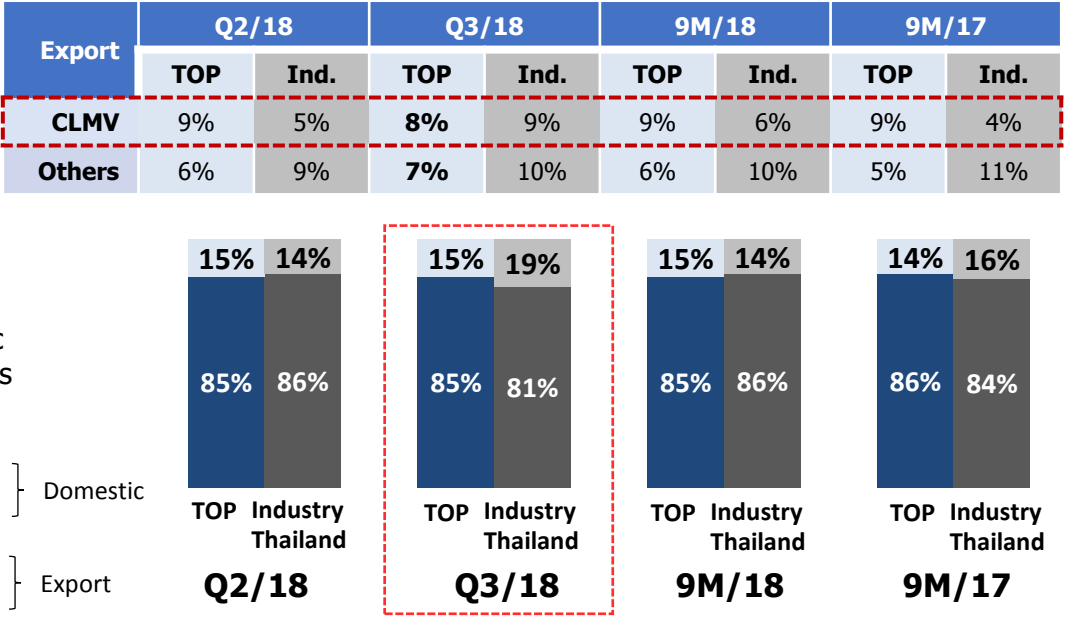
Domestic Oil Demand



Sales breakdown by customers



TOP's Domestic Sale vs Industry***



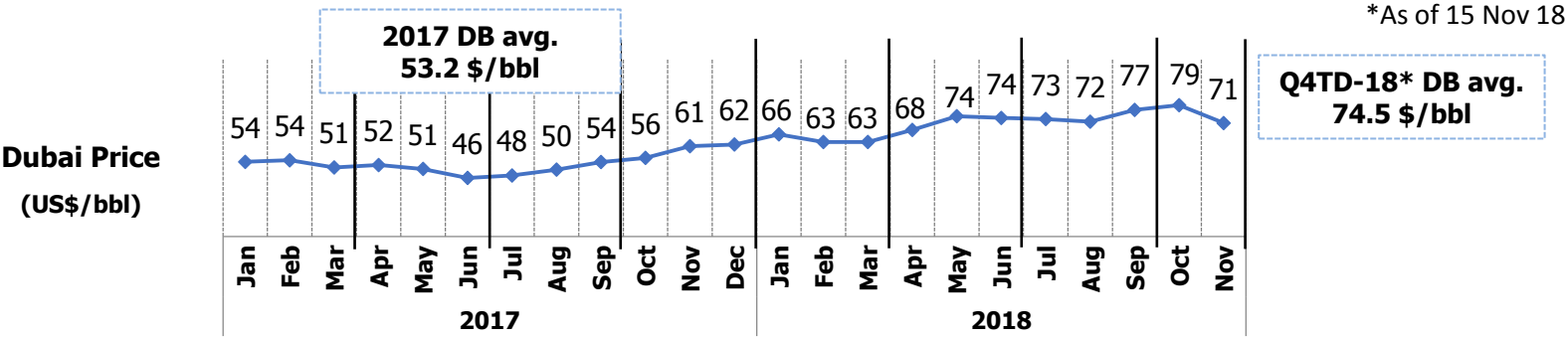
** Excludes export sale through PTT

*** Source: Department of Energy Business, Ministry of Energy

Q3/18: Improved Mkt GRM supported by Lower Crude Premium

Dubai Crude Price & Key Petroleum Product Spreads

	2017				2018					2017
\$/bbl	Q1	Q2	Q3	Q4	Q1	Q2	Q3	9M	Q4TD*	FY17
DUBAI (DB)	53.1	49.8	50.5	59.3	63.9	72.1	↑74.3	70.1	74.5	53.2
ULG95 - DB	14.8	14.2	16.1	14.4	13.7	12.1	↓11.6	12.5	5.8	14.9
JET - DB	11.3	10.8	13.2	13.3	16.1	15.3	↓14.5	15.3	16.8	12.1
GO - DB	11.8	11.4	13.9	13.0	14.8	14.6	↓14.4	14.6	17.0	12.5
HSFO - DB	(3.1)	(1.8)	(1.3)	(3.1)	(4.9)	(4.4)	↑(2.5)	(4.0)	1.8	(2.3)



Gross Refinery Margins - GRM

	2017				2018				2017
\$2.7/bbl	Q1	Q2	Q3	Q4	Q1	Q2	Q3	9M	FY17
Market GRM	6.5	6.1	8.1	6.0	5.7	4.0	5.0	4.9	6.7
Stock G/(L)	(0.2)	(2.2)	2.4	3.6	0.4	5.0	1.2	2.2	0.9
Accounting GRM	6.3	3.9	10.5	9.6	6.2	9.0	6.2	7.1	7.6

Refinery Utilization		
Q2/18	Q3/18	9M/18
108%	115%	112%

% MB Intake/OSP*		
35%/3.7	36%/2.9	37%/3.4

*Murban OSP over Dubai (\$/bbl)

Q3/18 Market GRM

- + **Lower crude premium** due to abundant light crude oil in the market
- + **Higher crude price** as **supply tightness** due to decreasing Iran's oil export prior to the deadline of U.S. sanctions and continuing downward trend of Venezuela's crude oil production
- **Weaken gasoline spread** as abundant stock as well as **lower middle distillate margin** due to more supply after resumption from maintenance
- + **Improved FO spread** from summer demand in Middle East

Q3/18 Performance

- + **Highest refinery run rate at 115%**

Q3/18: Robust Aromatics Contribution supported by Strong PX spread

Aromatics Spreads and Margins

	2017				2018					2017
\$/ton	Q1	Q2	Q3	Q4	Q1	Q2	Q3	9M	Q4TD*	FY17
PX**-ULG95	312	273	258	260	304	268	↑451	341	539	276
BZ**-ULG95	346	226	195	213	231	126	↔126	161	74	245

Aromatics Production

Q2/18	Q3/18	9M/18
84%	89%	88%

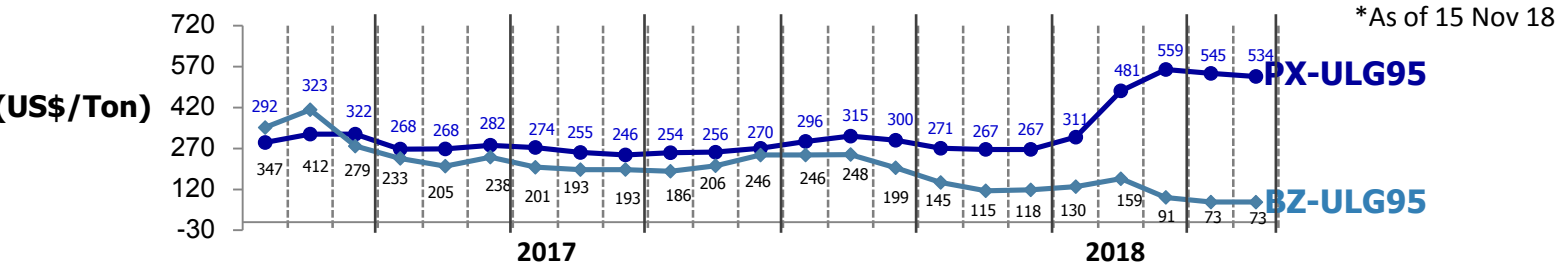
Q3/18 Market

+ **Strong PX spread** as the start-up of PetroRabigh (1.3 MTA) and Nghi Son (0.7 MTA) were not at full capacity and demand from downstream product i.e. PTA and Polyester

↔ **Stable BZ spread**, remaining at low level, due to ample supply as most producers maximized PX production to capture decent PX spread

Q3/18 Performance

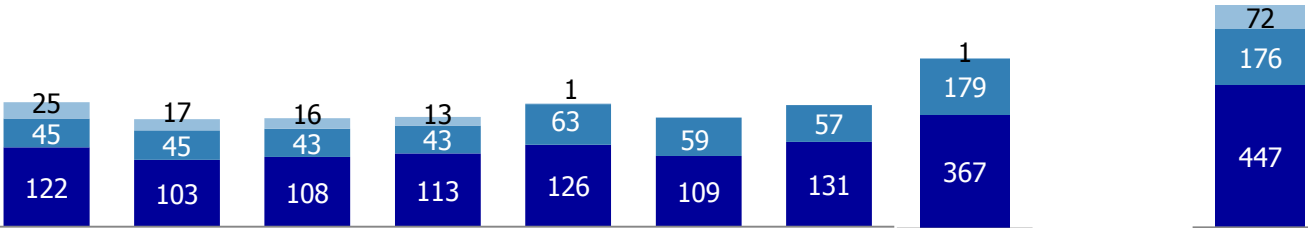
+ **Higher utilization rate** to capture decent PX margins



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

(Unit : KTon)

TL
BZ
PX



	2017				2018			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	9M
Aromatic P2F - \$/ton	126	91	84	93	110	87	129	110
Aromatic P2F - \$/bbl	16.4	11.9	11.0	12.2	14.5	11.6	16.9	14.5
GIM contribution***	2.1	1.5	1.4	1.5	1.7	1.3	2.0	1.7

2017
FY17
99
12.9
1.6

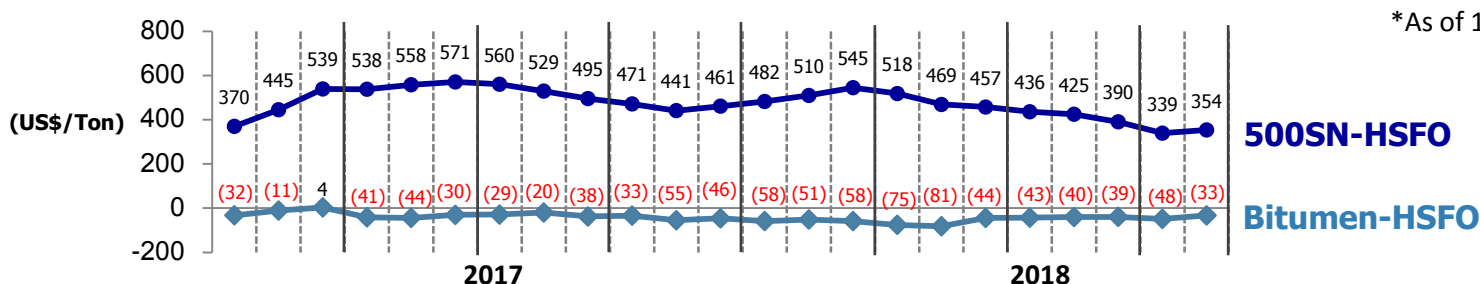
** PX price = CFP Taiwan, BZ price = FOB Korea *** including LAB contribution since 25 Feb 2016

Remark: TOL -ULG95 Q2/18 = 38 \$/ton, Q3/18 = 58 \$/ton, 9M/18 = 51 \$/ton

Q3/18: Lower Contribution as Soften Lube Base Spread

Base Oil & Bitumen Spreads & Margins

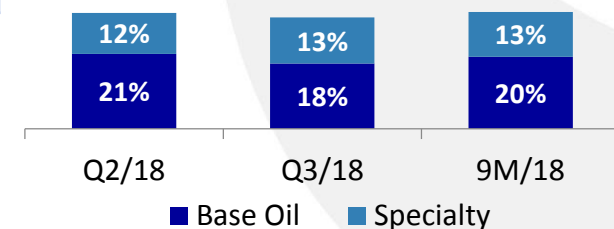
	2017				2018					2017
\$/ton	Q1	Q2	Q3	Q4	Q1	Q2	Q3	9M	Q4TD *	FY17
500SN-HSFO	451	556	528	458	512	481	↓ 417	432	352	528
BITUMEN-HSFO	(13)	(38)	(29)	(45)	(56)	(67)	↑ (41)	(44)	(35)	(29)



Base oil Production

Q2/18	Q3/18	9M/18
89%	72%	83%

% Base Oil & Specialty Sales Volume



Q3/18 Market

– **Soften lube spread** due to lower demand during rainy season and more supply after resumption from maintenance and additional base oil supply (Gr.I,II) from Saudi Arabia (0.17 MTA) and Korea (0.14 MTA)

+ **Improved bitumen spread** as good demand especially in Indonesia and China

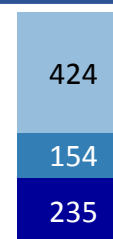
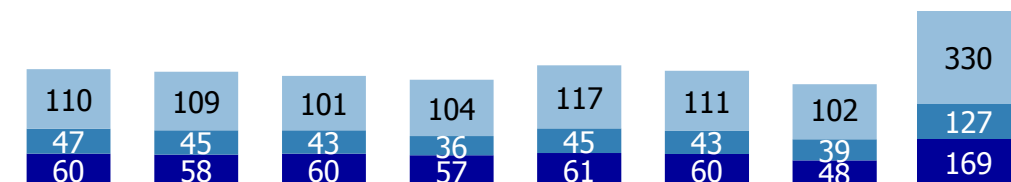
Q3/18 Performance

– **Lower utilization rate** constrained by feedstock and seasonally soften demand

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

(Unit : KTon)

■ Bitumen
■ Specialty
■ Base Oil



	2017				2018			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	9M
P2F -\$/ton	116	118	113	102	105	97	66	89
P2F -\$/bbl	17.6	17.9	17.1	15.5	16.0	14.8	9.9	13.4
GIM contribution	0.9	0.9	0.8	0.7	0.7	0.7	0.4	0.6

2017
FY17
112
17.0
0.8

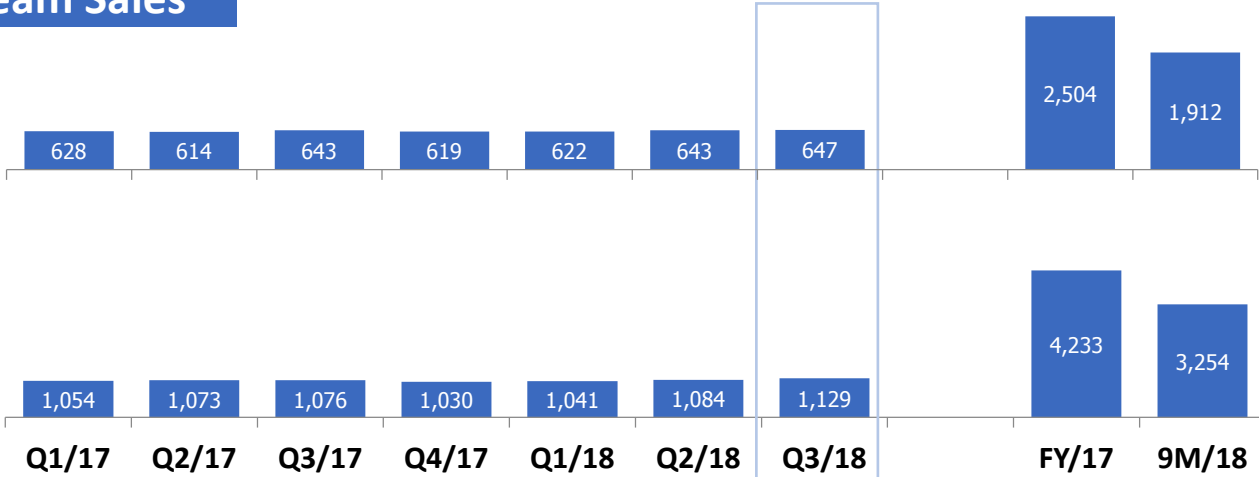
Q3/18 Power Sector Performance...Growing Contribution to the Group

Power Business Sector

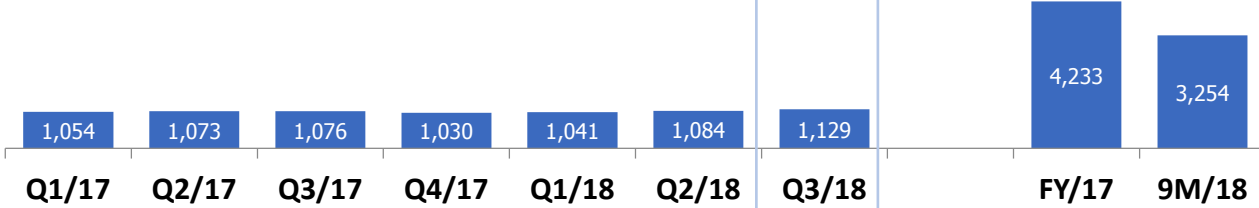


Power & Steam Sales

Electricity⁽¹⁾
(GWh)



Steam⁽¹⁾
(kton)



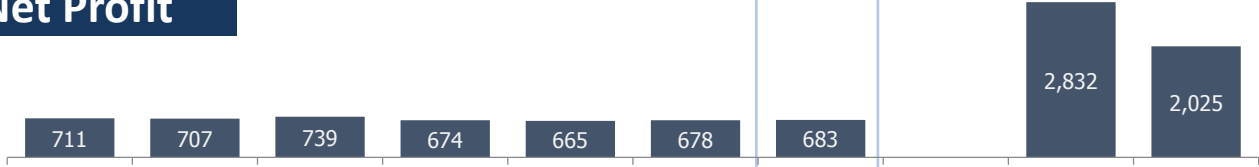
***TOP shareholding 24.29% (8.91% via TOP and 20.79% via TP)
GPSC is an associate company of TOP.
Equity method is applied to recognize share of profit. (EBITDA calculation excludes profit sharing from GPSC)

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

(1) 100% of TP and TOP SPP

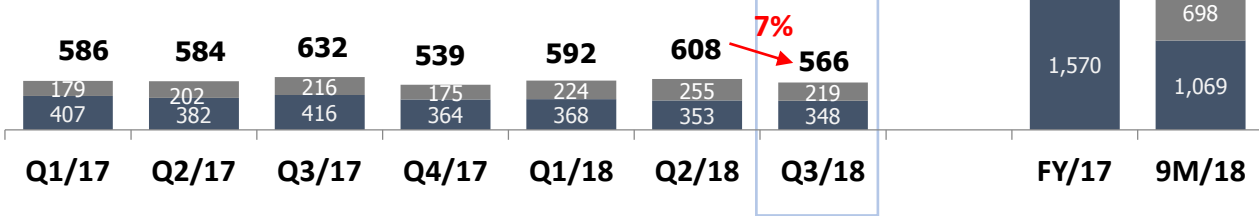
EBITDA & Net Profit

EBITDA⁽²⁾
(THB million)



(2) consolidated EBITDA of TP and TOP SPP

Net Profit⁽³⁾
(THB million)



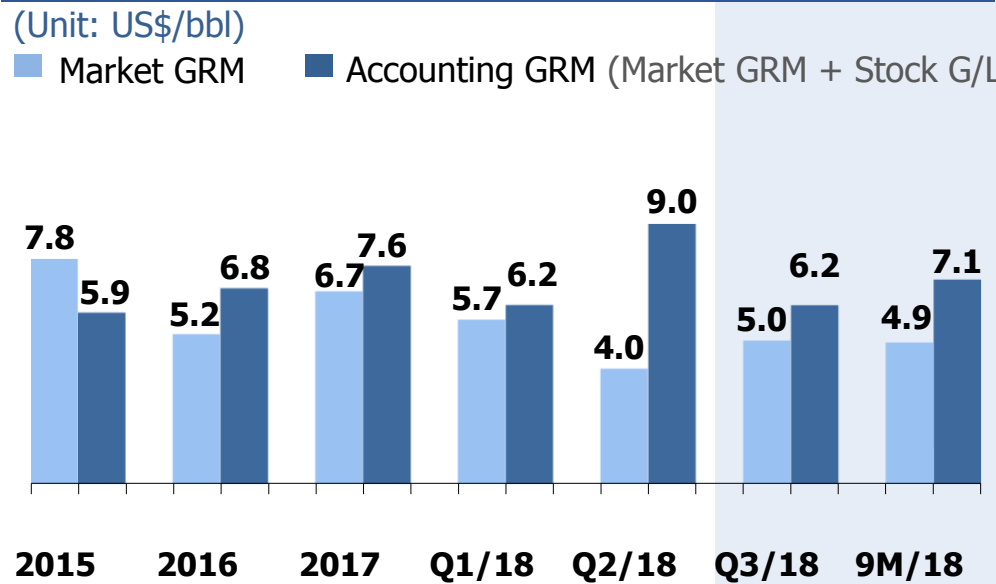
(3) Net profit of 74% TP + 100 % TOP SPP + 24.29% profit sharing from GPSC

Performance Highlight

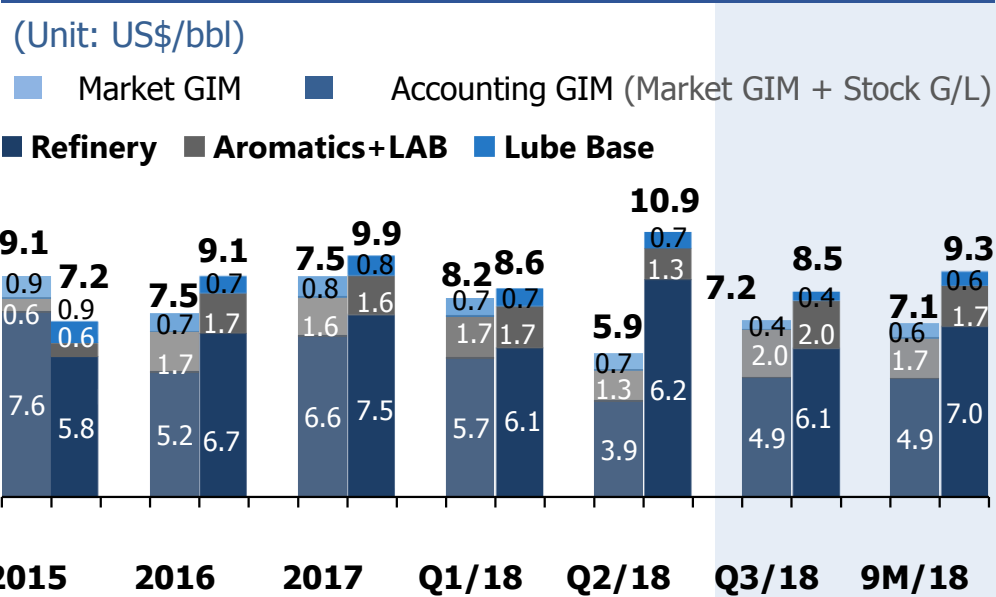
- **Lower contribution** mainly from lower profit sharing from GPSC due to the rise in natural gas price

Integrated Margin & Competitive Cash Cost

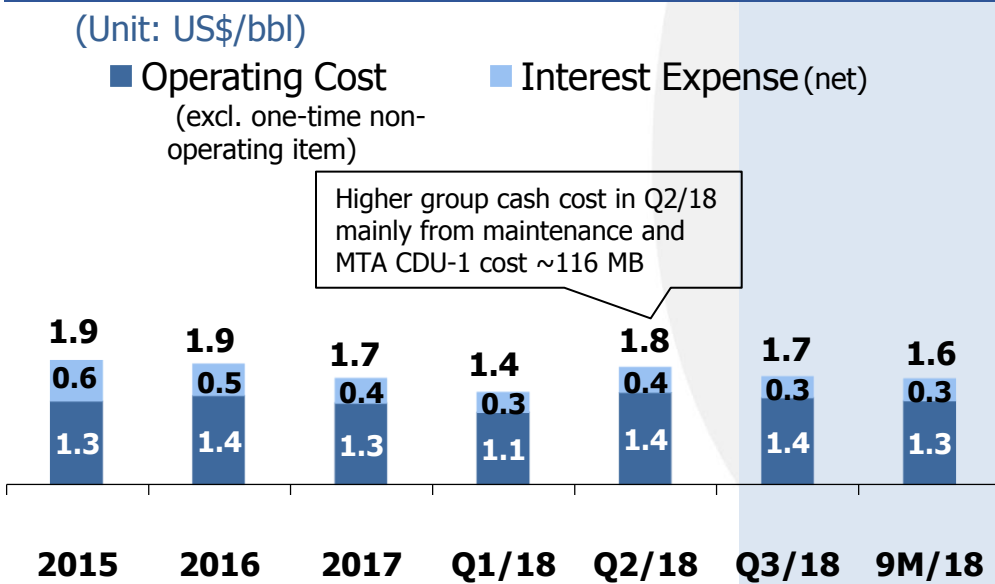
Gross Refining Margin



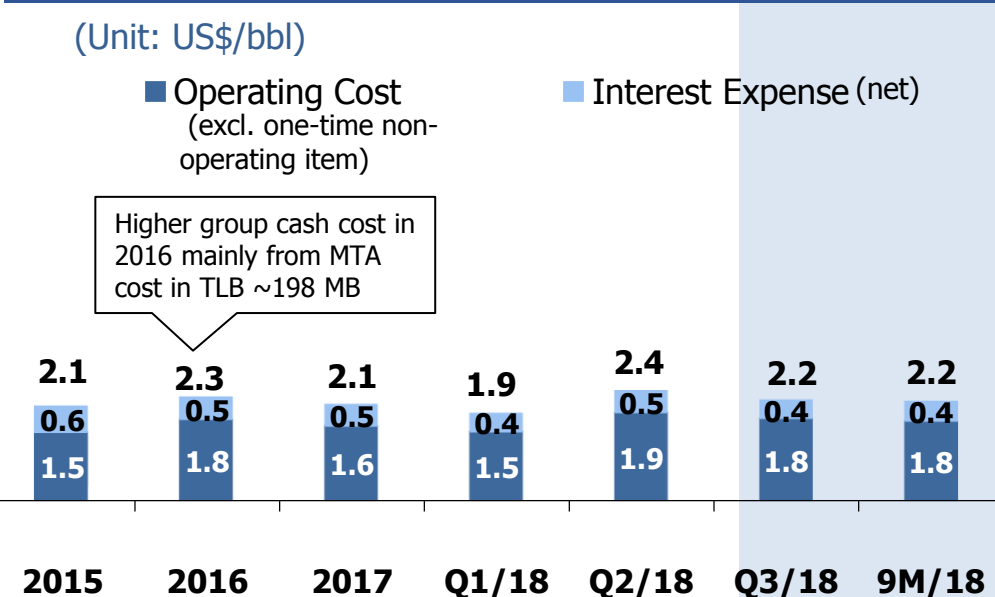
Gross Integrated Margin



Refinery's Cash Cost

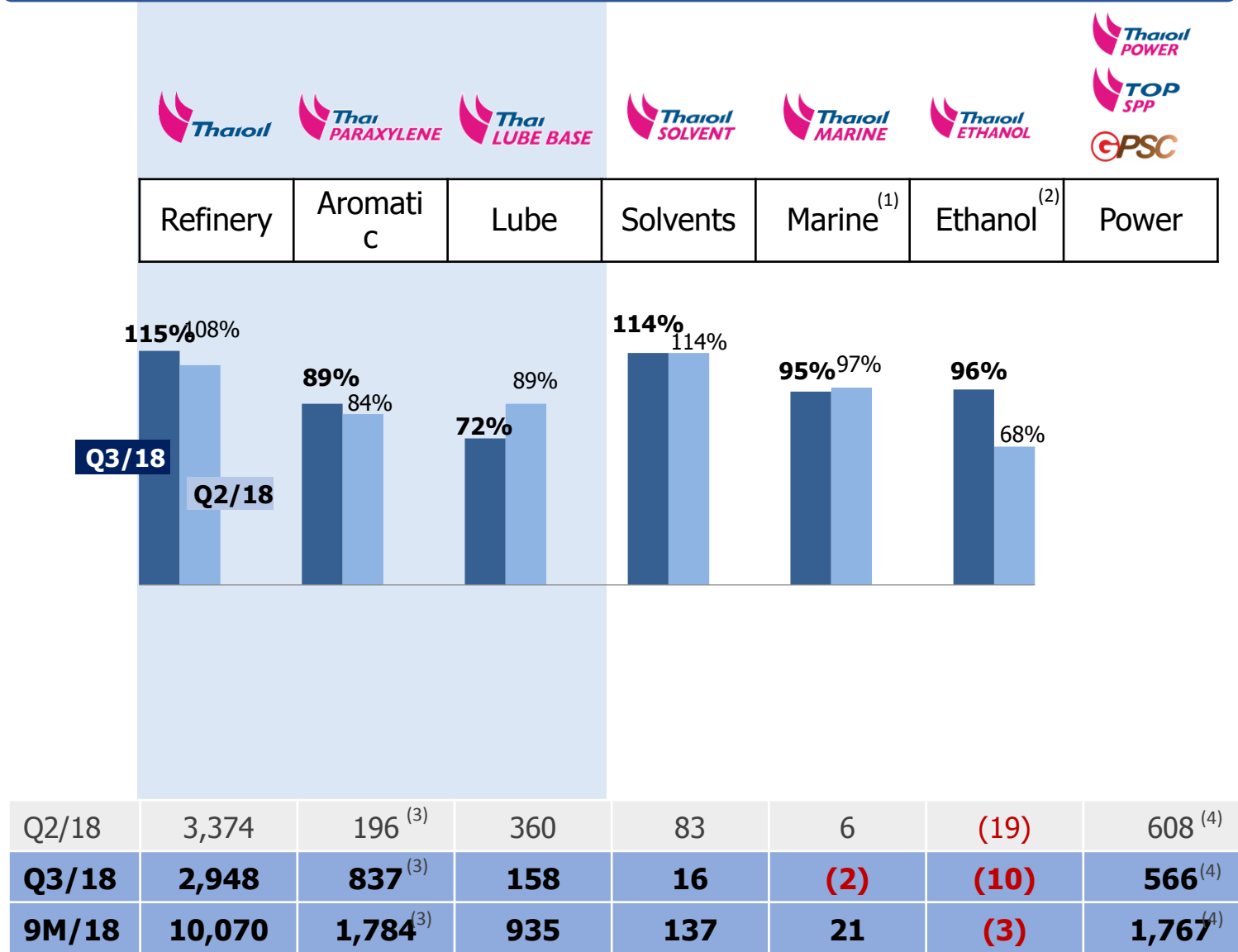


Group's Cash Cost



Q3/18: Performance Breakdown by Business Unit

Utilization/Production (%) & Net Profit (million THB)



- ### Key Points
- Refinery:** record high run rate to capture strong demand in domestic and Indochina market
 - Aromatic/LAB:** higher contribution mainly from robust PX spread due to supply tightness
 - Lube:** lower contribution pressured by soften lube spread due to lower demand during rainy season and more supplies after resumption from maintenance
 - Power:** lower contribution mainly from lower profit sharing from GPSC due to higher feedstock cost
 - Solvents:** lower contribution due to lower sale gross margins pressured by high competitive market
 - Marine:** lower contribution due to lower utilization rate and TM vessel dry dock
 - Ethanol:** higher utilization after resumption from schedule maintenance

(1) U-rate of 4 Oil & Chemical Tankers (total capacity: 20,100 DWT)

(2) U-rate of TET Q2/18 includes SAPTHIP 73% and UBE 65%, Q3/18 includes SAPTHIP 91% and UBE 98%, 9M/18 includes SAPTHIP 84% and UBE 91%

(3) Includes 75% of LAB net profit Q2/18 = (161) MB, Q3/18 = 18 MB and 9M/18 = (28) MB

(4) 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%)

Q3/18 TOP Group Consolidated P&L

(Unit : million THB)

	<u>Q3/18</u>	<u>Q2/18</u>	<u>QoQ</u>	<u>Q3/17</u>	<u>YoY</u>	<u>9M/18</u>	<u>9M/17</u>	<u>YoY</u>
Sales Revenue	101,261	96,710	4,551 (A)	80,296	20,965	289,589	247,945	41,644
Hedging Gain / (Loss)	(140)	70	(210)	(20)	(120)	32	(70)	102
EBITDA	7,124	9,337	(2,213) (B)	10,983	(3,859)	23,820	26,115	(2,295)
EBITDA excl. Stock G/(L) & Reversal of NRV/(NRV)	5,955	4,882	1,073 (C)	8,572	(2,617)	17,924	26,177	(8,253)
Financial Charges	(844)	(839)	(5)	(812)	(32)	(2,433)	(2,488)	55
Financial costs from repurchase of debentures	-	(431)	431 (D)	-	-	(431)	-	431
FX G/(L) & CCS	548	(1,159)	1,707 (E)	705	(157)	860	2,505	(1,645)
(Tax Expense)/reversal of income tax	(1,008)	(1,081)	73	(1,729)	721	(3,298)	(3,819)	521
Net Profit / (Loss)	4,558	4,795	(237)	7,605	(3,047)	14,961	17,929	(2,968)
EPS (THB/Share)	2.23	2.35	(0.12)	3.73	(1.50)	7.33	8.79	(1.46)
Stock G/(L)&Reversal of NRV/(NRV) & Adjusted product stock to cost	1,169	4,455	(3,286)	2,411	(1,242)	5,896	(62)	5,958
Net Profit/ (Loss) excl. Stock G/(L) and Reversal of NRV/(NRV)	3,389	340	3,049	5,194	(1,805)	9,065	17,991	(8,926)
THB/US\$ - average	33.15	31.12	2.03	33.54	(0.39)	32.33	34.42	(2.09)
THB/US\$ - ending	32.58	33.33	(0.75)	33.53	(0.95)	32.58	33.53	(0.95)
Effective Tax Rate (%)	18%	18%	0%	18%	0%	18%	17%	1%

QoQ analysis

A Increase overall product prices following crude oil price

B Mainly from lower stock gain in Q3/18 1.2 \$/bbl compared with stock gain 5.0 \$/bbl in Q2/18

C Mainly from improved Mkt GIM in Q3/18 7.2 \$/bbl from 5.9 \$/bbl in Q2/18

D One-time expense on liability management and accounting loss from discounted bond buy back in Q2/18

E Mainly from unrealized gain on USD debt as THB appreciated

9M/18 TOP Group Consolidated Cash Flow

(Unit: Million THB)

Operating Cash Flow		
	9M/18	9M/17
Operating Cash Flow	7,213	22,349
Net income & non-cash adj.	25,478	27,487
Change in working capital	(18,265)	(5,138)

(Unit: Million THB)

Investments		
	9M/18	9M/17
Investments	3,798	(17,267)
Dividend income	768	740
ST investments	4,257	(12,716)
Available for sale	2,287	(2,239)
CAPEX (PP&E) & other	(3,514) ¹⁾	(3,052)

1)TOP 3,103MB, TSV 200MB, TOPSP99MB

Financing		
	9M/18	9M/17
Financing	(6,349)	(18,613)
Loans proceeding	53,503 ²⁾	486
Loans repayment	(45,779) ³⁾	(6,455)
Interest	(3,067)	(3,189)
Dividend	(11,006)	(9,455)

2) TOP 18,990 MB TTC 18,915 MB
TOPSP 8,415 MB, LABIX 4,535 MB

3) TOP 39,067 MB (loan18,990 MB ,
bond 20,076 MB) LABIX 5,170 MB

Free Cash Flow	11,012	5,082
----------------	--------	-------

	Beginning		Change		Effect of FCD		Ending
cash	15,623	+	4,663 ↑	+	473	=	20,759
S/T investment	52,318		(4,001) ⁴⁾ ↓				48,317
Available for sale	3,103		(2,243) ⁵⁾ ↓				860
	71,045						69,936 ⁶⁾

non-cash transactions:

4) adj. FX gain from fixed deposit -437MB, other adjustment 181MB

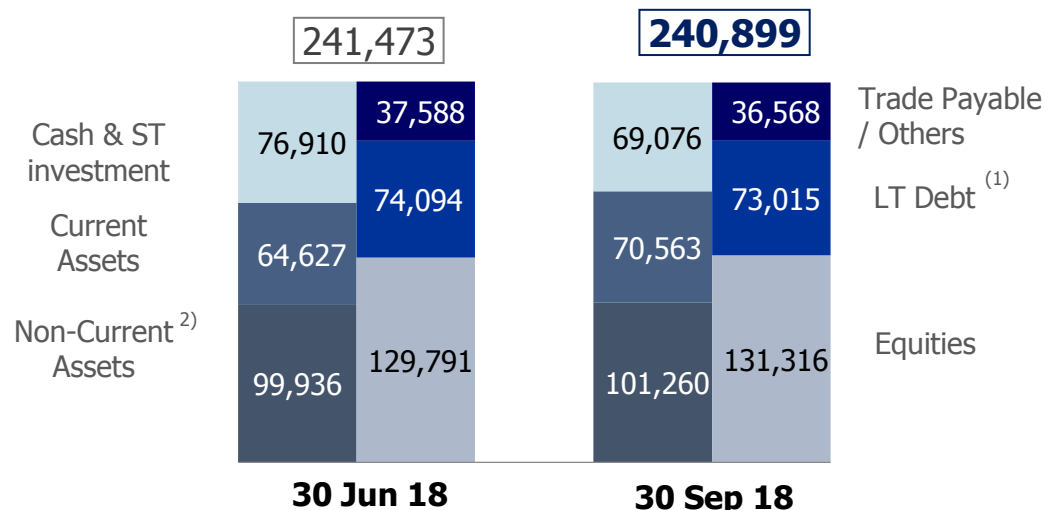
5) MTM EPIF -54MB, AP(private fund) as at 31Dec17 5MB

6) FCD = 22,662MB (703MUSD)

Q3/18 TOP Group Strong Financial Position & Financial Ratios

Statements of Financial Position

(Unit: million THB)



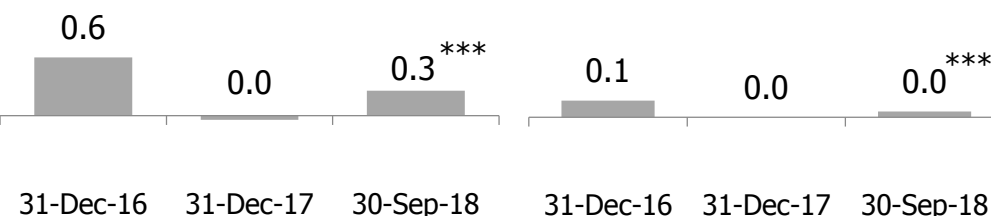
ROE	19.0 %	16.8 %*
ROIC	20.6 %	17.6 %*

(1) Including current portion of Long-Term Debt

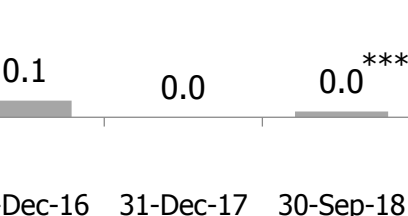
(2) Including available for sale 30 Jun 18 = 2,170 MB, 30 Sep 18 = 860 MB

Financial Ratios

Net Debt / adj. EBITDA**



Net Debt / Equity



* Based on actual performance in the past 12 months

** Annualized EBITDA (excl stock gain/loss & Reversal of NRV/(NRV))

*** As of 30 Sep 18 Net debt 6,249 MB or 192 M\$

Consolidated Long-Term Debt as at 30 Sep 18

Total IBD

75,325 million THB
(US\$ 2,312 million
equivalence)

Net Debt

6,249 million THB
(US\$ 192 million
equivalence)

As at 28 Sep 18 (32.58 THB/US\$)

	Value (Million)	Portion
US\$ Bond & US\$ Loan	USD 1,096	49%
THB Bond	THB 23,500	32%
THB Loan	THB 13,806	19%

Interest Rate	Portion
Float	12%
Fixed	88%
TOP avg.debt life	10.2 Yrs

Cost of Debt	
TOP Group (Net***)	2.85% ⁽³⁾
TOP Group (Gross)	4.54%

(3) Due to yield enhancement

MOODY'S

Baa1
Stable Outlook

STANDARD
& POOR'S

BBB
Stable Outlook

FitchRatings

AA- (tha)
Stable Outlook

Strategic Investment Plan Approved by Board of Directors

CAPEX Plan (Unit US\$ million)

Project	Total	Planned capital investment				
		2018	2019	2020	2021	2022
Reliability, Efficiency and Flexibility Improvement		27	35			
Infrastructure Improvement						
- Lorry Expansion		1				
- Jetty 7&8 / Improvement		44	83			
- Office Relocation & New Crude Tank		76	35	1		
- Site office preparation for fire water & fire water improvement		23	21			
Other Investments (i.e. solvent distribution in North Vietnam, benzene derivatives-LAB license fee)		59	19	17		
Total Ongoing CAPEX	441	230	193	18		
CFP project	4,719		1,180	1887	944	708
Total CAPEX (including CFP)	5,160	230	1,373	1,905	944	708

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



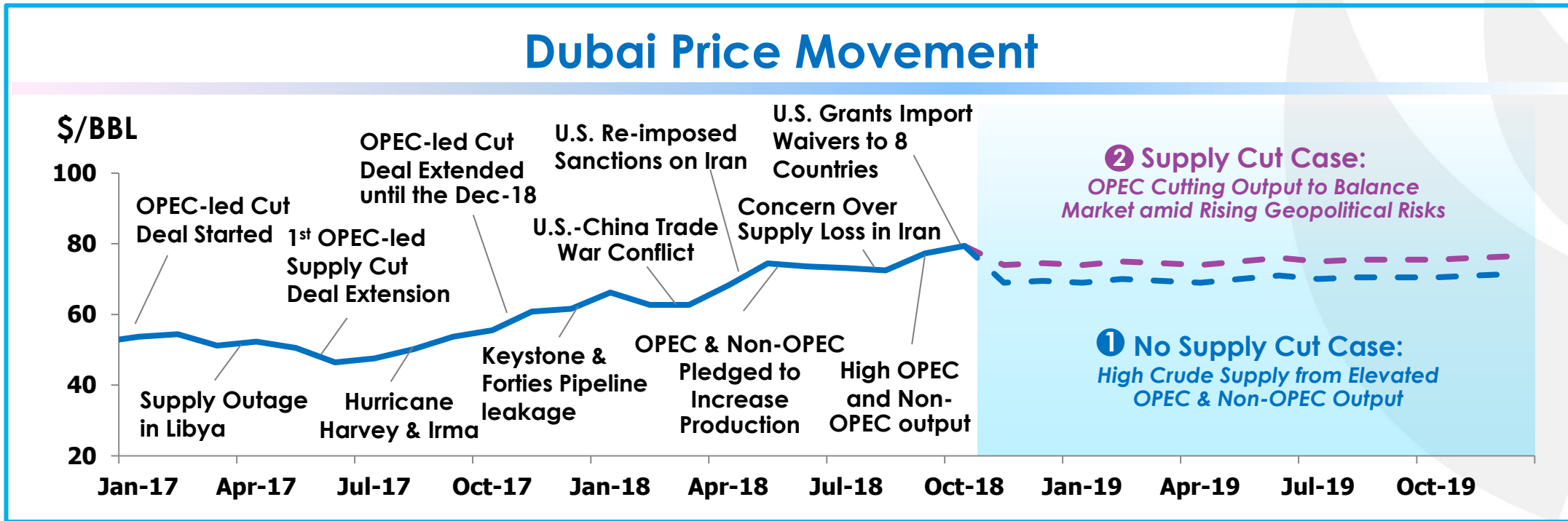
2019 MARKET OUTLOOK

- *Crude Oil*
- *Petroleum Products*
- *Aromatics*
- *Base Oil & Bitumen*
- *Linear Alkyl Benzene (LAB)*

CRUDE OIL



Steady-to-Firm Oil Prices as OPEC Cuts Output amid Supply Risks



*Q4TD'18 (as of 15 Nov): \$74.5/BBL

Key Highlights in 2019

1

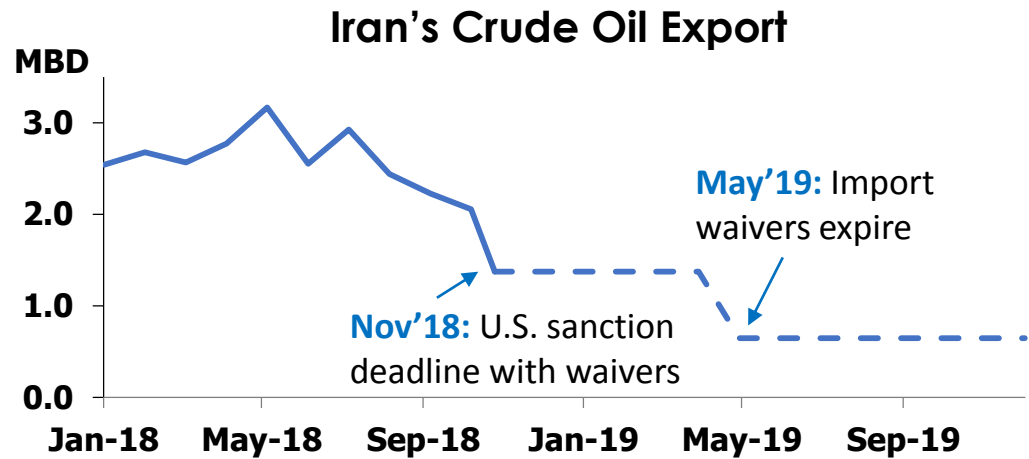
Surplus Market as Supply Growth Overtakes Demand Growth

2

OPEC Balancing Oil Market amid Emerging Supply Risks

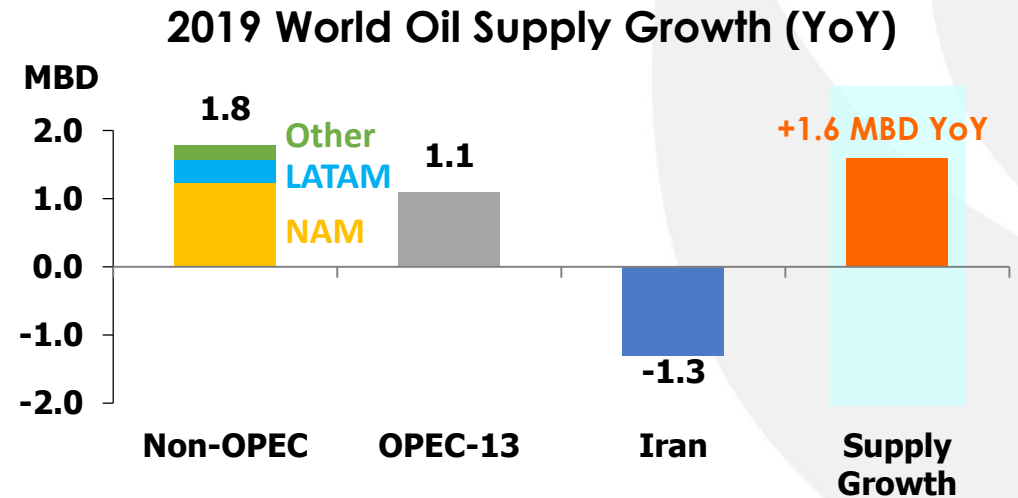
1 Surplus Market as Supply Growth Overtakes Demand Growth

A Falling Iranian Crude Export as Sanction Hits



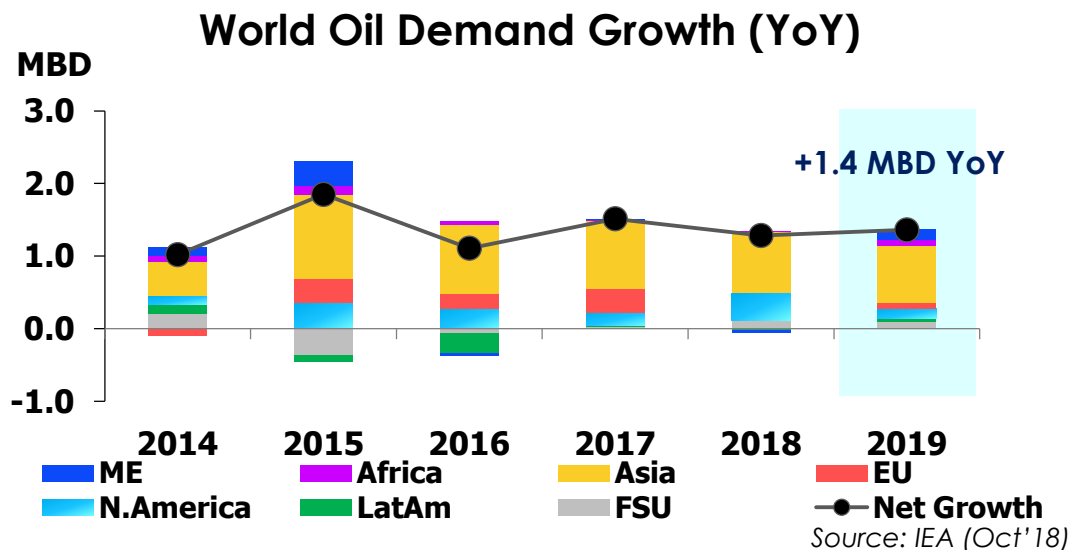
Sources : Reuters (Oct'18), OPEC (Oct'18), TOP's Estimate (Nov'18)

B OPEC and Non-OPEC Outputs Cover Iran Loss

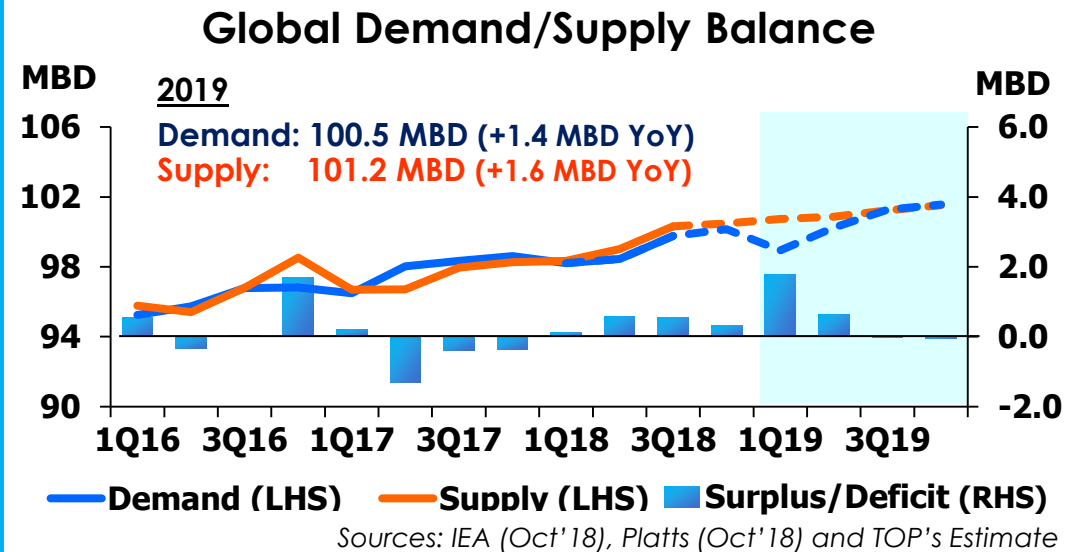


Sources: IEA (Oct'18), Platts (Oct'18), OPEC (Nov'18) and TOP's Estimate

C Stable Demand from Steady Economic Growth

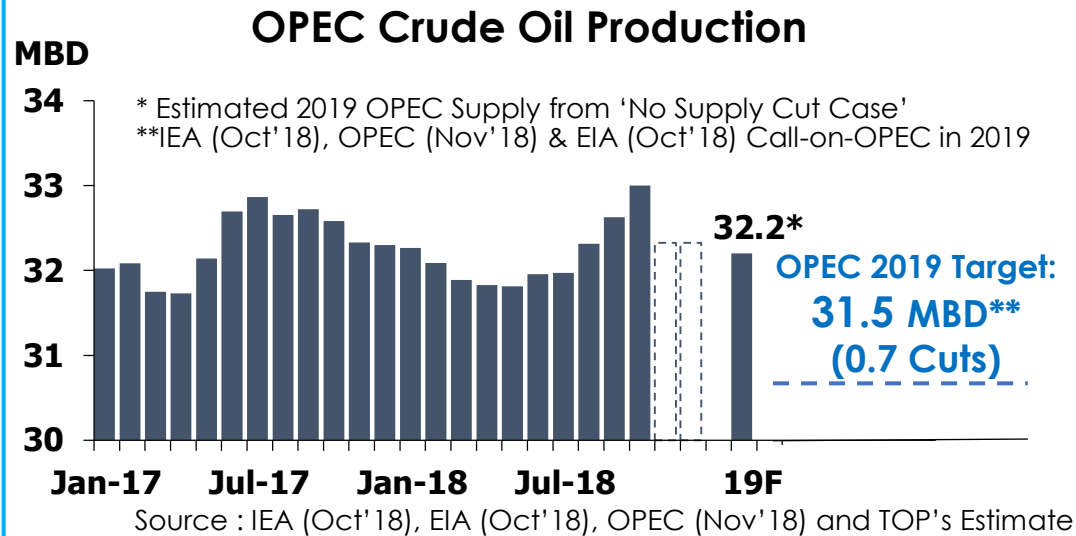


D Surplus Global Crude Oil Market

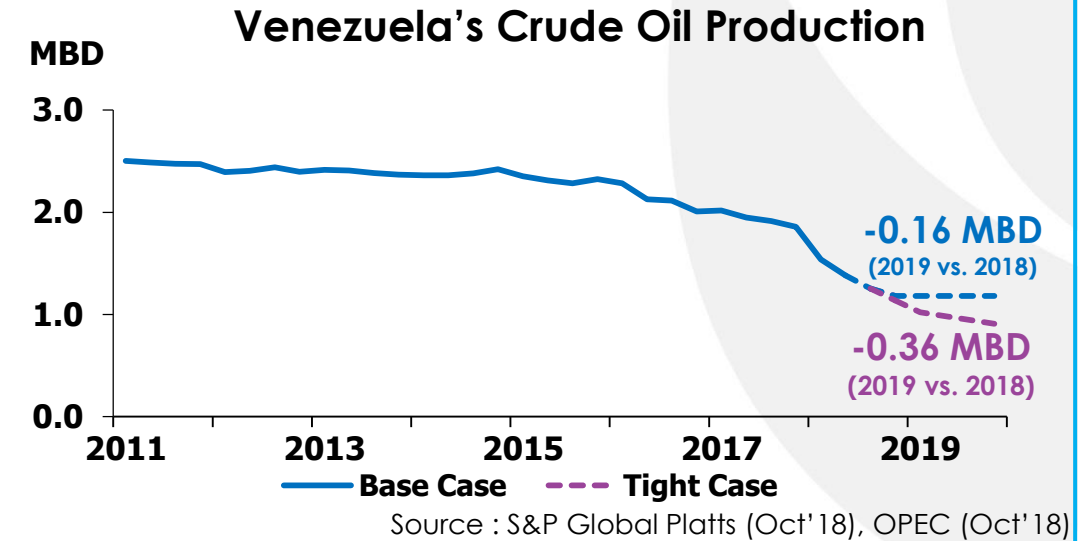


2 OPEC Balancing Oil Market amid Emerging Supply Risks

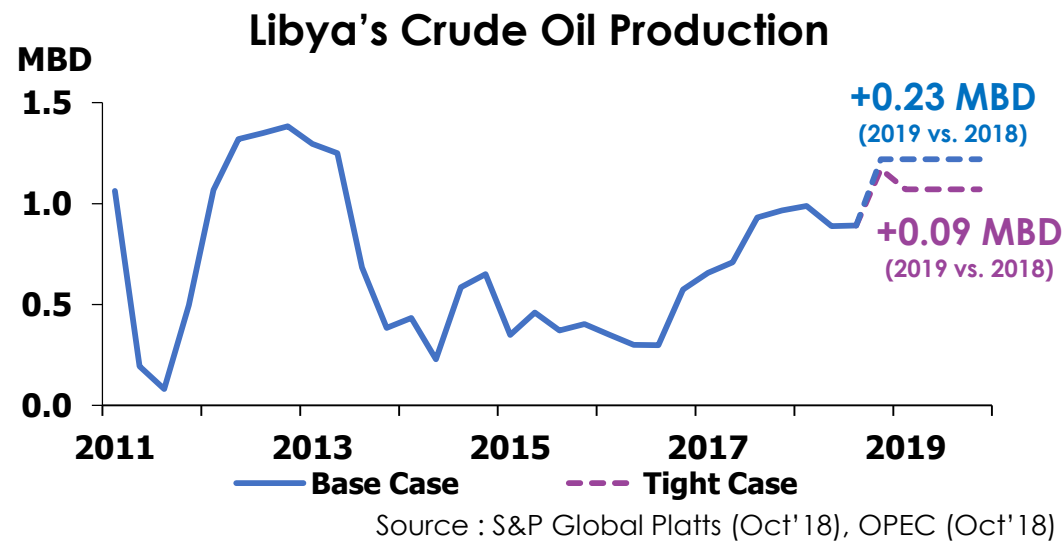
A OPEC to Eliminate Market Surplus



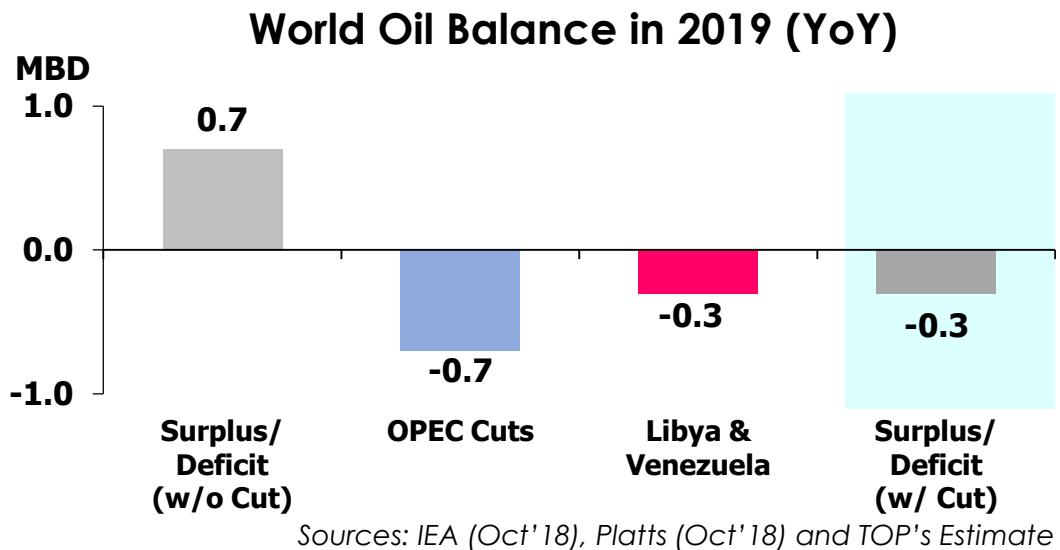
B Venezuela's Economic Crisis Pressures Output



C Libya's Domestic Unrest Poses Supply Risks



D Deficit 2019 Global Oil Balance

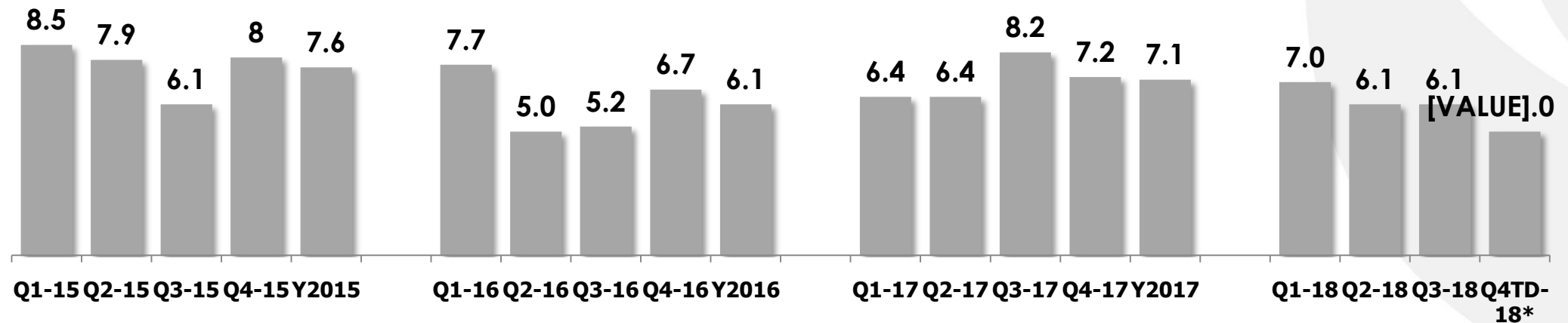


PETROLEUM PRODUCTS



Stable-to-Firm Refining Margins from Strong Middle Distillate Crack and Demand Growth Outpacing Supply Addition

Singapore Cracking GRM (\$/BBL)



(\$/BBL)	Q3-17	Q4-17	2017	Q1-18	Q2-18	Q3-18	Q4TD-18*
ULG95-DB	16.1	14.4	14.9	13.6	12.2	11.5	5.8
JET-DB	13.1	13.3	12.1	16.0	15.3	14.5	16.8
GO-DB	13.8	13.0	12.5	14.7	14.6	14.3	17.0
HSFO-DB	(1.4)	(3.0)	(2.3)	(4.9)	(4.5)	(2.5)	1.8

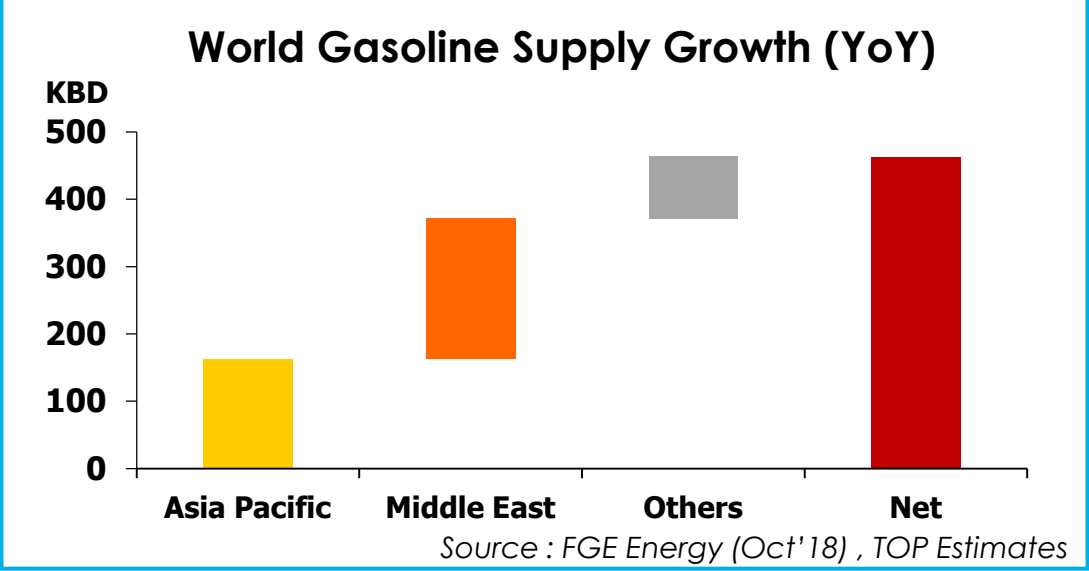
Remarks: *Q4TD-18 as of 15 Nov 18

Key Highlights in 2019

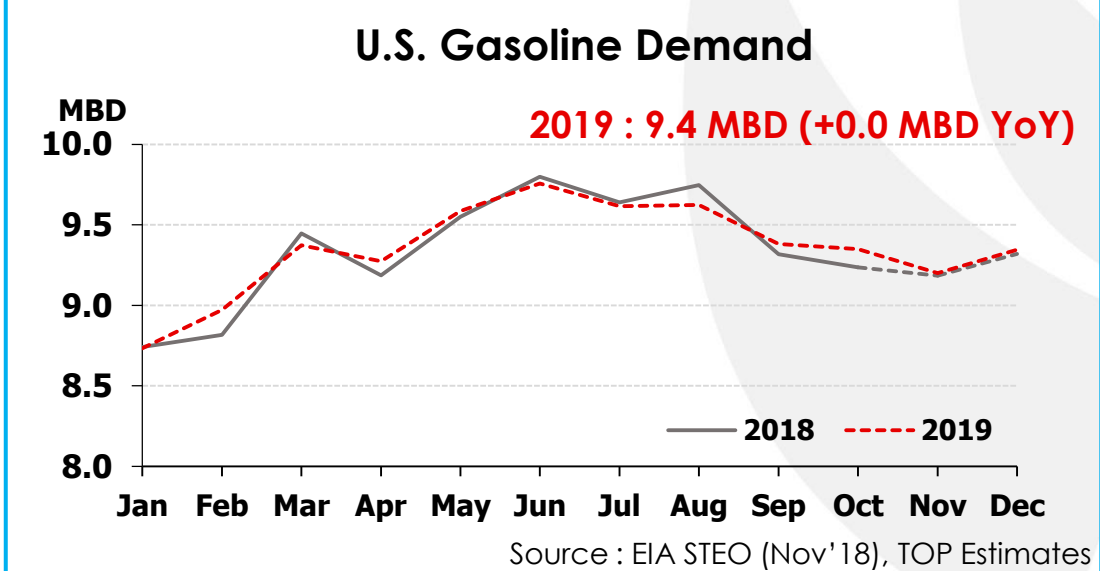
- 1 Soft Gasoline Cracks Pressured by Abundant Supply
- 2 Firm Middle Distillate Cracks from Healthy Demand Growth and Positive Sentiment Ahead of IMO Implementation
- 3 Demand Growth Outpacing Supply Addition

1 Soft Gasoline Cracks Pressured by Abundant Supply

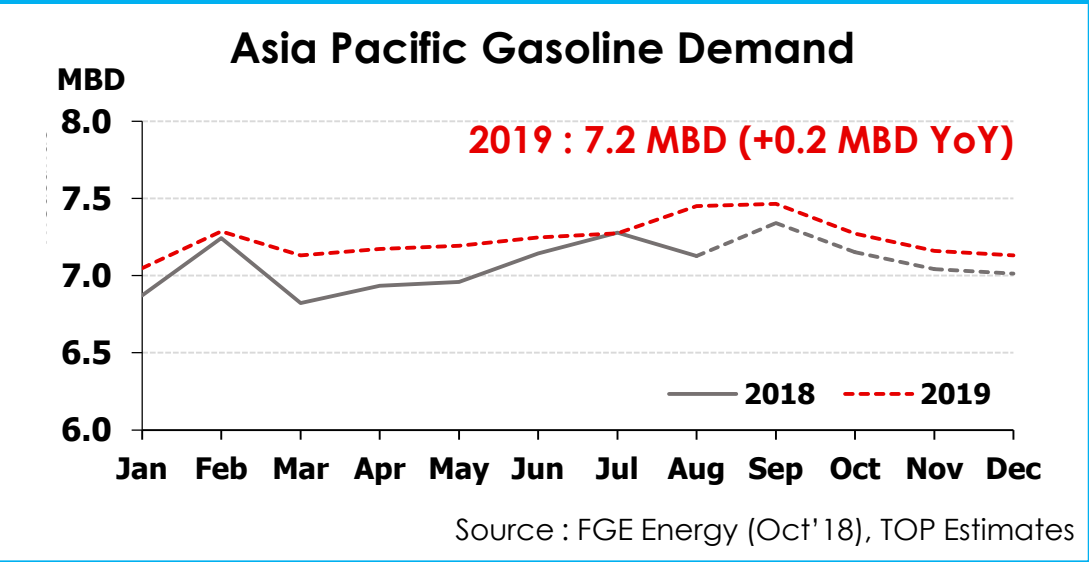
A High Supply Due to New Refineries' Start-up



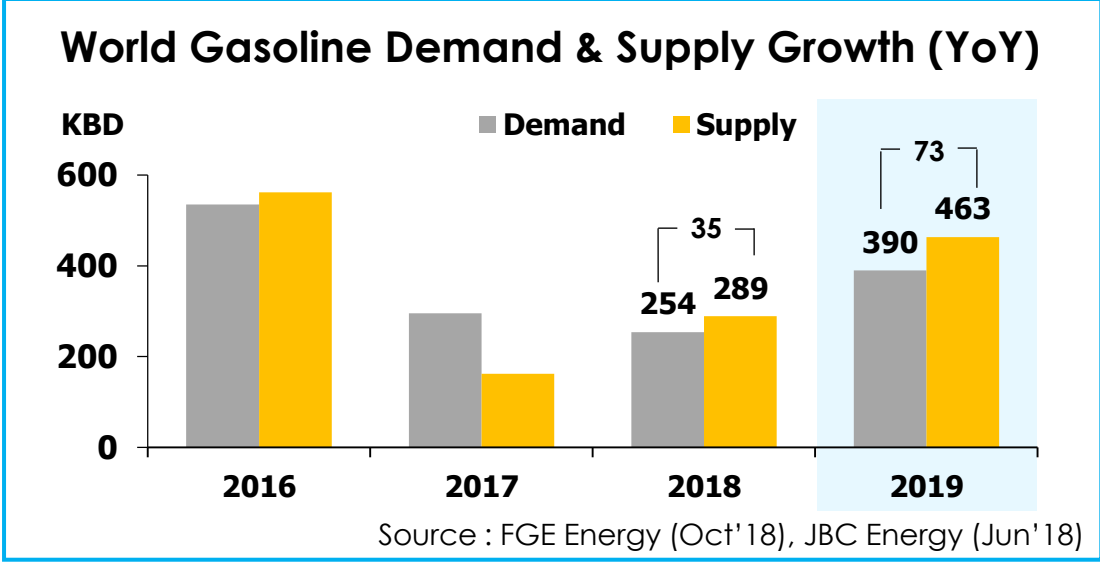
B Flat U.S. Demand Growth from High Retail Price



C Firm Asian Demand from Robust Car Sales



D Supply Growth Outpacing Demand Growth

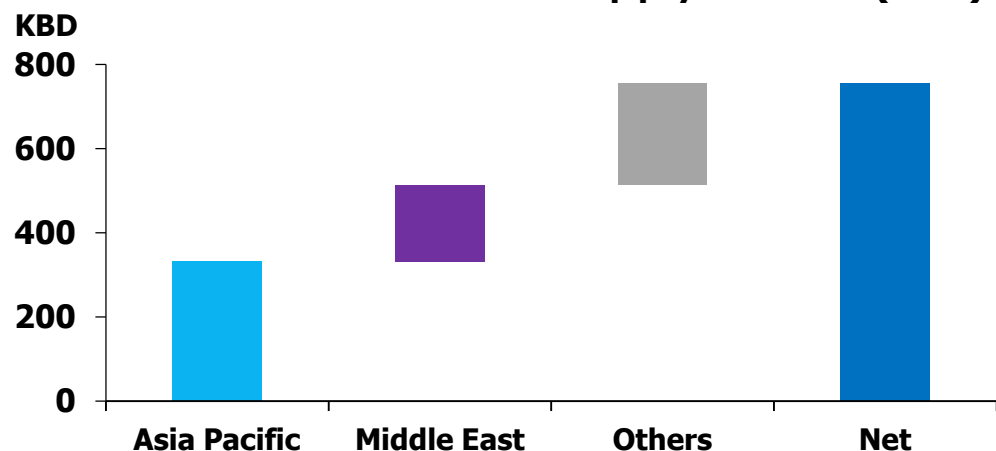


2

Firm Middle Distillate Cracks from Healthy Demand Growth and Positive Sentiment Ahead of IMO Implementation

A High Supply Due to New Refineries' Start-up

World Middle Distillates Supply Growth (YoY)

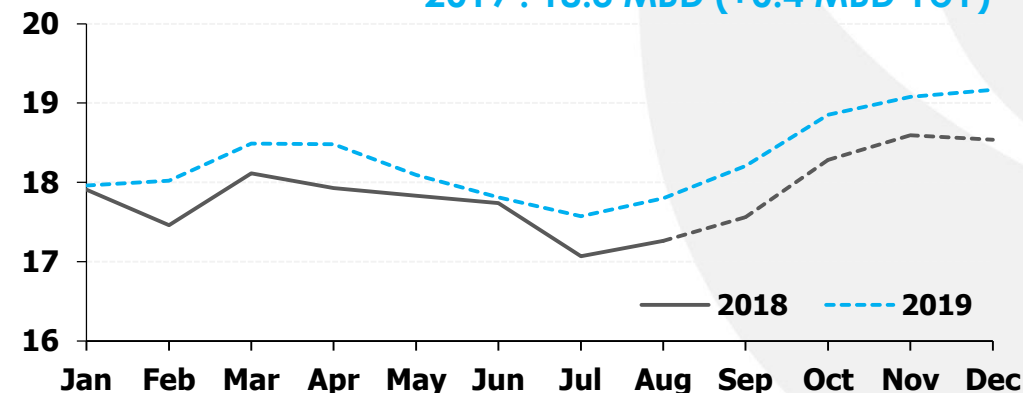


Source : FGE Energy (Oct'18), TOP Estimates

B Higher Demand from Economic Growth

Asia Pacific & US Middle Distillate Demand

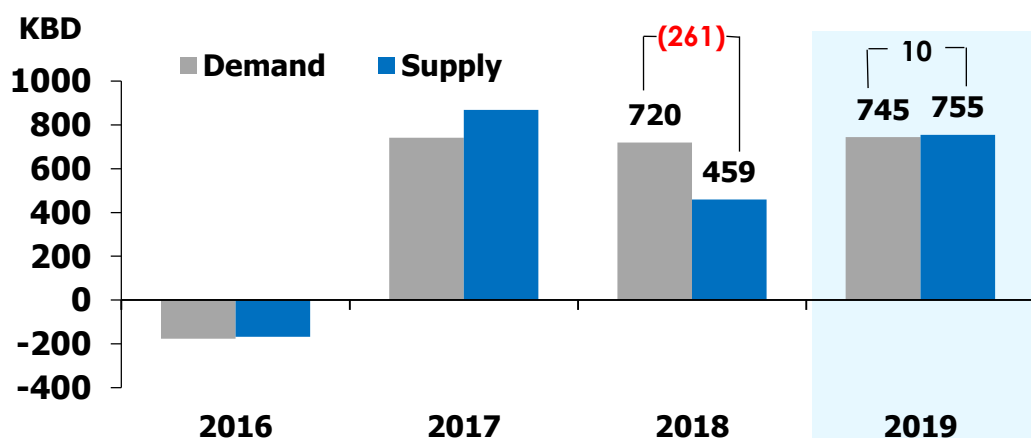
2019 : 18.3 MBD (+0.4 MBD YoY)



Source : FGE Energy (Oct'18), EIA STEO (Oct'18), TOP Estimates

C Demand Growth to be Offset by Supply Growth

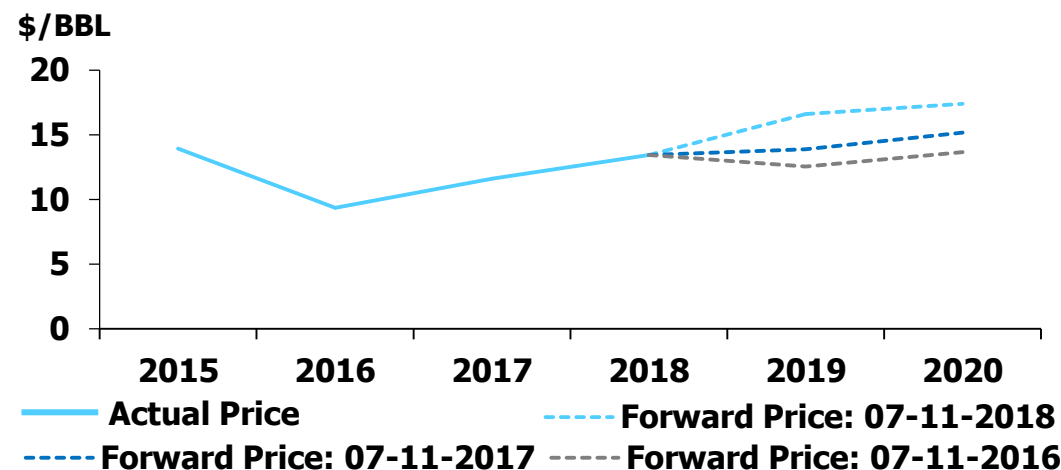
World Middle Distillate Demand & Supply Growth (YoY)



Source : FGE Energy (Oct'18), JBC Energy (Jun'18)

D Positive Sentiment Ahead of IMO Sulfur Cap

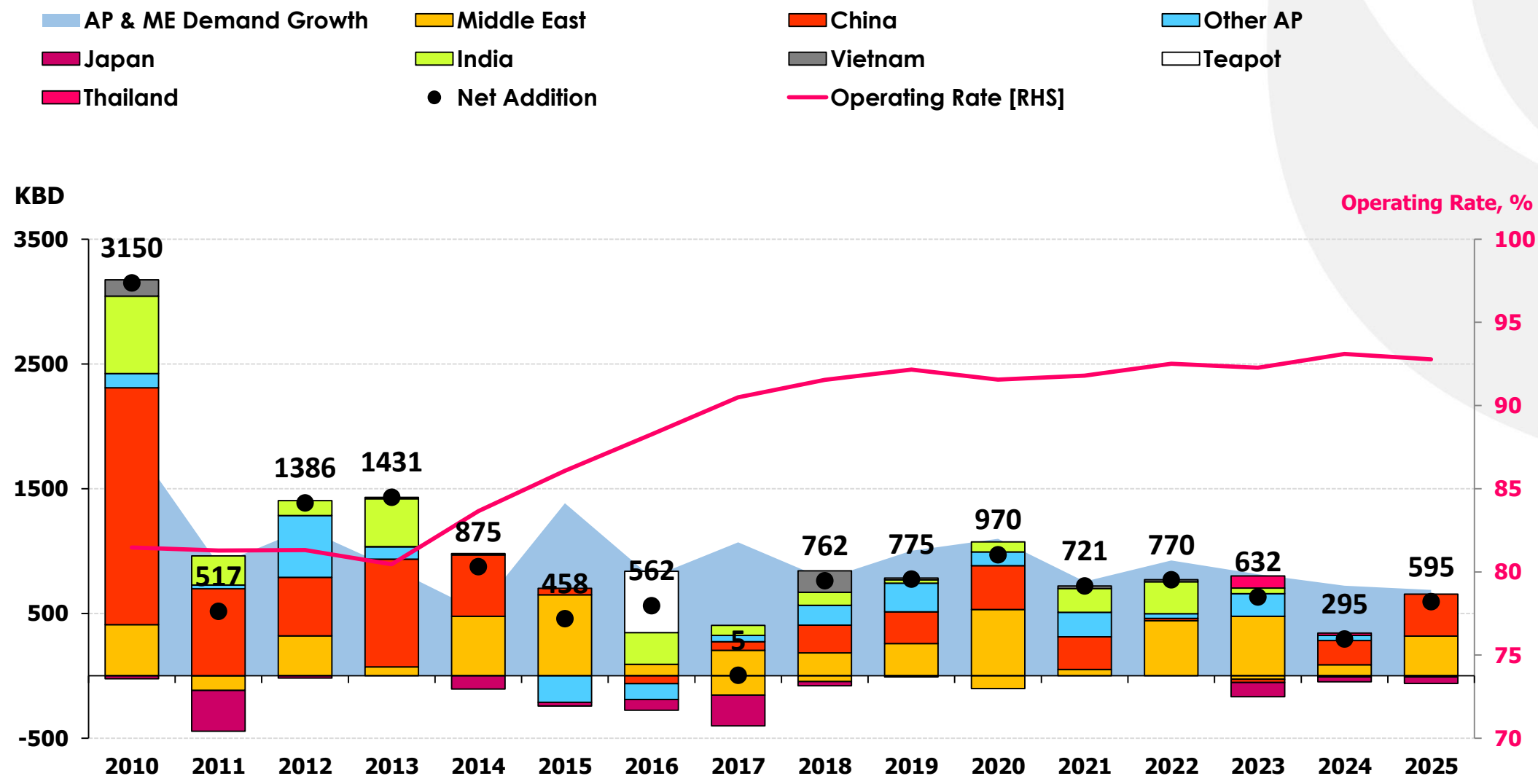
ICE Europe Gas Oil vs Brent Crude Oil Forward Price



Source : Reuters (Nov'18)

3 Demand Growth Outpacing Supply Addition


Asia Pacific and Middle East Effective CDU Addition VS Additional Demand



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

Sources : FACTs Semi Annual Reports, Fall 2018, Reuters (Oct'18) and TOP's estimate

Thailand Oil Demand Growth



Thailand Oil Demand Growth				
Year on Year	Y2016 ^(B)	Y2017 ^(B)	9M/18 ^(B) VS 9M/17	Y2019F VS 2018
Mogas ^(A)	+9.8%	+3.7%	+2.7%	Steady demand growth due to lower oil price
Jet/Kero	+6.8%	+4.4%	+6.2%	Softer demand growth due to limited airport capacity
Diesel ^(A)	+3.1%	+2.9%	+1.0%	Higher demand growth due to firmer transport demand
Total	+5.4%	+3.4%	+2.3%	
GDP	+3.2%	+3.9% ^(C)	+4.3% ^(D)	+4.2% ^(E)

Remarks: (A) Mogas and Diesel includes Ethanol and Biodiesel, respectively
(B) DOEB Statistics
(C) NESDB (2017)
(D) NESDB (Nov'18)
(E) BOT's Estimate (Oct'18)

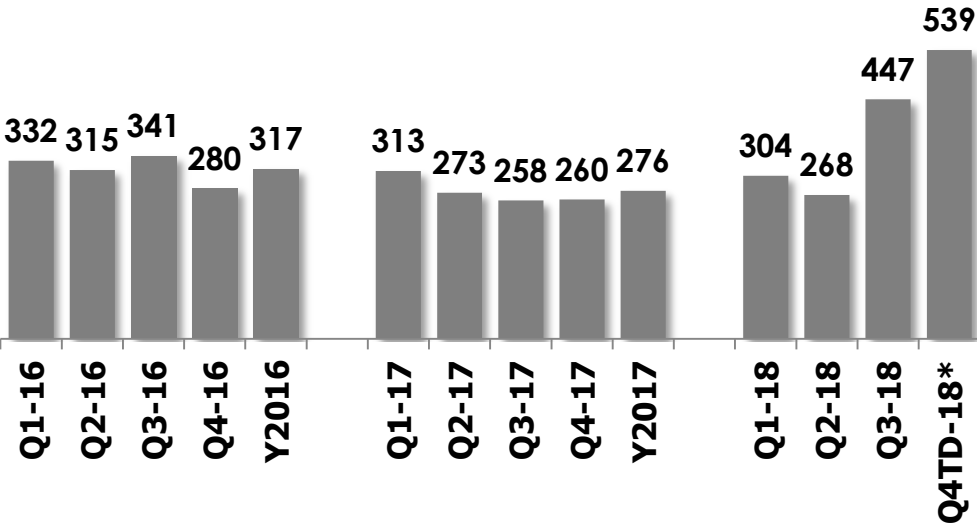
AROMATICS



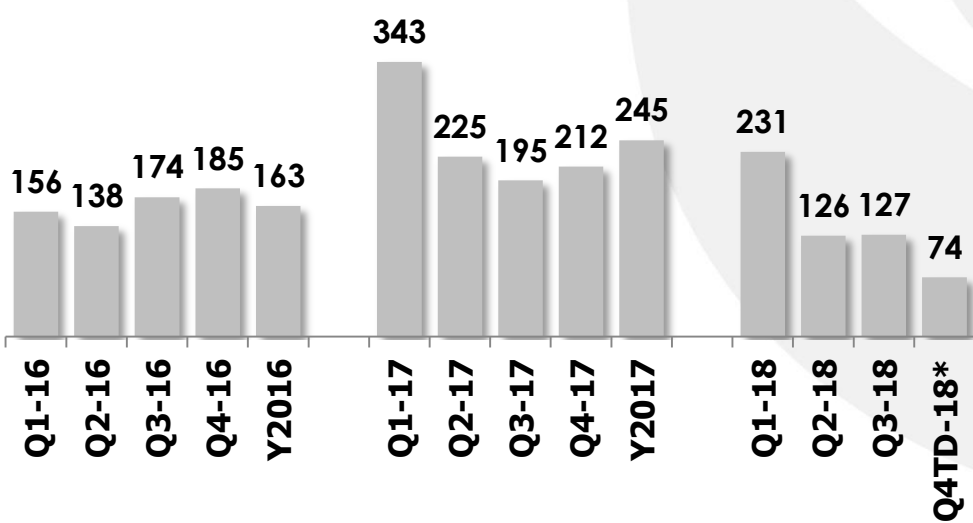
Softer PX and BZ Markets on Concerns of Roll-Over Capacity

Aromatics Market

PX CFR Taiwan-ULG95 (\$/TON)



BZ FOB Korea-ULG95 (\$/TON)



(\$/TON)	Q3-17	Q4-17	2017	Q1-18	Q2-18	Q3-18	Q4TD-18*
PX-ULG95	258	260	276	304	268	447	539
BZ-ULG95	195	212	245	231	126	127	74

Remarks: *Q4TD-18 as of 15 Nov 2018

Key Highlights in 2019

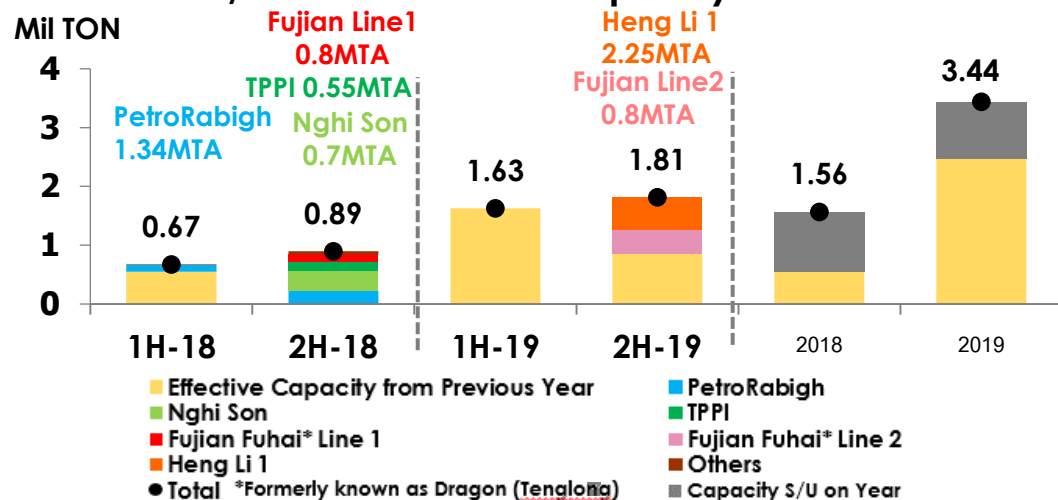
- 1 Pressured PX Market from Roll-Over Capacity amid Slower Demand Growth
- 2 Softer BZ Market on Concerns of Roll-Over Capacity, but still Supported by Chinese Demand

1

Pressured PX Market from Roll-Over Capacity amid Slower Demand Growth

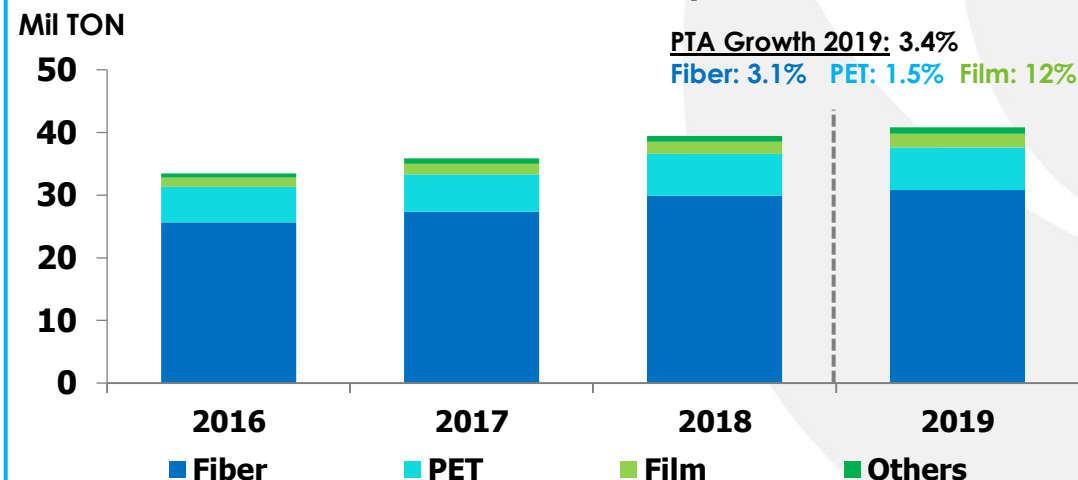
A Roll-Over Capacity to Pressure PX Market in 2019

AP/ME Effective PX Capacity Addition



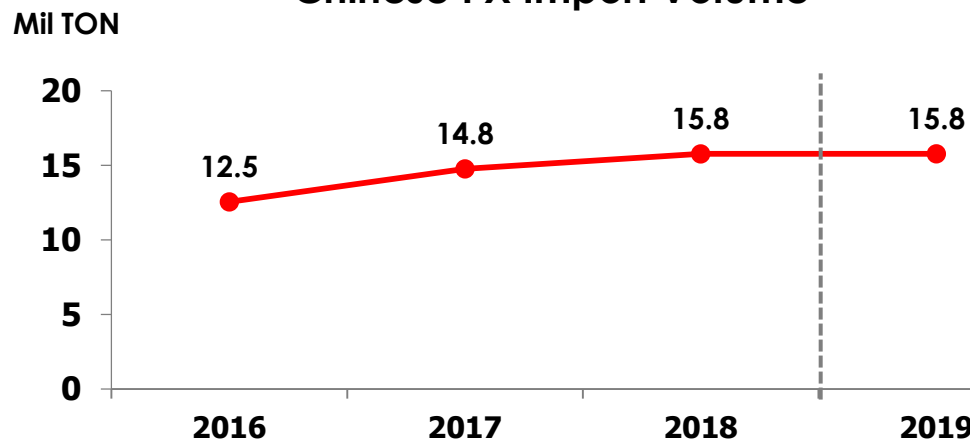
B PTA Demand Growth to Continually Boost PX Market

AP/ME PTA Demand by Sector



C Chinese Import to Support Asian Market

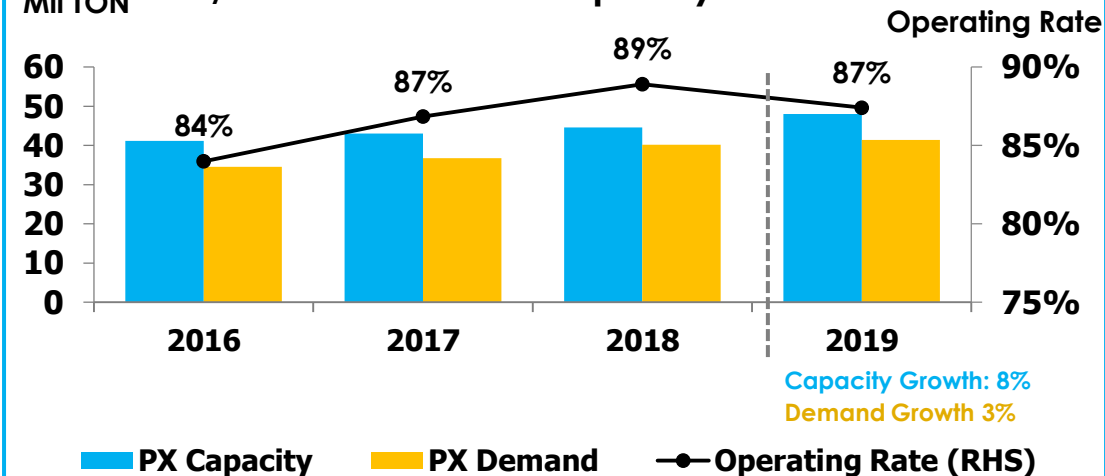
Chinese PX Import Volume



Note: China is the global biggest PX importer

D Lower Opt. Rate from Lower Demand Growth than Cap. Add.

AP/ME PX Effective Capacity vs Demand

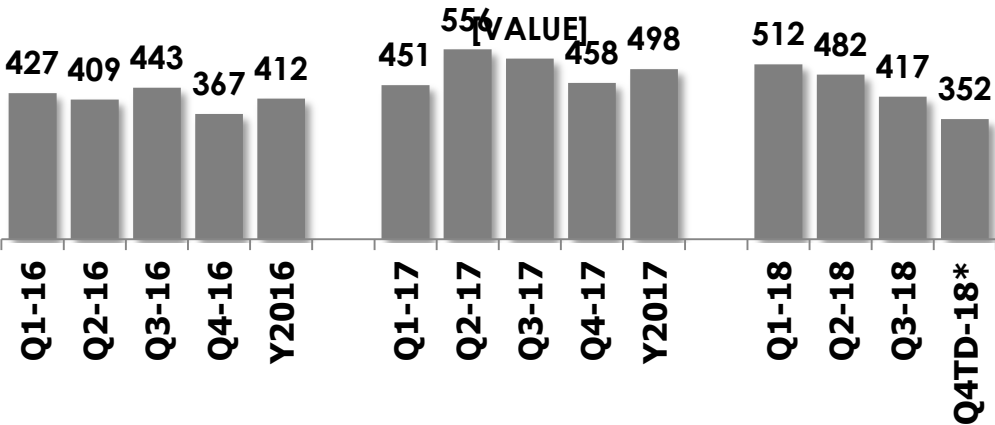


BASE OIL & BITUMEN



Soft Base Oil Market on New Additional Supply

500SN – HSFO (\$/TON)



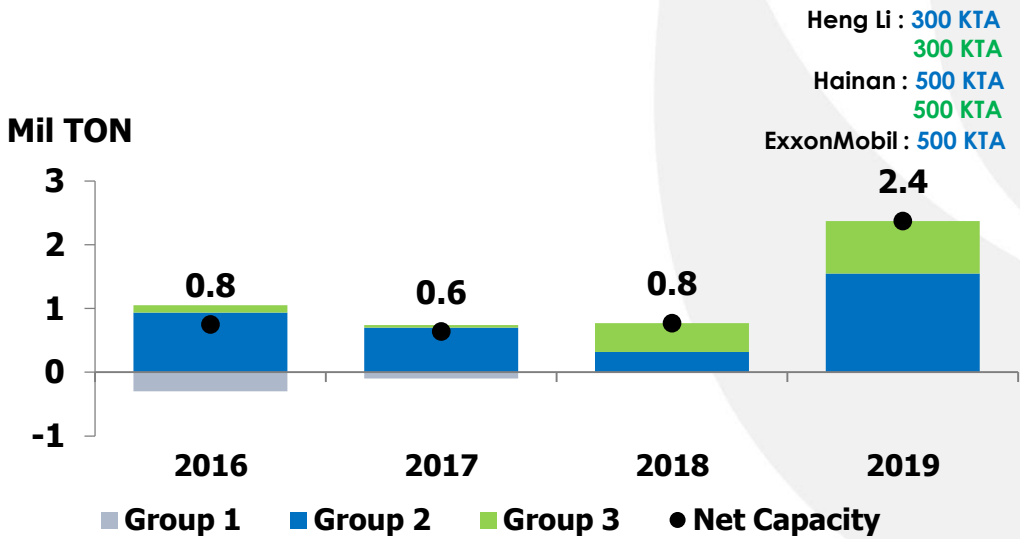
(\$/TON)	Q3-17	Q4-17	2017	Q1-18	Q2-18	Q3-18	Q4TD-18*
500SN-HSFO	528	458	498	512	482	417	352

Remarks: *Q4TD-18 as of 15 Nov 18

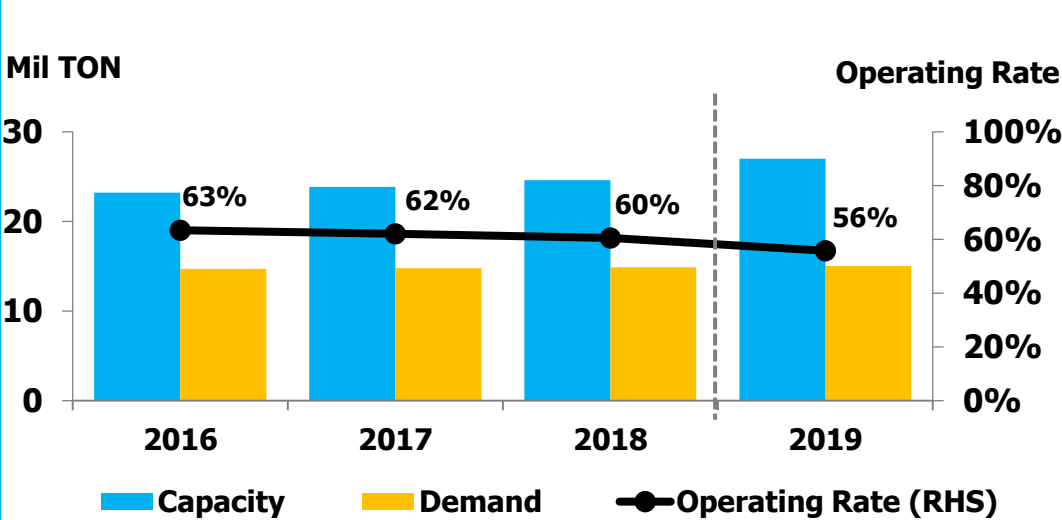
Key Highlights in 2019

- 1 High Additional Capacity Pressure Base Oil Market
- 2 Slightly Rising Base Oil Demand Following Economic Growth

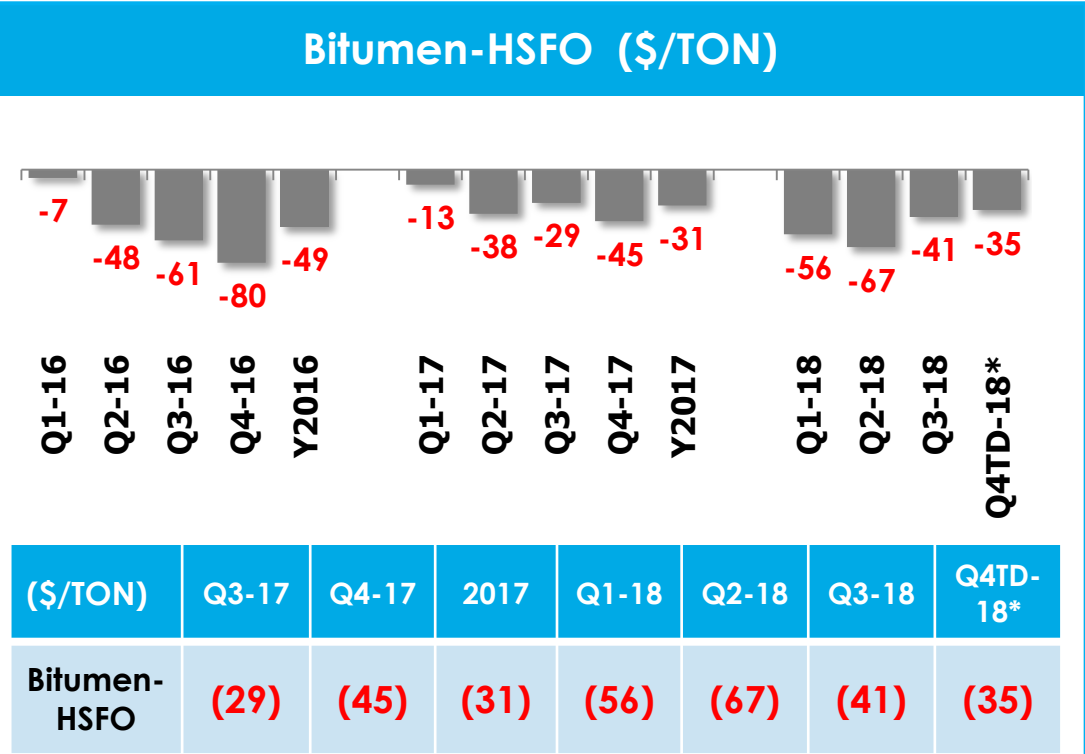
1 AP Base Oil Effective Capacity Addition



2 AP Effective Capacity vs Demand

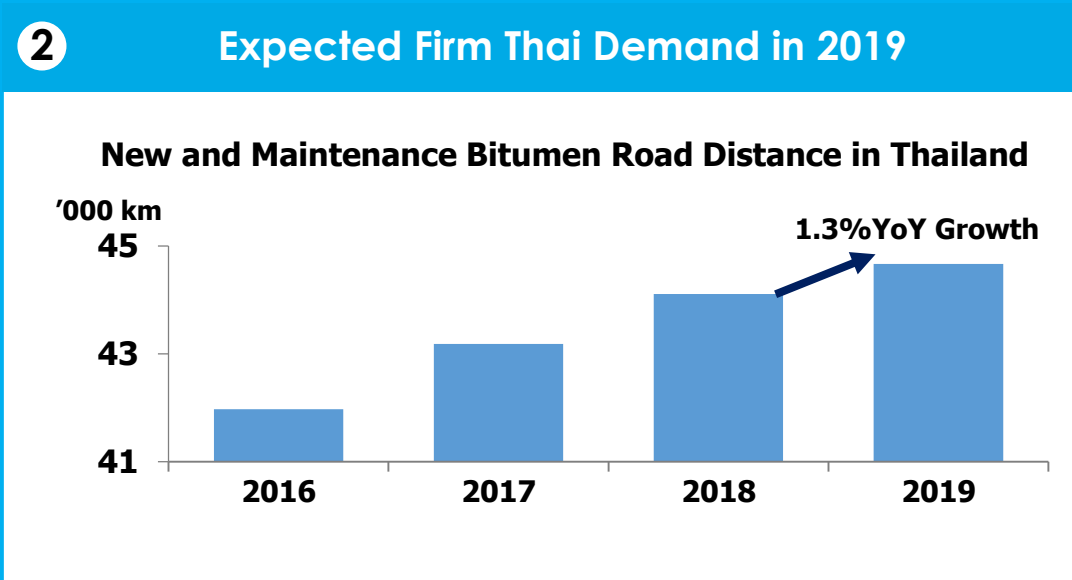
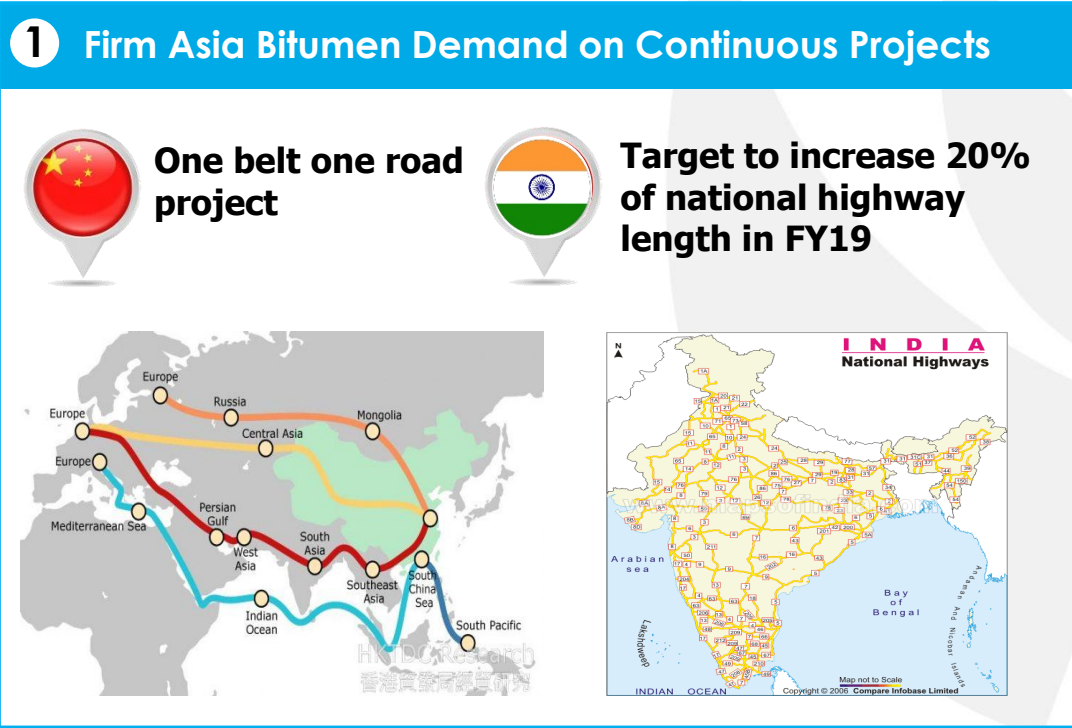


Stable Bitumen Market on Steady Regional Demand Growth



Remarks: *Q4TD-18 as of 15 Nov 18

- ## Key Highlights in 2019
- 1 Firm Chinese and Indian Bitumen Market for Transportation System
 - 2 Firm Thailand Demand for Road Construction
 - 3 Negative Sentiment over Higher Supply Due to IMO Sulphur Cap



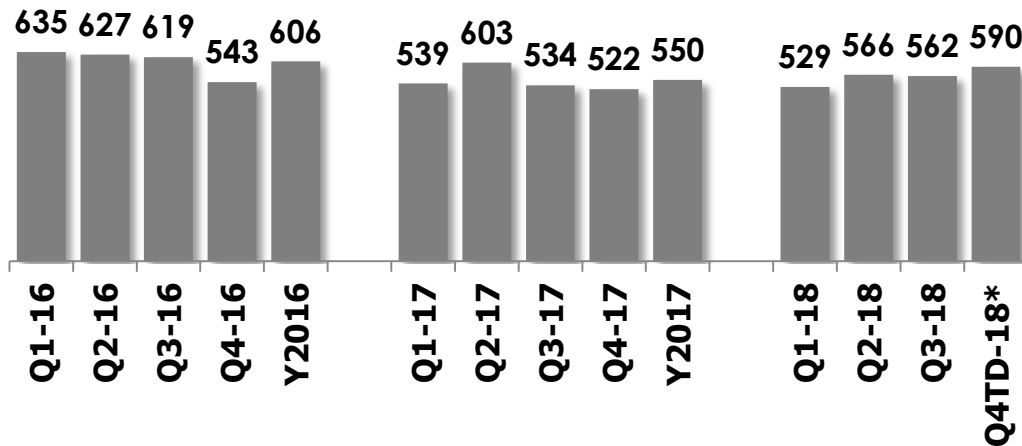
LINEAR ALKYL BENZENE (LAB)



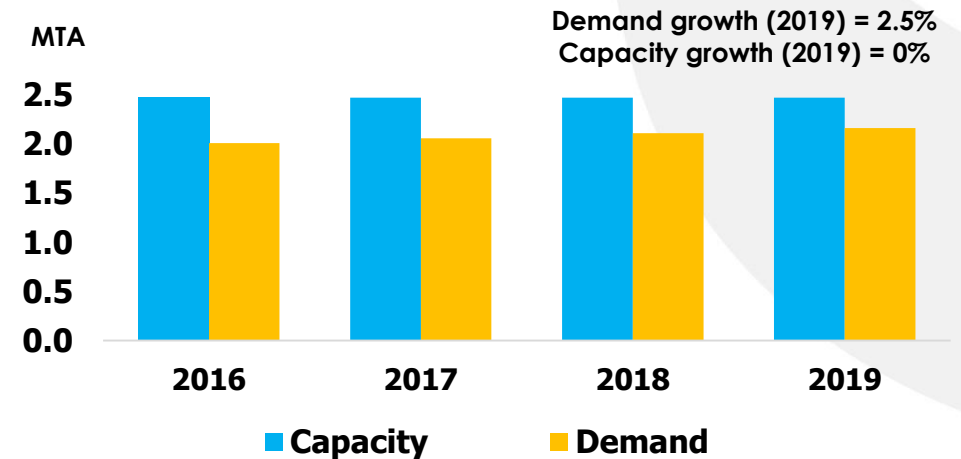
Recovery of LAB Market Supported by Demand Growth and No Additional Capacity

LAB Market

LAB Spread** (\$/TON)



LAB Capacity vs Demand in AP/ME



(\$/TON)	Q3-17	Q4-17	2017	Q1-18	Q2-18	Q3-18	Q4TD-18*
LAB Spread	534	522	550	529	566	562	590

Remarks: *Q4TD-18 as of 15 Nov 18

**Estimated indicator

Key Highlights in 2019

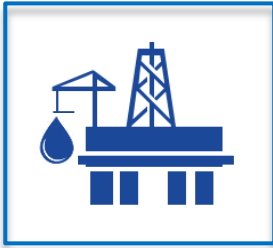
- 1 AP/ME Demand Growth Following Economic Growth and Increasing Population
- 2 No Additional Capacity in AP/ME

CONCLUSION



2019 Market Outlook Conclusion

(vs. 2018)



Crude Oil

Steady-to-Firm Oil Prices as OPEC Cuts Output amid Supply Risks



Refinery

Stable-to-Firm Refining Margins from Strong Middle Distillate Crack and Demand Growth Outpacing Supply Addition



Aromatics

Softer PX and BZ Markets on Concerns of Roll-Over Capacity



Lube Base

**Soft Base Oil Market on New Additional Supply
Stable Bitumen Market on Steady Regional Demand Growth**



LAB

Recovery of LAB Market Supported by Demand Growth and No Additional Capacity

Thank You

Any queries, please contact:



at email: ir@thaioilgroup.com

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

Fax: 662-797-2976

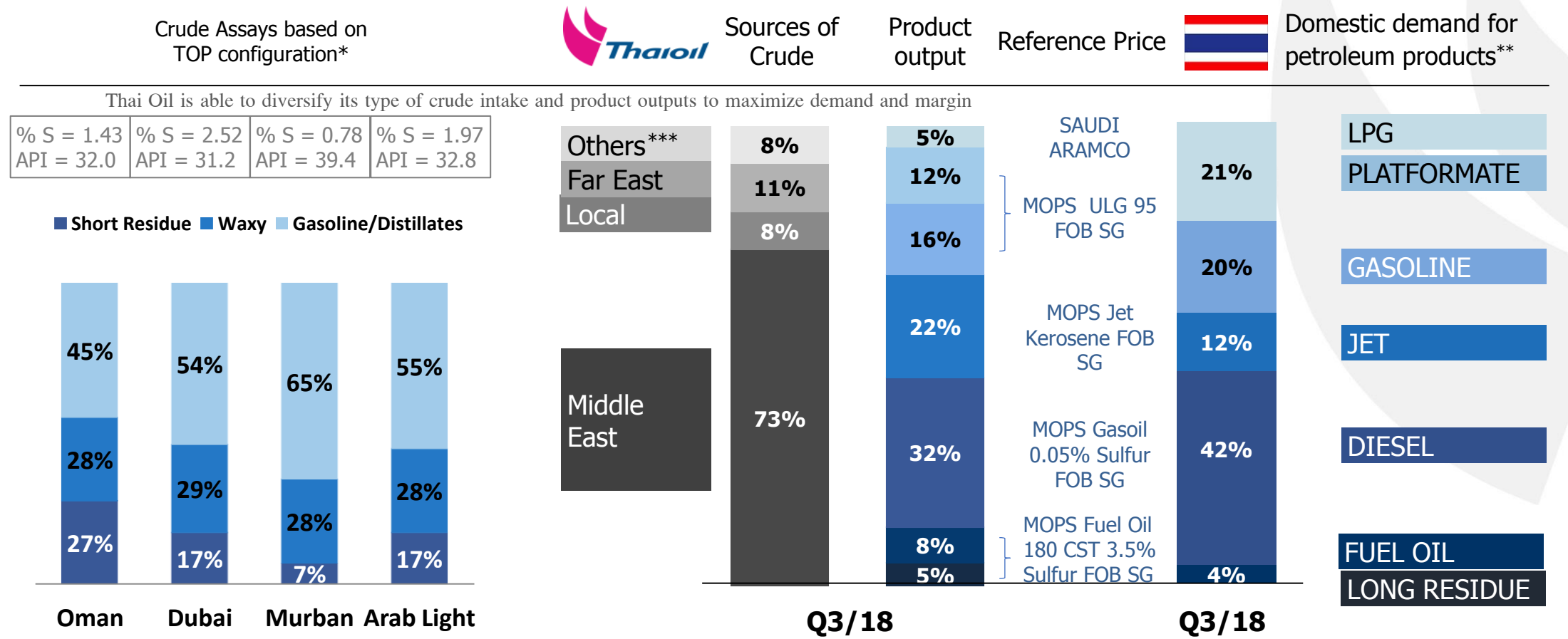




APPENDIX

- Optimized & Flexible Operations...Superior Performance
- 2017 Dividend payment
- CDU Addition VS Additional Demand – AP & ME
- World GRM / Inventories
- Thailand petroleum demand by products

Optimized & Flexible Operations...Superior Performance

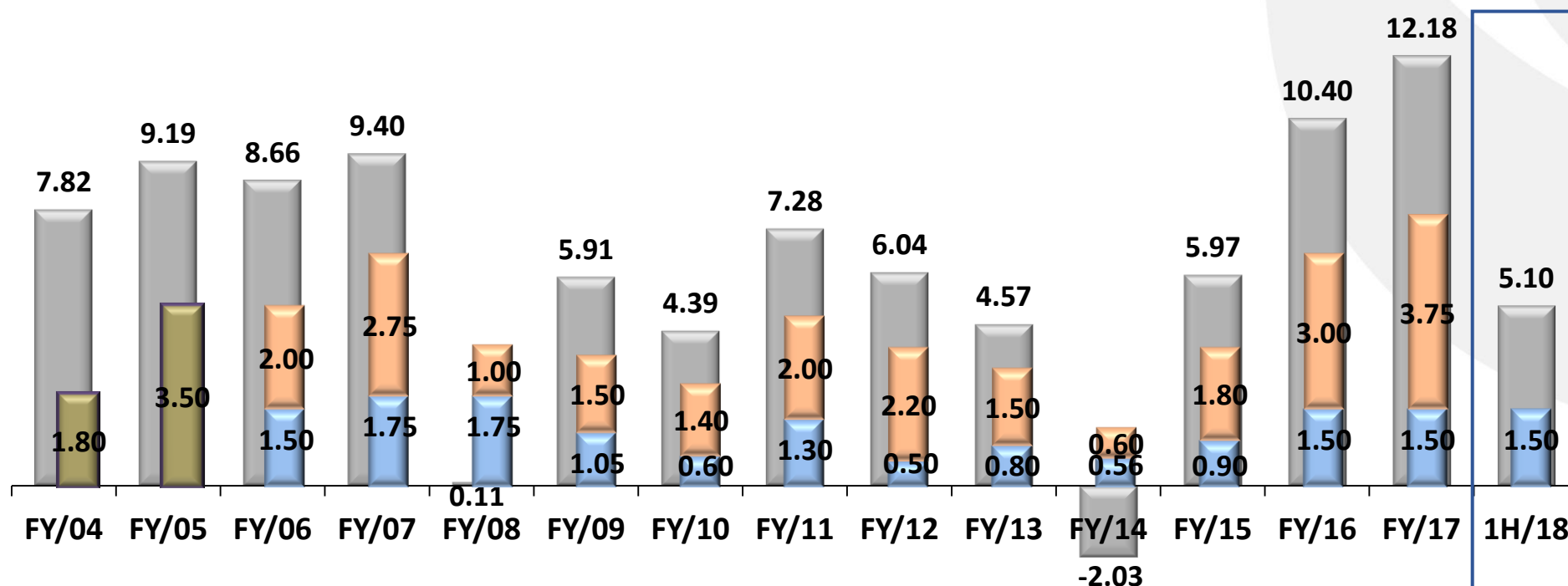


2018 Dividend Payment

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

Unit : THB/Share

 EPS^R
 2H dividend
 1H dividend
  Year Dividend



Annual DPS
(Baht/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	1H/18
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	-

Dividend
Payout

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	1H/18
23%**	38%	40%**	48%	n.a.	43%	45%	45%	45%	50%**	n.a.	45%	43%	43%	29%

Dividend Yield*

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	1H/18
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%	1.6%

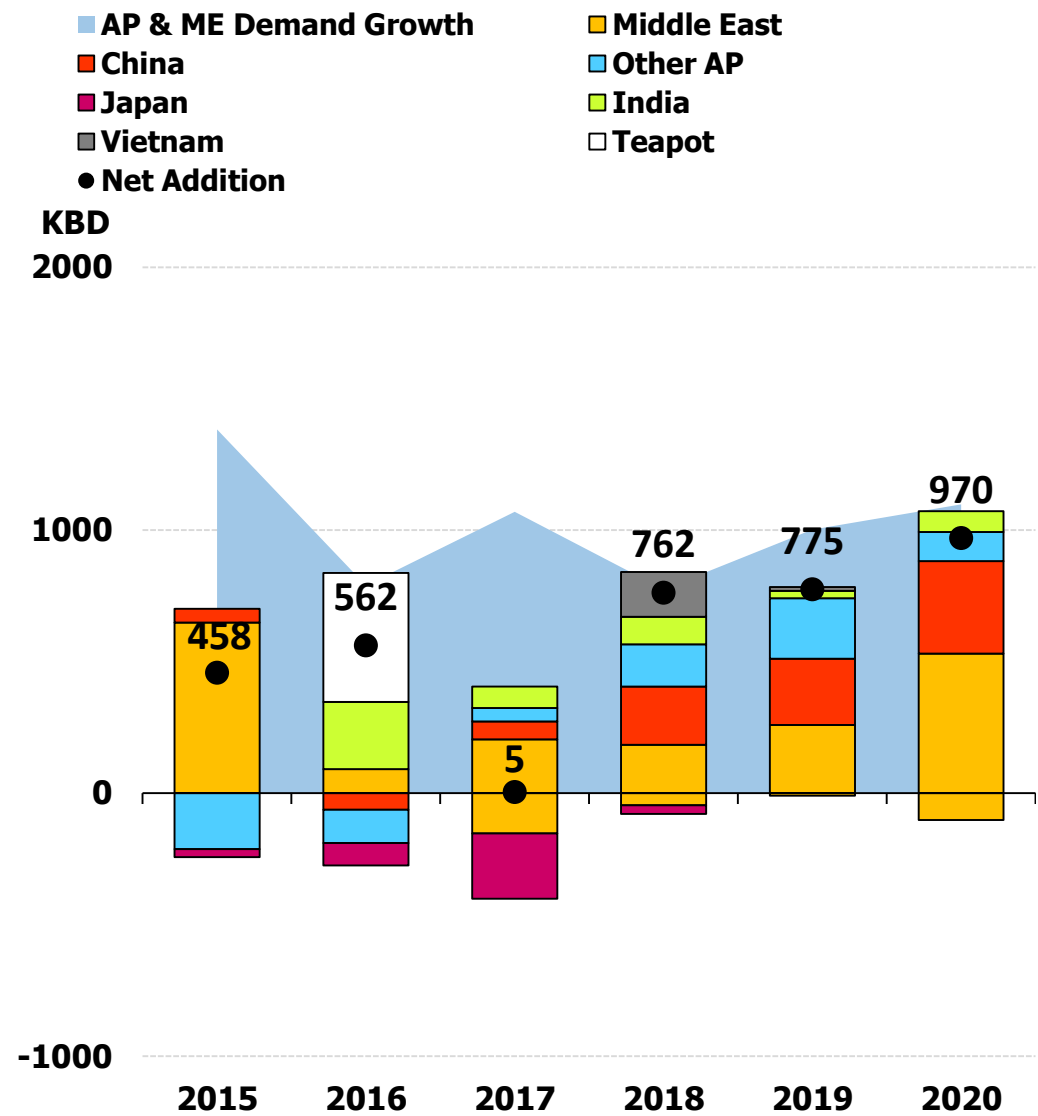
Avg TOP price

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	1H/18
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	94.3

^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%

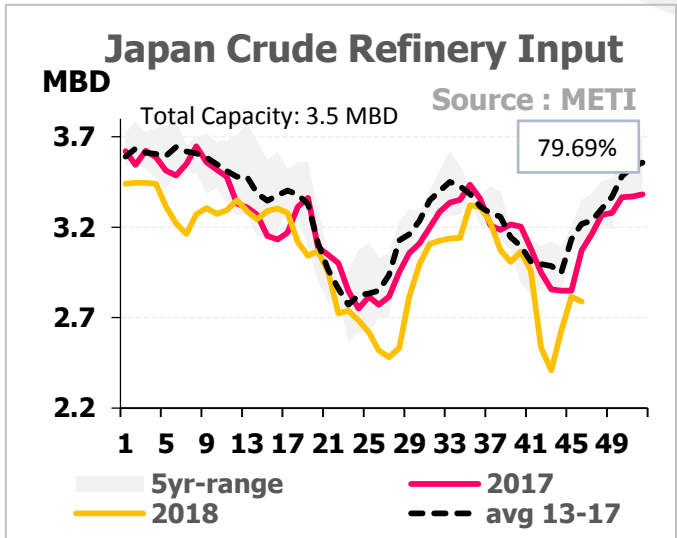
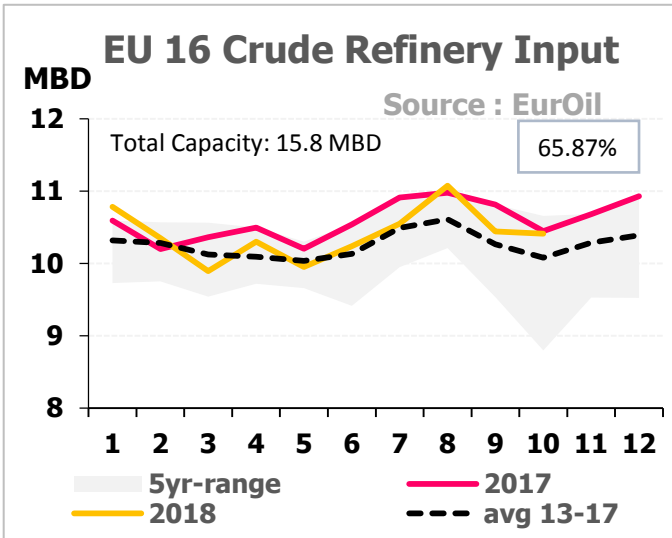
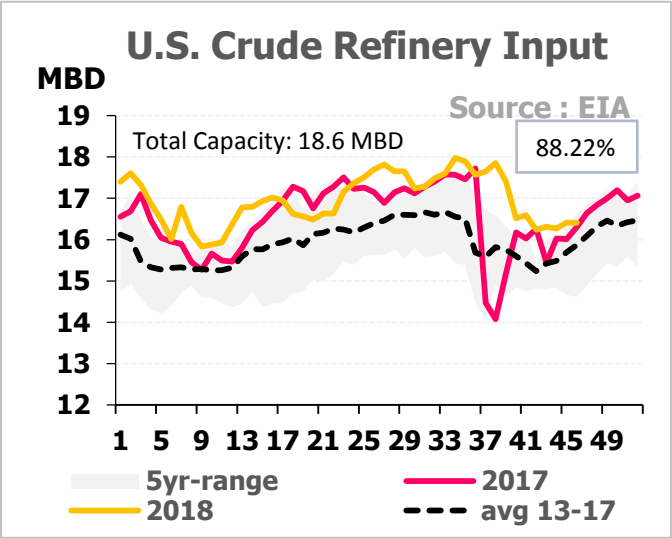
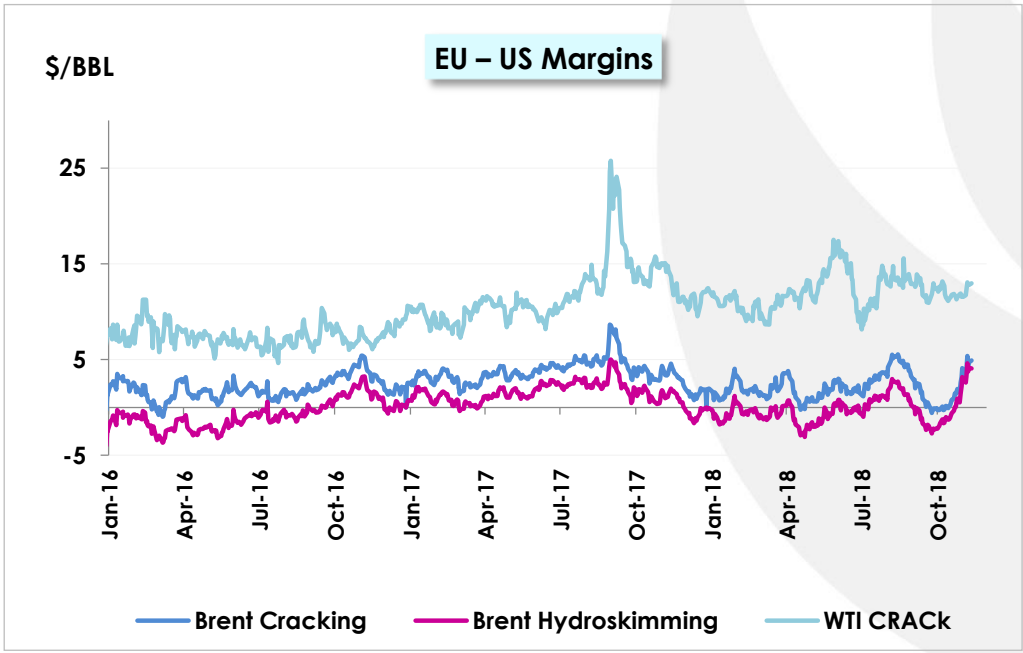
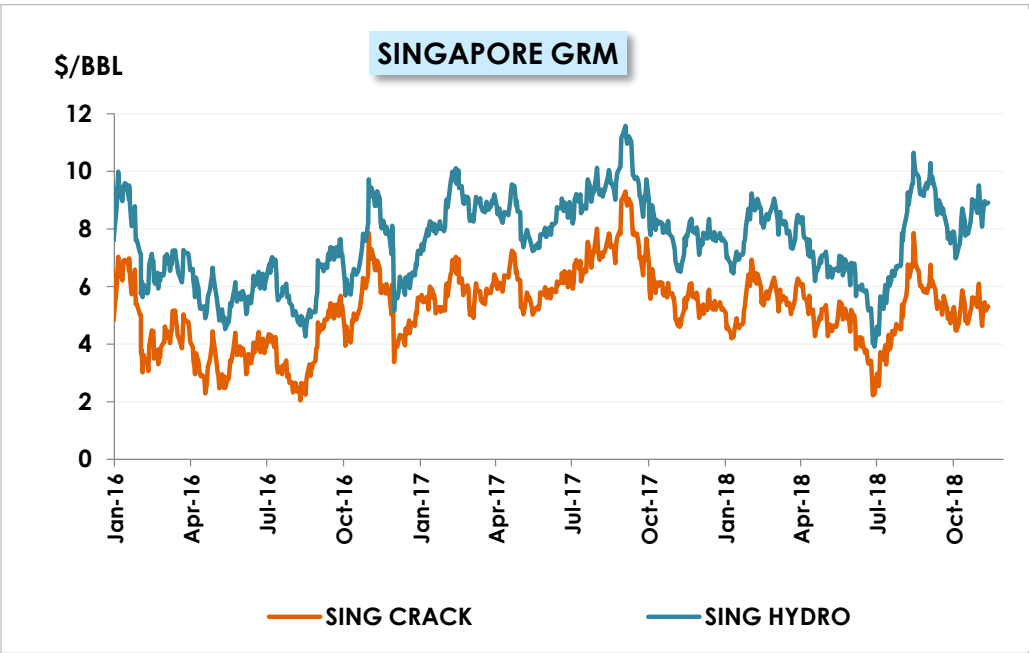
Asia Pacific and Middle East Refinery Addition



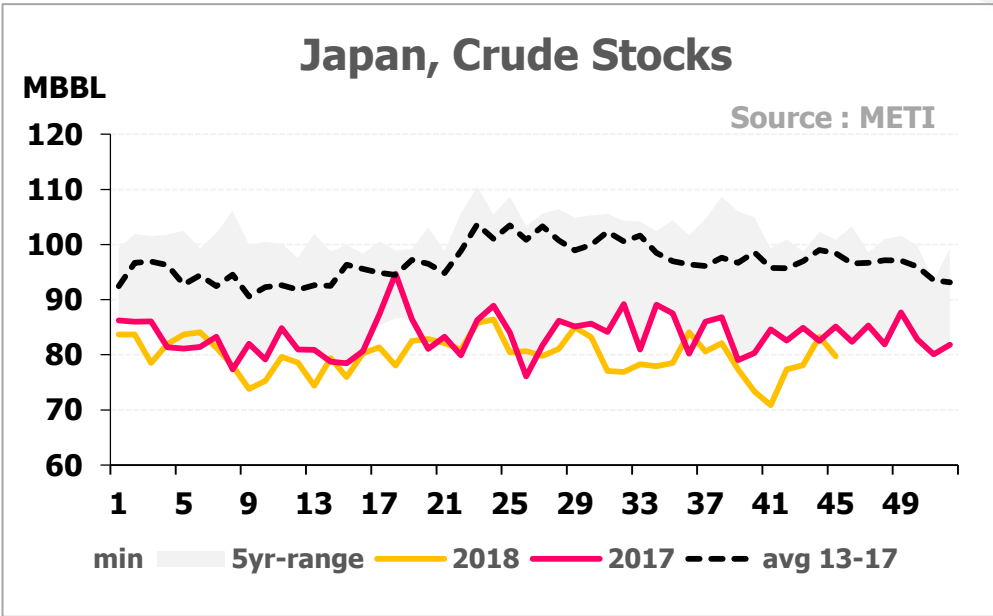
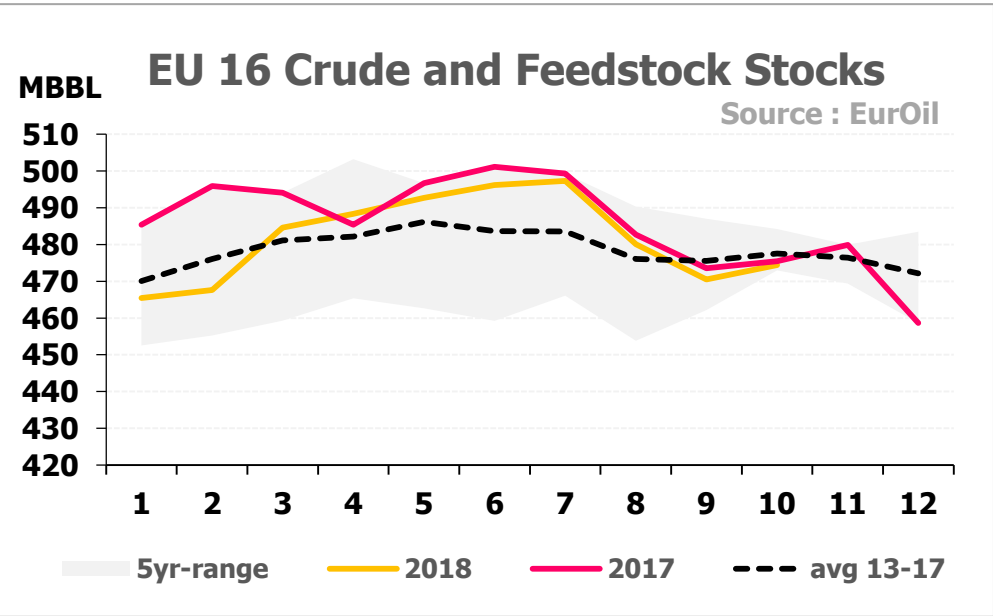
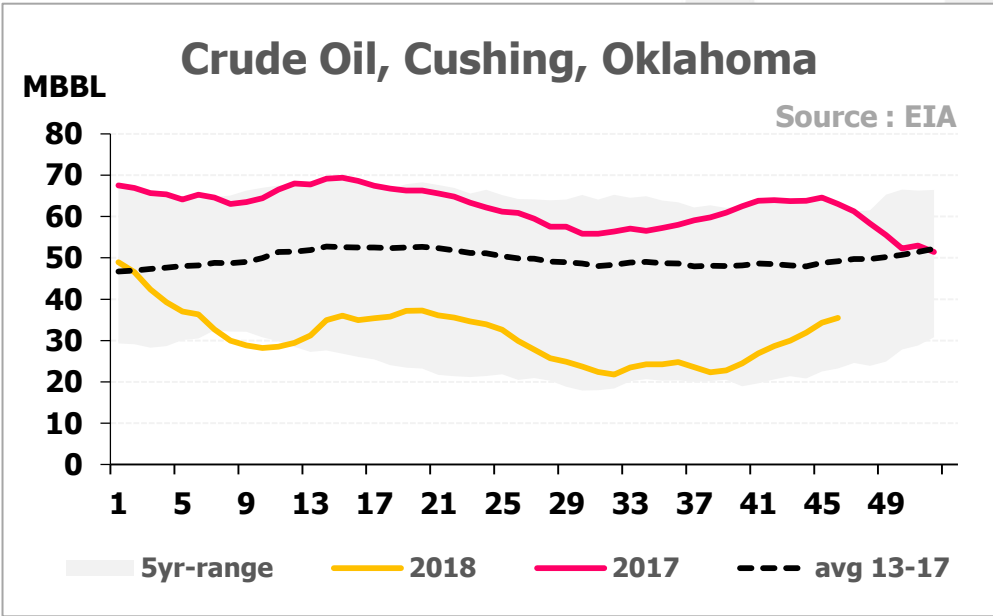
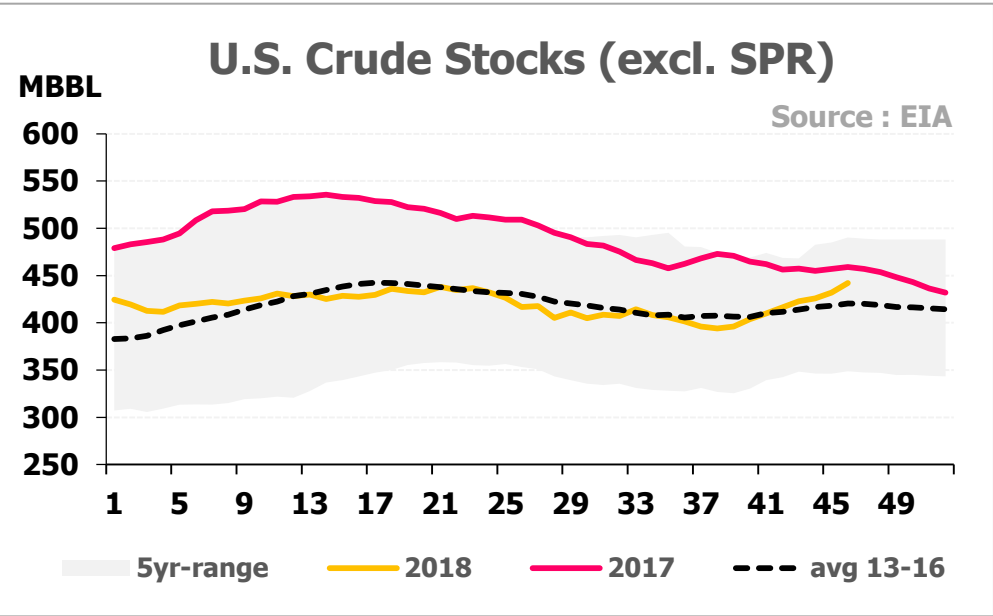
Note: Adjusted capacity based on start-up period (effective additional capacity)

Start-up period)	Country	Nameplate (KBD)	Company
Q1-18	Iran	120	Bandar Abbas - PGSOC/1 (Phase 2)
	Vietnam	186	Nghi Son
Q3-18	China	100	Petrochina Huabei
Q4-18	India	36	Bharat - Bina
	Iran	120	Bandar Abbas - PGSOC/1 (Phase 3)
	South Korea	82.8	Hyundai Oilbank – Daesan
Q1-19	China	70	CNOOC/Local Zhonghai Dongying
	Iraq	66	North Refining Company – Baiji
Q2-19	Malaysia	300	Petronas Pengerang (RAPID)
Q4-19	China	400	Hengli Petrochemical Dalian
	Saudi Arabia	400	Jizan
	China	60	Sinochem Quanzhou – Fujian
	Iraq	66	North Refining Company – Basra
	Kuwait	171	KPC - Mina Al-Ahmadi
Closures			
Q2-18	China	-75	Local refineries
Q4-19	China	-100	Local refineries
	Kuwait	-112	KPC - Mina Al-Ahmadi

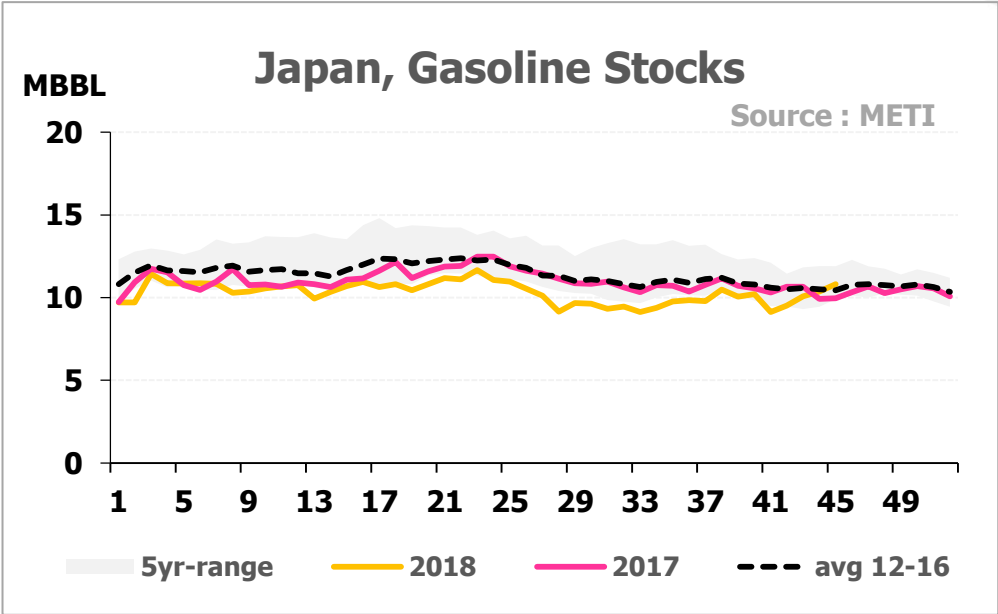
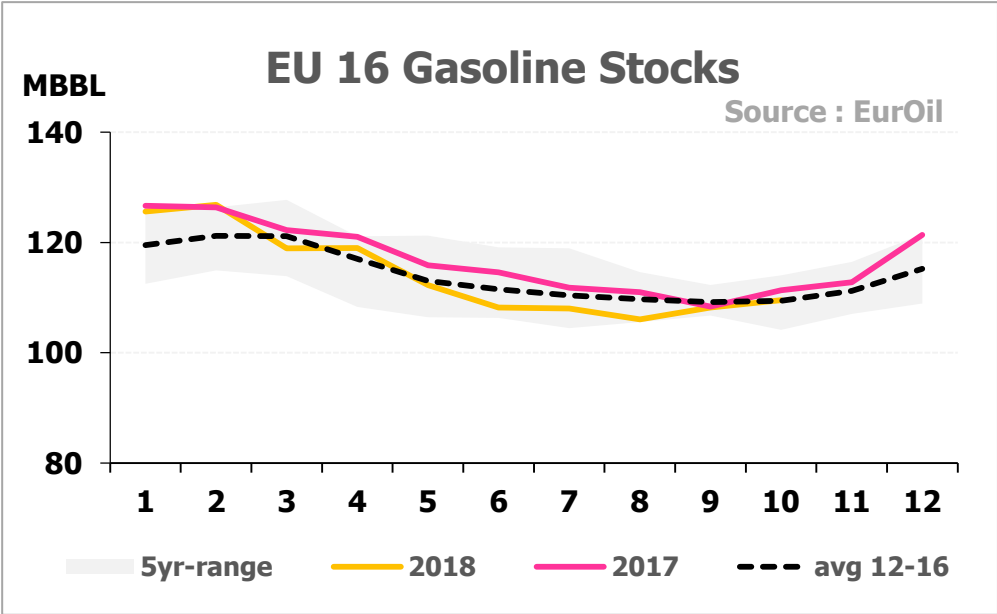
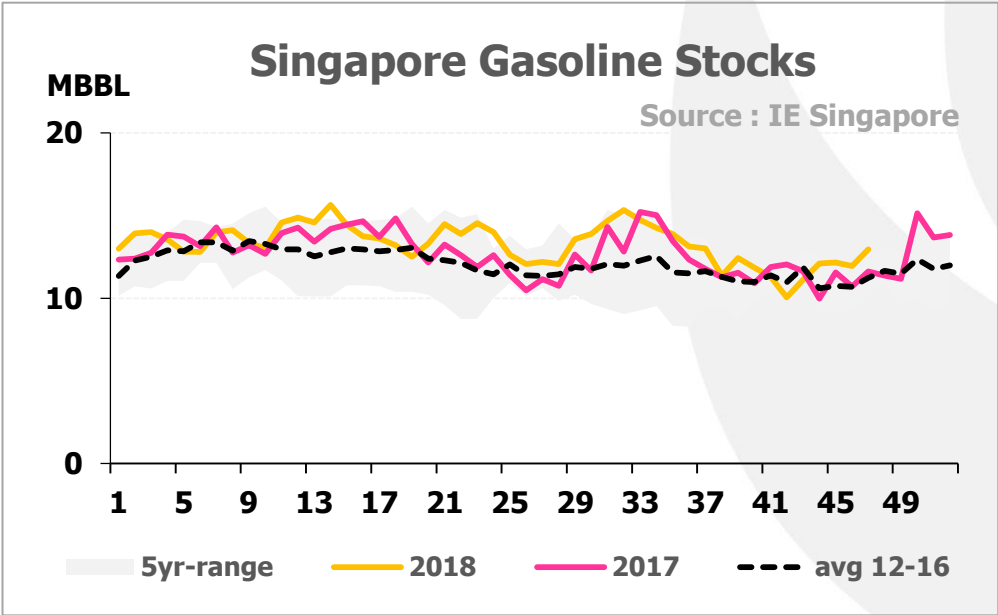
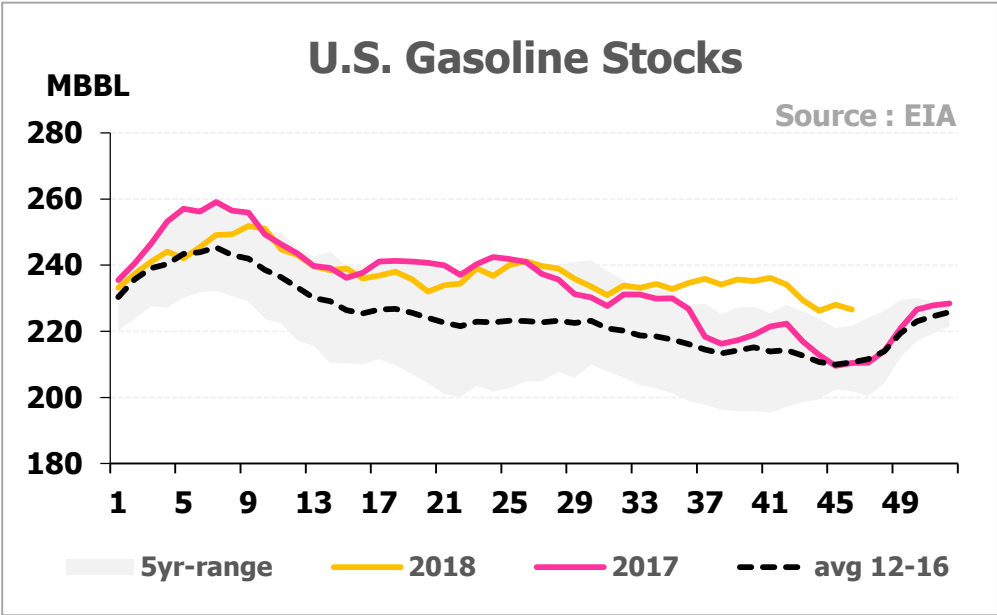
Asian Margin Vs. US-EU margin



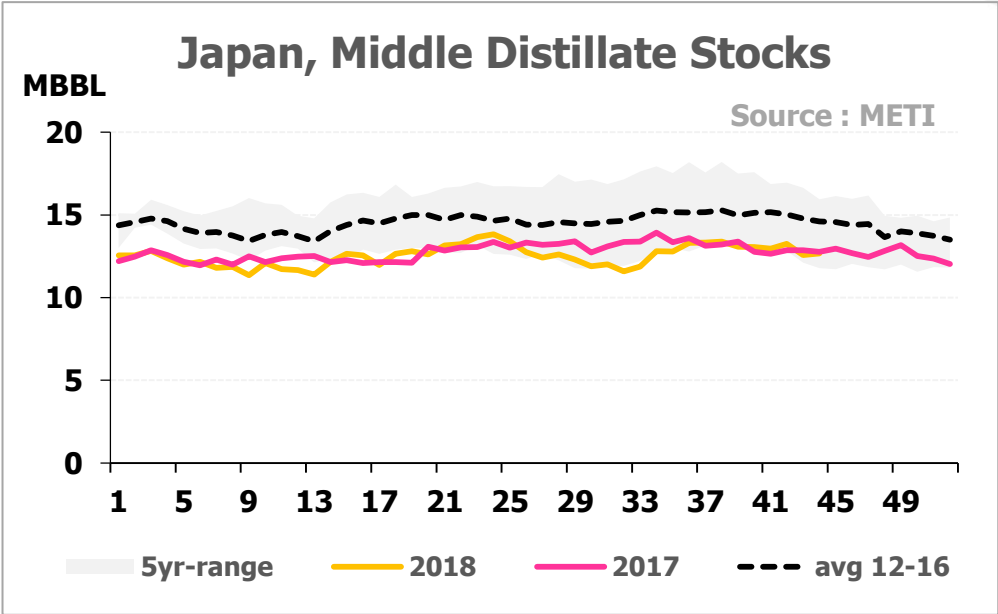
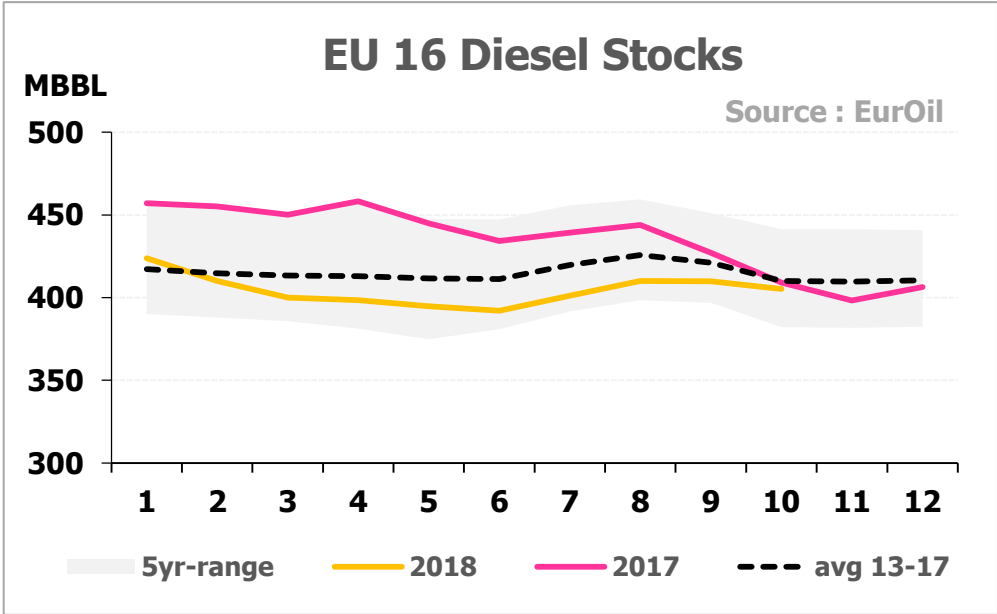
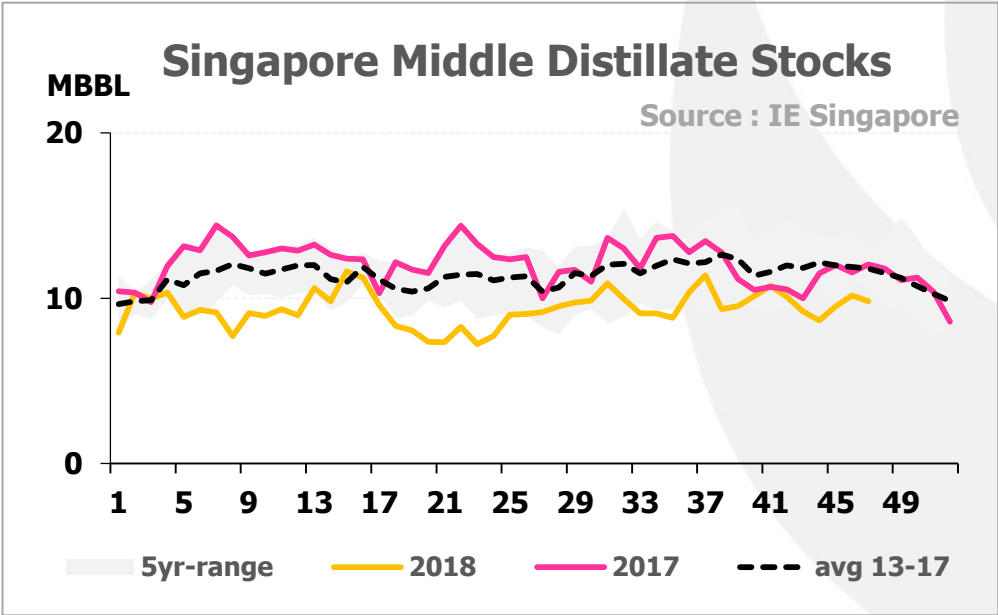
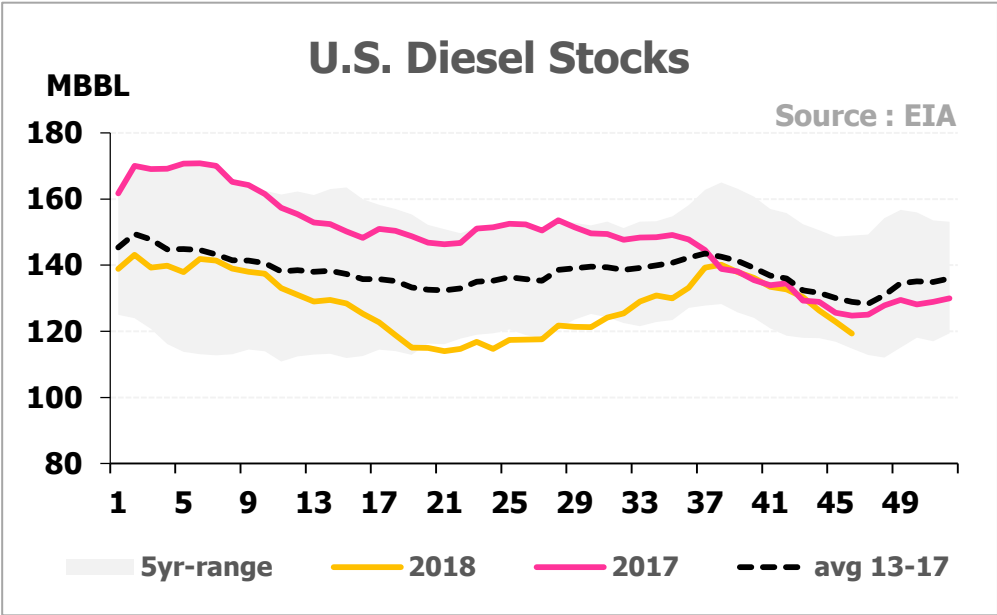
Global Crude Oil Inventories



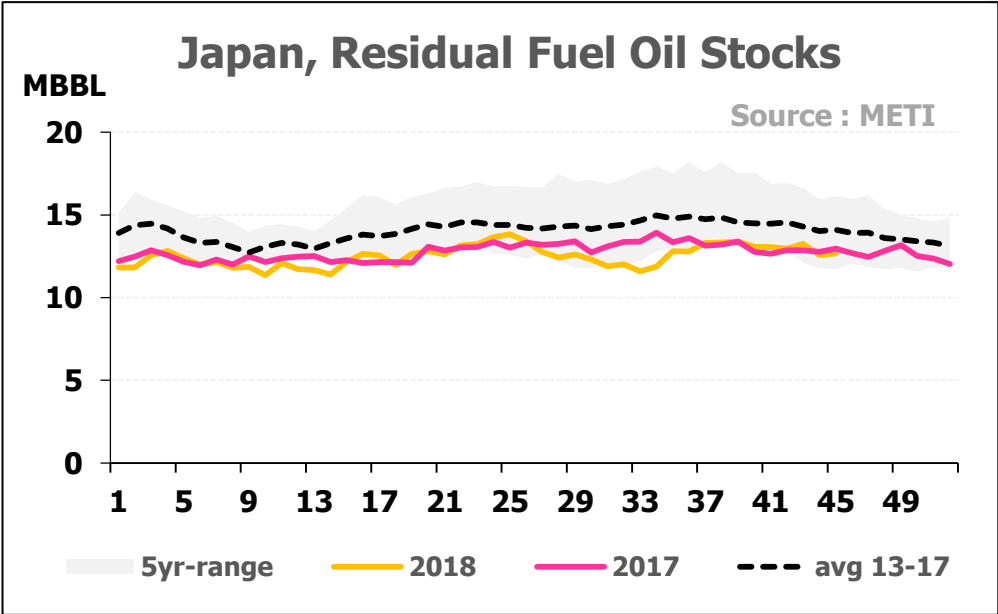
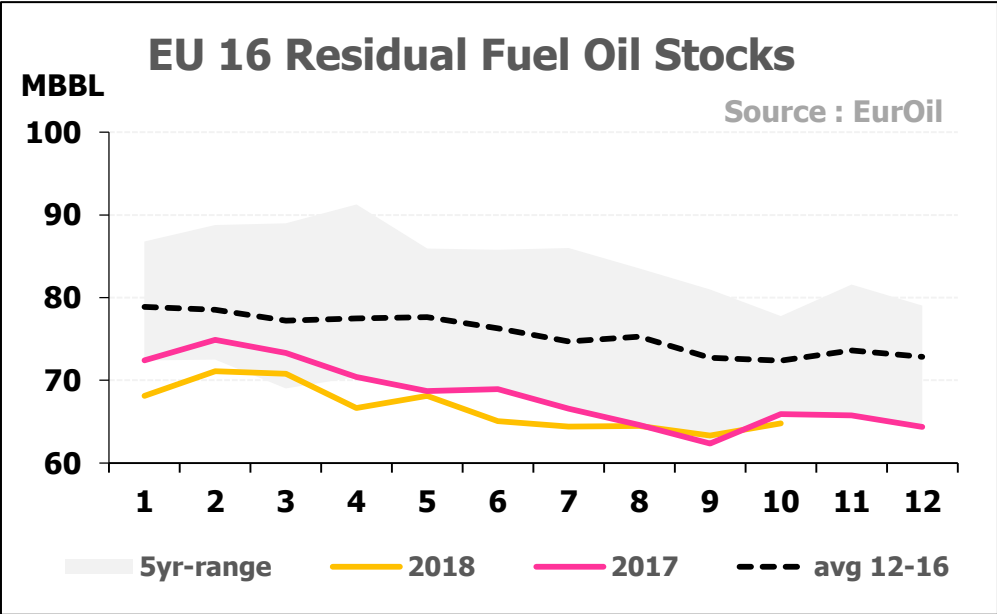
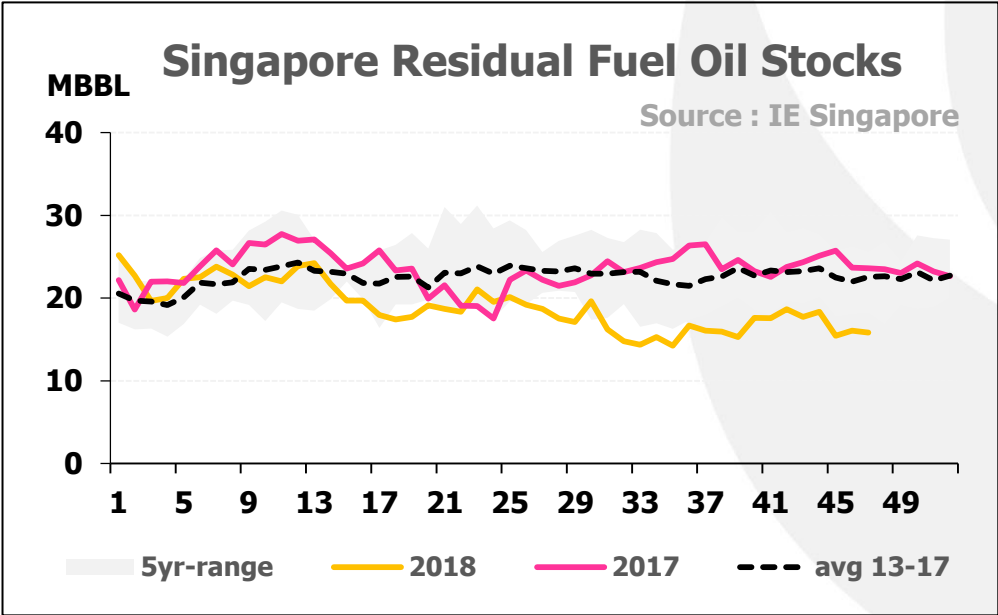
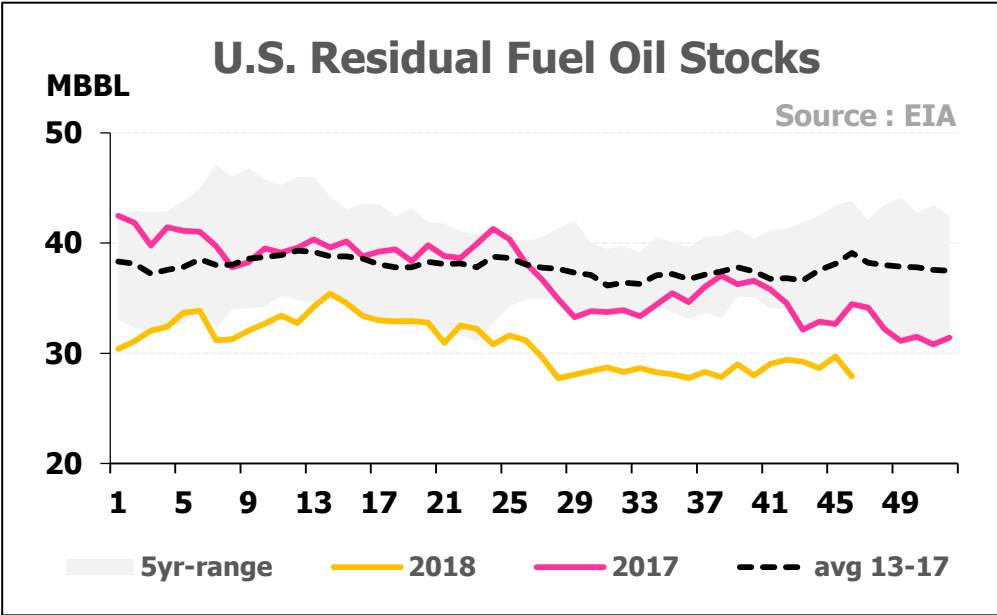
Global Gasoline Inventories



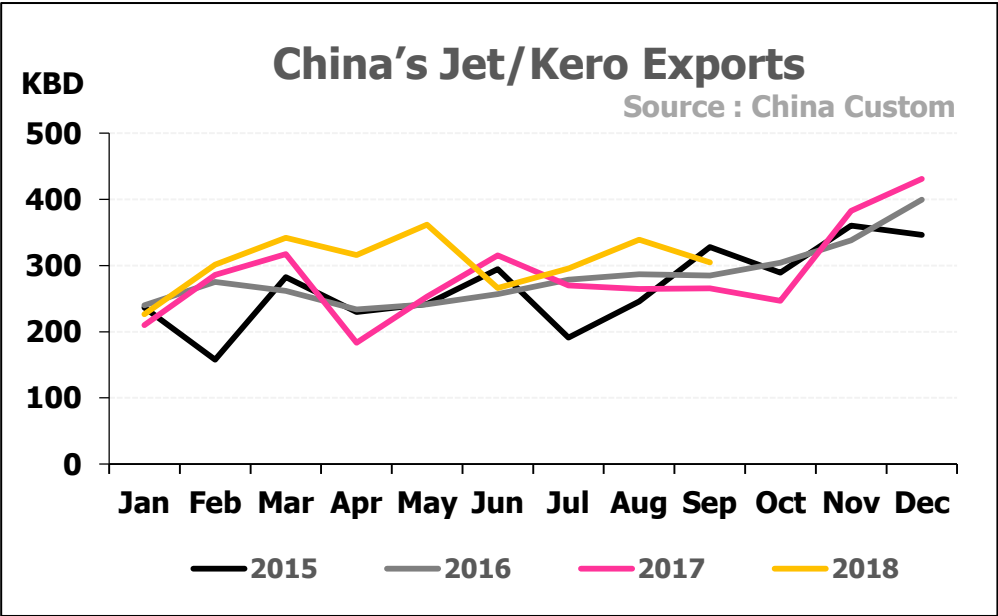
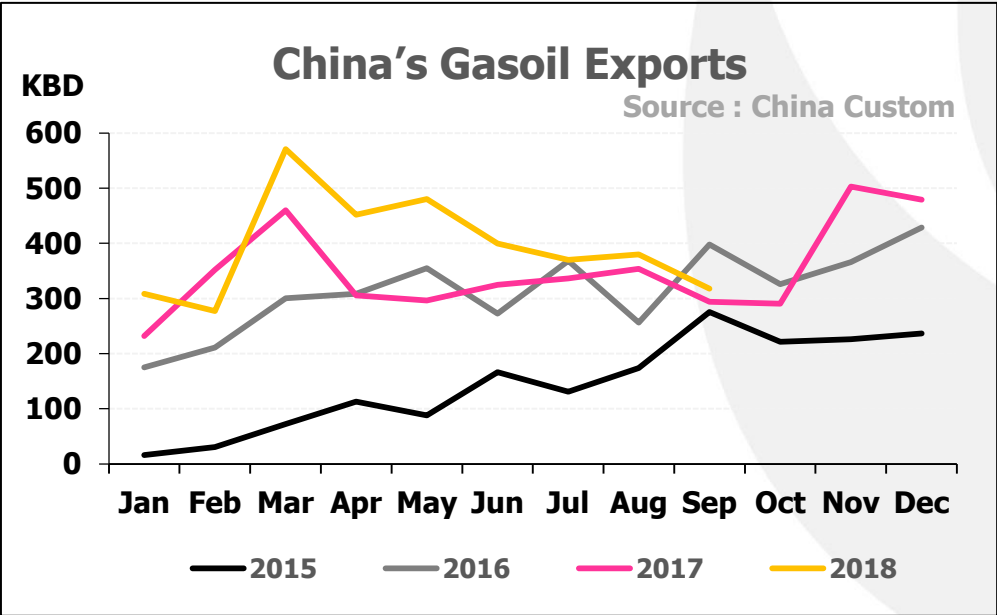
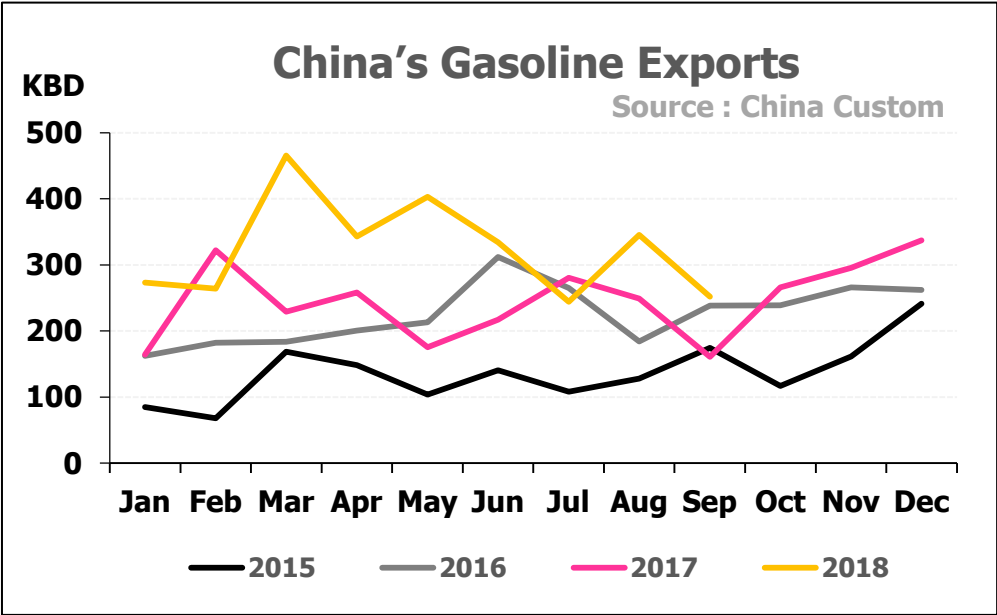
Global Middle Distillate Inventories



Global Fuel Oil Inventories

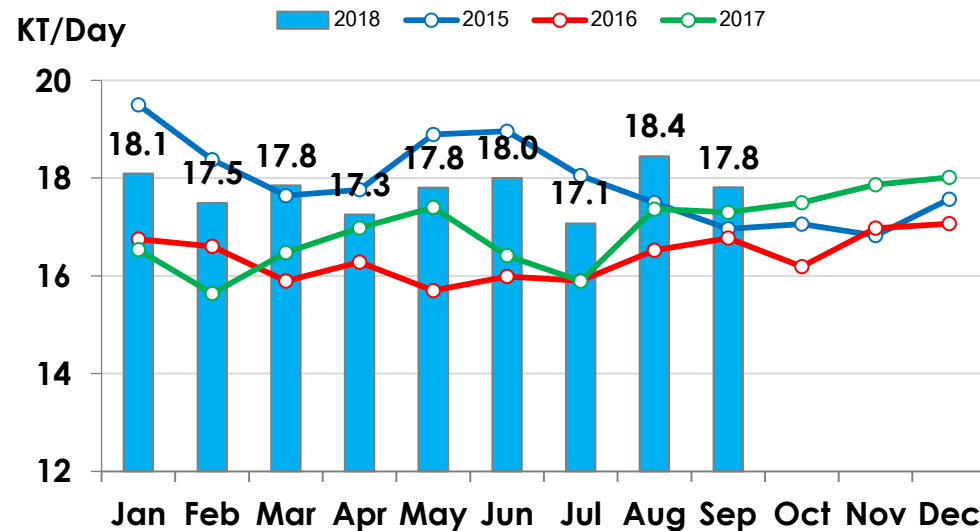


China's Refined Product Exports



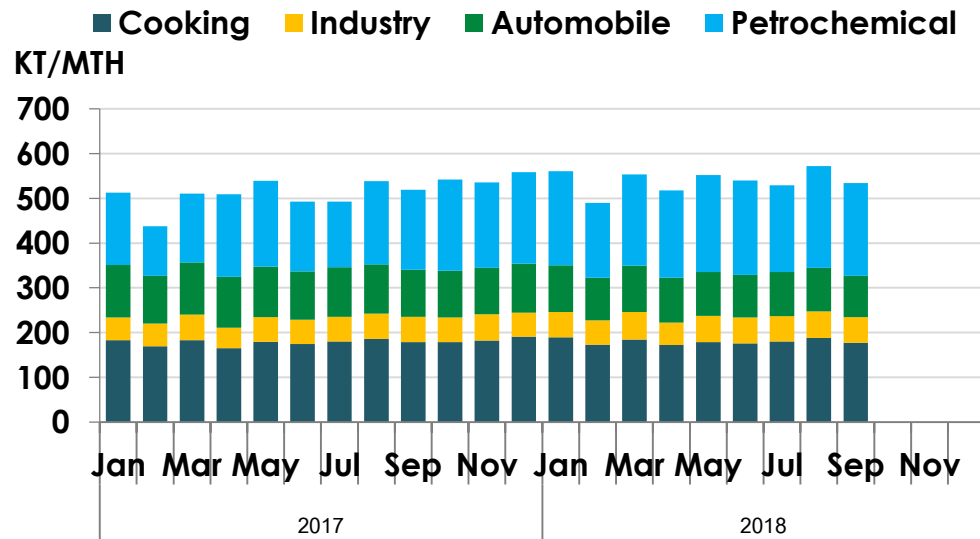
Domestic LPG Demand

Thailand LPG Demand



Remark : LPG demand includes Petrochemical consumption

LPG Demand by Sector



LPG Demand Highlight

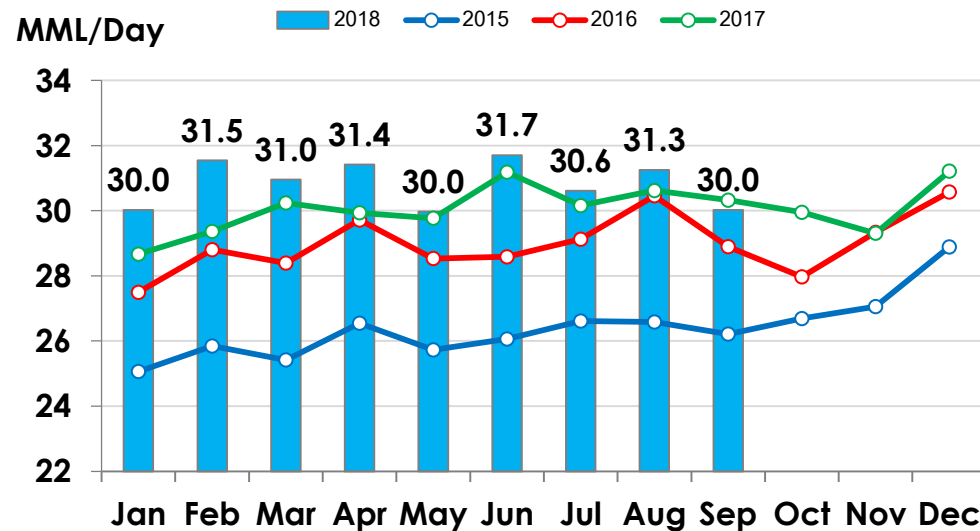
- In 9M/2018, LPG demand jumped by 6.6% YoY on the back of 24.7% YoY higher demand from petrochemical sector, as a result of higher substitute feedstock price. Moreover, LPG demand was also supported by 1.2% YoY, and 6.4% YoY higher demand of cooking sector, and industrial sector, respectively. However, LPG demand in automobile sector persisted falling by 11.6% YoY, according to less availability for LPG station and less LPG compatible cars in the market.

Outlook for 2019

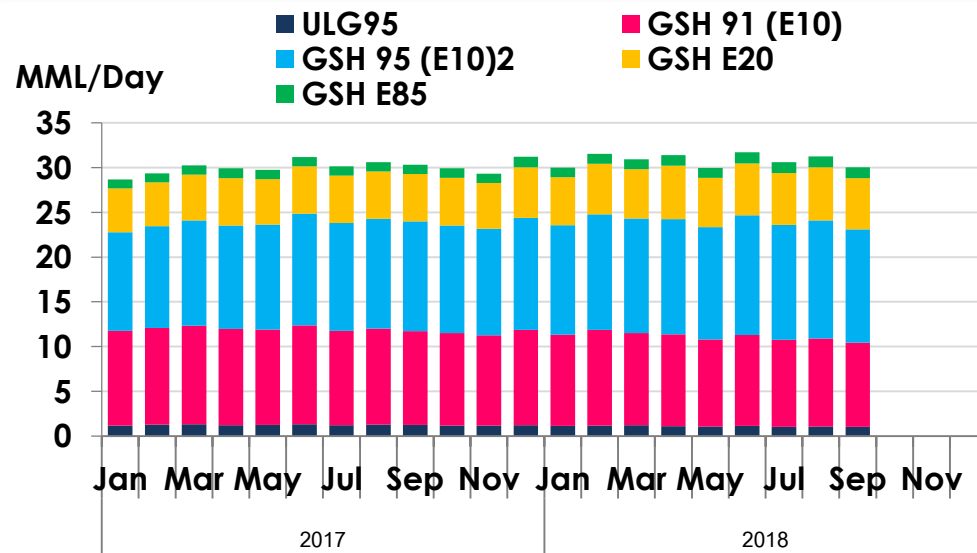
- LPG demand is expected to contract 1.1% YoY as consumption in transport sector is expected to decline at 10.0% YoY due to fuel switching. Despite gasoline price being relatively high, LPG station in Thailand is decreasing hence limiting access to fuelling station for LPG vehicle users. Moreover, the registered number of pure LPG vehicle in Thailand during 2010-2017 fell at a rate of 11.2% per year, which means LPG vehicle has become significantly less popular among automobile users over time.

Domestic Gasoline/Gasohol Demand

Thailand Gasoline/Gasohol Demand



Gasoline/Gasohol Demand by Grade



GASOLINE/Gasohol Demand Highlight

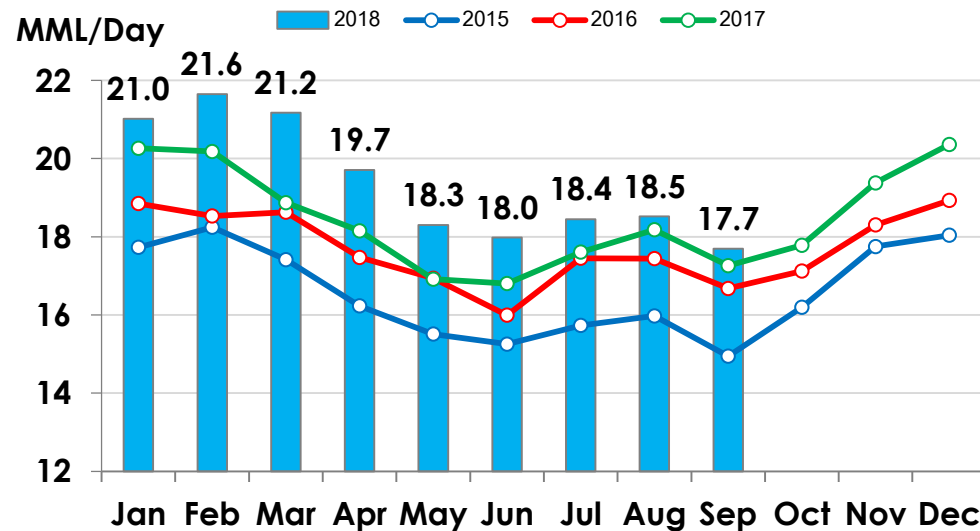
- In 9M/2018, Mogas demand rose moderately by 2.7% YoY to an average 30.8 ML/day.** Although, the retail price of Mogas is higher, Mogas demand was still supported by consumers' intimation that using their personal cars in their routines. Moreover, Mogas demand is also supported by fuel switching from LPG.
- The level of domestic ethanol demand, in 9M/2018, rose significantly by 5.6% YoY** from 3.92 mml/day to 4.14 mml/day following the rising of Mogas demand. Additionally, this was also because of higher demand in GSH95, E20, and E85 which increased by 8.4% YoY, 10.4% YoY, and 12.3% YoY, respectively, backed by increasing in the number of new E20 vehicle, higher E20 gas station, and attractive GSH95-E20 and E20-E85 price gap.

Outlook for 2019

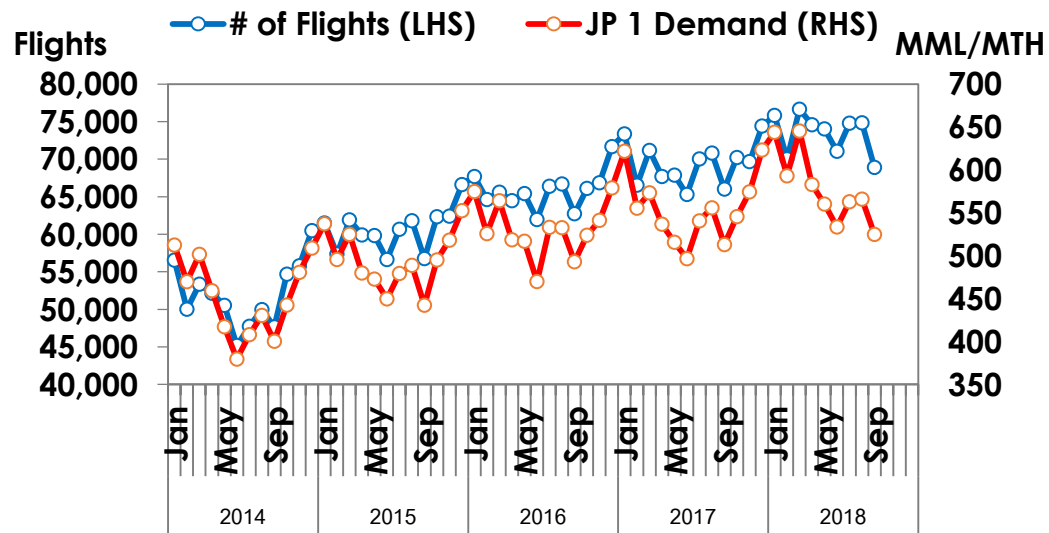
- Mogas consumption is predicted to grow by 2.9% YoY supported by expectation of growing of new passengers cars from return of private consumption. However, the demand growth is limited by higher oil price.

Domestic Jet Demand

Thailand JET Demand



JET-A1 demand and # of flights



JET Demand Highlight

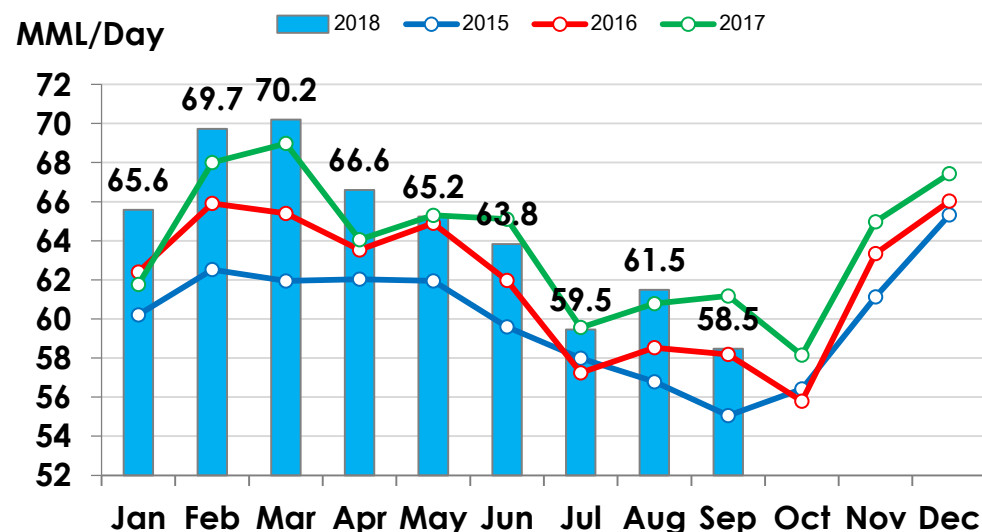
- In 9M/2018, Jet consumption increased significantly by 6.2% over the corresponding period last year mainly owing to booming tourism industry, leading to 6.8% YoY higher aircraft movement. The 8.6% YoY expansion of tourism sector was a result of increasing number of Chinese, Russian, and ASEAN tourists, pushing the number of flight movements higher both international and domestic aircrafts.

Outlook for 2019

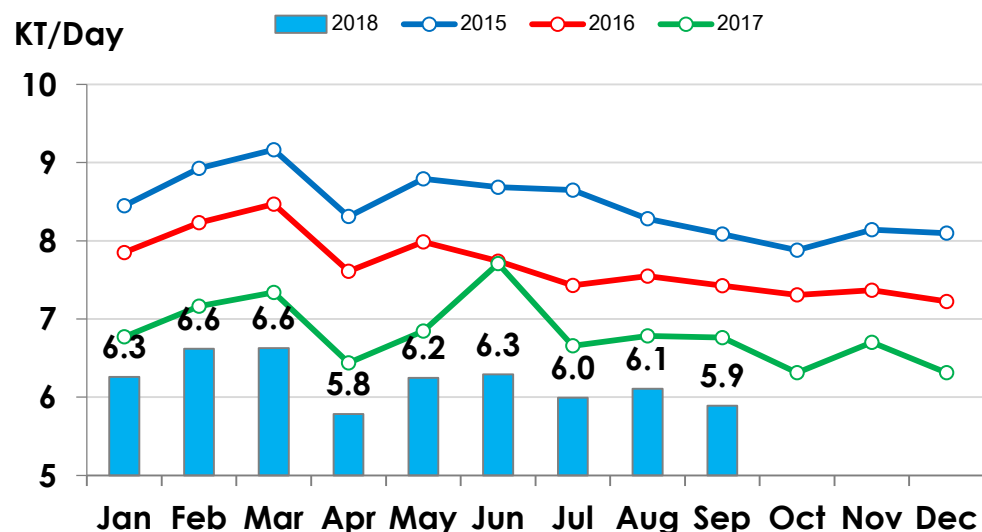
- Jet demand growth is expected to grow by 3.7% YoY as a result of rapid tourist number growth, especially from China and ASEAN. Furthermore, the demand is also supported by the return of European and Russian tourists.

Domestic Gasoil and NGV Demand

Thailand Gasoil Demand



NGV Demand



Diesel Demand Highlight

- In 9M/2018, Diesel demand rose moderately by 1.0% YoY as a result of the growth of Thai economic, according to higher Manufacturing Production Index (MPI) by 2.4% YoY. Moreover, the demand is also supported by 10.0% YoY higher Thai Agricultural Production Index, which increased agricultural product transportation activity.

Outlook for 2019

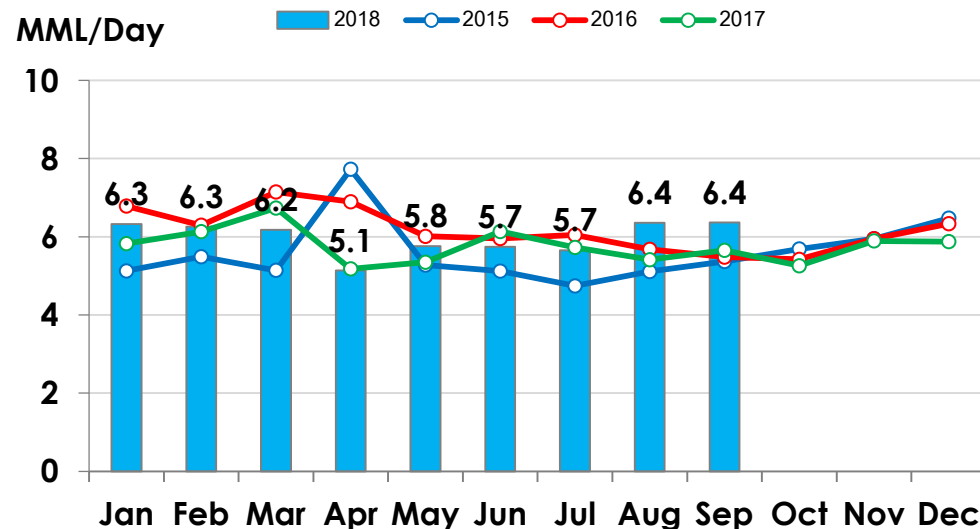
- Diesel demand is expected to expand by 1.7% YoY supported by economic activity. Moreover, NOAA (National Oceanic and Atmospheric Administration) predicts less rainfalls as El Nino is more likely to occur than La Nina.

NGV Demand Highlight

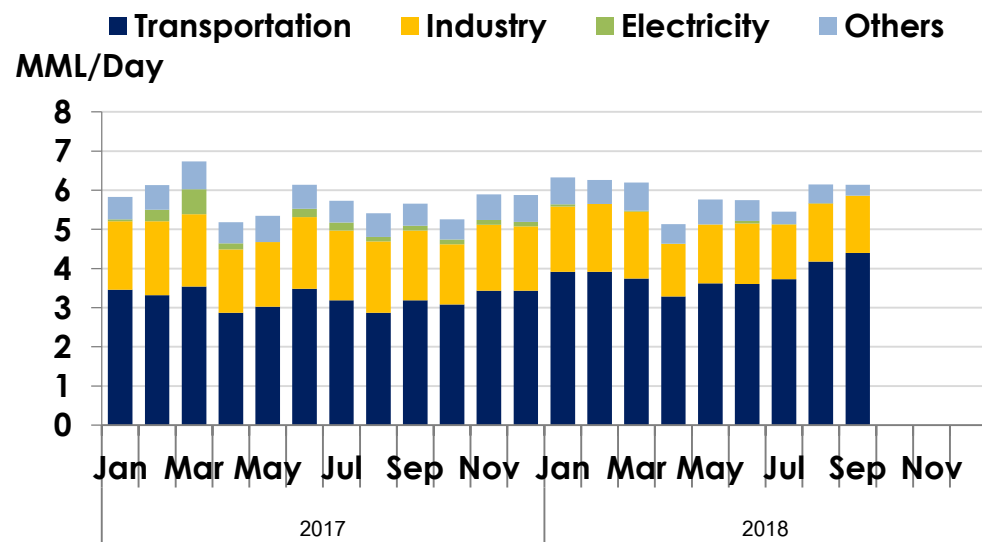
- In 9M/2018, NGV demand fell significantly by 11.1% YoY. This was mainly because of consumers' intimation that they still prefer to consume oil. Moreover, the low oil price level since 2015 has pressured the fuel switching from old cars, whereas the new cars which is available for NGV was lower recently.

Domestic Fuel Oil Demand

Thailand Fuel Oil Demand



Thailand Fuel Oil Demand by Sector



Fuel Oil Demand Highlight

- In 9M/2018, Fuel Oil consumption rose by 3.2%YoY, as a result of 18.9% YoY higher demand from transportation sector which takes approximately 64.7% of total Fuel oil demand. Transportation demand has accelerated since Aug-18 due to Singapore's Fuel oil off-spec issue which shifted demand to Thailand. However, the Fuel oil demand was pressured by 13.4% YoY lower demand from industrial sector, as a result of higher price of fuel oil, comparing to other fuel. Furthermore, the Fuel oil demand was also pressured by 91.2% YoY lower demand from electricity generation sector.

Outlook for 2019

- Fuel oil demand is expected to increase by 0.6% YoY, supported by transportation demand from economic activity. However, demand growth will continue to be limited by weak consumption for industrial and electricity purposes.

Thank You

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