



MEMBER OF  
**Dow Jones**  
**Sustainability Indices**  
In Collaboration with RobecoSAM



# Thai Oil Public Company Limited

**Presentation to Investors**  
**November 2016**



**The information contained in this presentation is intended solely for your personal reference. Please do not circulate this material. If you are not an intended recipient, you must not read, disclose, copy, retain, distribute or take any action in reliance upon it.**

**Some statements made in this material are forward-looking with relevant assumptions, which are subject to uncertainties, which may cause the actual result/performance to be materially deviated from any future result/performance implied by such forward-looking statements. Please note that the company and management/staff are not capable to control and guarantee if these forward-looking statements will be accurately materialized, they are subject to various risks and uncertainties.**

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

## 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

Thai Oil Public Company Limited  
555/1 Energy Complex Building A  
11F, Vibhavadi Rangsit Road,  
Chatuchak, Bangkok 10900

Email



[cgcoordinate@thaioilgroup.com](mailto:cgcoordinate@thaioilgroup.com)



+66-0-2797-2999 ext. 7440-7442



+66-0-2797-2973



CG  
Manual

<http://www.thaioilgroup.com>

MEMBER OF

**Dow Jones  
Sustainability Indices**

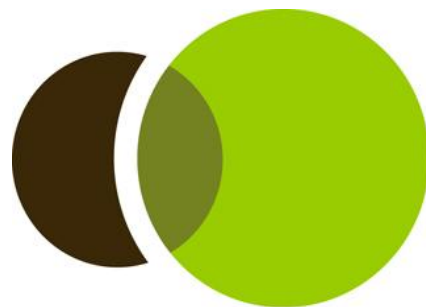
In Collaboration with RobecoSAM 

**3<sup>rd</sup>** Consecutive Year of leading positions:

Energy Industry Group Leader

Oil and Gas Industry Leader

**4<sup>th</sup>** Consecutive Year as the Member of DJSI Emerging Markets



**ROBECOSAM**  
**Sustainability Award**  
**Industry Leader 2016**

**2<sup>nd</sup>** Consecutive Year of leading positions:  
Oil and Gas Industry Leader

**TOP GROUP BUSINESS OVERVIEW**

**KEY FINANCIAL HIGHLIGHTS**

**STRATEGIC INVESTMENT PLANS**

**MARKET OUTLOOK**

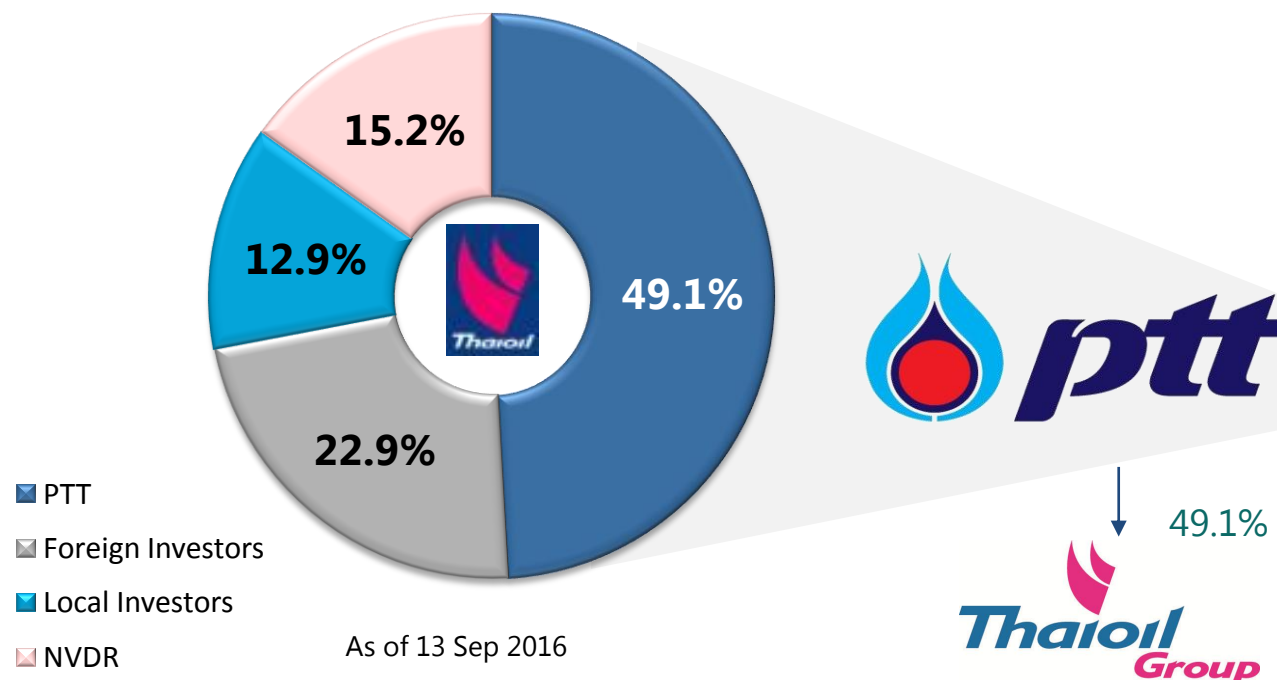
**APPENDIX**



# **TOP Group Business Overview**



## Thai Oil's strong shareholder base



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

### Key strategic benefits for Thai Oil

#### 1. Long-term strategic partnership

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

#### 2. Business partnership

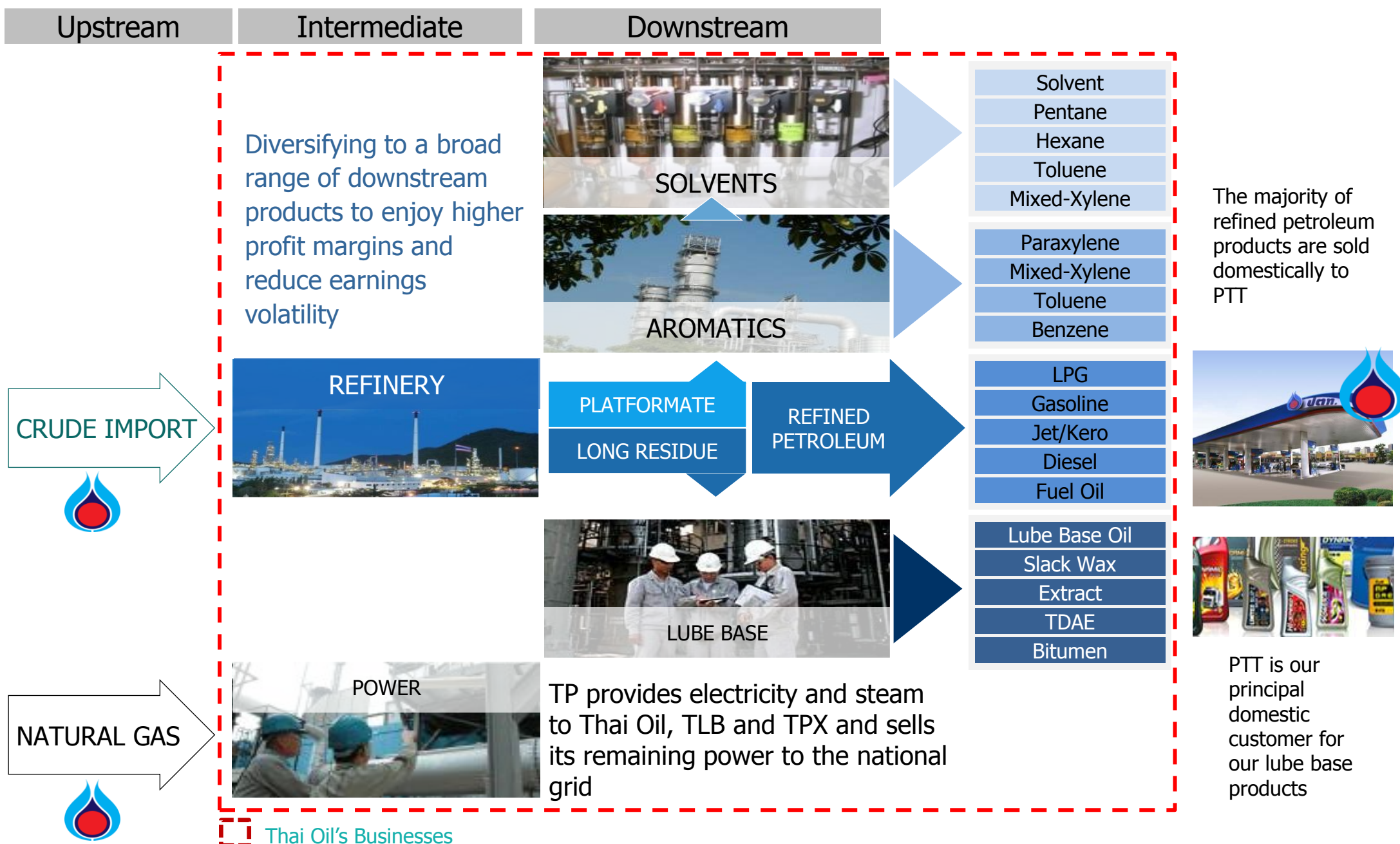
- Product offtake
- Crude procurement

#### 3. Operational synergies

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



# TOP Group Synergy & Strategic Role in PTT Group Value Chain



# Key Milestones: 55 Years, A Long Track Record of Success

## 1961 – 1997 Capacity expansion and initial stage of business diversification

- 1961
- Incorporated
- 1964
- Commenced operation with distillation capacity of 35 kbd
  - Simple refinery with Nelson complexity Index ~ 4<sup>1</sup>

- 1970
- Refining capacity expanded to 65 kbd
- 1989
- Increased refining capacity to 90 kbd

## 2004 – 2011 Listing, expansion and diversification

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

## Today A leading integrated refining and petrochemical group in Asia Pacific

- 275 kbd refinery ( approximately 22% of Thailand's total refining capacity)
- Nelson index 9.8<sup>1</sup>
- Diversified business through 13 subsidiaries
- The 3rd largest listed company by revenue in Thailand

★ 1961 – 1964

○ 1970-1989

○ 1993-1997

○ 2004

○ 2007 -2008

○ 2010

○ 2011

○ 2013-2016

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

- 2015-2016
- 2015 Revenue 293,060 MB
  - 2015 Net profit 12,181 MB
  - Completed Projects: LABIX & TOP SPP

- 2011
- Manufactured diesel and ULG in compliance with the sulfur and BZ aromatics content requirements of the Euro IV
  - Acquired 1<sup>st</sup> VLCC

- 1993
- We expanded our refining capacity to 190 kbd

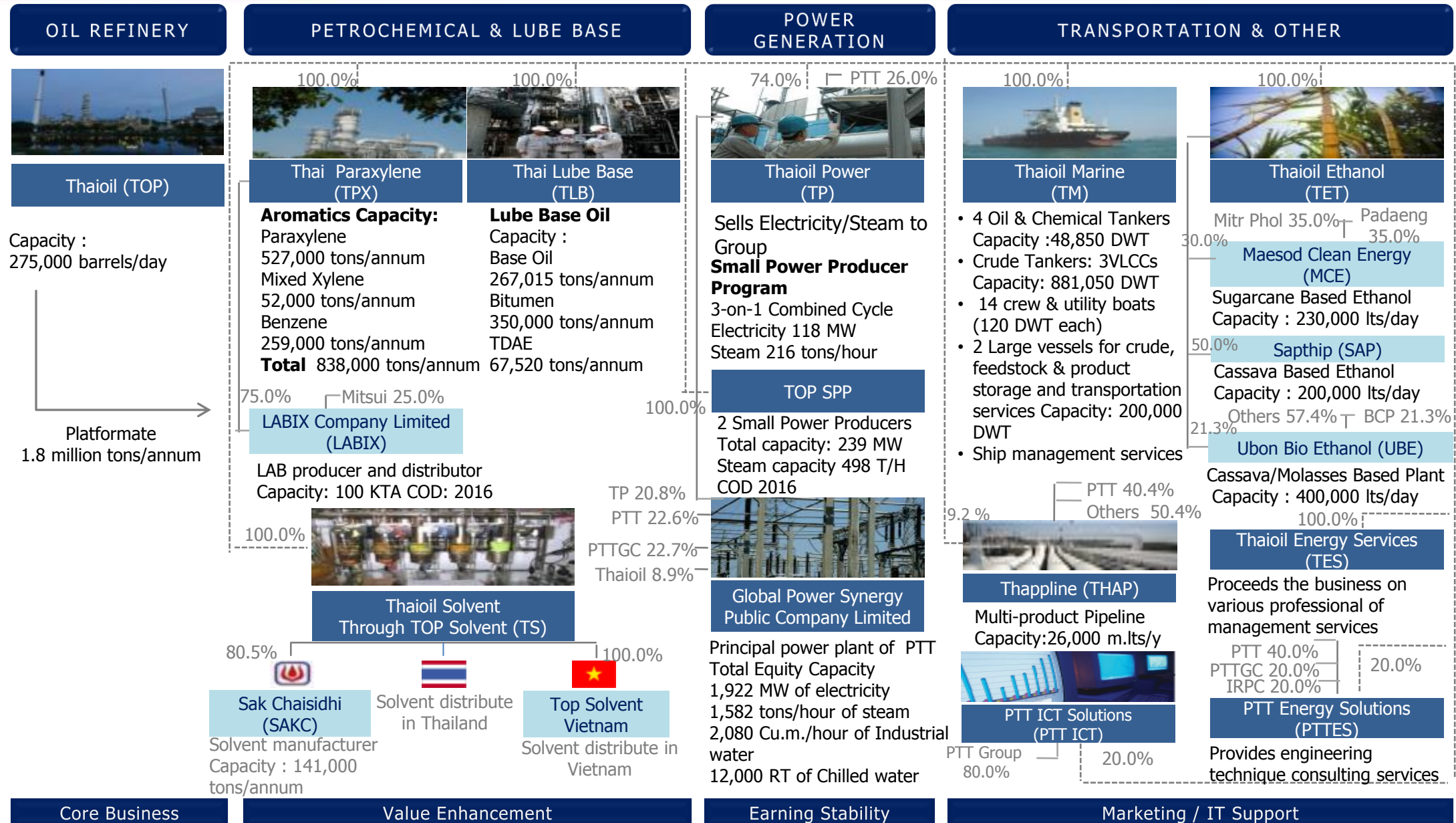
- 1994 – 1997
- Increased total refining capacity to 220 kbd
  - Initial investment in Thai Paraxylene ("TPX") and Thai Lube Base ("TLB")
  - IPT became the first IPP to enter into a PPA with EGAT<sup>2</sup> with 700 MW capacity ; separately, Thaioil Power ("TP") constructed the power generation plant under the SPP with 118 MW capacity

- 2007
- Increased refining capacity to 275 kbd
- 2008
- The first refinery in Thailand with diesel production to comply with the sulfur content requirements of Euro IV
  - Capacity expansion of Thai Paraxylene with total aromatics capacity of 900,000 tons p.a.
  - Invested in Solvents business in Thailand and Vietnam

- 2010
- Established Thaioil Ethanol
  - Production expansion of TDAE by 50,000 tons per annum

Note 1. Based on our internal estimates using the methodology of the Nelson Complexity Index 2. The Electricity Generating Authority of Thailand ("EGAT") is the national grid

# Thai Oil Group Business Structure



## Net Profit Contribution

46%

29%

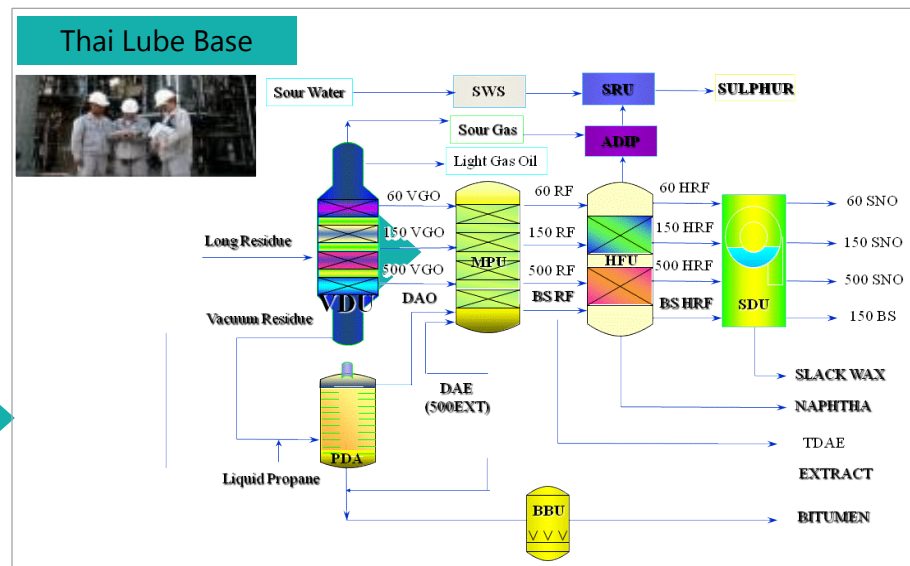
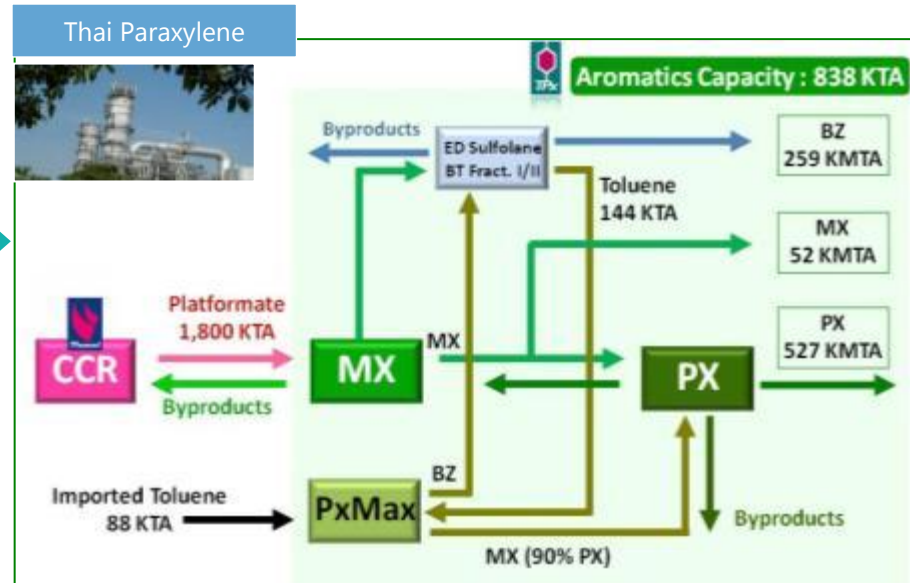
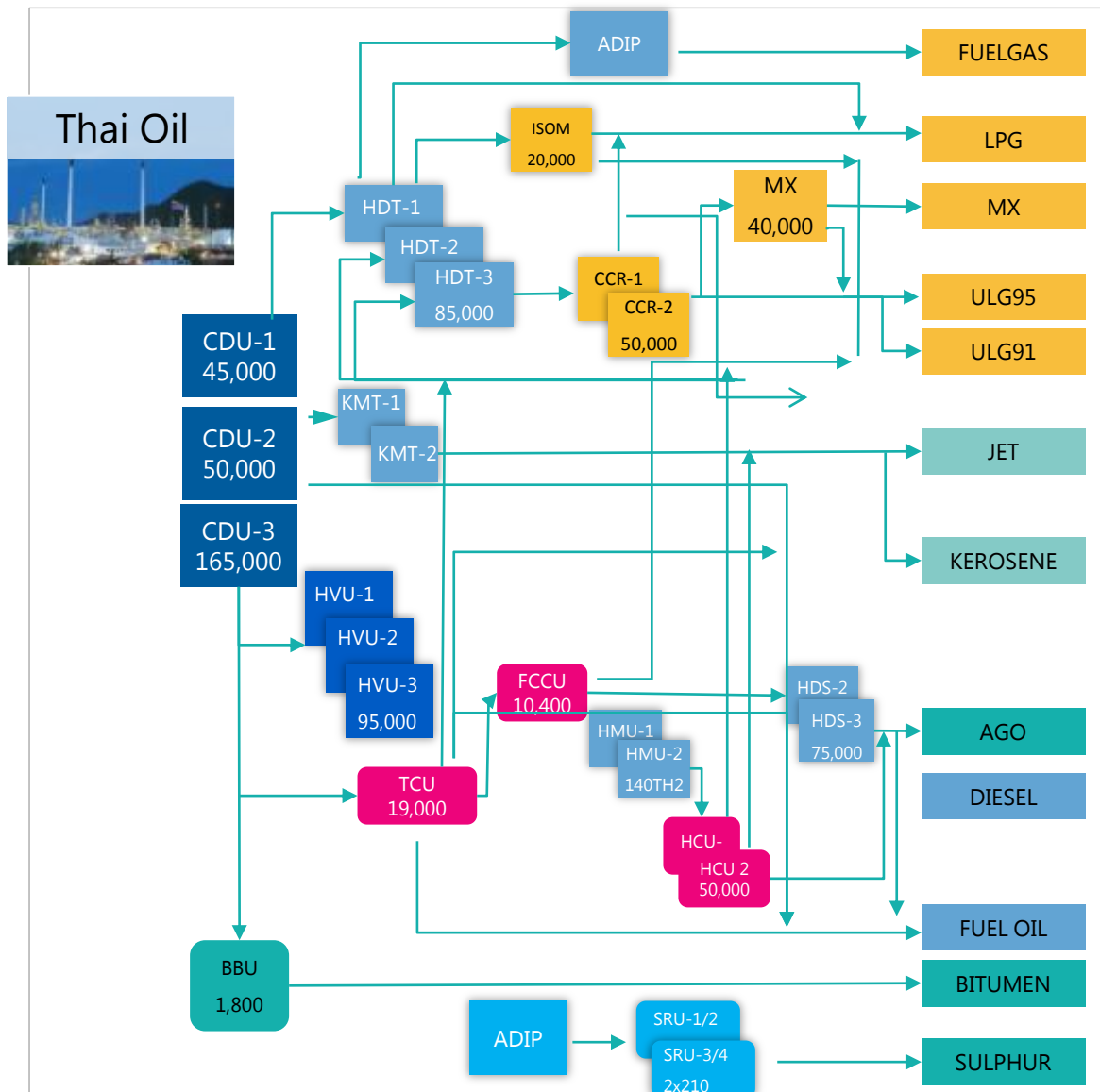
15%

11%

- Refinery
- Aromatics
- Lube Base
- Others

# Process Linkage: Beauty of Integration

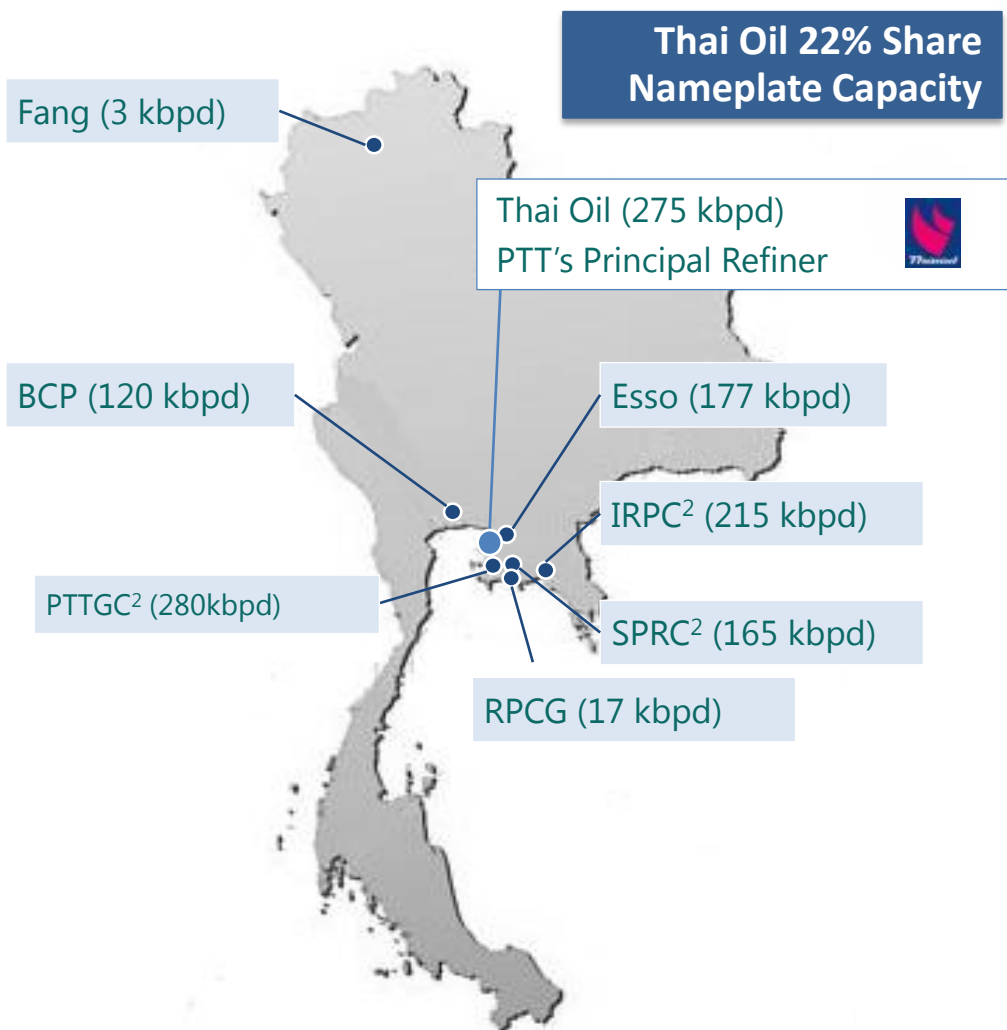
## PROCESS FLOWCHART



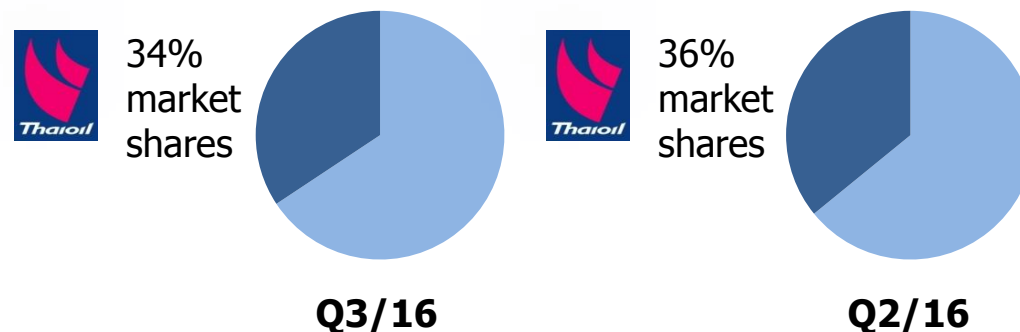


# One of Region's Leading Refineries

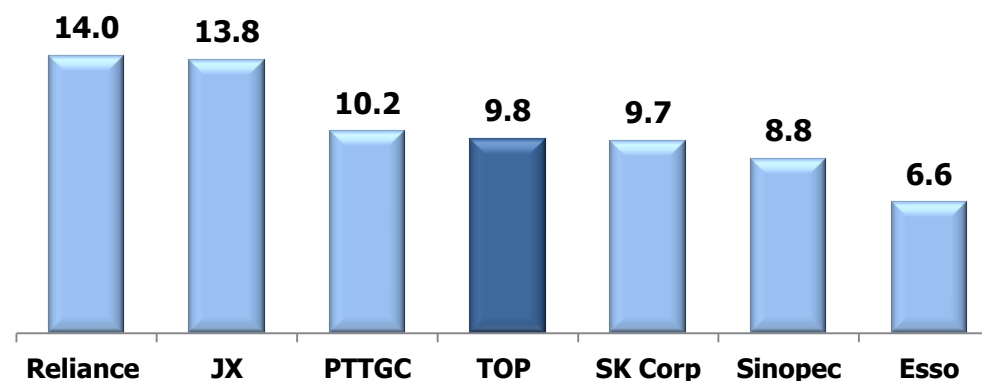
## Total Thailand crude refining capacity 1,252 kbd



## Market shares for refined petroleum product<sup>3</sup>



## Nelson Index - Regional Comparison<sup>4</sup>



Remarks:

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

Note: 1. Source: Energy Policy and Planning Office (EPPO), Ministry of Energy Thailand

2. PTT holds a 38.51% interest in IRPC, a 48.9% interest in PTTGC, and a 5.41% interest in SPRC as at 3 Dec 15

3. Calculate by total domestic sales of refined petroleum products of Thai Oil divided by total sales of petroleum products in Thailand excl LPG as a feedstock and own used. Source from EPPO

4. Source: Worldwide Refinery Survey and Complexity Analysis 2015 from Oil & Gas Journal and company information

# Strategic Location with Competitive Advantages in Access to Key Markets

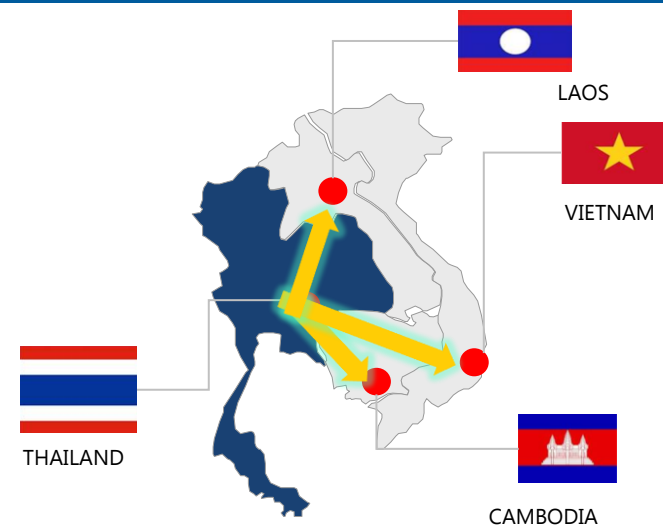
## Our strategic location provide us with

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

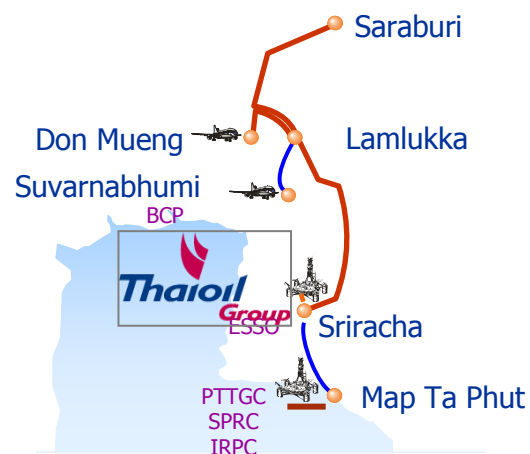
### Close proximity to the key domestic markets



### Access to Indochina markets through deep water ports



### Direct connection with product pipeline system



  Product pipeline system

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

# Optimized & Flexible Operations...Superior Performance

Crude Assays based on  
TOP configuration\*



Sources of  
Crude

Product  
output

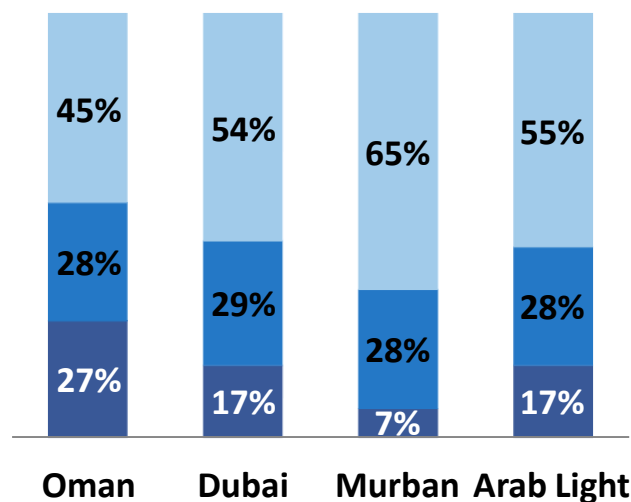
Reference Price



Domestic demand for  
petroleum products\*\*

|                          |                          |                          |                          |
|--------------------------|--------------------------|--------------------------|--------------------------|
| % S = 1.43<br>API = 32.0 | % S = 2.52<br>API = 31.2 | % S = 0.78<br>API = 39.4 | % S = 1.97<br>API = 32.8 |
|--------------------------|--------------------------|--------------------------|--------------------------|

■ Short Residue ■ Waxy ■ Gas/Distillates



Others\*\*\*

Far East

Local

Middle  
East

1. LPG price =  
LPG CP - 20\$/ton)  
since 2 Feb 15  
onwards.

7%

12%

8%

73%

Q3/16

SAUDI<sup>1</sup>  
ARAMCO

MOPS ULG 95  
FOB SG

MOPS Jet  
Kerosene FOB  
SG

MOPS Gasoil  
0.05% Sulfur  
FOB SG

MOPS Fuel Oil  
180 CST 3.5%  
Sulfur FOB SG

4%

12%

17%

22%

35%

7%

3%

22%

21%

12%

41%

4%

4%

Q3/16

LPG

PLATFORMATE

GASOLINE

JET

DIESEL

FUEL OIL

LONG RESIDUE

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

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

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

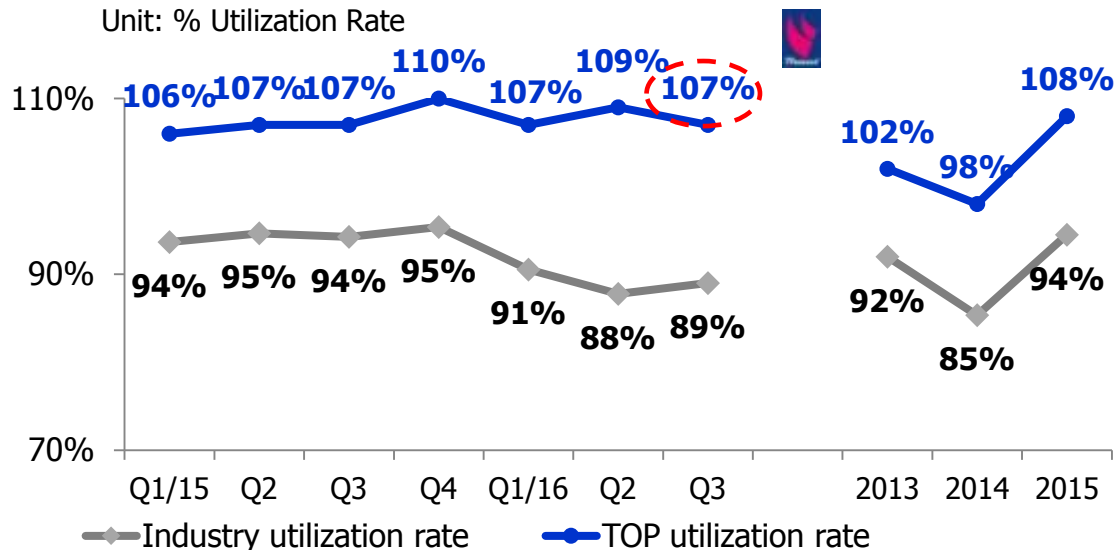
\*\*Source: Energy Policy and Planning Office, Ministry of Energy Thailand

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

# Refinery: Ongoing High Utilization Rate & Domestic Sales Portion

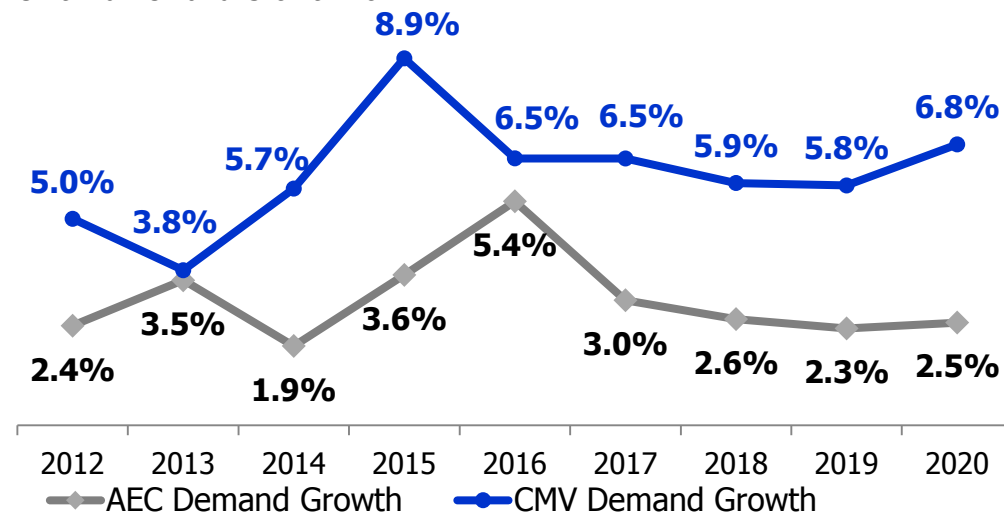
## TOP/ Domestic Refinery Utilization Rate

Unit: % Utilization Rate



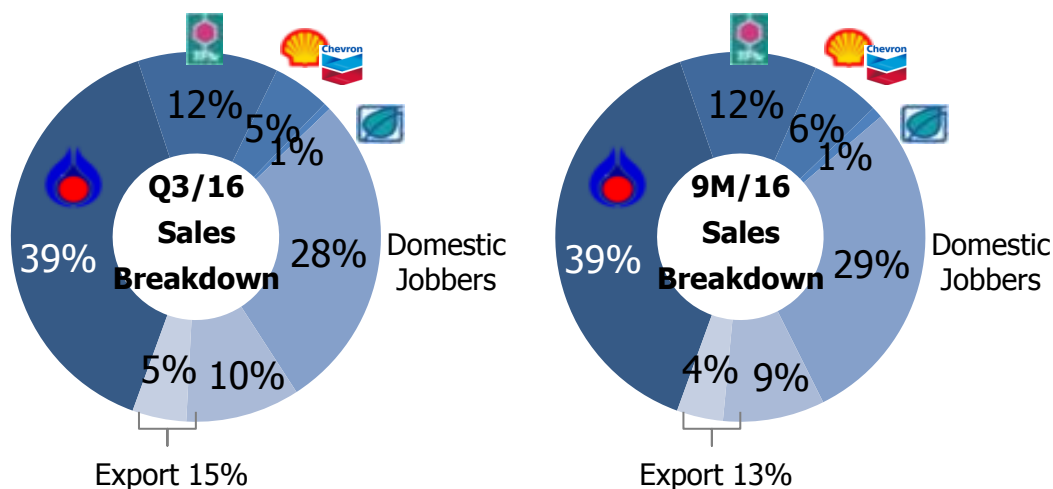
## AEC Oil Demand Growth

Unit: % Demand Growth YoY



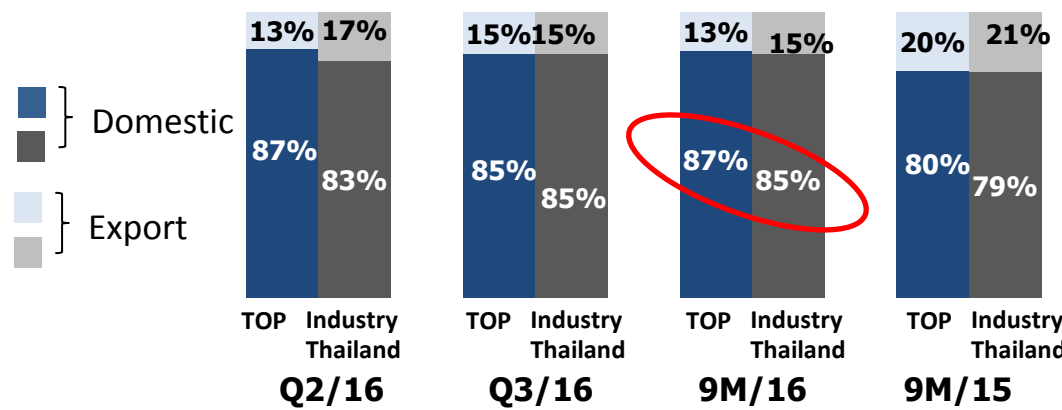
AEC countries: Cambodia, Myanmar, Vietnam, Indonesia, Thailand, Singapore, Philippines and Malaysia

## Sales breakdown by customers



## TOP's Domestic Sale vs Industry\*\*

| Export | Q2/16 |      | Q3/16 |      | 9M/16 |      | 9M/15 |      |
|--------|-------|------|-------|------|-------|------|-------|------|
|        | TOP   | Ind. | TOP   | Ind. | TOP   | Ind. | TOP   | Ind. |
| CLMV   | 9%    | 3%   | 9%    | 5%   | 9%    | 4%   | 8%    | 7%   |
| Others | 4%    | 14%  | 6%    | 10%  | 4%    | 11%  | 12%   | 14%  |

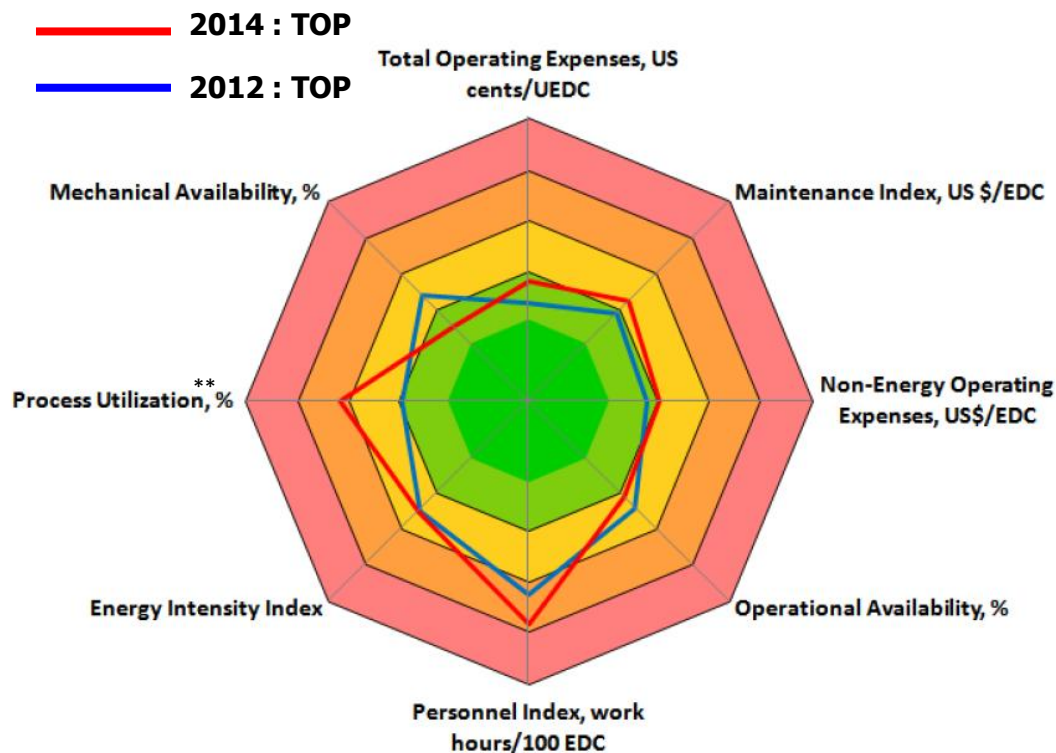




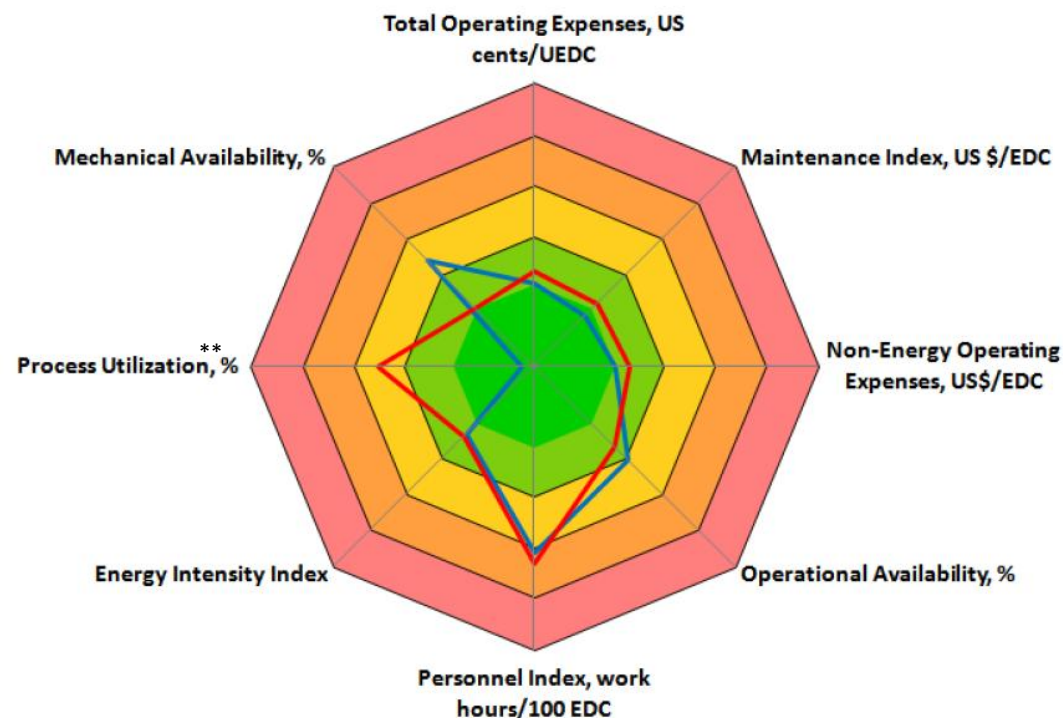
# Competitive Performance Benchmarking

Solomon Associates is the independent 3<sup>rd</sup> party who applies Comparative Performance Analysis methodology to industry peers in the area of reliability, equipment, utilization, operating expense, gross margin and overall performance range and come up with comparative ranking

## Overall Solomon



## Solomon for GOC 3\* Category



Remark : \*GOC 3 stands for Gas Oil Conversion Group 3, under which refineries in this group have equivalence distillation capacity 1,800 – 2,999 KEDC

\*\* In 2014, Thai Oil had Major turnaround for CDU-3 46 days and 2014FY refinery utilization was at 98%



Thailand's largest and one of the region's most advanced and competitive refineries

1

Diversified earnings through integration with, and significant contribution from, our subsidiaries

2

Strategic relationship and operational integration with PTT as the Group's principal refiner

3

Strategic location with competitive advantages in access to key markets

4

Industry with high barriers to entry and strong market positioning

5

Technological superiority, logistical advantages & cost leadership

6

Highly experienced management team

7

Strong financial profile

8



# Key Financial Highlights



# Q3/16 Key Market Drivers Highlights

## Refinery



- **Slightly soften MKT GRM mainly pressured by lower gasoline spread** from abundant inventory worldwide but offset by lower crude premium & stronger fuel oil spread
- **Weaken Dubai crude price** pressured by more supply from Libya & Nigeria, despite the OPEC agreement on oil output cut at Algiers meeting

## Implication

- **Soften Mkt GRM at 4.3 \$/bbl\***  
(Q2/16 = 4.4 \$/bbl)
- **(0.6) \$/bbl inventory loss\***  
(from stock gain 4.2 \$/bbl in Q2/16)\*

\* Based on refinery intake

## Aromatics & LAB



- **Improved Aromatic spread** supported by good downstream demand before G20 summit, decreased supply from plants shut down in Asia especially in China & Japan and weaken feedstock costs. **Slightly soften LAB spread** pressured by soft demand in Asia during monsoon season

## + Higher Aromatic & LAB Margins\*\*

(GIM contribution to 1.9 \$/bbl from 1.7 \$/bbl in Q2/16)

\*\* Aromatic contribution including LAB 0.3 \$/bbl in Q2/16 & Q3/16

## Lube Base



- **Declined Base Oil contribution** pressured mainly by 1-month planned MTA during Aug-Sep, while margins relatively stable as rising base oil offset lower bitumen spread

- **Soften Base Oil Contribution**  
(GIM contribution 0.6 \$/bbl from 0.9 \$/bbl in Q2/16)

**Refinery + Aromatics & LAB + Lube Base**

| \$/BBL                   | Q3/16 | Q2/16 |
|--------------------------|-------|-------|
| Market GIM               | ↓ 6.7 | 6.9   |
| Inventory Gains / (Loss) | (0.5) | 4.2   |
| Accounting GIM           | ↓ 6.2 | 11.1  |

# Q3/16 Key Achievements

## Key Achievements Q3/16

### Operational Excellence



- Optimized Refinery & Aromatics run, while lower run on Lube Base due to 1 month MTA during Aug-Sep

#### Utilization / Prod. Rate

|          | Q3/16 | Q2/16 |
|----------|-------|-------|
| Refinery | 107 % | 109%  |
| Aromatic | 80 %  | 80%   |
| Base Oil | 62 %  | 84%   |

- Captured high domestic sales

#### Local petroleum product sales (%)

|      | Q3    | 9M    |
|------|-------|-------|
| 2015 | 74%   | 80%   |
| 2016 | ↑ 85% | ↑ 87% |



### Sustainability

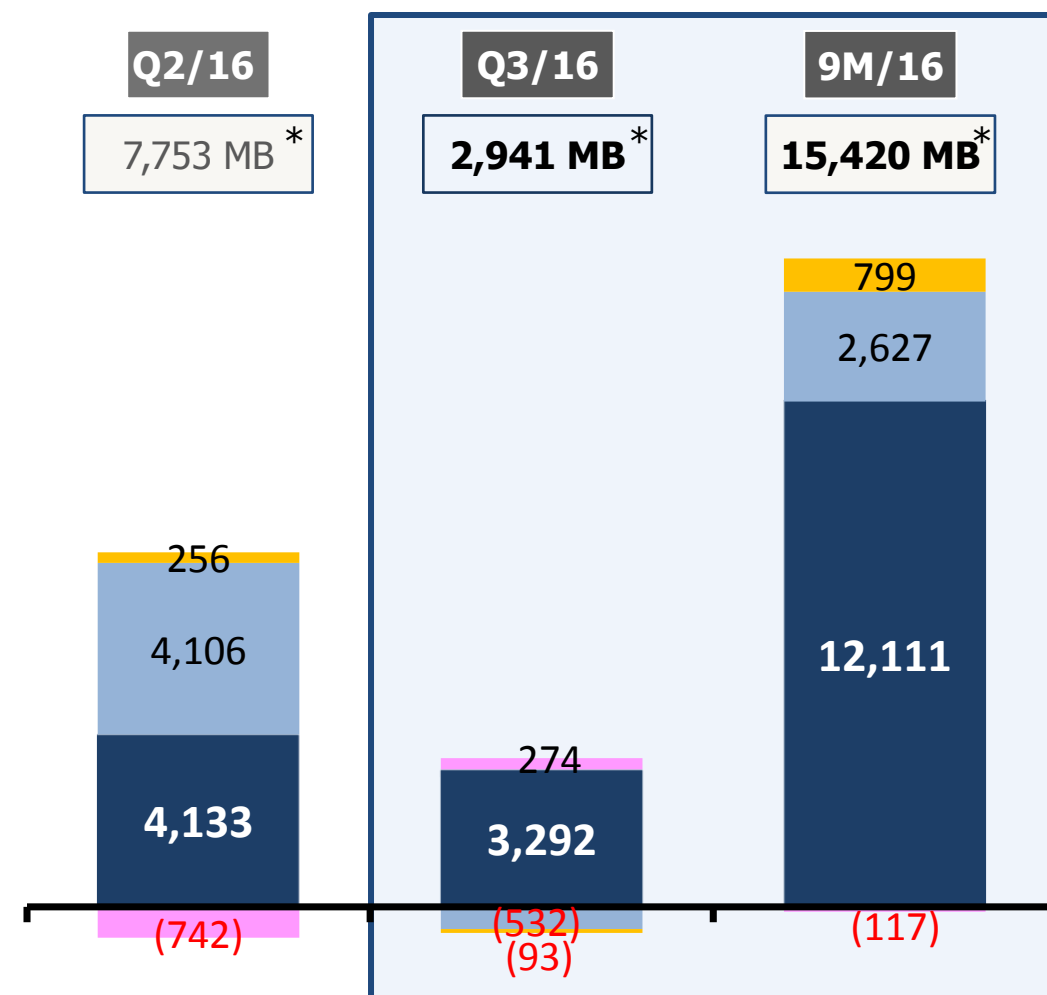
- Sustainability Leader for Oil & Gas Industry for 3<sup>rd</sup> consecutive years & 4<sup>th</sup> consecutive year for Member of DJSI Emerging Markets



## TOP Group Net Profit

Unit : million THB (MB)

- Net Operating Profit (before tax)
- Stock G/(L) (before tax)
- Reversal of NRV/(NRV) (before tax)
- Others i.e. FX G/(L), Hedging G/(L), tax expense etc.



\*redeemed BOI privilege for tax exemption on environmental projects in Q2/16 = 866 MB, Q3/16 = 99 MB, 9M/16 = 1,361 MB

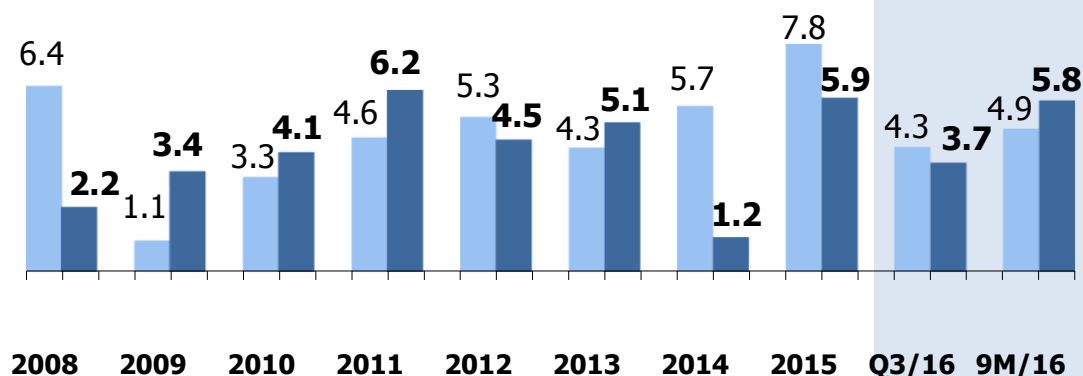


# Integrated Margin & Competitive Cash Cost

## Gross Refining Margin

(Unit: US\$/bbl)

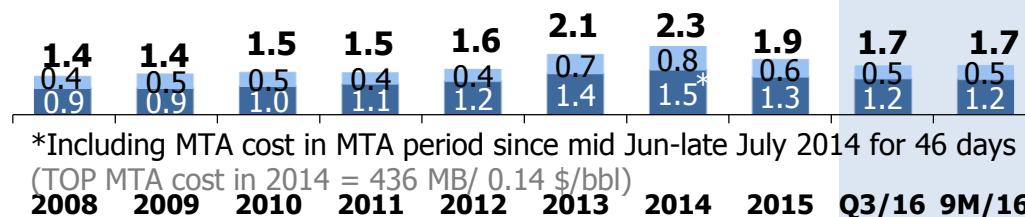
Market GRM Accounting GRM (Market GRM + Stock G/L)



## Refinery's Cash Cost

(Unit: US\$/bbl)

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

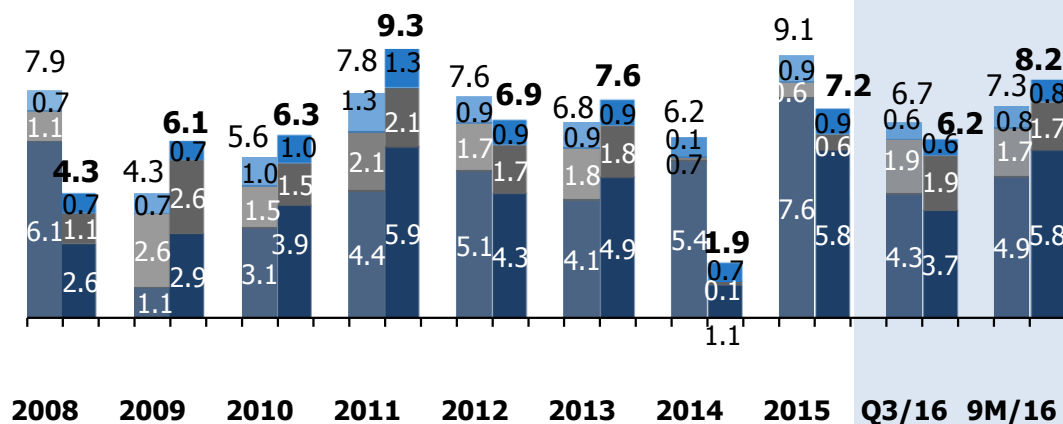


\*Including MTA cost in MTA period since mid Jun-late July 2014 for 46 days  
(TOP MTA cost in 2014 = 436 MB/ 0.14 \$/bbl)

## Gross Integrated Margin

(Unit: US\$/bbl)

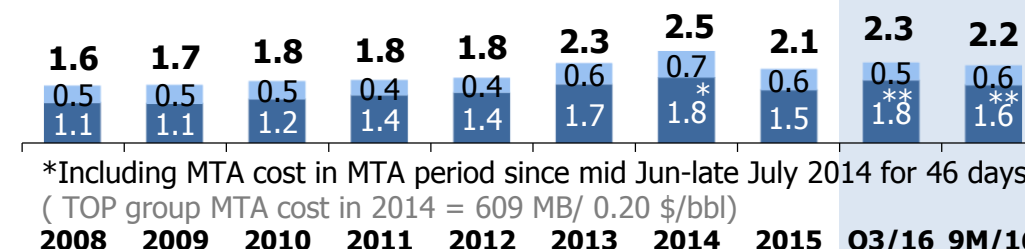
Market GIM Accounting GIM (Market GIM + Stock G/L)  
TOP TPX TLB



## Group's Cash Cost

(Unit: US\$/bbl)

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



\*Including MTA cost in MTA period since mid Jun-late July 2014 for 46 days  
( TOP group MTA cost in 2014 = 609 MB/ 0.20 \$/bbl)

\* \* Including LAB Q2/16=0.1 \$/bbl, Q3/16=0.1 \$/bbl, 9M/16=0.1 \$/bbl

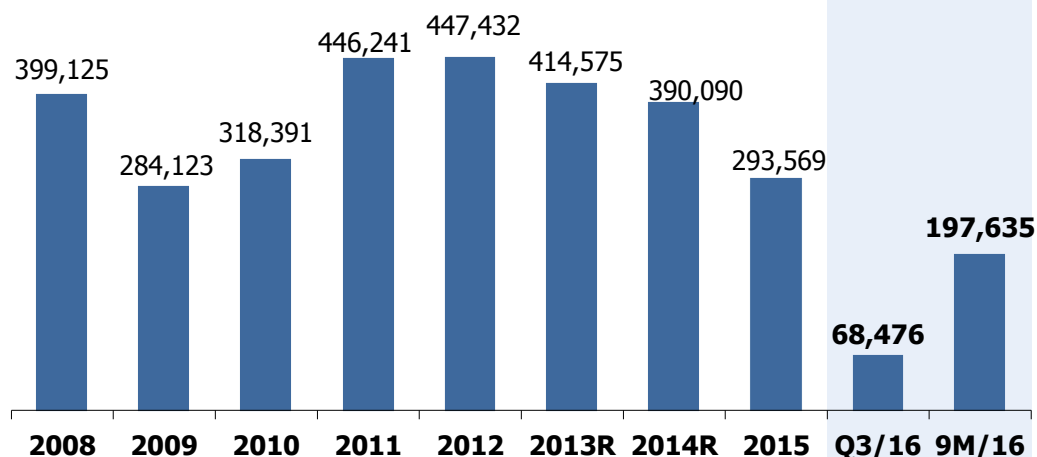
Higher group cash cost in Q3/16 due to MTA cost in TLB ~98 MB or ~ 0.1 \$/bbl



# Financial Performance

## Sales Revenue

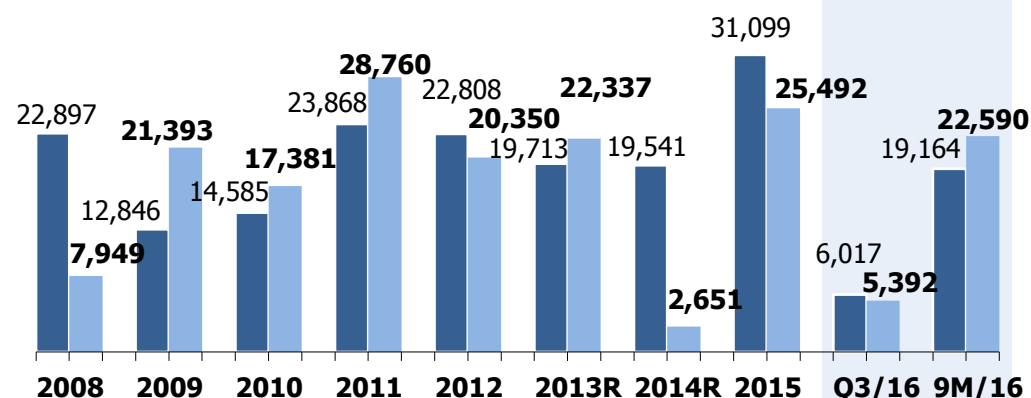
Unit: Million THB



## EBITDA

Unit: Million THB

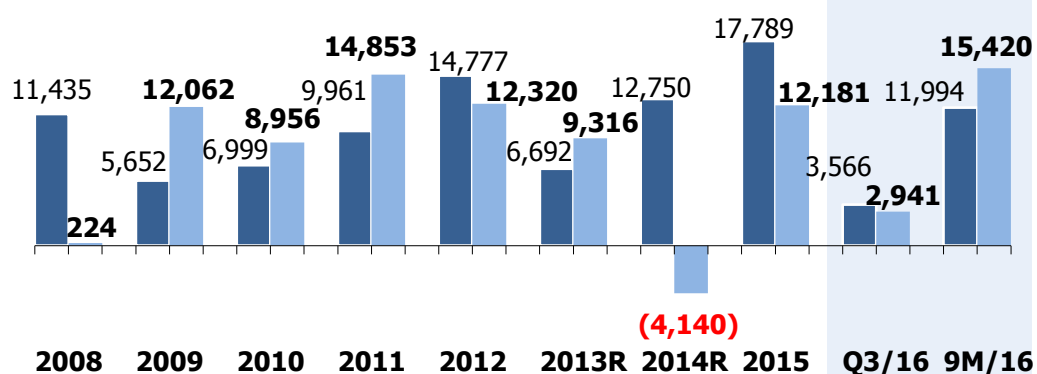
■ EBITDA (excl stk G/L &amp; NRV) ■ EBITDA (incl stk G/L &amp; NRV)



## Net Profit

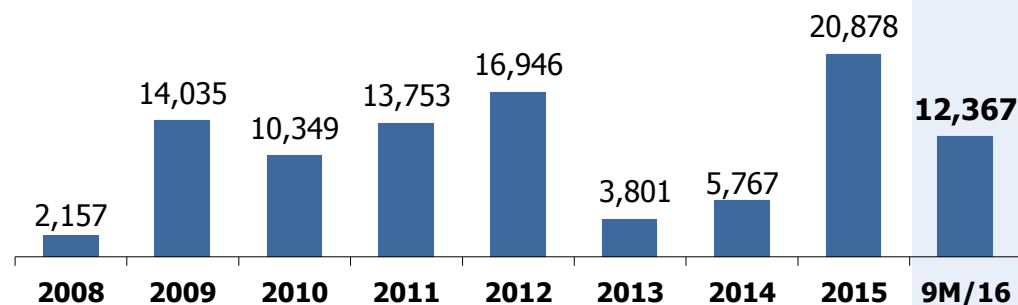
Unit: Million THB

■ NP (excl stk G/L &amp; NRV before tax) ■ NP (incl stk G/L &amp; NRV)



## Free Cash Flow\*

Unit: Million THB



CAPEX (PP&amp;E)-Net

|       |       |       |       |       |        |        |        |       |
|-------|-------|-------|-------|-------|--------|--------|--------|-------|
| 6,284 | 1,300 | 3,187 | 3,850 | 6,103 | 12,330 | 18,666 | 10,830 | 4,905 |
|-------|-------|-------|-------|-------|--------|--------|--------|-------|

R Restated financial statement

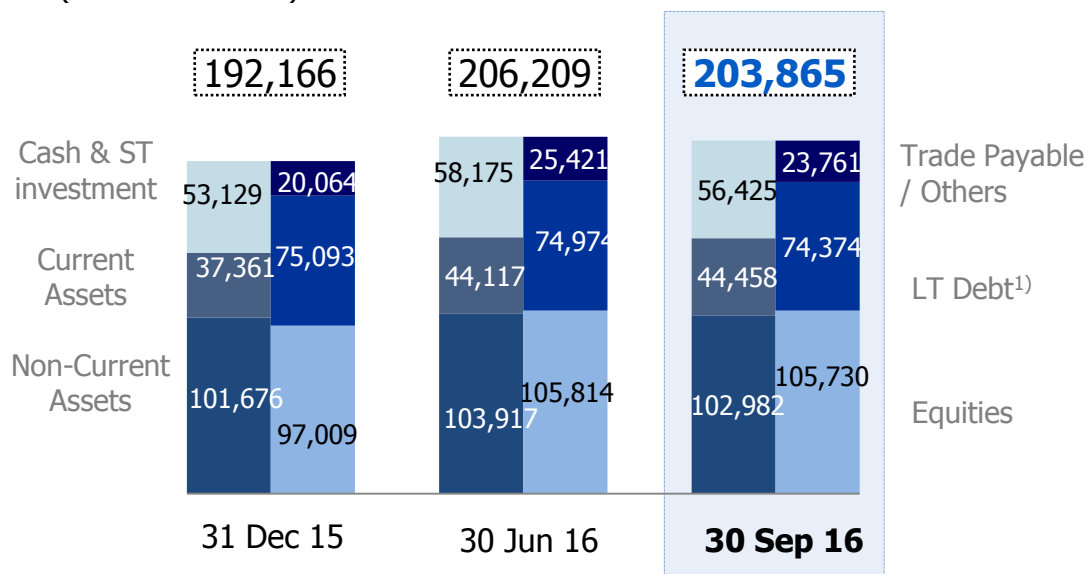
\* Free Cash Flow (FCF) = Operating cash flow – CAPEX(PP&amp;E)-Net



# Q3/16 TOP Group Strong Financial Position & Financial Ratios

## Statements of Financial Position

(Unit: million THB)



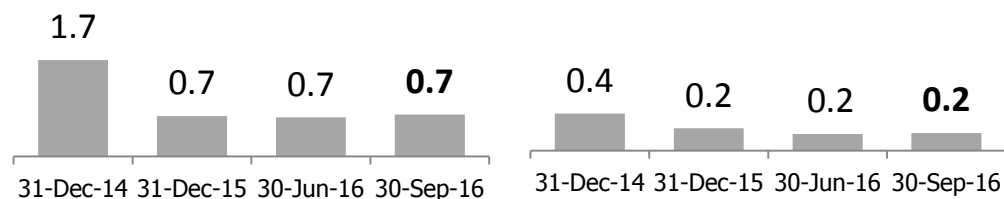
|      |       |         |         |
|------|-------|---------|---------|
| ROE  | 13.2% | 13.7% * | 18.9% * |
| ROIC | 12.6% | 13.4% * | 17.9% * |

<sup>1)</sup> Including current portion of Long-Term Debt

## 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))

## Consolidated Long-Term Debt as at 30 Sep 16 <sup>1)</sup>

### Total Long-Term Debt

74,374 million THB  
(US\$ 2,133 million  
equivalence)

### Net Debt

19,134 million THB  
(US\$ 549 million  
equivalence)

As at 30 Sep 16 (34.88 THB/US\$)

|                       | Value (Million) | Portion |
|-----------------------|-----------------|---------|
| US\$ Bond & US\$ Loan | USD 1,194       | 56%     |
| THB Bond              | THB 25,500      | 34%     |
| THB Loan              | THB 7,237       | 10%     |

| Interest Rate     | Portion  |
|-------------------|----------|
| Float             | 10%      |
| Fixed             | 90%      |
| TOP avg.debt life | 11.8 Yrs |

| Cost of Debt       |       |
|--------------------|-------|
| TOP Group (Net***) | 3.61% |
| TOP Group (Gross)  | 4.74% |

\*\*\*Calculated by interest expense net off interest income as per FS as at 30 Sep 16



Moody's Investors Service

Baa1  
Stable Outlook

STANDARD  
& POOR'S

BBB  
Stable Outlook

FitchRatings

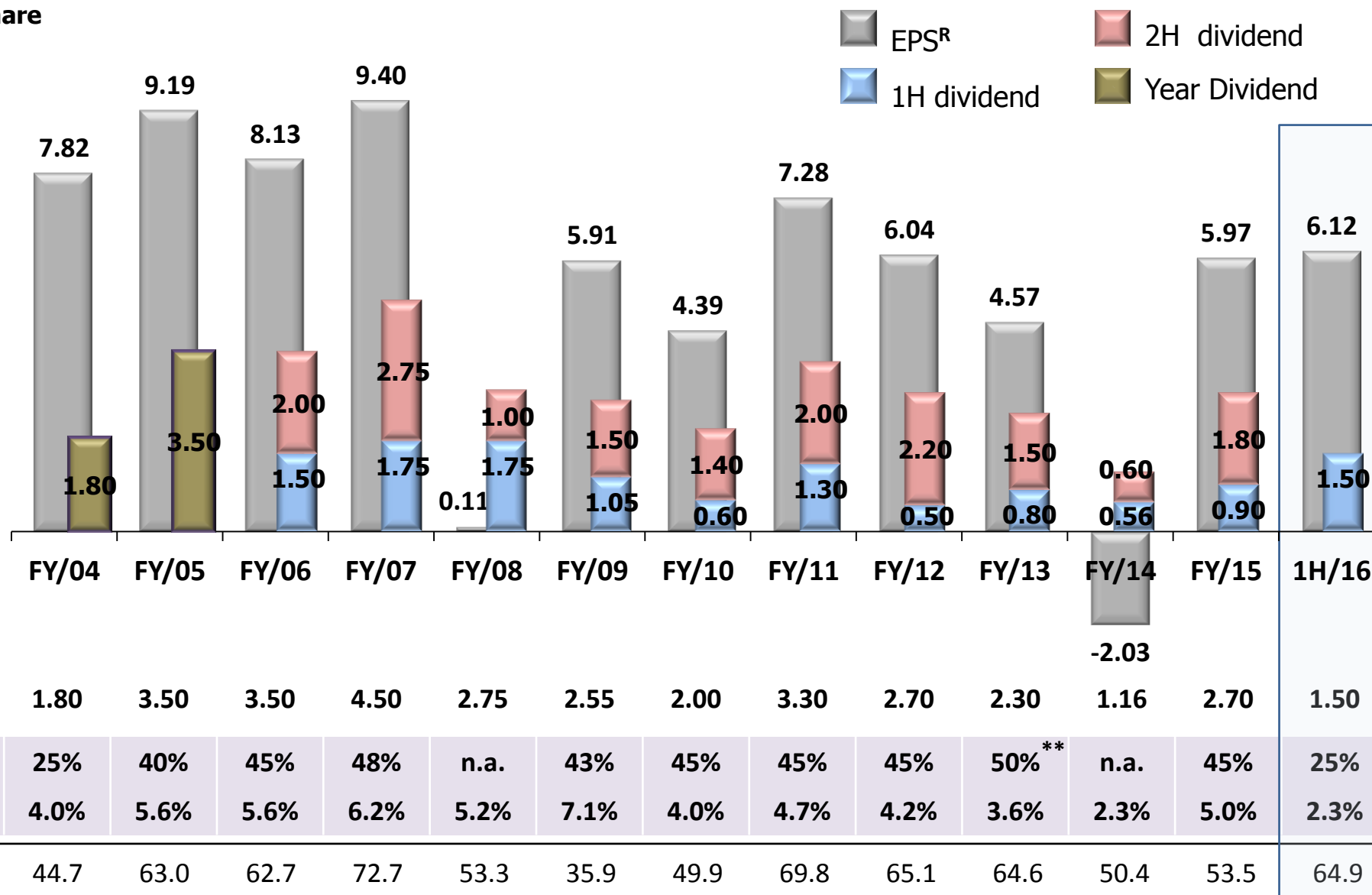
AA- (tha)  
Stable Outlook



# 2016 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



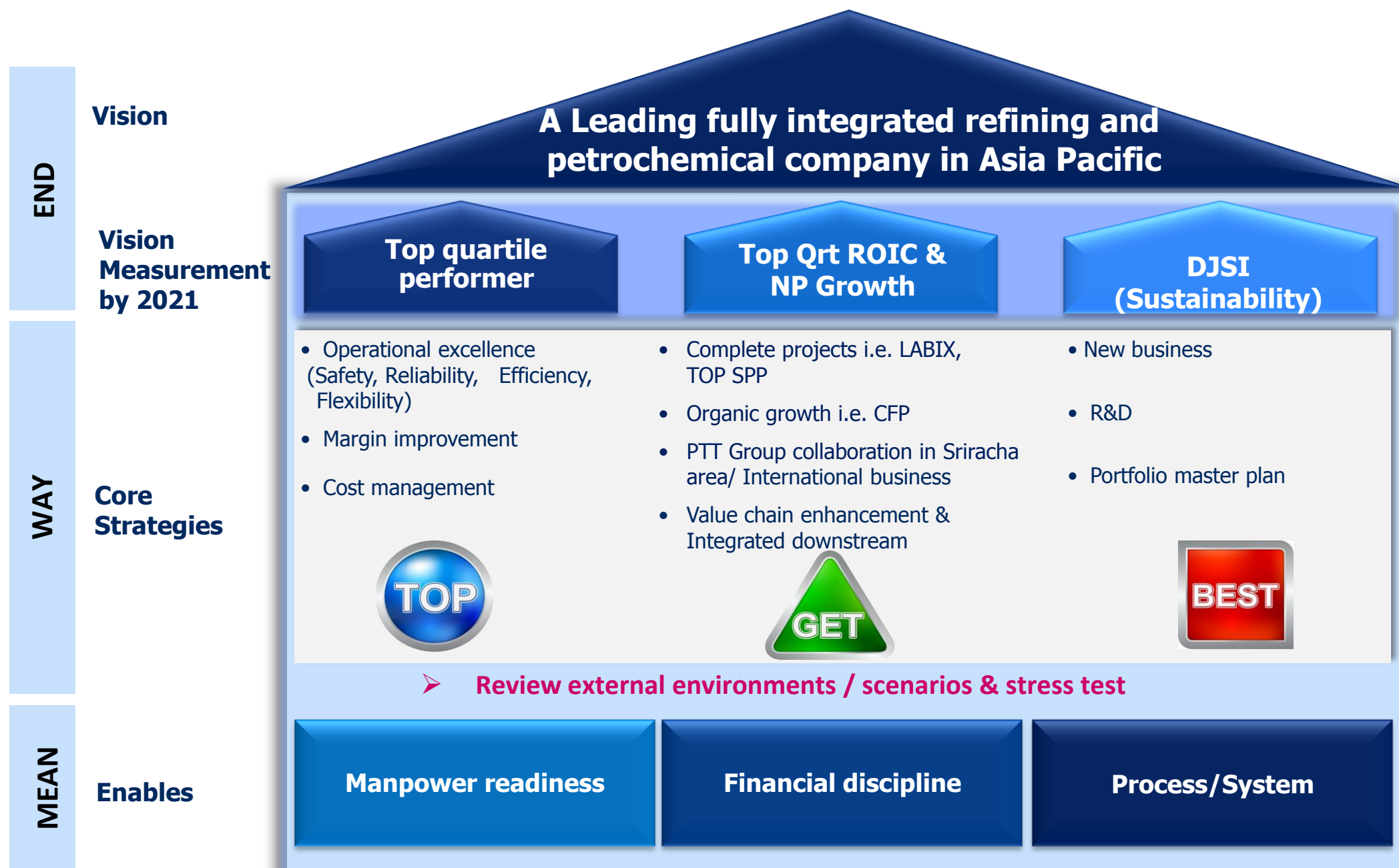
<sup>R</sup> Based on restated financial statement

\* Based on average TOP share price in each year    \*\* Dividend payout before restated = 45%



# Strategic Investment Plans





# Thaioil Group Investment Matrix



# Strategic Investment Plan



**Our CAPEX investments will cover improvements in plants reliability, efficiency & flexibility, environmental & fuel efficiency improvement as well as value chain enhancement**

**Thai Oil has sufficient internal cash flow to fund this investment plan**

| CAPEX Plan (Unit US\$ million)                      |           |                                |            | Remaining capital investment |            |           |  |
|---|-----------|--------------------------------|------------|------------------------------|------------|-----------|--|
| Projects  | COD       | Total Project Cost (2011-2018) | 2015       | 2016                         | 2017       | 2018      |  |
| Reliability, efficiency and flexibility improvement | 2013-2018 | 353                            | 21         | 60                           | 5          | 4         |  |
| Environmental and fuel efficiency improvement       | 2013-2015 | 269*                           | 5          | 8                            |            |           |  |
| CDU-3 preheat train                                 | 2014      | 68                             | 4          | 3                            |            |           |  |
| Benzene Derivatives - LAB                           | 2016      | 300                            | 74         | 38                           | 11         | 13        |  |
| Power – 2 SPPs                                      | 2016      | 380                            | 146        | 59                           |            |           |  |
| Solvent expansion – SAKC                            | 2014      | 64                             | 10         |                              |            |           |  |
| Marine fleets expansion                             | 2014/15   | 56                             | 15         | 5                            |            |           |  |
| Facility Improvement                                |           |                                |            |                              |            |           |  |
| - Lorry Expansion                                   | 2017      | 51                             | 3          | 34                           | 18         |           |  |
| - Jetty 7&8 / Improvement                           | 2018      | 129                            |            | 2                            | 93         | 35        |  |
| <b>Total</b>  |           | <b>1,670</b>                   | <b>278</b> | <b>209</b>                   | <b>127</b> | <b>52</b> |  |

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

\*anticipated to receive BOI for environmental projects

**\$388m**



# Key Projects Update : Successfully COD of LAB & TOP SPP

## Project : LAB

TPX 75% & Mitsui 25% , CAPEX 400 M\$

**Feedstock** : Kerosene 532 KTA, Benzene 33 KTA

**Product** : LAB 100 KTA, By Product (mainly kerosene component return to refinery) 463 KTA

**Successfully COD** : 25 Feb 2016

**Benefit Guidance** : Incremental GIM 0.40 – 0.60 \$/BBL or  
EBITDA ~ 1,100-1,500 MB p.a.

## Project : TOP SPP

TOP owns 100% , CAPEX 380 M\$

**Power capacity** : 239 MW (20% TOP Group & 80% EGAT)

**Steam capacity** : 498 TPH (100% TOP Group)

**Successfully COD** : 1<sup>st</sup> Block (124 MW) 1 Apr 2016

2<sup>nd</sup> Block (115MW) 1 Jun 2016

**Benefit Guidance** : EBITDA ~ 1,850 MB p.a.

**LABIX**

**Thaioil 55 Group**

**TOP SPP**

Thaioil 55<sup>th</sup> Anniversary & Grand Opening of LABIX and TOP SPP  
3<sup>rd</sup> AUGUST 2016

BUILD ON THE  
GROWTH

FOR SUSTAINABLE  
SUCCESS

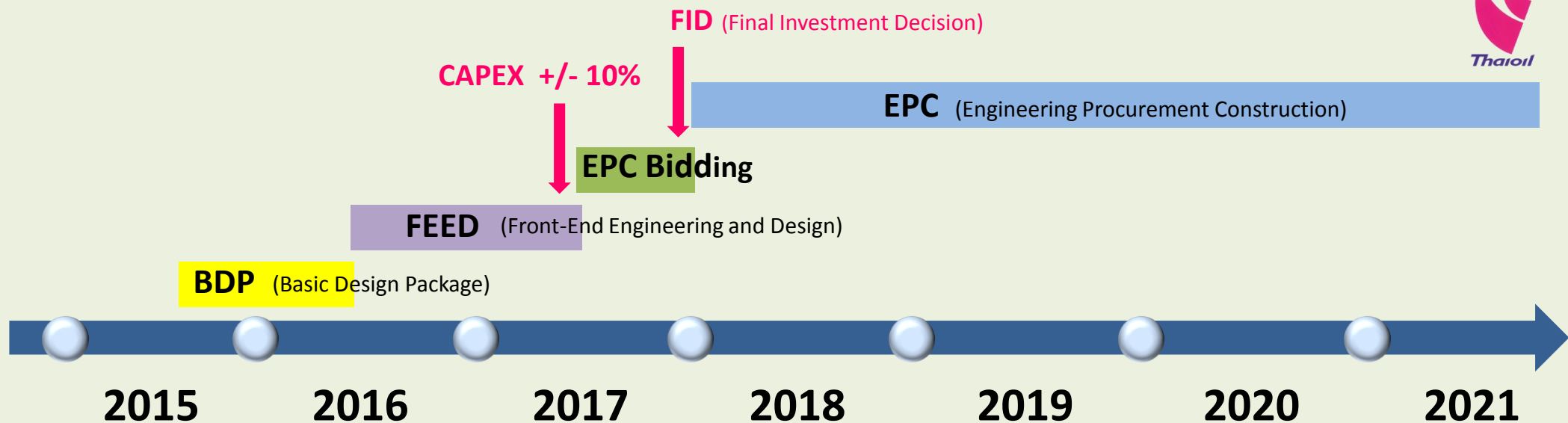


# Study Project : Clean Fuel Project (CFP)

## Main objectives of CFP

- Enhance **competitive advantage** of the refinery and **maintain 1<sup>st</sup> quartile performer**
- Enhance capability to **upgrade lower value product** into higher value product and ability to **process heavier (cheaper) crude oil**

## CFP Study Time line



# Q4-16 & 2017 MARKET OUTLOOK

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







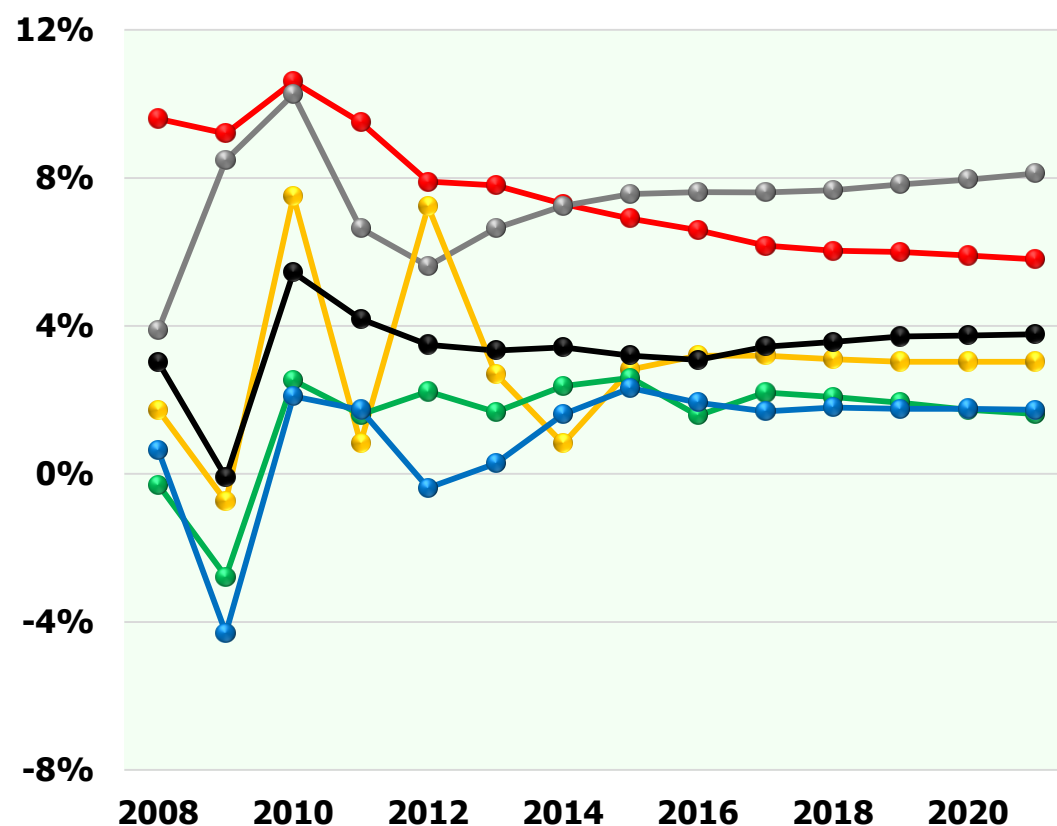
# CRUDE OIL



# World Economic Outlook

## 2017's world GDP growth at 3.4% and gradually rises throughout 2021

Growth (%YoY) — China — India — Thailand — US — EU — World

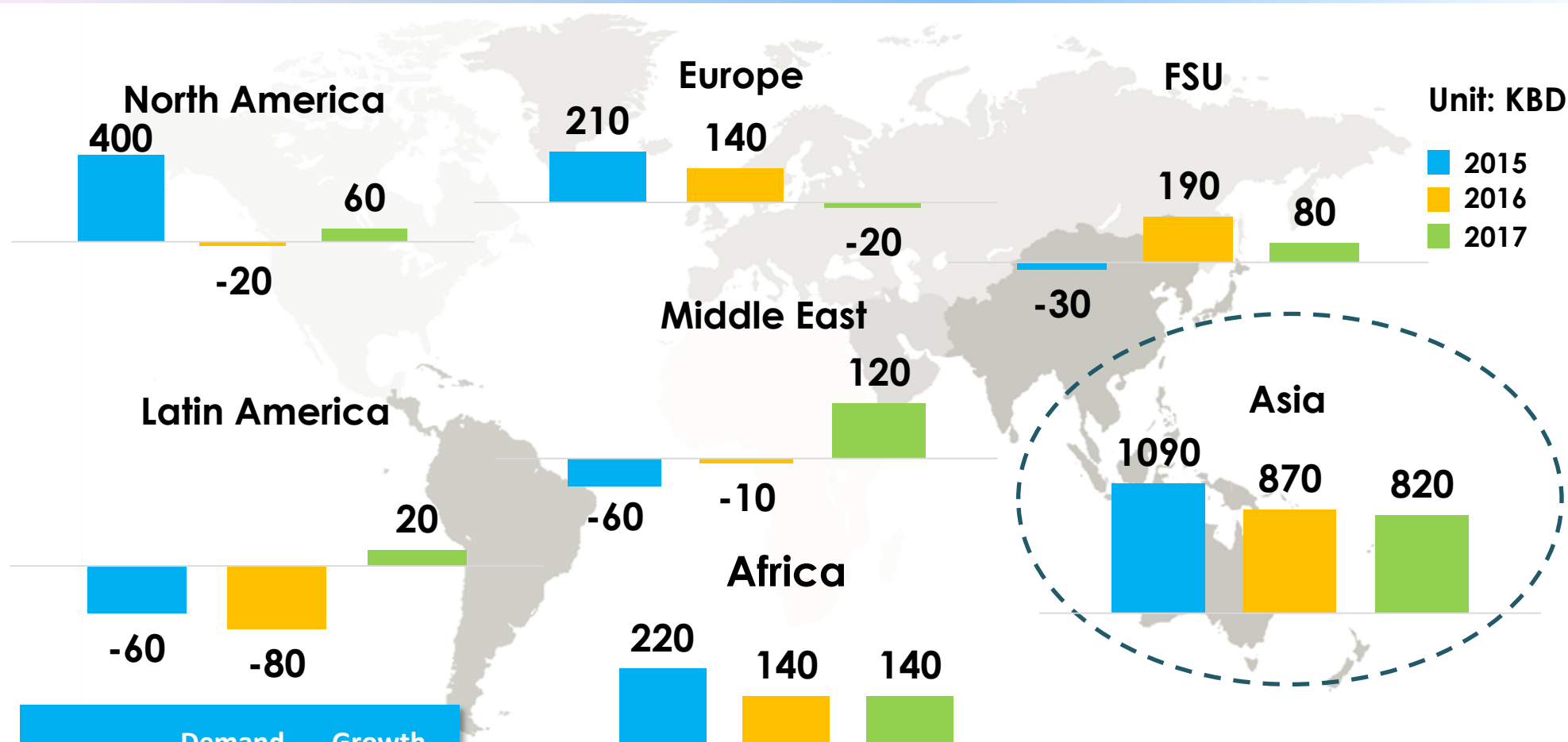


| INTERNATIONAL MONETARY FUND | 2016                  | 2017                  | 2018-21               |
|-----------------------------|-----------------------|-----------------------|-----------------------|
|                             | Oct-16 <sup>(1)</sup> | Oct-16 <sup>(1)</sup> | Oct-16 <sup>(1)</sup> |
| US                          | 1.6%                  | 2.2%                  | 1.8%                  |
| EU                          | 1.9%                  | 1.7%                  | 1.8%                  |
| China                       | 6.6%                  | 6.2%                  | 5.9%                  |
| India                       | 7.6%                  | 7.6%                  | 7.9%                  |
| Thailand                    | 3.2% <sup>(2)</sup>   | 3.2% <sup>(2)</sup>   | 3.1% <sup>(1)</sup>   |
| Indonesia                   | 4.9%                  | 5.3%                  | 5.8%                  |
| Vietnam                     | 6.1%                  | 6.2%                  | 6.2%                  |
| World                       | 3.1%                  | 3.4%                  | 3.7%                  |

Sources : 1) IMF Oct'16 (2) BOT's monetary Policy Report of Sep 2016

# Global Oil Demand Growth Projection

IEA forecasted 2017's global oil demand to grow by 1.2 MBD, driven by Asia

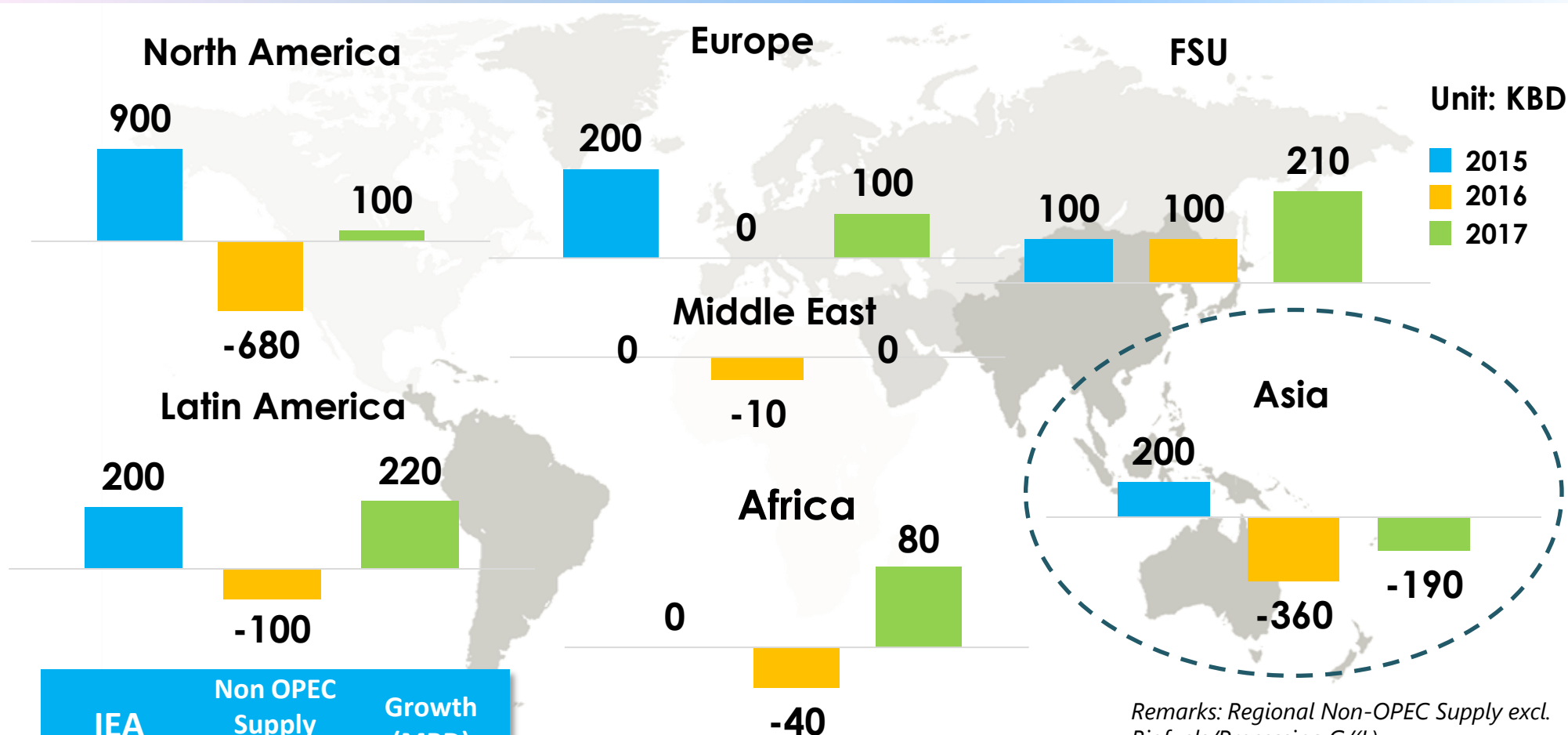


| IEA  | Demand (MBD) | Growth (MBD) |
|------|--------------|--------------|
| 2015 | 95.04        | 1.8          |
| 2016 | 96.28        | 1.3          |
| 2017 | 97.51        | 1.2          |

■ The global oil demand will grow by **1.2 MBD** in **2017**

# Non-OPEC Supply Growth Projection

IEA estimated 2017's Non-OPEC oil supply growth to grow by 400 KBD



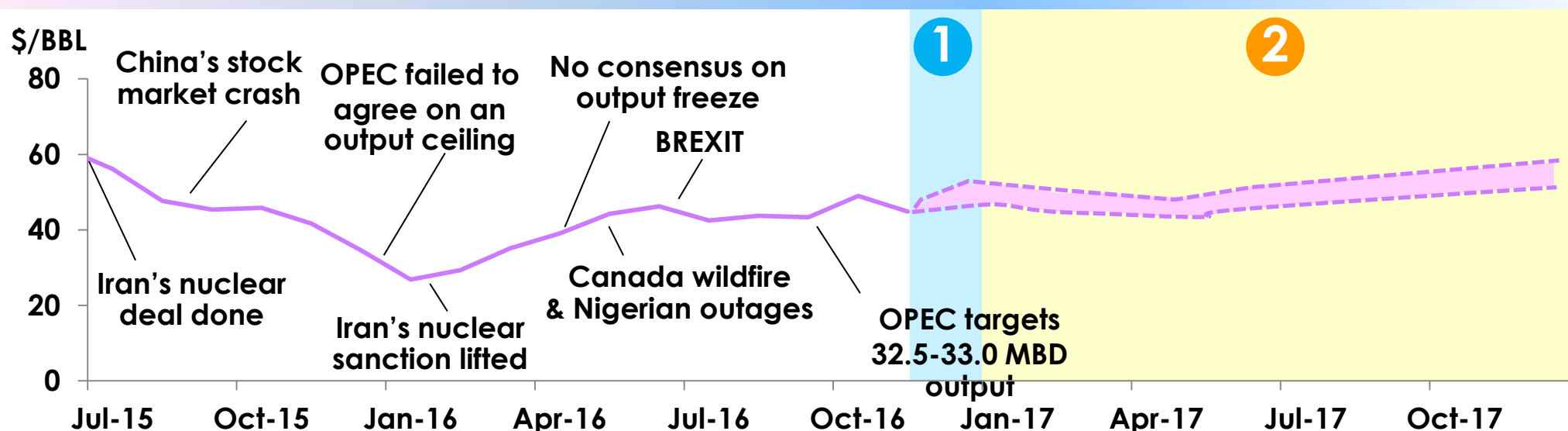
| IEA  | Non OPEC Supply (MBD) | Growth (MBD) |
|------|-----------------------|--------------|
| 2015 | 57.5                  | 1.5          |
| 2016 | 56.6                  | -0.9         |
| 2017 | 57.0                  | 0.4          |

Source: IEA, Oil Market Report Oct'16 2016

■ Non-OPEC outputs to contract by **900 KBD** in **2016** on due to low oil prices before **growth returns in 2017**.

# Crude Oil Market: Oil Market Rebalances in 2017

## Dubai Price Movement



\*Q4TD (as of 2 Nov): \$48.6/BBL

## Key Highlights

1

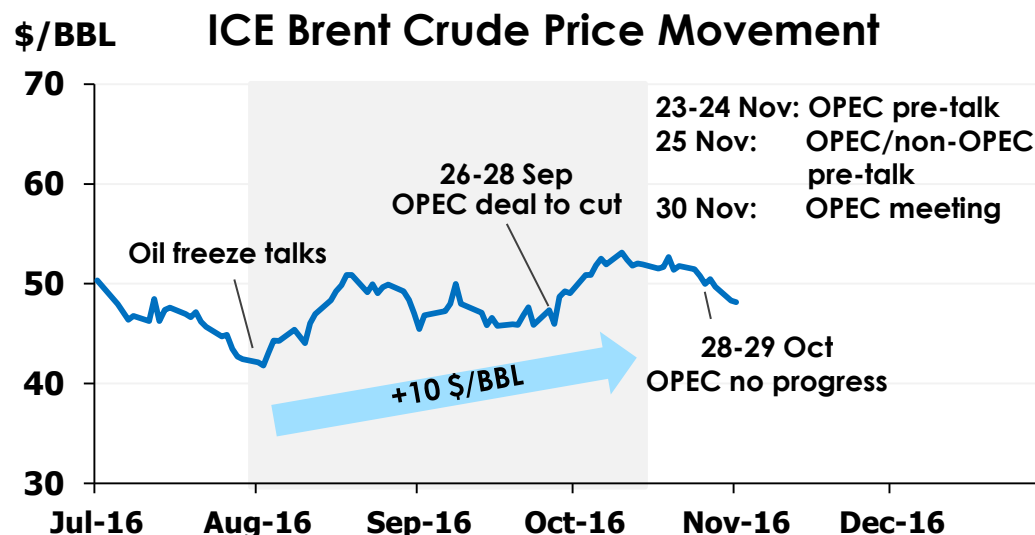
Uncertainty Over OPEC Cut Deal in Q4-16

2

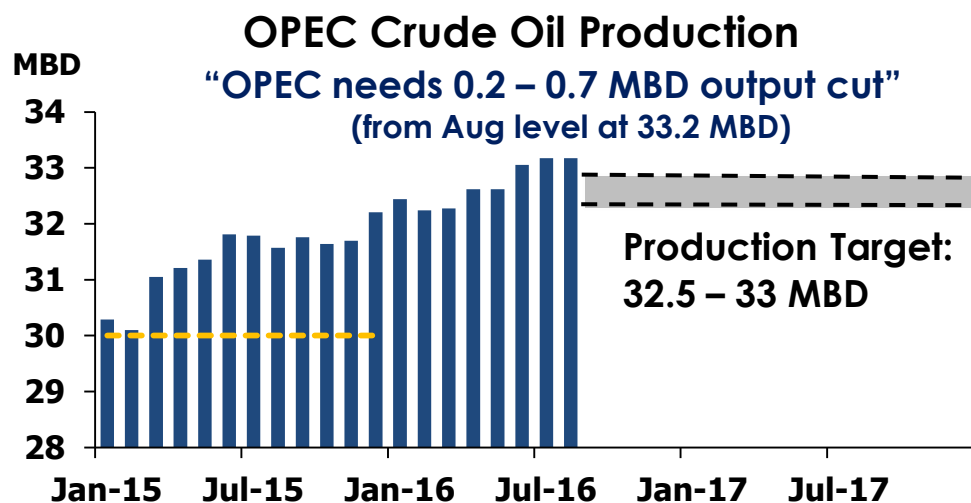
Market Rebalancing from Lower U.S. Oil Output and Firm Demand Growth in 2017

# 1 Uncertainty Over OPEC Cut Deal in Q4-16

## A Increasing Oil Price Due to OPEC's Talk to Cut



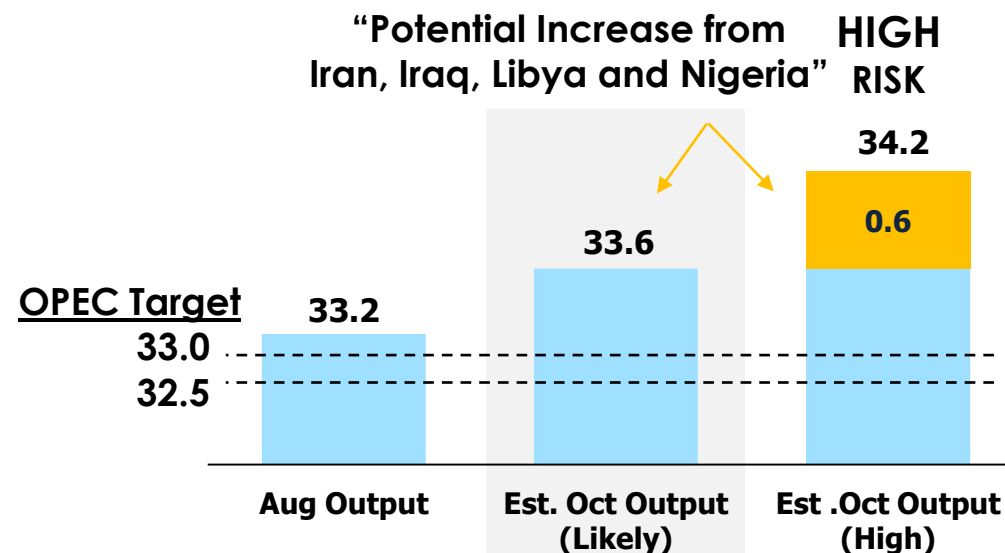
## B OPEC Agreed To Reduce Production



Sources: OPEC Monthly Report (Oct'16)

## C Possible OPEC Output Cut Amid High Risk

UNIT: MBD



OPEC Needs to cut:

0.6-1.1

1.2-1.7

Impacts (vs. Nov'16)

OPEC @33MBD

+

++

No Output Cut

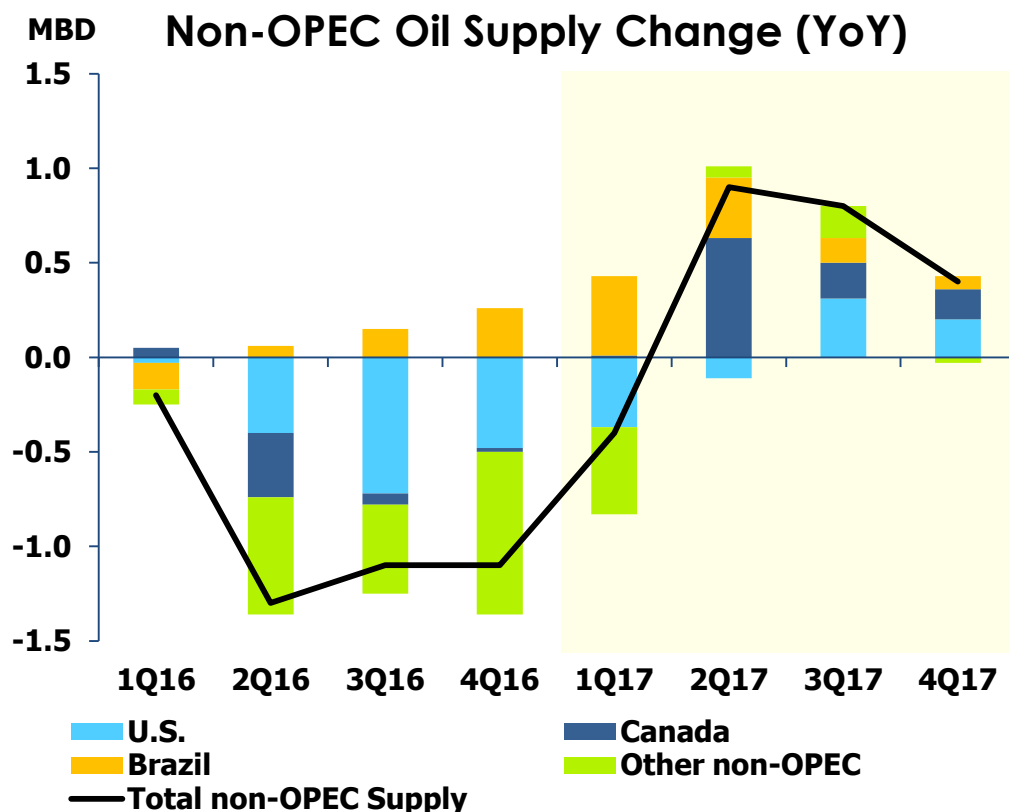
-

--

Sources: OPEC Monthly Report (Oct'16) and TOP's Estimate

# Market Rebalancing from Lower U.S. Oil Output and Firm Demand Growth in 2017

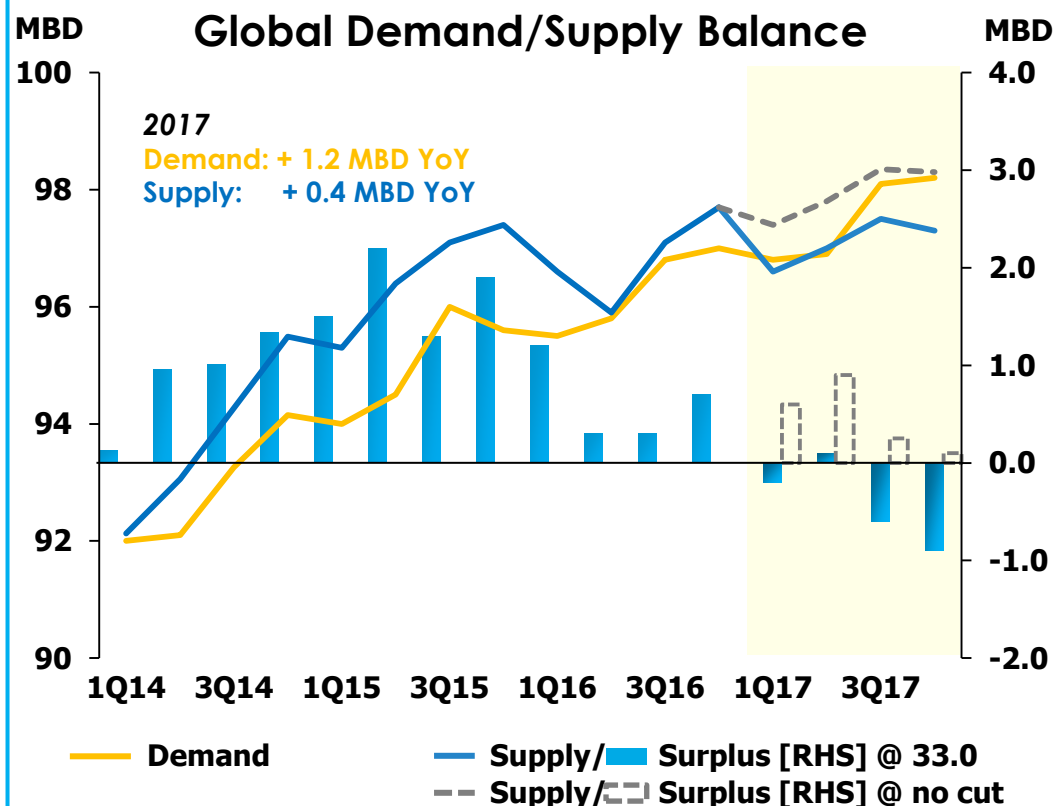
## A Declining U.S. Oil Output



- U.S. oil supply is declining amid low oil prices
- Productions from Brazil and Canada will rise from new projects coming online

Sources: IEA (Oct'16), TOP's Estimate

## B Market to Rebalance in 2017



- Crude surplus to reduce from persistent demand growth
- OPEC @33 MBD : Rebalance in 1H-17
- No Output Cuts : Rebalance in 2H-17

Source: IEA (Oct'16) and TOP's Estimate



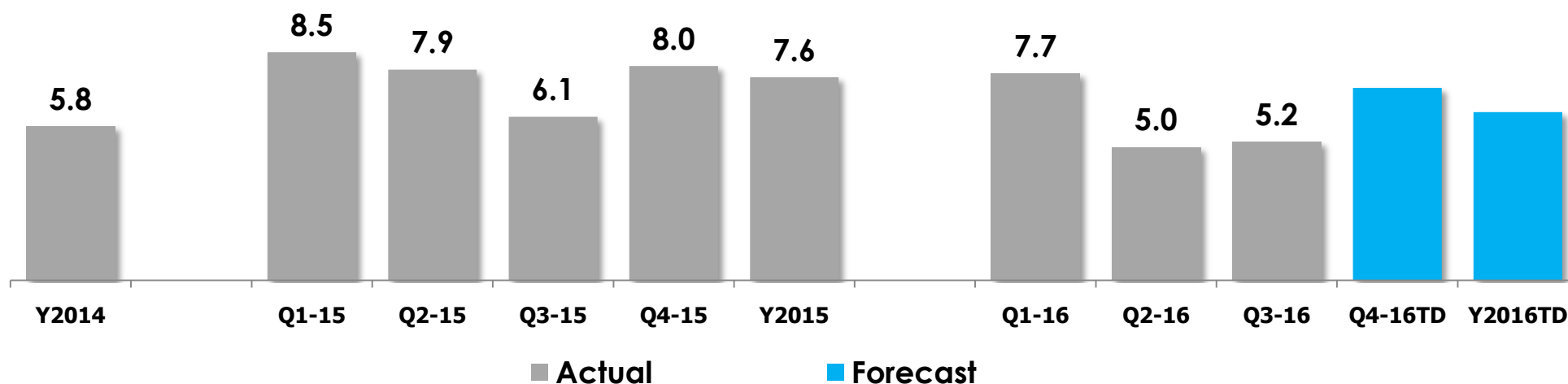
# PETROLEUM PRODUCTS





# Higher Refinery Margins from Demand Growth Outpacing Refinery Capacity Addition

## Singapore Cracking GRM (\$/BBL)



Sources: Reuters, TOP's estimate

| (\$/BBL) | Q1-16 | Q2-16 | Q3-16 | Q4TD-16* | 2016TD* |
|----------|-------|-------|-------|----------|---------|
| ULG95-DB | 18.8  | 14.4  | 11.6  | 14.3     | 14.8    |
| JET-DB   | 11.7  | 11.1  | 11.1  | 12.1     | 11.4    |
| GO-DB    | 9.6   | 10.5  | 11.0  | 12.4     | 10.6    |
| HSFO-DB  | (5.2) | (8.7) | (4.3) | (3.8)    | (5.9)   |

Remarks: \*Q4TD-16 and 2016TD as of 2 Nov 16

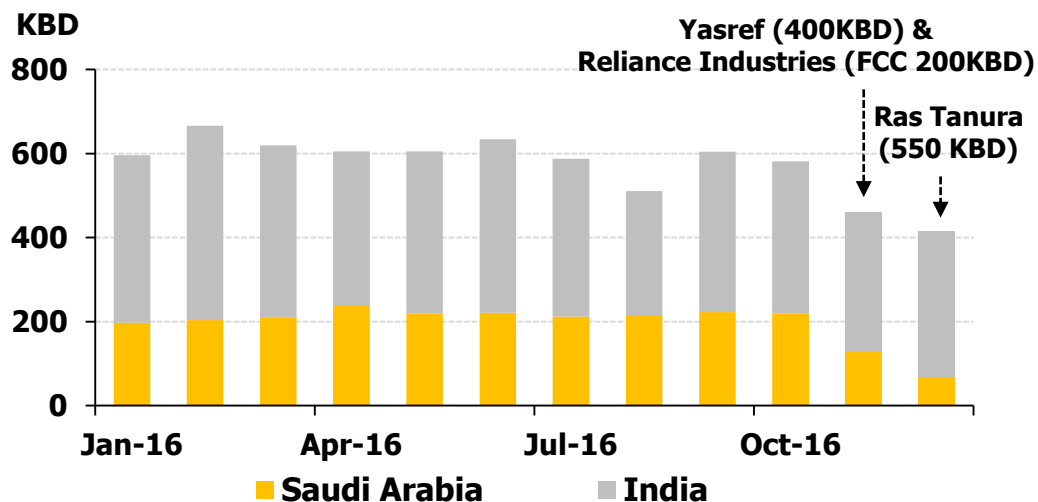
## Key Highlights in 2017

- 1 Better Refinery Margins in Q4-16 from Tighter Supply and Improved Distillate Demand
- 2 Higher Refinery Margins in 2017 from Demand Growth Outpacing Refinery Capacity Addition

# Better Refinery Margins in Q4-16 from Tighter Supply and Improved Distillate Demand

## A Tight Supply from Shutdown of Mega Refineries

### Saudi Arabia and India Gasoline Export



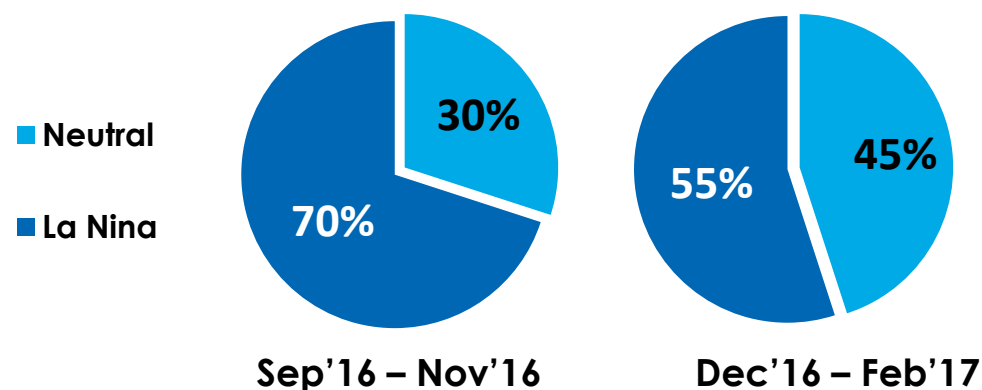
### Saudi Arabia Gasoil Export



Source : FACTs (Oct'16) , JODI and TOP's Estimate

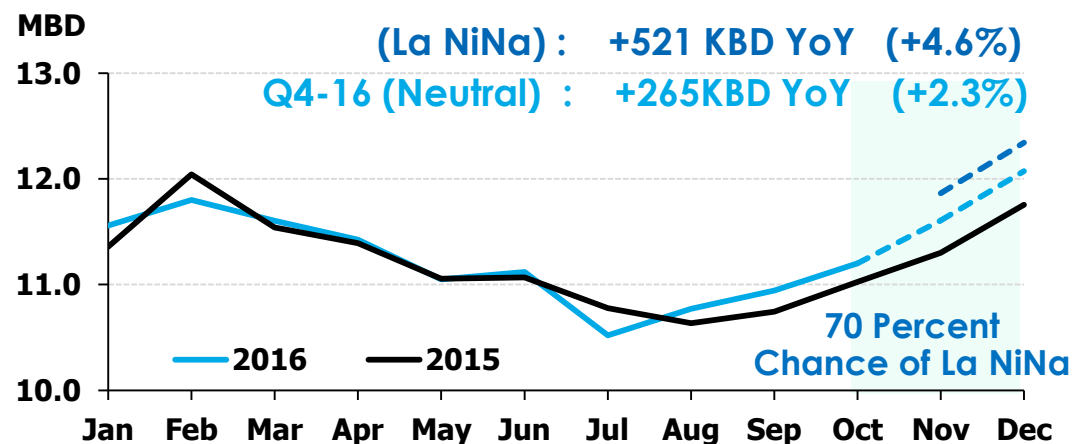
## B Demand on the Upside from La Niña

### Percent of La Nina Development



Sources : National Oceanic and Atmospheric Administration (Oct'16)

### Asia Pacific Middle Distillate Demand



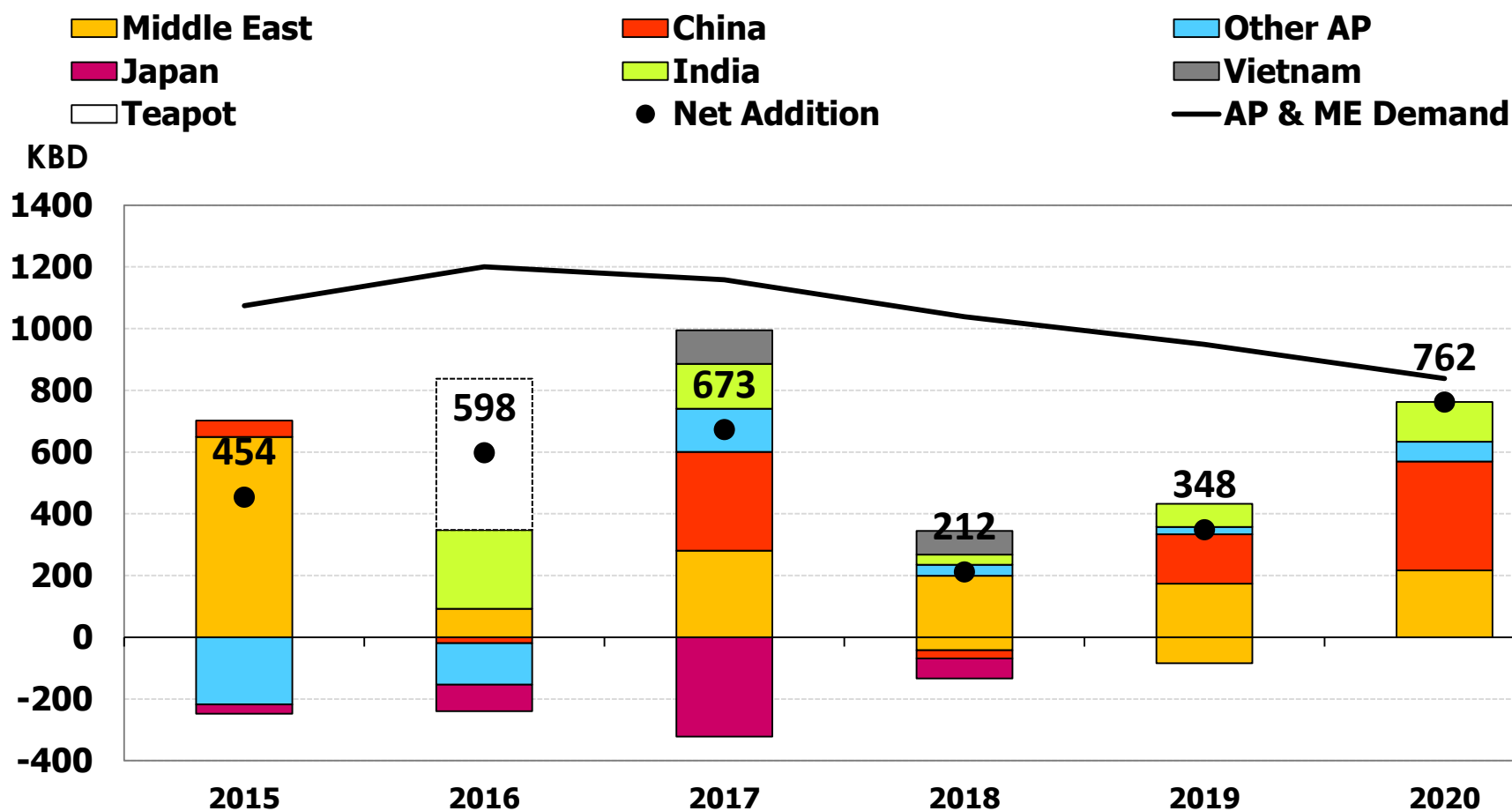
Source : FACTs (Oct'16)

2

# Higher Refinery Margins in 2017 from Demand Growth Outpacing Refinery Capacity Addition

## Demand Growth Better Than Refinery Addition in 2017

CDU Addition VS Additional Demand – AP & ME



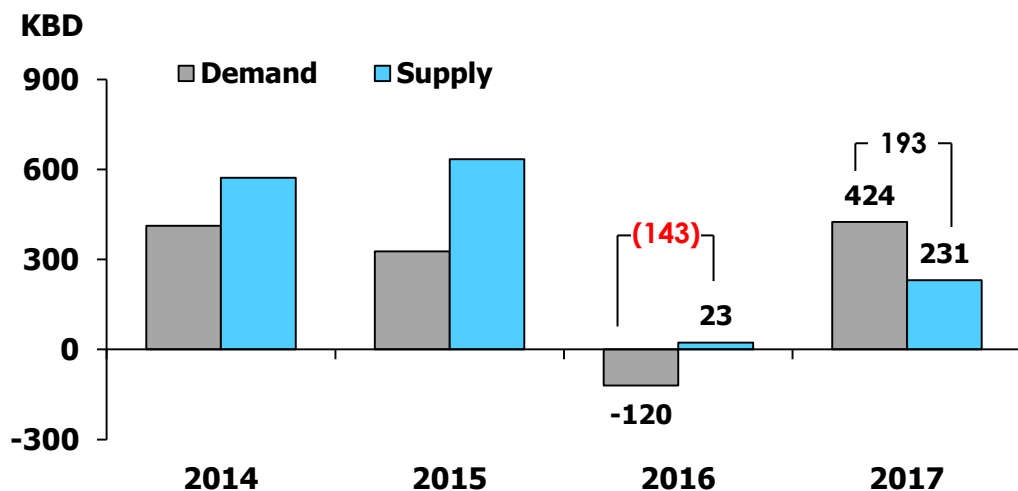
Note: Adjusted capacity based on start-up period (effective additional capacity)

# Higher Refinery Margins in 2017 from Demand Growth Outpacing Refinery Capacity Addition (Cont.)

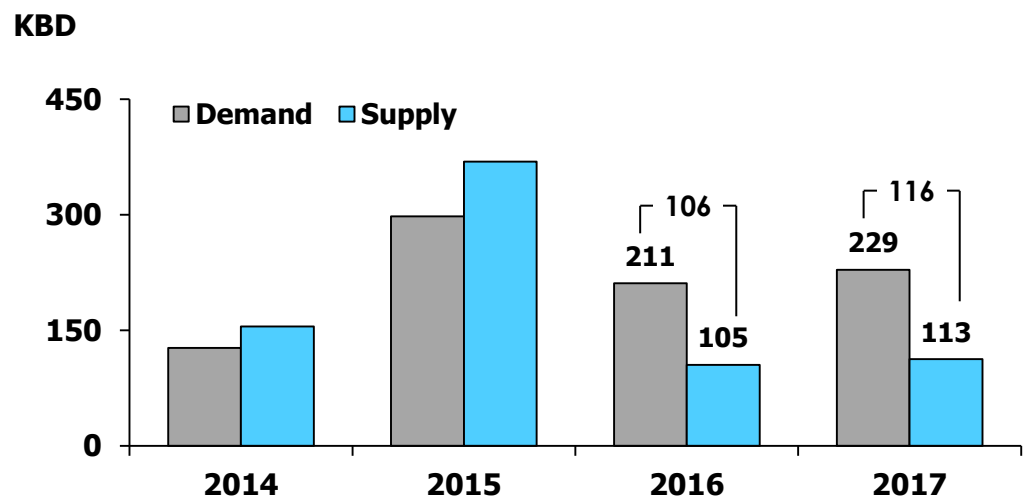


## A Better Middle Distillate from Recovered Demand

### World Gasoil Demand & Supply Growth YoY



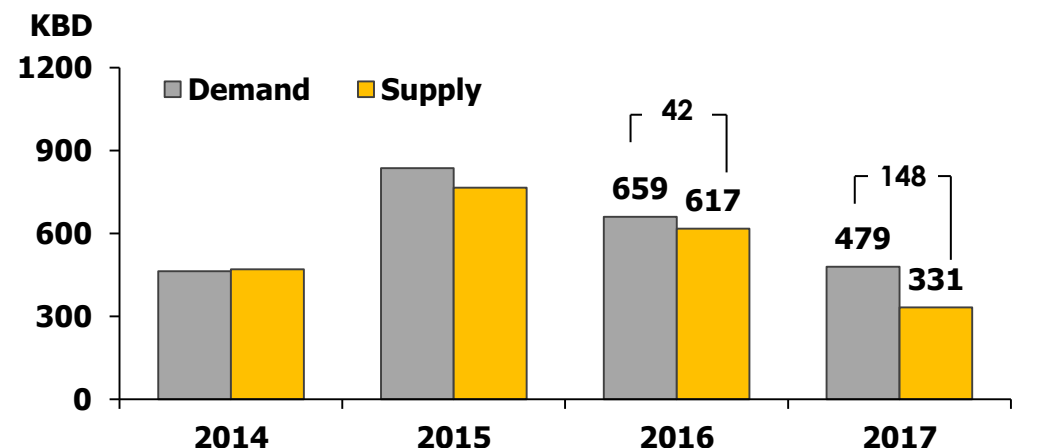
### World Jet/Kero Demand & Supply Growth YoY



Sources: FACTs (Oct'16) and JBC (Oct'16)

## B Strong Gasoline from Demand Outpacing Supply

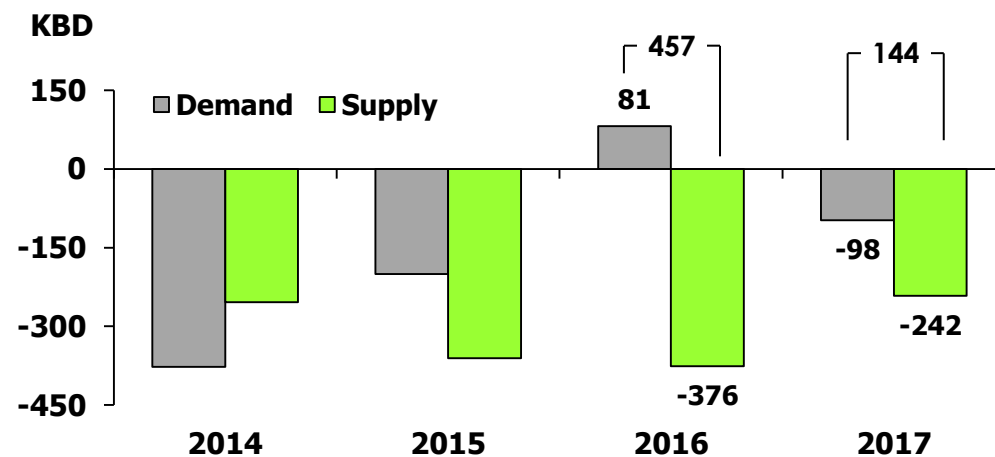
### World Gasoline Demand & Supply Growth YoY



Sources: FACTs (Oct'16) and JBC (Oct'16)

## C Tightening Supply from New Upgrading Units

### World Fuel Oil Demand & Supply Growth YoY



Sources: FACTs (Oct'16) and JBC (Oct'16)

# Thailand Oil Demand Growth

## Thailand Oil Demand Growth



| Year on Year          | Average<br>2011-2015 <sup>(B)</sup> | Y 2015 <sup>(B)</sup> | 9M-16 <sup>(B)</sup><br>(vs. 9M-15) | Y 2017 <sup>(C)</sup> |
|-----------------------|-------------------------------------|-----------------------|-------------------------------------|-----------------------|
| Mogas <sup>(A)</sup>  | +7.1%                               | +13.3%                | +11.1%                              | +1.3%                 |
| Jet/Kero              | +4.4%                               | +9.7%                 | +7.5%                               | +3.7%                 |
| Diesel <sup>(A)</sup> | +3.4%                               | +4.0%                 | +3.7%                               | +2.4%                 |
| Total                 | +4.4%                               | +7.1%                 | +6.2%                               | +2.3%                 |
| GDP                   | +3.4%                               | +2.8%                 | N/A                                 | +3.2% <sup>(D)</sup>  |

**Thailand oil demand growth at 2.3% YoY in 2017**

**Remarks:** (A) Mogas and Diesel includes Ethanol and Biodiesel, respectively  
 (B) DOEB Statistics (Nov-16)  
 (C) PTT's Estimation (Jul-16)  
 (D) BOT's Estimate (BOT Monetary Report as of Oct-16)



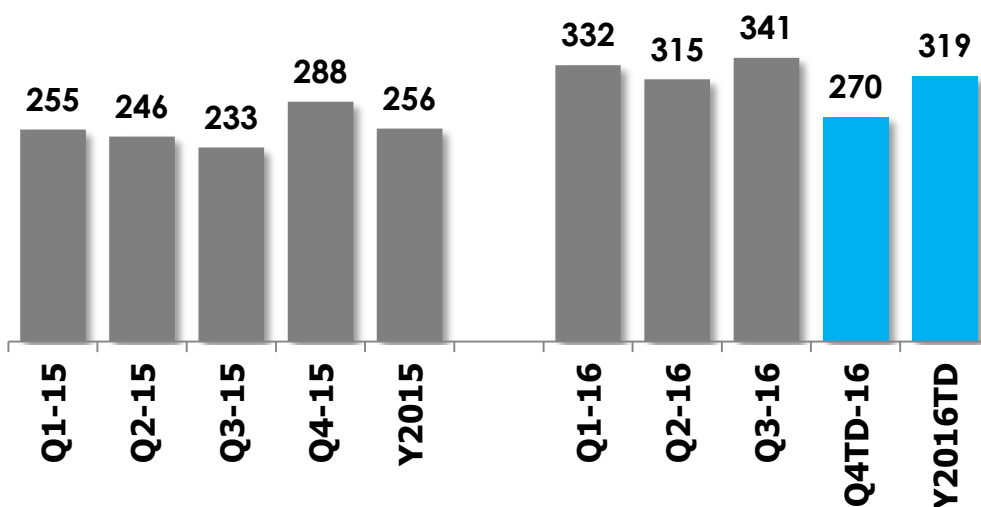
# AROMATICS



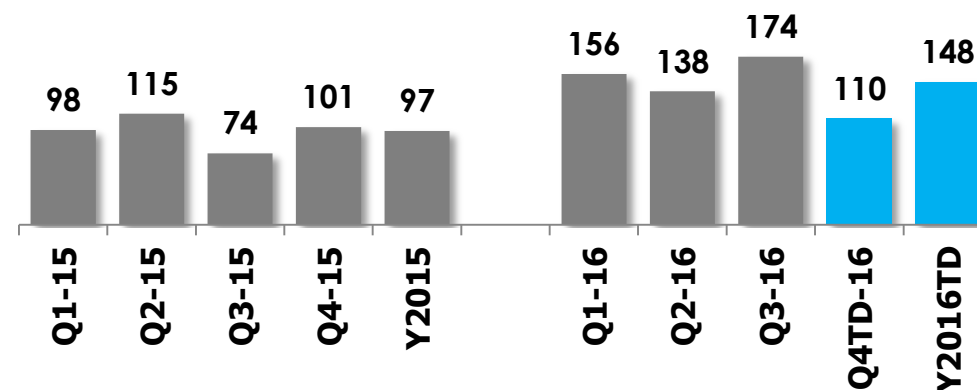
# Higher Additional Capacity Pressuring Aromatics Market

## Aromatics Market

PX CFR Taiwan-ULG95 (\$/TON)



BZ FOB Korea-ULG95 (\$/TON)



| (\$/TON) | Q1-16 | Q2-16 | Q3-16 | Q4TD-16* | 2016TD* |
|----------|-------|-------|-------|----------|---------|
| PX-ULG95 | 332   | 315   | 341   | 270      | 319     |
| BZ-ULG95 | 156   | 138   | 174   | 110      | 148     |

Remarks: \*Q4TD-16 and 2016TD as of 2 Nov 16

## Key Highlights in 2017

- 1 Softer PX Market from New Capacity Addition
- 2 Stable BZ Market on Balancing Demand and Capacity Growth

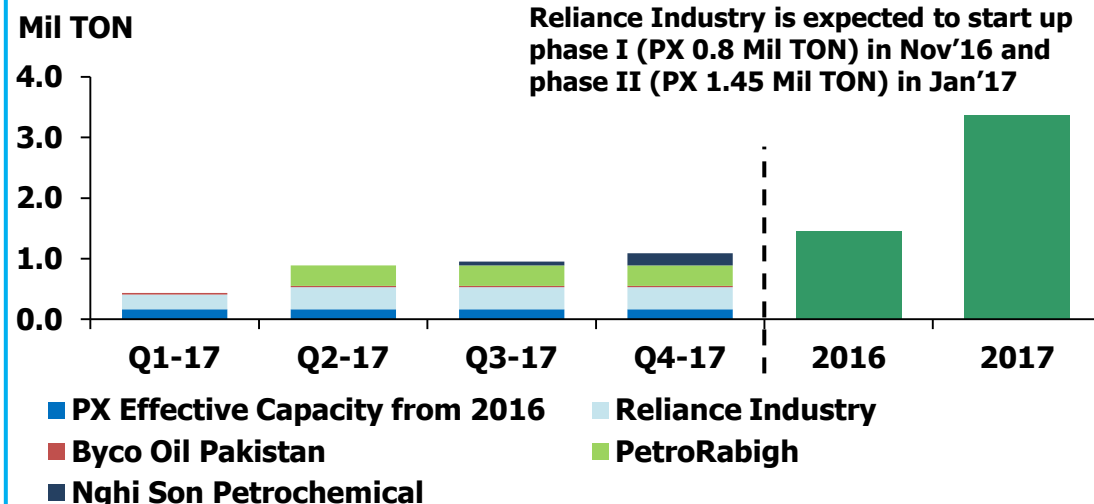


# 1 Softer PX Market from New Capacity Addition

## A New PX Capacity Addition Pressures Market

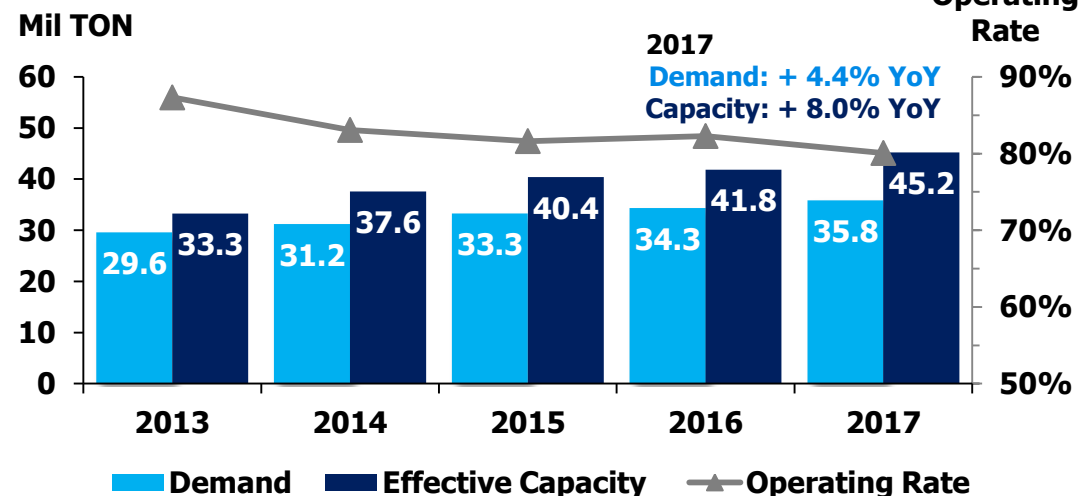
### AP & ME Effective PX Capacity Addition

Reliance Industry is expected to start up phase I (PX 0.8 Mil TON) in Nov'16 and phase II (PX 1.45 Mil TON) in Jan'17



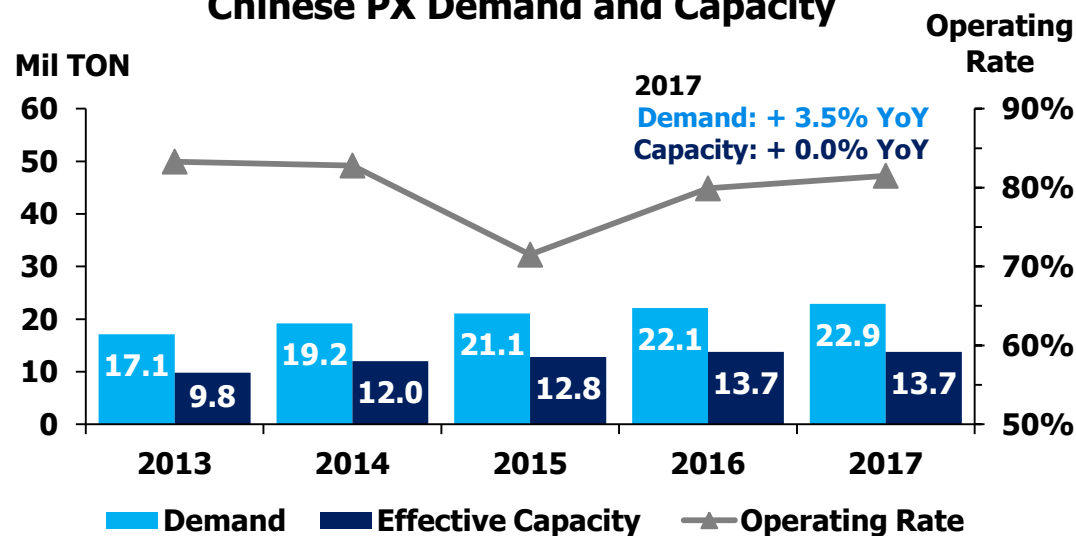
## B Reducing Operating Rate amid Higher Capacity

### AP & ME PX Demand and Capacity



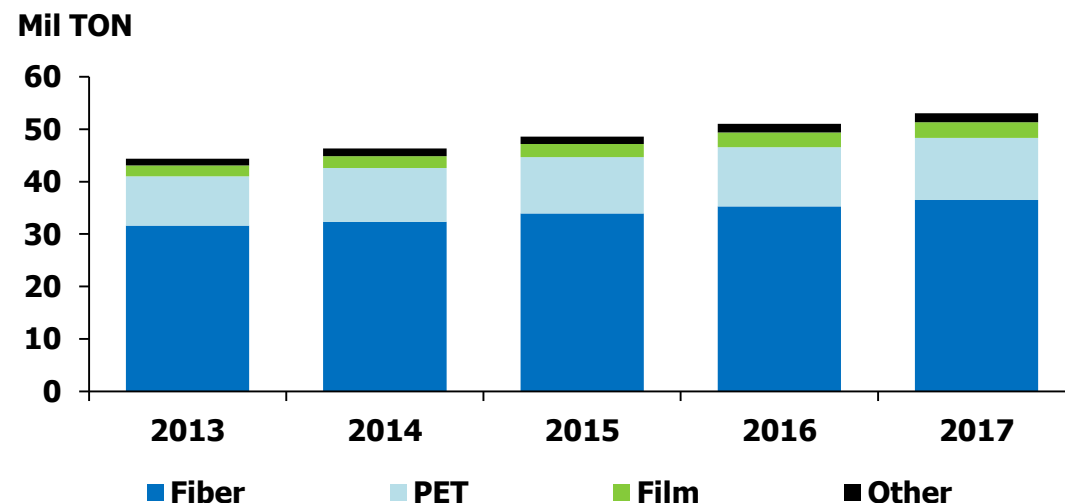
## C Growing Chinese Demand Supports Market

### Chinese PX Demand and Capacity



## D Fiber Demand Growth Boosts PX Market

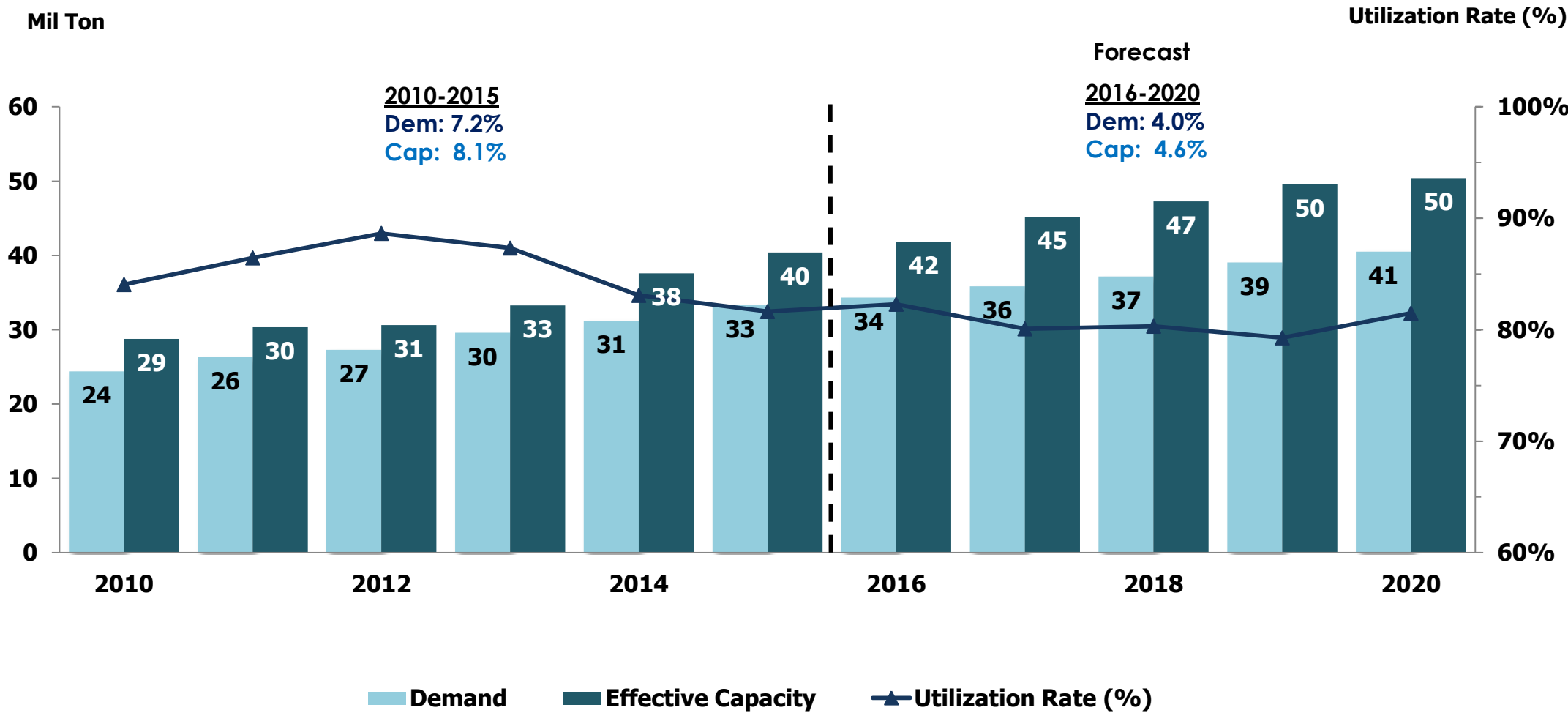
### AP & ME PTA Demand by Sector





# AP/ME PX Demand and Capacity Outlook

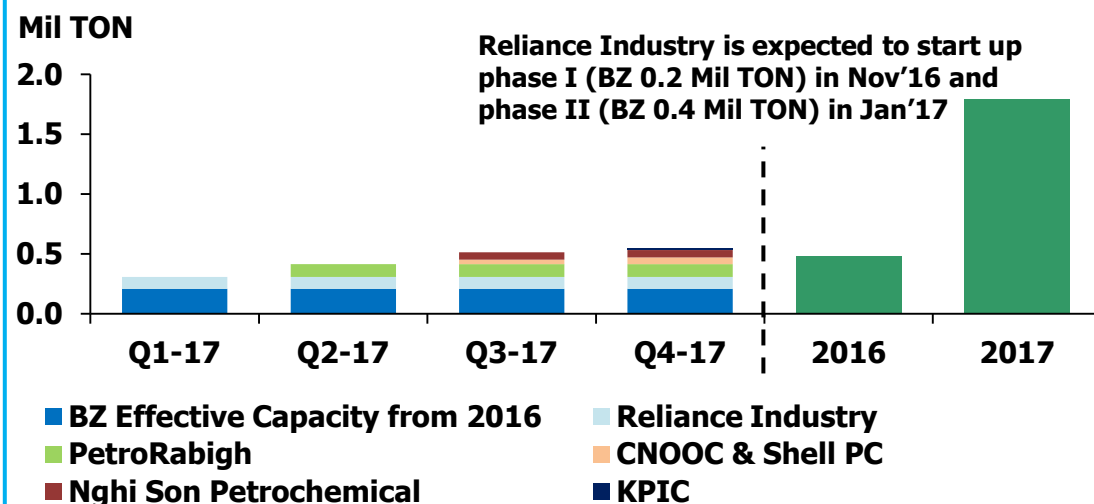
PX-ULG95 313 545 471 485 279 256



# 2 Stable BZ Market on Balancing Demand and Capacity Growth

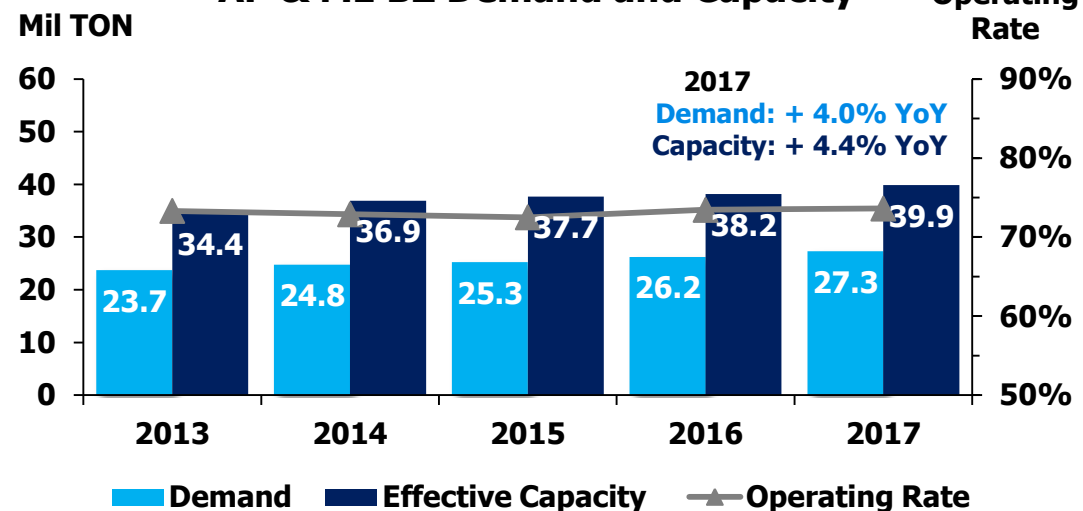
## A New BZ Capacity Will Come Online in 2017

### AP & ME Effective BZ Capacity Addition



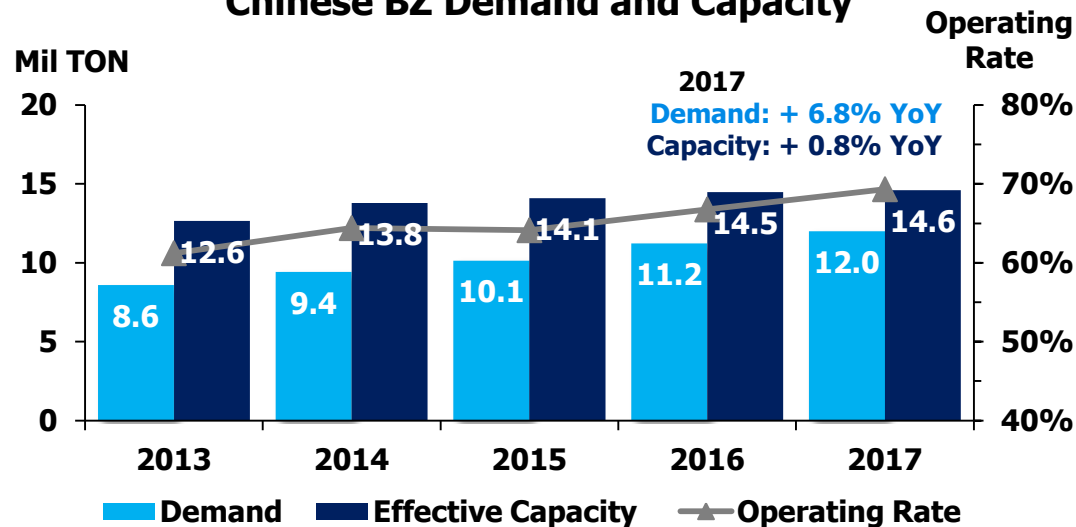
## B Firmer Demand Growth Supports BZ Market

### AP & ME BZ Demand and Capacity



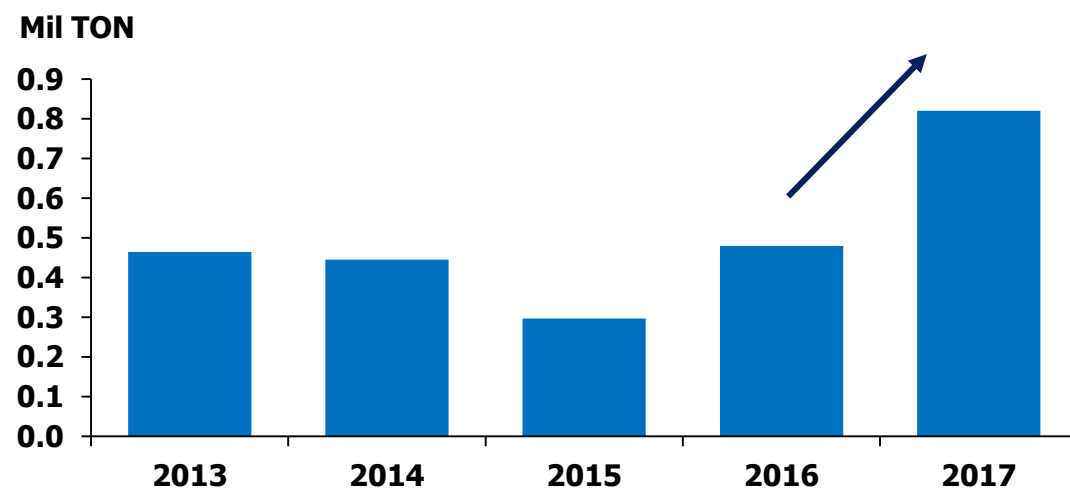
## C Increasing Chinese BZ Demand Lifts Market

### Chinese BZ Demand and Capacity



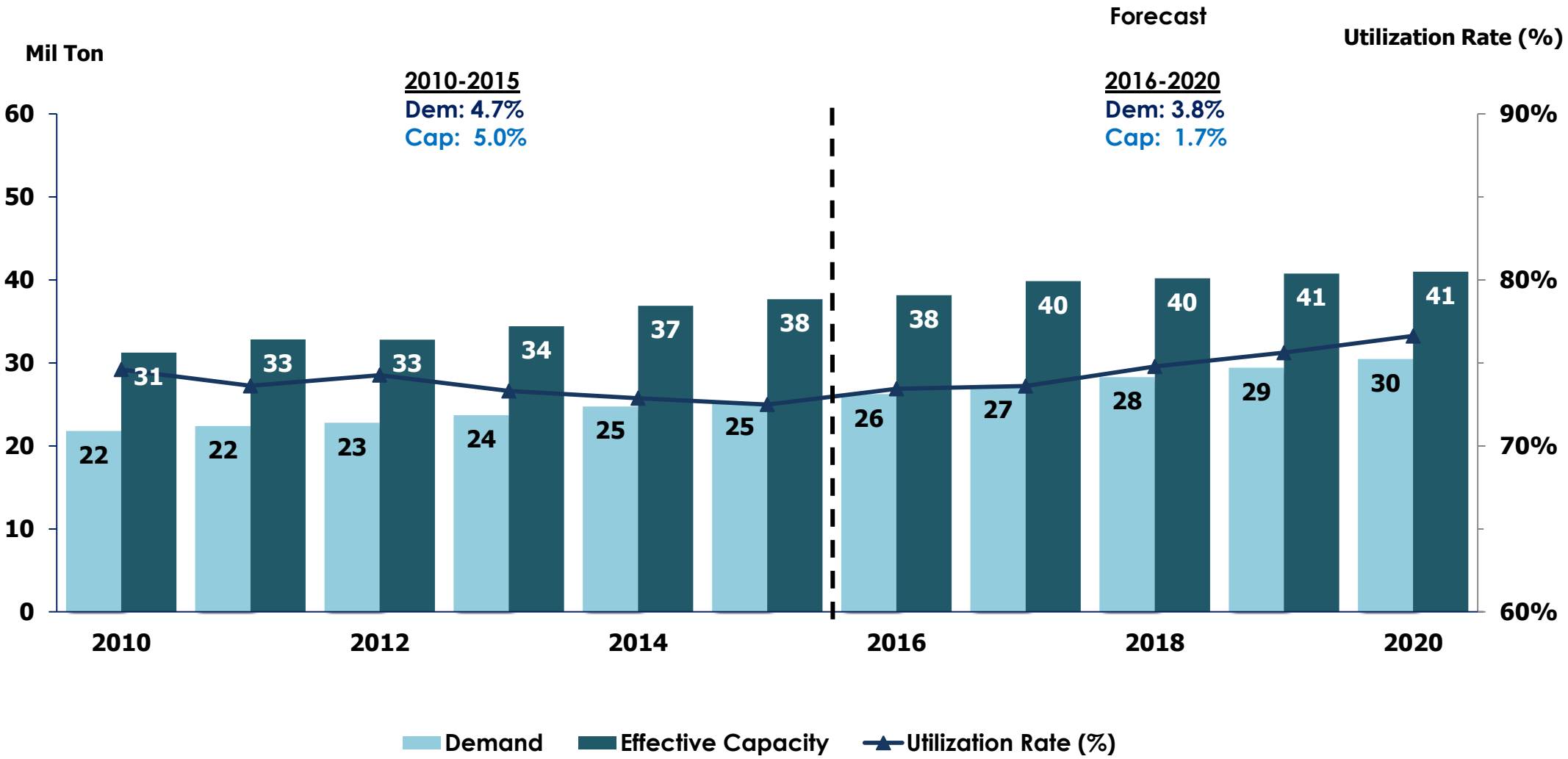
## D SM Capacity Growth Pushes Up BZ Demand

### AP & ME SM Effective Capacity Addition



# AP/ME BZ Demand and Capacity Outlook

BZ-ULG95    165                      87                      157                      288                      268                      97





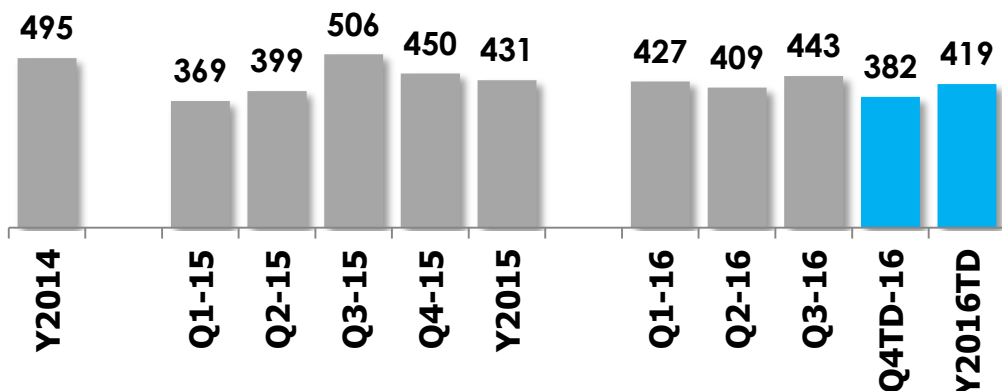
# **BASE OIL & BITUMEN**



# Stable Base Oil Market on Lower Global Base Oil Capacity Addition



## 500SN – HSFO (\$/TON)



| (\$/TON)   | Q1-16 | Q2-16 | Q3-16 | Q4TD-16* | 2016TD* |
|------------|-------|-------|-------|----------|---------|
| 500SN-HSFO | 427   | 409   | 443   | 382      | 419     |

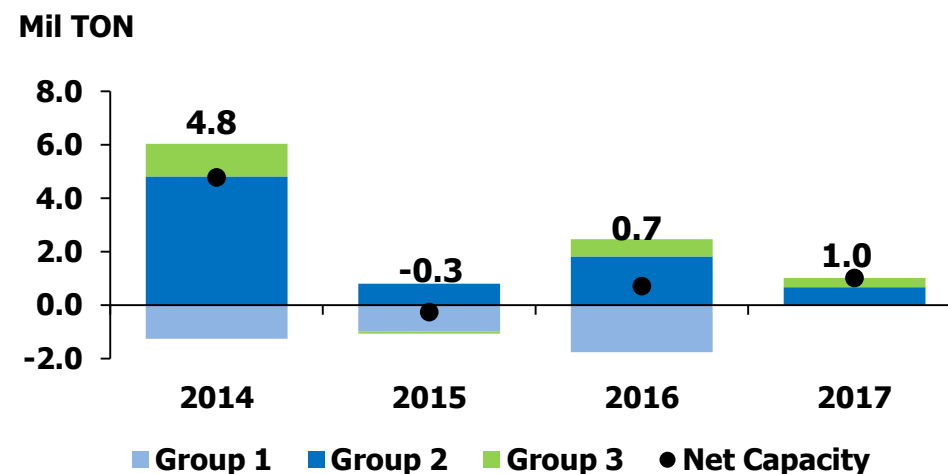
Remarks: \*Q4TD-16 and 2016TD as of 2 Nov 16

## Key Highlights in 2017

- 1 Lower Global Base Oil Capacity Addition
- 2 Lower Asia Pacific Plant Maintenance
- 3 Global Demand Growth at 0.5-1.0% following Better Economic

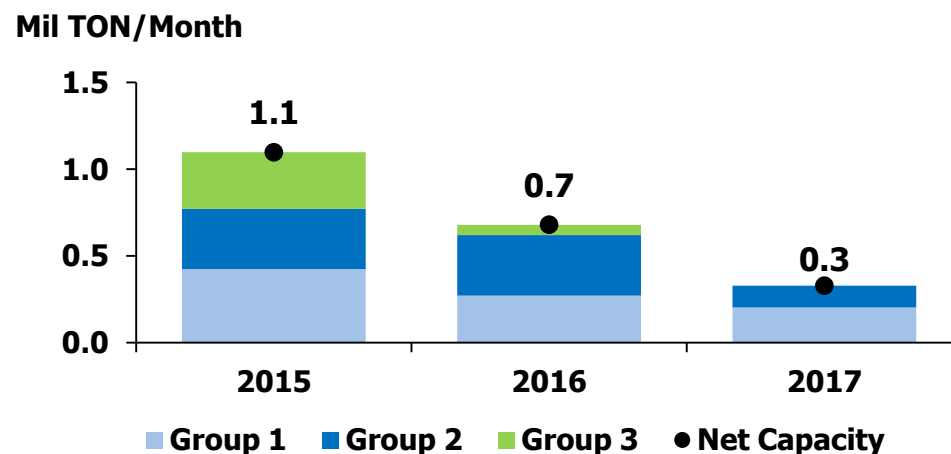
Sources: ICIS Publication and TOP's Estimate

## 1 Global Additional Nameplate Capacity



Sources: Argus (Jan 2014-Oct 2016) and TOP's Estimate

## 2 AP Plant Maintenance (Effective Capacity)



Sources: Argus Oct 2016 and TOP's Estimate

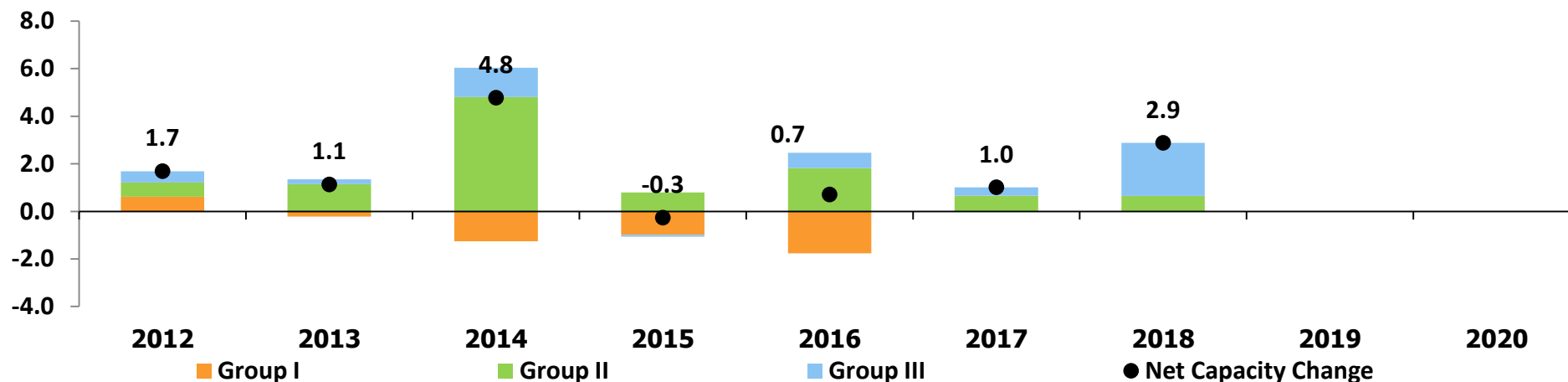
# Stable Base Oil Market on Lower Global Base Oil Capacity Addition



①

## Global Additional Nameplate Capacity

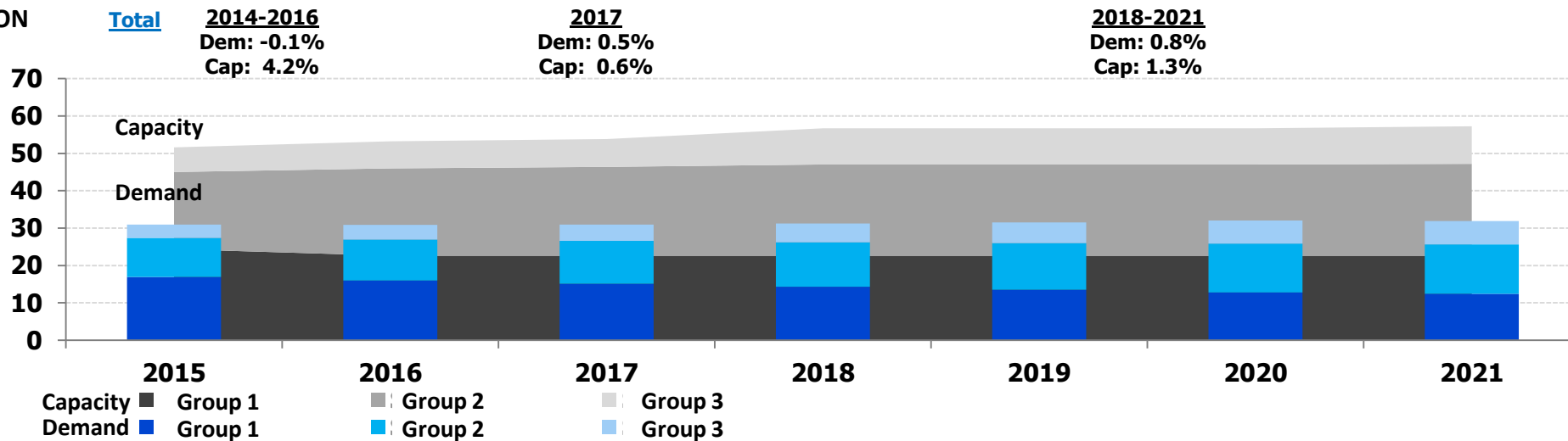
Million TON



②

## Global Base Oil Demand and Capacity

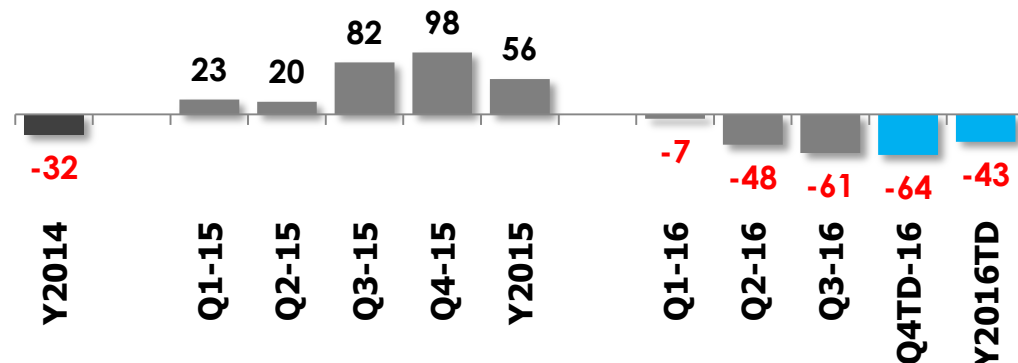
Million TON





# Softer Bitumen Market on Accumulated Inventory in 2017

## Bitumen-HSFO (\$/TON)



| (\$/TON)     | Q1-16 | Q2-16 | Q3-16 | Q4TD-16* | 2016TD* |
|--------------|-------|-------|-------|----------|---------|
| Bitumen-HSFO | (7)   | (48)  | (61)  | (64)     | (43)    |

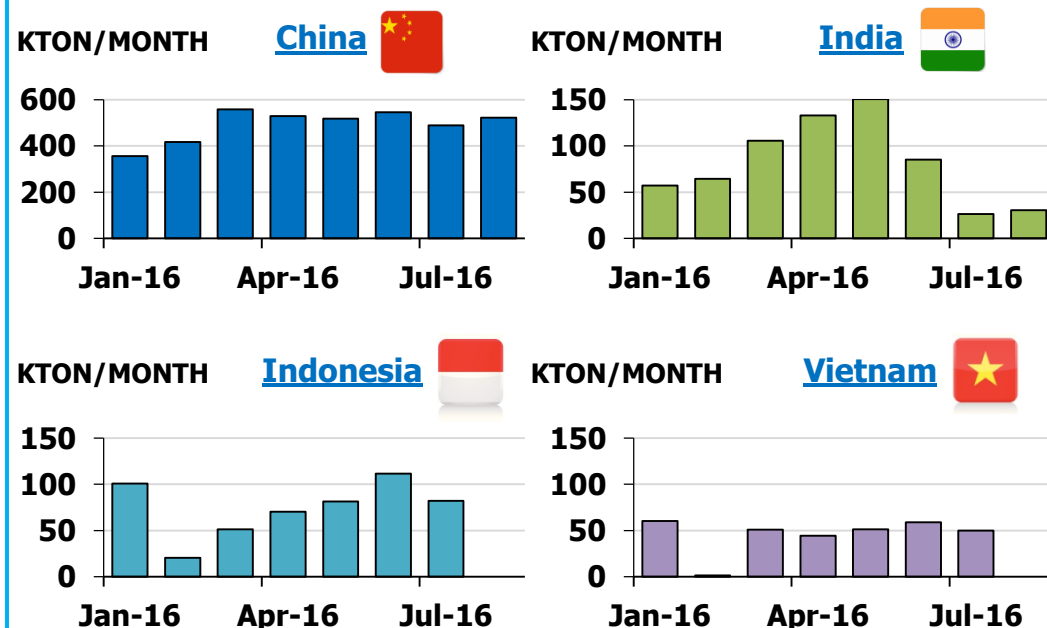
Remarks: \*Q4TD-16 and 2016TD as of 2 Nov 16

## Key Highlights in 2017

- 1 Still-high Inventory in Major Import Countries
- 2 Improved Thai Demand on Higher Road Maintenance Plan

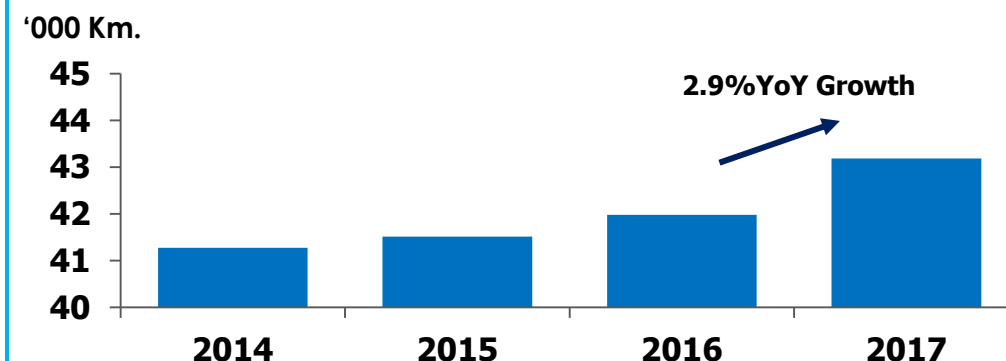
Sources: ICIS Publication, TOP's Estimate

## 1 Import Volume of Major Asian Players in 2016



Source: Bitumart (Oct 2016)

## 2 Thai Asphalt Cement Road Maintenance Plan



Source: Maintenance Bureau (2014-Sep 2016)



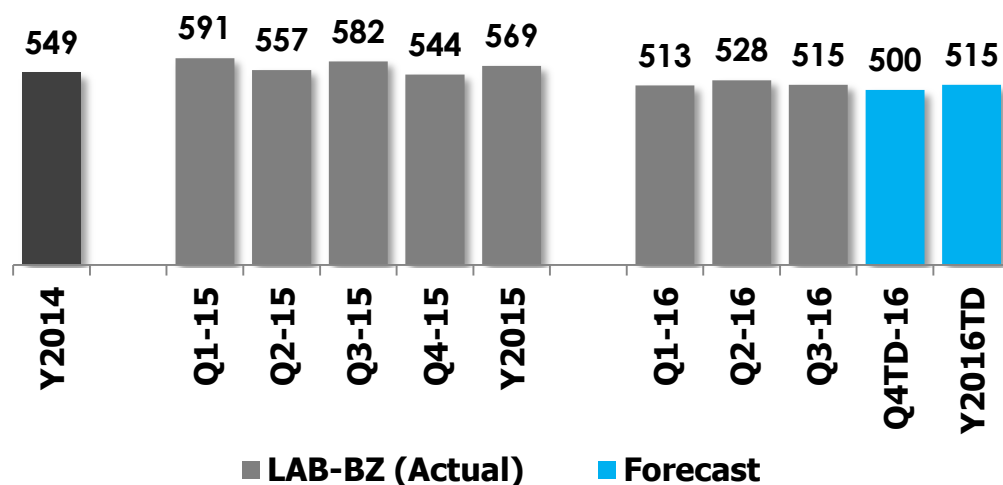
# **Linear Alkyl Benzene (LAB)**



# Stronger LAB Market on Steady Demand Growth

## LAB Market

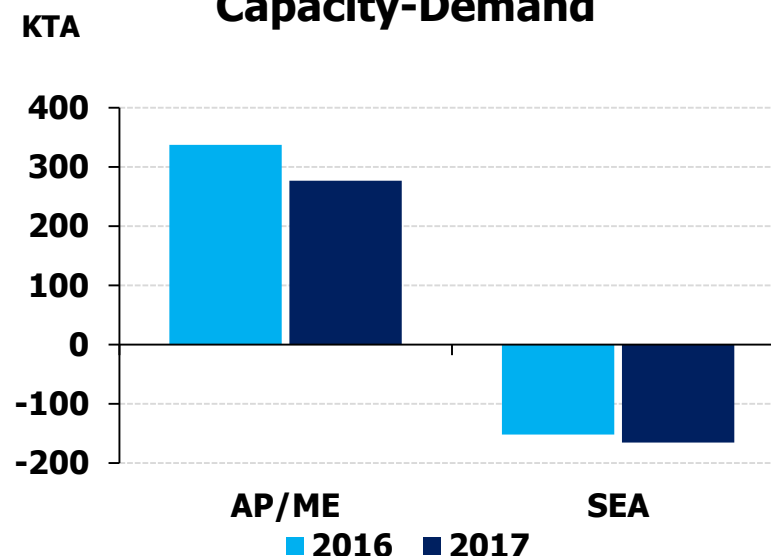
### LAB CFR SEA - BZ FOB Korea (\$/TON)



| (\$/TON) | Q1-16 | Q2-16 | Q3-16 | Q4TD16* | 2016TD* |
|----------|-------|-------|-------|---------|---------|
| LAB - BZ | 513   | 528   | 515   | 500     | 515     |

Remarks: \*Q4TD-16 and 2016TD as of 2 Nov 16

### Capacity-Demand



## Key Highlights in 2017

- 1 AP/ME Demand Growth at 2.6% Following Better Economic Growth and Higher Population
- 2 No New Plant Start Up in 2017



# CONCLUSION



# 2017 Market Outlook Conclusion

(vs. 2016)



## Crude Oil

**Higher crude oil prices from rebalancing market**



## Refinery

**Higher refinery margins from demand growth outpacing refinery capacity addition**



## Aromatics

**Softer Aromatics market from additional capacity outpaces demand growth**



## Lube Base

**Stable Base Oil market on lower global capacity addition**  
**Softer Bitumen market on accumulated inventory amid potential recovered regional demand**



## LAB

**Stronger LAB market on steady demand growth**

## **APPENDIX**

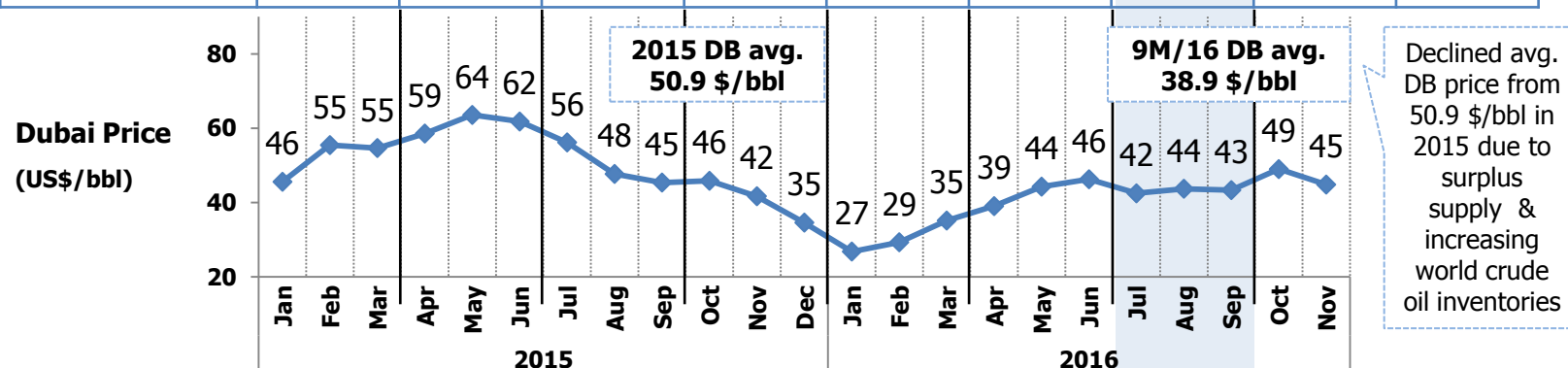
- Q3/16 Performance analysis
- CDU Addition VS Additional Demand – AP & ME
- World GRM / Inventories
- Thailand petroleum demand by products



# Q3/16: Stable Market GRM but Incurred Inventory Loss

## Dubai Crude Price & Key Petroleum Product Spreads

|            | 2015  |       |       |       | 2016  |       |        |       | 2015  |
|------------|-------|-------|-------|-------|-------|-------|--------|-------|-------|
| \$/bbl     | Q1    | Q2    | Q3    | Q4    | Q1    | Q2    | Q3     | 9M    | FY15  |
| DUBAI (DB) | 51.9  | 61.3  | 49.7  | 40.7  | 30.4  | 43.2  | ↔43.2  | 38.9  | 50.9  |
| ULG95 - DB | 15.3  | 19.8  | 19.3  | 18.7  | 18.8  | 14.4  | ↓11.6  | 14.9  | 18.3  |
| JET - DB   | 17.1  | 13.5  | 10.9  | 14.1  | 11.7  | 11.1  | ↔11.1  | 11.3  | 13.9  |
| GO - DB    | 16.3  | 13.7  | 10.8  | 13.8  | 9.6   | 10.5  | ↑11.0  | 10.4  | 13.7  |
| HSFO - DB  | (1.8) | (3.5) | (8.1) | (6.5) | (5.2) | (8.7) | ↑(4.3) | (6.1) | (5.0) |



## Gross Refinery Margins - GRM

|                | 2015  |     |       |       | 2016  |     |       |     | 2015  |
|----------------|-------|-----|-------|-------|-------|-----|-------|-----|-------|
| \$/bbl         | Q1    | Q2  | Q3    | Q4    | Q1    | Q2  | Q3    | 9M  | FY15  |
| Market GRM     | 8.8   | 7.4 | 6.6   | 8.5   | 6.1   | 4.4 | 4.3   | 4.9 | 7.8   |
| Stock G/(L)    | (1.5) | 2.5 | (4.9) | (3.3) | (1.0) | 4.2 | (0.6) | 0.9 | (1.9) |
| Accounting GRM | 7.3   | 9.9 | 1.7   | 5.2   | 5.1   | 8.6 | 3.7   | 5.8 | 5.9   |

## Refinery Utilization

| Q2/16 | Q3/16 | 9M/16 |
|-------|-------|-------|
| 109%  | 107%  | 108%  |

## % MB Intake/OSP\*

| 44%/3.0 | 45%/2.1 | 47%/2.8 |
|---------|---------|---------|
|---------|---------|---------|

\*Murban OSP over Dubai (\$/bbl)

### Q4TD (2 Nov 16)

ULG95-DB = 14.3 \$/bbl  
JET-DB = 12.1 \$/bbl  
GO-DB = 12.4 \$/bbl  
HSFO-DB = (3.8) \$/bbl

## Market GRM Highlight

- **Declined Gasoline Spread** as high inventory worldwide and slow Indonesian import

+ **Weaken MB Premium & stronger fuel oil spread** partially supported GRM

## Performance Highlight

+ **High Run at 107%** to capture strong domestic market

+ **High Domestic Sales of Petroleum Products at 85%**



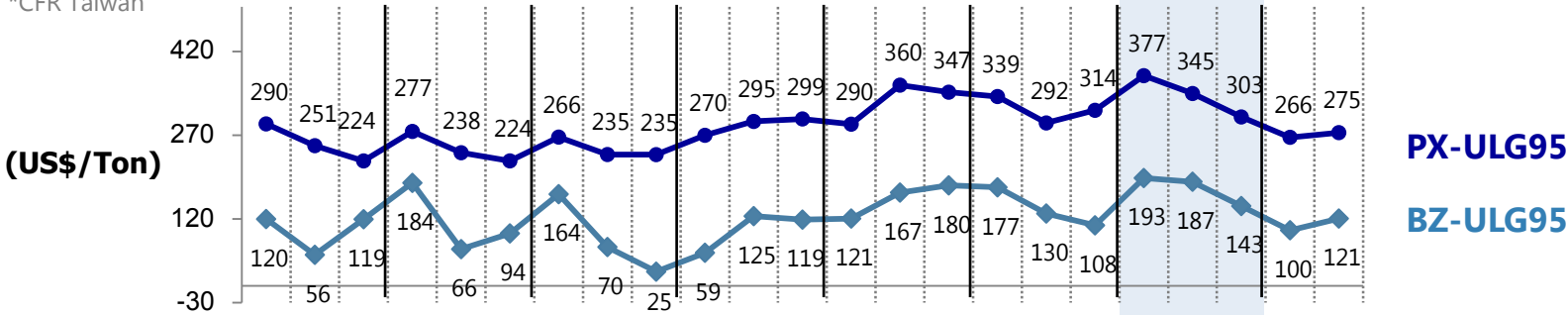


# Q3/16: Improved Margins by Good Demand & Lower Feed Cost

## Aromatics Spreads and Margins

|           | 2015 |     |     |     | 2016 |     |       |     | 2015 |
|-----------|------|-----|-----|-----|------|-----|-------|-----|------|
| \$/ton    | Q1   | Q2  | Q3  | Q4  | Q1   | Q2  | Q3    | 9M  | FY15 |
| PX*-ULG95 | 255  | 246 | 233 | 288 | 332  | 315 | ↑ 341 | 329 | 256  |
| BZ-ULG95  | 98   | 115 | 74  | 101 | 156  | 138 | ↑ 174 | 156 | 97   |

\*CFR Taiwan



## Aromatics Production

| Q2/16 | Q3/16 | 9M/16 |
|-------|-------|-------|
| 80%   | 80%   | 80%   |

### Q4TD (2 Nov 16)

PX-ULG95 = 270 \$/ton  
BZ-ULG95 = 110 \$/ton

## Market Highlight

### + Better Aromatic Margins

supported by good downstream demand, low supply from plant maintenances mainly in China & Japan and lower feedstock cost (gasoline)

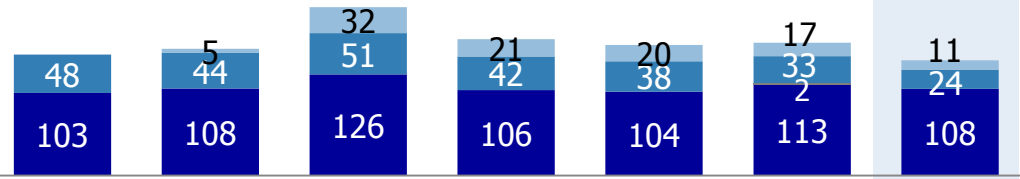
## Performance Highlight

+ **Optimized Run between aromatics and gasoline production** to maximize group margins

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

(Unit : Kton)

TL  
BZ  
MX  
PX



2015 total sales (Kton)

TL 59  
BZ 185  
PX 442

|                  | 2015  |     |     |      | 2016  |       |       |       | 2015 |
|------------------|-------|-----|-----|------|-------|-------|-------|-------|------|
| \$/ton           | Q1    | Q2  | Q3  | Q4   | Q1    | Q2    | Q3    | 9M    | FY15 |
| P2F -\$/ton      | 11    | 76  | 54  | 93   | 98    | 99    | 109   | 102   | 63   |
| P2F -\$/bbl      | 1.4   | 9.9 | 7.1 | 12.2 | 12.8  | 13.0  | 14.3  | 13.4  | 8.2  |
| GIM contribution | (0.4) | 0.8 | 0.5 | 1.3  | 1.4** | 1.7** | 1.9** | 1.7** | 0.6  |

\*\* including LAB margin Q1/16 = 0.1 \$/bbl, Q2/16 = 0.3 \$/bbl, Q3/16 = 0.3 \$/bbl, 9M/16 = 0.3 \$/bbl Remark: TOL -ULG95 Q1/16 = 154 \$/ton, Q2/16 = 103 \$/ton , Q3/16 = 99 \$/ton

# Q3/16: Improved P2F Supported by Higher Domestic Sales Portion



## LAB Price, Spread, Production & P2F Margin

## Market Highlight

+ **Slightly soften LAB spread**  
pressured by low seasonal demand during monsoon season in Asia

## Performance Highlight

+ **Continued high LAB production in Q3/16 at 31 Kton** (~ nameplate capacity 120 Kton/annum)

+ **Higher domestic sales in Q3/16 at 32%** (vs 13% in Q2/16) helped offset weaken benchmark spread

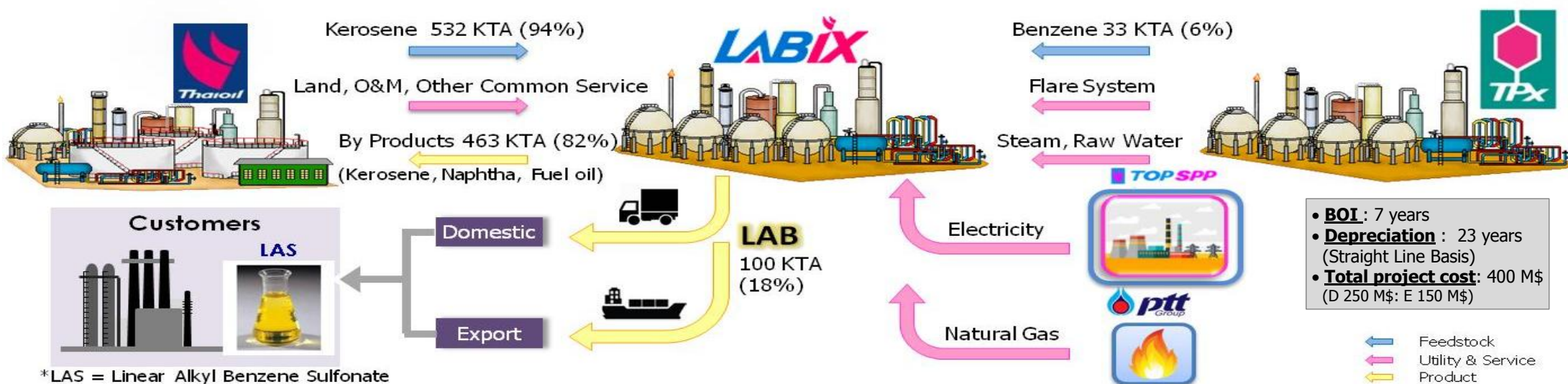
2016

|                      | Q1*   | Q2    | Q3           | 9M*          |
|----------------------|-------|-------|--------------|--------------|
| \$/ton               |       |       |              |              |
| LAB                  | 1,087 | 1,156 | <b>1,155</b> | <b>1,133</b> |
| LAB-BZ               | 513   | 528   | ↓ <b>515</b> | <b>519</b>   |
| LAB Production -Kton | 11    | 30    | <b>31</b>    | <b>72</b>    |
| P2F -\$/ton          | 59    | 74    | <b>78</b>    | <b>73</b>    |
| P2F -\$/bbl          | 7.5   | 9.4   | <b>10.0</b>  | <b>9.3</b>   |
| GIM contribution     | 0.1   | 0.3   | <b>0.3</b>   | <b>0.3</b>   |

\*Successfully COD on 25 Feb 2016

**Q4TD (2 Nov 16)**  
LAB - BZ = 500 \$/ton

## LAB Diagram



# Q3/16: Fallen Contribution as Planned Maintenance & Lower Base Oil Sales Volume

## Base Oil & Bitumen Spreads & Margins

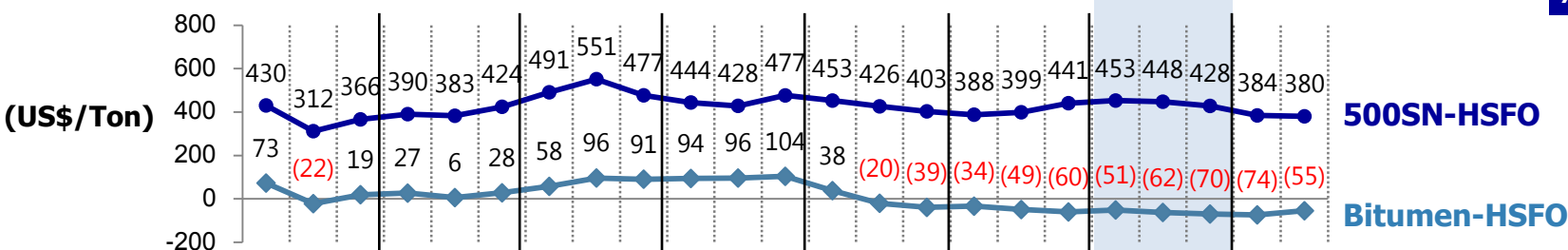
|              | 2015 |     |     |     | 2016 |      |       |      | 2015 |
|--------------|------|-----|-----|-----|------|------|-------|------|------|
| \$/ton       | Q1   | Q2  | Q3  | Q4  | Q1   | Q2   | Q3    | 9M   | FY15 |
| 500SN-HSFO   | 369  | 399 | 506 | 450 | 427  | 409  | ↑443  | 427  | 431  |
| BITUMEN-HSFO | 23   | 20  | 82  | 98  | (7)  | (48) | ↓(61) | (39) | 56   |

## Base oil Production

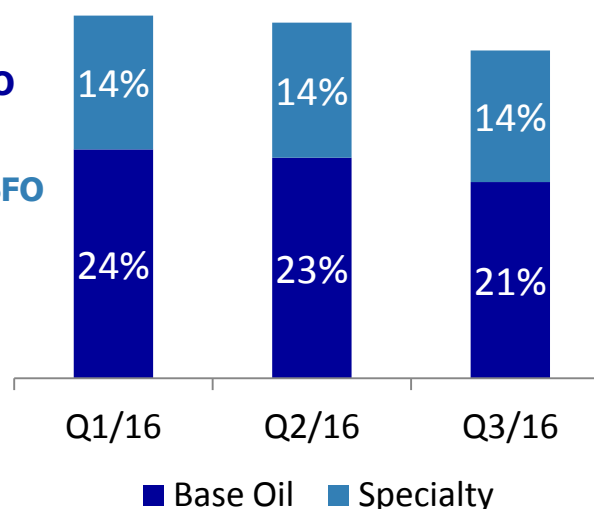
| Q2/16 | Q3/16 | 9M/16 |
|-------|-------|-------|
| 84%   | 62%   | 78%   |

### Q4TD (2 Nov 16)

500SN-HSFO = 382 \$/ton  
BIT-HSFO = (64) \$/ton

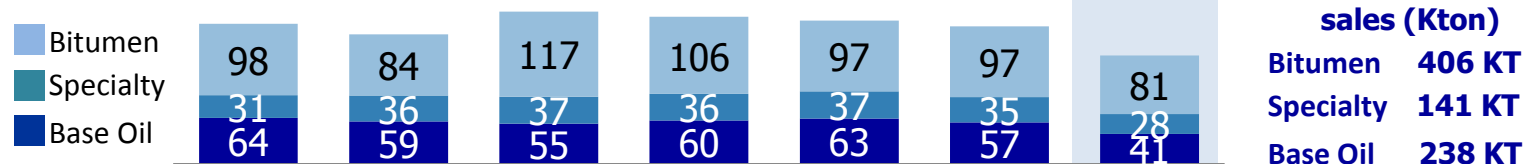


## % Base Oil & Specialty Sales Volume



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

(Unit : KTon)



|                  | 2015 |      |      |      | 2016 |      |      |      | 2015 |
|------------------|------|------|------|------|------|------|------|------|------|
| \$/ton           | Q1   | Q2   | Q3   | Q4   | Q1   | Q2   | Q3   | 9M   | FY15 |
| P2F -\$/ton      | 108  | 139  | 119  | 131  | 126  | 121  | 106  | 119  | 124  |
| P2F -\$/bbl      | 16.3 | 21.1 | 18.0 | 19.9 | 19.2 | 18.4 | 16.1 | 18.0 | 18.9 |
| GIM contribution | 0.7  | 1.0  | 0.9  | 1.1  | 0.9  | 0.9  | 0.6  | 0.8  | 0.9  |

## Performance Highlight

- **Lower Base oil production** due to one month planned MTA during 21 Aug – 19 Sep
- **Slightly higher utility cost** during the startup from plant maintenance

# Q3/16 Power Sector Performance...One of Future Earnings Driver

## Power Business Sector

SPP



TOP SPP

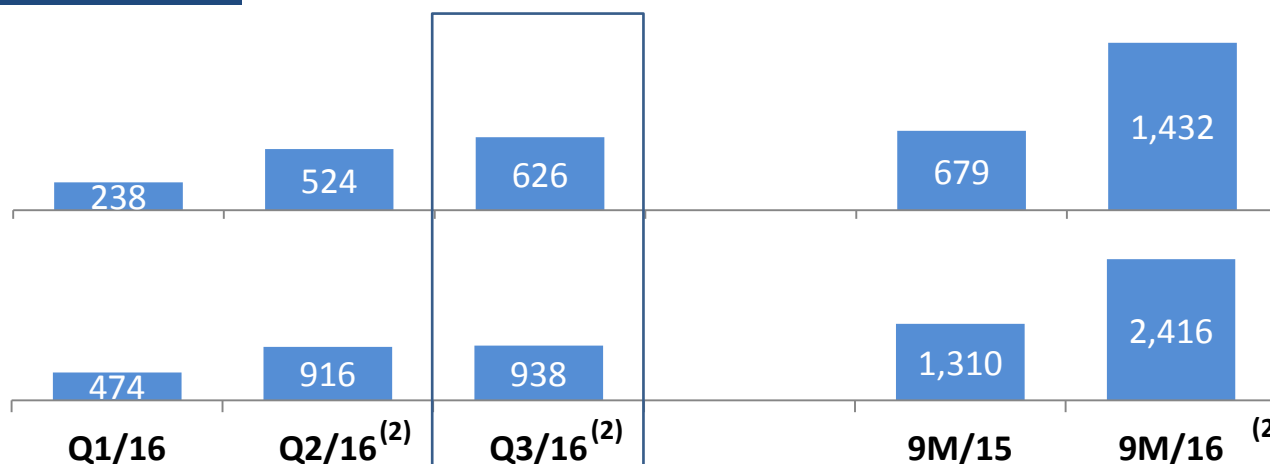


Equity holding in

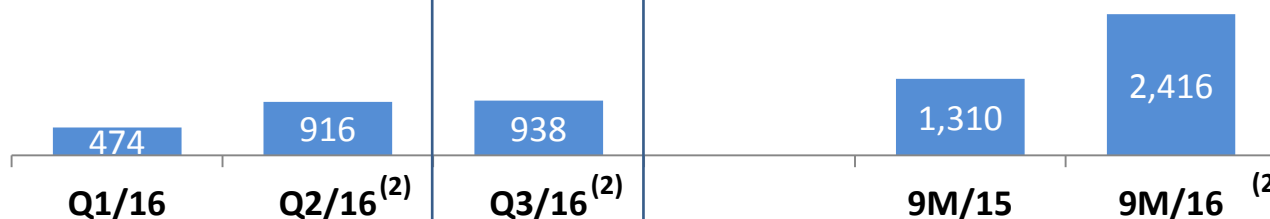


### Power & Steam Sales

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



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



### EBITDA & Net Profit

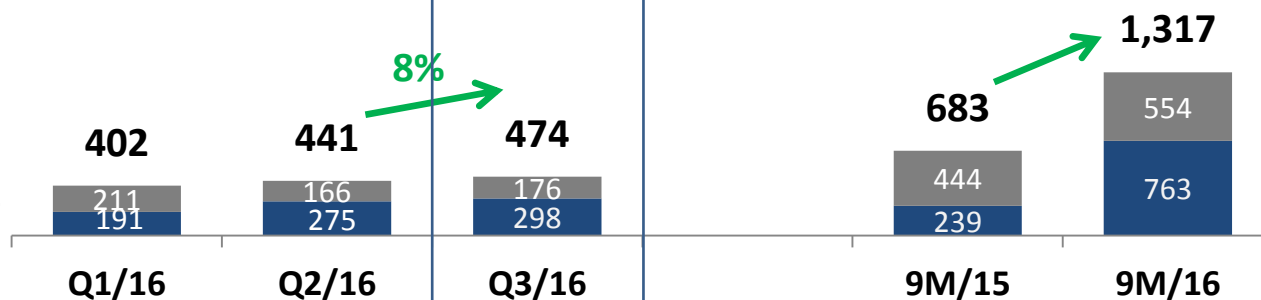
EBITDA\*  
(THB million)

\*consolidated EBITDA  
of TP and TOP SPP



Net Profit\*\*  
(THB million)

\*\* Net profit of 74% TP  
+ 100 % TOP SPP +  
24.29% profit sharing  
from GPSC



\*\*\*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)

<sup>(1)</sup> 100% of TP and TOP SPP

<sup>(2)</sup> TOP SPP COD 1<sup>st</sup> block in Apr 16 and  
2<sup>nd</sup> block in Jun 16

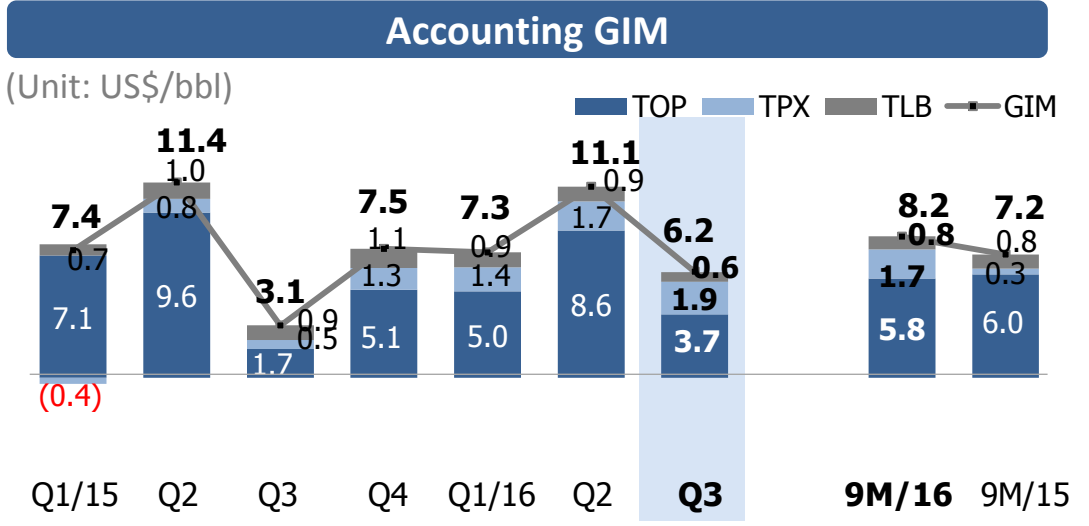
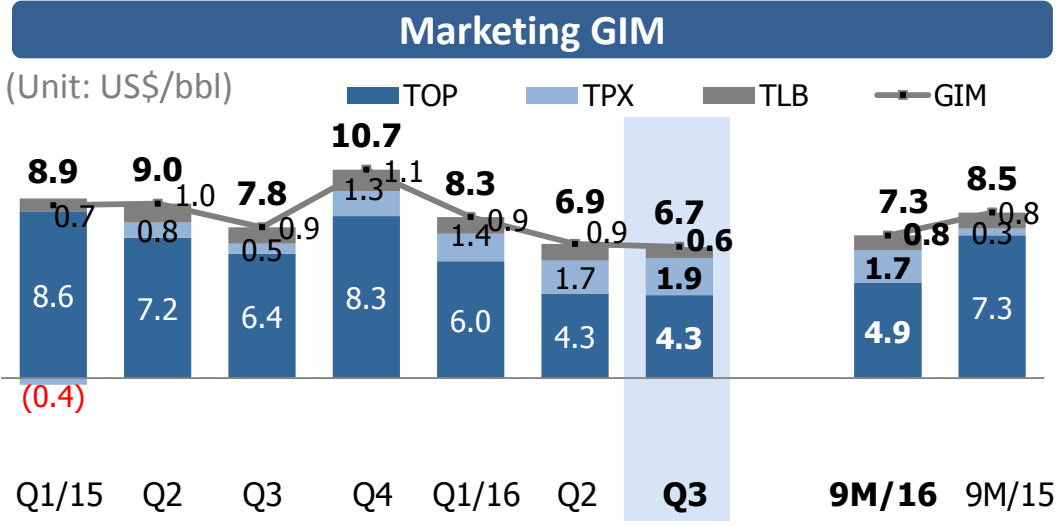
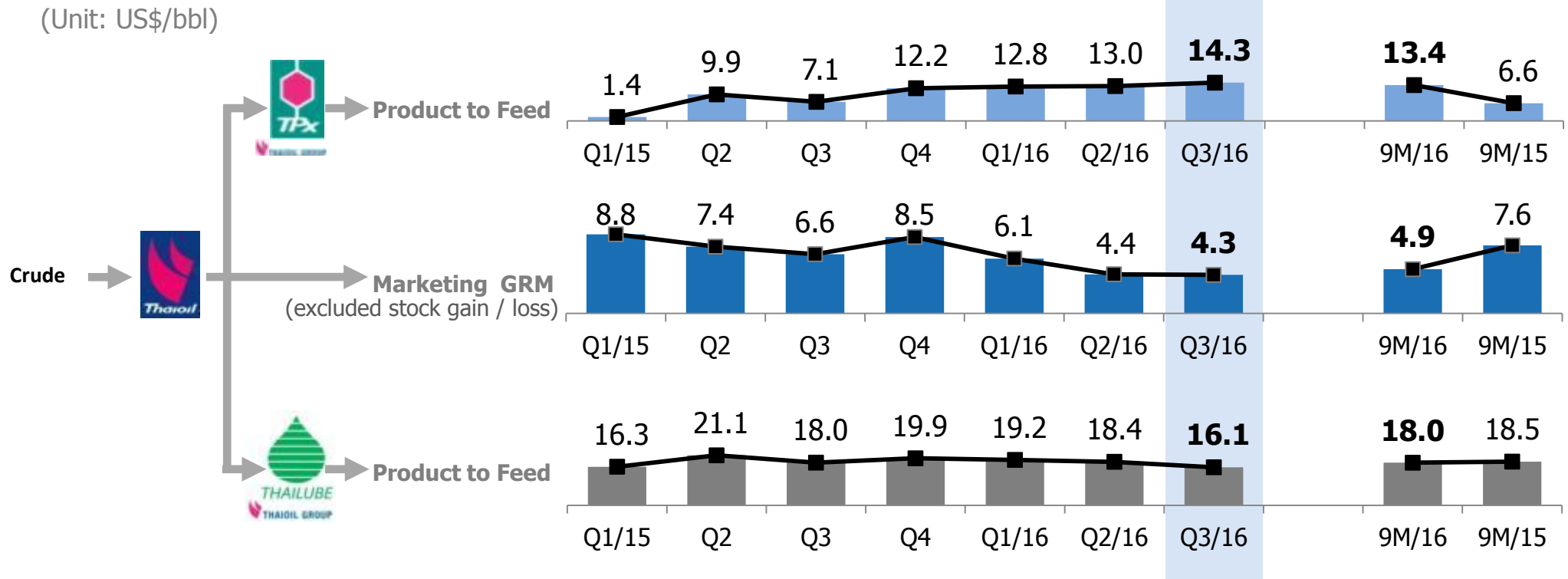
### Performance Highlight

+ **Higher Power section contribution** (EBITDA & Net Profit) in Q3/16 as TOP SPP fully operated after COD during Q2/16

+ **Higher net profit sharing from GPSC** mainly from dividend income from RPCL

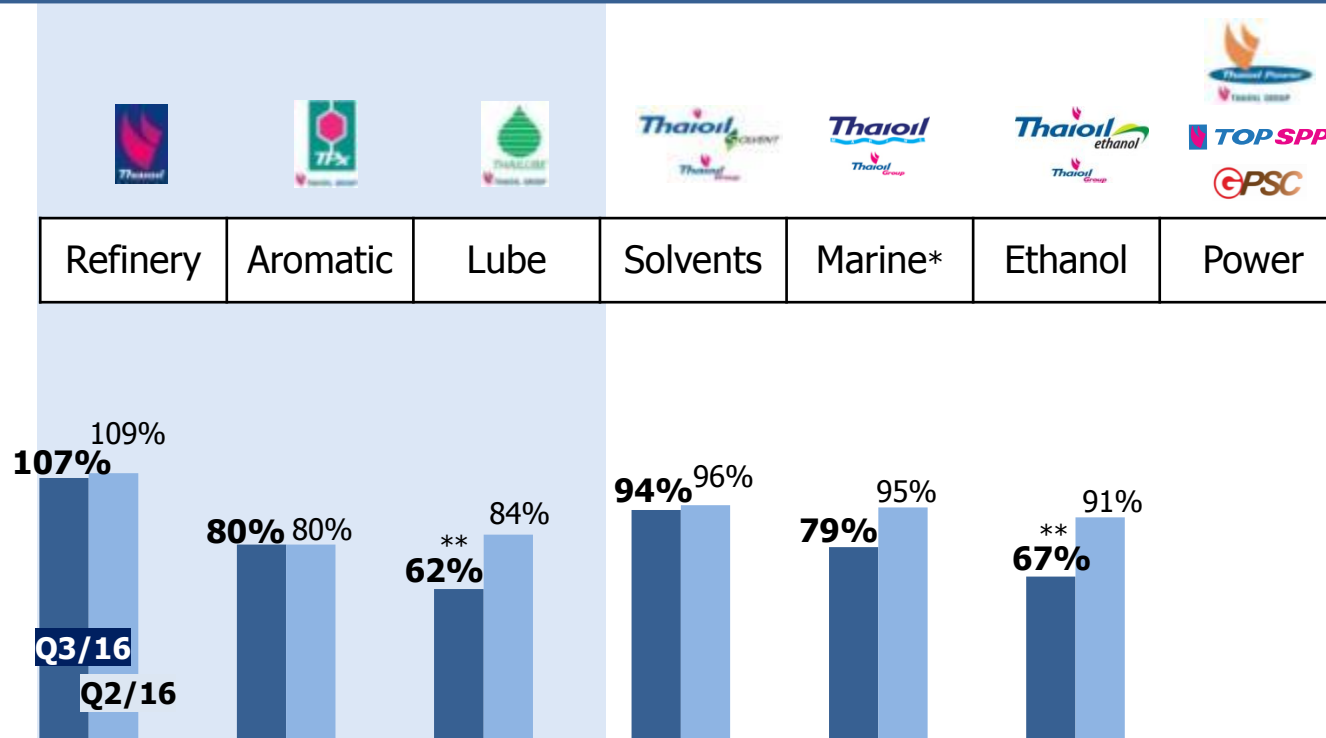


# Beauty of Integration...Sustainable GIM



# Q3/16: Performance Breakdown

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



## Key Points

- Refinery:** max run to capture strong domestic market
- Aromatic/LAB:** optimized aromatic run serving good downstream demand & more contribution from LAB due to improving domestic sales portion
- Lube:** lower contribution from 1 month planned MTA & lower base oil sales volume
- Power:** additional contribution from new TOP SPP after full run in Q3/16
- Solvents:** lower gross profit margin & contribution due to lower average selling price per unit during oil price declined
- Marine:** soften contribution pressured by lower TM vessel utilization from vessel dry docking
- Ethanol:** improved performance supported by higher average selling price which helped offset lower production rate (mainly from MCE)

|       |       |          |       |     |      |      |           | Consol | StkG/(L)& Reversal of NRV/(NRV) | Consol Excl Stock G/(L) & Reversal of NRV/(NRV) |
|-------|-------|----------|-------|-----|------|------|-----------|--------|---------------------------------|---|
| Q2/16 | 5,655 | 752***   | 460   | 158 | 26   | (26) | 441****   | 7,753  | 4,362                           | 3,391   |
| Q3/16 | 1,311 | 889***   | 163   | 84  | (13) | (14) | 474****   | 2,941  | (625)                           | 3,566   |
| 9M/16 | 9,753 | 2,521*** | 1,126 | 269 | 61   | (16) | 1,317**** | 15,420 | 3,426                           | 11,994  |

\* u-rate of 4 Oil & Chemical Tankers (total capacity: 48,850 DWT)

\*\* low u-rate from planned shutdown

\*\*\* includes 75% of LAB net profit Q2/16 = 46 MB, Q3/16 = 56 MB, 9M/16 = 86 MB

\*\*\*\* 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%)



# Q3/16 TOP Group Consolidated P&L

| (million THB)   | <u>Q3/16</u> | <u>Q2/16</u>  | <u>QoQ+ / (-)</u> | <u>Q3/15</u>   | <u>YoY+ / (-)</u> | <u>9M/16</u>  | <u>9M/15</u>  | <u>YoY+ / (-)</u> |
|---|--------------|---------------|-------------------|----------------|-------------------|---------------|---------------|-------------------|
| Sales Revenue   | 68,476       | 72,368        | (3,892)           | 74,721         | (6,245)           | 197,635       | 225,123       | (27,488)          |
| Hedging Gain  | 206          | (147)         | 353               | 547            | (341)             | 87            | 436           | (349)             |
| <b>EBITDA</b>   | <b>5,392</b> | <b>10,545</b> | <b>(5,153)</b>    | <b>2,931</b>   | <b>2,461</b>      | <b>22,590</b> | <b>19,144</b> | <b>3,446</b>      |
| EBITDA excl. Stk G/(L) & Reversal of NRV/(NRV)                      | 6,017        | 6,183         | (166)             | 7,786          | (1,769)           | 19,164        | 20,586        | (1,422)           |
| Financial Charges   | (879)        | (866)         | (13)              | (858)          | (21)              | (2,550)       | (2,777)       | 227               |
| FX G/(L) & CCS  | 519          | 110           | 409               | (2,568)        | 3,087             | 1,317         | (3,072)       | 4,389             |
| (Tax Expense)/reversal of income tax                                | (451)        | (688)         | 237               | (317)          | (134)             | (1,502)       | (1,032)       | (470)             |
| <b>Net Profit / (Loss)</b>  | <b>2,941</b> | <b>7,753</b>  | <b>(4,812)</b>    | <b>(2,294)</b> | <b>5,235</b>      | <b>15,420</b> | <b>8,432</b>  | <b>6,988</b>      |
| EPS (THB/Share)   | 1.44         | 3.80          | (2.36)            | (1.12)         | 2.57              | 7.56          | 4.13          | 3.43              |
| Stock G/(L)&Reversal of NRV/(NRV)                                   | (625)        | 4,362         | (4,987)           | (4,855)        | (5,480)           | 3,426         | (1,442)       | 4,868             |
| <b>Net Profit/ (Loss) excl. Stk G/(L) and Reversal of NRV/(NRV)</b> | <b>3,566</b> | <b>3,391</b>  | <b>175</b>        | <b>2,561</b>   | <b>1,005</b>      | <b>11,994</b> | <b>9,874</b>  | <b>2,120</b>      |
| THB/US\$ - average  | 35.00        | 35.45         | (0.45)            | 35.41          | (0.41)            | 35.42         | 33.91         | 1.51              |
| THB/US\$ - ending   | 34.88        | 35.34         | (0.46)            | 36.53          | (1.65)            | 34.88         | 36.53         | (1.65)            |
| Effective Tax Rate (%) *  | 13%          | 8%            | 5%                | N/A            | N/A               | 9%            | 11%           | (2%)              |

\*redeemed BOI privilege for tax exemption on environmental projects in Q2/16 = 866 MB, Q3/16 = 99 MB, 9M/16 = 1,361 MB, Q3/15 = (742) MB, 9M/15 = 769 MB





# 9M/16 TOP Group Consolidated Cash Flow

(Unit: Million THB)

| Operating Cash Flow        |               |               |
|----------------------------|---------------|---------------|
|                            | 9M/16         | 9M/15         |
| <b>Operating Cash Flow</b> | <b>17,273</b> | <b>22,537</b> |
| Net income & non-cash adj. | 22,830        | 17,950        |
| Change in working capital  | (5,557)       | 4,587         |

(Unit: Million THB)

| Investments          |                      |                |
|----------------------|----------------------|----------------|
|                      | 9M/16                | 9M/15          |
| <b>Investments</b>   | <b>(20,579)</b>      | <b>(7,041)</b> |
| ST investments       | (15,803)             | 2,253          |
| CAPEX (PP&E) & other | (4,776) <sup>1</sup> | (9,294)        |

<sup>1</sup> Mainly from LABIX, TOPSPP and TOP

|                       |                |               |
|-----------------------|----------------|---------------|
| <b>Free Cash Flow</b> | <b>(3,306)</b> | <b>15,496</b> |
|-----------------------|----------------|---------------|

| Financing        |                      |                 |
|------------------|----------------------|-----------------|
|                  | 9M/16                | 9M/15           |
| <b>Financing</b> | <b>(8,584)</b>       | <b>(15,192)</b> |
| Loans proceeding | 3,032 <sup>2</sup>   | 4,217           |
| Loans repayment  | (1,383) <sup>3</sup> | (12,787)        |
| Dividends paid   | (6,994)              | (3,194)         |
| Interest         | (3,240)              | (3,428)         |

<sup>2</sup> Mainly form LABIX=2,628MB

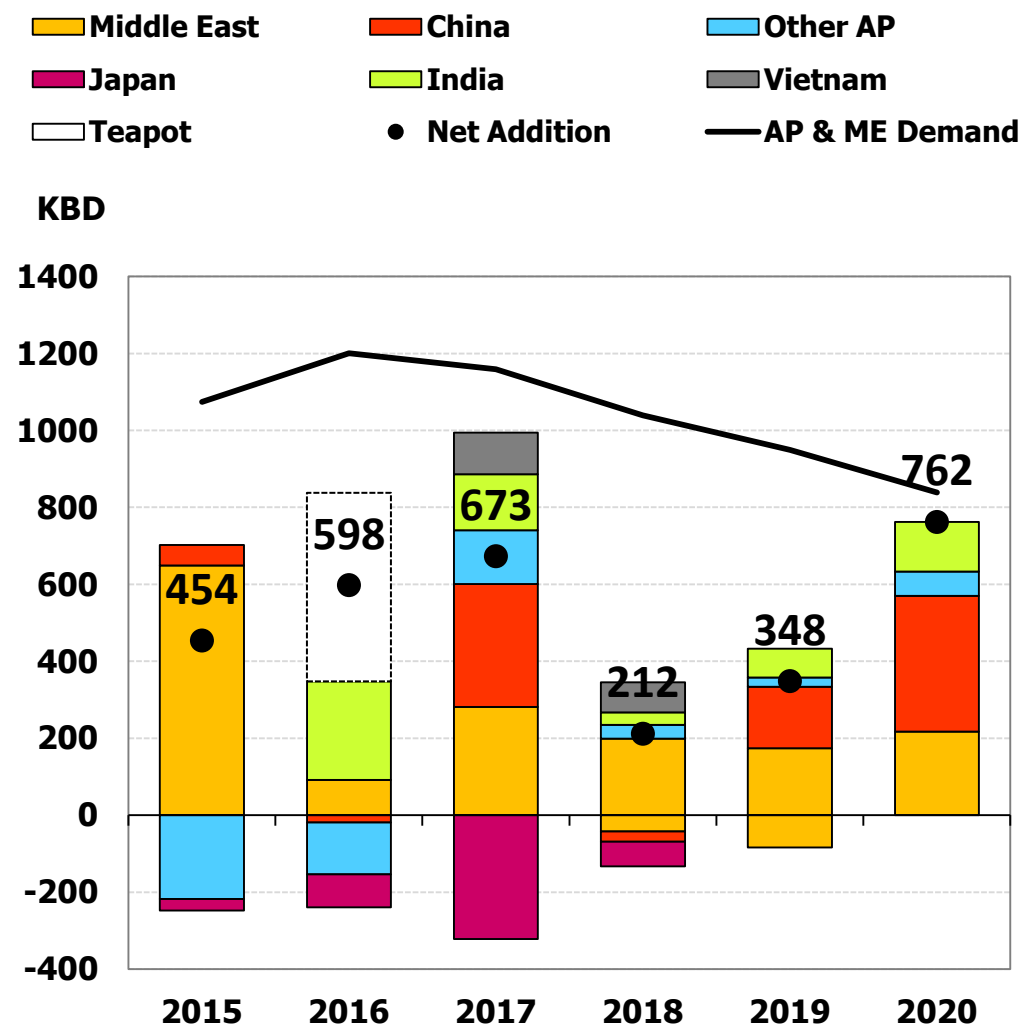
<sup>3</sup> Mainly form SAPHIP= (478) MB, LABIX = (346) MB and TM = (238) MB

|                       | Beginning     |   | Change            |   | Effect of FCD |   | Ending                     |
|-----------------------|---------------|---|-------------------|---|---------------|---|----------------------------|
| <b>cash</b>           | <b>35,764</b> | + | <b>(11,890) ↓</b> | + | <b>(617)</b>  | = | <b>23,257 <sup>4</sup></b> |
| <b>S/T investment</b> | <b>17,365</b> |   | <b>15,803 ↑</b>   |   |               |   | <b>33,168</b>              |
|                       | <b>53,129</b> |   |                   |   |               |   | <b>56,425</b>              |

<sup>4</sup> Mainly form USD FCD = 18,277MB

# Demand Growth Better Than Refinery Addition

## CDU Addition VS Additional Demand – AP & ME



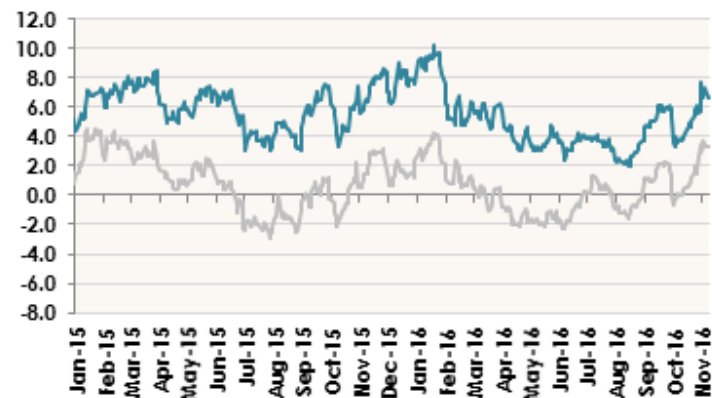
Note: Adjusted capacity based on start-up period (effective additional capacity)

| Start-up period | Country                   | Nameplate (KBD) | Company  |
|-----------------|---------------------------|-----------------|--|
| Q1-16           | India                     | 300             | IOC Paradip  |
| Q2-16           | China                     | 60              | CNOOC Taizhou  |
| Q3-16           | Qatar                     | 136             | Ras Laffan   |
|                 | South Korea               | 102             | Hyundai Lotte  |
| Q4-16           | China                     | 260             | CNPC/SA Anning   |
|                 | Taiwan                    | 46.5            | CPC Talin  |
| Q1-17           | China                     | 200             | CNOOC Huizhou  |
|                 | India (May'16 > Mar'17)   | 120             | BPCL Koshi   |
|                 | Iran (Sep'16 > Mar'17)    | 120             | Bandar Abbas - PGSOC/1                                       |
| Q2-17           | India                     | 42              | HPCL Bhatinda  |
|                 | Oman                      | 76              | Sohar-ORPIC  |
|                 | Iran                      | 120             | Bandar Abbas - PGSOC/1                                       |
| Q3-17           | Vietnam (Jun'18 > Jun'17) | 200             | Nghi Son   |
|                 | China                     | 100             | Petrochina Huabei  |
| Q4-17           | China                     | 100             | Local Zhuhai Huafeng   |
| Closures        |                           |                 |  |
| Q4-16           | China                     | -187            | Local refineries   |
| Q1-17           | Japan                     | -386            | Cosmo Oil/ JX Nippon / Tonen General/ Taiyo Oil Shaowa Shell |
| Q4-17           | China                     | -100            | Local refineries   |

# Asian Margin Vs. US-EU margin

\$/BBL

Singapore Margin

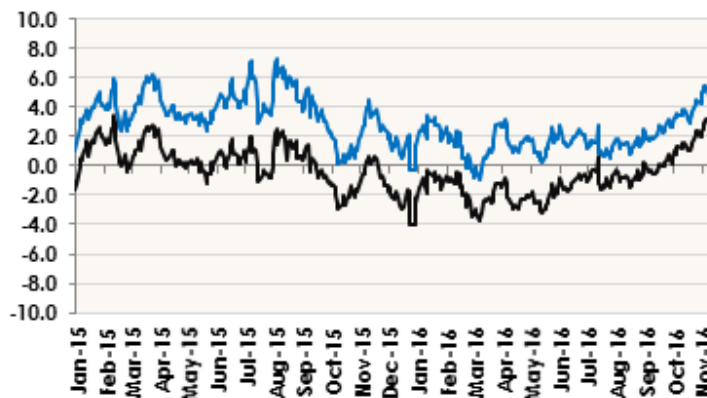


— SING Crack

— SING HYDRO

\$/BBL

EU Margin



— BRENT CRACK

— BRENT HYDRO

\$/BBL

US Margin

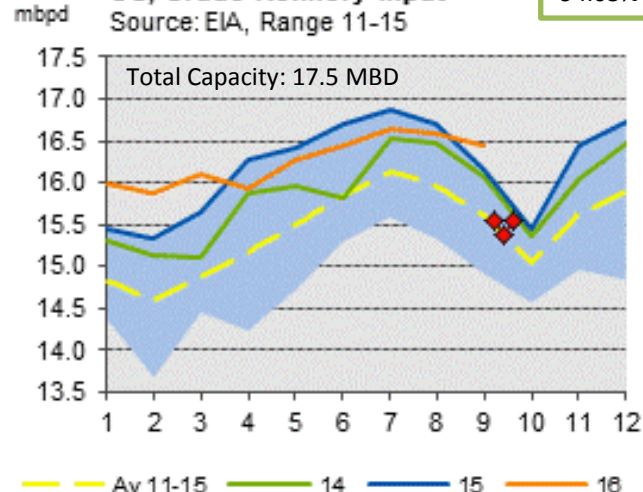


— US CRACK

US, Crude Refinery Input

Source: EIA, Range 11-15

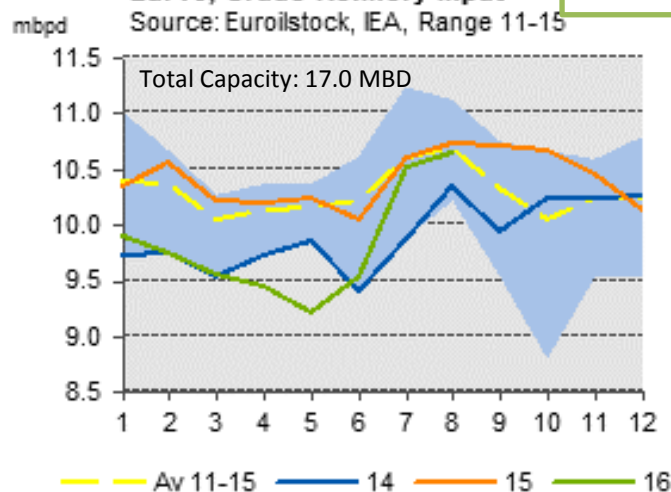
94.03%



Eur16, Crude Refinery Input

Source: Euroilstock, IEA, Range 11-15

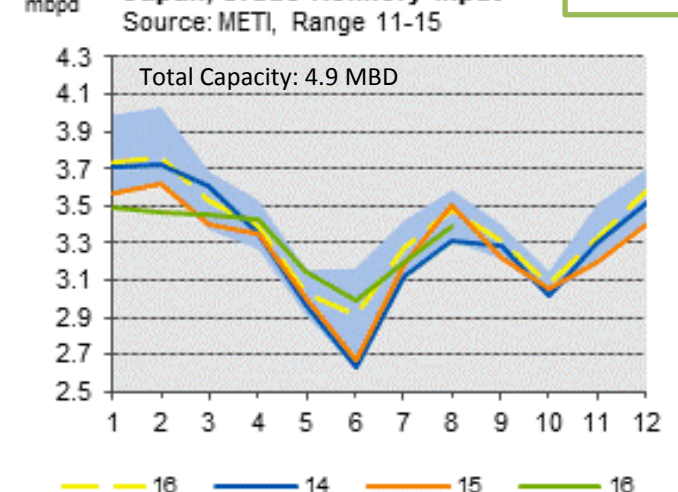
62.62%



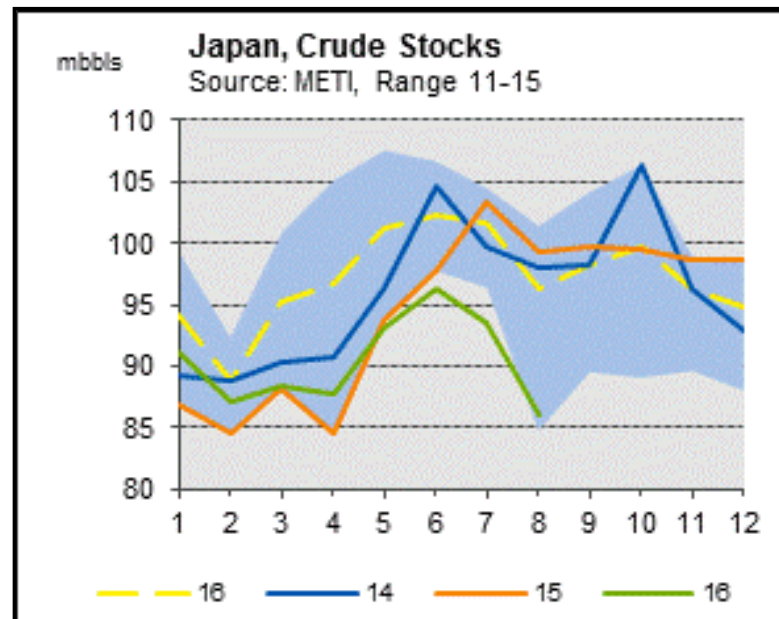
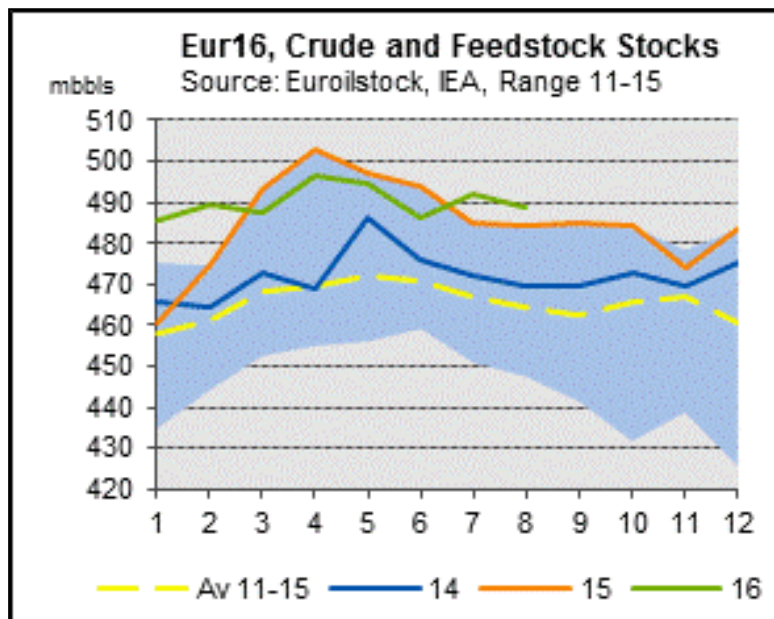
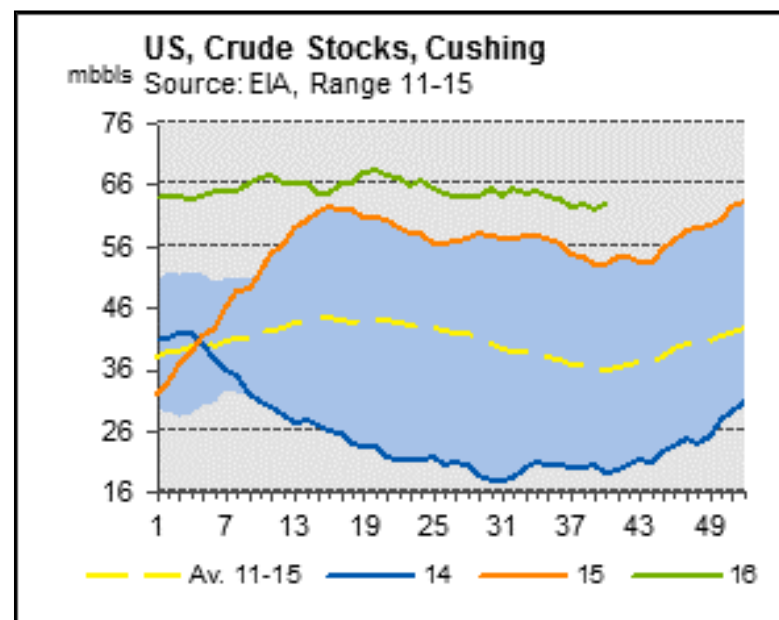
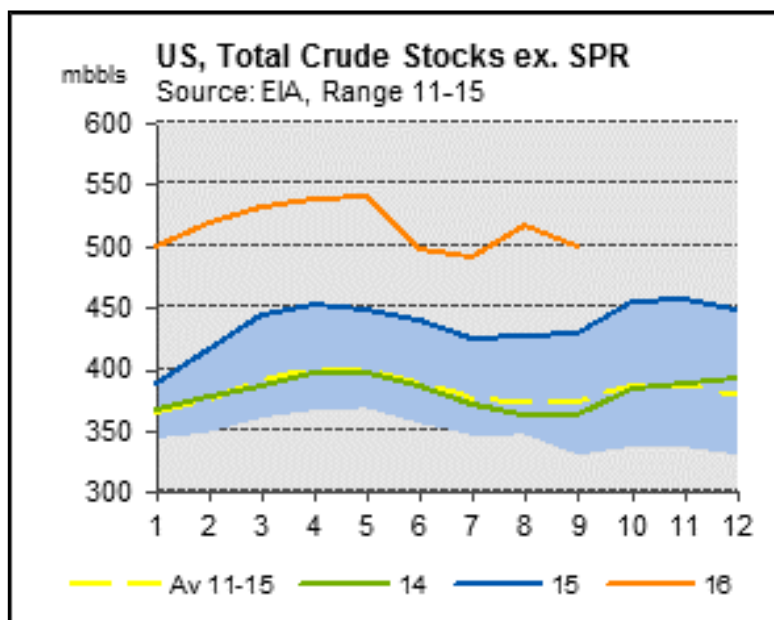
Japan, Crude Refinery Input

Source: METI, Range 11-15

69.18%

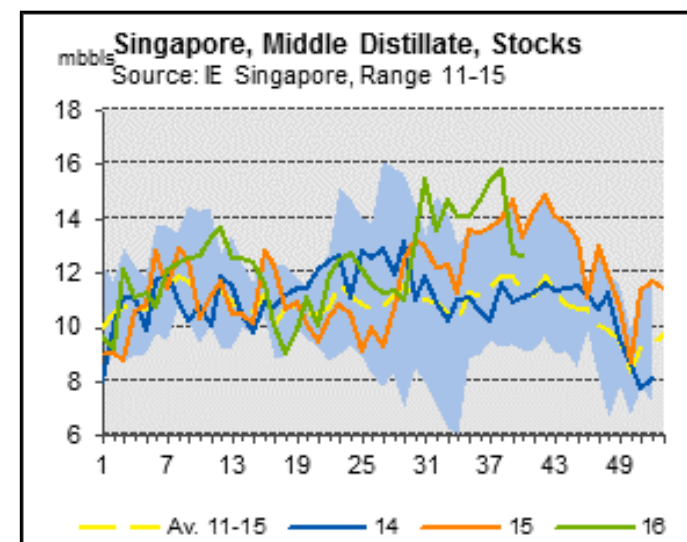
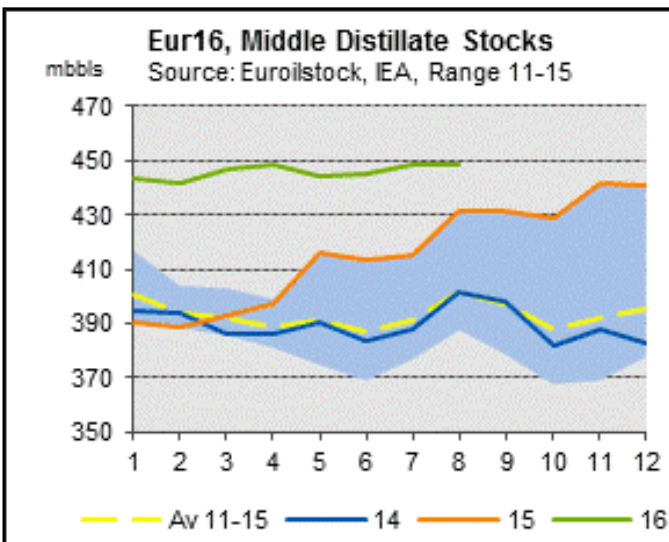
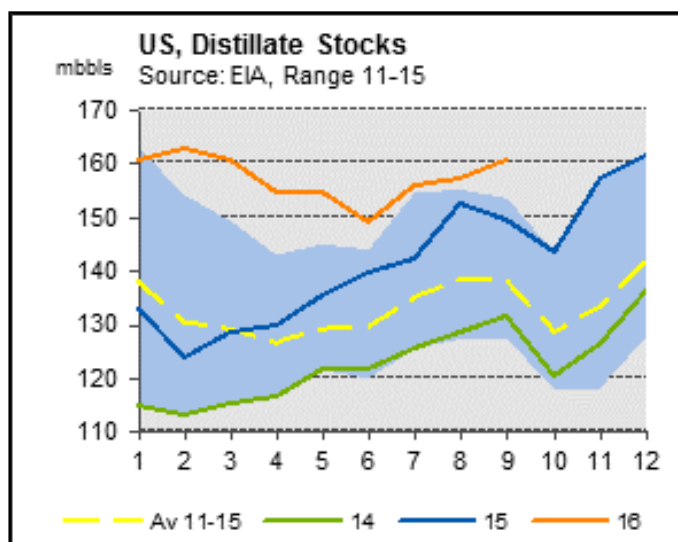
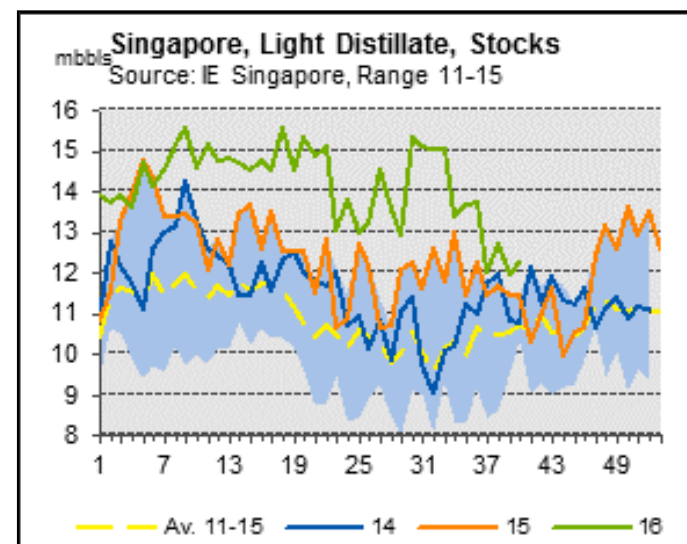
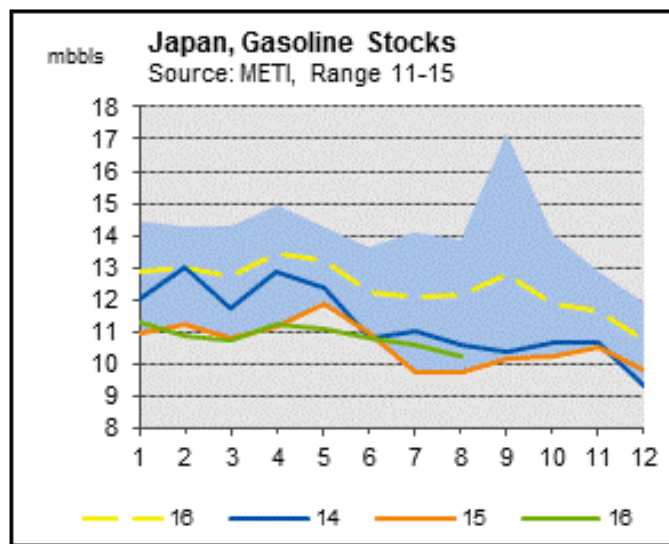
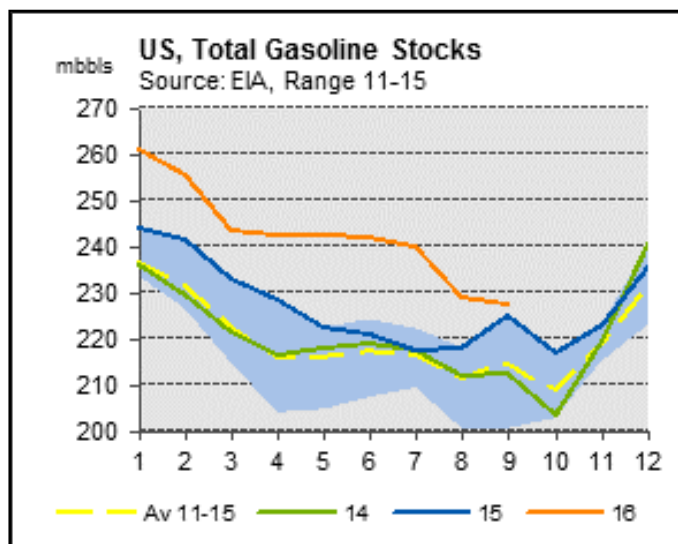


# Crude Inventory

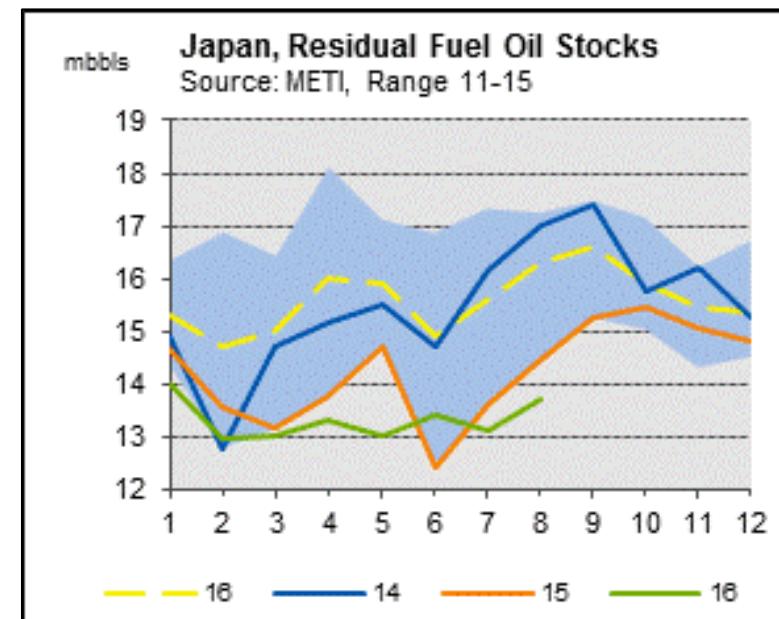
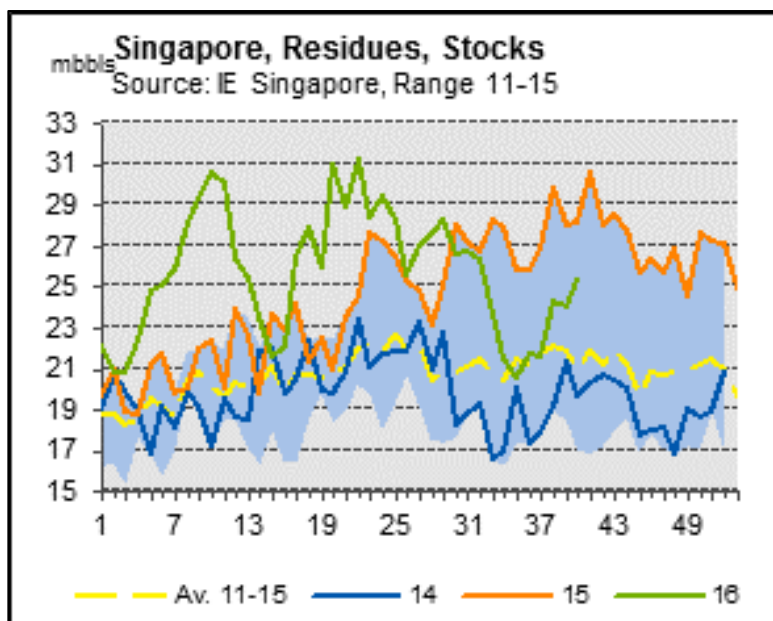
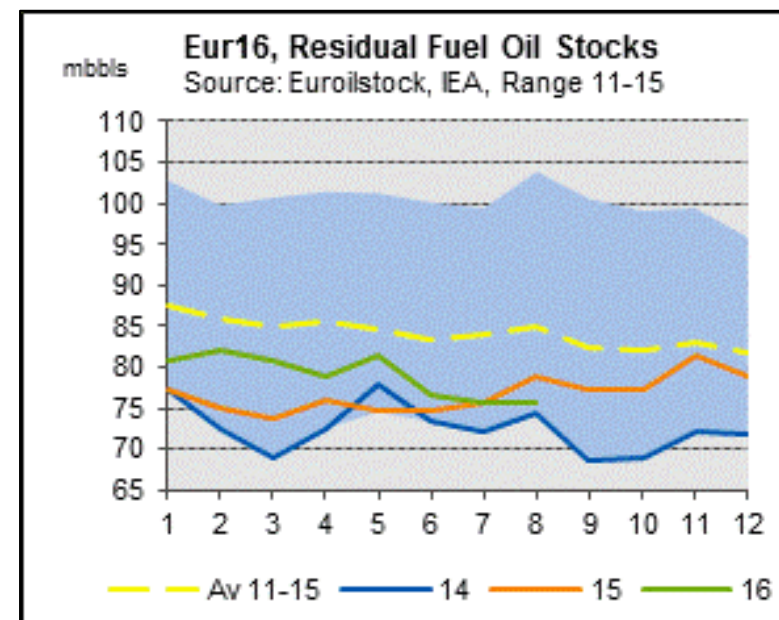
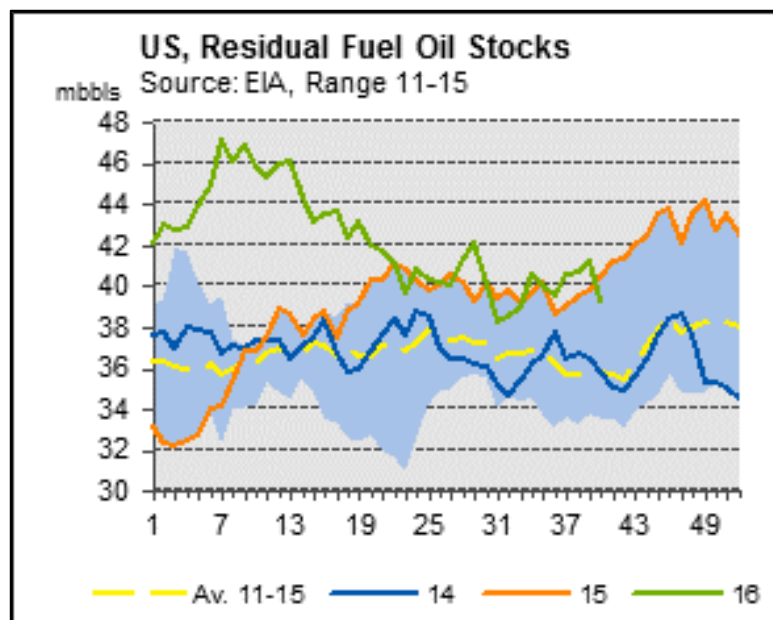




# Global Distillate Inventory

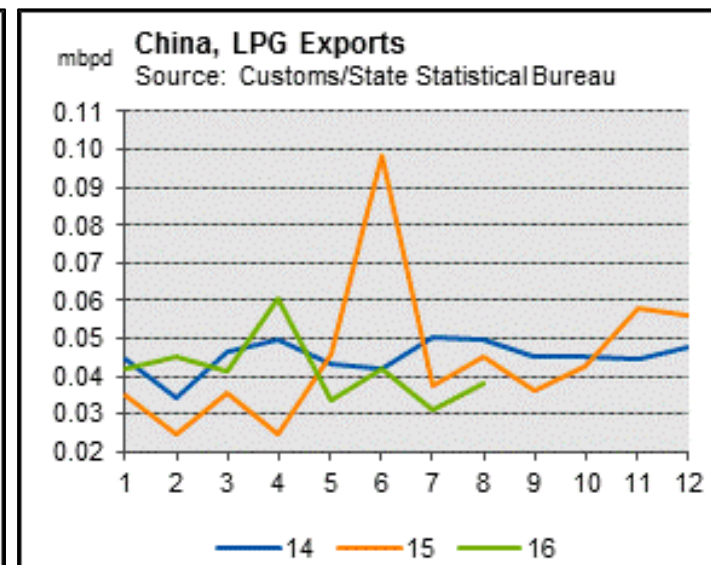
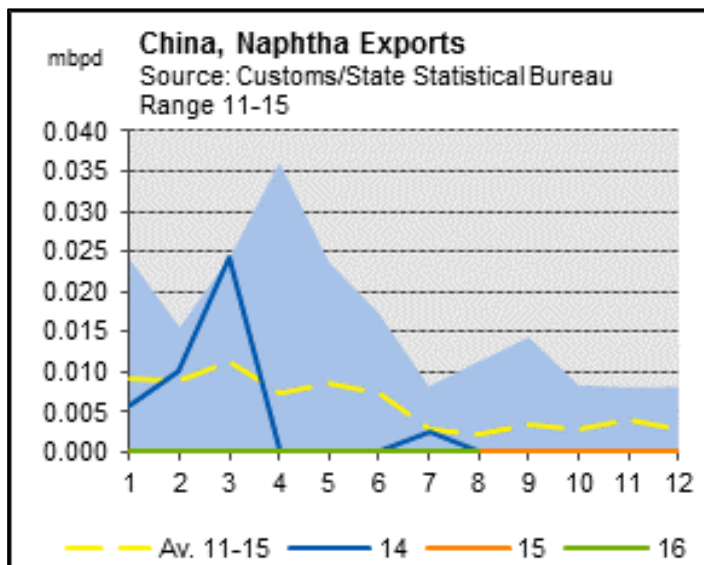
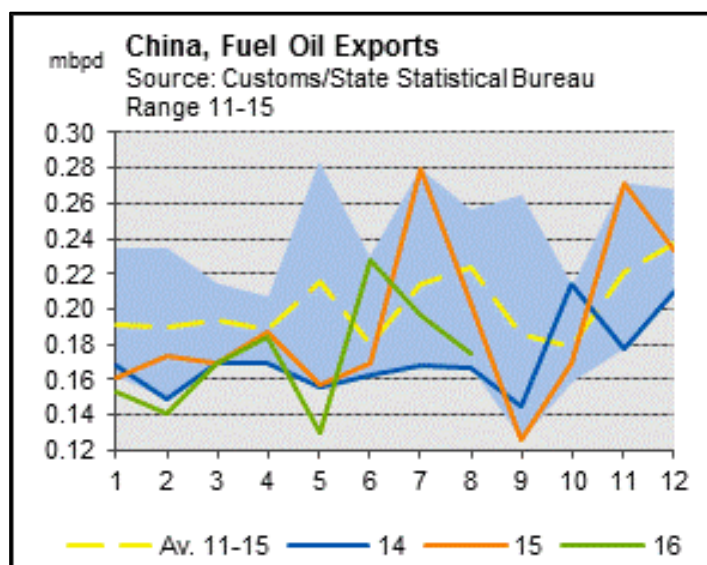
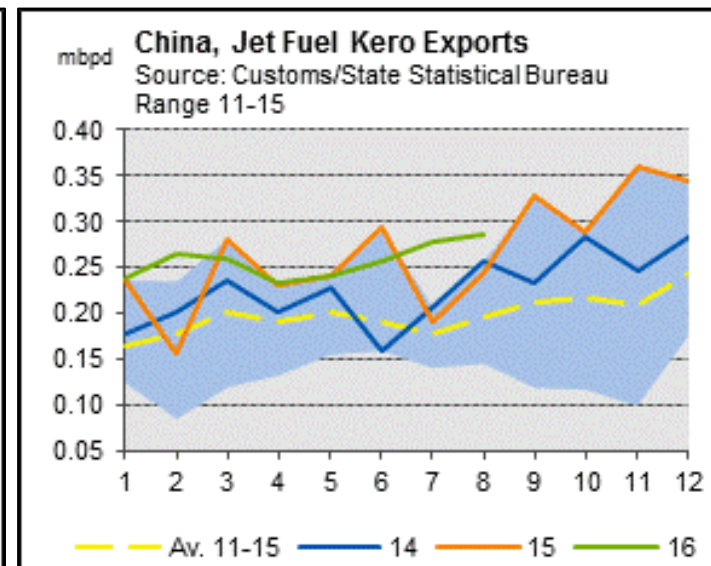
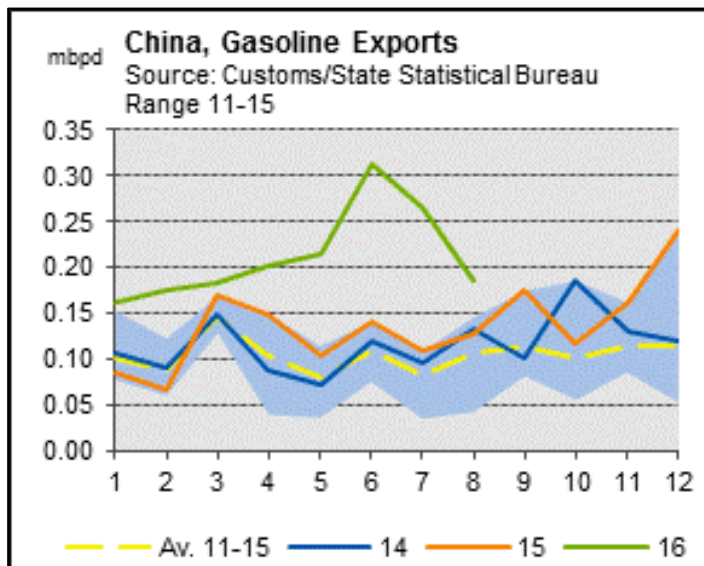
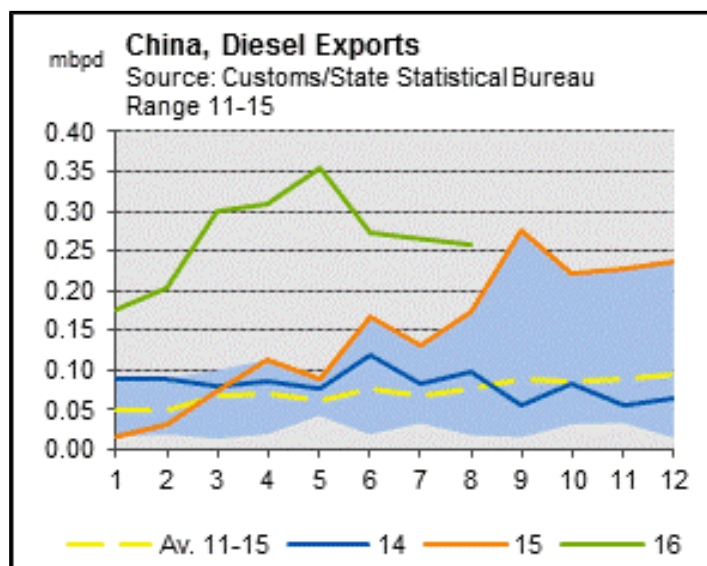


# Fuel Oil Inventory



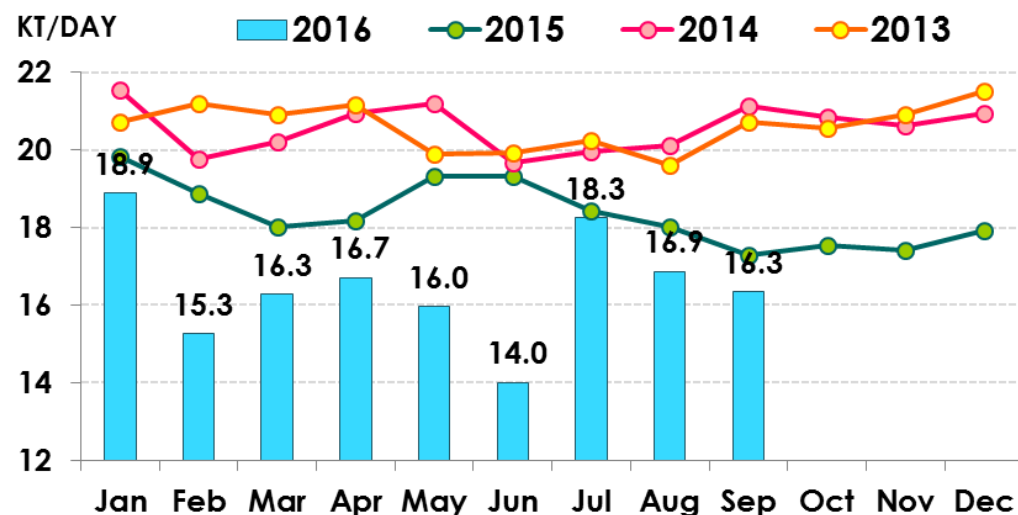


# China's Product Export



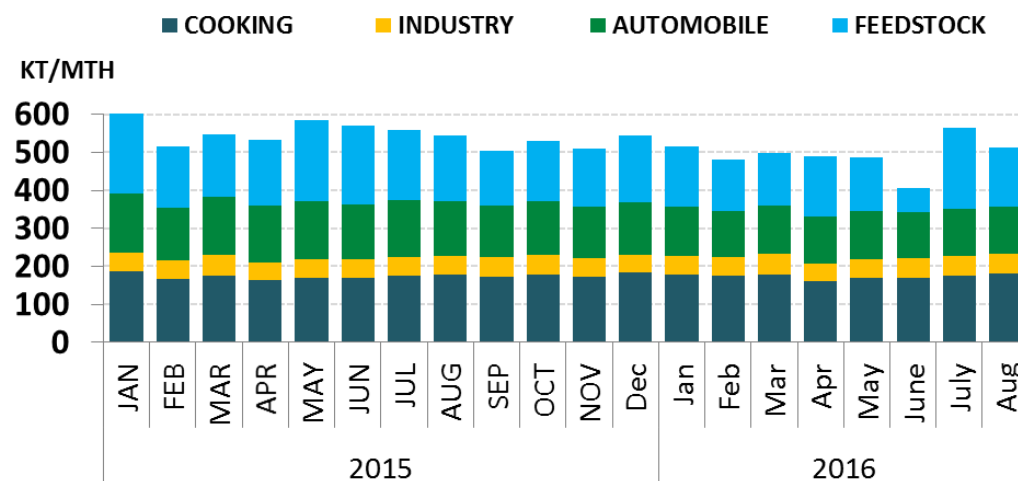
# Domestic LPG Demand

## Thailand LPG Demand



Remark : 1. LPG demand includes Petrochemical and own used consumption  
2. Sep-16 data is estimated by TOP

## LPG Demand by Sector



## LPG Demand Highlight

- In 9M/16, LPG demand fell significantly by 11.1%YoY on account of lower usages in all sectors. Most of the decline came from petrochemical sector which its feedstock switching from LPG to Naphtha leading to 22.5%YoY drop in this sector. Furthermore, LPG demand in automobile fell harshly by 16.1%YoY, as a result of fuel switching from LPG to Mogas due to lower price of Mogas.

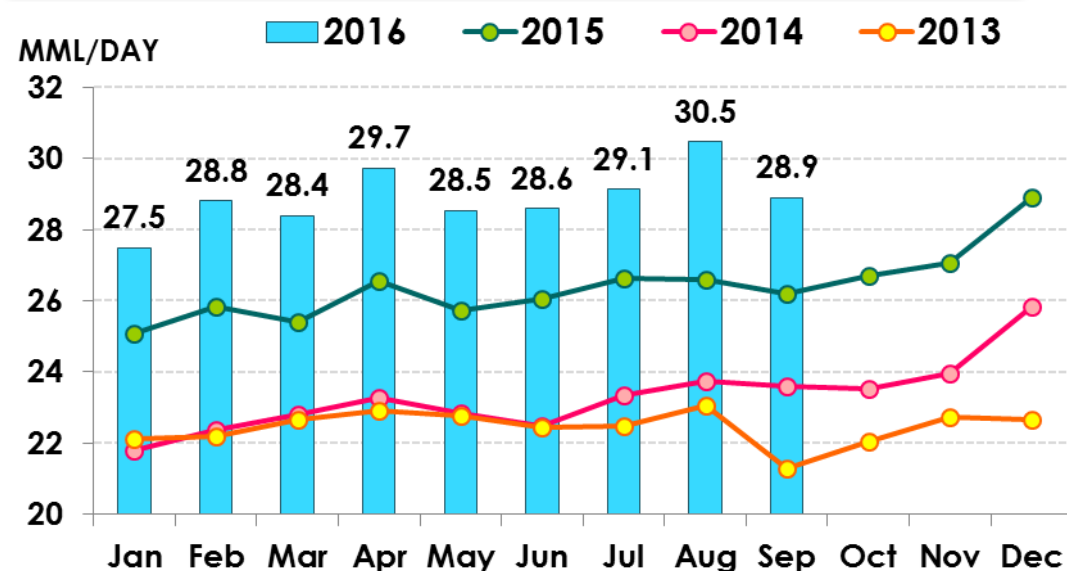
## Outlook for 2016

- LPG demand is expected to dropped by 3.8% YoY pressured by the expectation of more fuel switching from LPG to Mogas, due to low oil price.
- However, the slowdown of LPG demand was expected to be limited by higher usage in industry sector as a result of persistent low level of LPG price.

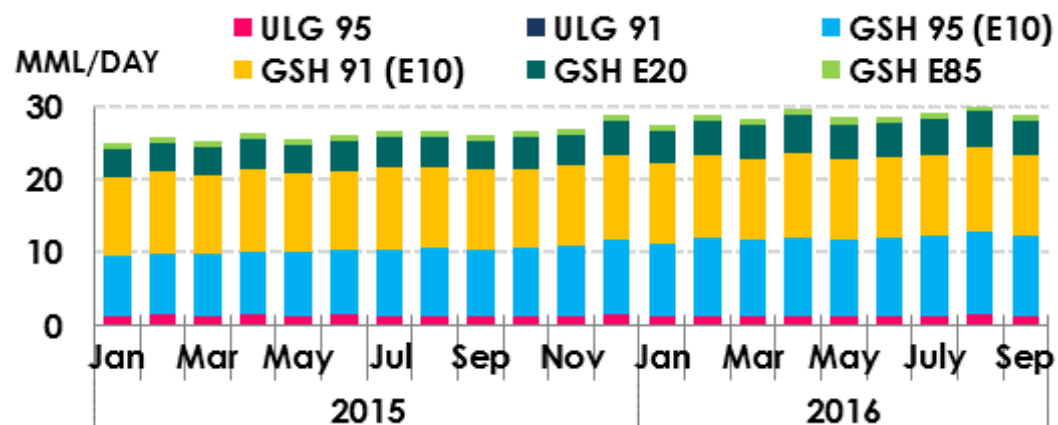


# Domestic Gasoline/Gasohol Demand

## Thailand Gasoline/Gasohol Demand



## Gasoline/Gasohol Demand by Grade



## GASOLINE/Gasohol Demand Highlight

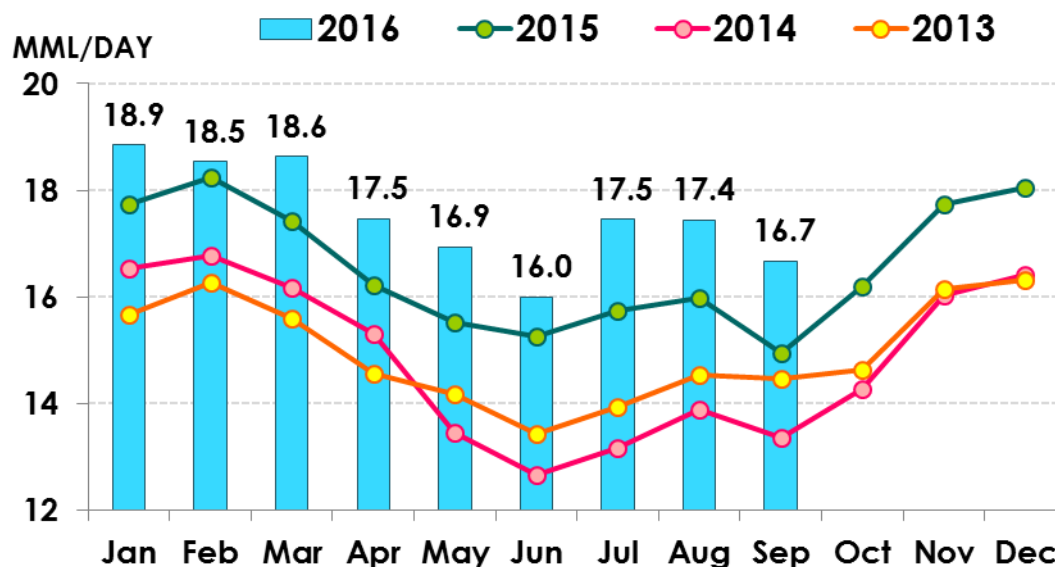
- In 9M/2016, Mogas demand jumped sharply by **11.1%YoY to an average 28.89 ML/day**. This was mainly due to lower retail prices and higher number of passenger cars since the end of the last year, as a result of avoiding new tax implementation. In fact, the gasohol portion increase significantly to 95.3% of total mogas demand as a result of lower proportion of ULG95 from 5.3% to 4.6%, according to more attractive price gap of ULG95 and GSH E10.
- The level of domestic ethanol demand, in 9M/16, rose significantly by **10.2% YoY** from 3.52 mml/day to 3.88 mml/day following the rising of Mogas demand. Additionally, this was also because of higher demand in GSH-91, GSH-95, and E20 which increased by 2.2%YoY, 22.5%YoY, and 17.6%YoY, respectively, backed by increasing in the number of new E20 vehicle, E20 gas station, and wider GSH95-E20 price gap.

## Outlook for 2016

- Mogas consumption is predicted to grow by 10.0% YoY supported by low level of retail price, higher passenger cars.

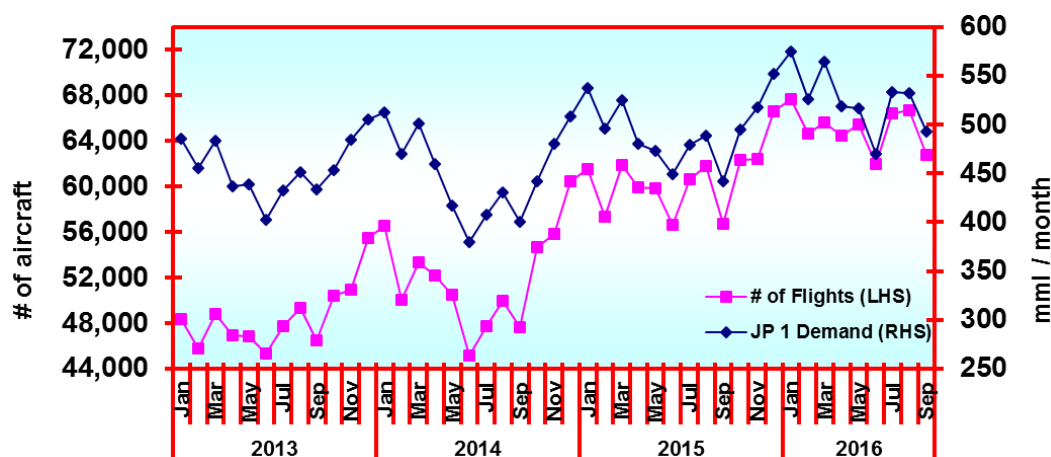
# Domestic Jet Demand

## Thailand JET-A1 Demand



## JET-A1 demand and # of flights

Relationship between aircraft movement and JP-1 demand



## JET Demand Highlight

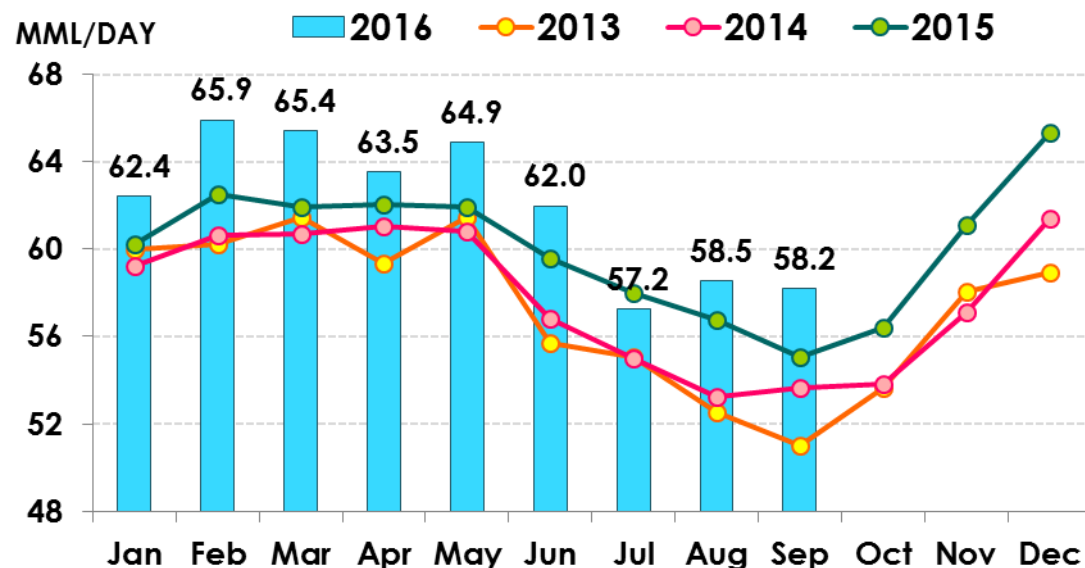
- In 9M/2016, Jet consumption increased significantly by 7.5% over the corresponding period last year mainly owing to booming tourism industry. The expansion in tourism sector was a result of increasing number of Chinese, ASEAN and European tourists, pushing the number of flight movements higher both international and domestic aircrafts.

## Outlook for 2016

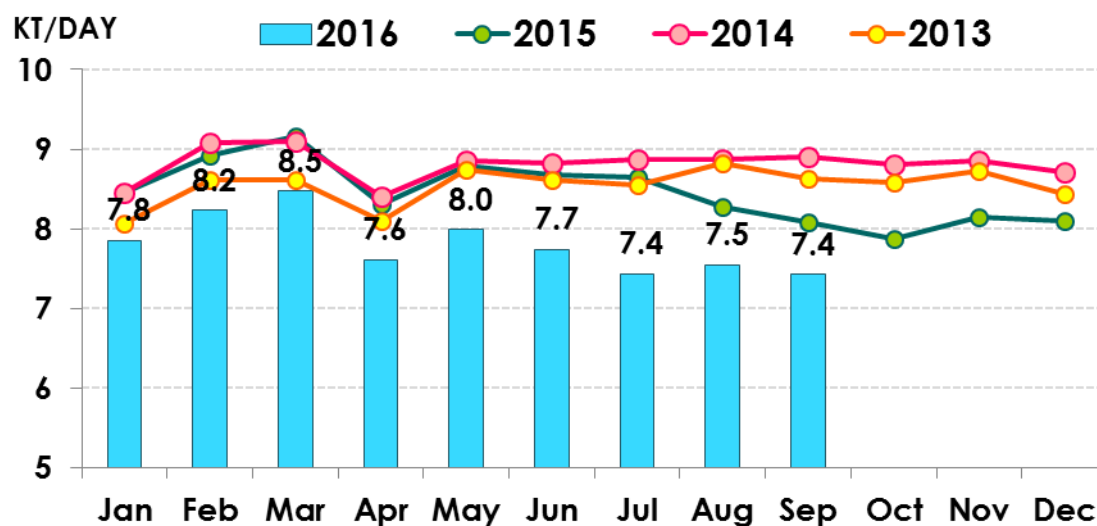
- Jet demand growth is expected to grow by 5.5%YoY as a result of rapid tourist number growth, especially from China and ASEAN.

# Domestic Gasoil and NGV Demand

## Thailand Gasoil Demand



## NGV Demand



### Diesel Demand Highlight

- In 9M/2016, Diesel demand rose gradually by 3.7% YoY as relatively low retail prices boosted the consumption amidst higher number of accumulated commercial vehicles. Nevertheless, demand growth was curbed by lower level of export activity, as a result of decelerated global economy.

### Outlook for 2016

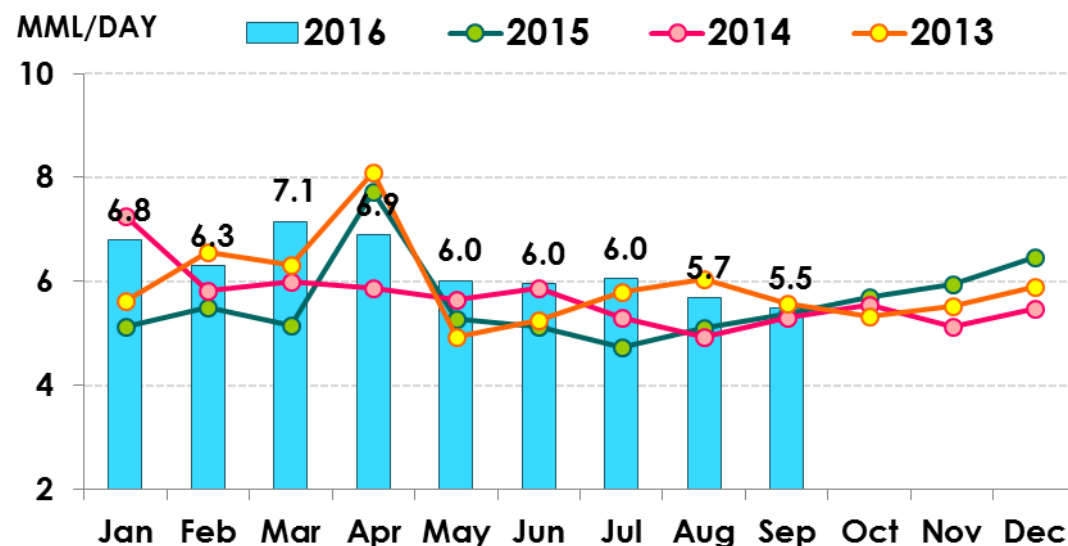
- Diesel demand in 2016 is expected to expand by 4.2% YoY supported by reducing retail price and Thailand economic improvement.

### NGV Demand Highlight

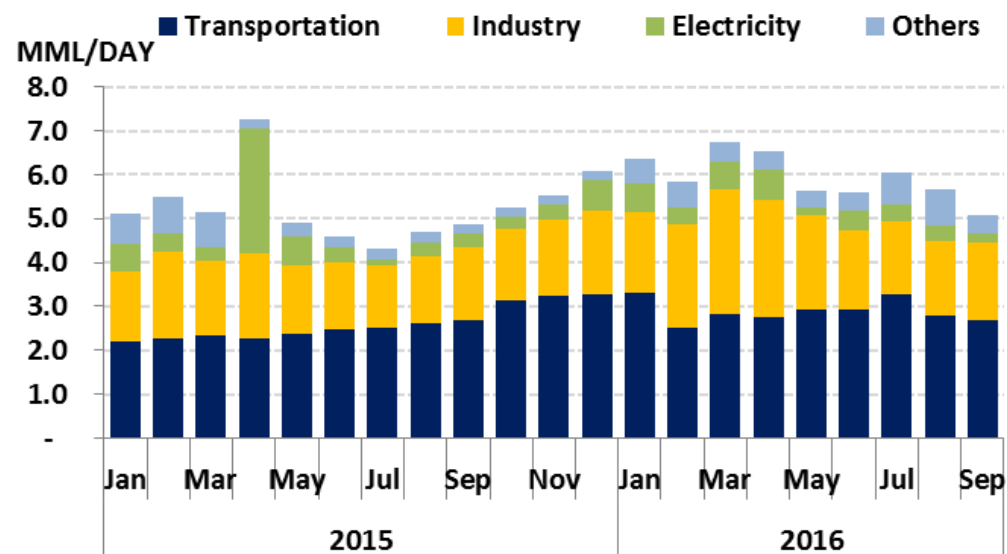
- In 9M/2016, NGV demand declined significantly by 9.1%YoY. This was mainly because of higher NGV retail price, which had increased to hit the record high at 13.5 baht/kg in Q1/16, and lower oil prices which reduced the fuel switching from old cars.

# Domestic Fuel Oil Demand

## Thailand Fuel Oil Demand



## Thailand Fuel Oil Demand by Sector



## FUEL OIL Demand Highlight

- In 9M/2016, Fuel Oil consumption jumped rapidly by 14.8%YoY, as a result of sharply increase by 19.7%YoY in transportation demand. Last year, transport activity in Thai fishery was pressured by EU warning of the concerning in illegal, unreported and unregulated fishing (IUU) of Thai seafood industry. Furthermore, the demand in industrial sector also increased by 26.0%YoY, as a result of lower price of fuel oil.

## Outlook for 2016

- Fuel oil demand is expected to rise by 10.9%YoY, as a result of higher activity in transportation sector from lower price and reviving in industrial sector.

# Thank You

Any queries, please contact:



at email: [ir@thaioilgroup.com](mailto:ir@thaioilgroup.com)

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

Fax: 662-797-2976