

# PTT Exploration and Production Public Company Limited

Q2 2016 Analyst Meeting  
Bangkok  
8 August 2016



**PTTEP**

MEMBER OF

**Dow Jones  
Sustainability Indices**

In Collaboration with RobecoSAM





# Safety Performance

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Industry Highlights

Financial Results

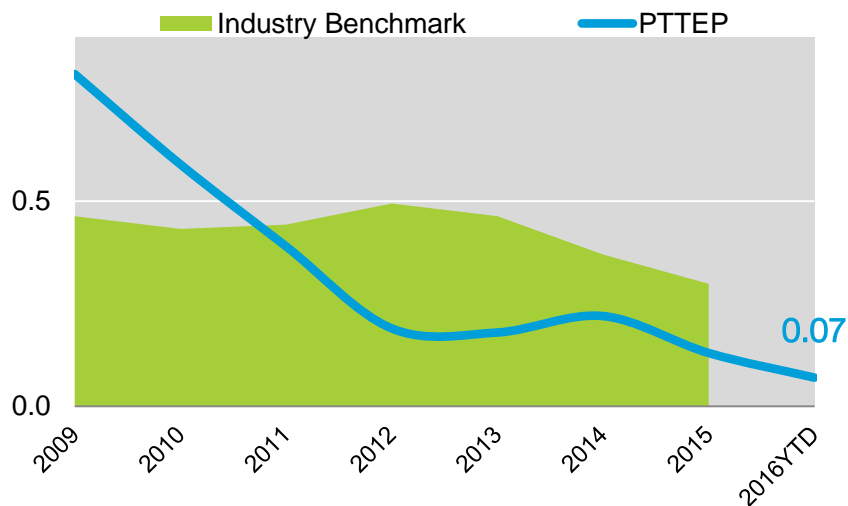
Outlook



## Safety

### Maintain high safety standard

# of incidents per million man hours  
(Lost time injury incident frequency, LTIF)

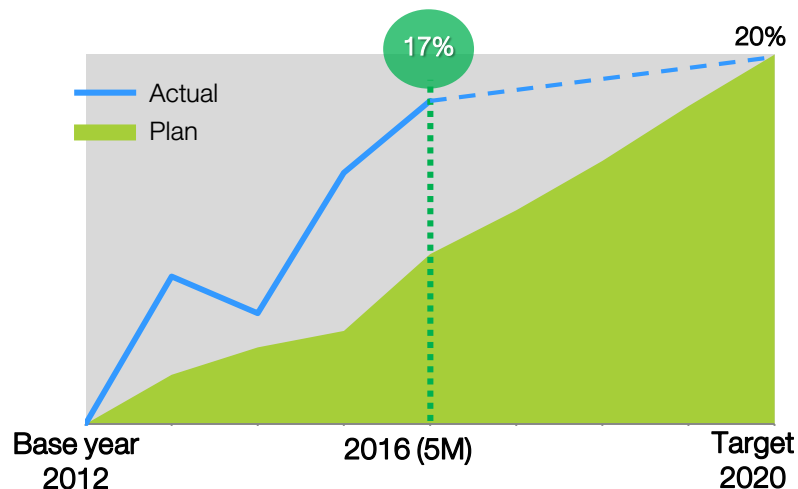


*Safety of PTTEP employees and contractors in every aspect of our operations is key to achieve the goal of "Target Zero"*

## Environment

### Target 20% GHG reduction by 2020

% of reduction in GHG emission per BOE produced, comparing to 2012 base year figure



*PTTEP aims to become a Low Carbon Footprint organization, and has set a goal to reduce its greenhouse gas (GHG) emissions by not less than 20% in the year 2020 versus its 2012 base year figure.*

\* Increase in GHG emission per barrel produced in 2014 was due to slight decrease in production from domestic assets.



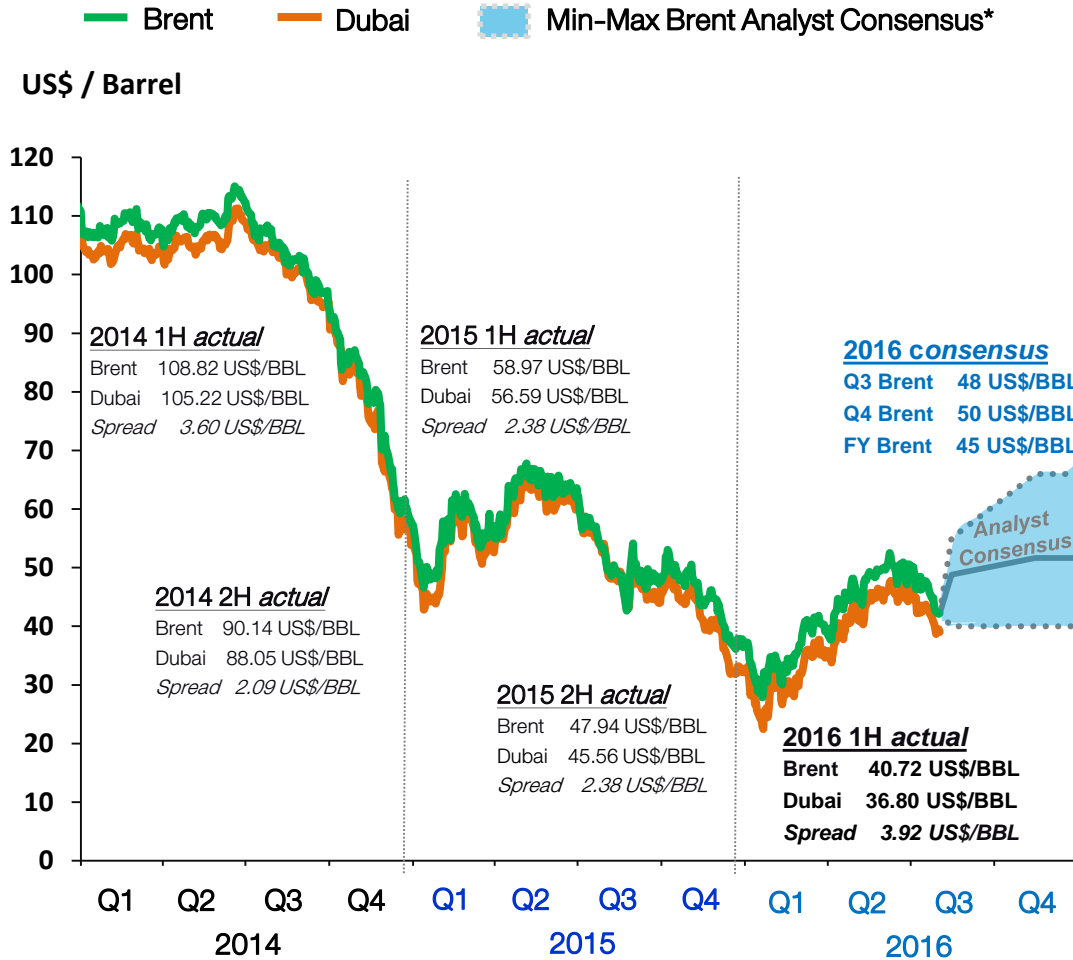
Safety Performance

**Industry Highlights**

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Financial Results

Outlook



## First Half of 2016 Highlights

- ↑ Supply disruption in Canada and Nigeria and declining output from US
- ↓ Continuous supply ramp-up from Iran after international sanctions lifted
- ↓ Concern over the impact of Brexit to global economic and oil demand outlook

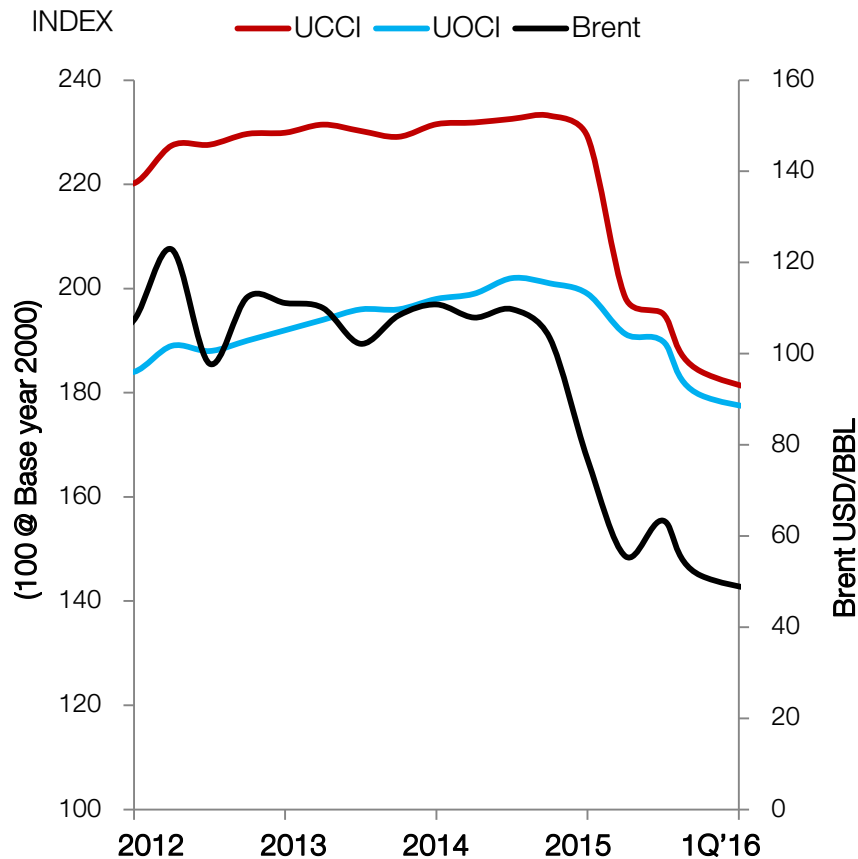
## Outlook for the Remainder of 2016

- ↓ Continued oversupply conditions
- ↓ EU and China economic slow down
- ↑ Decreasing production as a result of previous CAPEX cut since 2014
- ↑ Narrowing oversupply gap supported by continued growth in global crude oil demand

Remark: \* Bloomberg Analyst Consensus (CPFC) as of 3 August 2016 (36 estimates)

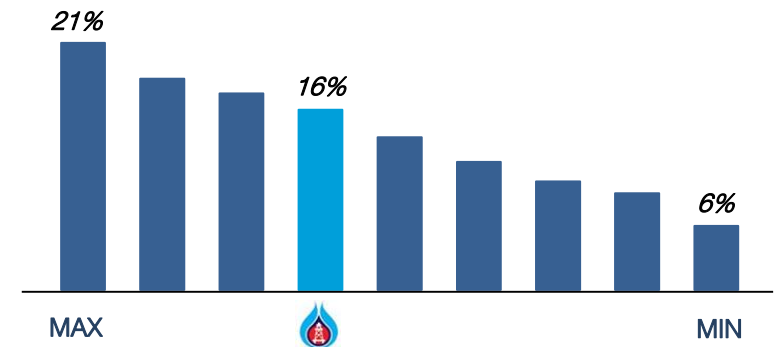


## Upstream Capital and Operating Cost Indices



Remark: UCCI = Upstream Capital Cost Index ; UOCI = Upstream Operating Cost Index  
Source: IHS CERA

## % Reduction in Operating Expense per BOE (FY15 vs FY14)

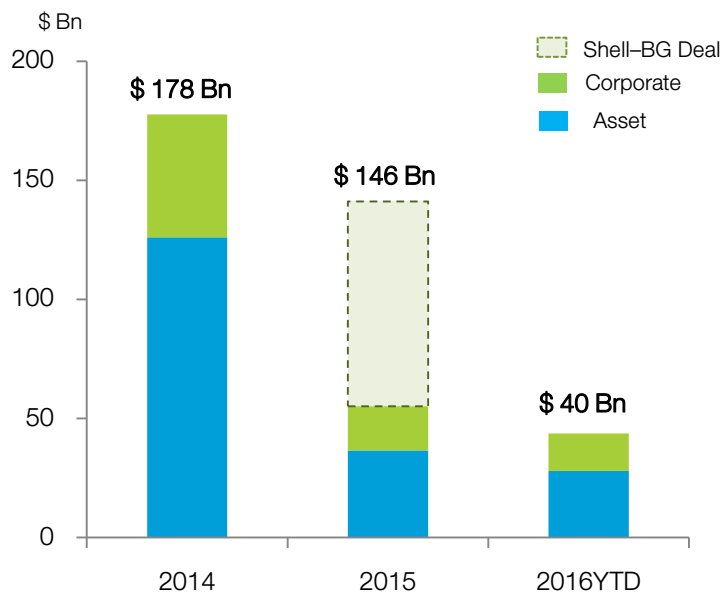


Peers incl. Anadarko, Apache, Chevron, CNOOC, Murphy Oil, Santos, Shell, Woodside  
Source: Company's Announcement based on average leasing operating cost, average production cost and operating expense per BOE

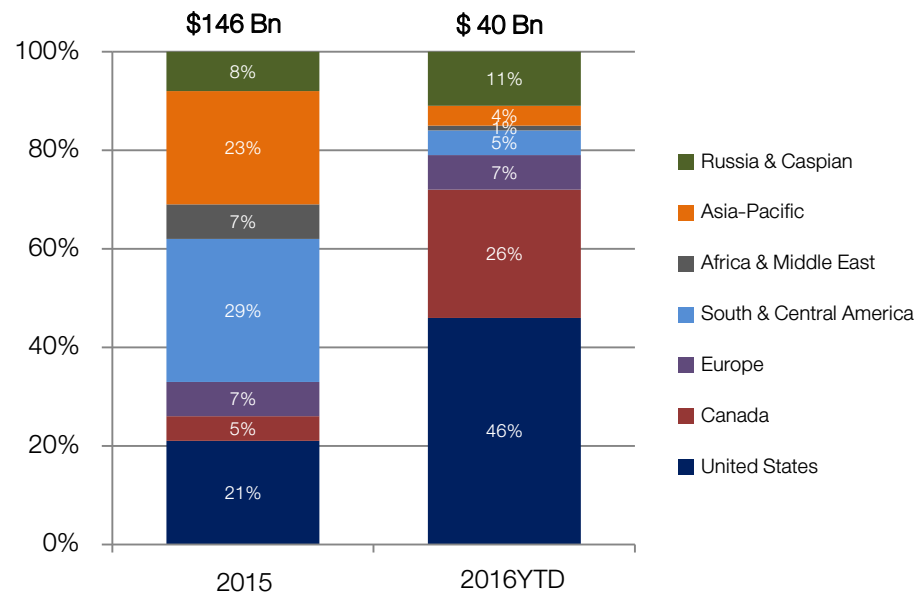
- Upstream cost deflation continues albeit recently at a slower rate
- E&P companies has capitalized on this, together with efficiency improvement, at varying degrees as partly reflected in unit operating expense



### Global Upstream M&A Deal Value \*



### Upstream Deal Value Distribution by Region



Global upstream M&A shows a sign of picking up in 2016 compared to FY2015 (excluding BG-Shell transaction), primarily driven by U.S. unconventional transactions and consolidation of Syncrude oil sand position by Suncor in Canada

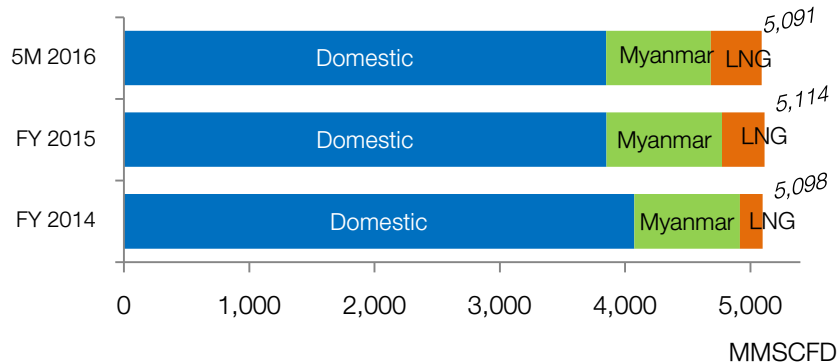
\*Remark: includes deal valued over \$100 million

Source: IHS



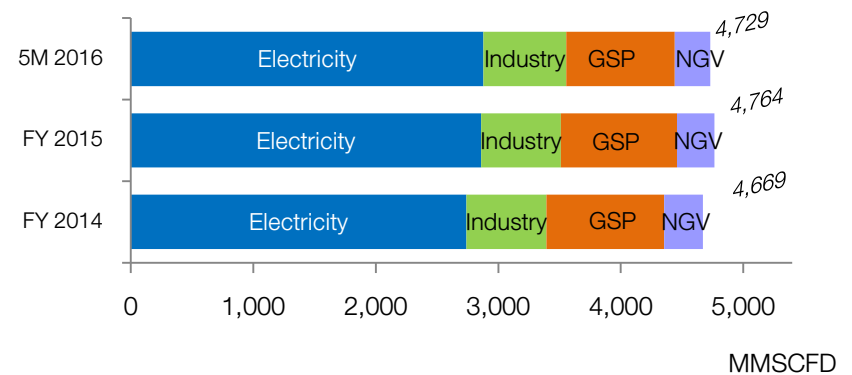


### Thailand's Natural Gas Supply by Source



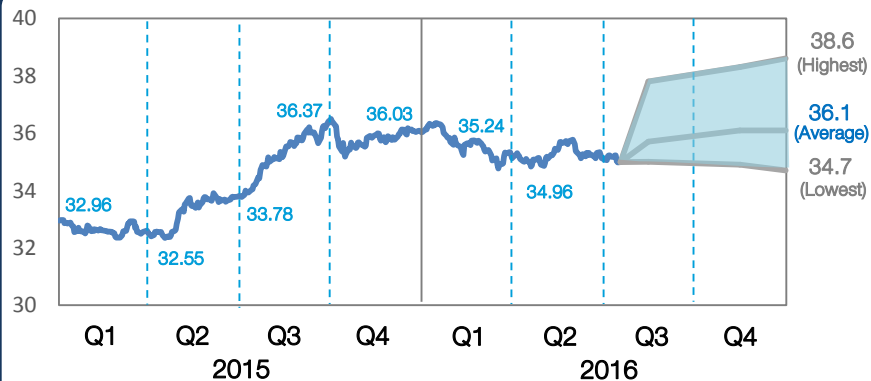
Source: EPPO

### Thailand's Natural Gas Consumption by Sector



Source: EPPO

### Exchange Rate Movement (THB/USD)



Source: Bank of Thailand, Bloomberg

Forecast based on Bloomberg Consensus as of 18 July 2016

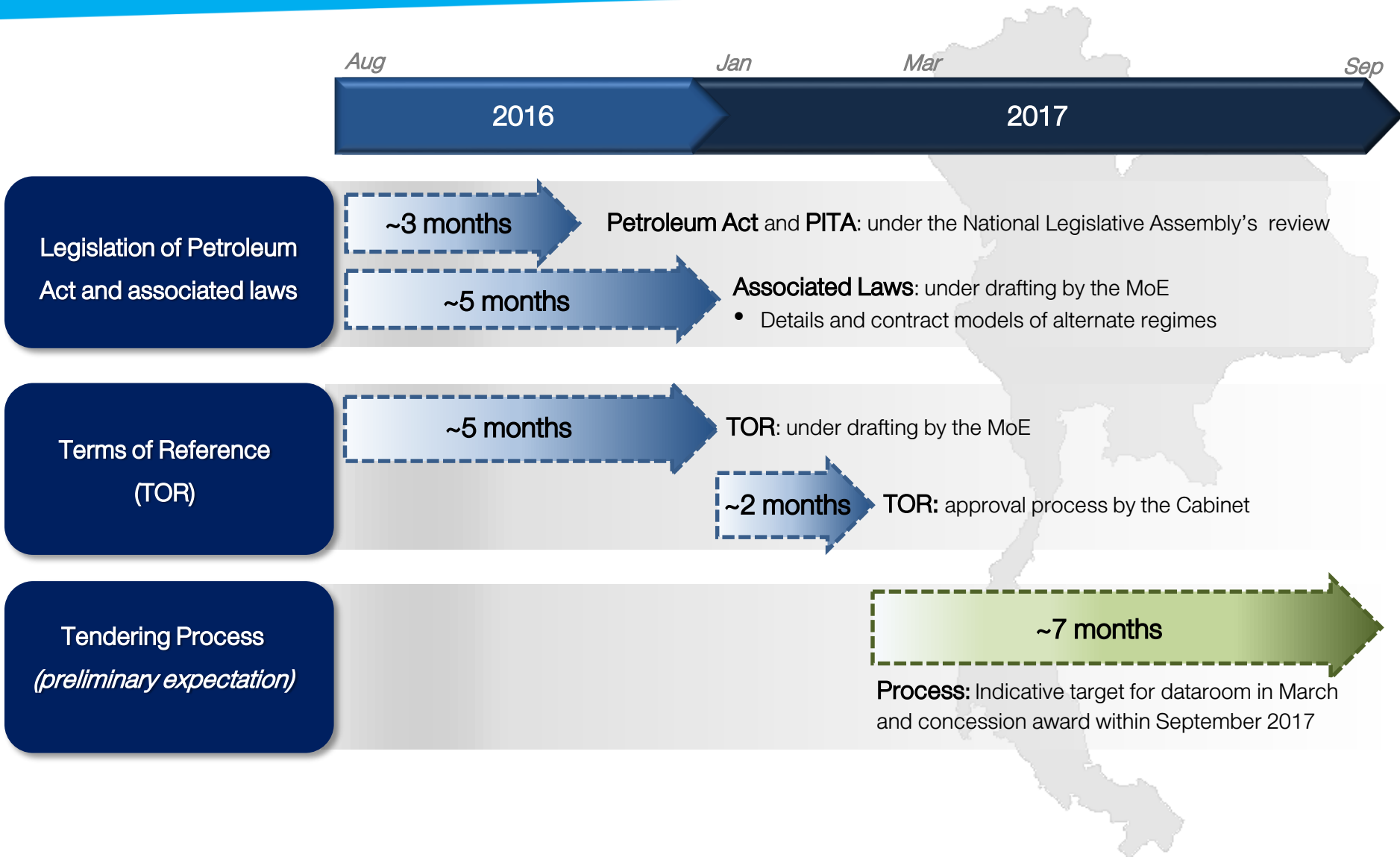
### Thailand's Gas Market:

- In meeting stable domestic demand, saw a slight increase in LNG imports and Myanmar volumes decline due to planned shutdown in 1H16

### Exchange Rate:

- Continue to be volatile; risk to weakening THB if FED increases interest rate in 2H16





Source: as interviewed by Permanent Secretary, the Ministry of Energy on 2 August 2016



Safety Performance

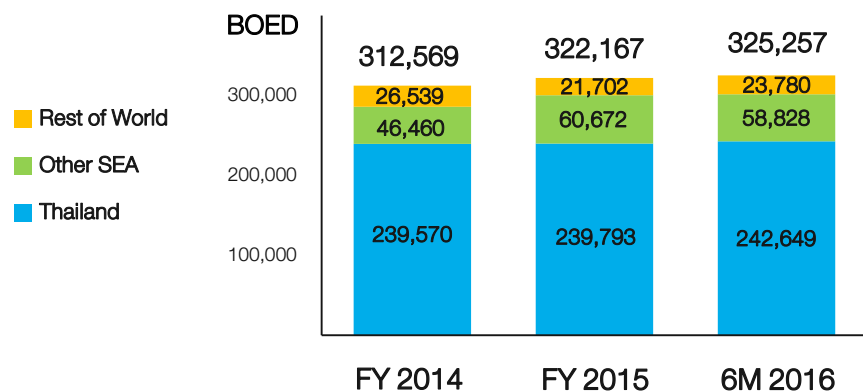
Industry Highlights

**Financial Results**

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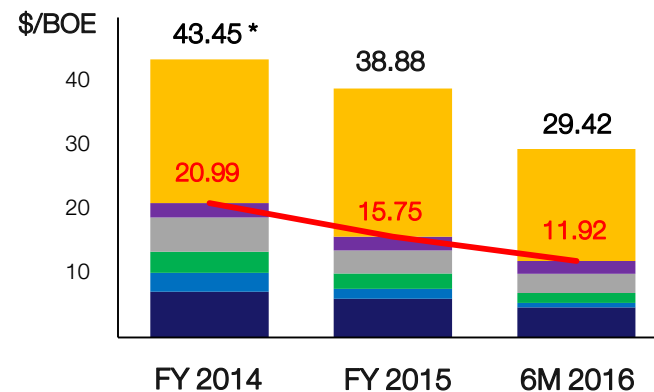
Outlook

## Sales Volume and Price



|   |         |         |         |
|---|---------|---------|---------|
| Gas (\$/MMBTU)                                | 8.06    | 7.20    | 5.84    |
| Liquid (\$/BBL)                               | 94.82   | 50.05   | 37.61   |
| Weighted Avg. (\$/BOE)                        | 63.71   | 45.29   | 35.84   |
| Avg. Dubai (\$/BBL)                           | 96.60   | 50.91   | 36.80   |
| Avg. HSFO (\$/BBL)<br>(High Sulphur Fuel Oil) | 86.74   | 44.86   | 29.16   |
| Volume Mix (Gas : Liquid)                     | 67 : 33 | 70 : 30 | 69 : 31 |
| Revenue Mix (Gas : Liquid)                    | 51 : 49 | 66 : 34 | 67 : 33 |

## Unit Cost



|                            |         |         |       |
|----------------------------|---------|---------|-------|
| DD&A                       | 22.46   | 23.13   | 17.50 |
| Finance Cost               | 2.27    | 2.14    | 1.98  |
| Royalties                  | 5.34    | 3.62    | 2.98  |
| G&A                        | 3.30    | 2.39    | 1.56  |
| Exploration Expenses       | 2.92    | 1.56    | 0.70  |
| Operating Expenses **      | 7.16    | 6.04    | 4.70  |
| Lifting Cost               | 5.26    | 4.62    | 3.97  |
| Drilling Success Ratio *** | 25 : 43 | 31 : 47 | 3 : 5 |

Remark: Sales Volume & Royalties: after reclassification of PSC royalty

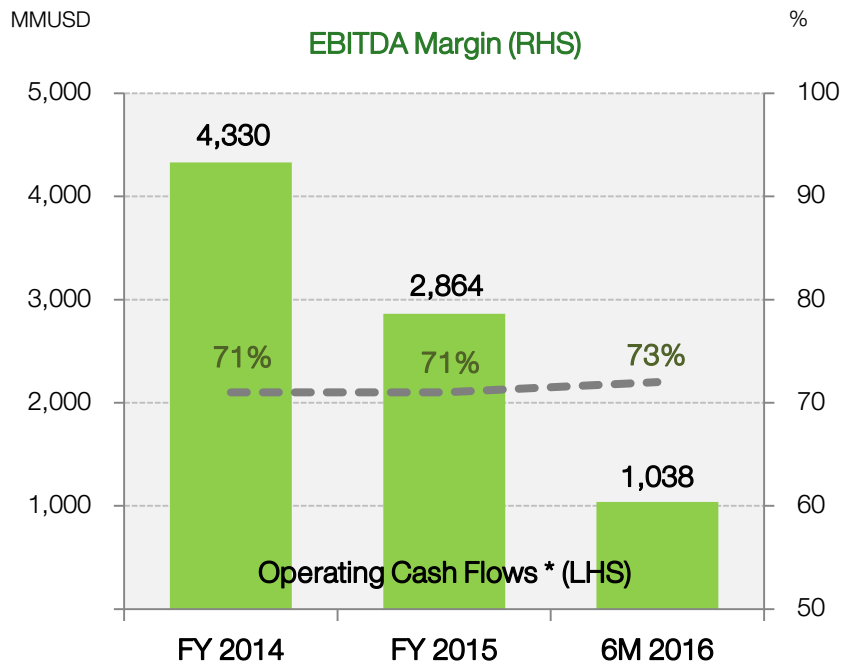
\* If exclude extra expense from Montara's Development well (H5): For 2014, Operating Exp: 6.73 \$/BOE / Unit cost: 43.02 \$/BOE

\*\* Exclude diluent cost for blending bitumen in KKD Oil Sands project

\*\*\* Successful wells : Total wells (includes Exploration and Appraisal wells)

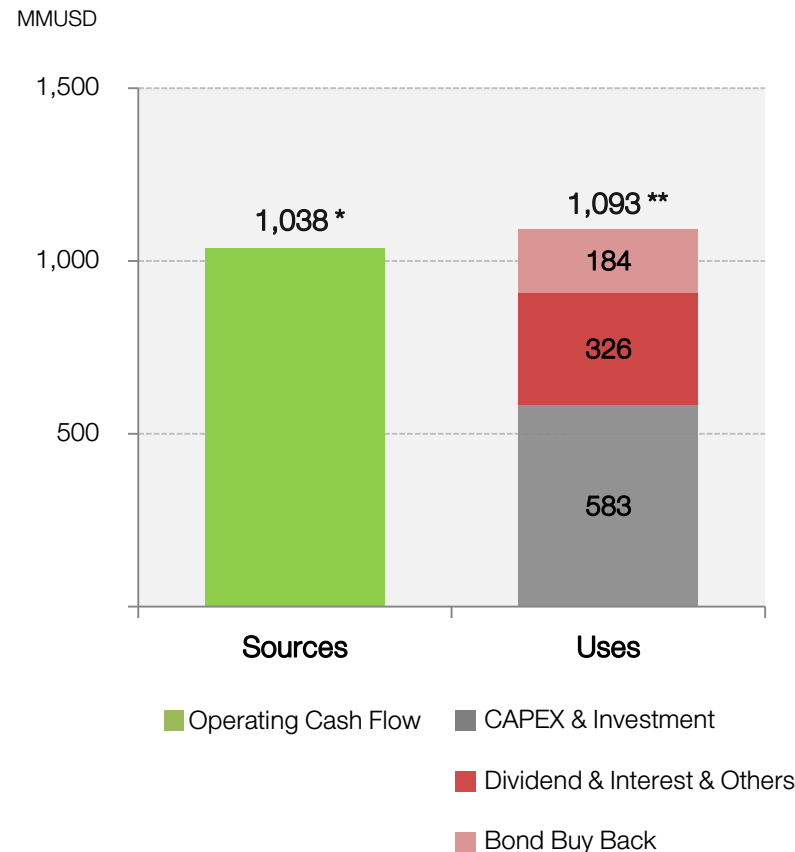


## Cash Flow Performance



|                          |       |       |     |
|--------------------------|-------|-------|-----|
| Net Income               | 677   | (854) | 232 |
| Recurring Net Income *** | 1,538 | 718   | 270 |

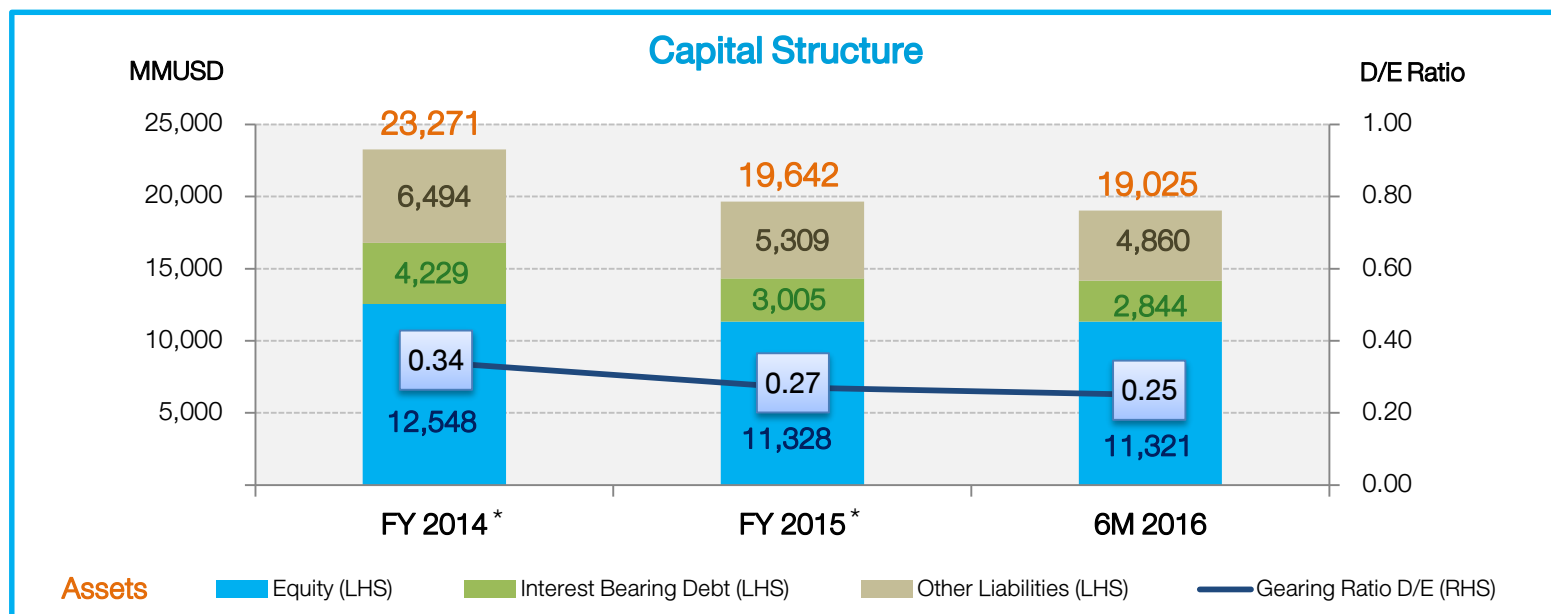
## Source & Use of Funds in 6M 2016



Remark: \* Net of adjustment for the effect of exchange rate changes on cash and cash equivalents

\*\* Excludes cash flows for investing in short-term investments (Fixed deposit > 3 months)

\*\*\* Excludes Gain/(Loss) on FX, Deferred tax from Functional currency, Current Tax from FX Revaluation, Gain/(Loss) from Financial Instruments, Impairment Loss on Assets, and etc.



## Debt Profile \*\*



Weighted Average  
Cost of Debt\*\* (%)

4.14

4.32

4.40

[Fixed : Floating]

[77 : 23]

[82 : 18]

[80 : 20]

Average Loan Life\*\* (Years)

7.05

8.17

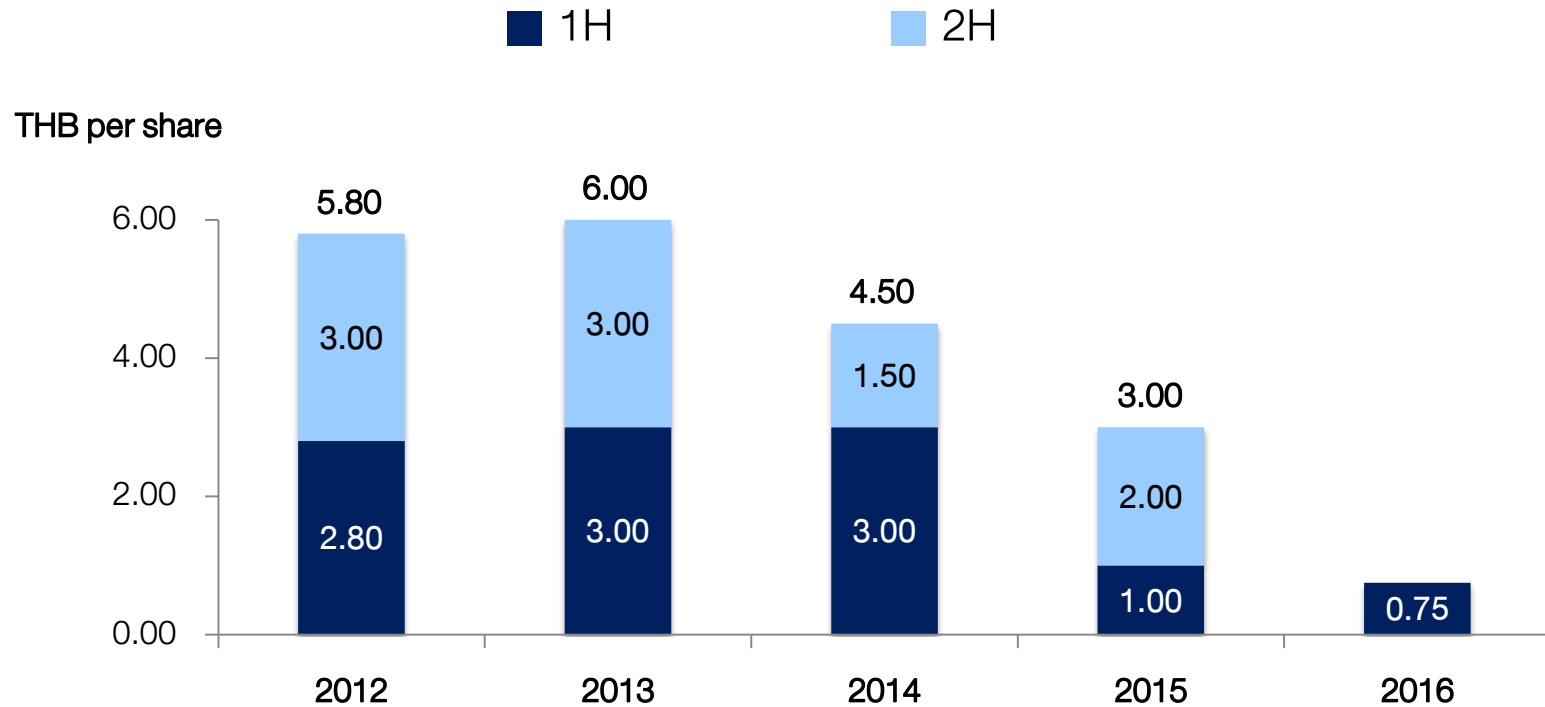
8.65

Remark: \* Restated

\*\* Excludes Hybrid bonds



## Dividend Payment History (Policy : No Less Than 30% of Net Income)



|                  |    |    |    |     |    |
|------------------|----|----|----|-----|----|
| Payout Ratio (%) | 38 | 40 | 82 | N/A | 37 |
|------------------|----|----|----|-----|----|



Safety Performance

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Financial Results

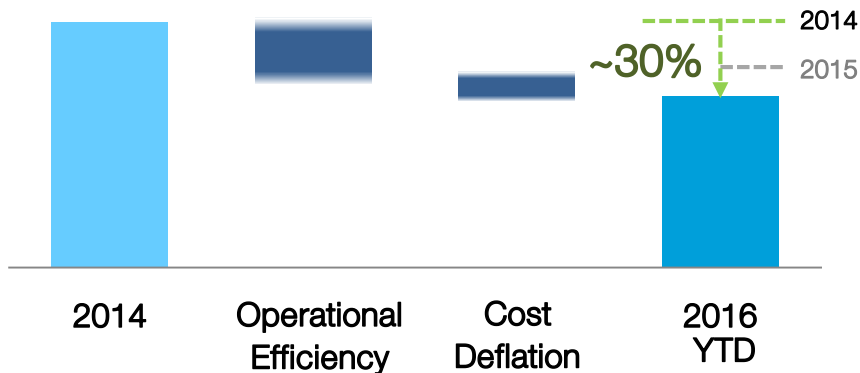
Outlook



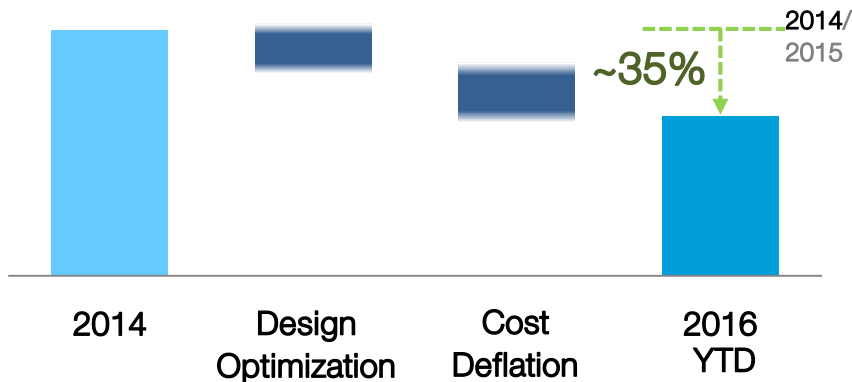


## Notable improvement in key CAPEX components

### Development Drilling Cost per Well\*



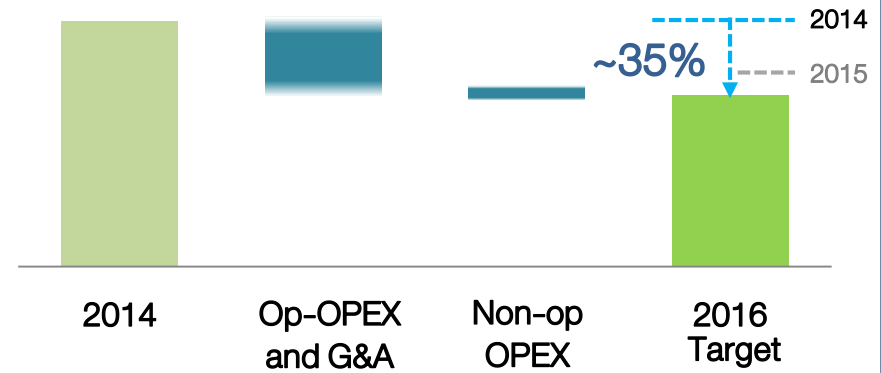
### Wellhead Platform Cost per Unit\*



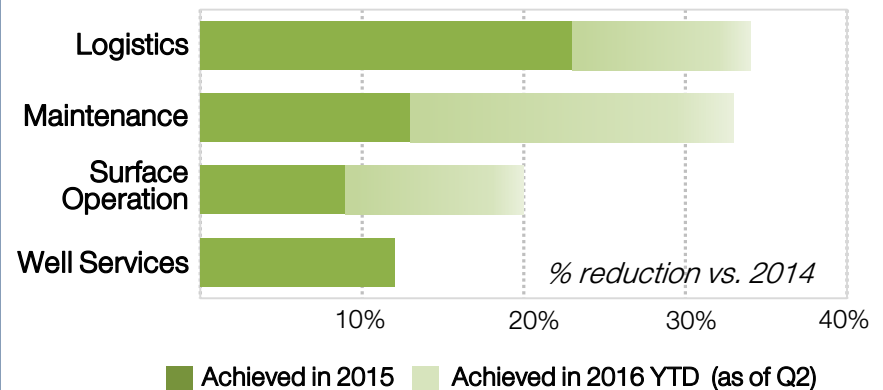
Note : Graph represents cost reduction captured but not yet fully realized

## With increased efficiency in OPEX spending

### OPEX and G&A per BOE



### Key OPEX Components



\* Primarily applicable in PTTEP-operated projects in the Gulf of Thailand



## RESET

## REFOCUS

## RENEW

### Maintain sales volume

Unit: KBOED



### 2016 full year guidance

As of Q2 2016

~5.5  
USD/MMBTU

~322  
KBOED

~65-70  
% of sales revenue

~31  
USD / BOE



Average  
Gas Price \*



Average  
Sales Volume



EBITDA  
Margin



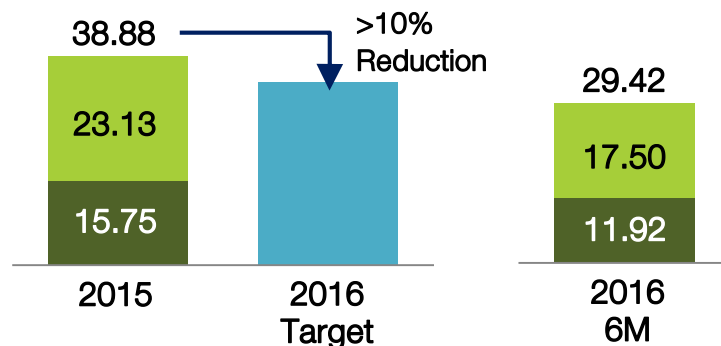
Unit  
Cost

### Bring down unit cost

Unit: USD/BOE

Cash

Non-cash



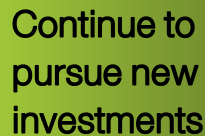
\* Based on the average Dubai crude oil price of 39 USD/BBL in 2016 after taking into account the 1H 2016 average price of 36.80 USD/BBL



- New exploration project (SK410B)
- Operator (42.5% WI)
- Gas-proven basin, offshore Sarawak, with established infrastructure

- Completed exploration and appraisal drilling
- Prepared to fast-track development study

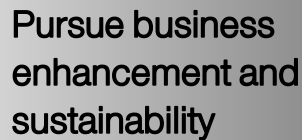
- Continue to make progress on various regulatory and commercial negotiations



- PTTEP well-positioned to continue as operator after the existing concession expires
- Awaiting clarity over the bidding process

- Producing / near-term producing assets in SEA
- Prospective exploration blocks

- Evaluate feasibility to form LNG value chain partnership with PTT



- Through R&D on exploration and production technologies



- Explore new business in both E&P-related and non-E&P related sectors



Detailed financial information

20-24

Project details

25-28

Organization structure

29

Ratios and formula

30

Unit : MMUSD

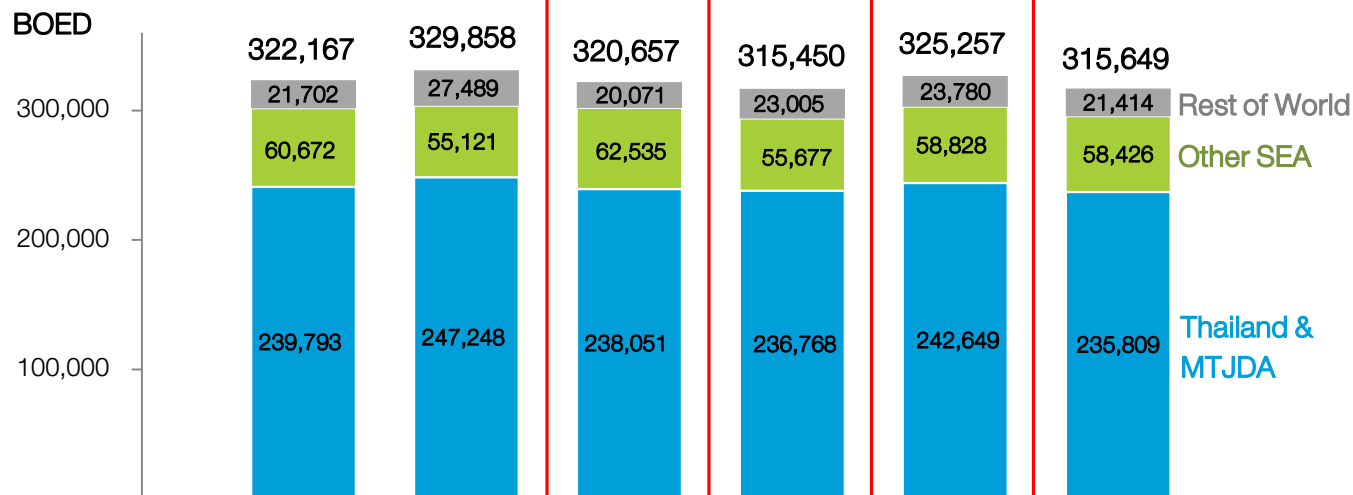
| Statement of Income    | Q1 16        | Q2 16        | % QoQ       | Q2 15 *      | % YoY          | 6M 16        | 6M 15 *      | % YTD       |
|------------------------|--------------|--------------|-------------|--------------|----------------|--------------|--------------|-------------|
| <b>Total Revenues</b>  | <b>1,093</b> | <b>1,110</b> | <b>2</b>    | <b>1,448</b> | <b>(23)</b>    | <b>2,203</b> | <b>2,895</b> | <b>(24)</b> |
| Sales                  | 1,053        | 1,069        | 2           | 1,398        | (24)           | 2,122        | 2,790        | (24)        |
| Others                 | 40           | 41           | 3           | 50           | (18)           | 81           | 105          | (23)        |
| Sales Volume (BOED)    | 329,858      | 320,657      | (3)         | 315,450      | 2              | 325,257      | 315,649      | 3           |
| Sales Price (USD/BOE)  | 35.08        | 36.62        | 4           | 48.71        | (25)           | 35.84        | 48.83        | (27)        |
| <b>Total Expenses</b>  | <b>936</b>   | <b>1,035</b> | <b>11</b>   | <b>1,413</b> | <b>(27)</b>    | <b>1,971</b> | <b>2,596</b> | <b>(24)</b> |
| <b>Major Expenses:</b> |              |              |             |              |                |              |              |             |
| Operating Expenses     | 135          | 144          | 7           | 182          | (21)           | 279          | 349          | (20)        |
| Exploration Expenses   | 26           | 15           | (42)        | 38           | (61)           | 41           | 52           | (21)        |
| DD&A                   | 518          | 518          | -           | 726          | (29)           | 1,036        | 1,454        | (29)        |
| Income Tax Expense     | 30           | 55           | 83          | 137          | (60)           | 85           | 155          | (45)        |
| (Gain)/Loss on FX      | (6)          | (7)          | (17)        | 19           | >(100)         | (13)         | 53           | >(100)      |
| <b>Net Income</b>      | <b>157</b>   | <b>75</b>    | <b>(52)</b> | <b>35</b>    | <b>&gt;100</b> | <b>232</b>   | <b>299</b>   | <b>(22)</b> |
| Recurring Net Income   | 116          | 154          | 33          | 194          | (21)           | 270          | 442          | (39)        |
| Non-Recurring **       | 41           | (79)         | >(100)      | (159)        | 50             | (38)         | (143)        | 73          |

\* Restated

\*\* Includes Gain/(Loss) on FX, Deferred tax from Functional currency, Current Tax from FX Revaluation, Gain/(Loss) from Financial Instruments, and etc.

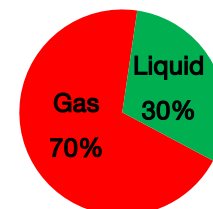


## Sales Volume

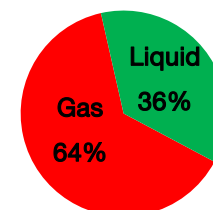


## Q2 2016 Sales Volume & Revenue By Product

### Volume Mix



### Revenue Mix

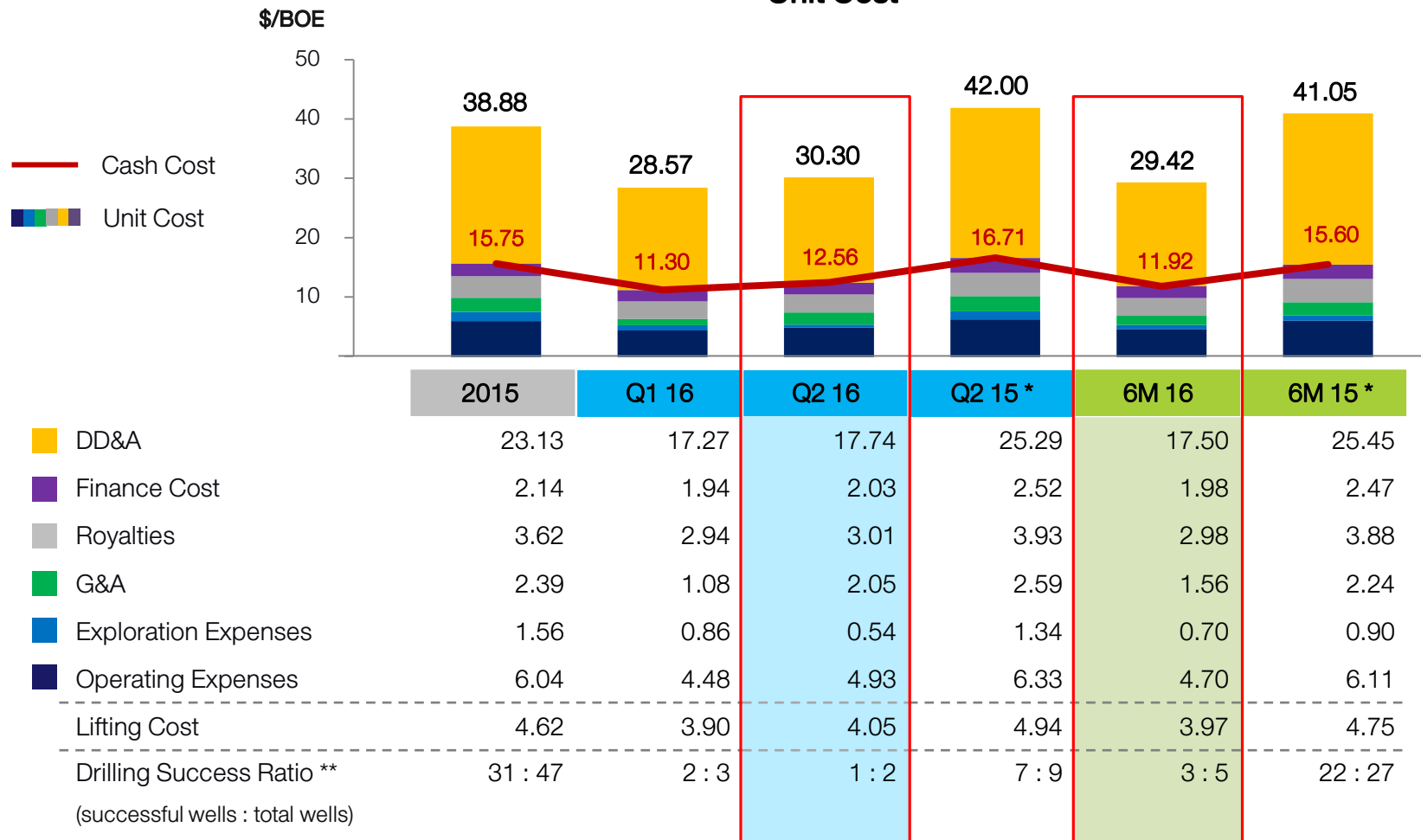


| Sales Price                                   | 2015         | Q1 16        | Q2 16        | Q2 15 *      | 6M 16        | 6M 15 *      |
|---|--------------|--------------|--------------|--------------|--------------|--------------|
| Gas (\$/MMBTU)                                | 7.20         | 6.09         | 5.59         | 7.32         | 5.84         | 7.70         |
| Liquid (\$/BBL)                               | 50.05        | 32.04        | 43.68        | 59.30        | 37.61        | 54.79        |
| <b>Weighted Avg. (\$/BOE)</b>                 | <b>45.29</b> | <b>35.08</b> | <b>36.62</b> | <b>48.71</b> | <b>35.84</b> | <b>48.83</b> |
| Avg. Dubai (\$/BBL)                           | 50.91        | 30.42        | 43.18        | 61.30        | 36.80        | 56.59        |
| Avg. HSFO (\$/BBL)<br>(High Sulphur Fuel Oil) | 44.86        | 24.67        | 33.65        | 56.44        | 29.16        | 52.67        |

Note: \* Restated



## Unit Cost



Note: \* Restated

\*\* Exploration and Appraisal Wells

The formulas for calculating ratios are provided in the supplementary section for your reference





|  | Q1 16 | Q2 16 | Q2 15 * | 6M 16 | 6M 15 * |
|--|-------|-------|---------|-------|---------|
| Sales Revenue ** (MMUSD)                                   | 1,070 | 1,085 | 1,429   | 2,155 | 2,856   |
| EBITDA (MMUSD)   | 789   | 778   | 1,022   | 1,567 | 2,106   |
| Net Income (MMUSD)   | 157   | 75    | 35      | 232   | 299     |
| Recurring Net Income (MMUSD)                               | 116   | 154   | 194     | 270   | 442     |
| Earning Per Share (USD)                                    | 0.04  | 0.01  | 0.005   | 0.05  | 0.07    |
| <b>Key Financial Ratios</b>                                |       |       |         |       |         |
| EBITDA Margin (%)  | 74    | 72    | 72      | 73    | 74      |
| Return on Equity (%) (LTM)                                 | (8)   | (8)   | 0.3     | (8)   | 0.3     |
| Return on Capital Employed (%) (LTM)                       | (5)   | (5)   | 1       | (5)   | 1       |
| Return on Equity (%) (LTM, Recurring Net Income)           | 5     | 5     | 8       | 5     | 8       |
| Return on Capital Employed (%) (LTM, Recurring Net Income) | 5     | 4     | 7       | 4     | 7       |

Note: \* Restated

\*\* Sales and revenue from pipeline transportation

The formulas for calculating ratios are provided in the supplementary section for your reference



|                                      | Q4 15  | Q1 16  | Q2 16  |
|--------------------------------------|--------|--------|--------|
| Total Assets (MMUSD)                 | 19,642 | 19,795 | 19,025 |
| - Cash & cash equivalents ** (MMUSD) | 3,260  | 3,702  | 3,205  |
| Total Liabilities (MMUSD)            | 8,314  | 8,509  | 7,704  |
| - Interest bearing debt (MMUSD)      | 3,005  | 3,018  | 2,844  |
| Equity (MMUSD)                       | 11,328 | 11,286 | 11,321 |
| <b>Key Financial Ratios</b>          |        |        |        |
| Total Debt to Equity (X)             | 0.27   | 0.27   | 0.25   |
| Net Debt ** to Equity (X)            | (0.02) | (0.06) | (0.03) |
| Total Debt to Capital (X)            | 0.21   | 0.21   | 0.20   |
| Total Debt to EBITDA (X)             | 0.78   | 0.85   | 0.86   |
| Net Debt ** to EBITDA (X)            | (0.07) | (0.19) | (0.11) |
| EBITDA Interest Coverage (X)         | 24     | 24     | 24     |

**Credit Ratings :** BBB+ (S&P), Baa1 (Moody's), AAA (TRIS)

**Weighted Average Cost of Debt \*\* :** 4.40%

**Average Loan Life \*\* :** 8.65 years

Note: \* Cash & Cash Equivalents (Cash on hand) include Short-term Investments (Fixed deposit > 3 months)

Net Debt = Total Debt less Cash & Cash Equivalents and Short-term Investments

\*\* Excludes hybrid bonds

The formulas for calculating ratios are provided in the supplementary section for your reference



|                  | Project                             | Status* | PTTEP's Share | Partners<br>(as of Q2 2016)            | 6M 2016 Average Sales Volume ** |               | 2016 Key Activities                     |   |
|------------------|-------------------------------------|---------|---------------|--|---------------------------------|---------------|---|---|
|                  |                                     |         |               |  | Gas                             | Oil and Other |   |   |
| Production Phase |                                     |         |               |  |                                 |               |   |   |
| Thailand and JDA |                                     |         |               |  |                                 |               |   |   |
| 1                | Arthit                              | OP      | 80%           | Chevron<br>MOECO                       | 16%<br>4%                       | 227 MMSCFD    | Condensate: 10 k BPD                    | <ul style="list-style-type: none"><li>Ensure gas deliverability level at DCQ****</li><li>Drill development wells</li><li>Install wellhead platforms</li></ul>   |
| 2                | B6/27                               | OP      | 60%***        |  |                                 | N/A           | N/A                                     | <ul style="list-style-type: none"><li>Subsurface study</li></ul>  |
| 3                | B8/32 & 9A                          |         | 25%           | Chevron<br>MOECO<br>KrisEnergy<br>PSTL | 51.66%<br>16.71%<br>4.63%<br>2% | 126 MMSCFD    | Crude: 27 k BPD                         | <ul style="list-style-type: none"><li>Drill development wells</li><li>Perform waterflood activities</li></ul>   |
| 4                | Bongkot                             | OP      | 44.4445%      | TOTAL<br>British Gas                   | 33.3333%<br>22.2222%            | 885 MMSCFD    | Condensate: 27 k BPD                    | <ul style="list-style-type: none"><li>Ensure gas deliverability level at DCQ****</li><li>Drill Exploration / Appraisal / Development wells</li><li>Install wellhead platforms</li></ul>   |
| 5                | Contract 3<br>(Formerly Unocal III) |         | 5%            | Chevron<br>MOECO                       | 71.25%<br>23.75%                | 577 MMSCFD    | Crude: 22 k BPD<br>Condensate: 23 k BPD | <ul style="list-style-type: none"><li>Drill exploration / appraisal / development wells</li><li>Install wellhead platforms</li><li>Perform waterflood activities</li></ul>  |
| 6                | Contract 4<br>(Formerly Pailin)     |         | 60%           | Chevron<br>MOECO                       | 35%<br>5%                       | 321 MMSCFD    | Condensate: 15 k BPD                    | <ul style="list-style-type: none"><li>Ensure gas deliverability level at DCQ****</li><li>Drill exploration / appraisal / development wells</li><li>Install wellhead platforms</li><li>Review development plan of Ubon field</li></ul> |
| 7                | E5                                  |         | 20%           | ExxonMobil                             | 80%                             | 12 MMSCFD     | -                                       |   |
| 8                | G4/43                               |         | 21.375%       | Chevron<br>MOECO<br>PSTL               | 51%<br>21.25%<br>6.375%         | 1.5 MMSCFD    | Crude: 6.7 k BPD                        | <ul style="list-style-type: none"><li>Drill development wells</li><li>Perform waterflood activities</li></ul>   |
| 9                | G4/48                               |         | 5%            | Chevron<br>MOECO                       | 71.25%<br>23.75%                | 7.9 MMSCFD    | Crude: 0.9 k BPD                        |   |
| 10               | L53/43 & L54/43                     | OP      | 100%          |  |                                 | -             | Crude: 537 BPD                          | <ul style="list-style-type: none"><li>Drill exploration and development wells</li></ul>   |
| 11               | PTTEP1                              | OP      | 100%          |  |                                 | -             | Crude: 409 BPD                          | <ul style="list-style-type: none"><li>Drill development wells</li><li>Perform waterflood activities</li></ul>   |
| 12               | S1                                  | OP      | 100%          |  |                                 | 23 MMSCFD     | Crude: 28 k BPD                         | <ul style="list-style-type: none"><li>Drill exploration / appraisal / development wells</li><li>Enhance oil recovery program includes waterflooding and artificial lift</li></ul>   |
| 13               | Sinphuhorm                          | OP      | 55%           | Apico<br>ExxonMobil                    | 35%<br>10%                      | 126 MMSCFD    | Condensate: 471 BPD                     | <ul style="list-style-type: none"><li>Drill development wells</li></ul>   |
| 14               | MTJDA                               | JOC     | 50%           | Petronas-Carigali                      | 50%                             | 305 MMSCFD    | Condensate: 7.8 k BPD                   | <ul style="list-style-type: none"><li>Drill development wells</li><li>Install wellhead platforms</li></ul>  |
| 15               | L22/43                              | OP      | 100%          |  |                                 | -             | Crude: 82 BPD                           | <ul style="list-style-type: none"><li>Drill exploration / development wells</li></ul>   |

\* Status: OP = PTTEP operatorship / JOC = PTTEP joint operatorship

\*\* Sales volume stated at 100% basis.

\*\*\* Pending the approval of the partner divestment from DMF

\*\*\*\* DCQ = Daily Contractual Quantity



|                  | Project                        | Status* | PTTEP's Share                   | Partners<br>(as of Q2 2016)   | 6M 2016 Average Sales Volume ** |                                       | 2016 Key Activities   |
|------------------|--------------------------------|---------|---------------------------------|---|---------------------------------|---------------------------------------|---|
|                  |                                |         |                                 |   | Gas                             | Oil and Other                         |   |
| Production Phase |                                |         |                                 |   |                                 |                                       |   |
| Overseas         |                                |         |                                 |   |                                 |                                       |   |
| 16               | Oman 44                        | OP      | 100%                            |   | 20 MMSCFD                       | Condensate:<br>1.3 k BPD              | <ul style="list-style-type: none"><li>Maintain production operation</li></ul>   |
| 17               | Vietnam 9-2                    | JOC     | 25%                             | PetroVietnam 50%<br>SOCO 25%  | 12 MMSCFD                       | Crude: 4.6 k BPD                      | <ul style="list-style-type: none"><li>Maintain production operation</li><li>Perform reservoir management</li></ul>  |
| 18               | Yadana                         |         | 25.5%                           | TOTAL 31.24%<br>Chevron 28.26%<br>MOGE 15%  | 741 MMSCFD                      | -                                     | <ul style="list-style-type: none"><li>Drill exploration / development wells</li><li>Acquire 2D seismic reprocessing</li><li>Perform reservoir management</li></ul>          |
| 19               | Yetagun                        |         | 19.3178%                        | Petronas-Carigali 30.00140%<br>MOGE 20.4541%<br>Nippon Oil 19.3178%<br>PC Myanmar (Hong Kong) 10.90878% | 232 MMSCFD                      | Condensate:<br>6.0 k BPD              | <ul style="list-style-type: none"><li>Drill development wells</li><li>Perform reservoir Management</li></ul>  |
| 20               | Vietnam 16-1                   | JOC     | 28.5%                           | PetroVietnam 41%<br>SOCO 28.5%<br>OPECO 2%  | 13 MMSCFD                       | Crude: 27 k BPD                       | <ul style="list-style-type: none"><li>Drill development wells</li><li>Perform reservoir management</li><li>Review feasibility for water handling facility upgrade</li></ul> |
| 21               | PTTEP Australasia (PTTEP AA)   | OP      | 50%-100%<br>(varied by permits) |   | -                               | Crude: 17 k BPD                       | <ul style="list-style-type: none"><li>Maintain production operation</li><li>Assess resource potential of exploration permits</li></ul>                                      |
| 22               | Natuna Sea A                   |         | 11.5%                           | Premier Oil 28.67%<br>KUFPEC 33.33%<br>Petronas 15%<br>Pertamina 11.5%                                  | 216 MMSCFD                      | Crude: 1.1 k BPD                      | <ul style="list-style-type: none"><li>Maintain production operation</li></ul>   |
| 23               | Zawtika (M9 & a part of M11)   | OP      | 80%                             | Myanma Oil and Gas Enterprise (MOGE) 20%  | 303 MMSCFD                      | -                                     | <ul style="list-style-type: none"><li>Maintain production rate</li><li>Drill development wells</li><li>Install wellhead platforms</li></ul>                                 |
| 24               | Algeria 433a & 416b (Bir Seba) | JOC     | 35%                             | PetroVietnam 40%<br>Sonatrach 25%   | -                               | Crude: 2.2 k BPD<br>(net entitlement) | <ul style="list-style-type: none"><li>Maintain production operation</li><li>Review field development plan for possible capacity expansion</li></ul>                         |

\* Status: OP = PTTEP operatorship / JOC = PTTEP joint operatorship

\*\* Sales volume stated at 100% basis except for Algeria 433a & 416b



|                          | Project                           | Status* | PTTEP's Share | Partners<br>(as of Q2 2016)  | 2016 Key Activities   |
|--------------------------|-----------------------------------|---------|---------------|--|---|
| <b>Exploration Phase</b> |                                   |         |               |  |   |
| <b>Thailand and JDA</b>  |                                   |         |               |  |   |
| 25                       | G9/43                             | OP      | 100%          |  |   |
| <b>Overseas</b>          |                                   |         |               |  |   |
| 26                       | Myanmar M3                        | OP      | 80%           | MOECO 20%  | <ul style="list-style-type: none"> <li>Access development options and commercial potential</li> </ul>   |
| 27                       | Mozambique Rovuma Offshore Area 1 |         | 8.5%          | Anadarko, Mitsui, 26.5%, 20%,<br>ENH, Bharat Petroleum, 15%, 10%,<br>BREML, OVL 10%, 10% | <ul style="list-style-type: none"> <li>Preparatory work for Final Investment Decision (FID) including LNG marketing and finalization of remaining commercial contracts</li> </ul> |
| 28                       | Algeria Hassi Bir Rekaiz          | OP      | 24.5%         | CNOOC 24.5%,<br>Sonatrach 51%  | <ul style="list-style-type: none"> <li>Drill Appraisal wells</li> </ul>   |
| 29                       | Myanmar M11                       | OP      | 100%**        |  | <ul style="list-style-type: none"> <li>Acquire 3D seismic</li> </ul>  |
| 30                       | Vietnam B & 48/95                 |         | 8.5%          | PVN 65.88%,<br>MOECO 25.62%  | <ul style="list-style-type: none"> <li>Negotiate a GSA with the Vietnamese government</li> </ul>  |
| 31                       | Vietnam 52/97                     |         | 7%            | PVN 73.4%,<br>MOECO 19.6%  | <ul style="list-style-type: none"> <li>Negotiate a GSA with the Vietnamese government</li> </ul>  |
| 32                       | Myanmar PSC G and EP 2            | OP      | 70%           | WinPreciousResources 10%,<br>MOECO 10%,<br>Palang Sophon Offshore 10%                    | <ul style="list-style-type: none"> <li>Conduct G&amp;G studies</li> </ul>   |
| 33                       | Myanmar MD 7                      | OP      | 100%          |  | <ul style="list-style-type: none"> <li>Acquire 3D seismic</li> </ul>  |
| 34                       | Mariana Oil Sands                 | OP      | 100%          |  | <ul style="list-style-type: none"> <li>Assess development approach and cost reduction opportunity</li> </ul>  |
| 35                       | Barreirinhas AP1                  |         | 25%           | BG Brasil 75%  | <ul style="list-style-type: none"> <li>Acquire 3D seismic</li> </ul>  |

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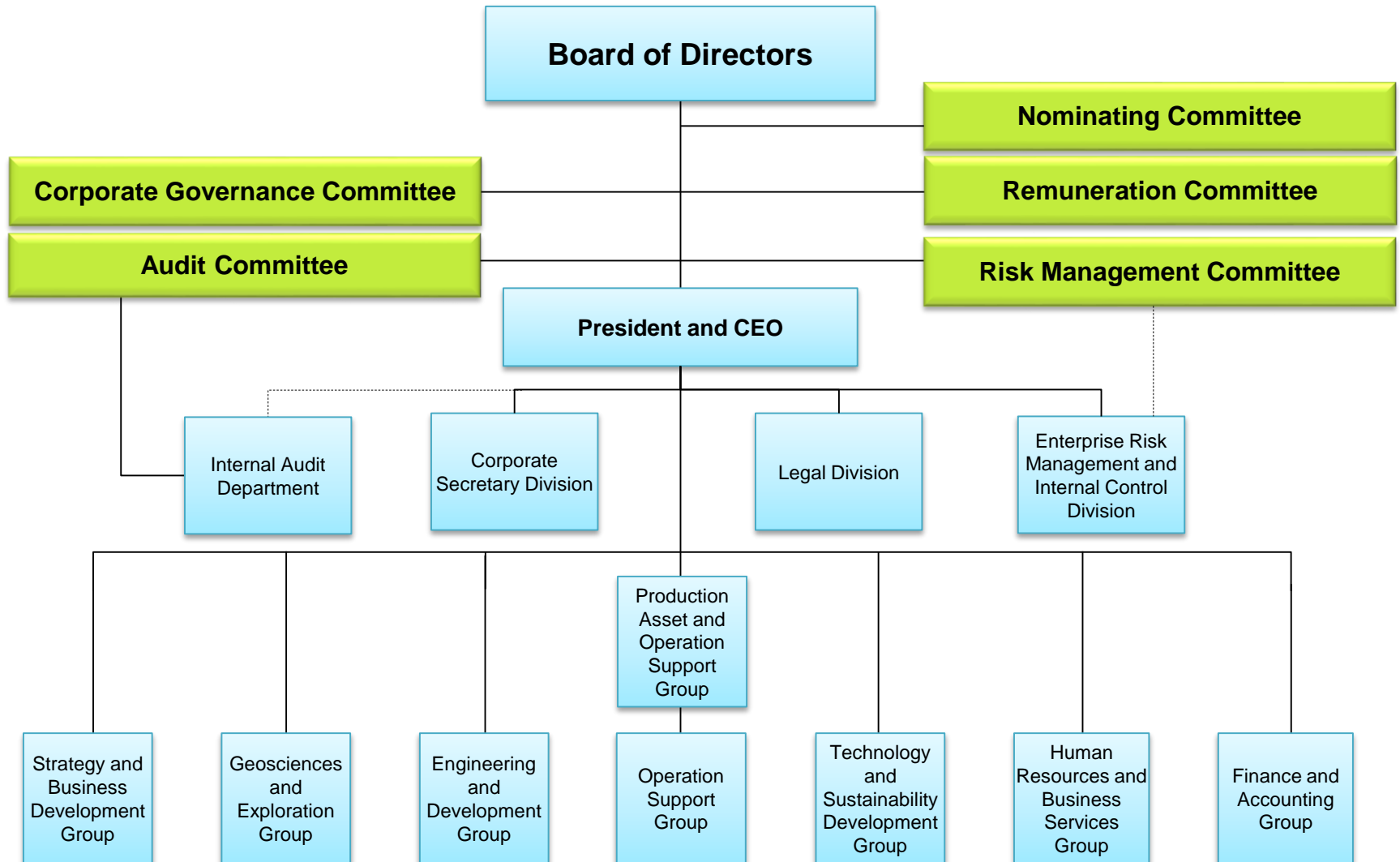
\*\* New participating interest subject to government approval



|                          | Project                | Status* | PTTEP's Share | Partners<br>(as of Q2 2016)                             | 2016 Key Activities                                     |
|--------------------------|------------------------|---------|---------------|---|---|
| <b>Exploration Phase</b> |                        |         |               |   |   |
| <b>Overseas (Cont'd)</b> |                        |         |               |   |   |
| 36                       | <b>Myanmar MOGE 3</b>  | OP      | 75%           | Palang Sophon Offshore<br>MOECO<br>WinPreciousResources | 10%<br>10%<br>5%<br>• Acquire 3D seismic                |
| 37                       | <b>Brazil BM-ES-23</b> |         | 20%           | Petrobras<br>INPEX                                      | 65%<br>15%<br>• Drilling result and resource evaluation |
| 38                       | <b>Malaysia SK410B</b> | OP      | 42.5%         | KUFPEC<br>PSCB  | 42.5%<br>15%  |

Remarks: 38 projects exclude 3 projects that are pending official withdrawal approval

\* Status: OP = PTTEP operatorship / JOC = PTTEP joint operatorship







| Ratio                          | Formula  |
|--------------------------------|--|
| Lifting Cost (\$/BOE)          | $(\text{Operating Exp.}) / \text{Production Volume}$   |
| Cash Cost (\$/BOE)             | $(\text{Operating Exp.} + \text{Exploration Exp.} + \text{G\&A} + \text{Royalties} + \text{Finance Cost}) / \text{Sales Volume}$   |
| Unit Cost (\$/BOE)             | $(\text{Operating Exp.} + \text{Exploration Exp.} + \text{G\&A} + \text{Royalties} + \text{Finance Cost} + \text{DD\&A}) / \text{Sales Volume}$  |
| Reserves Replacement Ratio     | $5\text{-Yr Additional Proved Reserves} / 5\text{-Yr Production Volume}$   |
| Reserves Life Index (Year)     | $\text{Proved Reserves} / \text{Production Volume}$  |
| Success Ratio                  | $\text{Number of wells with petroleum discovery} / \text{Total number of exploration and appraisal wells}$   |
| Sales Revenue                  | $\text{Sales} + \text{Revenue from pipeline transportation}$   |
| EBITDA                         | $(\text{Sales} + \text{Revenue from pipeline transportation}) - (\text{Operating expenses} + \text{Exploration expenses} + \text{Administrative expenses} + \text{Petroleum royalties and remuneration} + \text{Management's remuneration})$ |
| EBITDA Margin                  | $\text{EBITDA} / \text{Sales Revenue}$   |
| Return on Equity               | $\text{Trailing-12-month net income} / \text{Average shareholders' equity between the beginning and the end of the 12-month period}$   |
| Return on Capital Employed     | $(\text{Trailing-12-month net income} + \text{Trailing-12-month Interest Expenses \& Amortise Bond Issuing Cost}) / (\text{Average shareholders' equity and average total debt between the beginning and the end of the 12-month period})$   |
| Simple Effective Tax Rate      | $\text{Income tax expenses} / \text{Income before income taxes}$   |
| Total debt                     | $\text{Short-term loans from financial institution} + \text{Current portion of long-term debts} + \text{Bonds} + \text{Long-term loans from financial institution}$  |
| Net debt                       | $\text{Total debt} - \text{Liquidity}$   |
| Debt to Equity                 | $\text{Total debt} / \text{Shareholders' equity}$  |
| Net Debt to Equity             | $\text{Net debt} / \text{Shareholders' equity}$  |
| Total Debt to Capital          | $\text{Total debt} / (\text{Total debt} + \text{Shareholders' equity})$  |
| Total Debt to EBITDA           | $\text{Total debt} / \text{Trailing-12-month EBITDA}$  |
| Net Debt to EBITDA             | $\text{Net debt} / \text{Trailing-12-month EBITDA}$  |
| EBITDA Interest Coverage Ratio | $\text{Trailing-12-month EBITDA} / \text{Trailing-12-month Interest Expenses \& Amortize Bond Issuing Cost}$   |