

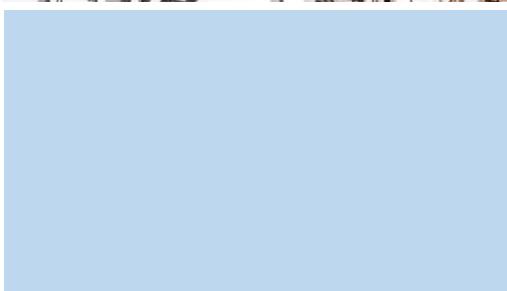


# Analyst Meeting

2Q2019 & 1H2019  
16 August 2019



Scan me



# Contents

**Overview**

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**2Q2019 & 1H2019  
Performance**

**PTT's Strategies**

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**Outlook 2019**

# Health & Safety Performance in 2Q2019

Truck and car accidents increased during 2Q2019 but still under target

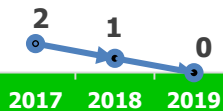
## Personal Safety



Employee

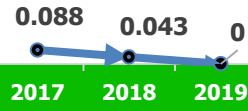
**LTA**  
0 persons

(Target = 0)



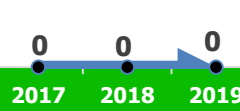
**TRIR**  
0 per 200,000 hrs

(Target ≤ 0.08)



**TROIR**  
0 person

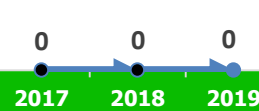
(Target = 0.12)



## Process Safety

**PSE Tier I**  
0 case

(Target = 0)



**PSE Tier II**  
0 case

(Target = 0)



## Road Safety

**Truck Accident**  
0.026 cases/  
1 MKm

(Target ≤ 0.04)



**Car Accident**  
1 case

(Target ≤ 5)



Contractor

**LTA**  
1 persons

(Target = 0)



**TRIR**  
0.027 per 200,000 hrs

(Target ≤ 0.08)



LTA (Loss Time Accident)  
PSE Tier 1 (Process Safety Event Tier 1)

TRIR (Total Recordable Injury Rate)  
TROIR (Total Recordable Occupational Illness)



# Activity highlights in 2Q2019



+ **NGV** price for Public be lifted Baht 1 per kg. every 4 months starting from 16 May 2019 (for total of Baht 3 per kg.)

+ **PTTGE** : Divestment of the last palm plantations in Indonesia (Apr.)



+ Signing SPA to acquire **Partex** (Jun.)

+ **FID Mozambique** Area 1 Project (Jun.)

+ Completion of **Murphy** Oil Corporation's acquisition in Malaysia (Jul.)

+ Additional share acquisition in **Sinphuhorm** project → stakeholding increase to 80.48% (Jul.)



+ COD **Catalyst Cooler** Project (May)

+ COD **Low Sulfur Fuel Oil** Project (Jul.)



+ Completion of **GLOW's** acquisition : 95.25% shareholding from ENGIE & Tender Offer (Jun.)

+ BOD approval on **Capital increase** thru **Right offering** (Jul.)

+ COD **Namlik Power Plant** with 26 MW capacity (Jul.)

**MOODY's**

- Affirms PTT's Baa1 ratings
- Changed to **positive outlook** in line with sovereign rating

**FitchRatings**

- Revised **PTT & PTTEP** to **Positive outlook**
- Affirms PTT final rating at BBB+



## Lowlights in 2Q2019



**New Labor Protection Act** : Recognition of additional compensation (May)



**GSP#6** : Planned shut down and turndown around 20 days (24 to 29 May)



**CDU 3 and Related plants** : Planned Shut down (Mid Jun. to Jul.)

**ARO** : Planned Shut down (Mid Jun. to Jul.)



**ARO 1** : Planned Shut down (Mid Jun. to Jul.)

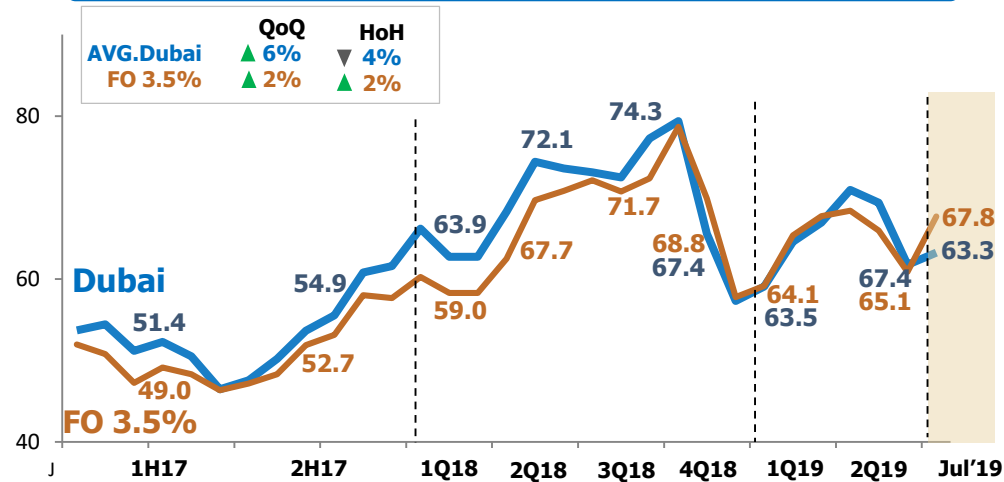


# Key Business Drivers:

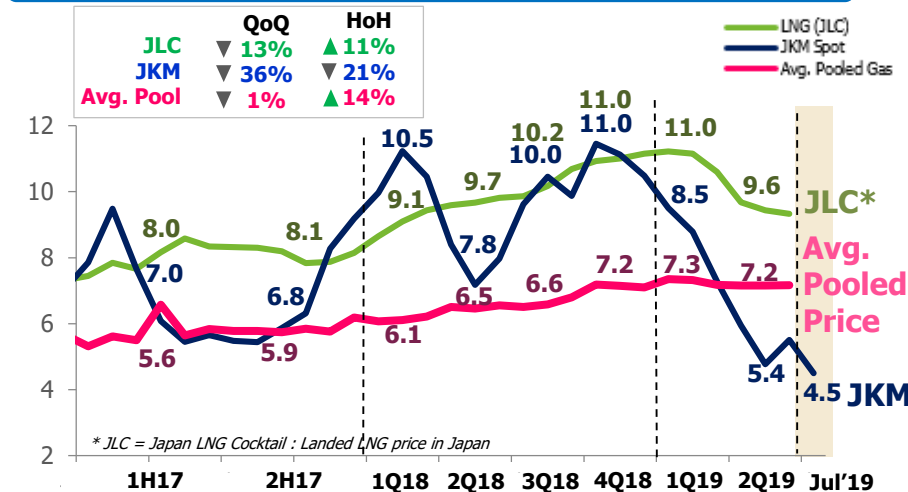
**QoQ:** Oil prices picked up from OPEC+ cut while lower NG pooled price from pressured LNG

**HoH:** Pooled gas price surged following lagged of FO while trade war impact on Petchem prices

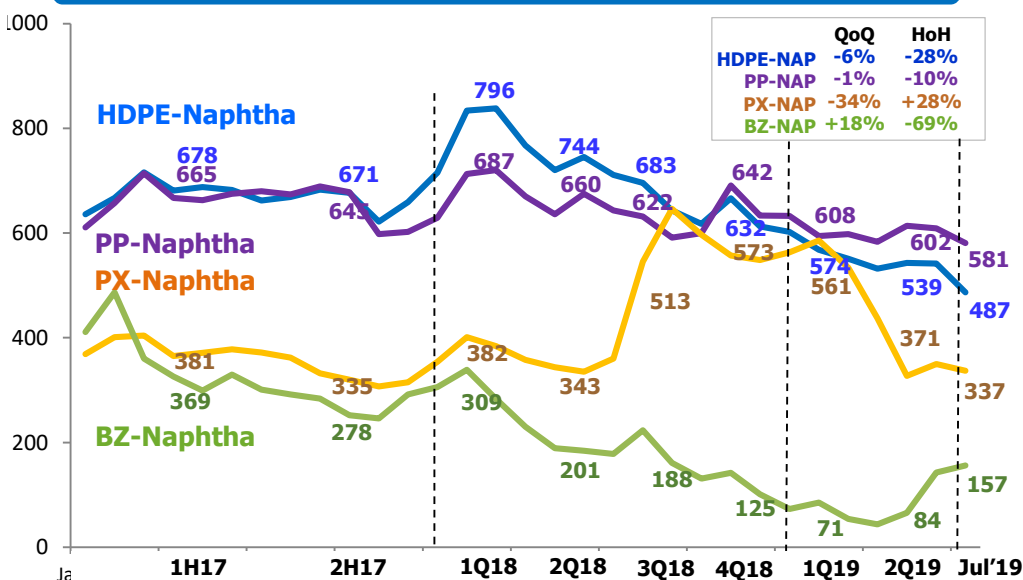
## AVG. Dubai vs FO (\$/bbl)



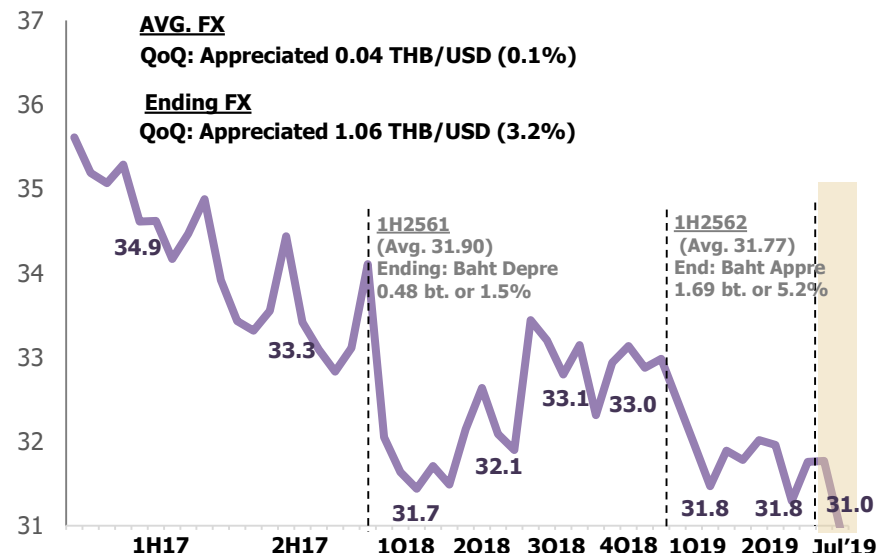
## NG Prices (\$/MMBTU)



## Petrochemical Spread (\$/ton)



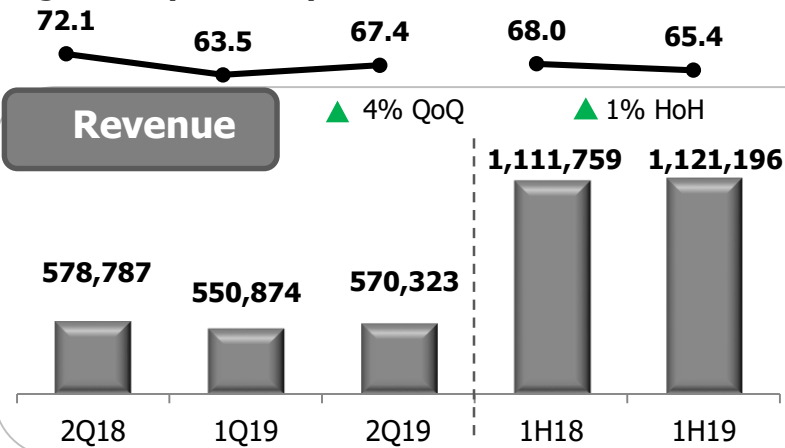
## AVG. FX (THB/USD)



# PTT Consolidated Performance: 2Q19 & 1H2019

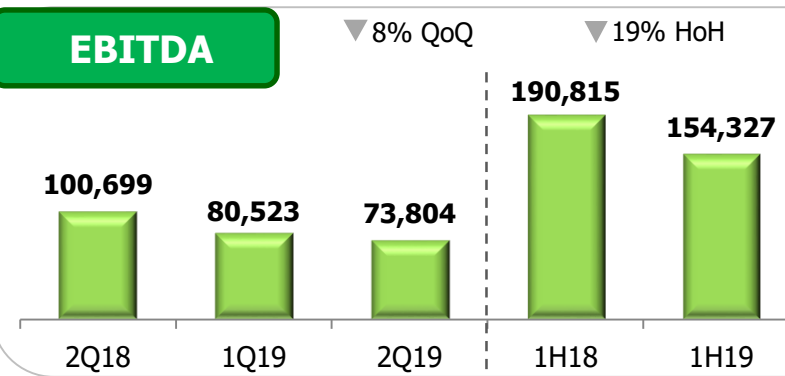
**QoQ:** ↓ 12% NI; Soften from stock loss vs better results from Gas and E&P  
**HoH:** ↓ 21% NI; Lower P&R spreads and gas margin, higher stock loss

Avg. Dubai (USD/BBL) ▲ 6% QoQ ▼ 4% HoH



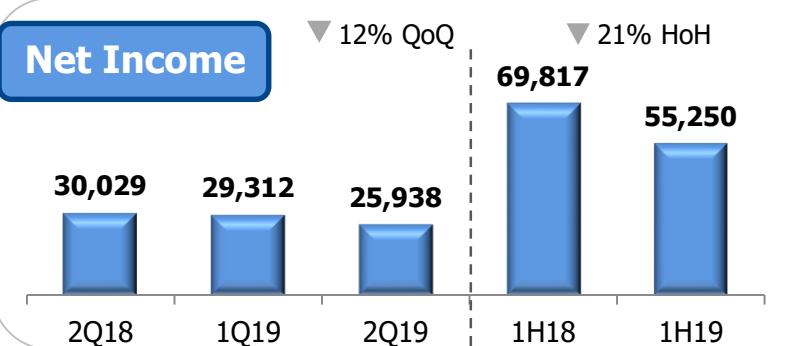
**▲ 4% QoQ**  
 + Power : Glow – full performance recognition  
 + Trading : higher oil prices  
 + Gas & EP : higher sales vol. & selling prices

**▲ 1% HoH**  
 + Gas : higher sales vol.  
 + Power : Glow acquisition  
 + EP : higher prices & Bongkot +22.2%  
 - P&R : soften product prices & more T/A



**▼ 8% QoQ**  
 - P&R : lower GIM & Stock loss  
 + Gas : higher vol. & margin from ↓ NG cost  
 + EP : increased in vol. & prices

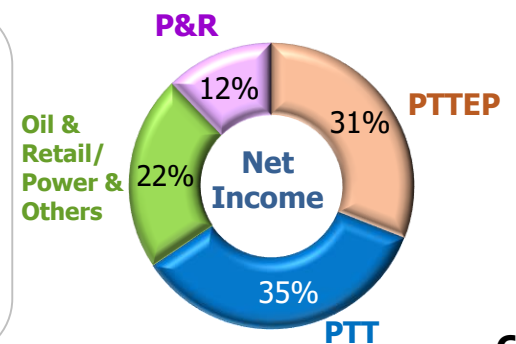
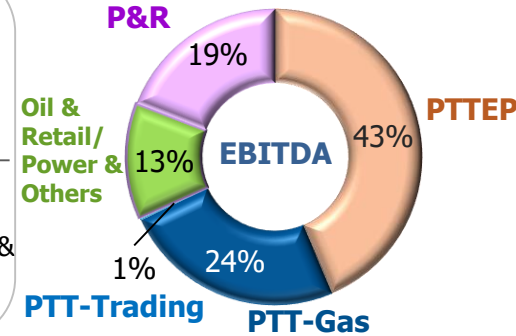
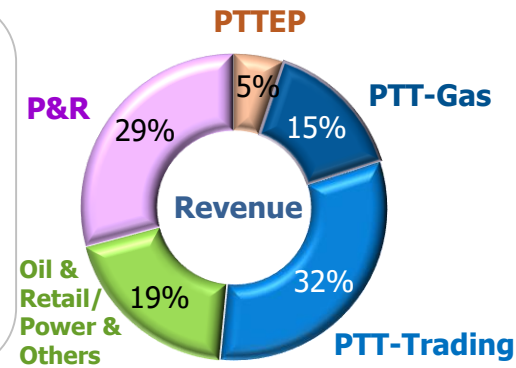
**▼ 19% HoH**  
 - P&R : lower Olefins & Aromatics spreads and lower stock gain  
 - GAS : lower GSP from weakened product prices & higher feed cost



**▼ 12% QoQ**  
 - Higher DD&A from power business  
 - Higher tax : PTTEP's tax reversal  
 + Higher gain on derivatives & FX

**▼ 21% HoH**  
 - Higher DD&A from E&P and power business  
 + Lower tax: lower performances  
 + Higher gain on FX

1H19



# E&P : Prices & Volume and NI

QoQ: ▲ Stronger results from higher prices & vol. with lower hedging loss

HoH: ▲ Robust results from increased prices & vol. with lower taxes

E & P

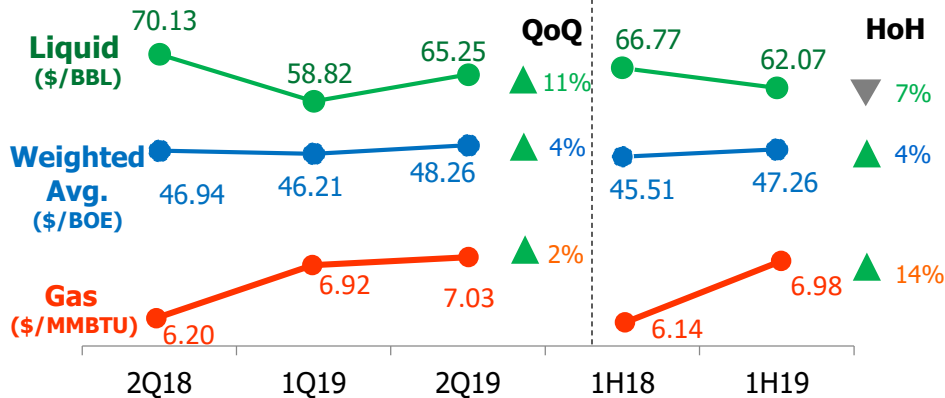
Gas

Oil & Trading

P&R

Others

## Product Prices

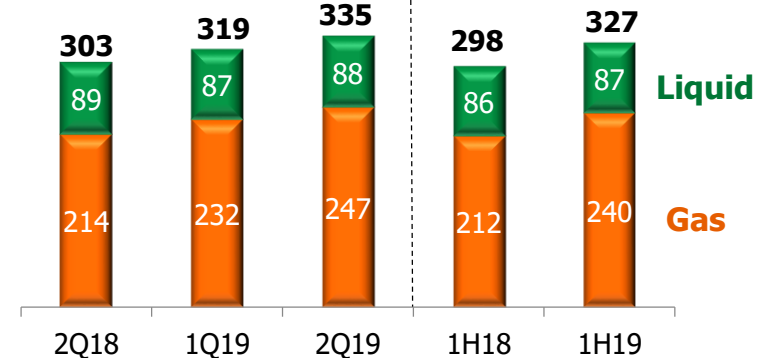


## Sales Volume

KBOED

5% QoQ  
11% YoY

10% HoH



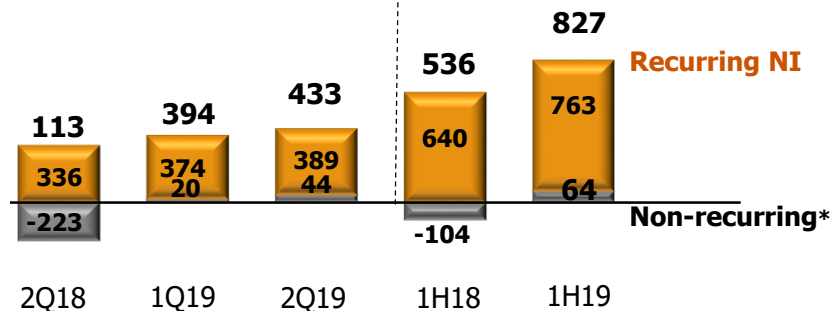
## Net Income (100%)

MMUSD

10% QoQ

283% YoY

54% HoH



## Key Highlights

### QoQ

- Price:** 4% increase in avg. selling prices from rising oil price
- Volume:** 5% increase mainly from Bongkot project (Lower S/D day)
- NI** increased 10% : Higher ASP & Vol. and lower loss on derivatives

### HoH

- Price:** 4% ASP increased from gas price
- Volume:** 10% increased from +22% Bongkot acquisition
- NI** 54% increased from higher ASP & Vol. and lower income taxes from Baht appreciation

\* Includes Deferred tax from Functional currency, Current Tax from FX Revaluation, Gain/loss from Financial instruments, Gain/(loss) on FX, H1 incident Insurance Claim, and etc.



# PTT EBITDA Breakdown by Business

QoQ: ▲ Improved from GAS Business mainly S&M and GSP amid stock loss from oil business

HoH: ▼ Declined mainly from GSP due to pressured Petchem spreads and higher feed gas cost

(Unit: MMTHB)

Business Unit	2Q18	1Q19	2Q19	QoQ	YoY	1H18	1H19	HoH
<b>Gas- EBITDA</b>	<b>24,635</b>	<b>17,948</b>	<b>19,850</b>	<span style="color: green;">▲</span> 11%	<span style="color: grey;">▼</span> 19%	<b>47,879</b>	<b>37,798</b>	<span style="color: grey;">▼</span> 21%
• S&M	4,133	3,503	4,438	<span style="color: green;">▲</span> 27%	<span style="color: green;">▲</span> 7%	8,407	7,941	<span style="color: grey;">▼</span> 6%
• TM	9,271	8,633	8,520	<span style="color: grey;">▼</span> 1%	<span style="color: grey;">▼</span> 8%	18,565	17,153	<span style="color: grey;">▼</span> 8%
• GSP	9,763	4,252	5,059	<span style="color: green;">▲</span> 19%	<span style="color: grey;">▼</span> 48%	17,971	9,311	<span style="color: grey;">▼</span> 48%
• NGV	(1,314)	(1,148)	(1,015)	<span style="color: green;">▲</span> 12%	<span style="color: green;">▲</span> 23%	(2,124)	(2,163)	<span style="color: grey;">▼</span> 2%
• Others <sup>1/</sup>	2,782	2,708	2,848	<span style="color: green;">▲</span> 5%	<span style="color: green;">▲</span> 2%	5,060	5,556	<span style="color: green;">▲</span> 10%
<b>Oil- EBITDA</b>	<b>3,943</b>	<b>5,729</b>	<b>4,205</b>	<span style="color: grey;">▼</span> 27%	<span style="color: green;">▲</span> 7%	<b>10,261</b>	<b>9,934</b>	<span style="color: grey;">▼</span> 3%
<b>Trading<sup>2/</sup> - EBITDA</b>	<b>2,267</b>	<b>613</b>	<b>363</b>	<span style="color: grey;">▼</span> 41%	<span style="color: grey;">▼</span> 84%	<b>3,517</b>	<b>976</b>	<span style="color: grey;">▼</span> 72%
<b>Total<sup>3/</sup></b>	<b>30,845</b>	<b>24,290</b>	<b>24,418</b>	<span style="color: green;">▲</span> 1%	<span style="color: grey;">▼</span> 21%	<b>61,657</b>	<b>48,708</b>	<span style="color: grey;">▼</span> 21%

<sup>1/</sup> Others include PTTLNG, PTTNGD, and PTTGL (restructured by excluding GPSC, PTES, PTTDigital and ENCO)

<sup>2/</sup> MIS

<sup>3/</sup> Included subsidiaries from all BUs

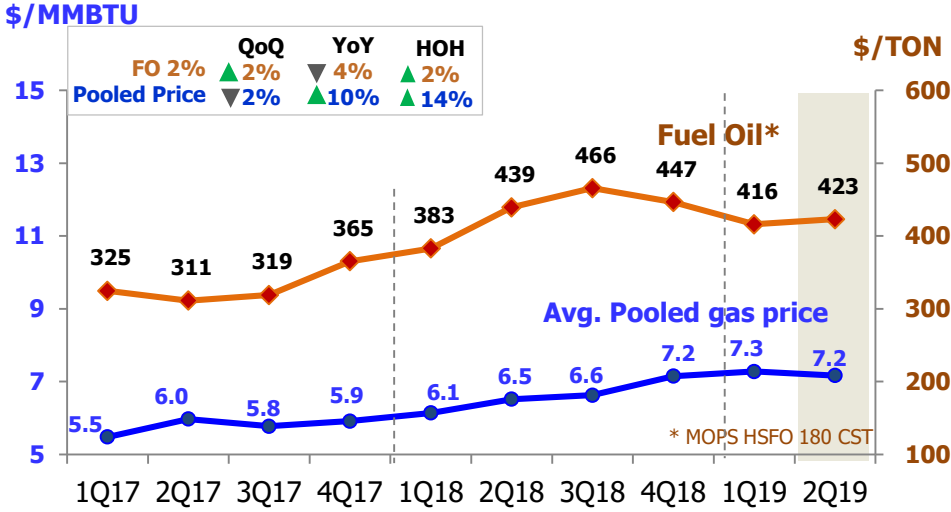
# Gas Business : Prices & Sales Vol.

QoQ: ▲ NG vol. increased from IPP & better FO price

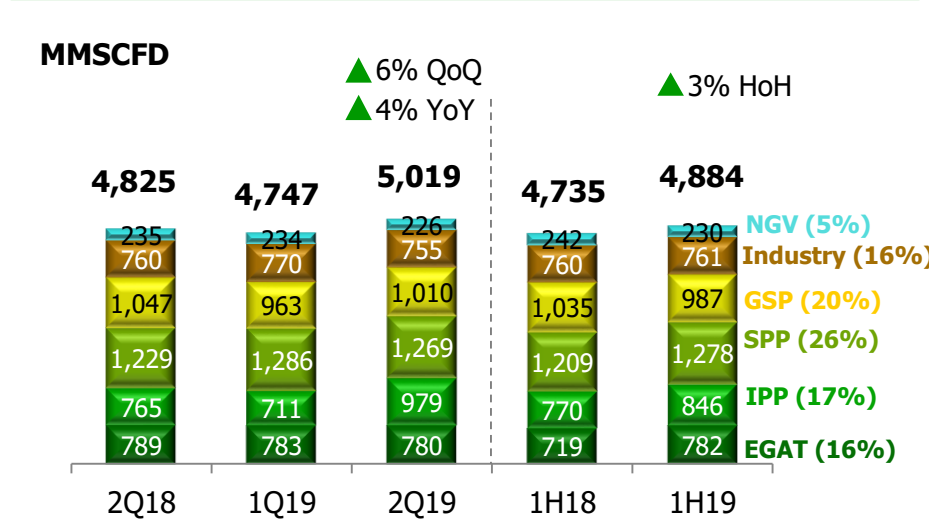
HoH: ▲ NG vol. up from Power & higher pooled gas price



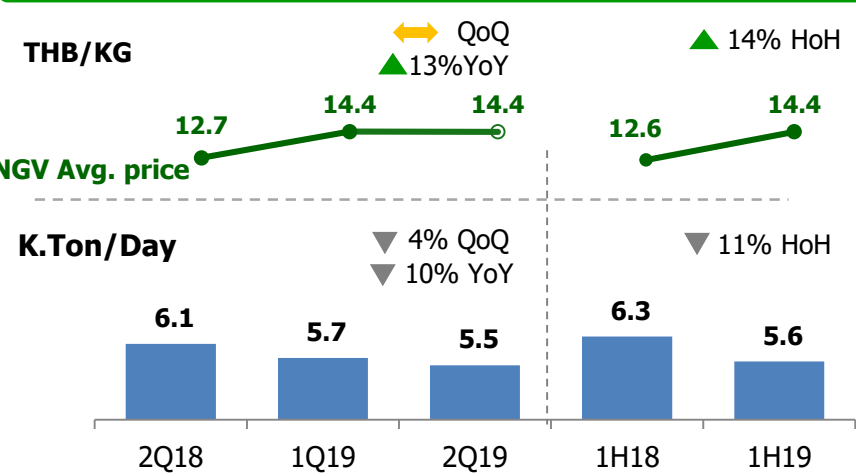
## NG Price VS FO



## NG Customer Breakdown



## NGV Price/Sales Volume



## Key Highlights

- QoQ**
- NG sales vol. increased from power and GSP
    - + Power : 38% IPP vol. increased during summer
    - + GSP : 5% vol. increased due to lower planned TD and SD than 1Q19 that had unplanned SD from tropical storm 'PABUK'
    - + NGV volume continued to drop (lower losses)
  - Selling Price due to FO price increased
  - Slightly lower avg. pooled gas price (cost) due to lower LNG prices
- HoH**
- Higher NG sales volume
    - + Power : 9% EGAT & IPP and 6% SPP vol. increased
    - GSP and NGV vol. decreased
  - Selling Price : increase due to FO price increase
  - 14% increase of avg. pooled price (cost)

# Gas Business Performance

QoQ: ▲ Better performance due to higher gas volume and avg. selling prices

HoH : ▾ Declined performance in most segments

E & P

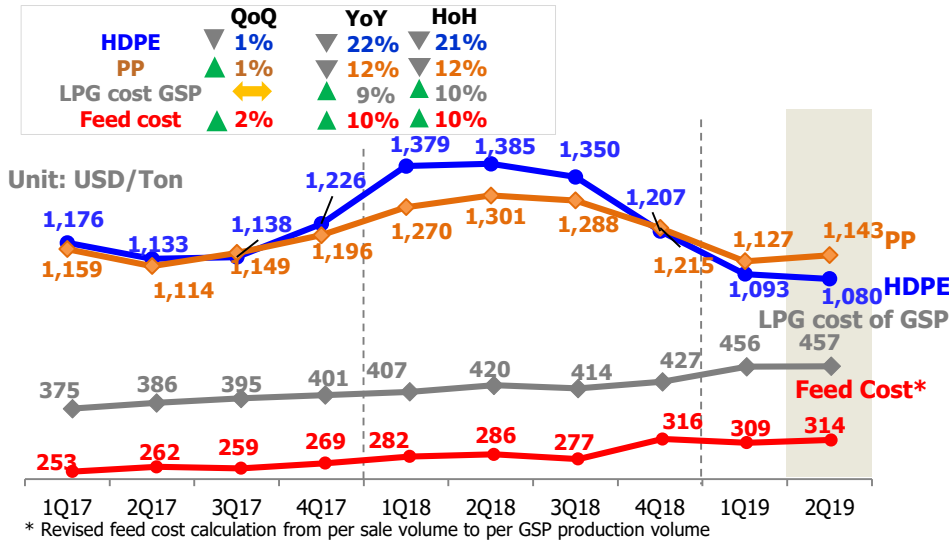
Gas

Oil & Trading

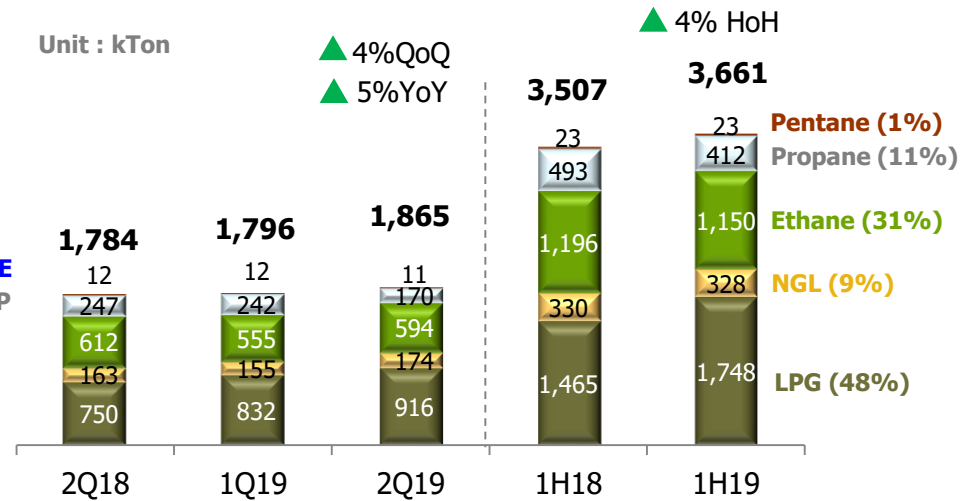
P&R

Others

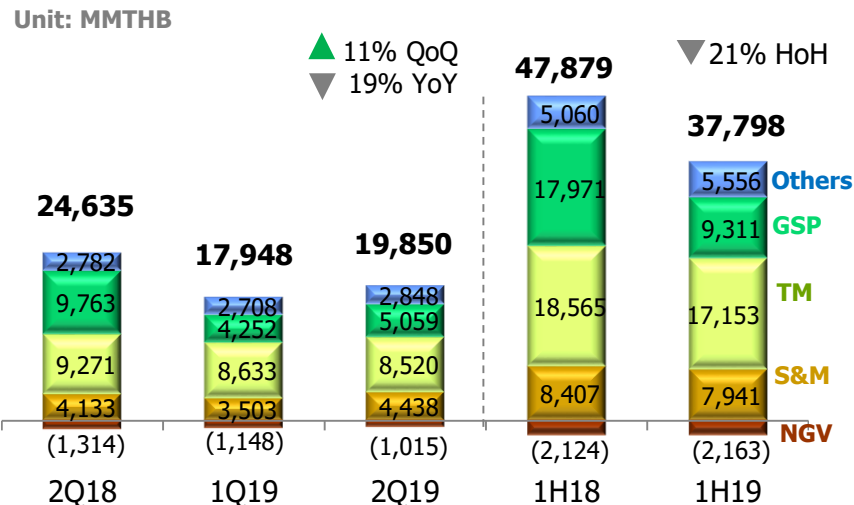
## GSP Feed Cost vs Petrochem. price



## GSP Sales Volume



## Gas - EBITDA



## Key Highlights

### QoQ results (EBITDA)

- + **S&M** increased from higher vol. and selling price (according to FO price) vs lower avg. pooled price
- + **GSP** rose due to higher sales vol. & avg. selling prices
- + **NGV lower loss** from lower vol. & gas cost and public selling price lifting (1 baht per kg since 16 May 2019)

### HoH results

- **GSP dropped** from lower petchem prices (-21% HDPE, -12% PP), and 10% higher feed cost
- **S&M** decreased from higher avg. pooled gas cost
- **TM** dropped from lower TDC Vol.
- **NGV** higher loss from rising gas cost vs higher avg. selling price
- + **Other increased** from LNG Terminal 1 volume increase of (10 MT) **10**

# Oil BU & PTTOR

**QoQ** : ⬇️ pressured from higher stock loss during price downtrend and lower sales vol.

**HoH** : ⬇️ Lower EBITDA from stock loss despite higher margin

E & P

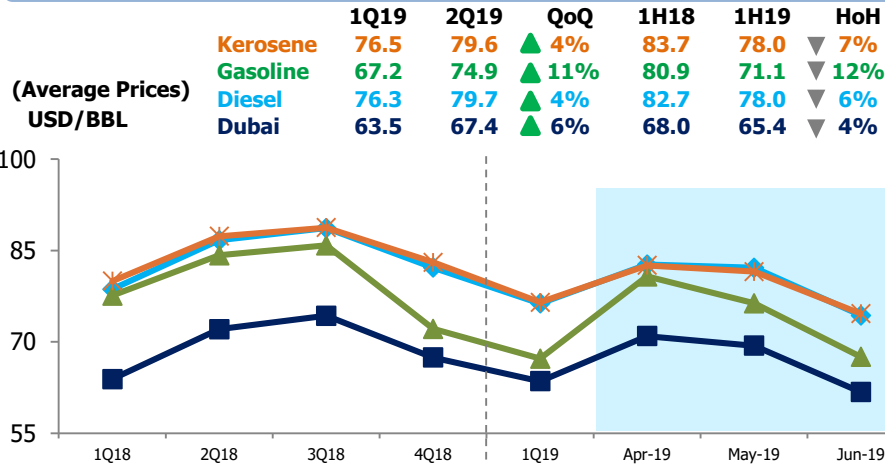
Gas

Oil & Trading

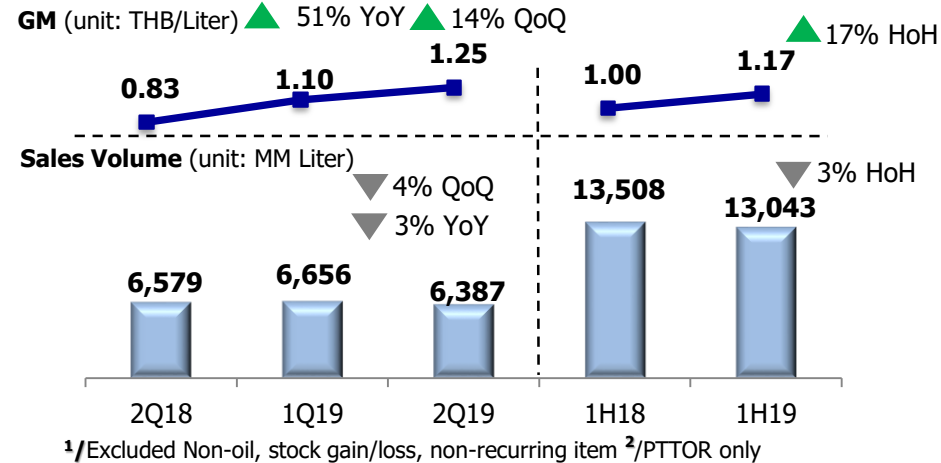
P&R

Others

## Petroleum Prices



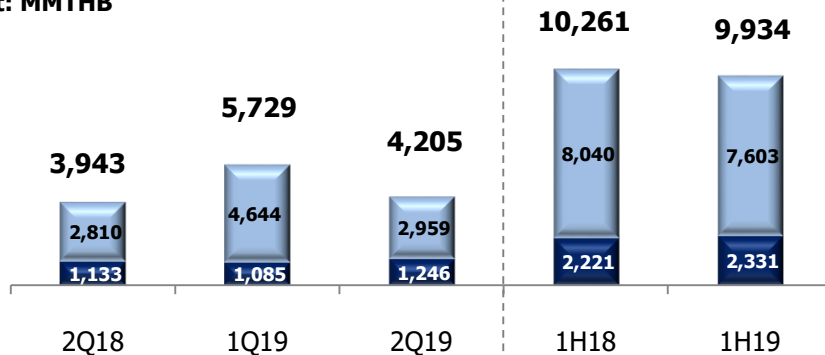
## Gross margin<sup>1</sup>/Sales volume<sup>2</sup>



## Oil – EBITDA

	QoQ	YoY	HoH
Oil	▼ 36%	▲ 5%	▼ 5%
Non-oil <sup>3</sup>	▲ 15%	▲ 10%	▲ 5%
Total	▼ 27%	▲ 7%	▼ 3%

Unit: MMTHB



## Key Highlights

### QoQ

- Vol**: 4% lower mainly from aviation and LPG due to soften demand, though gasoline increased from station expansion and traveling season
- Margin**: 14% higher from aviation due to pricing structure during downtrend
- EBITDA**: Lower oil EBITDA from higher stock loss though higher non-oil EBITDA from Café Amazon expansion

### HoH

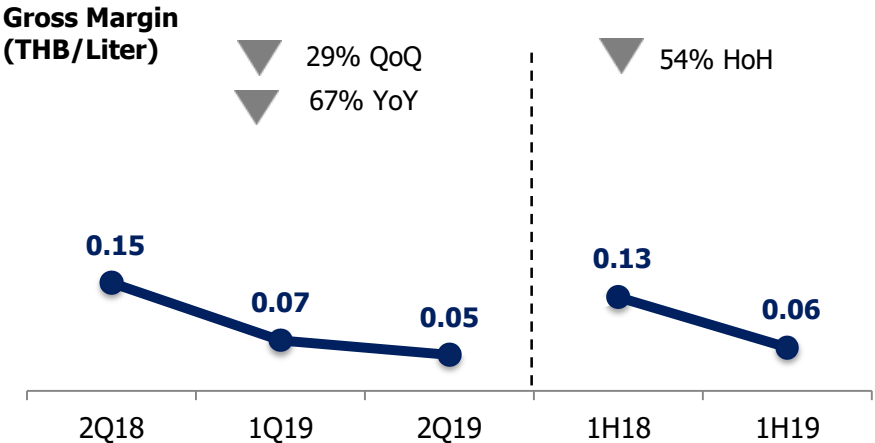
- Vol**: 3% decreased mostly from LPG and aviation vs gasoline volume increased from station expansion
- Margin**: 17% increased mainly from diesel due to high competition in 1H18
- EBITDA**: Lower oil EBITDA due to stock loss though non-oil EBITDA rose mainly from Café Amazon expansion

# Trading BU:

**QoQ:** ⬇️ Soften performance during oil price downtrend and loss from derivatives  
**HoH:** ⬇️ Pressured from Domestic Condensate margin while sales vol. rose

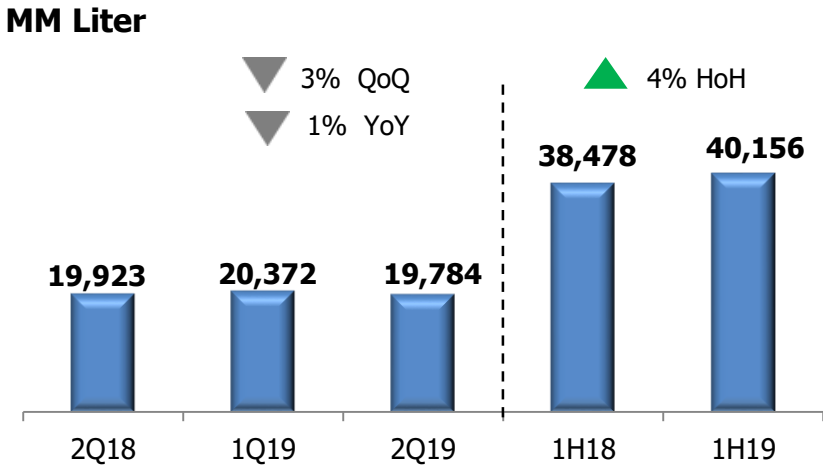


## Gross Margin<sup>1</sup>



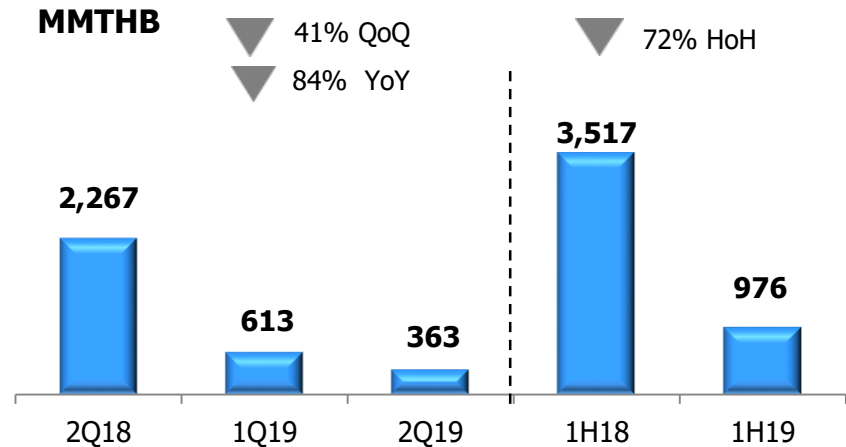
<sup>1</sup> PTT Trading BU + trading subsidiaries: FX Adjusted + derivatives

## Sales Volume<sup>2</sup>



<sup>2</sup> PTT Trading BU + trading subsidiaries

## Trading – EBITDA<sup>3</sup>



<sup>3</sup> PTT Trading BU + trading subsidiaries: FX Adjusted + derivatives

## Key Highlights

### QoQ

- **Volume decreased** mainly from lower crude import volume as domestic refineries turned down in 2Q2019
- **Margin & EBITDA** decreased during oil price downtrend in 2Q19 and loss from derivatives

### HoH

- **Volume** increased due to higher out-out trading activities from International offices
- **Margin & EBITDA** reduced from lower domestic condensate price and more discount in 1H19 due to oversupply of substitutes

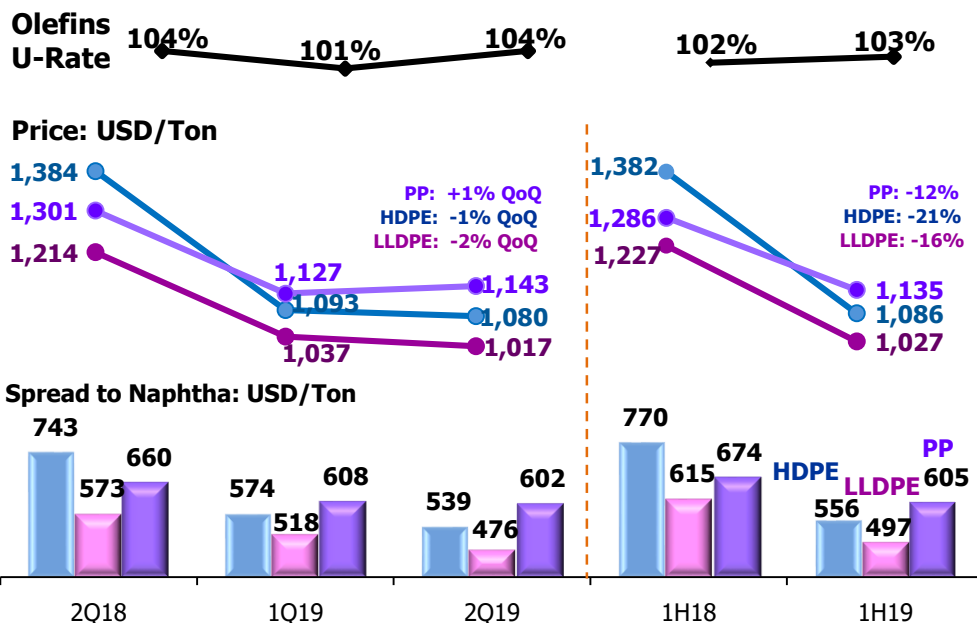


**QoQ:** ⬇️ Weaker NI from stock loss, with softer petroleum and petrochemical spreads

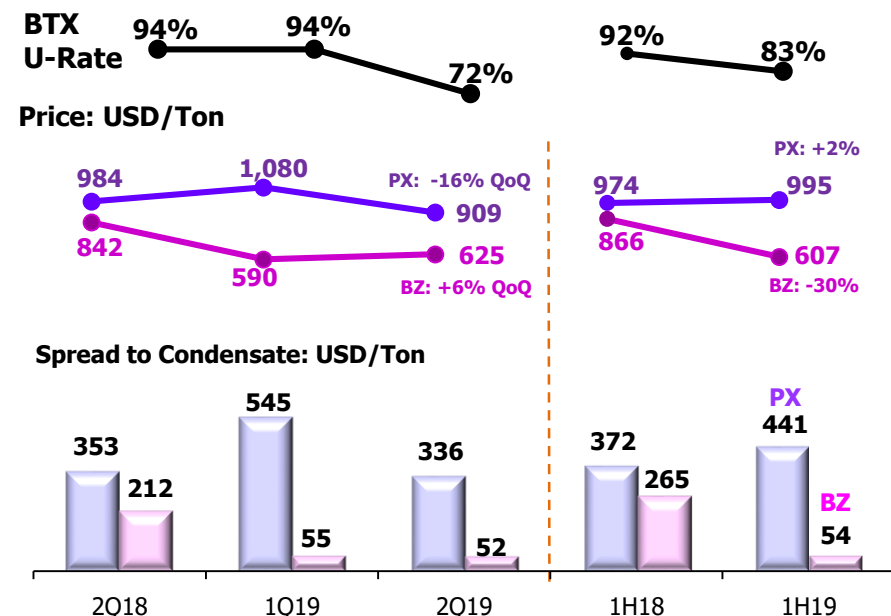
**HoH:** ⬇️ Lower NI; Softer GRM and Petchem spreads except for PX



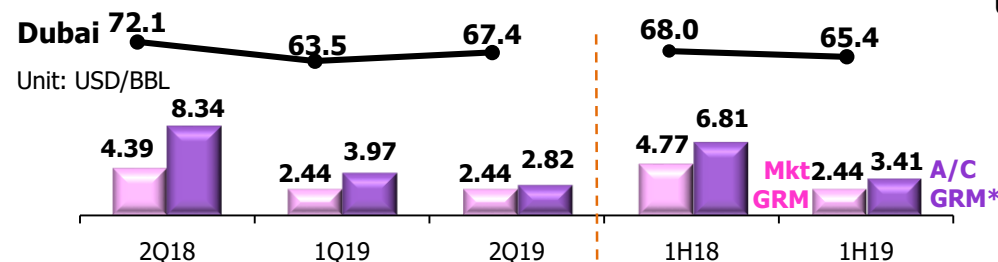
## Olefins



## Aromatics



## GRM



\*A/C GRM = Mkt. GRM + Hedging + Stock G/L

**Hedging G/L**

Period	G/L
2Q18	0.08
1Q19	(0.05)
2Q19	0.36
1H18	-
1H19	0.14

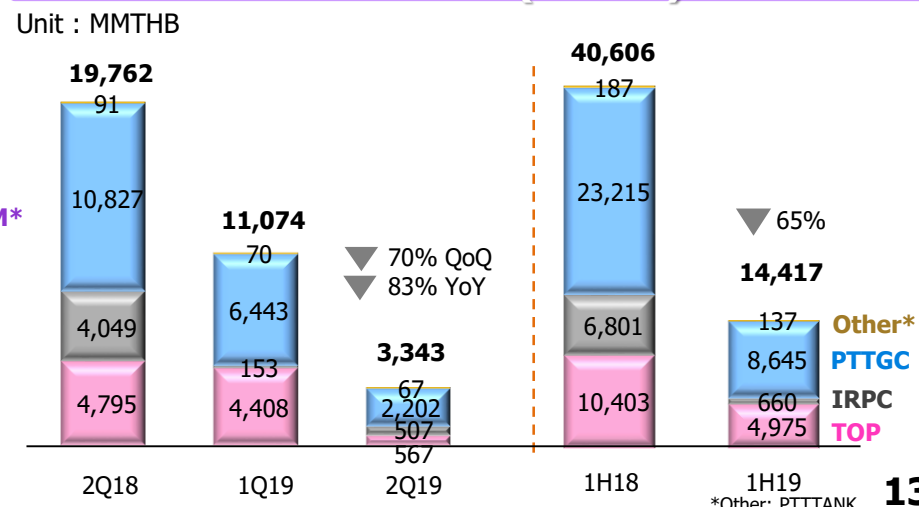
**Stock G/L excl. NRV**

Period	USD/BBL	Mil. Baht
2Q18	3.87	9,185
1Q19	1.58	2,442
2Q19	0.02	121
1H18	2.04	9,758
1H19	0.83	2,563

**NRV (MB)**

Period	Value
2Q18	104
1Q19	3,485
2Q19	(2,392)
1H18	(7)
1H19	1,093

## Net Income (100%)



# Other Businesses : Coal business (SAR)

QoQ: ↓ NI from no payback on tax lawsuit as in 1Q19 and lower margin

HoH: ↑ Improved performance from tax lawsuit case; despite margin drop

E & P

Gas

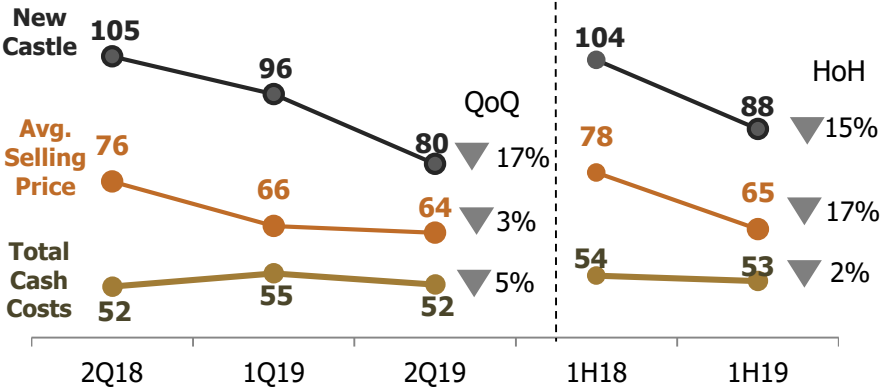
Oil & Trading

P&R

Others

## Avg. Selling Price<sup>1/</sup> & Cash cost<sup>1/</sup>

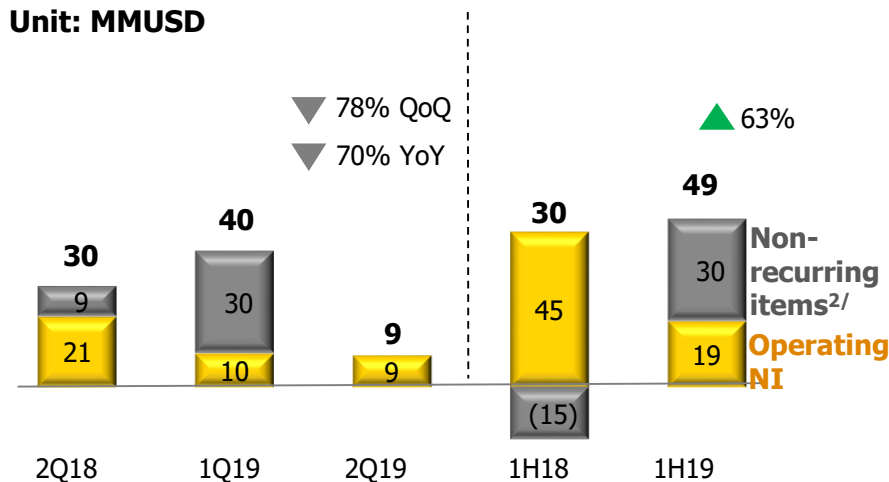
Unit: USD/Ton



<sup>1/</sup>Average Calorific value ~ 5,450 kcal/kg

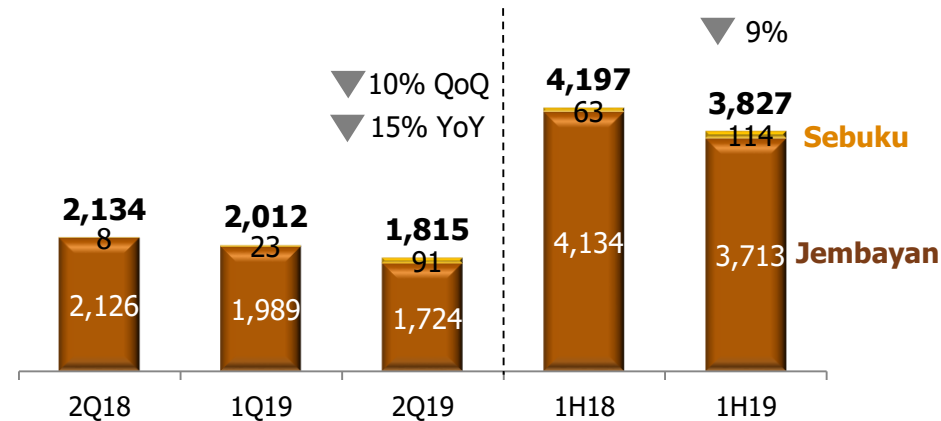
## Net income

Unit: MMUSD



## Sales Volume

kTon



## Key Highlights

### QoQ

- Vol. decreased** from lower export of Jembayan (*shipment delay from Jun. to July*)
- Lower ASP** following New Castle Coal price
- Net Income** reduced as no payback on tax lawsuit case as in 1Q19 together with lower margin

### HoH

- Vol. dropped** from lower demand (China & India import restriction)
- ASP & Cash cost drop** following coal price
- Net Income:** increased from past tax lawsuits net payback; despite lower margin

<sup>2/</sup>Non-recurring items include the payback on tax lawsuit case & impairment

# Other Businesses : Power - GPSC

QoQ: ▲ Higher GM and NI from first full quarter recognition of GLOW's performance

HoH: ▲ Higher GM and Adjusted NI from an acquisition of GLOW

E & P

Gas

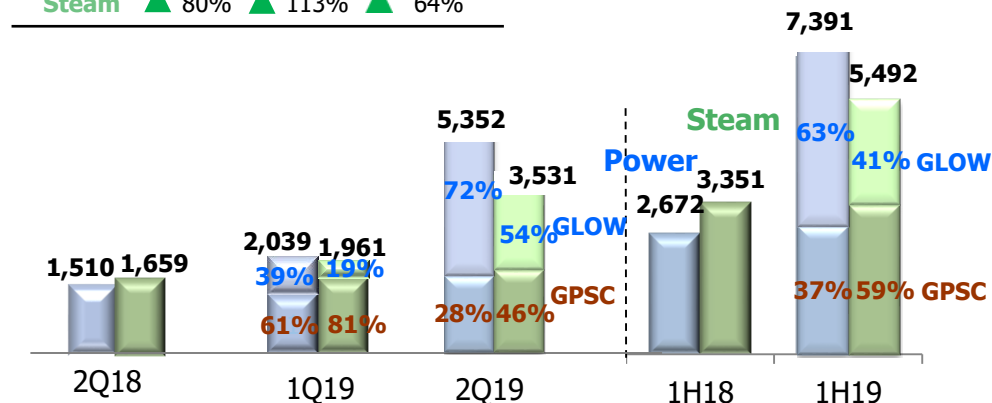
Oil & Trading

P&R

Others

## Sales Volume

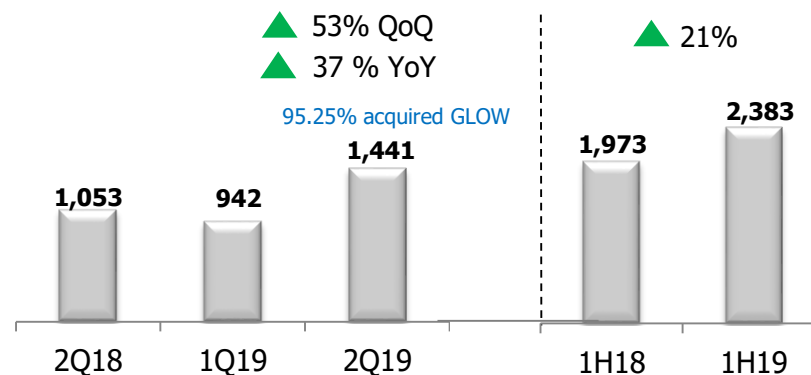
	QoQ	YoY	HoH
Power	<span style="color: green;">▲</span> 162%	<span style="color: green;">▲</span> 254%	<span style="color: green;">▲</span> 177%
Steam	<span style="color: green;">▲</span> 80%	<span style="color: green;">▲</span> 113%	<span style="color: green;">▲</span> 64%



## Adjusted Net Income\* (100%)

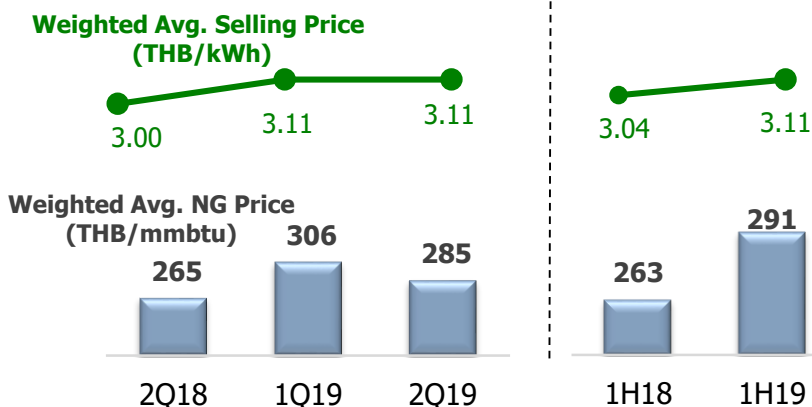
\*Adjusted Net Income: The net profit attribute to the company that excludes the "fair value of intangible asset from the acquisition of GLOW" which is the amortization expense.

MMTMB



## Key Drivers: Ft Rate & Weighted Avg. NG

	QoQ	YoY	HoH
Weight Avg. Selling Price	<span style="color: orange;">↔</span> 0%	<span style="color: green;">▲</span> 4%	<span style="color: green;">▲</span> 2%
Weighted Avg. NG Price	<span style="color: gray;">▼</span> 7%	<span style="color: green;">▲</span> 8%	<span style="color: green;">▲</span> 11%



## Key Highlights

### QoQ

- Sales Vol.** increased from the first full quarter recognition of GLOW's performance and Sriracha Power Plant in corresponding to EGAT's dispatch instruction
- Adjusted NI** increased from an acquisition of GLOW
- Higher interest expense** from loans to acquire GLOW and amortization expenses from such acquisition

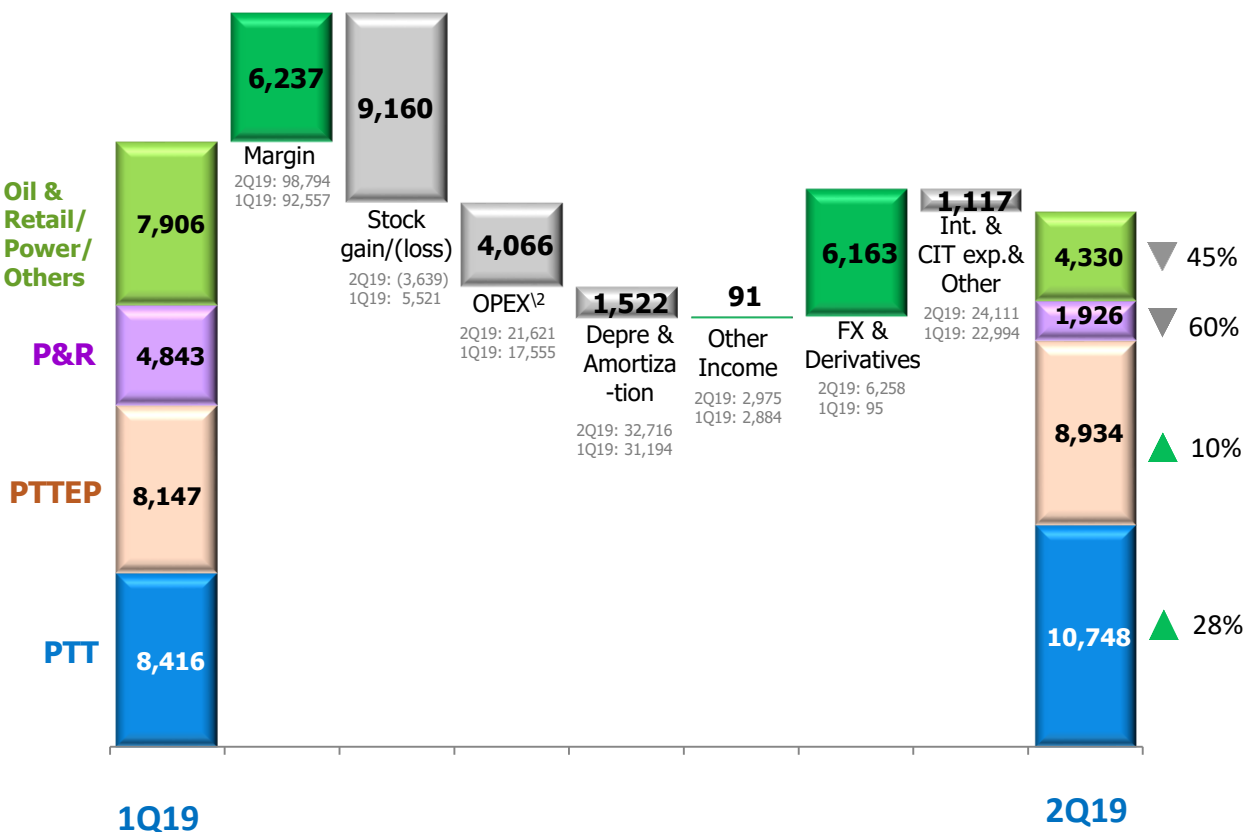
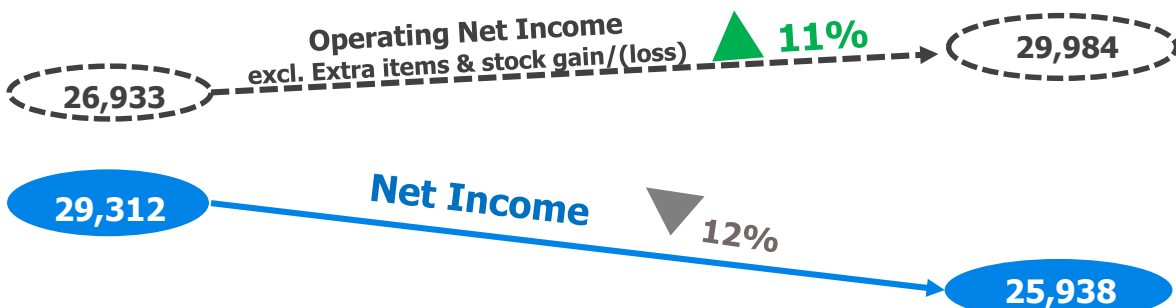
### HoH

- Sales Vol.** increased from an acquisition of GLOW in 1H19
- Adjusted NI** increased from the recognition of GLOW's performance

# 2Q19 Performance (QoQ):

↓ **Soften performance from stock loss; despite improved operating performance**

**MMTHB**



## Oil & retail/ Power/ Others ▼

### Oil & Retail ▼

- Lower sales Vol. from aviation & LPG
- Higher stock loss
- + Margin increased from aviation and outlet expansion of Café amazon

### Power ▲

- + Operating income rose from full quarter recognition of GLOW in 2Q19
- Higher finance cost and DD&A from GLOW acquisition

▼ **Coal** : no payback from tax lawsuits in 2Q19 and operating margin dropped

## Petrochem & Refining ▼

- Higher stock loss in 2Q19 (*stock gain in 1Q19*)
- Aromatics decreased from PX spread
- Olefins dropped from vol. & product spread
- ↔ Soften GRM while gasoline spread improved

## PTTEP ▲

- + Higher ASP following crude oil price
- + Higher Volume (lower SD in 2Q19)

## Gas ▲

- + S&M increased from higher sales volume & lower gas cost
- + GSP increased from higher vol. & selling prices

## Trading ▼

- Mismatch derivatives & lower sales vol.

<sup>1</sup> consisting of GPSC, TP, DCAP, PTTEs, Digital and ENCO <sup>2</sup> including petroleum exploration expenses and royalties

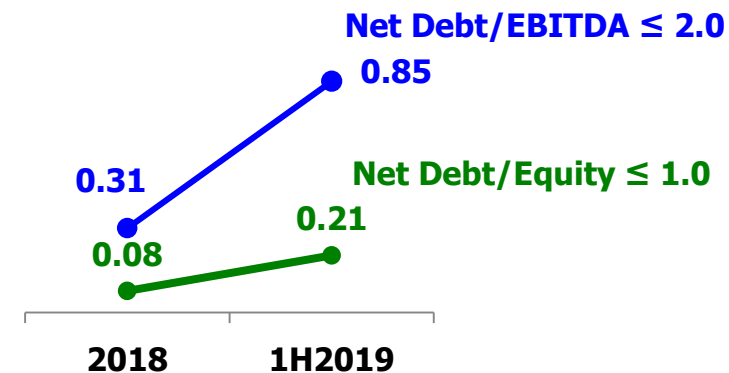
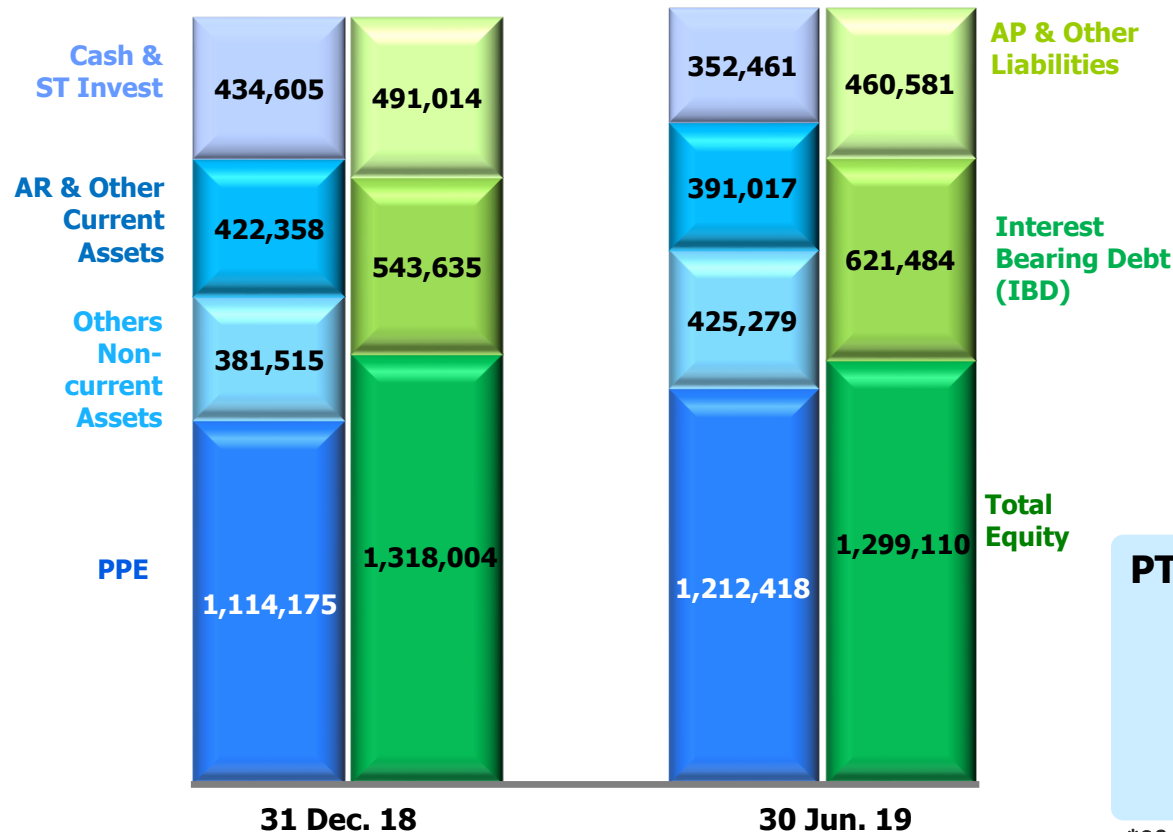
# Statement of Financial Position

MMTHB

2,352,653  2,381,175

**Assets/Liabilities slightly increased** : mainly from

- + Increased in PPE from
  - GPSC's acquisition of Glow
- Decreased in cash from loans repayment & bond redemption



## PTT Ratings at Sovereign Level

- FC : Moody's (Baa1), S&P\* (BBB+), FITCH (BBB+)
- LC : Moody's (Baa1), S&P\* (A-), FITCH (BBB+)

\*S&P final rating uplift 1 notch at LC only but maintain for FC



# Statements of Consolidated Cash Flows : 1H2019

Operating	1H2018 128,314	1H2019 119,703
Net Income	69,817	55,250
Changes in assets & liabilities	(35,970)	9,995
Income Tax	(28,000)	(51,235)
Non-Cash Adjustment	122,467	105,693

Investing	1H2018 16,993	1H2019 (63,068)
CAPEX (PP&E, Intangible asset)	(58,474)	(69,270)
Investment (Sub. & Affiliates & others)	(21,434)	(75,620)
Current investment	88,240	72,659
Dividend/Interest Received	7,305	7,225
Others	1,356	1,938

Free Cash flow	
145,307	56,635



Financing	(100,957)	(60,622)
Repayment Loans	(80,092)	(65,159)
Interest paid	(14,035)	(14,188)
Dividend paid	(52,129)	(48,429)
Received from share issue	-	117
Received from loans/Bonds	57,808	101,760
Others	(12,509)	(34,723)

Adjustment	
1,766	(6,135)

Beginning Cash and Cash Equivalents	
166,189	292,184



Cash In/(Out)	
46,117	(10,122)



Ending Cash & Cash Equivalents	212,306	282,062
Ending cash incl. S/T investment	358,719	352,461

**Overview**

**1**

**2**

**2Q2019 & 1H2019  
Performance**

**PTT's Strategies**

**3**

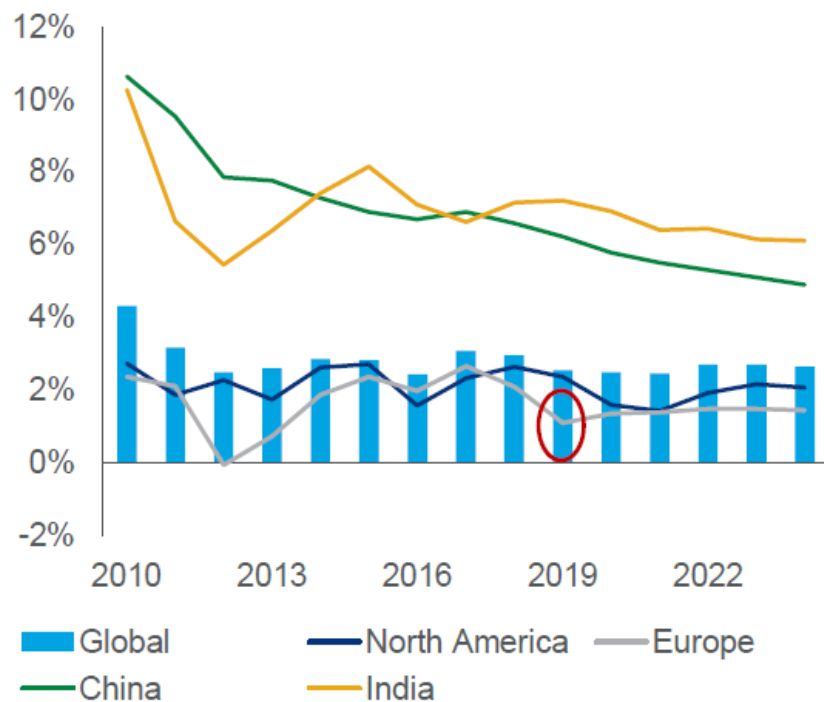
**4**

**Outlook 2019**

# The Global Economy is Slowing

But will it be soft landing or a heavy fall?

## Real GDP growth



Source: Wood Mackenzie, World Bank

## Key risks to the outlook

### Trade Wars

- 2020 Global GDP 2.0%
- 2020 China GDP 5.1%



### Europe and Brexit



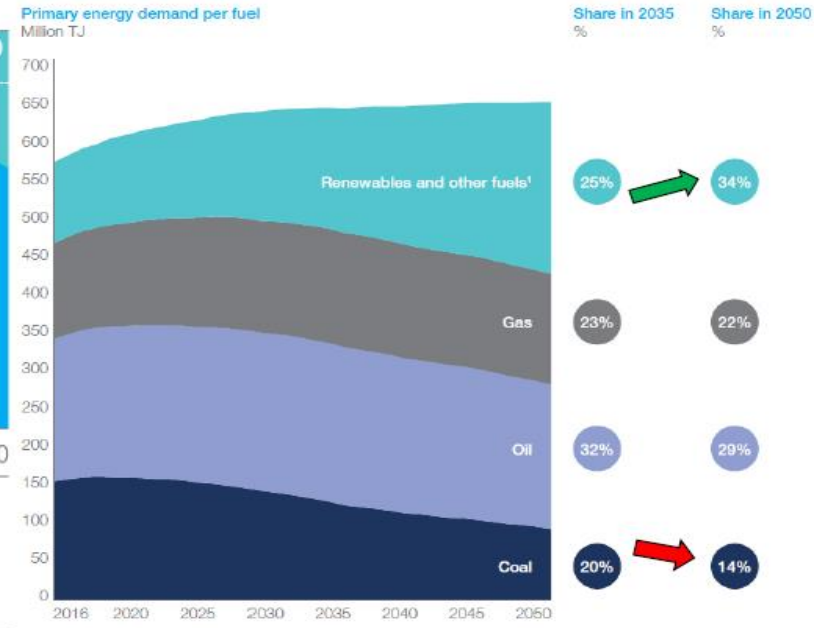
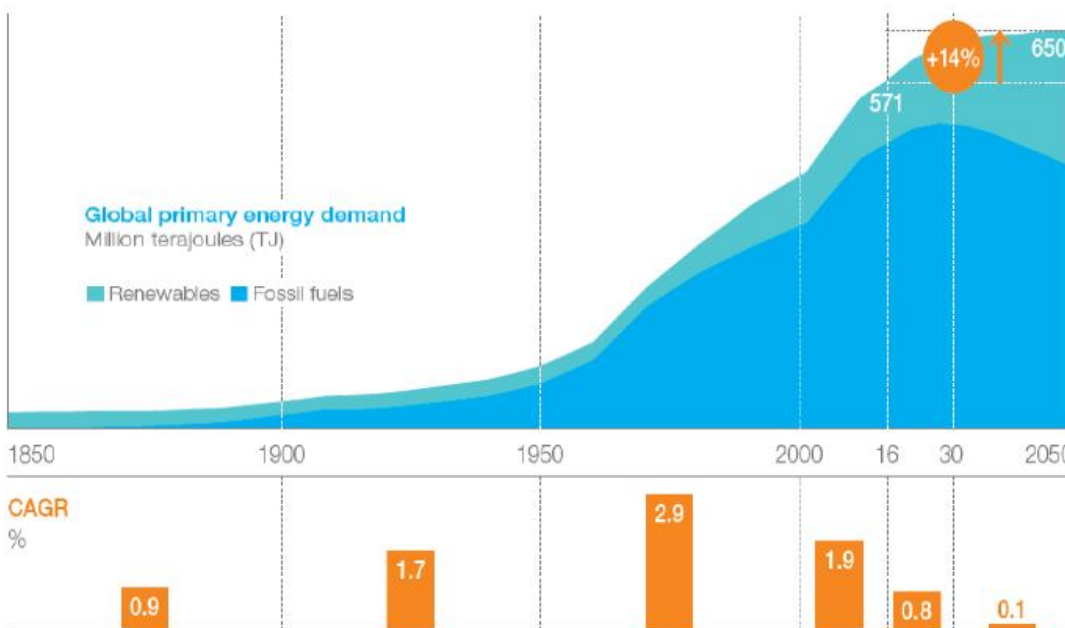
### Oil and geopolitics



# Global Primary Energy Demand will be Slowed Down after 2030



- Penetration of renewable energy complement by nuclear will double shares from now until 2050
- Energy intensity fall as increasing of service industries together with efficient technologies offset energy demand growth.

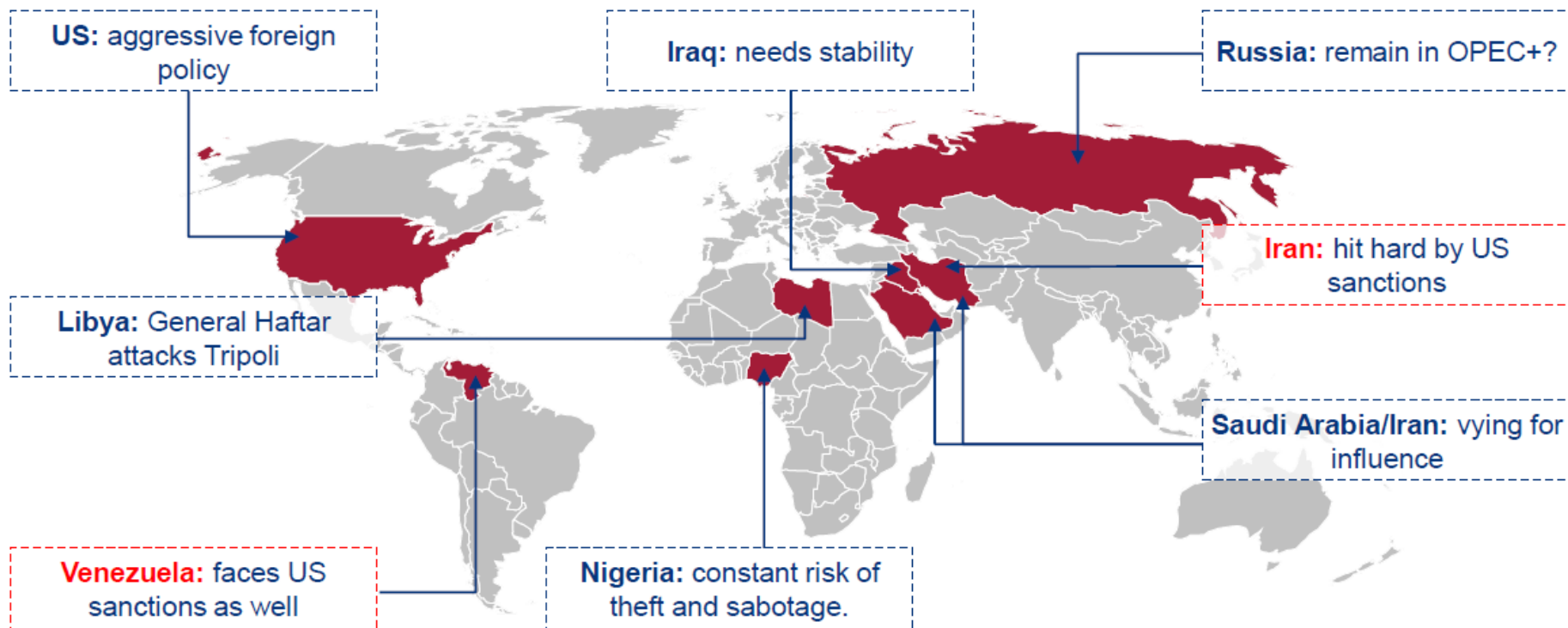


<sup>1</sup> Includes biomass, hydro, and nuclear  
Source: McKinsey Energy Insights' Global Energy Perspective, January 2019

Source: McKinsey Energy Insights' Global Energy Perspective, January 2019; IEA Energy Balances (Historical); Smil, V. (Historical)

# Volatile Geopolitical Dynamics add to Global Supply Uncertainty

Iran, Venezuela, and Libya are hot spots



Source: Wood Mackenzie Macro Oils Service



# Energy Transition Trends

Energy industry dynamics will change the way we produce and consume energy

## Key Technologies



### Electrification

*New Energy*

In 2040, Electricity consumption is almost doubled from the year 2017.



### Decarbonization

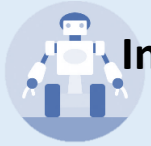
*New Green*

Decarbonization is accelerating, with coal hit hardest while the shift to renewables requires gas.



### New Connectivity

Bring more secure & more diverse energy system. Renewables with energy storage & Blockchain transaction will encompass the objectives.



### Intelligent Solutions

*New Devices*

Digitalization of both the grid and other digital network technologies, with the advent of the IoT and a surge of power-consuming connected devices



Charging Station



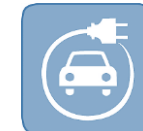
Smart Charging



Heat Pump



Solar & Wind



EVs



Energy Efficiency



Energy Storage



Blockchain



MicroGrid



Networking



Smart Metering



Automation Appliances

# Implications for PTT Group to Sustain Leading Position

## 1 No Regrets



- ☐ **Digitalization** should be as a basic knowledge
- ☐ **Result based Approach/OKR** should be adopted to speed up time to market
- ☐ **Organization Transformation (i.e. Agile, Flattened structure)** should be implemented for dynamic & flexibility

## 2 No Compromises



- ☐ **ALL** : Use **Applied Technology** for sustained competitive advantage
- ☐ **UPSTREAM** : Aggressive switch to **Low Carbon Energy**
- ☐ **DOWNSTREAM** : Strive on **Group optimization** and accelerate **Bio Economy, Circular Economy & Green Business**

# PTT balances all stakeholders through embedding people & planet strategy into business strategy for long term value creation



## People

- Apply different mechanisms for different types of business

PTT Group



- Drive “Digitalization” as a core value and enhance productivity program



GC digital analytical

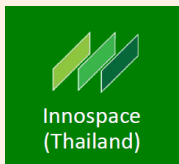


Trade demand pooling



Digital KPIs and data analytics

- Build up platform to move Thailand forward as a hub of innovation for startups and new corporates



“All in one national Platform” will connect startups with fresh capital and increase value-added products targeted at the global market.

## Planet

- Achieve circular economy maturity level 3



As-Is



To-be

- Invest in bioplastic production and green business



Nakorn Sawan Bio Complex, the country first bio-economic industrial complex  
Produce high quality biodegradable plastics from sugarcane bagasse.



Green plastic “ABS”  
IRPC is the pioneer and be the first one who could produce ABS with natural rubber.

- Reduce GHG from operation 20% vs BAU

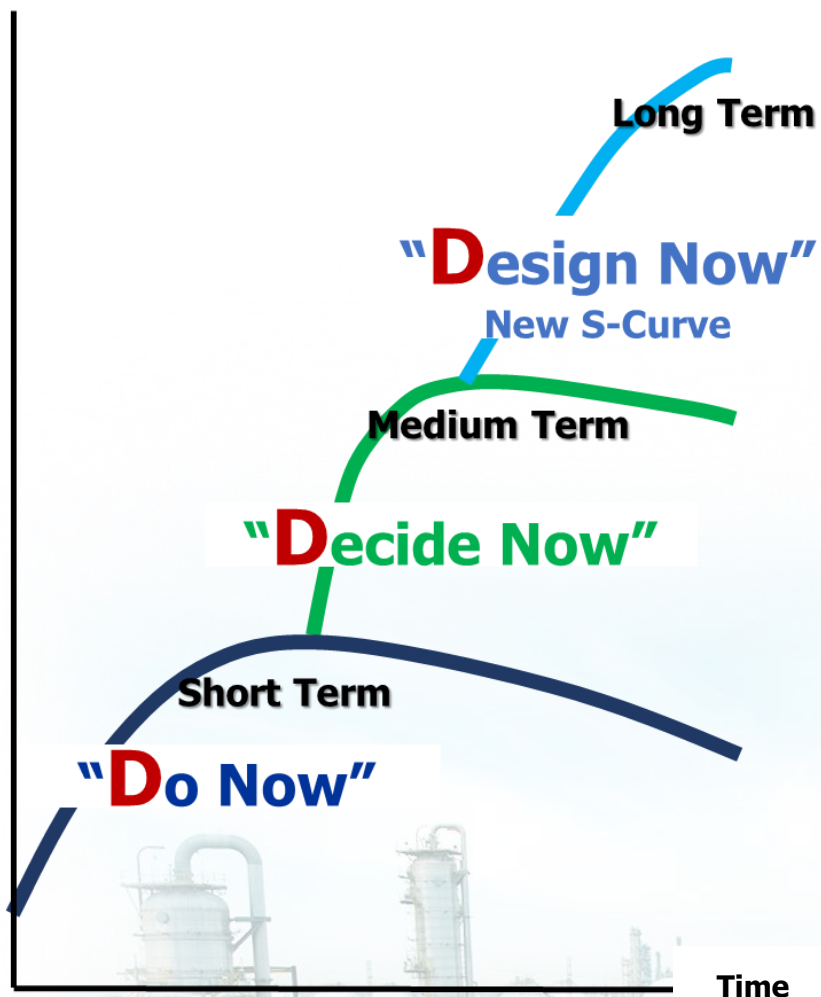


20 % vs BAU

Set up target to reduce GHG Emission in Operations 20% comparing with BAU in 2030

# Execute growth strategy to build sustainable growth for PTT and drive Thailand Economy

Profit



## DESIGN NOW

### Explore new business



- **EXPLORE & SEED FOR NEW S-CURVE** Seeking opportunity to invest in new businesses e.g. Life science, IOT/AI/ robotics business

## DECIDE NOW

### Focus on discipline investment



- **ENERGY SECURITY** invest in NG infrastructures, GoT's resources, LNG hub and LNG Value Chain (Gas-to-power)
- **NEW ENERGY/ NEW BUSINESS** increase new energy portfolio and invest in smart city, logistics & property development
- **EXPAND CORE** move to high value products
- **NATIONAL/SOCIAL INVESTMENT** invest for social, community and country

## DO NOW

### Strengthen from inside



- **OPTIMIZATION** capture more value from optimizing value chain
- **PRODUCTIVITY** reduce cost /expense and improve productivity through digitization
- **BUSINESS INTEGRITY** build trust and transparency via GRC\* process

\*Governance - Risk Management - Compliance

# PTT investment aims to ensure energy security, capture value from international growth and explore new businesses



## PTT Owned Businesses

### Natural gas/LNG and infrastructure strategy



- Invest in **gas/ LNG infrastructure** for future demand
- Promote **Thailand as a regional hub**
- Invest in **LNG Value Chain** and expand gas business to SEA

### International trading strategy



- Create group synergy value through **PROJECT ONE** with real time optimization and group **asset-backed trading**
- Build **global trade flow network**

### New business strategy



- Invest in **new business related to megatrend** e.g. clean energy, battery business
- Invest in **EEC/EECi**, national infrastructure/ logistics & properties
- Support startup and commercialize researches via **PTT Accelerator**



# PTT's Flagship companies investment strategies focus on expanding core business and creating value along Group Value Chain

## Businesses invested by flagship companies

### Upward Integration

#### Expand

"Coming Home" to Southeast Asia"



**PTTEP**



Thailand



Myanmar



Malaysia

"Partnering" with prudent operators in prolific low cost area



UAE



Oman

#### Execute

Ensure smooth asset transitions and maximize existing assets value

**Capture** Synergy Value with GLOW



**Growth along with PTT Group**  
(Domestic, Inter.)

Invest in **Renewable Energy, Battery, Energy Solution**

### Downward Integration



Move forward from Commodity to **Specialty**

Produce more bio plastic and apply **Circular Economy** in to business



**Upgrade product for environment** and shift to crude to chemical production



Invest in clean fuel to **strengthen competitiveness**

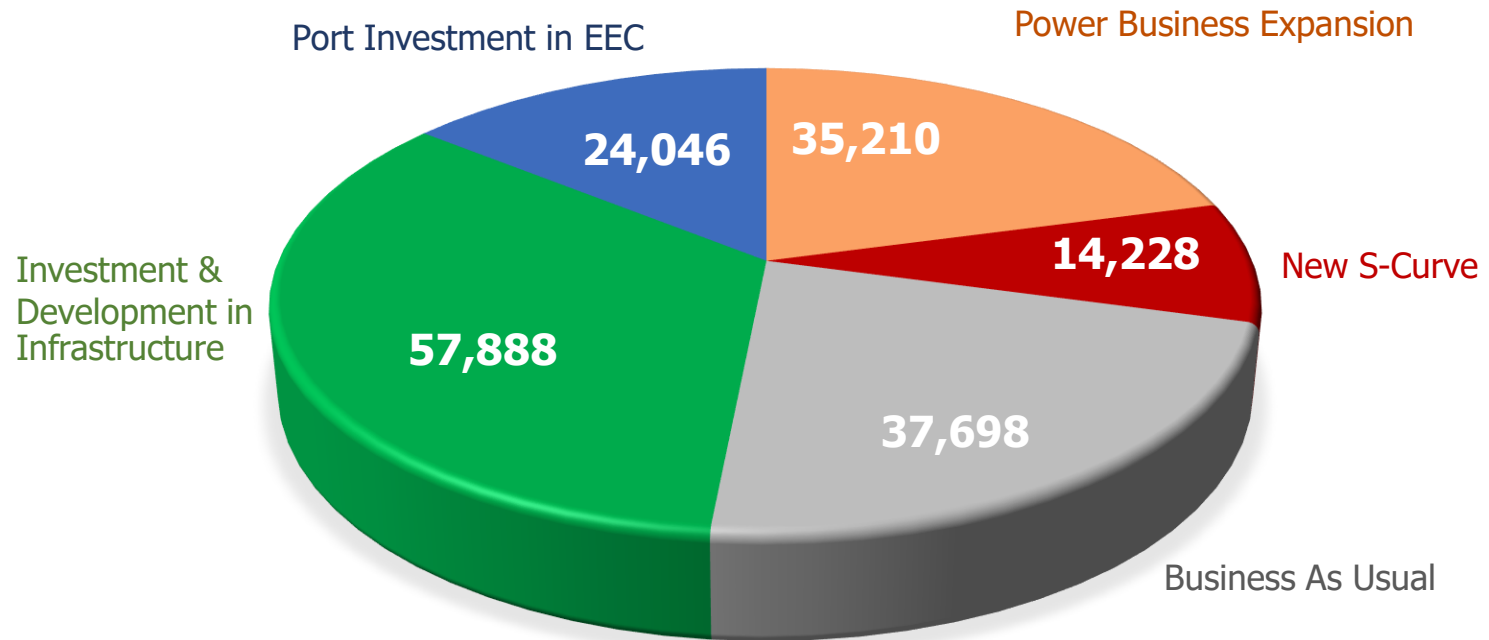


**Expand oil/non oil business globally**

Build **Café Amazon** to be **Asia's Brand**

Leverage income and **growth along local community**

# 5-Year Investment Plan for PTT & PTT 100% Owned Subsidiaries\*



Unit:MMTHB

## Area of Investment Plan

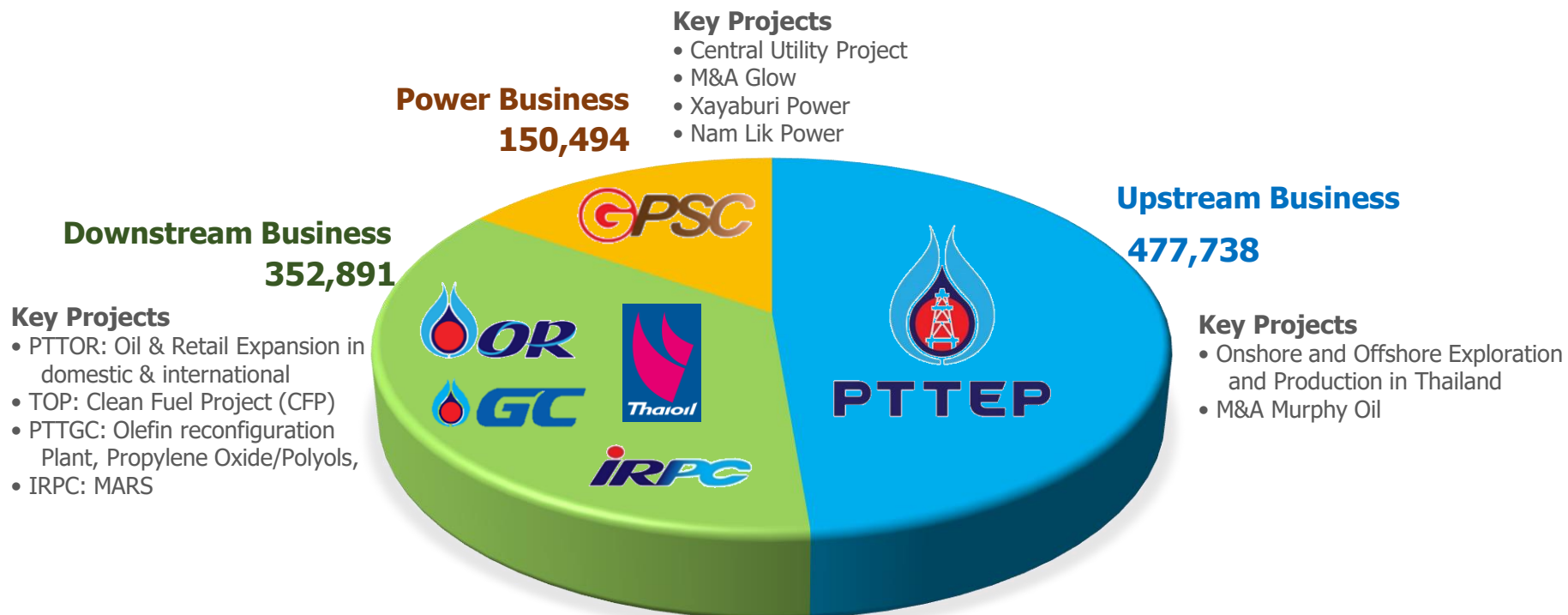
- Domestic 152,710
- International 16,360

**Total**

**169,070**

\* Revised investment plan of FY2019 on June / The chart excludes PTTOR & PTTOR's Subsidiaries

# 5-Year Investment Plan for PTT's Flagships\*

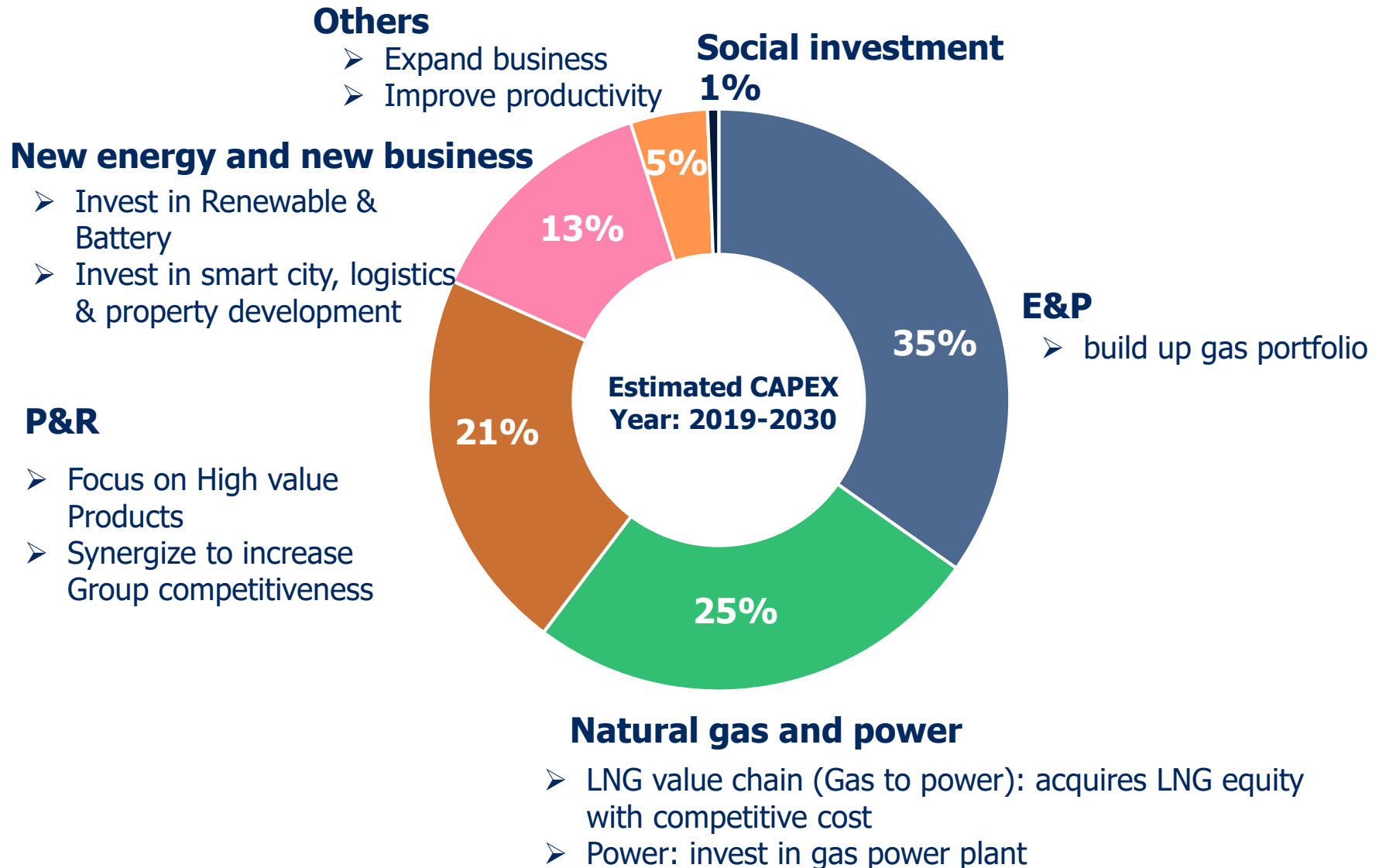


Unit: MMTHB

Area of Investment Plan	
• Domestic	726,112
• International	255,010
<b>Total</b>	<b>981,122</b>

\* Some companies have a revised investment plan during the year.

# PTT reshapes future portfolio by balancing existing businesses and new businesses to sustainable grow in energy transition period





# Global Economic Outlook: Sluggish and Precarious Growth



2018 GDP = \$21,480 Bn  
24% of World GDP



## *US economy : Moderate, but Solid, Growth*

- + **Strong labor market** to underpin consumption
- + Somewhat more **accommodative monetary policy stance**
- **Fading income tax-cut boost**
- **Trade and technology tensions**, despite the US and China returning to the negotiating table after G20 meeting



2018 GDP = \$14,170 Bn  
15% of World GDP



## *Chinese economy: Steady Slowdown in Growth*

- + Beijing's commitment to support the economy via **fiscal stimulus and accommodative monetary policy**, while delivering on promised reforms
- Difficult **trade and technology problems** with the US



2018 GDP = \$14,030 Bn  
16% of World GDP



## *Eurozone economy: Decent, but Subdued, Growth*

- + **Improving labor market**
- + **Ultra-accommodative monetary policy** and some **fiscal loosening**
- + **Fading temporary drags** (auto woes and yellow-vest protests)
- **Uncertain political landscape** (Brexit, Italy, and Euroscepticism)



# Asian Economic Outlook:

Moderate growth as more challenging external environment leaves its mark



2018 GDP = \$5,220 Bn  
6% of World GDP



## Japan economy: Solid but Volatile Growth

- + Sustained **accommodative monetary stance**
- + **Investment** to replace aging capital stock and address labor shortages
- + **Spending** related to the 2020 Tokyo Olympics
- Planned **consumption tax rate increase** in Oct 2019, despite promised stimulus spending to offset the hit from higher taxes
- Impact from **US China Trade war**
- A trend **decline in the labor force**



2018 GDP = \$2,960 Bn  
3% of World GDP



## India economy : Further Pick-Up in Growth

- + **Continued recovery of investment**
- + **Still-favorable population and labor force**
- Non-banking financial companies (NBFCs) **liquidity crisis**



2018 GDP = \$524 Bn  
0.6% of World GDP



## Thai economy: Moderate Growth to Continue

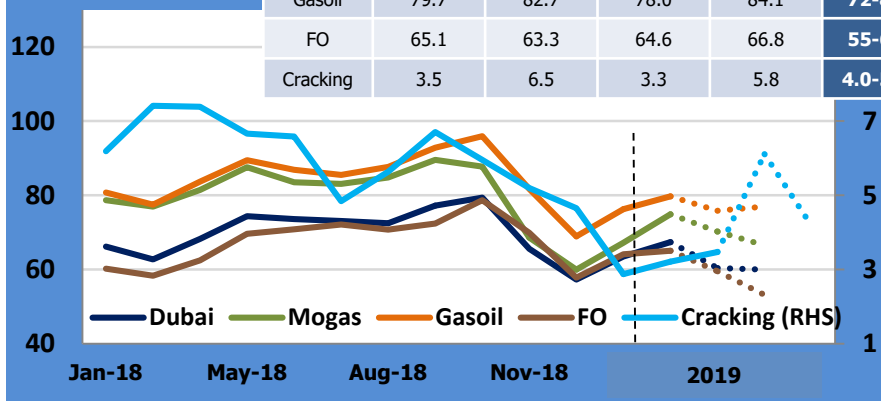
- + **Public investment** with more infrastructure projects entering construction
- + **Rebound in foreign tourism** amid low base in 2H2018 and new airline routes
- **Sluggish merchandise exports**
- **Political transitions & accompanying uncertainties**
- **High household debt**

# 2019 Petroleum and Gas Outlook

## Petroleum

\$/bbl

Price	2Q2019	1H2018	1H2019	2018	2019E
Dubai	67.4	67.9	65.4	69.4	58-68
Mogas	74.9	80.9	71.1	79.9	65-75
Gasoil	79.7	82.7	78.0	84.1	72-82
FO	65.1	63.3	64.6	66.8	55-65
Cracking	3.5	6.5	3.3	5.8	4.0-5.0



## Dubai

- ▲ **OPEC+ extended supply cut at 1.2 MMBD** to balance market until 1Q'20
- ▲ **Geopolitical Risks** in the ME with heightened tensions between the US/Britain and Iran.
- ▼ **Surging Non-OPEC output**; especially in the US – increasing crude exports after pipeline expansion completed in 4Q'19
- ▼ **Lower demand** due to expectation on global economic slowdown

## Mogas

- ▼ **Ample supply** due to higher refinery intakes of lighter crude, after the US shale oil export surges
- ▼ **Softened demand** from falling car sales in China, the big market
- ▲ **Lower supply from refinery's yield shifting** to maximize middle distillate ahead of IMO implementation in 2020

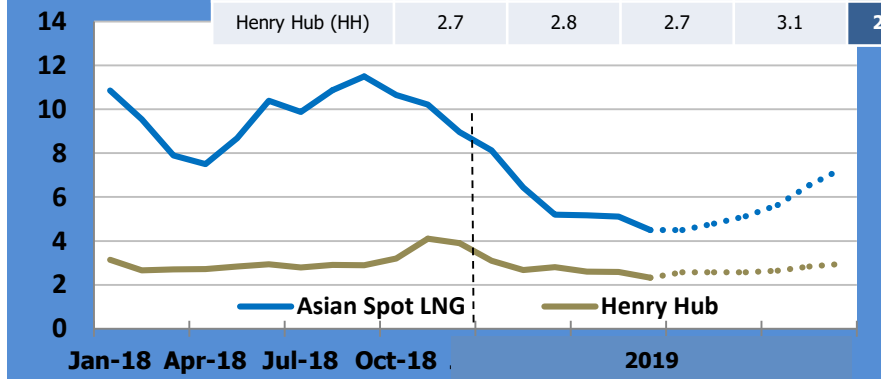
## GRM:

- ▲ Asian refining margins to range between **\$4.0 – 5.0/bbl** in 2019 mainly from the impact of IMO 2020
- ▼ **Lower gasoline & FO crack margins in 4Q19** before IMO 2020

## Gas/LNG

\$/MMBTU

Price	2Q2019	1H2018	1H2019	2018	2019E
Asian Spot LNG	6.9	9.1	5.8	9.9	5.8 – 6.8
Henry Hub (HH)	2.7	2.8	2.7	3.1	2.5 – 2.9



## Gasoil

- ▲ **Diesel inventory buildup** ahead of IMO 2020
- ▼ **Higher Indian exports** due to normal monsoon season
- ▼ **Softened demand** due to poor industrial/manufacturing output, resulting from trade war and global economic slowdown

## Gas/LNG

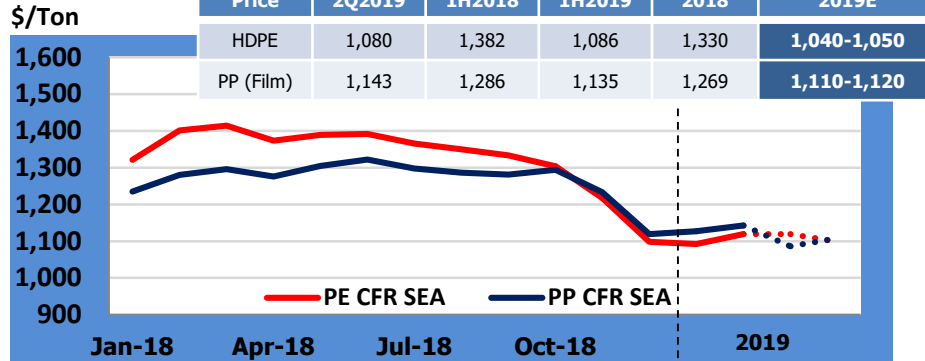
### Asian Spot LNG:

- New LNG trains will boost output in 2H'19 e.g. Corpus Christi T2, Elba Island, Cameron T1 and Freeport T1
- Uncertain industrial growth in China, re-gas capacity constraints and slower pace of coal-to-gas switching.

- ▼ **Henry Hub:** Less severe summer weather in the US led to lower-than-expected natural gas-fired electricity generation and high reserves, which will continue to keep prices low

# 2019 Petrochemical Outlook

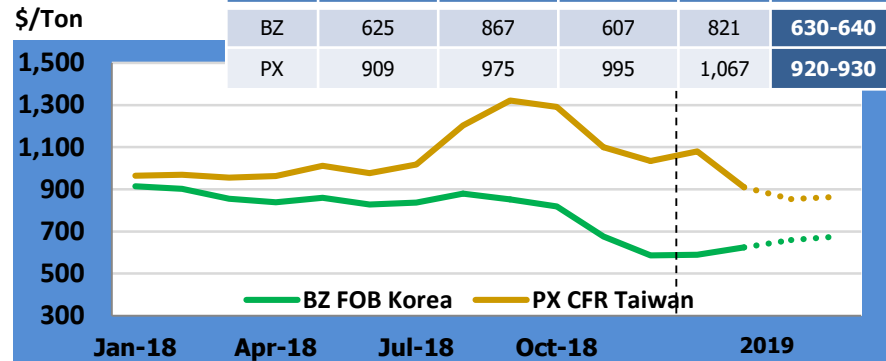
## Olefins



## Olefins

- ▼ **More U.S. PE cargoes to divert to SEA** particularly in Vietnam market
- ▼ Import cargoes will be more competitive due to the appreciation of local currency against US dollar
- ▼ **US-China trade war** to impact market sentiment
- ▼ **Off-seasonal demand** for PE and PP during 3Q'19
- ▼ **RAPID Project** in Malaysia will **start-up HDPE, PP** in 4Q'19, pressuring market

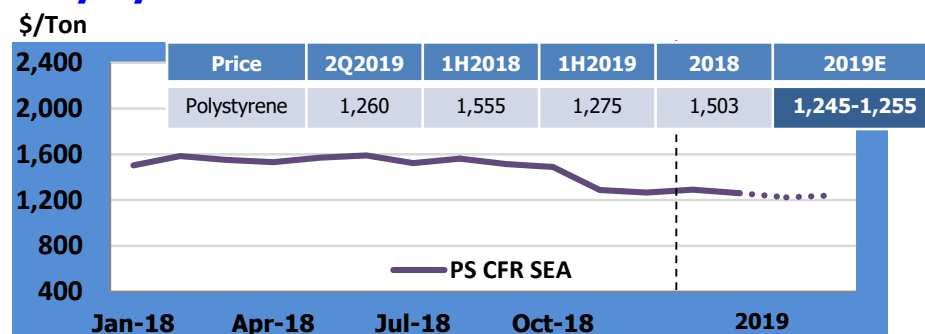
## Aromatics



## Aromatics

- ▼ **Concerns on long PX supply** due to plan start-up of Zhejiang Petrochemical and Hengli Group in 2H19
- ▼ **More BZ supply from new units** and high inventory in China
- ▲ US driving season leading to higher gasoline demand thus **lower Benzene production**
- ▲ **Resumption of BZ downstream unit** will boost up demand

## Polystyrene



## Polystyrene (PS)

- ▼ PS price in **3Q'19** will be **pressured by the uncertainty of global economy**
- ▼ **Limited growth in long term:** PS packaging demand continues facing **competition from alternative materials** and will face **risks of bans** and negative consumer perception

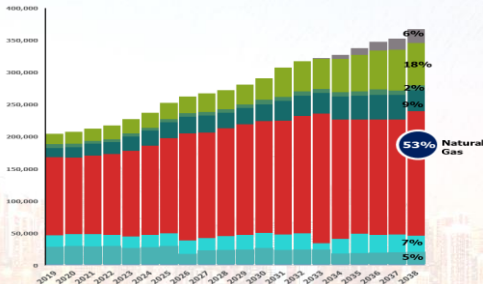
# Guidance 2019



## PDP 2018 (Power Development Plan)

Cabinet approved on Apr 30, 2019

GAS plan to be finalized in 2019



## GAS trend

Avg. pooled gas price

3Q19 ↑

4Q19 ↓



**PTTEP**

4Q19: Completion of Partex acquisition in Oman

4Q19: Additional 39% stake in Sinphuhrom proj. → 80%



4Q19: Refinery major TA 54 days (Oct-Nov)



3Q19: Refinery major TA (Jun-Jul)

3Q19: Aromatics shutdown TA (Jun-Jul)



3Q19: COD Catalyst Cooler Phase II (Aug)



3Q19: COD CUP 4

4Q19: COD Xayaburi

## Gas Separation Plant



Additional 1.5 MTA;  
Revenue expect in  
4Q2019



### GSP Planned shutdown

3Q19: none

4Q19: GSP#1 (< 1 week)



Optimize asset &  
Improve public sector price

Public price: Lifted 1 Baht/kg for total 3 Baht  
Adjust every 4 months  
1<sup>st</sup> : May 16, 2019  
2<sup>nd</sup> : Sep 16, 2019  
3<sup>rd</sup> : Jan 16, 2020

# Thank you



## PTT Public Company Limited – Investor Relations Department



**Tel. +66 2 537-3518, Fax. +66 2 537-3948**



**E-mail: [ptt-ir@pttplc.com](mailto:ptt-ir@pttplc.com)**



**Website: <http://www.pttplc.com>**

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The information contained in this presentation is subject to change without notice and PTT does not undertake any duty to update the forward-looking statements, and the estimates and assumptions associated with them, except to the extent required by applicable laws and regulations.

# Statements of Cash Flows (PTT Only) : 1H2019

Operating	1H2018 41,749	1H2019 14,139
Net Income	61,916	38,990
Changes in assets & liabilities	(10,137)	4,051
Income Tax	(5,641)	(22,712)
Non-Cash Adjustment	(4,389)	(6,190)

Investing	1H2018 11,793	1H2019 2,809
CAPEX (PP&E, Intangible asset)	(7,899)	(10,445)
Investment (Sub. & Affiliates & others)	(35,833)	(410)
Current investment	24,417	17,026
Dividend/Interest Received	24,429	20,468
Others	6,679	(23,830)

Free Cash flow	
53,542	16,948



Financing	(47,861)	(65,565)
Repayment Loans	(10,025)	(27,684)
Interest paid	(4,735)	(3,608)
Dividend paid	(34,258)	(34,273)
Received from share issue	-	-
Received from loans/Bonds	1,157	-
Others	-	-

Adjustment	
503	24

Beginning Cash and Cash Equivalents	
38,692	86,204



Cash In/(Out)	
6,184	(48,593)



Ending Cash & Cash Equivalents	44,876	37,611
Ending cash incl. S/T investment	95,113	49,677



# PTT Group Performance : 2Q2019 (QoQ)

Unit : MMTHB

	Performance 100%			% PTT holding	Equity Method % PTT		
	Q1/19	Q2/19	QoQ		Q1/19	Q2/19	QoQ
PTT Net operating Income	8,416	10,748	28%		8,416	10,748	28%
<b>E&amp;P</b> - PTTEP	12,479	13,684	10%	65.29%	8,147	8,934	10%
<u>Petrochemical</u>	6,513	2,269	-65%		3,004	1,173	-61%
- PTTGC	6,443	2,202	-66%	47.68%	2,934	1,106	-62%
- Other	70	67	-4%		70	67	-4%
<u>Refining</u>	4,561	1,074	-76%		1,839	753	-59%
- TOP	4,408	567	-87%	47.53%	1,749	540	-69%
- IRPC	153	507	>100%	47.55%	90	213	>100%
<u>Others Business</u>	9,356	6,002	-36%		7,906	4,643	-41%
<u>Inter</u> - PTTER/PTTGE/PTTGM	1,229	57	-95%	100%	1,234	62	-95%
<u>Gas</u> - PTTLNG/PTTNGD/PTTGL/TTM(T)/TTM(M)	2,211	2,094	-5%		1,893	1,862	-2%
<u>Utilities</u> - GPSC/TP/DCAP/PTTES/PTTDIGITAL/ENCO	1,524	1,526	0%		387	382	-1%
<u>Oil &amp; Oth.</u> - PTTT/PTTOR/THAPPLINE/Others <sup>1/</sup>	4,392	2,325	-47%		4,392	2,337	-47%
Shared of Net Income from Affiliates	32,909	23,029	-30%		20,896	15,503	-26%
Tax adjustment for gain on disposal of investment and asset	-	(313)	n/a		-	(313)	n/a
PTT Conso. Net Income	41,325	33,464	-19%		29,312	25,938	-12%

1/ Including BSA, PTT TCC and RTC

# PTT Group Performance : 1H2019 (HoH)

Unit : MMTHB

	Performance 100%			% PTT holding	Equity Method % PTT		
	1H/18	1H/19	HoH		1H/18	1H/19	HoH
<b>PTT Net operating Income</b>	34,618	19,164	-45%		34,618	19,164	-45%
<b>E&amp;P - PTTEP</b>	16,971	26,163	54%	65.29%	11,079	17,081	54%
<b>Petrochemical</b>	23,402	8,782	-62%		11,913	4,177	-65%
- PTTGC	23,215	8,645	-63%	47.68%	11,725	4,040	-66%
- Other	187	137	-27%		188	137	-27%
<b>Refining</b>	17,204	5,635	-67%		8,231	2,592	-69%
- TOP	10,403	4,975	-52%	47.53%	5,137	2,289	-55%
- IRPC	6,801	660	-90%	47.55%	3,094	303	-90%
<b>Others Business</b>	15,167	10,966	-28%		5,376	12,549	>100%
<b>Inter - PTTER/PTTGE/PTTGM</b>	6,386	1,286	-80%	100%	57	1,296	>100%
<b>Gas - PTTLNG/PTTNGD/PTTGL/TTM(T)/TTM(M)</b>	3,990	4,305	8%		3,291	3,755	14%
<b>Utilities - GPSC/TP/DCAP/PTTES/PTTDIGITAL/ENCO</b>	2,943	3,050	4%		734	769	5%
<b>Oil &amp; Oth. - PTTT/PTTOR/THAPPLINE/Others<sup>1/</sup></b>	1,848	2,325	26%		1,294	6,729	>100%
<b>Shared of Net Income from Affiliates</b>	72,744	51,546	-29%		36,599	36,399	-1%
<b>Tax adjustment for gain on disposal of investment and asset</b>	(1,400)	(313)	78%		(1,400)	(313)	78%
<b>PTT Conso. Net Income</b>	105,962	70,397	-34%		69,817	55,250	-21%

1/ Including BSA, PTT TCC and RTC

# Debt Profile : Control Cost & Manage Risk

Managed debt according to financial risk and policy

## Debt Portfolio

Unit : MM THB

### PTT Only

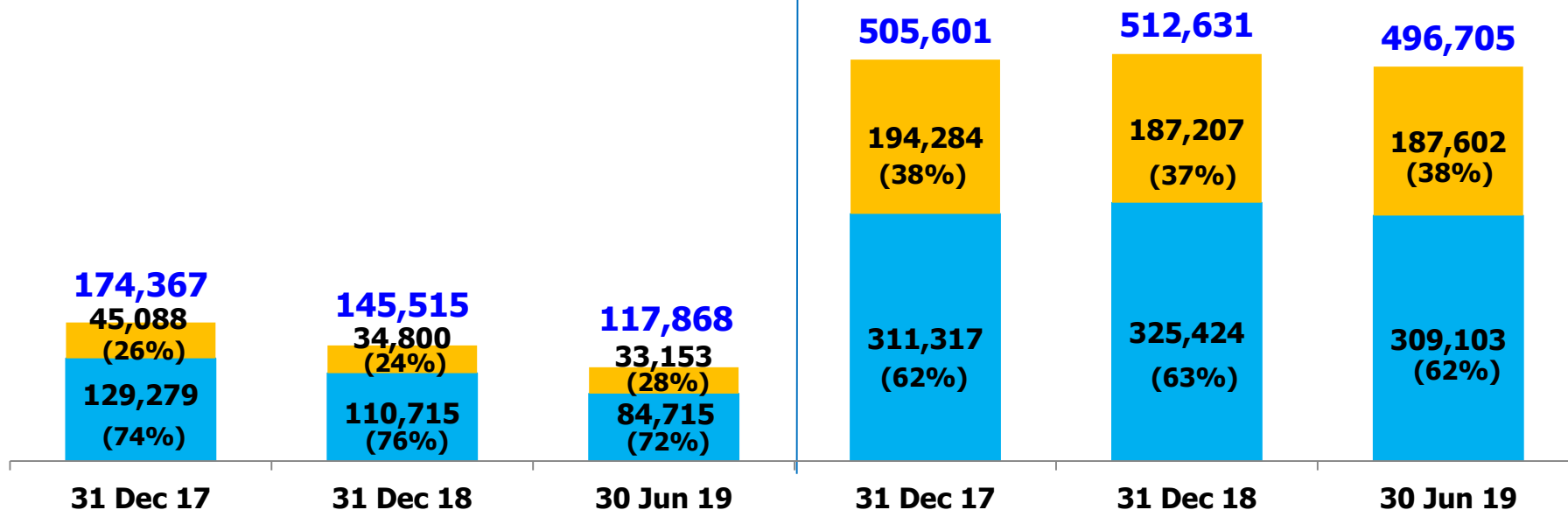
: Cost of debts ~ 5.39%  
: % fixed-rate ~ 68.32%  
: Avg. debt life ~ 10.82 years

### Consolidated

: Cost of debts ~ 4.41%  
: % fixed-rate ~ 66.18%  
: Avg. debt life ~ 8.63 years

■ USD&Others

■ THB



Note : 1. Data as of 30 Jun 19 (THB/USD = 30.9152 THB/JPY = 0.2892) Excluding liabilities from finance leases; Cost of debts includes withholding tax.

2. Debt Outstanding represents amount and portion before derivative swaps, and reconciled with accounting

3. Cost of debts, % fixed rate, and avg. debt life took into account the derivative transactions.

# PTT Group Accounting Structure

Data as of 30 Jun 2019

## E&P and Gas Business Group

Subsidiaries		Consolidate
PTT Exploration & Production Plc.	PTTEP	65.29%
PTT Natural Gas Distribution Co., Ltd.	PTTNGD	58.00%
PTT LNG Co., Ltd.	PTTLNG	100.00%
PTT Global LNG Co., Ltd	PTTGL	50.00%
Joint Ventures		Equity
Trans Thai-Malaysia (Thailand) Co., Ltd.	TTM (T)	50.00%
Trans Thai-Malaysia (Malaysia) Sdn. Bhd.	TTM (M)	50.00%
Map Ta Phut Air Products Company Limited	MAP	49.00%

## Oil Business Group

Subsidiaries		Consolidate
PTT Oil & Retail Business Co., Ltd.	PTTOR	100.00%
Others		Cost
PetroAsia (Maoming) Co., Ltd.	PA(Maoming)	20.00%
PetroAsia (Sanshui) Co., Ltd.	PA(Sanshui)	25.00%

## Petrochemicals & Refining Business Group

Petrochemical Subsidiaries		Consolidate
PTT Global Chemical Plc.*	PTTGC	47.68%
PTT Tank Terminal Co., Ltd.	PTTTANK	100.00%
Refining Subsidiaries		Consolidate
Thai Oil Plc.*	TOP	47.53%
IRPC Plc.*	IRPC	47.55%

## International Trading Business Group

Subsidiaries		Consolidate
PTT International Trading Pte.	PTTT	100.00%
PTT International Trading London Ltd	PTTLDN	100.00%

## Power Business Group

Subsidiaries		Consolidate
Global Power Synergy Co., Ltd.*	GPSC	22.58%
Thai Oil Power Co., Ltd.*	TP	26.00%
Joint Ventures		Equity
District Cooling System and Power Plant	DCAP	35.00%

## International Investment

Subsidiaries		Consolidate
PTT Energy Resources Co., Ltd.	PTTER	100.00%
PTT Green Energy Pte. Ltd	PTTGE	100.00%
PTT Global Management Co., Ltd.	PTTGM	100.00%

## Others

Subsidiaries		Consolidate
PTT Digital Solutions Co., Ltd.*	PTT DIGITAL	20.00%
PTT Energy Solutions Co., Ltd.*	PTTES	40.00%
Energy Complex Co., Ltd.	EnCo	50.00%
Business Service Alliance Co., Ltd.*	BSA	100.00%
PTT Regional Treasury Center Pte. Ltd.	PTTRTC	100.00%
PTT Treasury Center Co. Ltd	PTT TCC	100.00%
Others		Cost
Sarn Palung Social Enterprise Company Ltd.	SPSE	20.00%
Baania (Thailand) Company Ltd.	Baania	3.57%
Others		Fair Value
Dhipaya Insurance Plc.	TIP	13.33%
HR Robotics Plc.	HG Robotics	9.49%

Remark : \* Subsidiaries that PTT holds less than 50% but being consolidated because PTT has the power to control the financial and operating policies.