



ขอบคุณทุกพลังความรัก ที่ร่วมสร้างกันมาตลอด 40 ปี และตลอดไป



สานพลังสู่ความยั่งยืน

Analyst Meeting
YE2018



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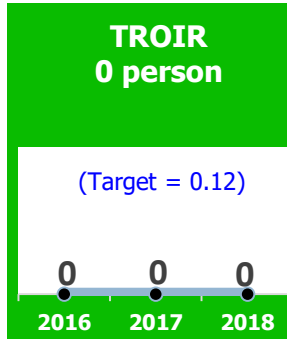
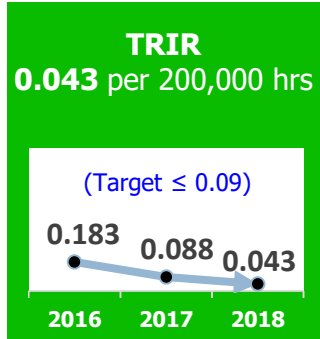
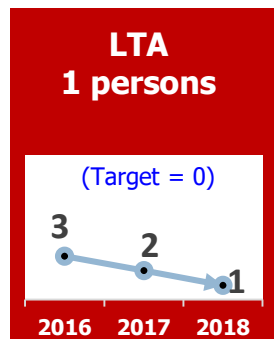
Health & Safety Performance 2018

Top Q low accident of Contractor and Lower accident to employee



Employee

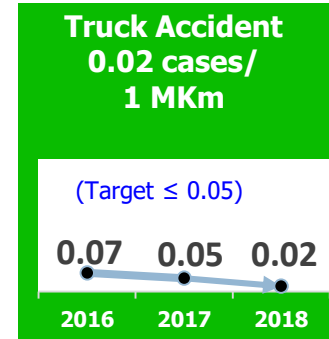
Personal Safety



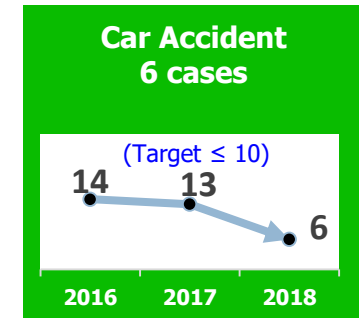
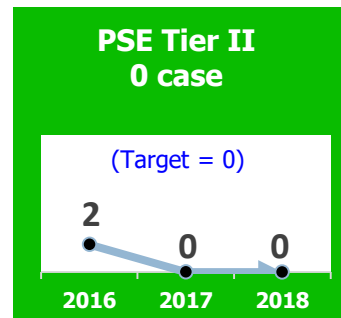
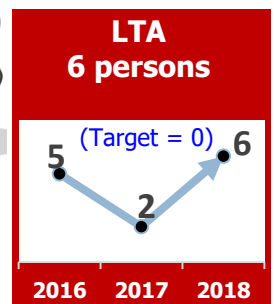
Process Safety



Road Safety



Contractor



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

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

REWARDS

Sustainable Growth for All Prides & Treasure of Thailand



People



Planet



Prosperity

SPiRiT + Synergy Performance excellence Innovation Responsibility for society Integrity & ethics Trust & respect + Digitalization

1. Executive of the Year 2018



2. The Shield of Anti - Corruption



3. The Shield of FAME for Sustainable Energy Foundation



4. The Shield of Building a Good Society Award



5. Best Public Facility



6. 7th consecutive years/ 2nd time as Leader



- Outstanding Award
- Award of Excellent



8. Thailand's Most Admired Brand



11. SOE Award



9. The Royal Awards



12. SET

- Excellent CG Scoring Company (10th consecutive years)
- SET Sustainability Awards 2018
- Innovation Award

14.



8th Annual Corporate Awards 2018 & 12th Annual Best Financial Institution Awards



10. Asian Corporate Governance Awards



- Outstanding Innovation Organization
- Outstanding Innovation for Economy

Others

Activity highlights 2018



- + Acquired **IRPC shares** to become 48.05% (Feb.)
- + **Par Split** (Bt 10 to Bt 1 per share) (Apr.)
- + Transferred **Oil BU's** assets to PTTOR (1st Jul.)
- + Established **Map ta phut Air Product Co., Ltd** (Jan'19)
- GSP#2 : planned TA 16 days (Mar.)
- GSP#3 : planned TA 18 days (Sept)



- + Established **PTTOR China** (Aug.)
- + Established **Café Amazon** in **Singapore** (Sept.)



PTTEP

- + Win bidding **2 blocks in Mexico & Malaysia** (Jan.)
- + Acquired **22.22% Bongkot** (Jun.)
- + Win bidding **Bongkot & Erawan** (Dec.)
- + Win bidding in **UAE** (Jan'19)
- Divest 100% stakes of assets in **Montara** (Q2)



- + To **acquire GLOW** with condition to craft out SPP1 (69.11% & tender offer 30.89%) (2Q18-4Q18)
- + Acquired Energy Recovery Unit (**ERU**) from **TOP**
- + Adding **Solar** power capacity in Thailand (39.5 MW)



- + **FID Clean Fuel Project : CFP** (Q2)
- CDU 1 : planned TA 21 days (Q2)



- + EHIA for **Olefins Reconfiguration Project** (Q1)
- + **COD LLDPE** plant 2 (Q1)
- + **Acquired** stake in **PET/PTA** businesses (Q4)
- I1 : planned major TA 37 days (Q3)



- + Approved the investment in plastic product **E-commerce** in Guangzhou : **IPLAS** (Q4)
- Hyvahl & RDCC in UHV : planned TA 1 month (Q3)

Financial highlights 2018 VS 2017

Soften performance from stock loss & higher taxes, despite healthy operating performance



+ **GAS** : Better performance almost all segments mainly **GSP and S&M**

+ **TRD** : **Higher margin** due to crude import and domestic condensate



- Stock loss
- Higher SG&A

+ **Higher sales volume & margin**
+ **Better Non-Oil** performance



- **Higher tax expense** from transferring of oil BU and lower BOI tax privilege



PTTEP

+ Stronger volume mainly from acquisition of **Bongkot**
+ **Higher selling price** according to Oil price

+ No huge **impairment** loss

+ Less **Baht appreciated** → Tax saving



- **Higher tax expenses** from strong results
- **Higher Depreciation** after acquisition Bongkot's Stakes
- Expenses on **Montara's write-off**



+ **Full operation** : IRPC-CP both phrases & ISP1
+ Higher sales vol. from Rayong

- Higher gas cost
- Higher SG&A to support business growth
- DD&A of IRPC-CP & ISP1 (COD in 2017)



- 2018 **Stock loss VS 2017 stock gain**

- **Weaker MKT GRM**

- Aromatics: Squeezed BZ spread due to over supply, despite better PX spread from strong demand

+ Higher sales **volume**
+ **Productivity Improvement**
Transcendence and Orchestra



- Pressured **Olefins spread** due to supply surplus
- **Aromatics**: Squeezed BZ spread due to over supply, despite better PX spread from strong demand

+ Higher sales **volume (COD LLDPE2)**
+ Higher affiliates contribution
+ **Productivity Improvement** : MAX



- 2018 **Stock loss VS 2017 stock gain**

+ Higher sales **volume**

+ **Productivity Improvement** : Everest and E4E

Overview

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**4Q18 & YE2018
Performance**

Project update

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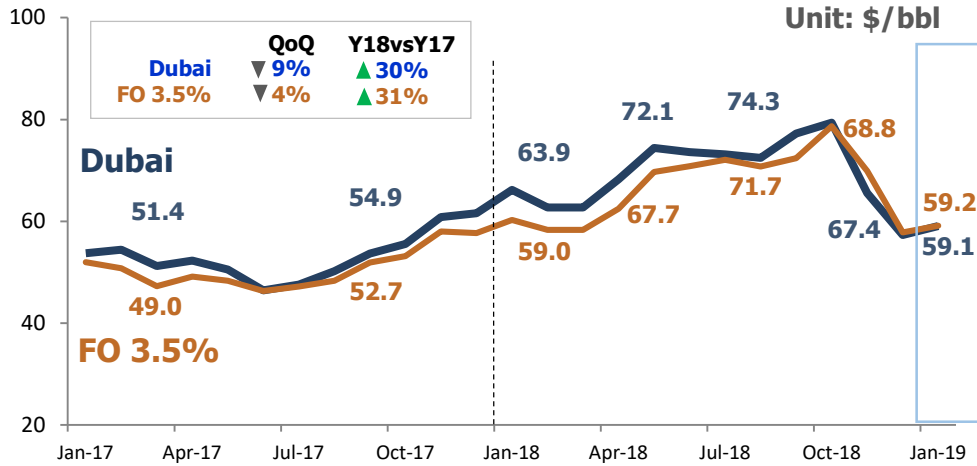
Outlook 2019

Key Business Drivers:

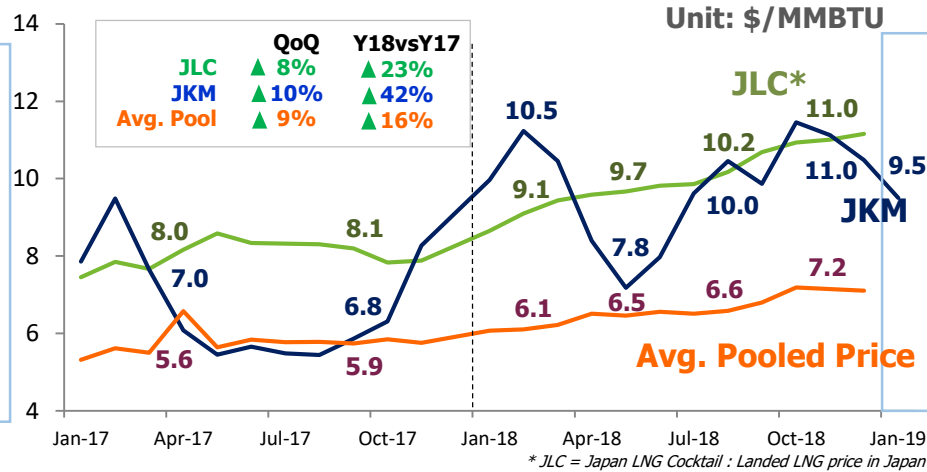
YoY: Upsurge in oil, gas, and most petrochemical prices

QoQ: NG prices uptrend while downtrend on Dubai, Olefins, and Benzene spread

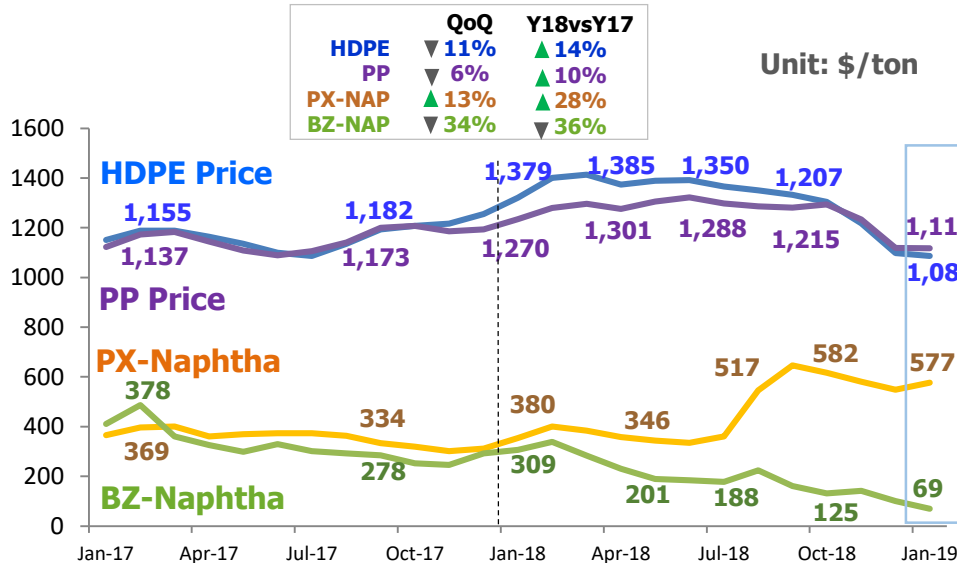
Dubai vs FO



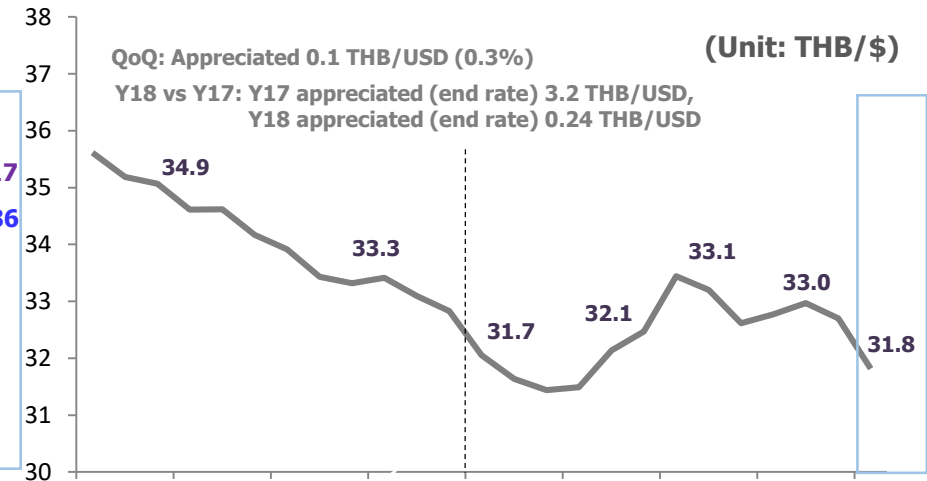
NG Prices (\$/MMBTU)



Petrochemical Products



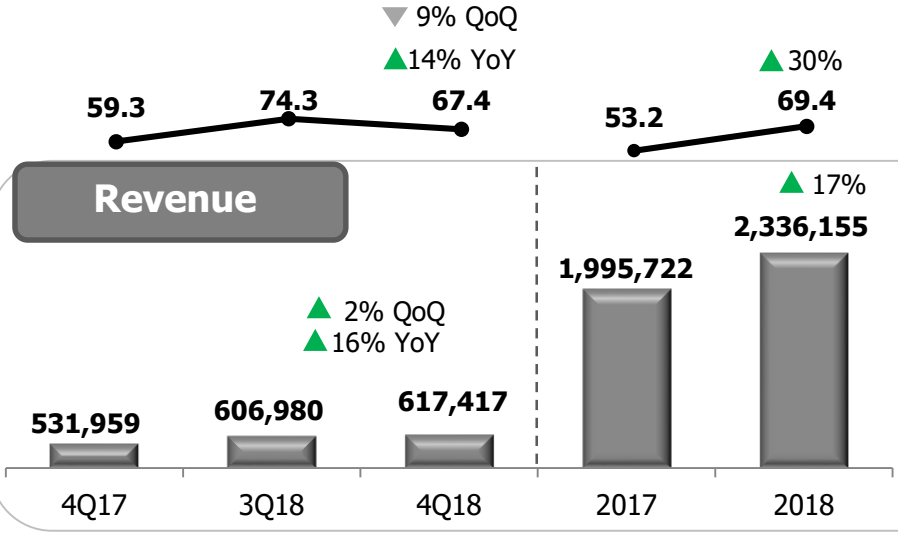
AVG. FX



Note: Figures are average & Naphtha (MOP)

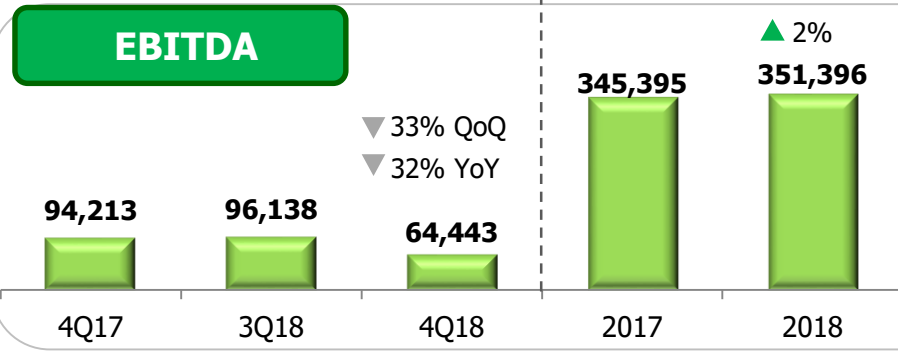
PTT Consolidated Performance: FY2018

2018 vs 2017 : Strong EBITDA from PTT & upstream; despite refineries' stock loss
4Q18 vs 3Q18 : EBITDA pressured from stock loss and Petrochemical prices



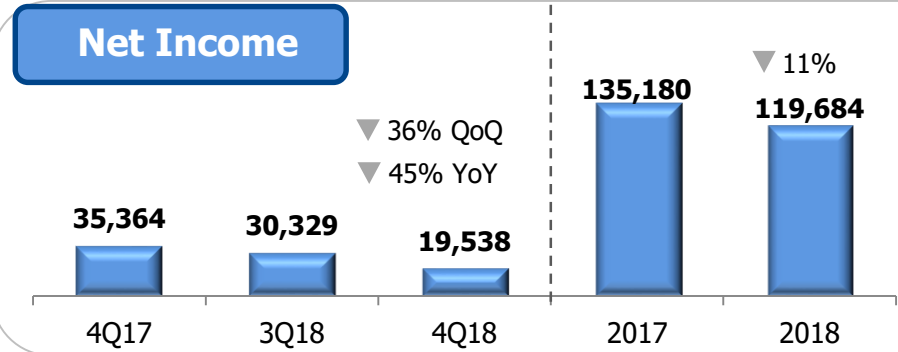
▲ **2% QoQ**
 + Oil (Vol. 4%)
 + Gas (Pooled price 9%)
 + PTTEP (Vol. & Price)

▲ **17% Y18 vs Y17**
 + From all businesses (higher product prices following crude price)



▼ **33% QoQ**
 - P&R and Oil (stock loss)
 - Gas (Lower margins)

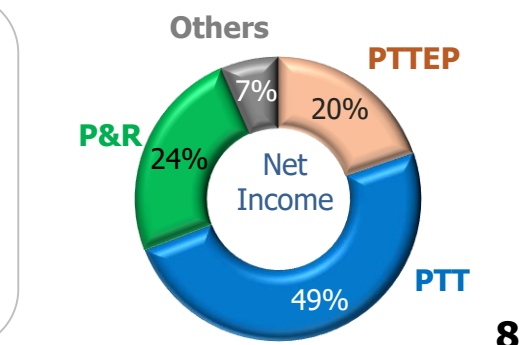
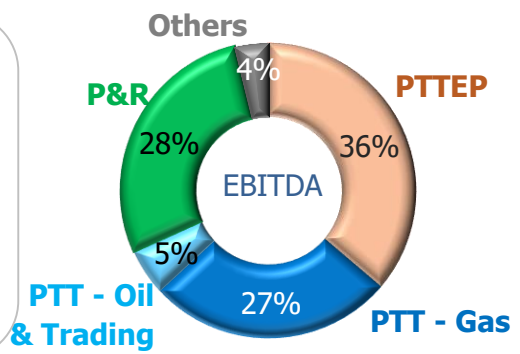
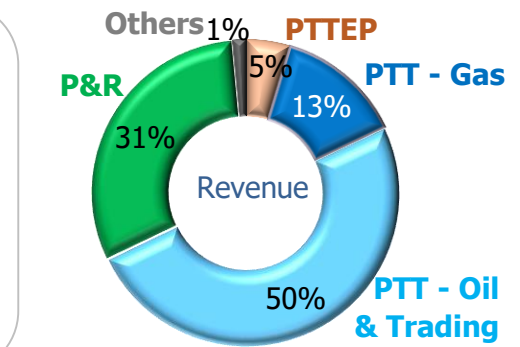
▲ **2% Y18 vs Y17**
 + GSP (higher margin)
 + PTTEP (Vol. & Price)
 - P&R (Stock loss)



▼ **36% QoQ**
 - Lower EBITDA
 - Lower FX gain

▼ **11% Y18 vs Y17**
 - Higher Tax (PTTOR's transfer & full BOI)
 - Higher DD&A
 - Lower FX gain

Y2018



E&P : Volume & Prices and NI

2018 vs 2017: Stronger results from avg. selling price & Volume, no impairment

4Q18 vs 3Q18: Softer NI mainly from DD&A and income tax

E & P

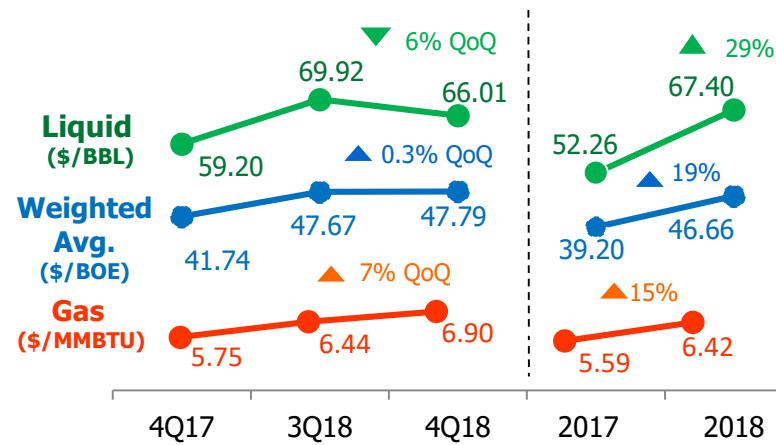
Gas

Oil & Trading

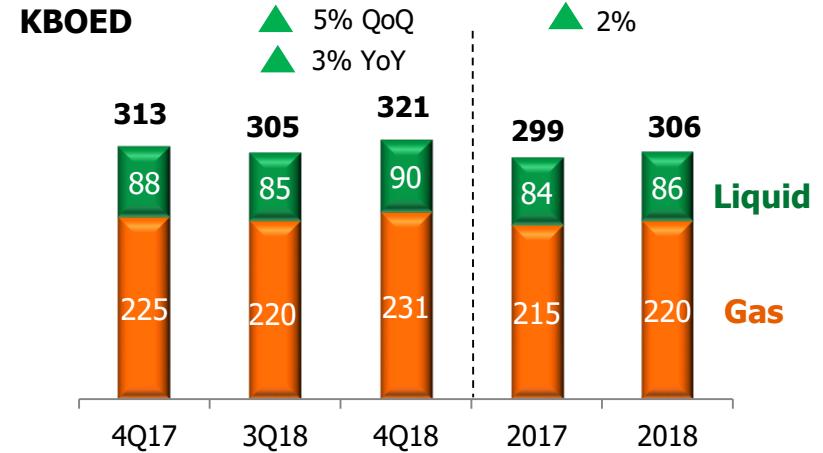
P&R

Others

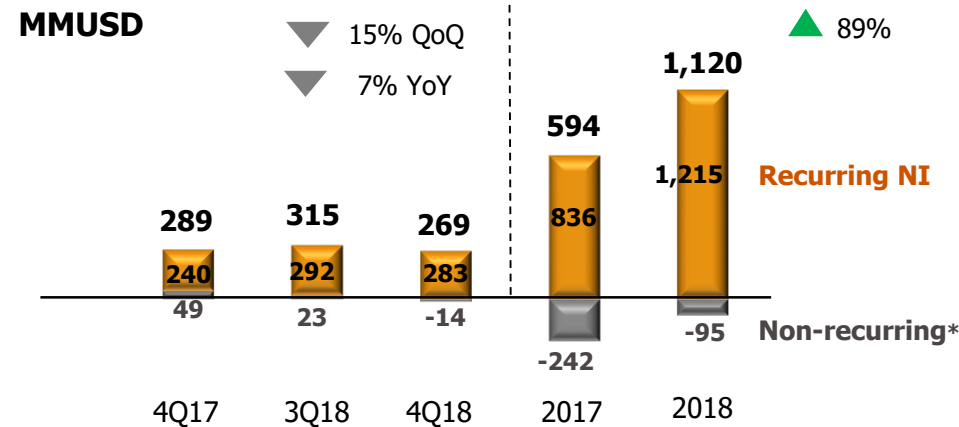
Product Prices



Sales Volume



Net Income (100%)



Key Highlights

4Q18 vs 3Q18

- Price:** 0.3% increase in avg. selling prices (4Q18 oil price downtrend)
- Volume:** 5% increase from Sinphuhorm and +22% Bongkot acquisition
- NI** dropped 15% : Higher DD&A, income tax, and derecognition of DTA of PTTEP Australasia

2018 vs 2017

- Price:** 19% ASP increase from oil price uptrend
- Volume:** 2% increased from Bongkot acquisition and Contract 4
- NI** 89% increase from sales revenue vs 2017 recognition of Marina Oil sand impairment

* 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 BU's

2018 vs 2017: Stronger results from almost businesses

4Q18 vs 3Q18: Pressured by higher gas cost & lower petchem prices as well as oil stock loss



(Unit: MMTHB)

Business Unit	4Q17	3Q18	4Q18	QoQ	YoY	2017	2018	Y18 vs Y17
Gas- EBITDA	23,028	24,831	21,373	↓14%	↓7%	83,792	94,084	↑12%
• S&M	4,718	5,305	5,204	↓2%	↑10%	16,267	18,917	↑16%
• TM	8,306	8,237	8,355	↑1%	↑1%	34,134	35,157	↑3%
• GSP	8,774	9,850	6,239	↓37%	↓29%	29,424	34,060	↑16%
• NGV	(856)	(1,437)	(1,309)	↑9%	↓53%	(4,188)	(4,872)	↓16%
• Others ^{1/}	2,086	2,876	2,884	↔	↑38%	8,155	10,822	↑33%
Oil- EBITDA	4,513	4,103	907	↓78%	↓80%	19,598	15,271	↓22%
Trading^{2/} - EBITDA	1,896	1,003	1,409	↑40%	↓26%	5,387	5,929	↑10%
Total^{3/}	29,437	29,937	23,689	↓21%	↓20%	108,777	115,284	↑6%

1/ Others include PTTLNG, PTTNGD, and PTTGL (restructured by excluding GPSC, PTTES, PTTDigital and ENCO)

2/ MIS

3/ Included subsidiaries from all BUs

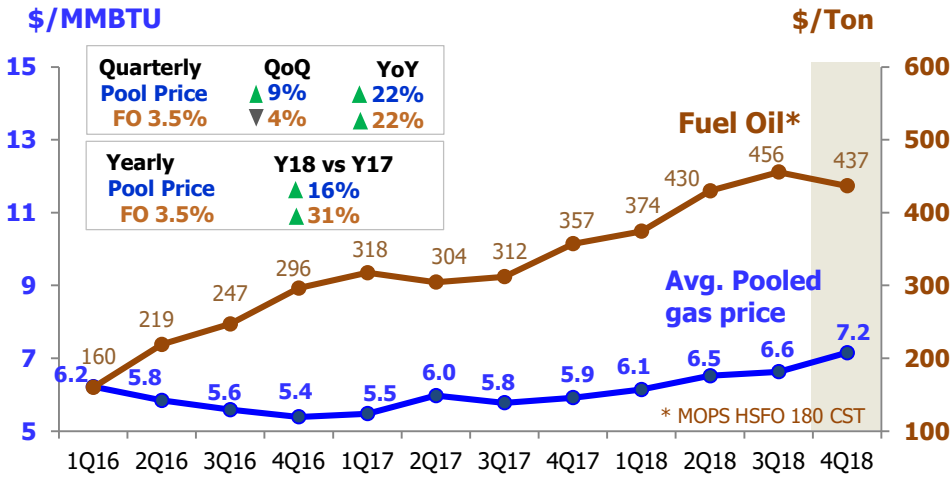
Gas Business Unit

2018 vs 2017: Rising pooled gas price vs NG vol. maintained

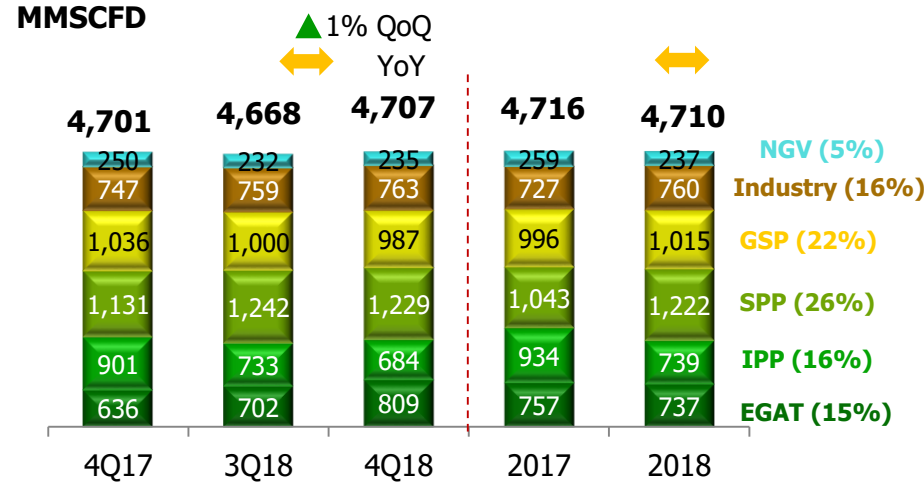
4Q18 vs 3Q18: Higher NG vol. and pooled gas price



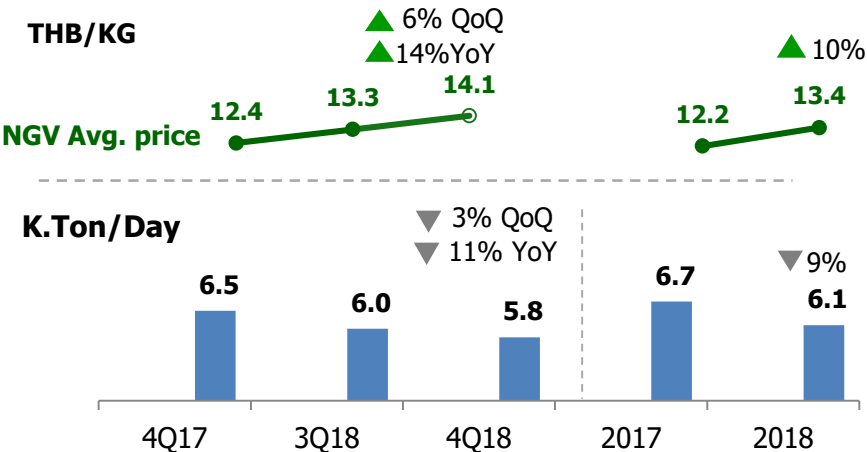
NG Price VS FO



NG Customer Breakdown



NGV Price/Sales Volume



Key Highlights

4Q18 vs 3Q18

- Price: Avg. pooled gas cost raised 9% while FO price lower 4%
- Volume: NG sales vol. increased 1% from EGAT & Industry vs GSP decrease due to predictive maintenance
- NGV: sales vol. continue to drop despite rising avg. selling prices

2018 vs 2017

- Price: Higher increase in FO price than a rise in avg. pooled gas
- Volume: NG sales volume maintained due to higher GSP & industrial vol. offset by lower power demand and NGV
- NGV: sales vol. dropped as demand switched to diesel

Gas Business Unit

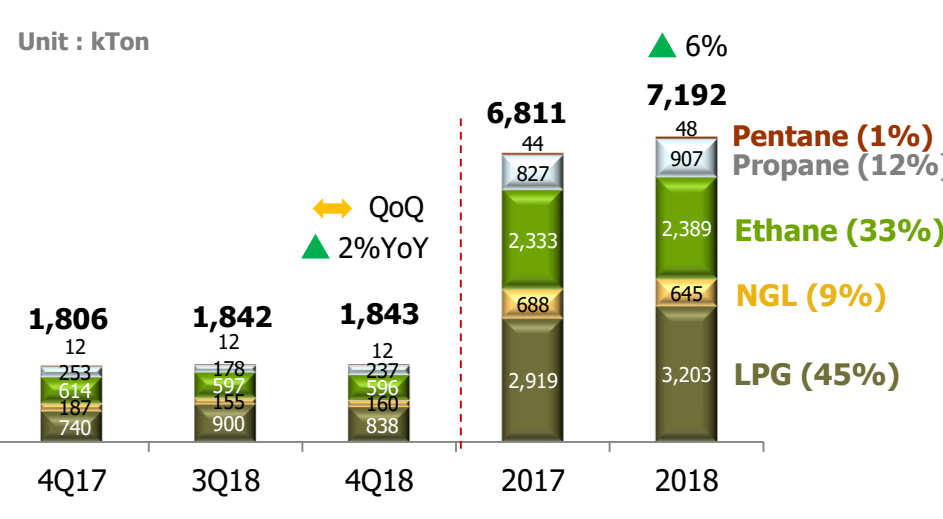
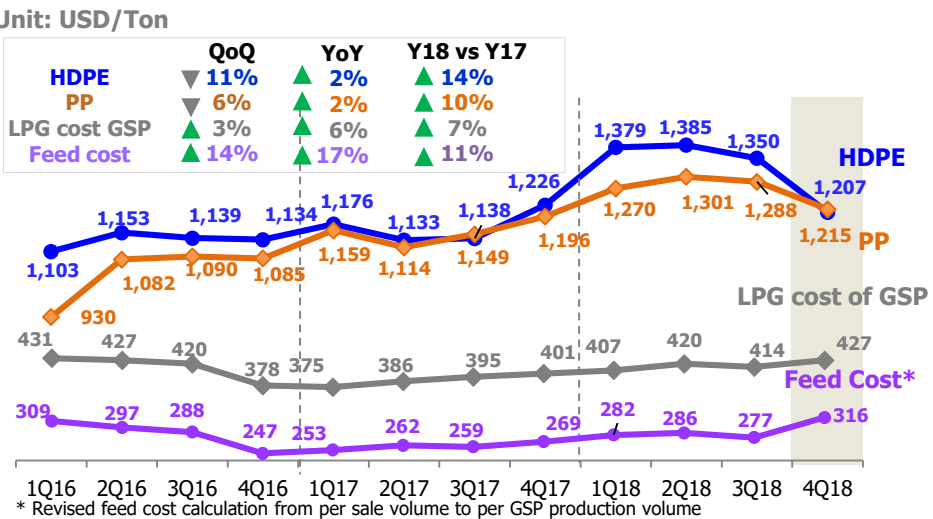
2018 vs 2017: Boosted Performance in almost segments

4Q18 vs 3Q18: Performance pressured by NG cost and petrochemical prices



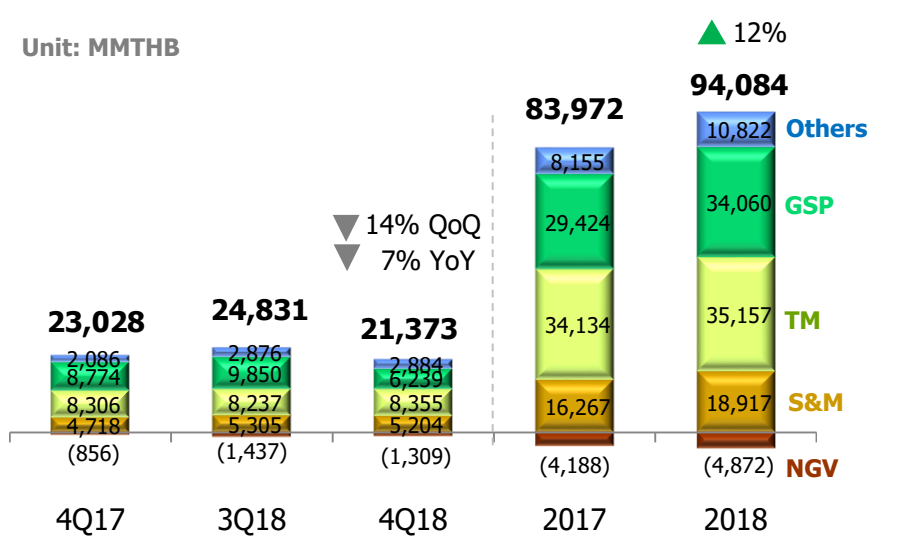
GSP Feed Cost vs Petrochem. price

GSP Sales Volume



Gas - EBITDA

Key Highlights



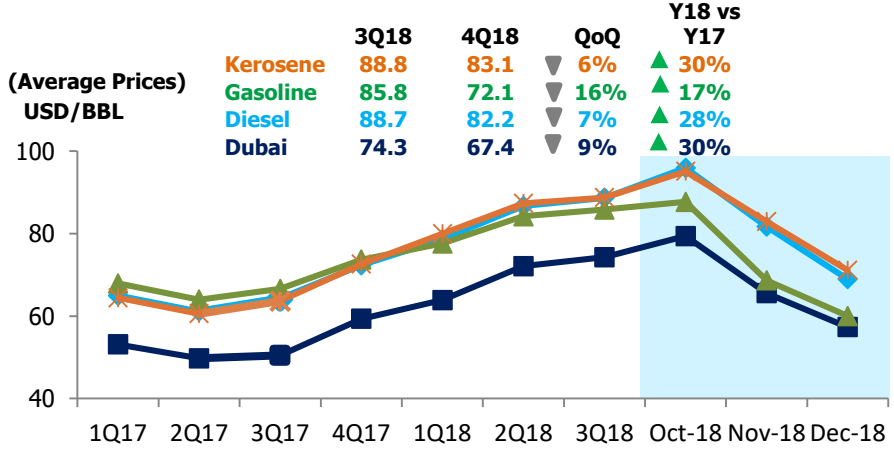
- 4Q18 vs 3Q18**
- GSP tumbled from feed cost hiked 14% & HDPE, PP prices declined
 - TM: slightly increase due to lower expenses
 - SM slightly dropped from higher gas cost
 - NGV loss less from lower operating expense
 - GAS EBITDA dropped 14% mainly from GSP
- 2018 vs 2017 results**
- GSP: improve from petchem prices (HPDE +14%, PP +10%) and increased vol. from lower shutdown
 - TM & SM: Stronger result from higher demand (SPP) and prices
 - LNG : EBTIDA increased from LNG Terminal 1 ph# 2 since Mar. 18
 - NGV higher loss from rising gas cost vs lower vol.
 - GAS EBITDA 12% increase mainly from GSP,SM, and TM

Oil BU & PTTOR

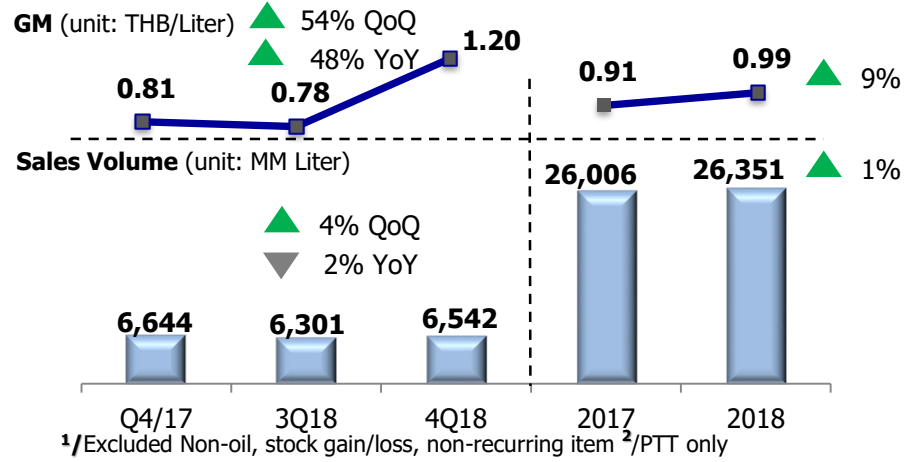
2018 vs 2017: Higher Vol. & Margin despite lower EBITDA from stock loss
4Q18 vs 3Q18: Downward price trend in 4Q18 caused lower EBITDA (stock loss)



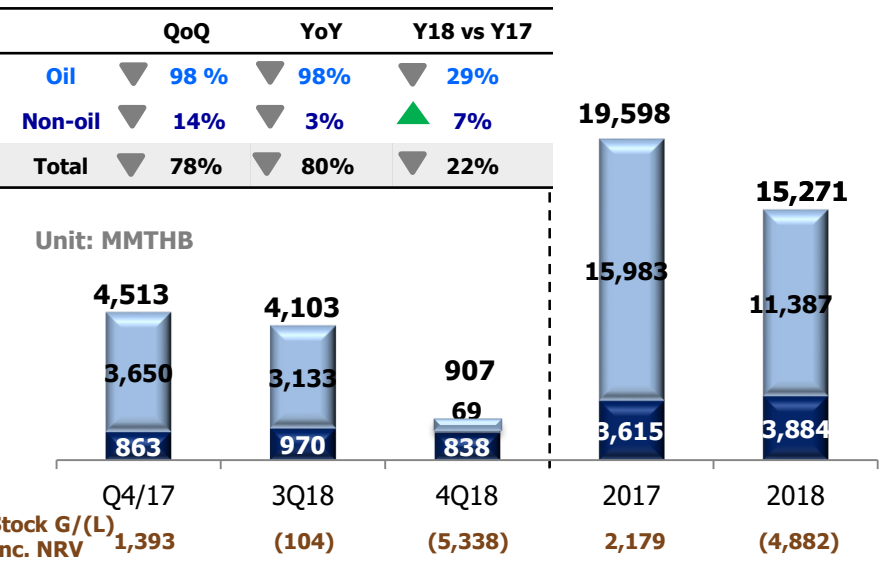
Petroleum Prices



Gross margin¹/Sales volume²



Oil - EBITDA



Key Highlights

4Q18 vs 3Q18

- **Margin:** 54% higher from better aviation & diesel Spread
- **Vol:** 4% higher mainly from station expansion
- **EBITDA:** Lower EBITDA from ~Bt 5.3 bn stock loss and non-oil from higher expenses, despite higher GM

2018 vs 2017

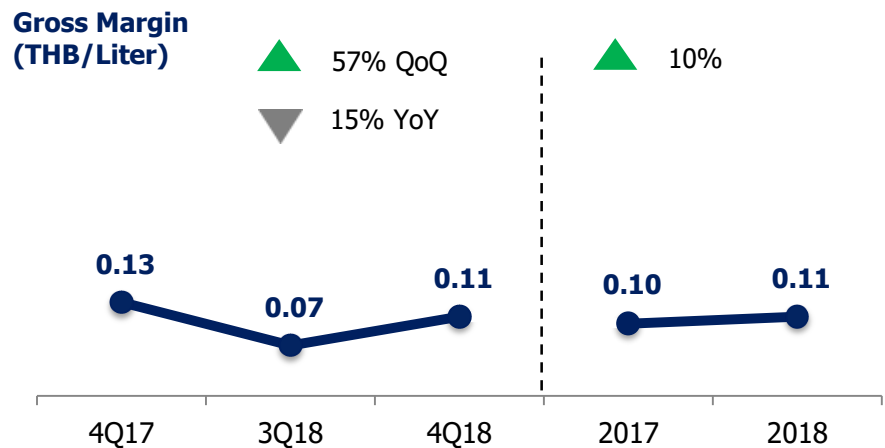
- **Margin:** 9% increase due to +17% rise of diesel spread
- **Vol:** 1% increase from station expansion and aviation after ICAO lifted red flag
- **EBITDA:** Lower EBITDA due to ~Bt 4.8 bn stock loss, non-oil EBITDA increase 7% from expansion

Trading BU:

2018 vs 2017: Improved performance from Domestic Condensate & rising oil price
4Q18 vs 3Q18: Higher GM from Domestic Condensate price increased

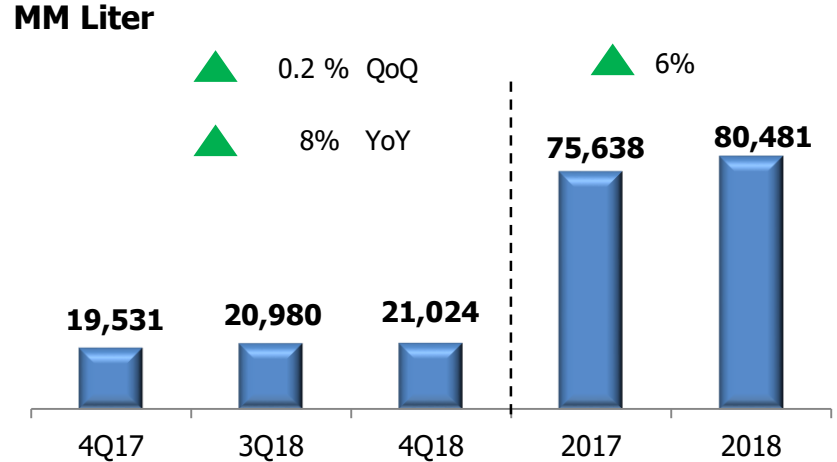


Gross Margin¹



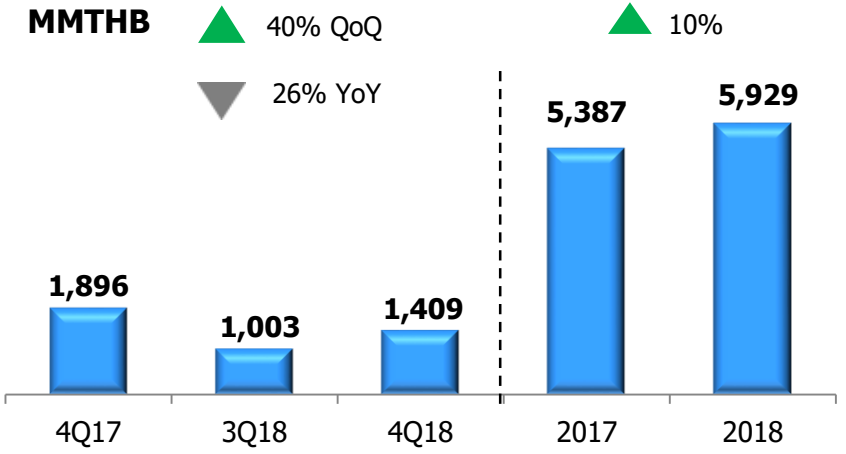
¹ PTT Trading BU + trading subsidiaries: FX Adjusted + derivatives

Sales Volume²



² PTT Trading BU + trading subsidiaries

Trading – EBITDA³



³ PTT Trading BU + trading subsidiaries: FX Adjusted + derivatives

Key Highlights

4Q18 vs 3Q18

- **Vol:** slightly increased mainly from Gasoil vol. to North Asia & EU
- **Gross margin & EBITDA** increased from higher domestic condensate price in 4Q18 and more discount in 3Q18

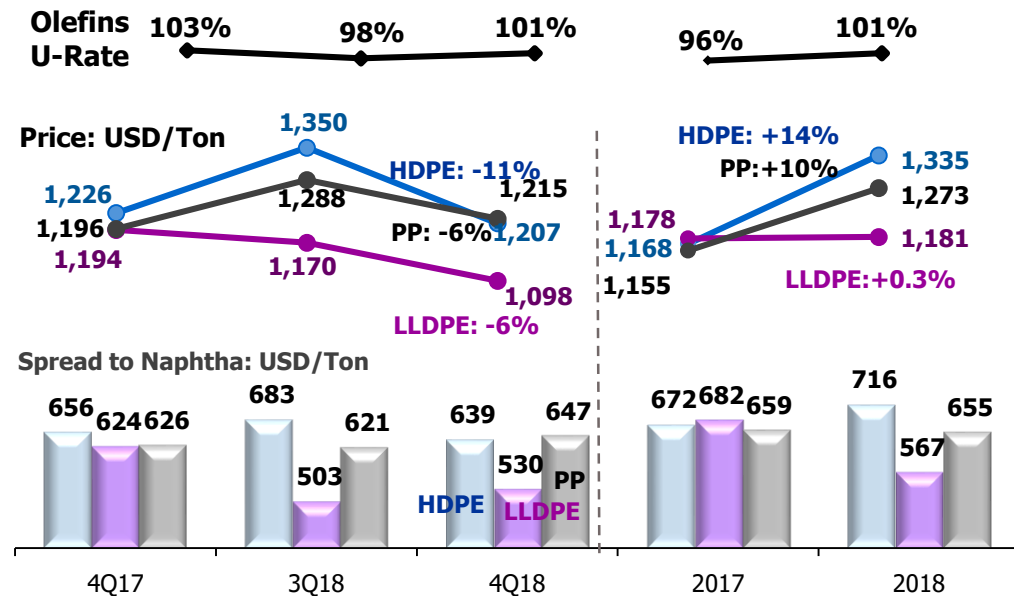
2018 vs 2017

- **Vol:** 6% increase due to no major TA of refineries in 2018 and higher out-out trading activities
- **Gross margin & EBITDA** increased from rising in oil price

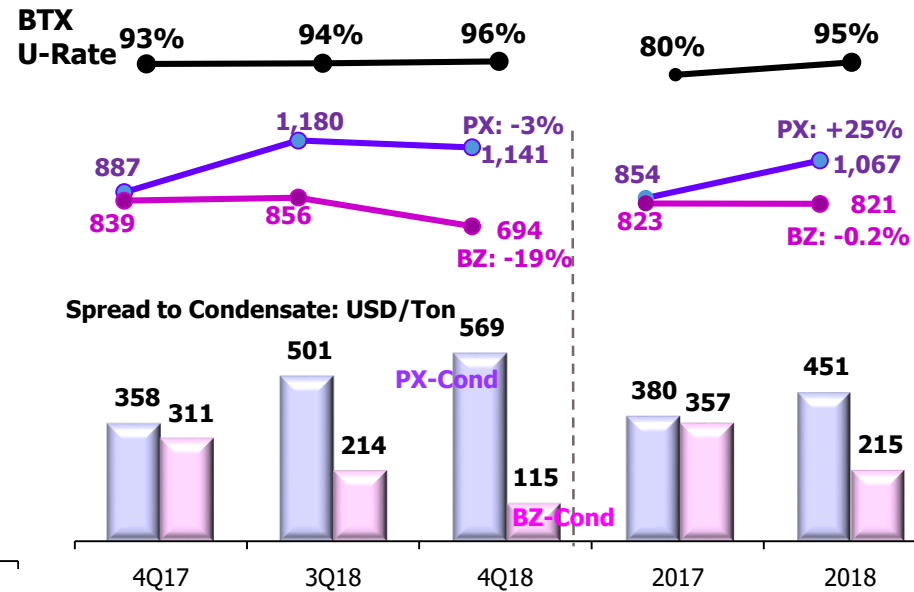
2018 vs 2017: PTTGC's better NI (incl. 6 companies from PTT) , TOP & IRPC hurt from stock loss
 4Q18 vs 3Q18: Oil price collapsed → all P&R recorded stock loss



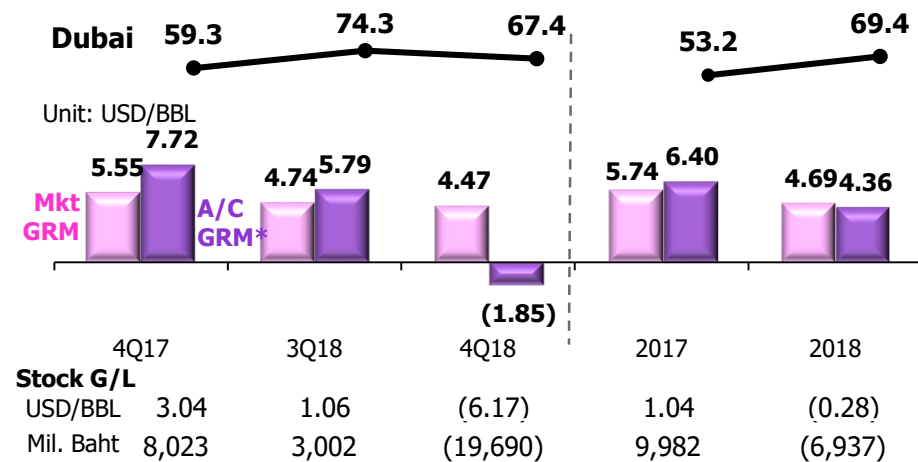
Olefins



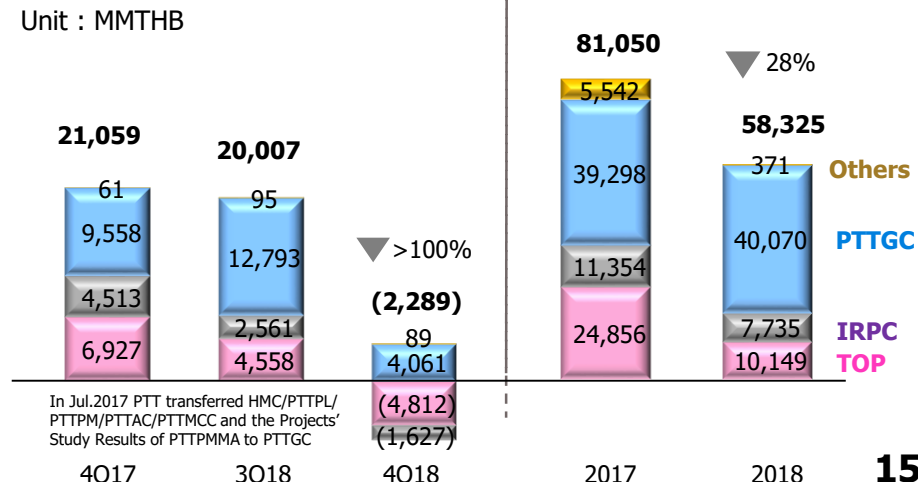
Aromatics



GRM



Net Income (100%)



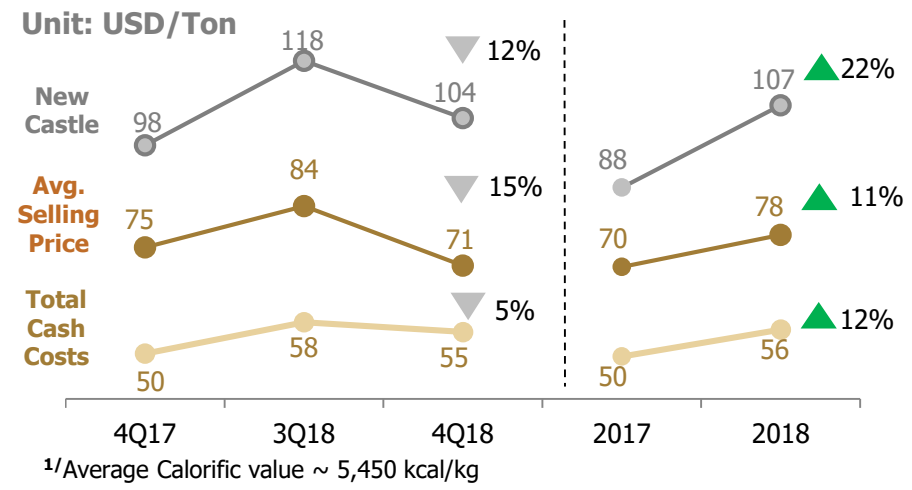
*A/C GRM and A/C GIM include effect from hedging gain/(loss)

Other Businesses : Coal - SAR

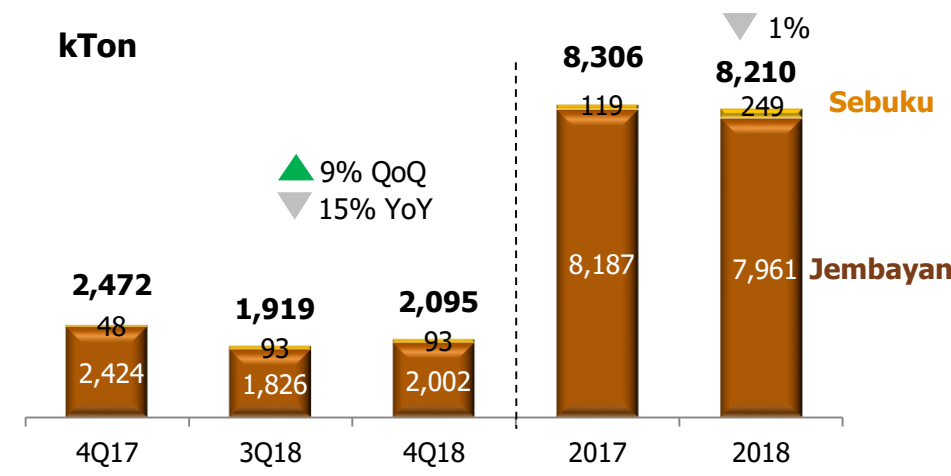
2018 vs 2017: Strong performance from improved coal price
4Q18vs 3Q18: Perf. improved from seasonal winter demand



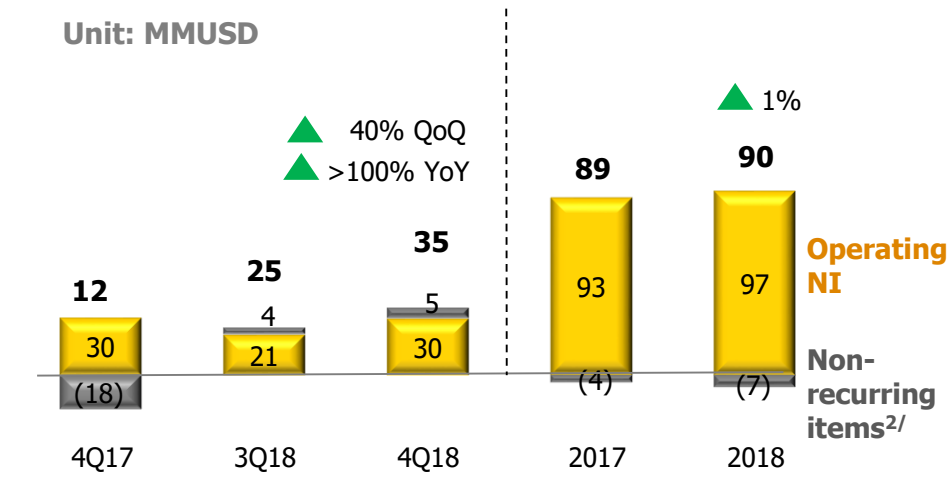
Avg. Selling Price^{1/} & Cash cost^{1/}



Sales Volume



Net income



Key Highlights

- 4Q18 vs 3Q18**
- **Vol:** rose 9% from seasonal winter demand
 - **Cash cost:** Lower from royalties following coal price
 - **Net Income:** improved 40% from vol., lower cash cost and hedging gain in 4Q18
- 2018 vs 2017**
- **Vol:** flat due to lower demand in 3Q18 (price hiked)
 - **Cash cost:** increased 12% vs ASP increased 11% following coal price
 - **Net Income:** 1% increase from higher ASP despite past tax penalties

^{2/}Non-recurring items include the settlement of past's tax lawsuit & impairment

Other Businesses : Power - GPSC

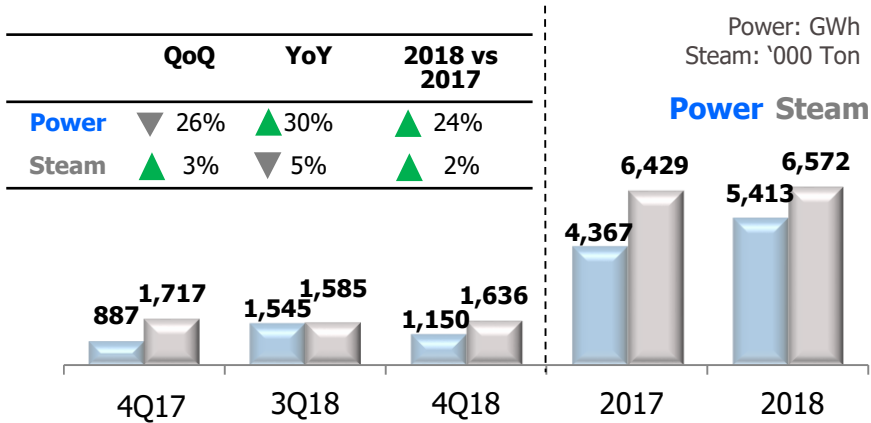
2018 vs 2017: Enhanced performance mainly from full operation of IRPC-CP

4Q18 vs 3Q18: Softened due to Sriracha major TA and higher gas cost



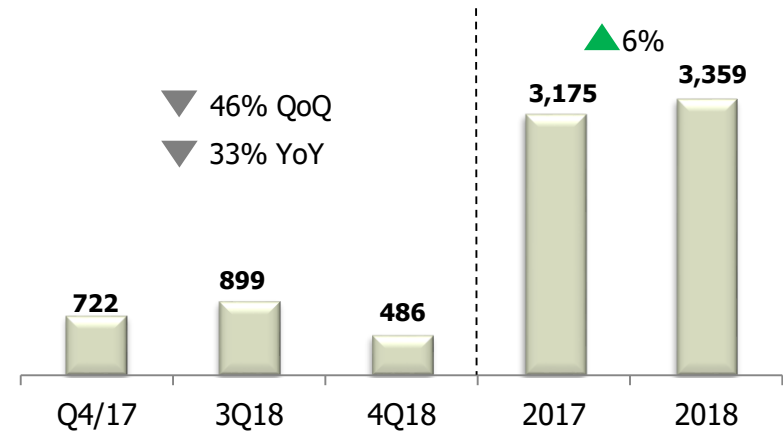
Sales Volume*

*sales vol. of Sriracha, Rayong, IRPC-CP, CHPP, and ISP1 power plants

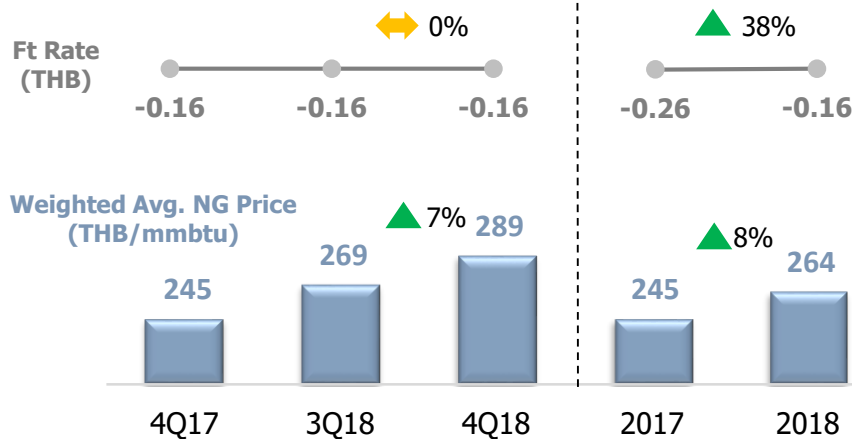


Net Income (100%)

MMTHB



Key Drivers: Ft Rate & Weighted Avg. NG



Key Highlights

4Q18 vs 3Q18

- **Vol:** 26% lower power sales vol. due to planned SD of Sriracha and IRPC-CP plants in 4Q18
- **Gross margin:** decreased due to Plant's SD & rise in gas cost vs no change in Ft rate
- **NI** dropped 46% due to lower GM and higher SGA

2018 vs 2017

- **Vol:** 24% higher from full year operations of IRPC-CP and ISP1
- **Gross margin:** increased from all power plants except for Sriracha due to major TA
- **NI** rose 6% from GM and increase in share of profit from Bangpa-in Cogeneration (BIC2), Nam Lik 1 Power (NL1PC)

FY18 Performance:

Soften performance from stock loss; despite healthy operating performance



MMTHB

Operating Net Income ▼ 1%
excl. Extra items & stock gain/(loss)

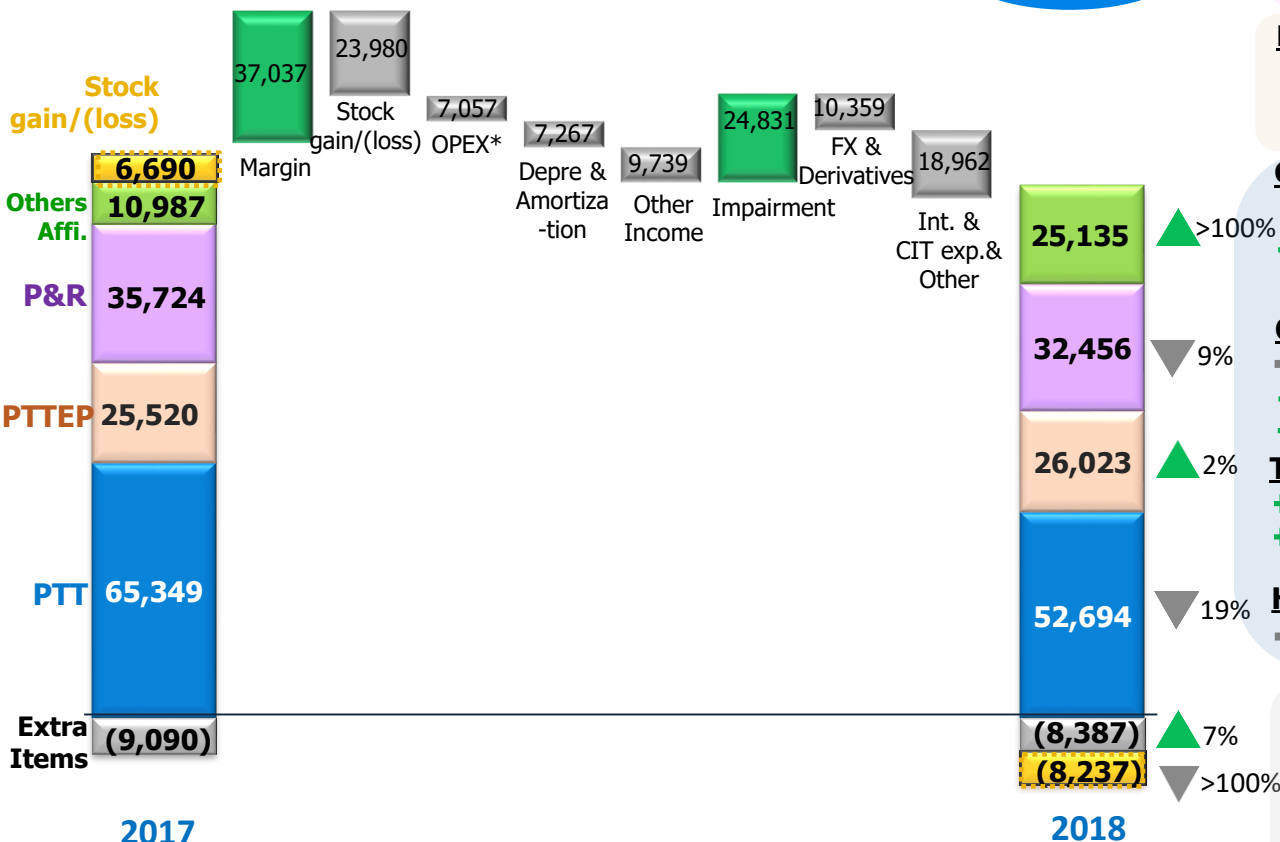
137,580

136,308

135,180

Net Income ▼ 11%

119,684



Others Affi ▲

- + 2H18 included PTTOR performance
- + PTT NGD from higher FO price
- + Higher revenue from LNG Terminal 1 Phase 2
- + Coal business from better coal price

Petrochem & Refining ▼

- Stock loss following crude price
- Weaken Mkt. GRM from higher crude premium and low gasoline spread
- Aromatics decreased from lower BZ spreads
- Olefins soften from weak product prices in 4Q18

PTTEP ▲

- + Improved ASP & Vol. from rising in oil price
- + No impairment loss

Gas ▲

- + GSP increased from vol. and price
- + S&M margin rose
- + TM increased from SPP vol.

Oil ▼

- Stock loss despite higher margin
- + Higher vol. from station expansion
- + Non-oil : Store expansion

Trading

- + Vol. increased from lower refineries' shutdown
- + Margin rose from domestic condensate price

HO

- Higher Corporate Income Tax

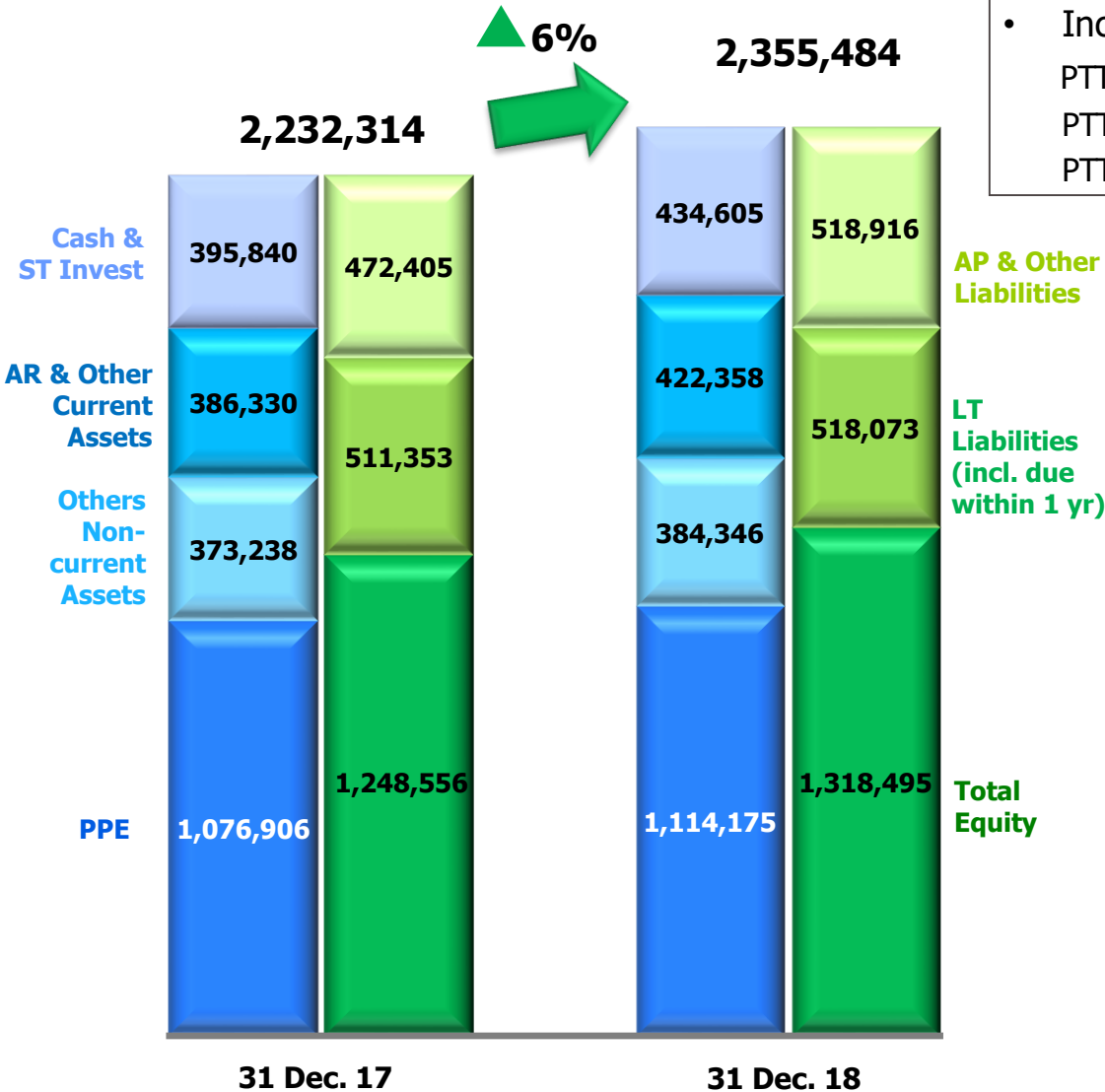
Extra Items ▲

- FY18**
- Tax effect from oil business transferred
- FY17:**
- Marina Oil Sand Impairment
 - + Dividends from mutual fund (EPIF)

* including petroleum exploration expenses and royalties

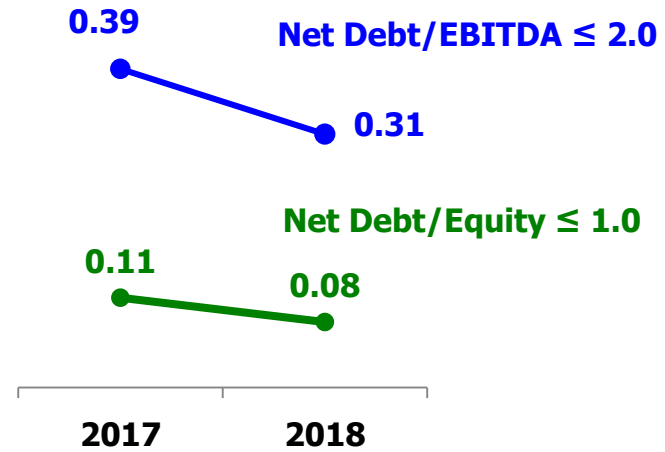
Statement of Financial Position

MMTHB



Assets/Liabilities increased :

- Increased in cash from operating CF
- Increased in PPE from construction in progress of PTTGC: Olefins reconfiguration, Propylene Oxide, Polyols PTT: 5th pipeline PTTEP: additional stakes in Bongkot



PTT Ratings at Sovereign Level

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

Statements of Consolidated Cash Flows : YE2018

Operating	2017	2018
	306,100	267,801
Net Income	135,180	119,684
Changes in assets & liabilities	(13,235)	(44,043)
Income Tax	(33,958)	(45,371)
Non-Cash Adjustment	218,113	237,531

Investing	2017	2018
	(180,525)	(34,148)
CAPEX (PP&E, Intangible asset)	(115,815)	(106,958)
Investment (Sub. & Affiliates & others)	(23,230)	(38,035)
Current investment	(52,838)	93,821
Dividend/Interest Received	17,517	13,173
Others	(6,159)	3,851

Free Cash flow	
125,575	233,653



Financing	2017	2018
	(162,498)	(111,468)
Repayment Loans	(114,914)	(132,802)
Interest paid	(30,893)	(28,148)
Dividend paid	(73,834)	(85,035)
Received from share issue	3,056	93
Received from loans/Bonds	21,013	143,627
Others	33,074	(9,203)

Adjustment	
(12,454)	3,810

Beginning Cash and Cash Equivalents	
215,566	166,189



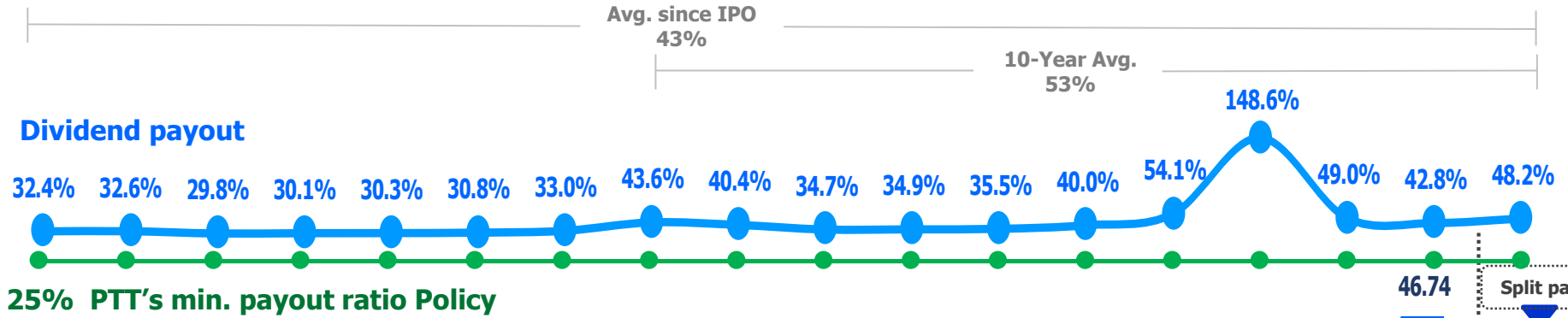
Cash In/(Out)	
(49,377)	125,995



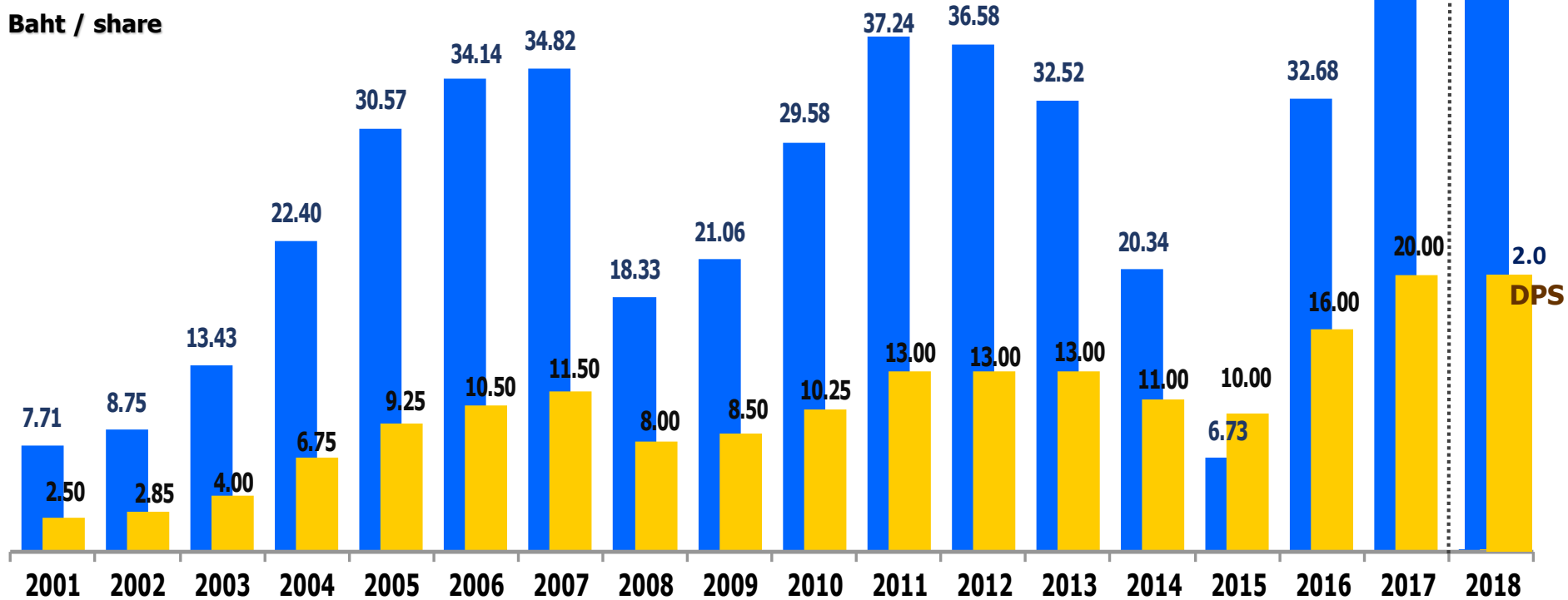
Ending Cash & Cash Equivalents	166,189	292,184
Ending cash incl. S/T investment	395,840	434,605

Dividend Policy & Historical Payments

Dividend payout Policy: Not less than 25% of net income



Baht / share



* Split par value from 10 to 1 Baht/share since 24 April 2018

Overview

1

2

**4Q18 & YE2018
Performance**

Project Update

3

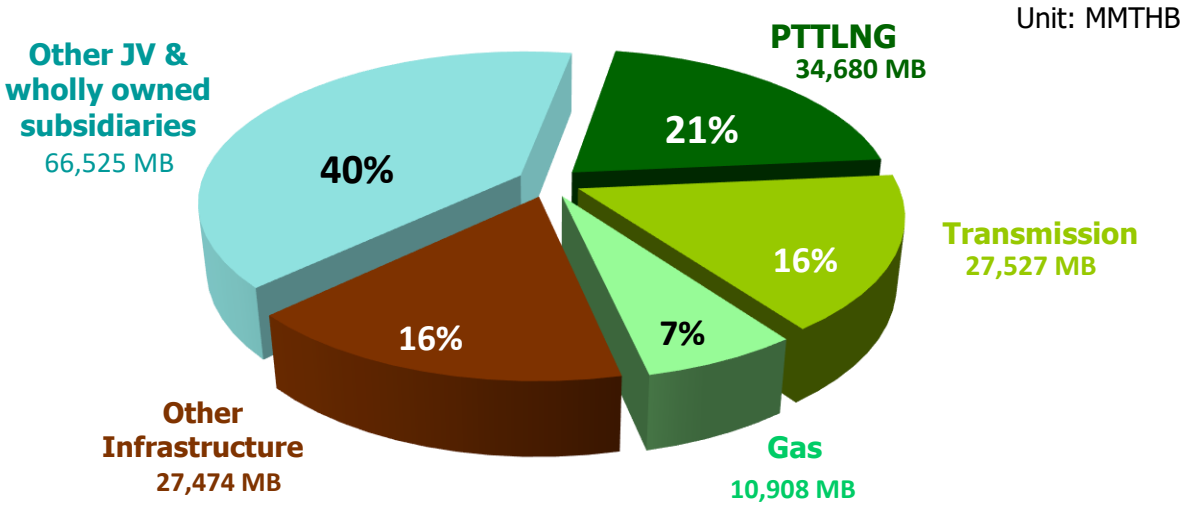
4

Outlook 2019

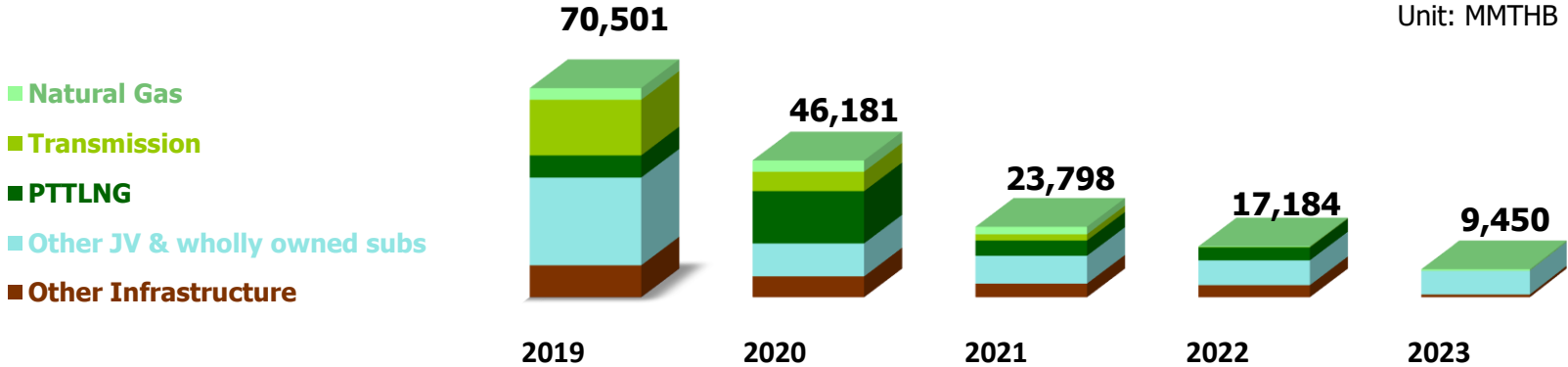
Committed CAPEX: PTT and wholly owned Subsidiaries

Total committed CAPEX during 2019-2023: ~Bt 167bn or USD 5bn

PTT 5-Years Committed CAPEX Plan totaling Baht 167,114 million



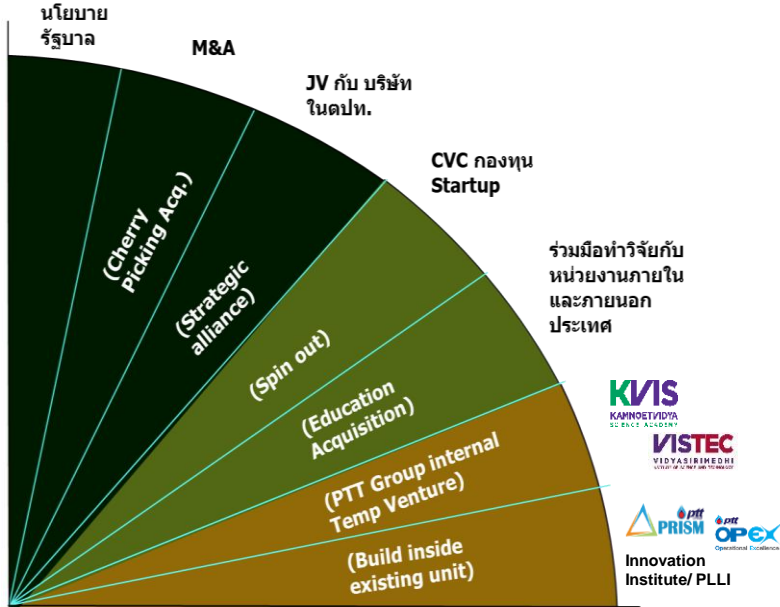
Note: 2019-2023 committed CAPEX excluding project under study (provisional CAPEX)



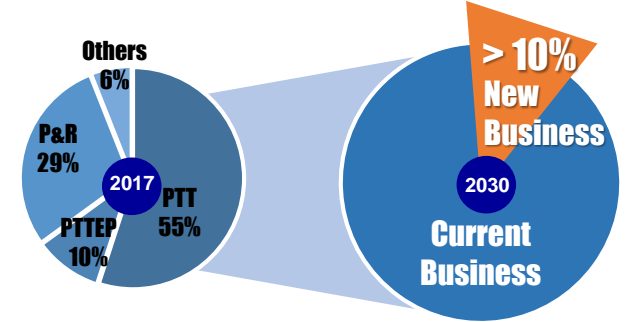
Note: 2019-2023 CAPEX budget be approved by the BOD on 21 Dec. 18

Finding PTT's New S-Curve along with the development **Technology and Innovation**

- Continuity
- Honesty
- Alignment
- New Innovation Solution**
- Good Governance
- Excellence Teamwork



Set up Goal:
Net Income from New Business >10% within 2030



Set Mergers and Acquisitions (M&A) Structure



Set up team from PTT group who have experience of M&A to complete PTT Group value chain as PTT strategic position

Build on PTT capability

- Electricity Value Chain
- IoT/ AI/ Robotics
- Life Science
- Smart Material
- Bio-Economy
- Smart City

Set Goal to reduce Greenhouse Gas Emission from PTT Group



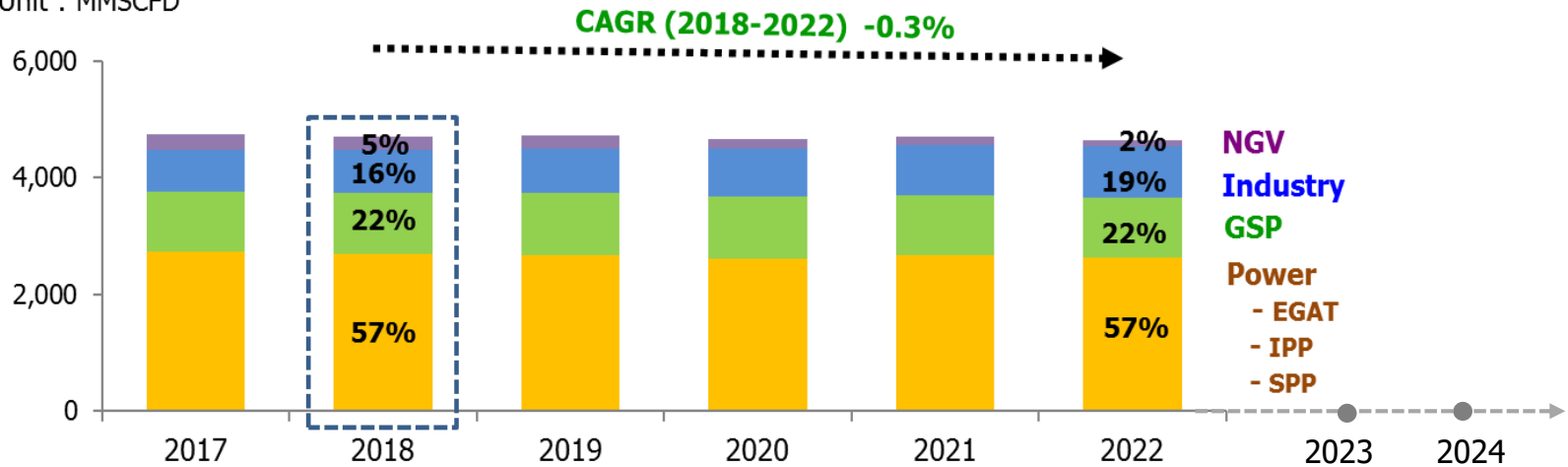
Gas Business Roadmap

Under new PDP, Gas Demand growth be maintained



Thailand Gas Demand Outlook

Unit : MMSCFD



New Supply		Bongkot		Bongkot Erawan		Mozambique
Additional capacity (mmscfd)		210		700	800	
Major Project : COD	4th onshore Midline Comp	Nakhon Ratchasima	Compressor Wangnoi	5th pipeline RA#6 Pipeline		
Cum. Pipeline Length (Km)		4,182		4,702		
GSP project: COD	GSP#6 Debottleneck	GSP#5 Debottleneck				
Cum. GSP Production (mmscfd)	2,860	2,870	2,870	2,870	2,870	2,870
LNG new project	LNG1 Phase#2		LNG1 Extension		LNG Terminal 2	
Cum. Capacity (MTA)	10.0	10.0	11.5	11.5	11.5	19.0

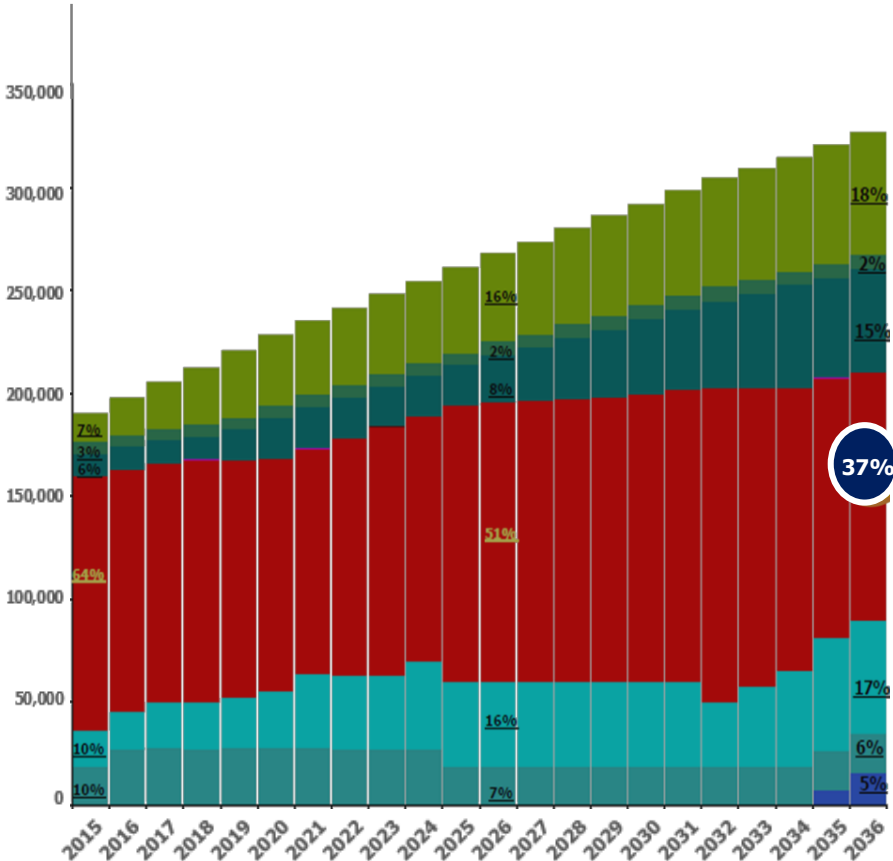
Newly Thailand Power Development Plan

Stronger demand of NG for power plants

PDP 2015*

Natural Gas growth upon Government fuel diversification policy for power generation

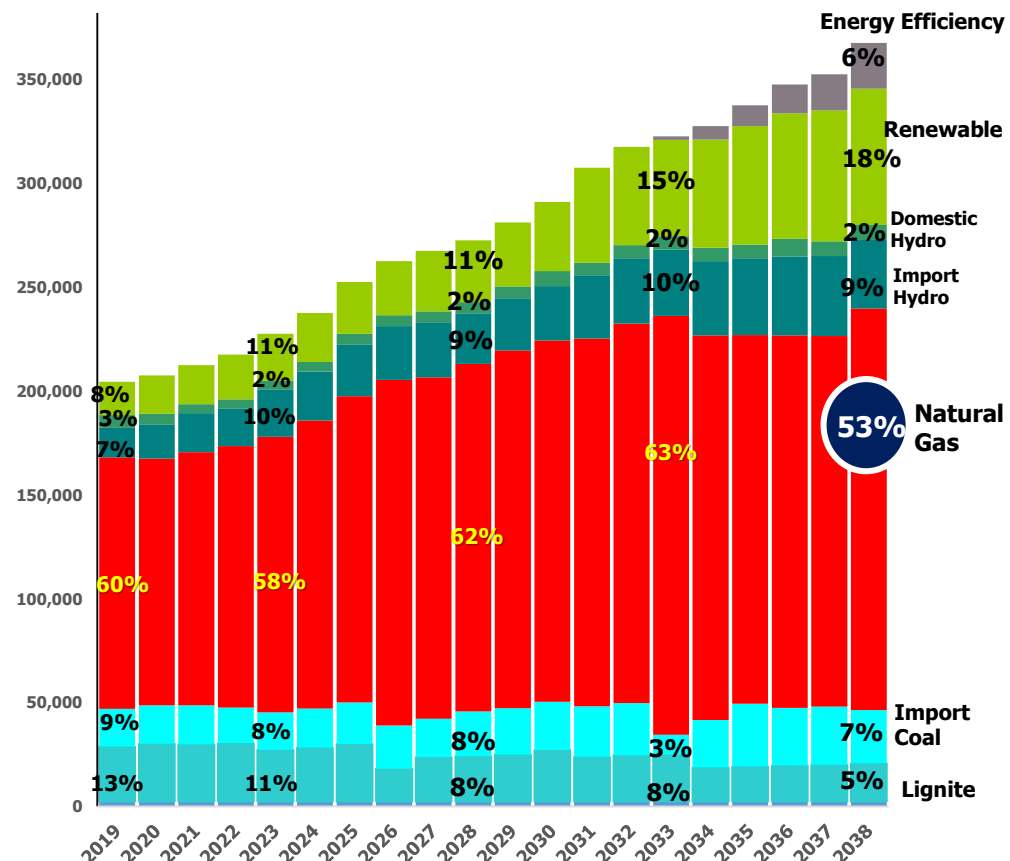
Unit: GWh



NEW (Draft**) – PDP

Natural Gas be the most important source of energy with highest portion among other fuels

Unit: GWh



*Source: Ministry of Energy

** Source : EPPO (Public Hearing presentation)

NG Growth upon Government fuel diversification policy for power generation

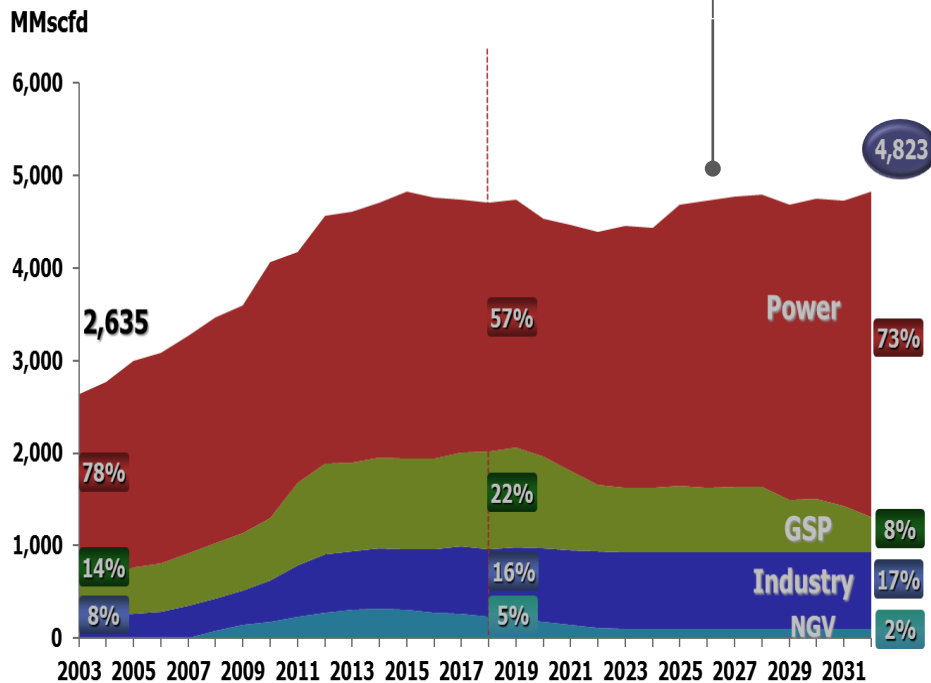
At the end of PDP, NG demand increase by 12%

Old*

Thailand Gas demand forecast (CAGR during 2018-2032)

: Total	~	0.1%
: Power	~	2%
: GSP	~	-7%
: Industry	~	1%
: NGV	~	-6%

Thailand Gas Demand Replace :
Coal ๓๕๓๑ (800 MW),
EE 30%



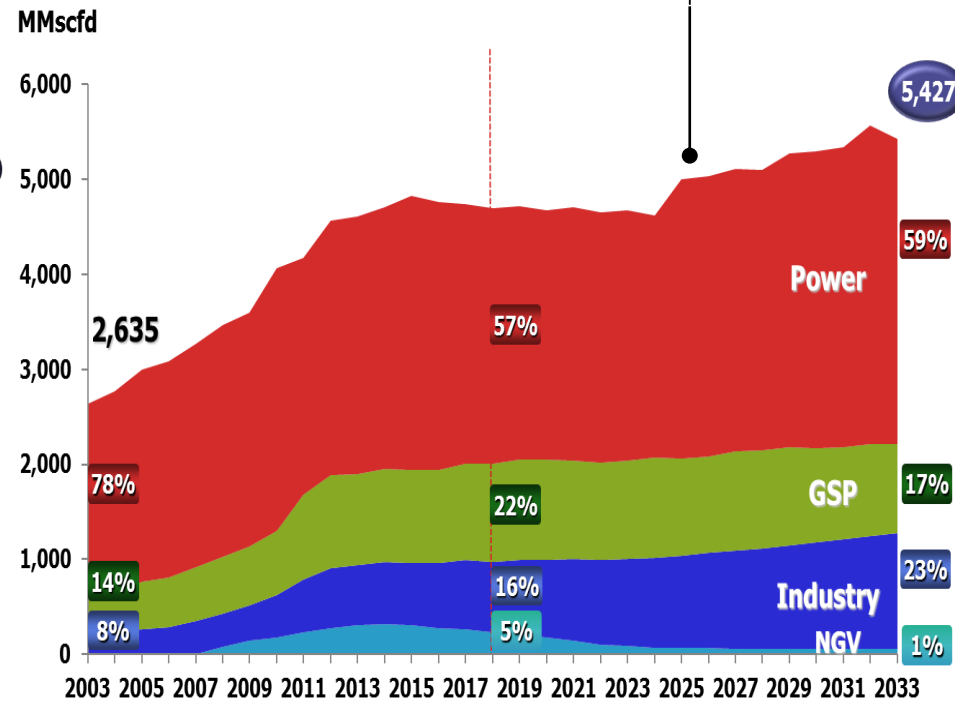
*Source: Ministry of Energy

NEW**

Thailand Gas demand forecast (CAGR during 2018-2033)

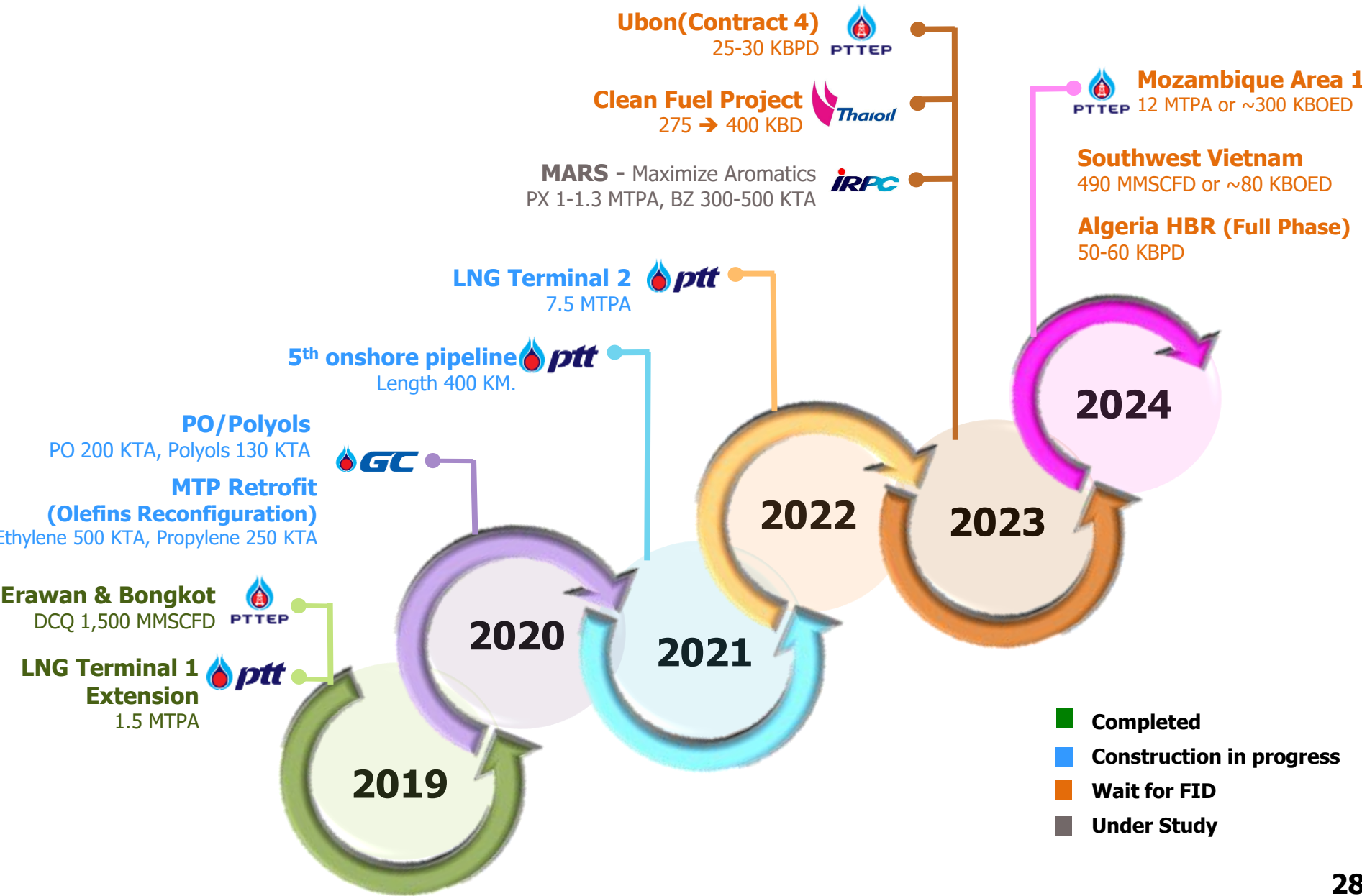
: Total	~	1%
: Power	~	1%
: GSP	~	-1%
: Industry	~	3%
: NGV	~	-8%

Thailand Gas Demand :
+ Surat PP (2x700 MW)

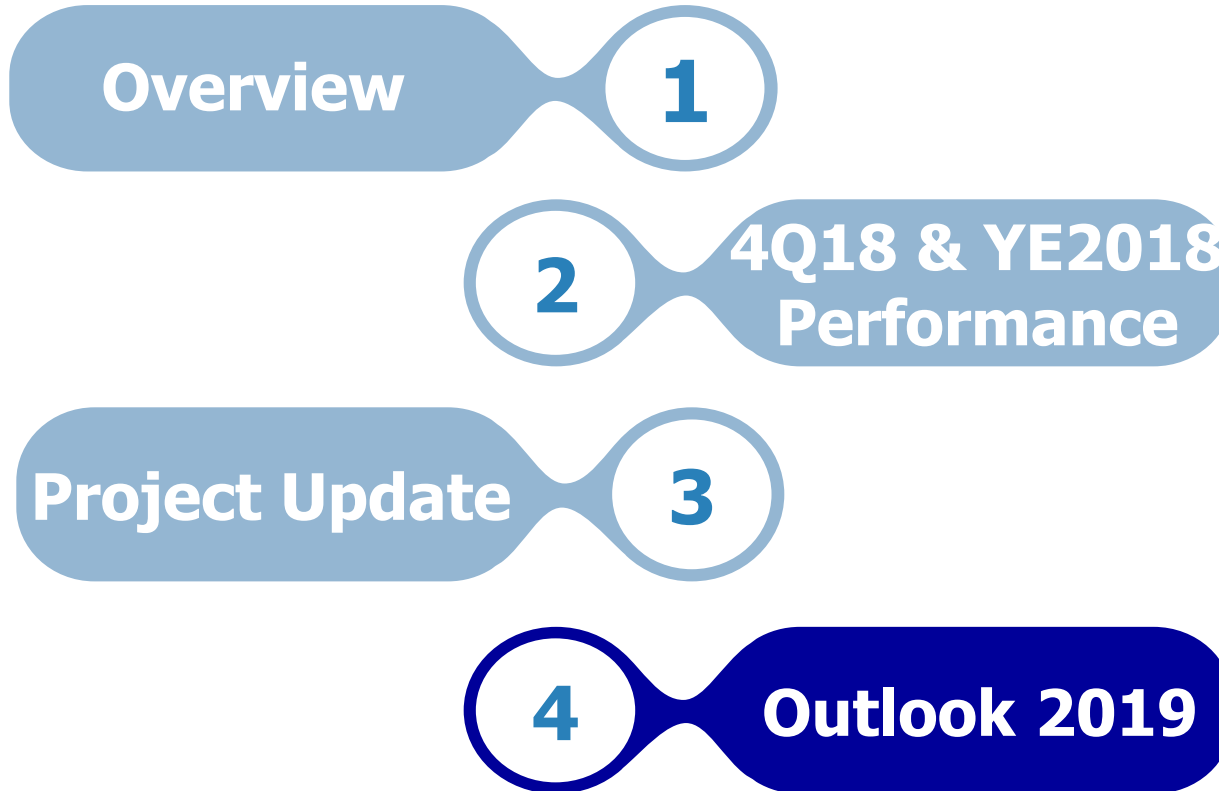


** Source : PTT Business plan 2019 approved by BOD on 21 Dec 2018

PTT Group : Upcoming Projects



- Completed
- Construction in progress
- Wait for FID
- Under Study



Global Economic Outlook:

Weakening Global Growth amid Growing Risks



2018 GDP = \$21,480 Bn
24% of World GDP
2018 GDP growth ~ 2.9%

US economy : Slowing but Solid Growth



+ **Strong labor market** support consumer spending



- Fading **tax-cut**
- **Fed's rate hike**
- Uncertainty over the outcome of trade talks



2018 GDP = \$14,170 Bn
15% of World GDP
2018 GDP growth = 6.6%

Chinese economy: Steady Slowdown in Growth



+ Proactive fiscal & prudent **monetary policies** support and stabilize growth
+ **Easing credit campaign** help counter trade dispute impact & support growth



- Impact to China from US **trade war**
- Ongoing reforms in China, specifically **tight pollution rules**



2018 GDP = \$14,030 Bn
16% of World GDP
2018 GDP growth ~ 1.8%

Eurozone economy: Healthy, If Moderate, Growth



+ **Improving labor market** & fiscal loosening support growth



- Less accommodative **monetary policy**
- **Uncertain political scene**



Global Economic Outlook:

Weakening Global Growth amid Growing Risks



2018 GDP = \$5,220 Bn
6% of World GDP
2018 GDP growth = 0.9%

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
- **Weather disruptions** and **earthquakes**
- Unfavorable demographics and a trend **decline in the labor force**



2018 GDP = \$2,960 Bn
3% of World GDP
2018 GDP growth ~ 7.3%

India economy : Further Pick-Up in Growth



- + **Lower oil prices** and **slower pace of monetary tightening**, as inflation pressures ease
- + **Strengthening investment and consumption**
- + Still-favorable **demographic dividend**



- **Uncertainty** stemming from the **general elections** due in May 2019
- Non-banking financial companies (NBFCs) **liquidity crisis**



2018 GDP = \$524 Bn
0.6% of World GDP
2018 GDP growth = 4.1%

Thai economy: Slower Growth amid Intensifying Risks



- + **Public investment** (growth driver) to crowd in private investment
- + **Rebound in Chinese tourist** arrivals support growth



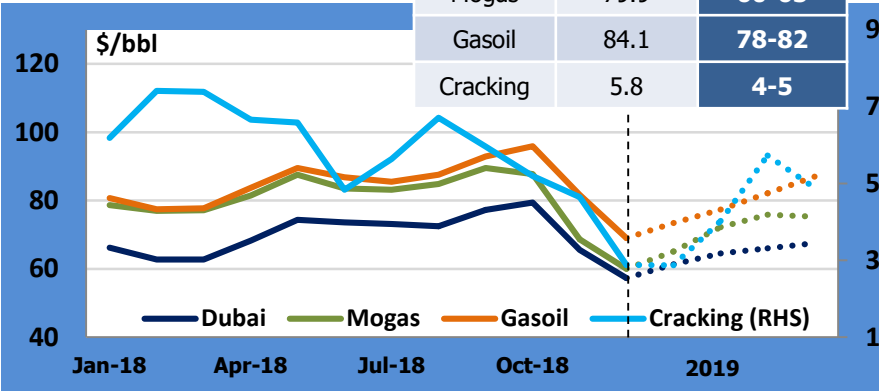
- **Weakening** merchandise **export growth**
- Potential de-stocking from a huge **increase in 2018 inventories**
- **High household debt** constrain domestic demand
- **Political** transition & uncertainties



2019 Petroleum and Gas Outlook

Petroleum

Price	2018A	2019E
Dubai	69.4	60-70
Mogas	79.9	60-65
Gasoil	84.1	78-82
Cracking	5.8	4-5



Dubai

- ▲ **OPEC+ cut supply** 1.2 MMBD to balance market
- ▲ **Political Risks**; Iran sanction, Venezuela, unrest in Libya
- ▼ **Surging Non-OPEC output**; especially U.S.
- ▼ **Lower demand** due to expectation on econ. slowdown

Mogas

- ▼ **High global inventory** due to high refinery intake YoY and more light crude availability
- ▼ **Soft demand** from higher oil prices last year
- ▲ **Improving demand** during CNY and beginning of driving season
- ▲ **Lower supply from shifting refinery yield** to maximize middle distillate ahead of IMO implementation in 2020

Gasoil

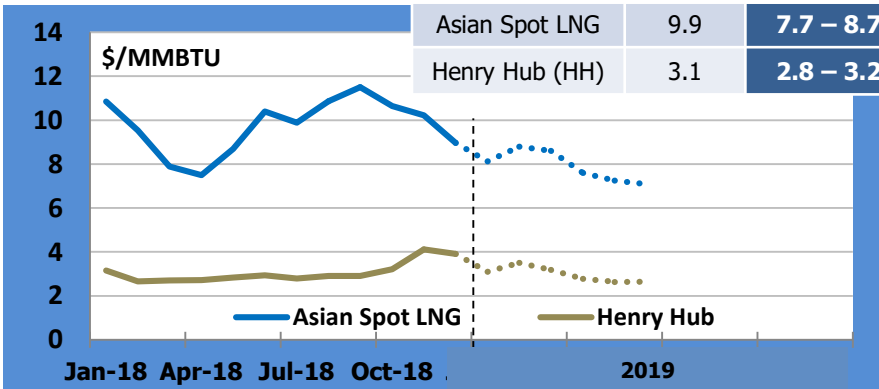
- ▲ **Low global inventory** vs last few years
- ▲ **Stock buildup** ahead of IMO in 2020
- ▼ **Higher China exports** after govt. granted more export quota
- ▼ **Soft demand** after winter ends

GRM:

- ▼ Asian refining margins to range between **\$4.0 – 6.0/bbl** in 2019
- ▼ **Lower gasoline & FO crack margins in 4Q19** before IMO in 2020

Gas/LNG

Price	2018A	2019E
Asian Spot LNG	9.9	7.7 – 8.7
Henry Hub (HH)	3.1	2.8 – 3.2

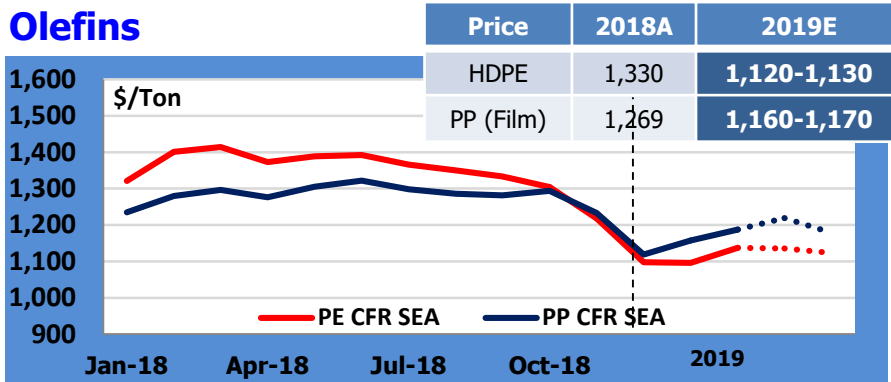


Gas/LNG

- ▼ **Asian Spot LNG: Strong supply growth** continued while demand growth slows.
- ↔ **Henry Hub: Cold temperature and low inventory levels** contributed to the increase in price as well as the **upcoming LNG projects** in the US.

2019 Petrochemical Outlook

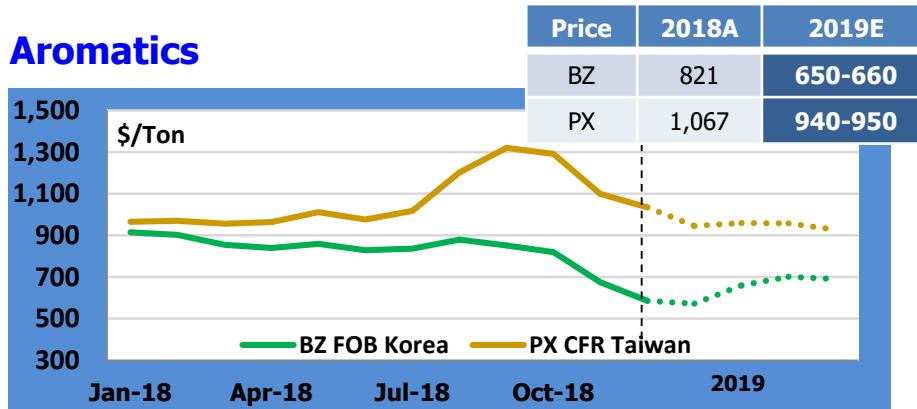
Olefins



Olefins

- ▼ **More U.S. PE cargoes to divert to SE. Asia** after start-up of new units, approx. 4 MTA, and ongoing US-China trade war
- ↔ **PP demand maintain** mostly from automotive and household appliances
- ▼ **RAPID Project** in Malaysia will **start-up PP unit** in 2H19, pressuring market

Aromatics

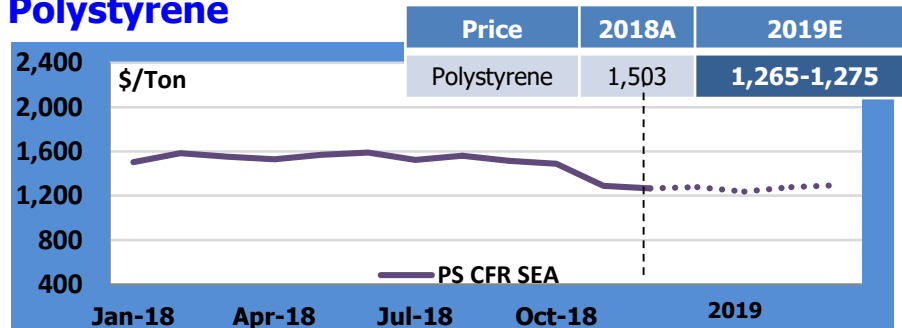


Aromatics

- ↔ **PX price to drop then to maintain at high level** due to affirmed downstream demand and seasonal plant TA in 1H19
- ▼ **China to lower PX import** due to start-up of Zhejiang Petrochemical, 4 MTA and Hengli Group, 4 MTA
- ▼ **Ample BZ supply**, high inventory in China while demand remains at low level

Note: Dampened Aromatics Prices during Q42018 due to supply from 1) Nghi Son (Vietnam) 2) Petro Rabigh (Saudi Arabia) 3) TPPI (Indonesia)

Polystyrene



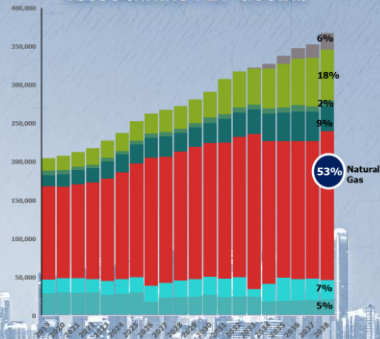
Polystyrene (PS)

- ▲ PS price in **1Q19** will be **supported by high demand** from electronics manufacturing in China to export End-product to U.S..
- ▼ **Limited growth in long term:** Packaging PS demand continues facing **competition from alternate materials** and will face **risks of bans** and negative consumer perception

Guidance 2019



แผนพัฒนากำลังผลิตไฟฟ้า (Power Development Plan) ของประเทศไทย PDP ฉบับใหม่



GAS trend
1H2019 gas price **uptrend**

2H2019 gas price **downtrend**



Refinery major TA 54 days
Aromatics I major TA 53 days
Olefins HDPE plant TA 20 days



Refinery major TA 30 days
Aromatics shutdown TA 45 days



Catalyst Cooler TA 28 Days

Gas Separation Plant
Ethane plant shutdown



Optimize asset &
Improve public sector price



Additional 1.5 MTA



Continue to grow thru Out-Out activities



Thank you



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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) : YE2018

Operating	2017	2018
	76,099	62,872
Net Income	104,474	165,274
Changes in assets & liabilities	(15,705)	(23,453)
Income Tax	(9,518)	(12,330)
Non-Cash Adjustment	(3,152)	(66,619)

Investing	2017	2018
	11,465	80,004
CAPEX (PP&E, Intangible asset)	(23,261)	101,343
Investment (Sub.& Affiliates & Others)	(30,957)	(118,298)
Current investment	(8,890)	49,530
Dividend/Interest Received	42,258	39,146
Others	32,315	8,283

Free Cash Flow	
87,564	142,876



Financing	(111,550)	(95,730)
Repayment Loans	(48,831)	(29,998)
Interest paid	(12,464)	(10,188)
Dividend paid	(51,413)	(57,108)
Received from loans/Bonds	1,158	1,564

Adjustment	
30	366

Beginning Cash and Cash Equivalents	
62,648	38,692



Cash In/(Out)	
(23,956)	47,512



Ending Cash & Cash Equivalents	38,692	86,204
Ending cash incl. S/T investment	106,748	108,176

PTT Group Performance : 2018 vs 2017

Unit : MMTHB

	Performance 100%			% PTT holding	Equity Method % PTT		
	Y2017	Y2018	YoY		Y2017	2018	YoY
PTT Net operating Income	74,552	59,160	-21%		74,552	59,160	-21%
E&P - PTTEP	20,579	36,206	76%	65.29%	13,438	23,646	76%
Petrochemical	44,840	40,440	-10%		22,156	20,174	-9%
- PTTGC ^{1/}	39,298	40,069	2%	48.18%	19,459	19,802	2%
' - PTTTANK/HMC/PTTPL/PTTPM/PTTAC/PTTMCC/PMMA ^{1/}	5,542	371 ^{3/}	-93%		2,697	372 ^{3/}	-86%
Refining	36,210	17,884	-51%		17,103	8,967	-48%
- TOP	24,856	10,149	-59%	48.03%	12,276	5,330	-57%
- IRPC	11,354	7,735	-32%	48.05%	4,827	3,637	-25%
Others Business	19,325	26,548	37%		8,280	13,933	68%
Inter - PTTER/PTTGE/PTTGM	3,978	8,284	>100%	100%	(962)	1,852	>100%
Gas - PTTLNG/PTTNGD/PTTGL/TTM(T)/TTM(M)	7,158	8,409	17%		5,628	6,788	21%
Utilities - GPSC/TP/DCAP/PTTES/PTTDIGITAL/ENCO	5,334	5,375	1%		1,371	1,367	0%
Oil & Oth. - PTTT/PTTOR/THAPPLINE/Others^{2/}	2,855	4,480	57%		2,243	3,926	>100%
Shared of Net Income from Affiliates	120,954	121,078	0%		60,977	66,720	9%
Tax adjustment for gain on disposal of investment and asset	(348)	(6,196)	>-100%		(349)	(6,196)	>-100%
PTT Conso. Net Income	195,505	174,042	-11%		135,180	119,684	-11%

1/ On Jul 3, 2017 PTT transferred all stake in HMC/PTTPL/PTTPM/PTTAC/PTTMCC and the Projects' Study Results of PTTMMA to PTTGC

2/ Including BSA, PTT TCC and RTC

3/ PTT Tank and others

PTT Group Performance : 4Q2018 (QoQ)



Unit : MMTHB

	Performance 100%			% PTT holding	Equity Method % PTT		
	Q3/18	Q4/18	QoQ		Q3/18	Q4/18	QoQ
PTT Net operating Income	13,534	11,008	-19%		13,534	11,008	-19%
E&P - PTTEP	10,401	8,834	-15%	65.29%	6,792	5,775	-15%
Petrochemical	12,888	4,150	-68%		6,259	2,002	-68%
- PTTGC ^{1/}	12,793	4,061	-68%	48.18%	6,164	1,913	-69%
- PTTTANK/HMC/PTTPL/PTTPM/PTTAC/PTTMCC/PMMA ^{1/}	95	89	-6%		95	89	-6%
Refining	7,119	(6,439)	>-100%		3,518	(2,782)	>-100%
- TOP	4,558	(4,812)	>-100%	48.03%	2,078	(1,885)	>-100%
- IRPC	2,561	(1,627)	>-100%	48.05%	1,440	(897)	>-100%
Others Business	7,633	3,747	-51%		5,896	2,661	-55%
Inter - PTTER/PTTGE/PTTGM	872	1,026	18%	100%	796	999	26%
Gas - PTTLNG/PTTNGD/PTTGL/TTM(T)/TTM(M)	2,340	2,079	-11%		1,764	1,733	-2%
Utilities - GPSC/TP/DCAP/PTTES/PTTDIGITAL/ENCO	1,457	974	-33%		372	261	-30%
Oil & Oth. - PTTT/PTTOR/THAPPLINE/Others^{2/}	2,964	(332)	>-100%		2,964	(332)	>-100%
Shared of Net Income from Affiliates	38,041	10,292	-73%		22,465	7,656	-66%
Tax adjustment for gain on disposal of investment and asset	(5,670)	874	>100%		(5,670)	874	>100%
PTT Conso. Net Income	45,905	22,174	-52%		30,329	19,538	-36%

1/ On Jul 3, 2017 PTT transferred all stake in HMC/PTTPL/PTTPM/PTTAC/PTTMCC and the Projects' Study Results of PTTMMA to PTTGC

2/ 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

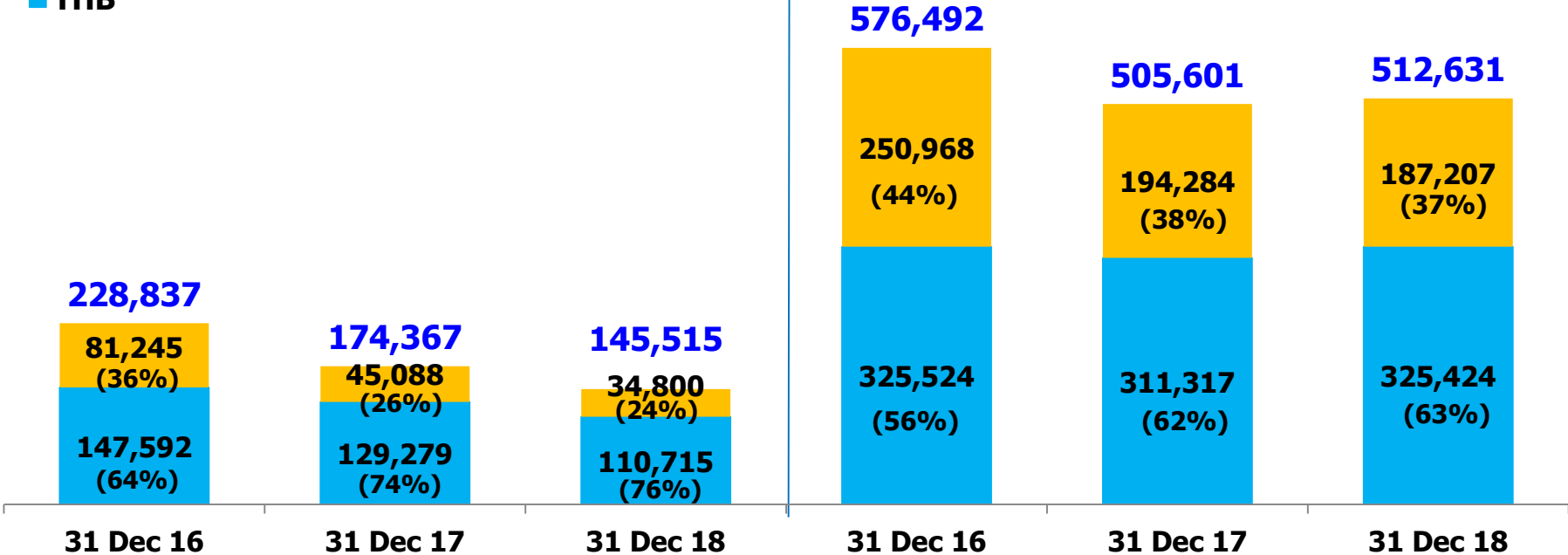
: Cost of debts ~ 5.37%
 : % fixed-rate ~ 73.70%
 : Avg. debt life ~ 9.46 years

Consolidated

: Cost of debts ~ 4.52%
 : % fixed-rate ~ 67.11%
 : Avg. debt life ~ 8.41 years

■ USD&Others

■ THB



Note : 1. Data as of 31 Dec 18 (THB/USD = 32.6148 THB/JPY = 0.296963 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 31 Dec 2018

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%

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	48.18%
PTT Tank Terminal Co., Ltd.	PTTTANK	100.00%
Refining Subsidiaries		Consolidate
Thai Oil Plc.*	TOP	48.03%
IRPC Plc.*	IRPC	48.05%

International Trading Business Group

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

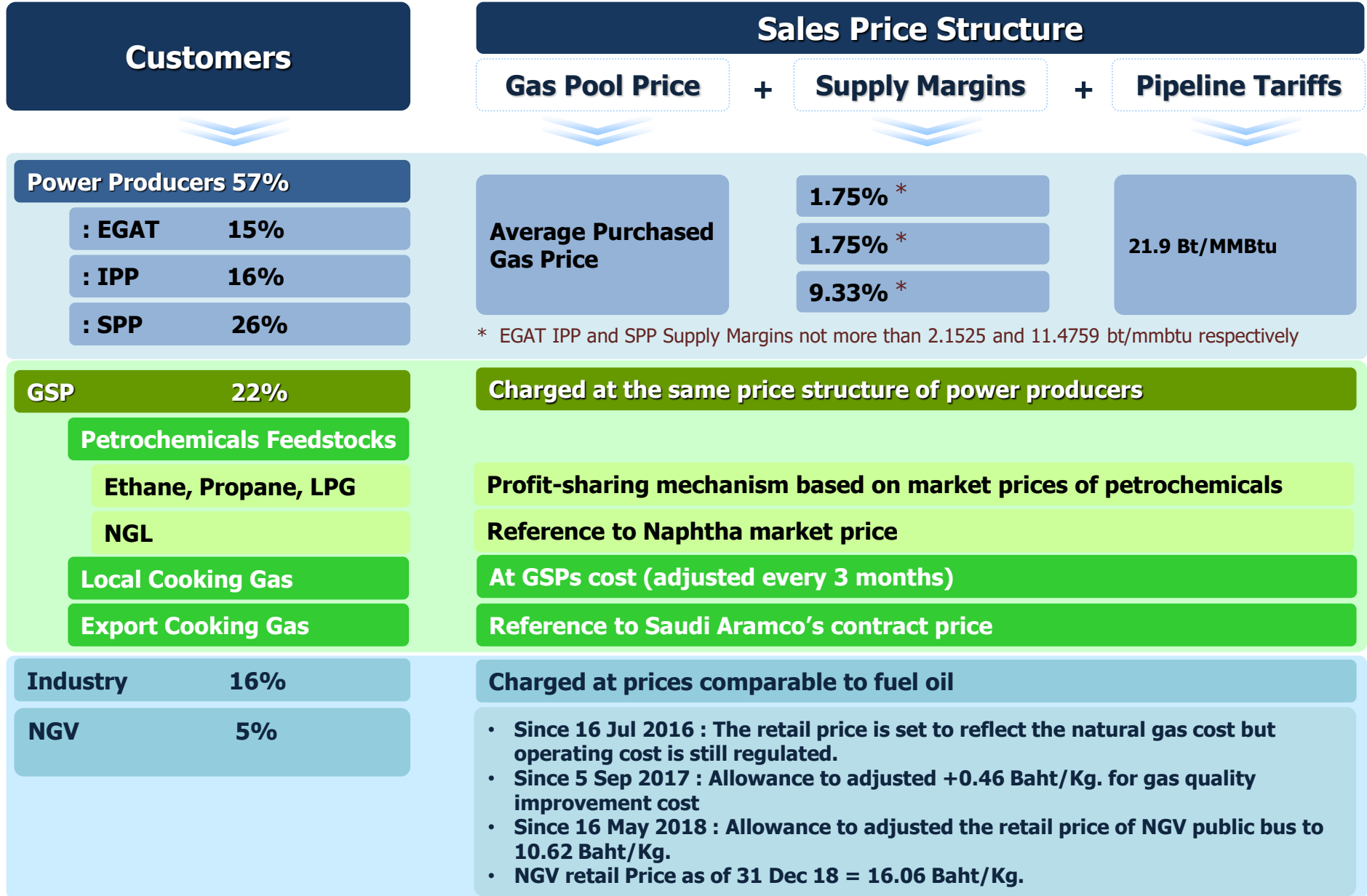
Others

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

Natural Gas Price Structure : Jan-Dec 2018

Gas prices are mostly agreed under long term contracts and volatility pass-through to ensure stable returns



• Contract periods are ~ 25-30 years or until depletion of gas fields or the expiration of concessions

Gas Business Generates Stable Returns

Overview

Gas transmission pipeline capacity

- ✔ **Sole owner and operator of entire gas transmission pipelines in Thailand (~ 4,000 km), a regulated business**
 - IRROE ranges between 12.5% - 18% for transmission pipeline investment
- ✔ **Supply & marketing of natural gas provides fixed margin with long-term contracts of 25-30 years**
- ✔ **6 Gas Separation Plants; Total production 6.7 MTA; are on petrochemical market price-linked profit sharing basis**

