



**Analyst Meeting
4Q & YE 2021
1 March 2022**



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Key Activities in 4Q2021



Future Energy

- Arun Plus JV (51%) with GPSC to establish **"Nuovo Plus"** to support **battery business value chain**
- **JV (60%) with FOXCONN** to establish **"Horizon Plus"** to operate **the electric vehicle manufacturing business**
- Establishment of **ReAcc** to be the **trading platform for clean energy** and climate neutrality



Beyond

- **JV (30%) with Gulf & Chec Oversea** for **operating Laem Chabang port phase III**
- **Increase stake to 37% in Lotus Pharmaceutical** and investment in Adalvo (60%)



- A cap of **NGV price at 15.59 baht/kg** from 15 Nov 21 for **private and other vehicles** and **13.62 baht/kg for taxi** from 1 Nov 21 until 15 Mar 22
- **Divestment of East Mediterranean Gas S.A.E** (operate gas pipeline business in Egypt) with the total amount of approximately USD 50 mn



Acquisition of 25% stakes in the **Concession Area C exploration block** in UAE



Established 3 subsidiaries to support future investment in **renewable energy**

- **FutureTech Energy Venture & FutureTech Solar (Thailand) : Solar thermal**
- **Delta Gas Transportation : Gas to power**

ORZON

Establishment of **ORZON VENTURES** to invest in **high-potential startup** companies in Thailand and Southeast Asia



Investment 25% in **KAMU & KOUEN Global Cuisine** to strengthen OR's **food and beverage business**

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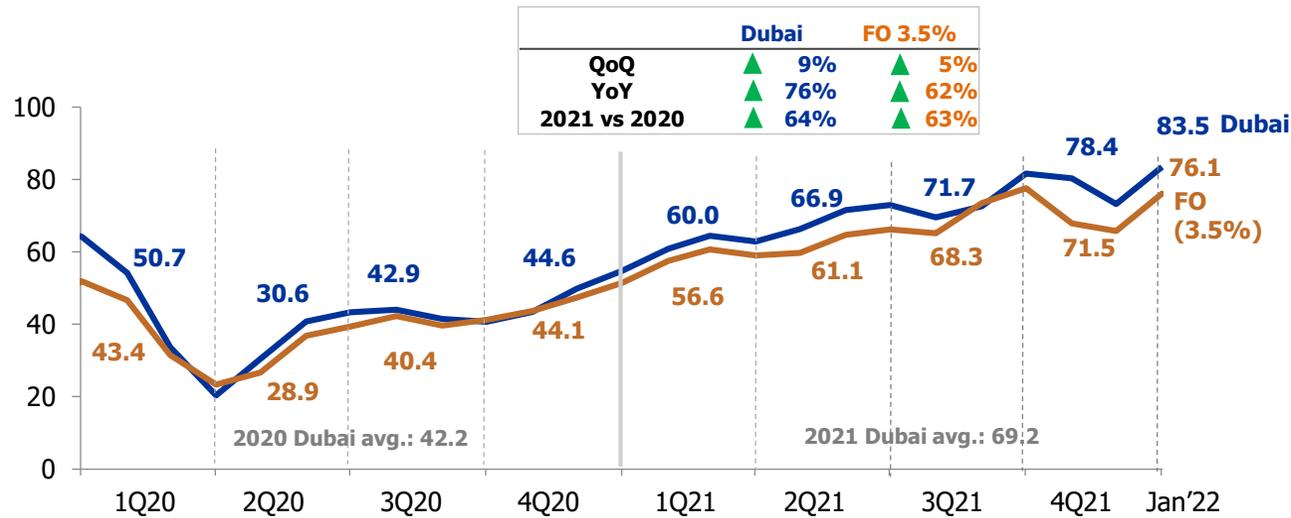
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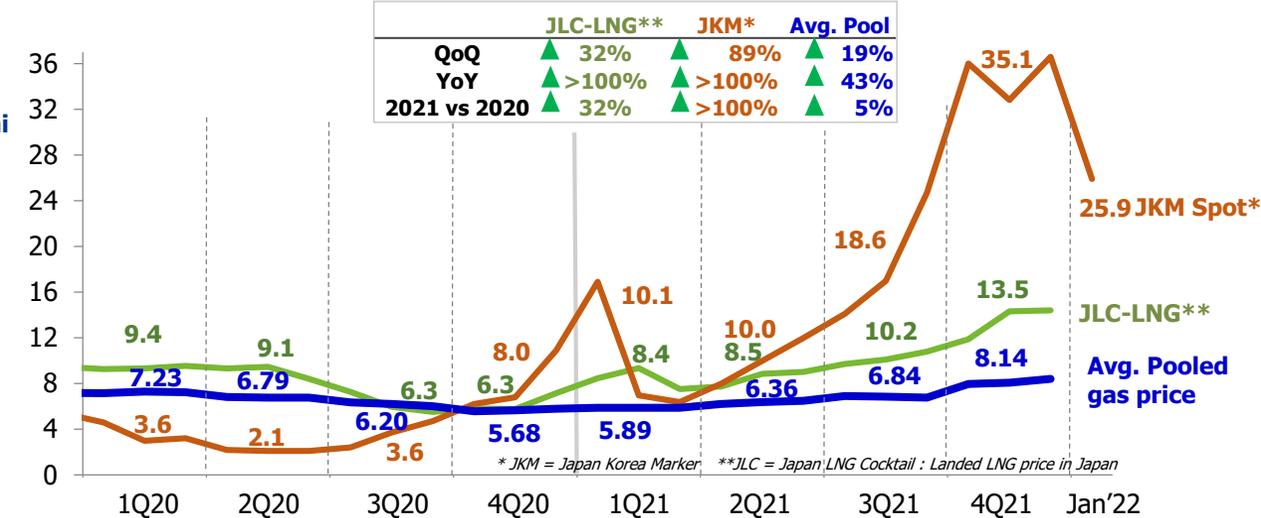
Key Business Drivers:

Increased in most of petroleum and petrochemical prices due to demand recovery resulted from easing of lockdown and vaccines rollout

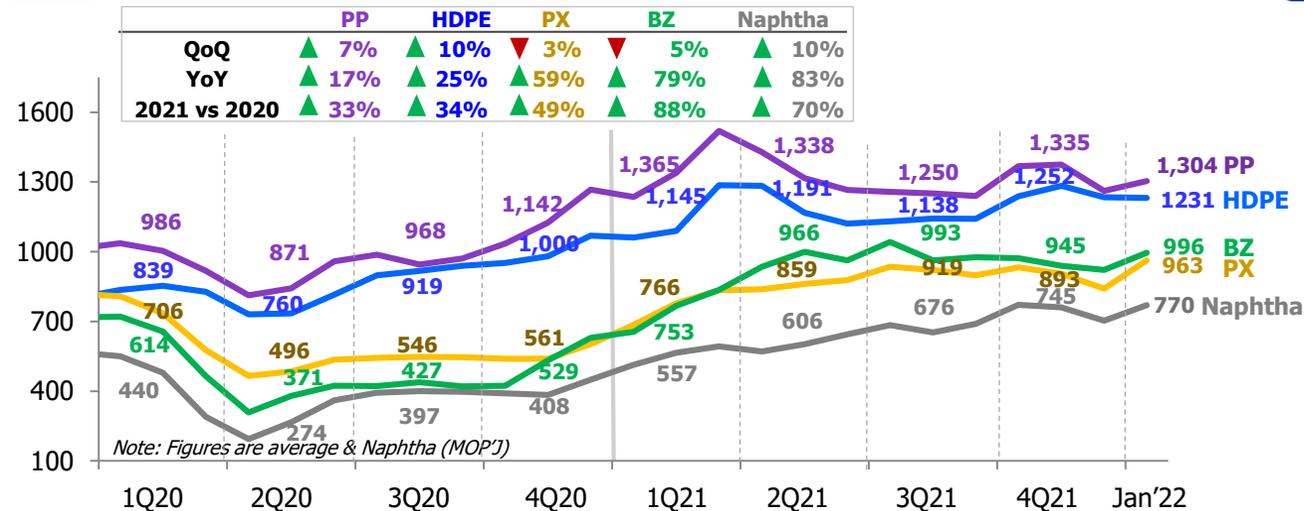
AVG. Petroleum Prices (\$/bbl)



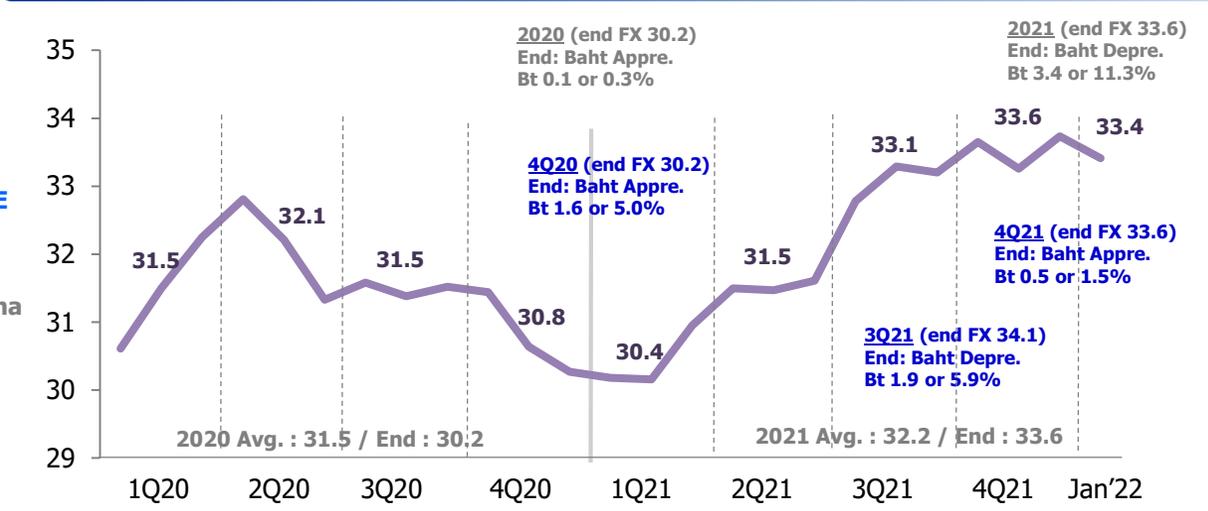
AVG. NG Prices (\$/MMBTU)



Petrochemical Prices (Avg. \$/ton)



AVG. FX (THB/USD)



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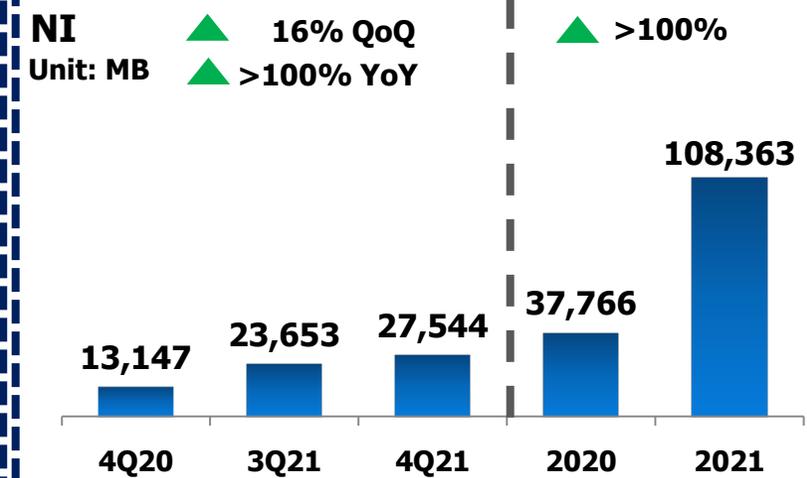
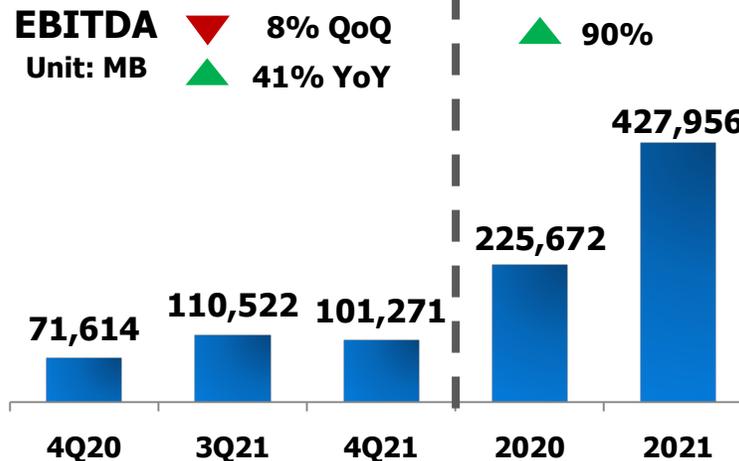
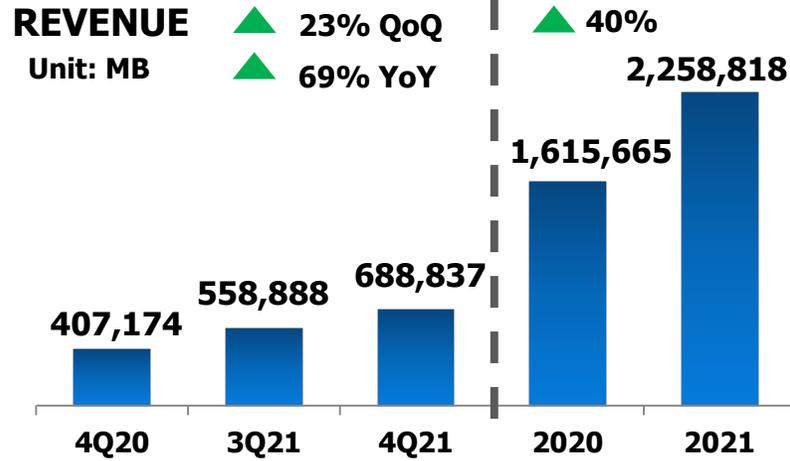
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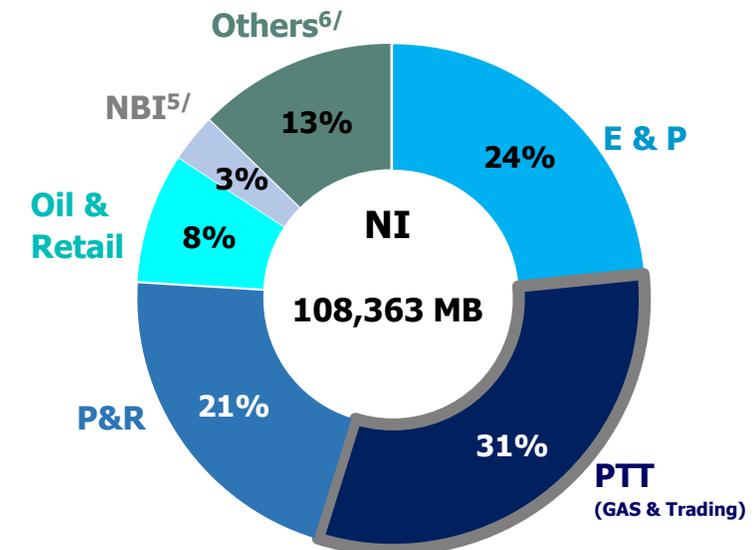
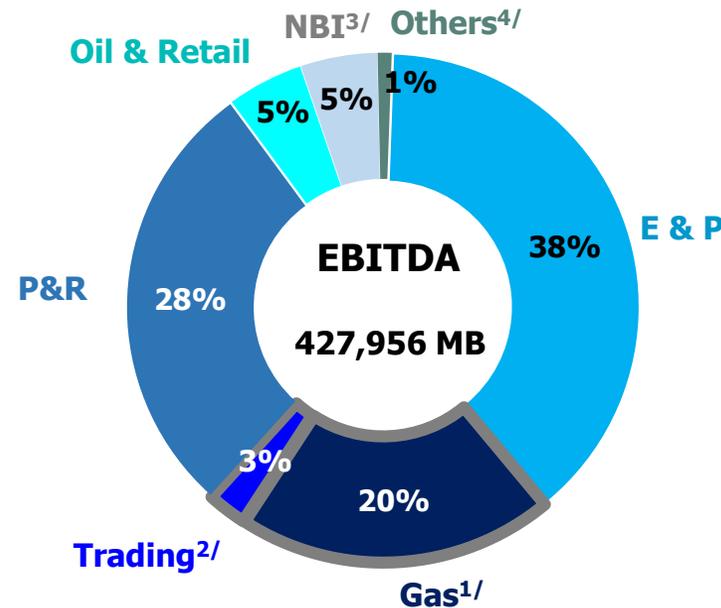
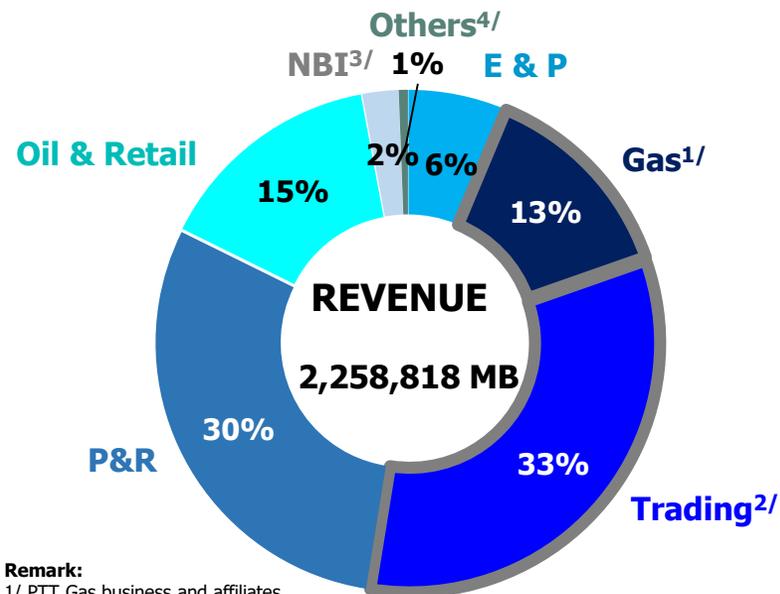
Outlook

PTT Consolidated Performance: 4Q2021 & 2021

QoQ: Improved NI mainly from lower derivative loss and increased FX gain despite slightly soften margin and higher impairment loss
 2021 vs 2020: Robust performance as a result of global petroleum & petrochemical prices and demands recovery



2021



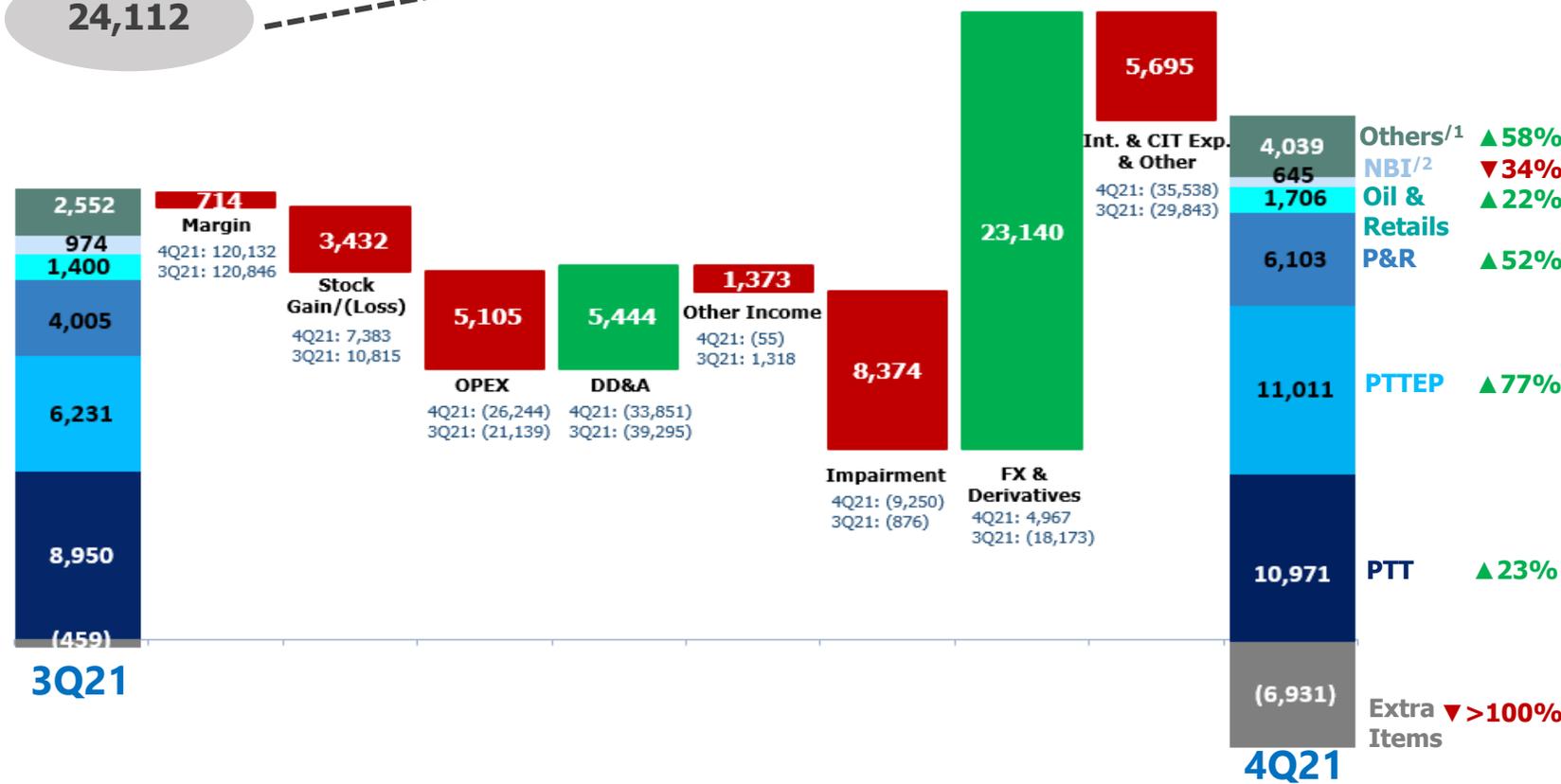
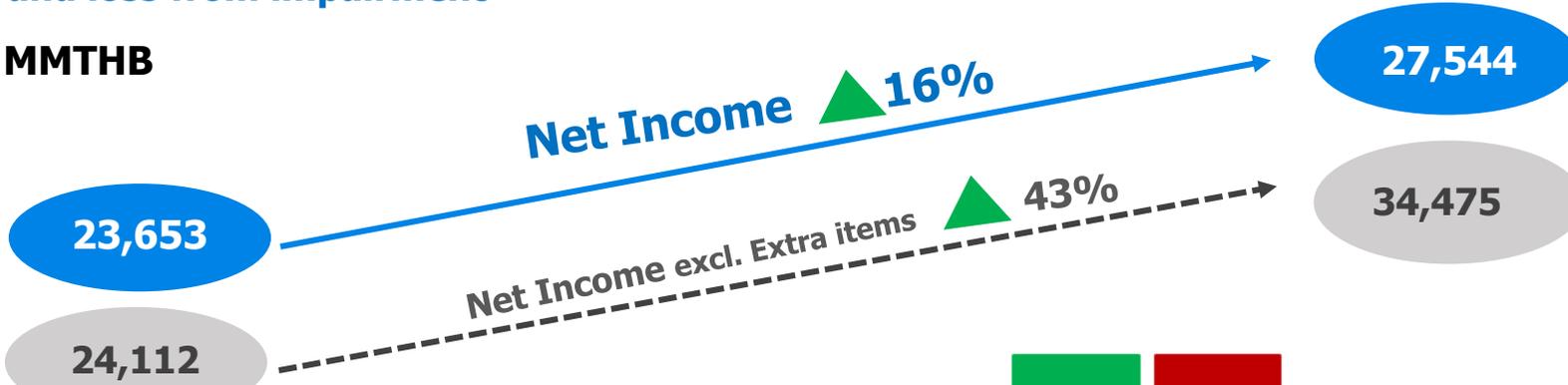
Remark:
 1/ PTT Gas business and affiliates
 2/ PTT Trading business and affiliates
 3/ New Business and Infrastructure mainly contributed from power business
 4/ Others business mainly contributed from coal business

Remark:
 5/ New Business and Infrastructure mainly contributed from power business
 6/ Others business mainly contributed from PTT LNG, PTT NGD, PTTT and PTTGM etc.

4Q21 vs 3Q21 PTT Consolidated Performance (QoQ):

NI increased from lower derivative loss and higher FX gain despite soften margin and loss from impairment

MMTHB



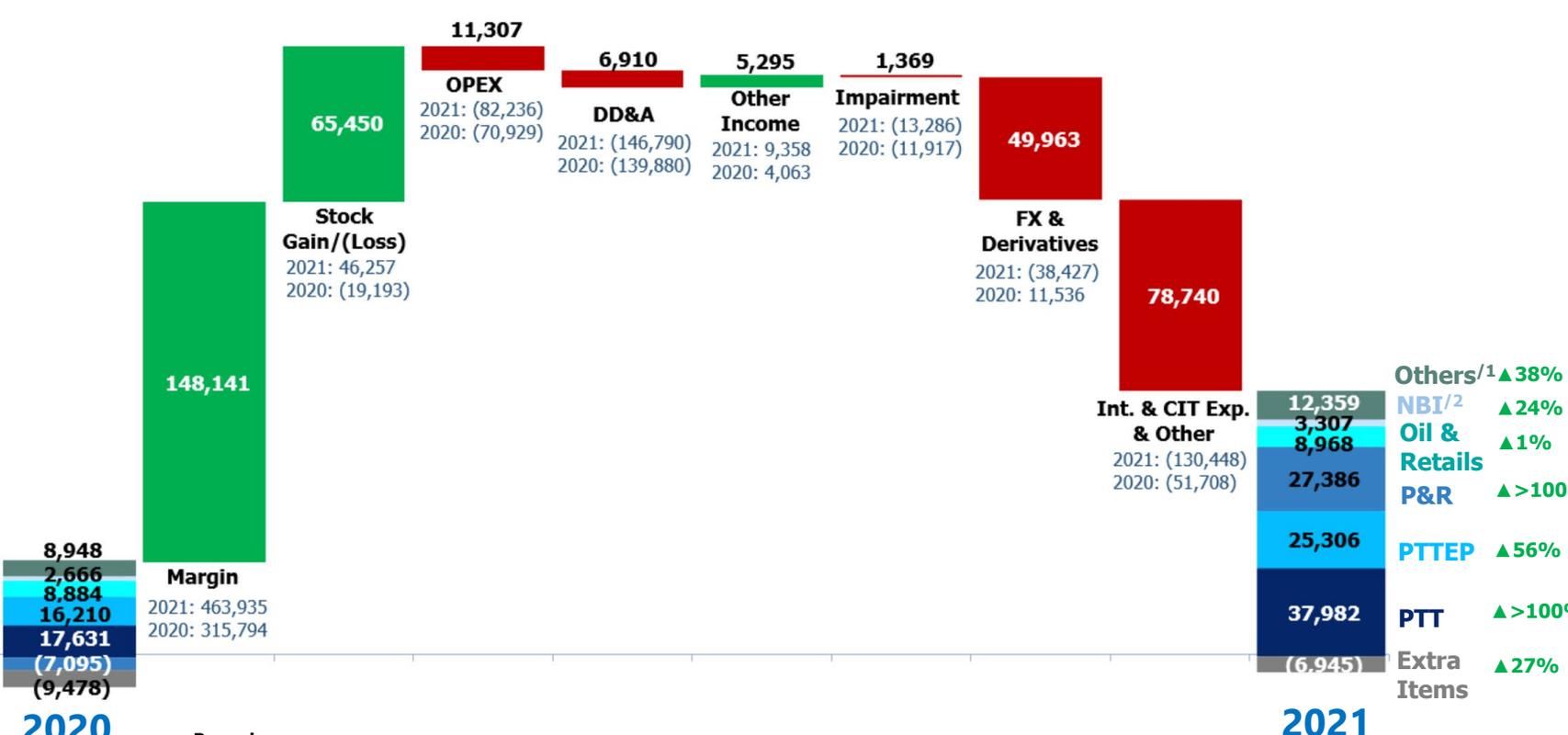
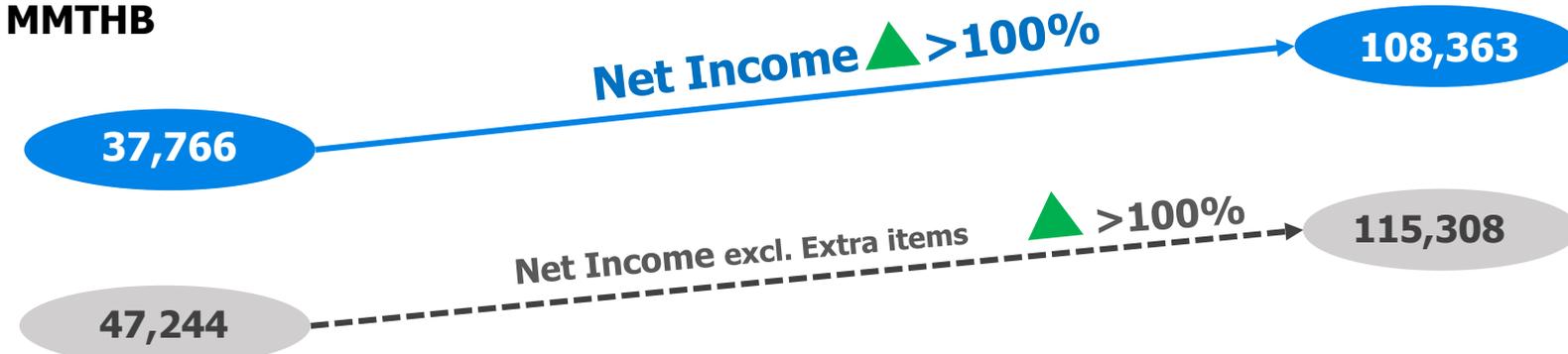
- ▲ **Others**
 - + **Coal**: Increased in selling prices, and sales volume due to seasonal demand
 - **PTTT**: Decreased from MTM loss of petroleum products
- ▼ **NBI** (mainly from power)
 - Lower GPSC's performance from increased NG cost and decrease in shares of profit from XPCL due to seasonal impact
- ▲ **Oil & Retail**
 - + Both oil and non-oil have increased sales volume from easing of lockdown in 4Q21
 - Oil margin dropped
- ▲ **Petrochemical & Refining**
 - + Higher derivative gain despite soften operating profit
- ▲ **Refinery**
 - + Higher Mkt GRM due to improved product spreads and higher sales vol.
- ▼ **Petrochemical**
 - Higher feed cost and lower sales vol.
- ▲ **PTTEP**
 - + Higher avg. selling prices from higher liquid price
 - + Sales volume increased from Malaysia and MTJDA project
 - + Lower DD&A mainly from Bongkot
- ▲ **PTT**
 - + Higher gain on FX despite soften operating profit of Gas
- ▼ **Gas**
 - **S&M**: Higher pooled gas cost and lower gas sales volume
 - **NGV**: Higher gas cost while prices were capped
 - + **GSP**: Higher avg. selling prices of all products despite lower sales vol.
- ▲ **Trading**
 - + Higher domestic condensate margin & sales vol.
- ▼ **Extra Items***
 - (**PTT's portion net tax amount*)
 - 4Q21 : Impairment loss ~7,000 MB** (PTTEP's Mozambique and Yetagun projects, PTT's NGV, and GC's US project)
 - : Other items ~+100MB** mainly from
 - PTT: Take or pay Myanmar gas contract returned to gov. ~2,700 MB offset with gas discount from production shortfall ~1,700 MB
 - Gain on disposal of gas pipeline in Egypt ~1,400 MB
 - 3Q21 : PTT's write-off on obsolete materials and supplies of 702 MB** offset with TOP's gain on divestment of UBE 233 MB

Remark:
 1/ Others business mainly contributed from PTT LNG, PTT NGD, PTTT and PTTGM etc.
 2/ New Business and Infrastructure business mainly contributed from power business

2021 vs 2020 PTT Consolidated Performance (YTD):

Escalated performance driven by most of PTT Group Businesses

MMTHB



2020

2021

Remark:
 1/ Others business mainly contributed from PTT LNG, PTT NGD, PTTT and PTTGM etc.
 2/ New Business and Infrastructure mainly contributed from power business

Others

▲ **Coal:** Higher margin due to increased selling prices following Newcastle price despite lower sales vol.

▲ **NBI** (mainly from power)
 + Increased in shareholding of GPSC despite GPSC's soften performance due to higher fuel costs

▲ **Oil & Retail**
 + Improved oil margin; especially gasoline & diesel
 - Lower oil sales volume due to Covid-19 impact
 - Non-oil was pressured by higher promotion expenses

▲ **Petrochemical & Refining**
 ▲ **Refinery**
 + Higher stock gain in 2021
 + Higher Mkt GRM mainly from gasoline spread
 ▲ **Petrochemical**
 + Olefins & Aromatics: Improved product spreads

▲ **PTTEP**
 + Higher sales vol. from Oman Block 61 acquisition, Malaysia Block H projects, Bongkot, Contract4, and Arthit.
 + Higher avg. selling prices from liquid price increased

▲ **PTT**
 ▲ **Gas**
 + **GSP:** Higher avg. selling prices, sales volume, and lower feed gas cost
 + **S&M:** Higher industrial customers' selling price linked to FO price, higher gas sales vol. despite higher pooled gas cost
 ▲ **Trading**
 + Higher gross margin and sales vol.

▲ **Extra Items*** (*PTT's portion net tax amount)
2021 : Impairment loss ~ 9,000 MB from EP's Mozambique and Yetagun projects, PTT's NGV, and GC's US project
: Other items ~+2,000 MB mainly from
 • **EP:** Gain on bargain purchase of Oman Block 61 of 6,928 MB offset write-off assets in Brazil 2,909 MB
 • **GC:** loss from restructuring of Emery Group 1,295 MB
 • **PTT:** recognition of Take of Pay 2,763 MB and write-off obsolete material and supplies 700 MB offset benefit from shortfall 1,700 MB and gain on disposal of gas pipeline in Egypt 1,394 MB

2020 : Impairment of PTTGM's Coal mining impairment of 6,800 MB and EP's Mariana Oil Sands and Yetagun impairments of 1,614 MB

PTT EBITDA Breakdown by Business



Unit: MMTHB

	4Q20	3Q21	4Q21	QoQ	YoY	2020	2021	2021 vs 2020
GAS	16,202	23,388	19,200	▼ 18%	▲ 19%	54,942	86,497	▲ 57%
S&M	2,796	4,281	1,578	▼ 63%	▼ 44%	8,120	14,366	▲ 77%
TM	8,084	8,463	7,911	▼ 7%	▼ 2%	34,850	33,071	▼ 5%
GSP	2,969	8,198	8,443	▲ 3%	▲ >100%	4,879	30,245	▲ >100%
NGV	(159)	(465)	(1,252)	▼ >100%	▼ >100%	(1,836)	(2,363)	▼ 29%
Others	2,512	2,911	2,520	▼ 13%	↔	8,929	11,178	▲ 25%
Trading	265	1,942	1,449	▼ 25%	▲ >100%	3,024	5,436	▲ 80%
Total	16,467	25,330	20,649	▼ 18%	▲ 25%	57,966	91,933	▲ 59%

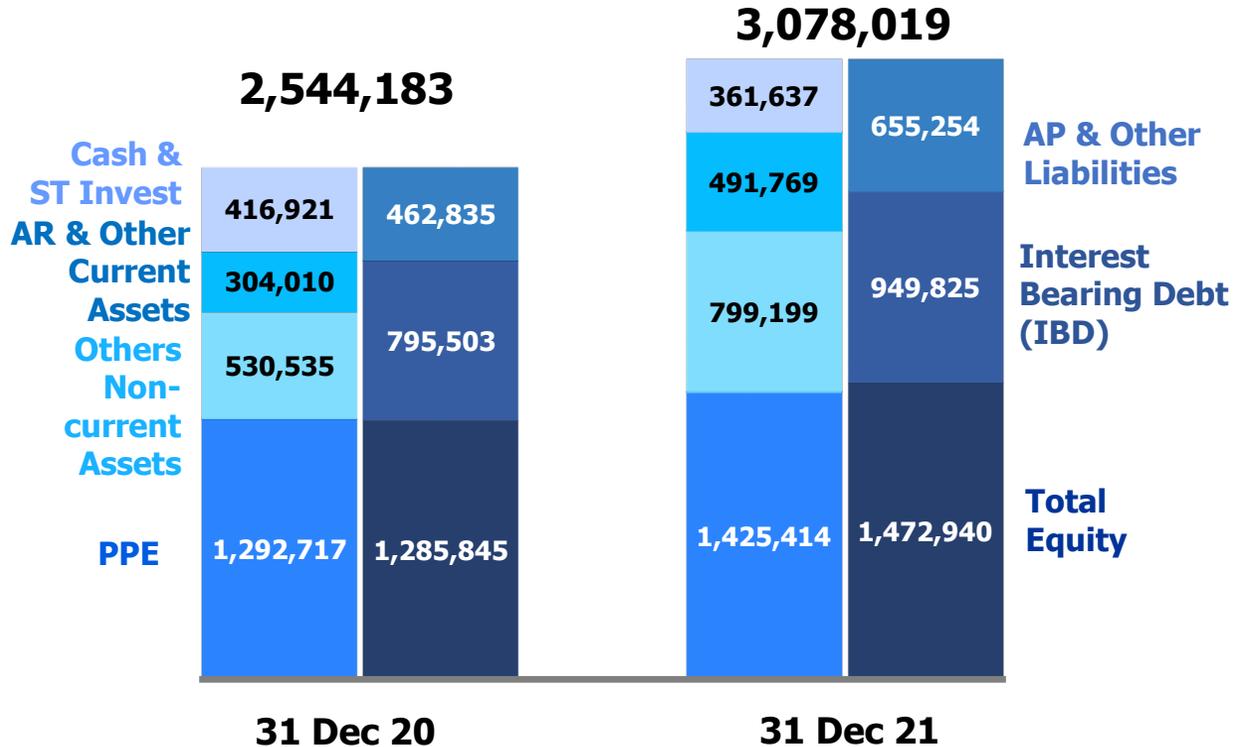
Financial Position

Strong Balance Sheets maintained credit ratings

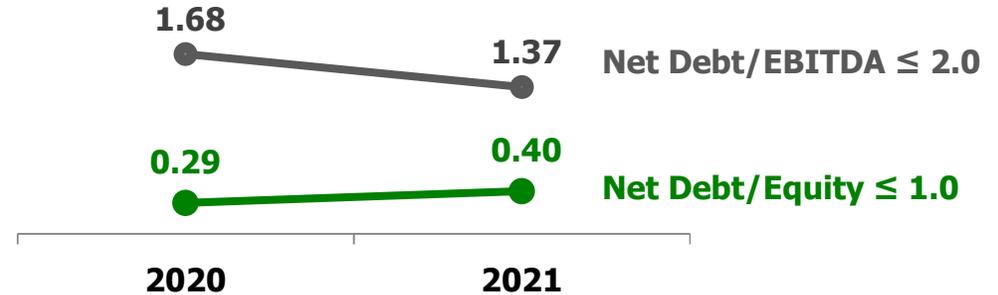
Consolidated Balance Sheets

MMTHB

▲ 21%



Key Financial Ratios

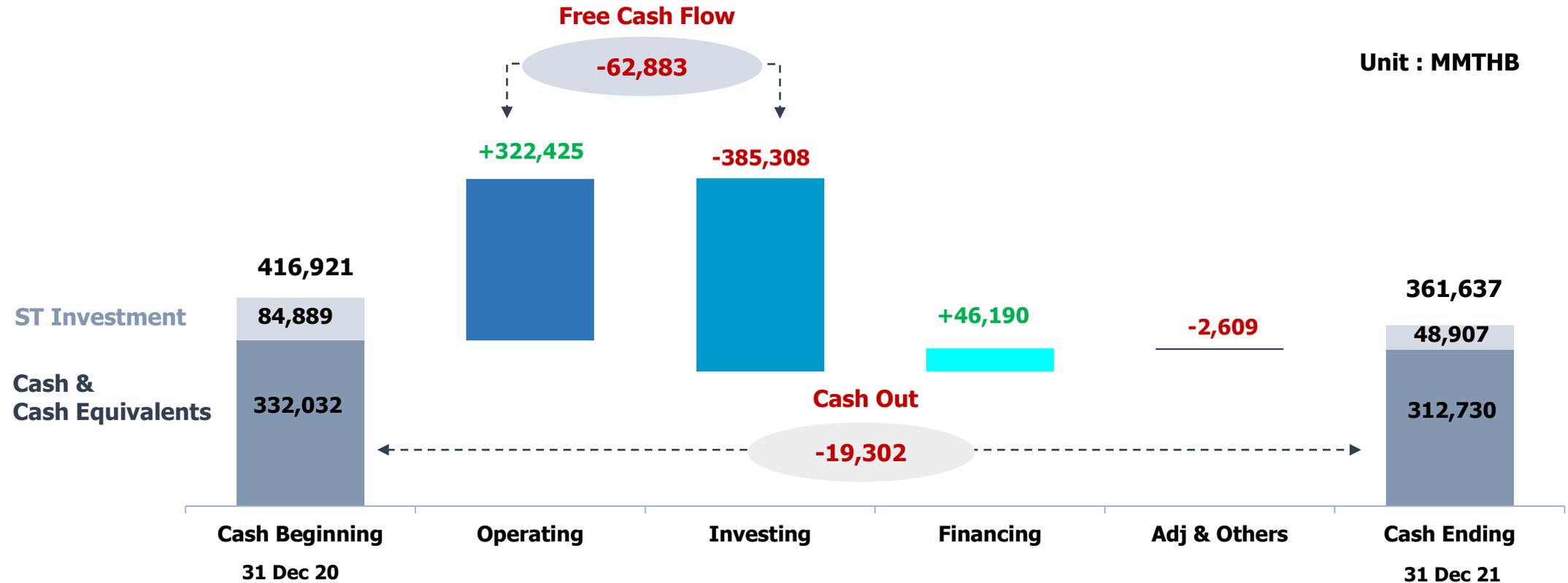


PTT Ratings at Sovereign Level

	MOODY'S	S&P Global Ratings	FitchRatings
Foreign Currency	Baa1	BBB+	BBB+
Local Currency	Baa1	BBB+	BBB+

- + **Increase in Others Non-current Assets** mainly from the increase in intangible assets and goodwill from GC's acquisition of Allnex
- + **Increase in Account Receivables and Inventories** from the rise of product prices
- + **Higher PPE** from PTTEP's business acquisition of Oman Block 61 and TOP's construction in progress of Clean Fuel Project
- + **Increase in IBD** from long-term loan and bond issuances of GC, PTT, and TOP
- + **Increase in Equity** due to PTT group's net profit and OR's capital increase

PTT Consolidated Cash Flows 2021



Operating	322,425
Non-Cash Adjustment	304,977
Net Income	108,363
Income Tax	(50,648)
Changes in Assets & Liabilities	(40,267)

Investing	(385,308)
Investment (Sub. & Affiliates)	(256,359)
CAPEX	(141,870)
Others *	(28,585)
Current Investment	34,304
Dividend/Interest Received	7,202

Financing	46,190
Received from Loans/Bonds	207,296
Ordinary Share Issuance of Subsidiaries**	55,154
Loan Repayment	(107,888)
Dividend Paid	(78,469)
Finance Cost Paid	(29,752)
Derivatives	(151)

*Investment in financial assets, ST/LT lending loans

**Included resale of treasury shares

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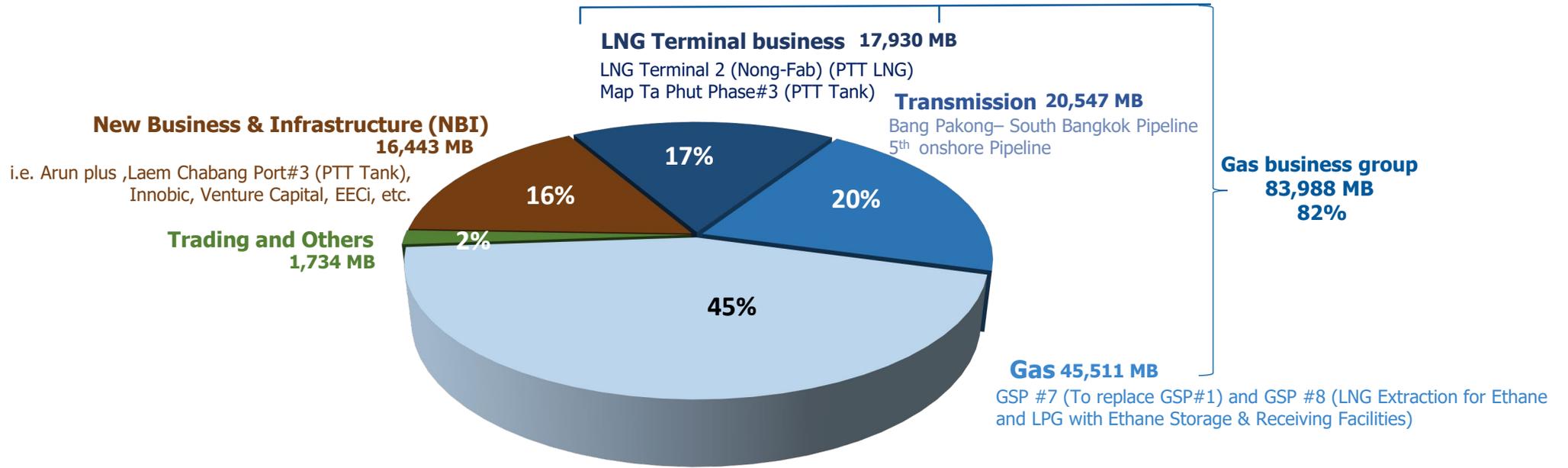
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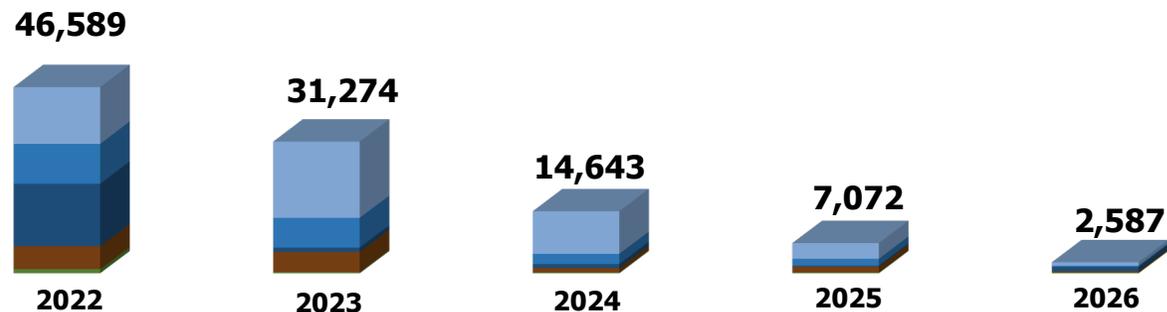
PTT: Committed CAPEX (PTT and Wholly Owned Subsidiaries)

PTT 5-Years (2022-2026) Committed CAPEX Plan totaling Baht 102,165 million or ~ USD 3.2 bn^{1/}



Unit: MMTHB

- Natural Gas
- Transmission
- LNG Terminal business
- NBI
- Trading and Others



Note: 2022-2026 budget approved by BOD on 16 Dec 21

^{1/} FX rate (avg.) 32.1Baht/USD

The Provisional uncommitted CAPEX ~Bt 238 bn mainly focus on Future Energy and New Businesses including Life sciences (Pharmaceutical, Nutrition, Medical devices), Renewable energy, Electricity value chain, Logistics & Infrastructure as well as new pipelines network and LNG value chain.

Committed CAPEX: PTT Group

Total committed CAPEX during 2022-2026 : ~Bt 944 bn or USD 29 bn

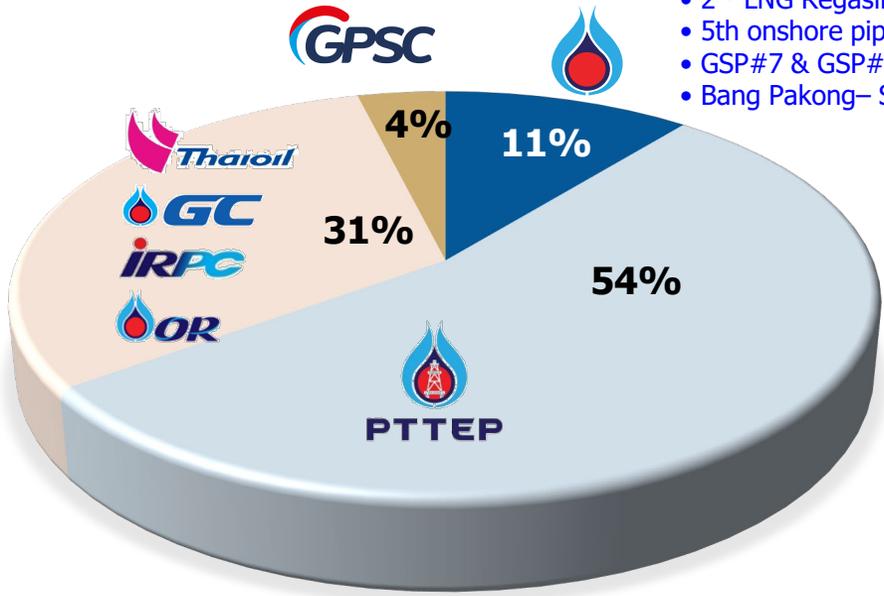
Unit: MMTHB

Power Business

- Key Projects**
- Renewable Energy (Solar/Wind)
 - ERU

PTT Business

- Key Projects**
- 2nd LNG Regasification Terminal
 - 5th onshore pipeline
 - GSP#7 & GSP#8
 - Bang Pakong– South Bangkok Pipeline



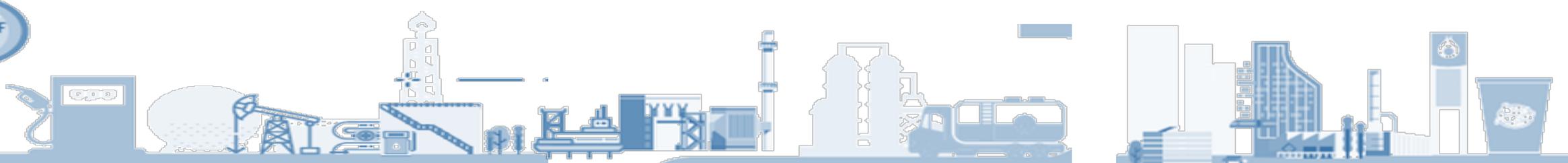
Downstream Business

- Key Projects**
- **GC:** Acquired Allnex
 - **TOP:** Clean Fuel Project (CFP)
 - **OR:** Oil & Retail Expansion in domestic & international
 - **IRPC:** Ultra Clean Fuel Project (UCF)

Upstream Business

- Key Projects**
- Onshore and Offshore Exploration and Production in Thailand (Bongkot, Erawan etc.)
 - SK410B
 - Mozambique LNG
 - Algeria HBR
 - Southwest Vietnam

PTT Group's Provisional CAPEX for 2022 - 2026 ~Bt 747 bn



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Prime Minister statements at COP26, Thailand's transform to moving towards a low-carbon society



**UN CLIMATE
CHANGE
CONFERENCE
UK 2021**

IN PARTNERSHIP WITH ITALY

“Thailand is willing to be more aggressive in addressing climate change and will strive to reach carbon neutrality by 2050, and net zero emissions on or before 2065. With adequate, timely and equitable technology transfer and cooperation, and most importantly, access to ample green financing facilities, Thailand can increase its Nationally Determined Contributions (NDC) to 40% and reach net zero emissions in 2050. ”



Prime Minister Prayut Chan-o-cha presents his statement at the World Leaders Summit during the 26th United Nations Framework Convention on Climate Change Conference of the Parties (UNFCCC COP26).
1 November 2021
Glasgow, United Kingdom

PTT's Performance on Sustainability Management



E Environmental: Sustainable Production and Consumption

"Clean growth" Aim to reduce GHG emission **15% from 2020 by 2030**

In 2021, PTT Group's GHG emissions was 32.4 MtCO₂e* **Achieve the target.**

Establish **PTT Group Net Zero Task Force (G-NET)** to set a net zero GHG emission target and drive related operations.

Collaborated with various sectors, private and public, to develop the energy policy, the forestry and carbon credit mechanism support Thailand's net zero target.



Prototype traffic cone
(recycle from lube container)



LCSi Award

3rd consecutive year



Listed a member of the DJSI

10th consecutive year in the World Index and the Emerging Market Index.

Member of Dow Jones Sustainability Indices Sustainability Award Silver Class 2022
Sustainability Award Silver Class 2022
S&P Global
Powered by the S&P Global CSA

PTT is awarded a **Silver Class** distinction from the **S&P Global Sustainability Award 2022**

S Social: People Well-being

Social Contribution During the COVID-19 Pandemic Situation "Giving Breath Project"

- Set up one-stop field hospital (End-to-End)
- Support field hospital and medical equipment
- Developing Antigen Test Kit for COVID-19



Natural Climate Solutions
Continuous maintenance of the 1-Million-Rai Reforestation Project and learning centers

Social Enterprise Projects

- Café Amazon for Chance
- Community Coffee Sourcing
- Forest for Chance



No Lost Time Accident (LTA) and Safety and Occupational Health targets

of employee and contractor: Achieve the target.



PTT won Sustainability Awards of Honor

and was listed in Thailand Sustainability Investment (THSI) from SET Awards 2021



G Governance: Good Governance and Performance Excellence

Powering life with Future energy and Beyond



Beyond

Excellent CG Scoring
13th consecutive year



Integrity and Transparency Assessment (ITA)
Score 94.26 (Level A)

Sustainable Development Goals (SDGs)

PTT's operations fully support 17 SDGs



*The data is being reviewed by external independent agencies including both direct and indirect emissions (scope 1 and 2)

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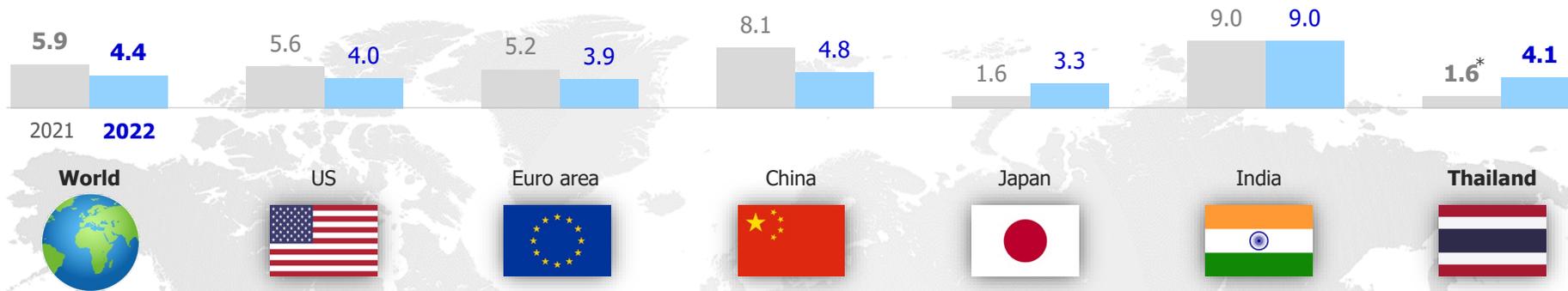
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Outlook

2022 Global Economic Outlook:

A Disrupted Global Recovery Amid Rising Caseloads and Higher Inflation

IMF Forecast – GDP Growth (%)



+ Improving vaccination rates and more effective therapies (including the newly developed oral antivirals), with adverse health outcomes expected to decline to low levels in most countries by end-2022



- Omicron expected to weigh on activity in 1Q2022, while persistent disparities in access to COVID-19 tools across countries risking prolonging the pandemic

- Continued supply-demand imbalances contributing to high inflation (adding to pressures from elevated energy prices), though the effect to wane later in 2022 as demand rebalances away from goods to services

- Less accommodative monetary policy in the US to curb inflation to prompt tighter global financial conditions

- China's self-inflicted slowdown, due to pandemic-induced disruptions related to the zero-tolerance COVID-19 policy and protracted financial stress among property developers, and negative implications for trading partners

Note: *Real GDP in 2021 from The Office of the National Economic and Social Development Council (NESDC)

Sources: IMF WEO (Jan 25, 2022), Blog by Gita Gopinath, International Industry Research and Economics Department

2022 Thailand Economic Outlook:

Recovery to Gain Traction in 2022, but Activity Still below Pre-Pandemic Level



+ Continued progress with vaccination and "learning to live with COVID-19" policy to boost private consumption (expected growth of 3.4 to 5.6% in 2022 vs. 0.3% in 2021), despite slowing economic activity in 1Q2022 due to Omicron



+ Border reopening to allow international tourism to partially recover, especially in 2H2022 (number of foreign tourists expected at 4 to 7.5 mn in 2022 vs. 0.4 mn in 2021)

+ Merchandise exports to continue to grow (expected growth of 3.4 to 5% in 2022 vs. 18.8% in 2021), albeit at a slower rate amid supply disruptions

+ Monetary policy to remain accommodative, amid higher but still-within-target inflation



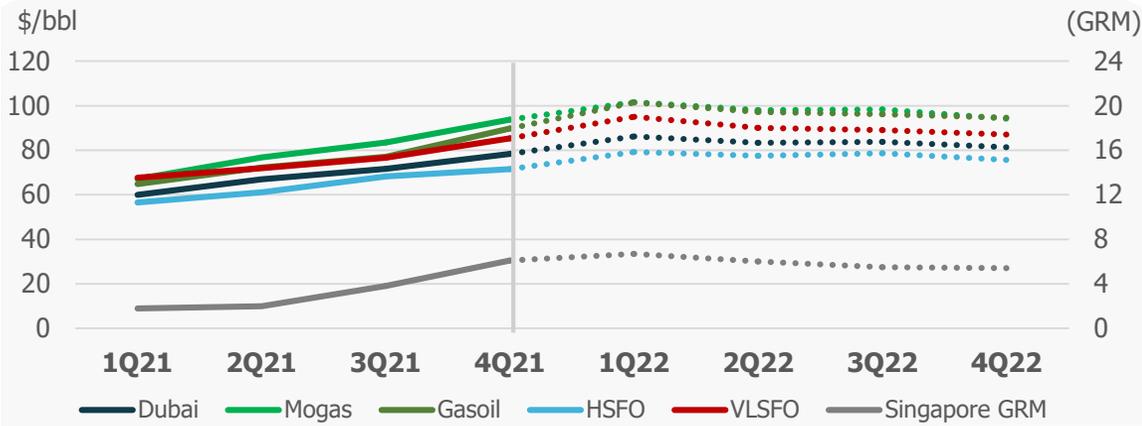
- More limited fiscal space and heavier public debt burdens to pose difficult policy challenges to further support growth and offset the scarring impact of the pandemic

- GDP to not return to pre-pandemic level until 2023

2022 Petroleum and Gas Outlook



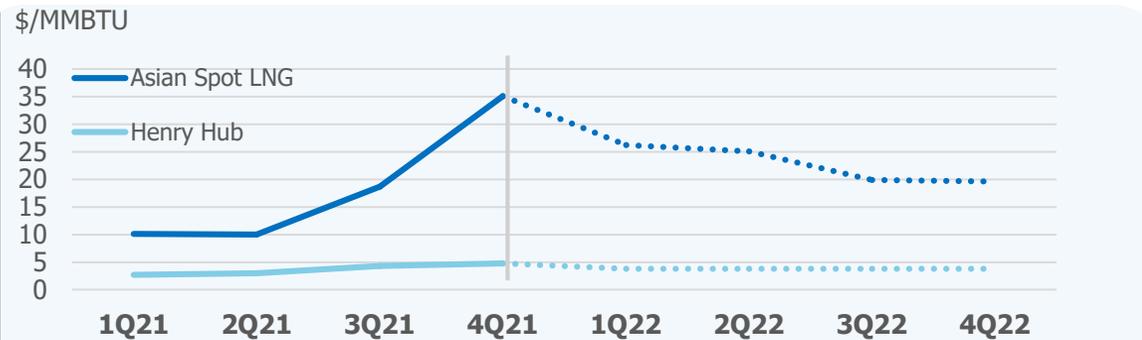
Petroleum



Price	Y2021	4Q2021	1Q2022(E)	2022(E)
Dubai	69.2	78.4	84-89	81-86
Mogas	80.3	93.8	99-104	96-101
Gasoil	76.0	89.8	99-104	95-100
HSFO (3.5%S)	64.4	71.5	77-82	75-80
VLSFO (0.5%S)	75.4	85.3	92-97	88-93
Singapore GRM	3.4	6.1	6.2-7.2	5.4-6.4

Source: PTT, PRISM Petroleum Rolling as of February 2022

Gas/LNG



Price	Y2021	4Q2021	1Q2022(E)	2022(E)
Asian Spot LNG	18.5	35.1	26.3	22.7
Henry Hub (HH)	3.7	4.8	3.8	3.8

Source: FGE & EIA as of January 2022

▲ Dubai

- + **Recovered demand** driven by higher vaccination rates and **low global crude inventories**
- + **Geopolitical tensions** between Russia and Ukraine, and unrest in ME
- **Concern of Omicron variants** pressure market sentiment
- **OPEC+ agreed to continue increasing production** 400 KBD/month from Aug'21 to Sep'22 and the market will be surplus from Q2'22 onwards
- **Refinery maintenance season** (Mar-Apr & Sept-Oct)
- **US supply gradually recover** due to high crude price and the new budget year
- **Iran may increase supply in 2H22** if US relief sanction relief within Q1

▲ Mogas

- + **Rising mobility in Asia** amid easing travel restriction measures
- + **Lower Chinese export** due to limited export quota
- + **Support from US summer driving season** in Q3
- **Concern on Omicron variant** caused travel restriction in some countries
- **Easing supply from higher utilization rate** along with recovered demand

▲ Gasoil

- + **Demand recovery from the industrial and transportation sectors**
- + **Lower Chinese export** due to limited export quota
- + **Low stock levels below 5 years average** across all regions
- **Fading heating demand** after winter ends

▲ Fuel Oil

- HSFO:** + **Higher demand from economic recovery and more installation of scrubber in marine vessels**
- **Easing supply from OPEC+ and higher utilization rate** along with recovered demand
- VLSFO:** + **Improved bunker demand** following the increasing trading activities
- **Higher supply** from the increase in Chinese export quotas, **higher utilization rate**, and **new capacity from Kuwait**

▲ Singapore GRM

- + **Improve** following the recovery of gasoline and middle distillates

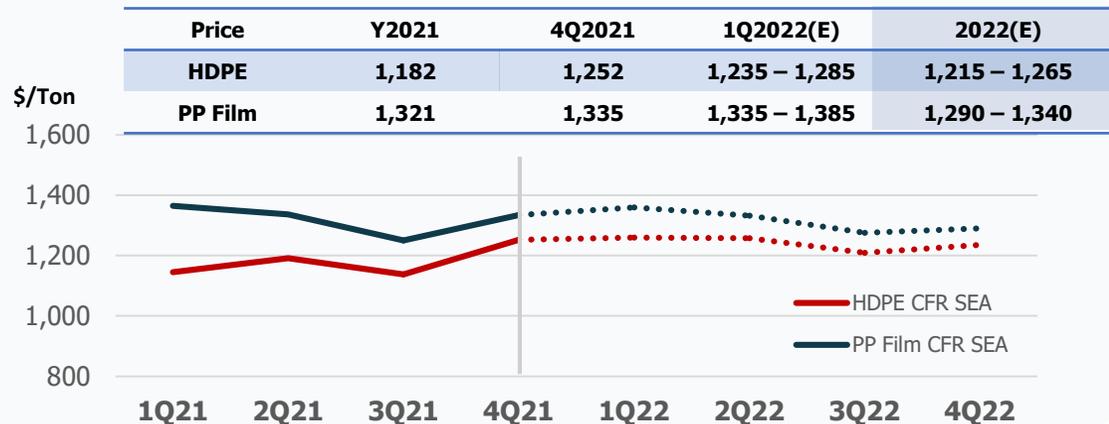
▲ Gas/LNG

- Asian Spot LNG:** + **Geopolitical tensions** between Russia and Ukraine
- + **European gas stock hit a record low** in Jan'22
- **Expected more US LNG export** in 2022
- **Sufficient inventories during this winter** in North Asia

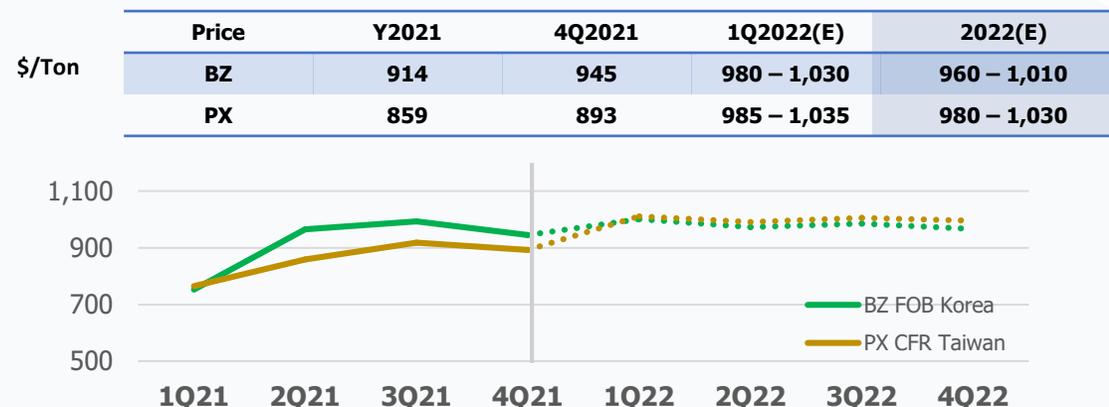
Henry Hub:

- + **Recovered demand** since the end of 2021
- **US gas supply will increase more than demand, especially in 2H22**

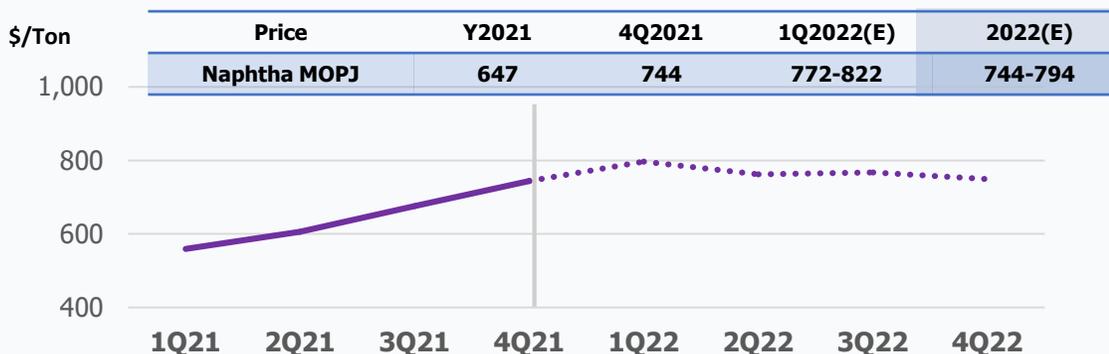
Olefins



Aromatics



Naphtha



Source: PTT, PRISM Petrochemical Rolling as of Feb 2022

Olefins

- + **Tighten Asian supply** from production cuts due to squeezed margins and seasonal turnarounds in late 1Q until 2Q
- + **Expected demand recovery** according to brighter economic prospects and higher vaccination campaigns
- + **Stronger feedstock costs and freight rates** to support olefins prices
- **Incoming additional Asian capacities** from Northeast Asia and Southeast Asia especially China throughout 2022

Aromatics

- + **Lower supply** from production cuts due to squeezed margin and seasonal turnarounds in late 1Q until 2Q
- + **Higher demand from** new capacities of SM/ PTA downstream and economic recovery
- + **Stronger feedstock costs** to support aromatics prices
- **Closed Asia-US arbitrage opportunities** to weigh on BZ sentiment
- **Elevated Chinese inventories** pressure on BZ & PX markets
- **Incoming additional Asian capacities** from Northeast Asia and Southeast Asia especially China throughout 2022

Naphtha

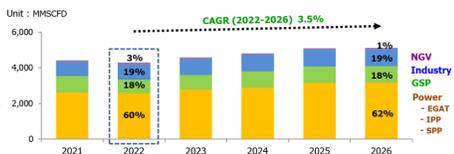
- + **More gasoline blending demand** especially US driving season in 3Q
- + **Additional demand from petrochemical plants which expected to COD throughout 2022**
- **Weak demand as a result of switching to LPG after winter and sluggish petchem margins**, prompted more Asian crackers to reduce operating rates
- **Cracker maintenance** between late Q1 to early 2Q
- **Rising supply from higher refinery's utilization rate** resulted from recovered demand

PTT Group 2022 Guidance

Business outlook in 2022

E&P : + Vol. ↑ ~12% , +Unit cost ↓ ~2-5%

GAS : + Domestic gas demand slightly increase despite higher gas cost compared to 2021



CAGR 3.5% (during 2022 -2026)

GSP's U-Rate
82-87% in 2022

OIL : + Resuming domestic demand
+ Oil station ↑ 186 stations
+ Café Amazon ↑ 506 stores

P&R : Refinery
+Improving Demand after the global economic recovery (SG GRM → 5.4 – 6.4\$/bbl)
- Lower PTT Group U-Rate ~91-95%

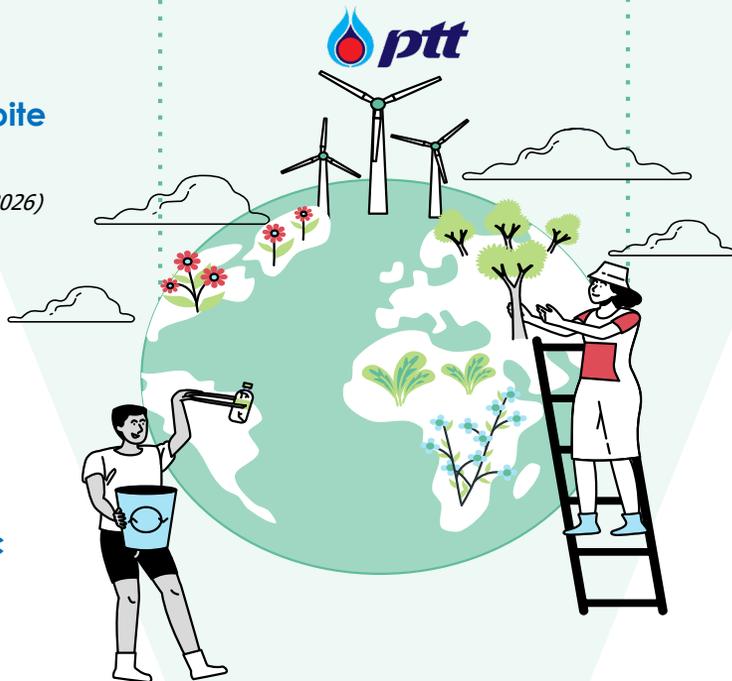
Petchem:

+ Higher demand from economic recovery and vaccination rate
- More capacities addition from new plants will pressure the product prices

Power : +Recover domestic electricity consumption

Future Energy : +Expansion of EV charger
(Arun plus +1,350 units & OR +200 inside PTT stations, +150 outside PTT stations)
+EVME: increasing EV car in the fleet > 500 units

New business : + Lotus: starting to recognize NI contribution in 2Q2022



Upcoming project in 2022

ptt 5th Pipeline

Phase I



COD Mar 2022

Phase II



COD Oct 2022

Phase III



COD Dec 2022



ptt LNG Terminal#2



Fully COD: Dec 2022



1st phase : mid year 2.5 MTA

ptt FID - EV Platform (JV with Foxconn) in 1H2022

IRPC Non-Woven Fabric products: ~ 5.6 KTA

Innobic COD: 2Q2022

GC High-quality Circular Plastic Resin Plant: 45 KTA

GC COD: 1Q2022

GPSC Avaada Solar Power Platform in India : 4,560 MW
GPSC hold 41.6% (2,205 MW in operating / 2,403 MW in progress)
COD: 4Q2021-2023

Gas Separation Plants

2Q: ESP Major SD & GSP#2&3 TD : 23 days
3Q: GSP#4 Major SD :20 days
4Q: GSP#5 SD : 15 days

Maintenance schedule in 2022

Petrochemical & Refinery Plants

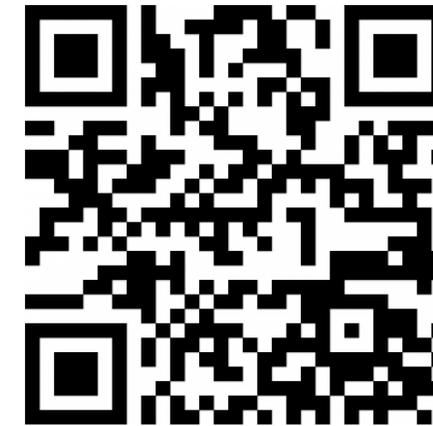
GC 2Q: Ole 3 & ARO I Major TA : ~1 month
4Q: Ole 2/2 & HDPE Major TA : ~1 month
Refinery Plant Major TA : 50 days
IRPC 4Q: Refinery Plant Major TA : ~1 month

Thank you



PTT Public Company Limited Investor Relations Department

Questionnaire



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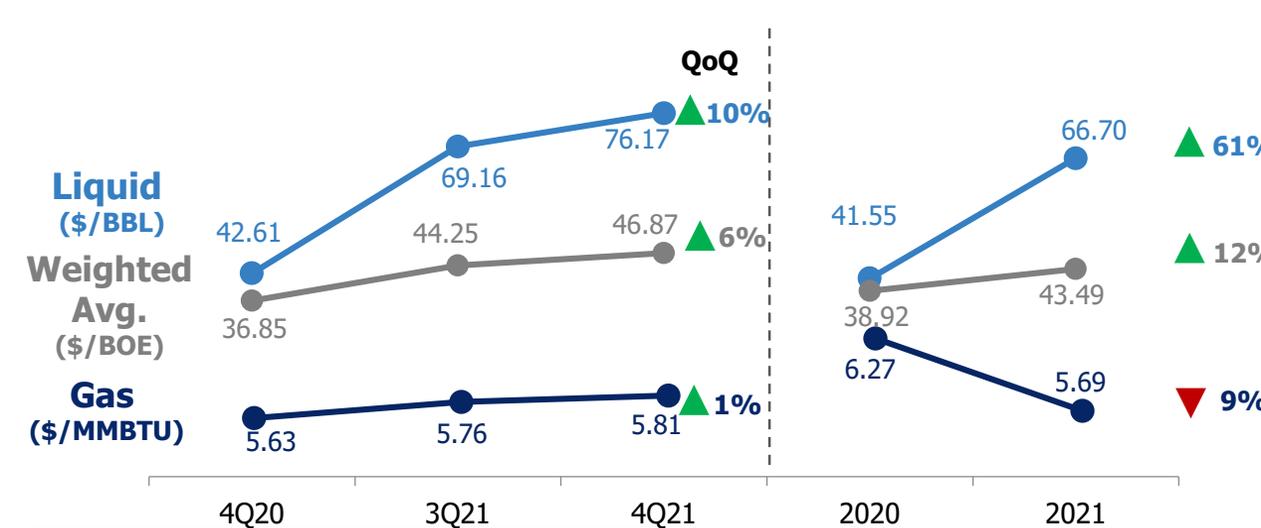
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E&P Performance

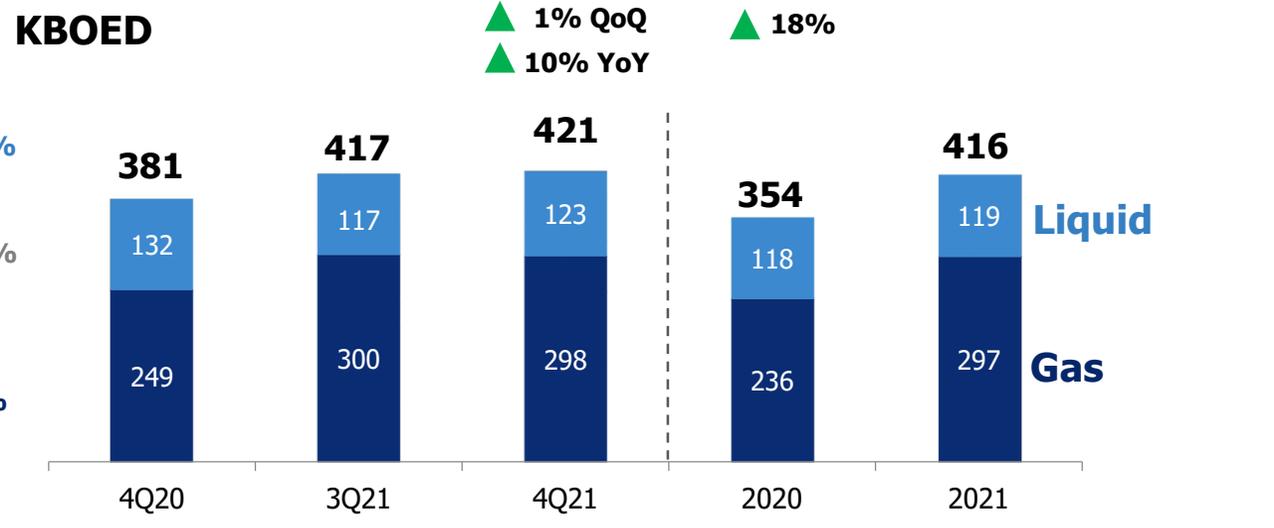
QoQ: Improved performance due to higher selling prices & sales volume as well as lower DD&A

2021 VS 2020: Strengthen performance due to higher sales volume, selling prices, and extra gain on bargain purchase of Block 61

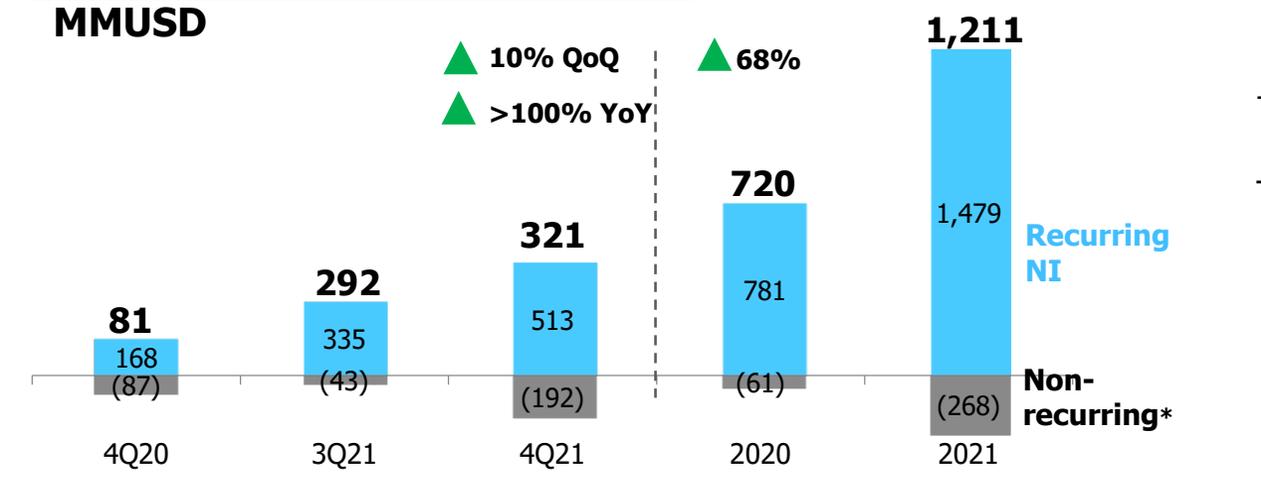
Product Prices



Sales Volume



Net Income (100%)



QoQ ▲

- + Recurring NI : increased due to higher selling prices & sales volume, and lower DD&A
- Non-recurring : mainly from impairment loss on Mozambique Area 1 and Yetagun Project

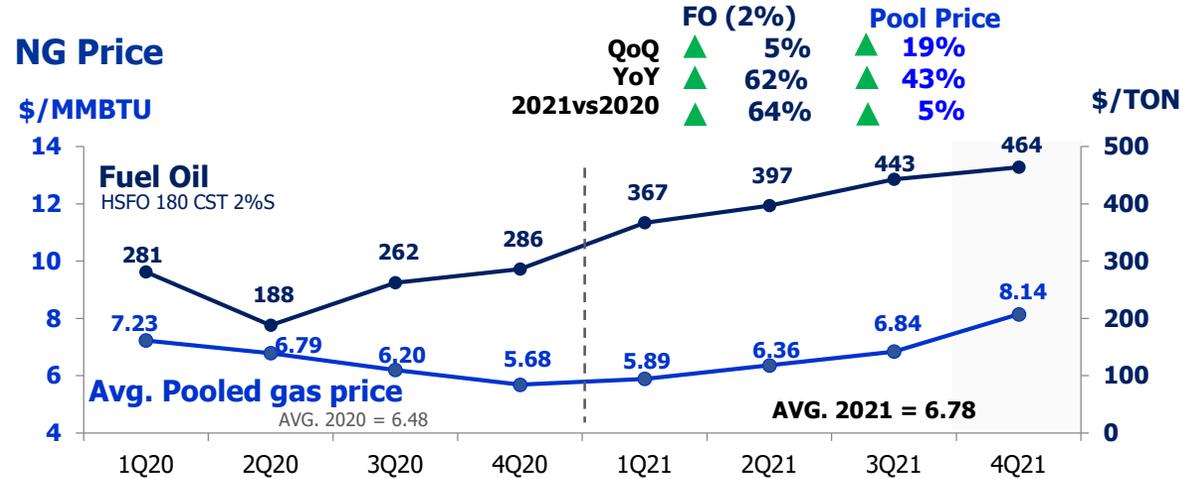
2021 VS 2020 ▲

- + Recurring NI : significantly improved from higher sales volume & selling prices with lower unit cost
- Non-recurring : primarily from higher loss on oil price hedging and impairment offset with gain on bargain purchase of Block 61

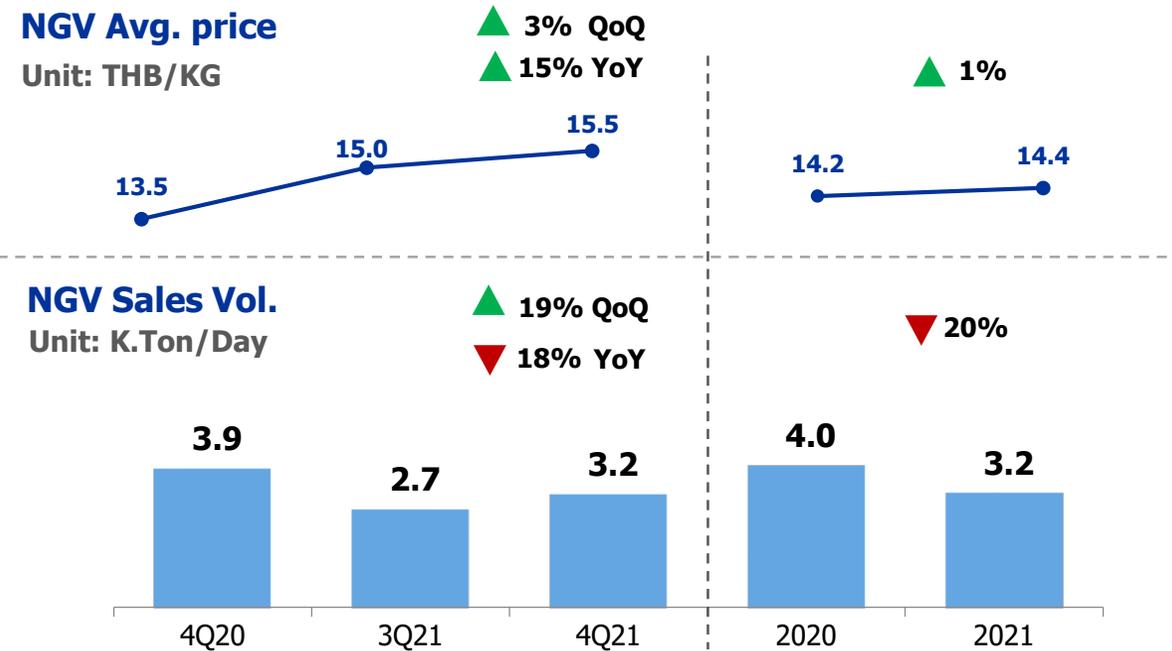
* Includes Gain/(Loss) on FX, Deferred tax from Functional currency, Current Tax from FX Revaluation, Gain/(Loss) from Financial Instruments, Impairment loss on assets and etc.

QoQ : Pool price increased from LNG import and lower NG vol. from soften power demand as well as pressured gas supply
 2021 vs 2020 : Increased gas sales vol., higher industrial selling prices referenced to FO price

NG Price VS FO & Customer Breakdown



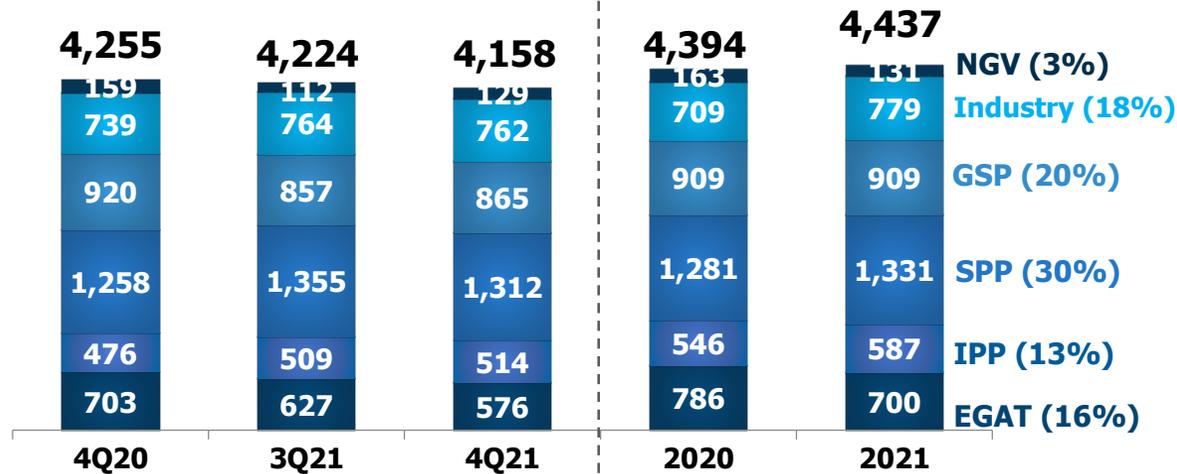
NGV Price & Sales Volume



NG Vol.
Unit: MMSCFD

▼ 2% QoQ
▼ 2% YoY

▲ 1%



Key Highlights

QoQ ▼

- Avg. pooled gas price increased from imported LNG and Myanmar gas
- Decreased overall NG sales volume mainly from power producers due to seasonal demand and lower gas supply

- + Industrial selling prices linked to FO increased
- + NGV vol. increased from easing lockdown and the cap of NGV price

2021 vs 2020 ▲

- + NG sales vol. increased from industrial customers due to the recovery of economic activities
- + Industrial selling prices improved according to FO price linked
- NGV sales vol. dropped from lockdown measures and switching to alternative fuels

Gas Business : Gas Separation Plant (GSP)

QoQ : GSP performance improved from higher average selling prices despite lower sales volume

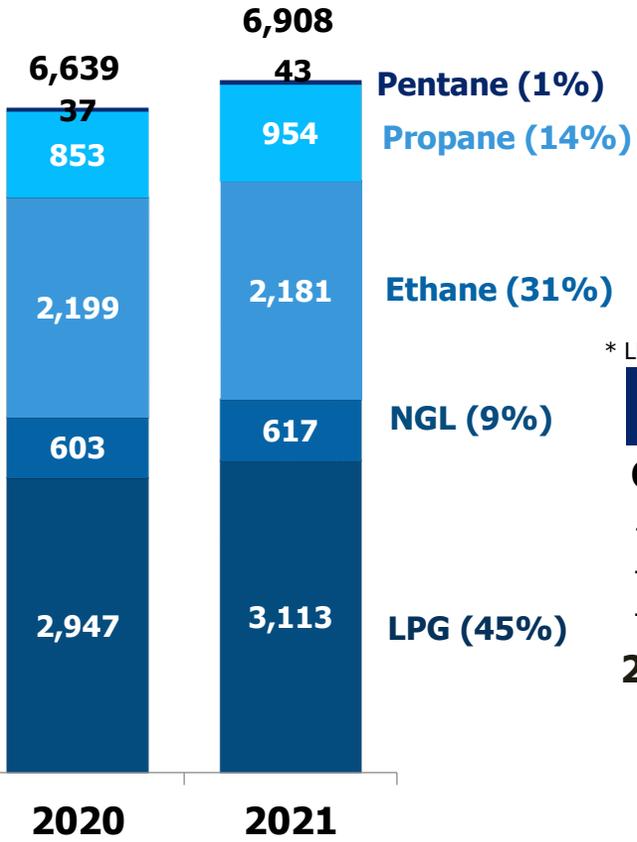
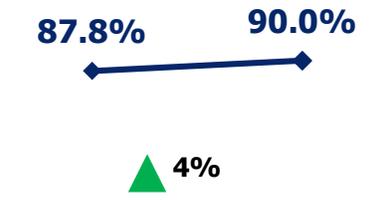
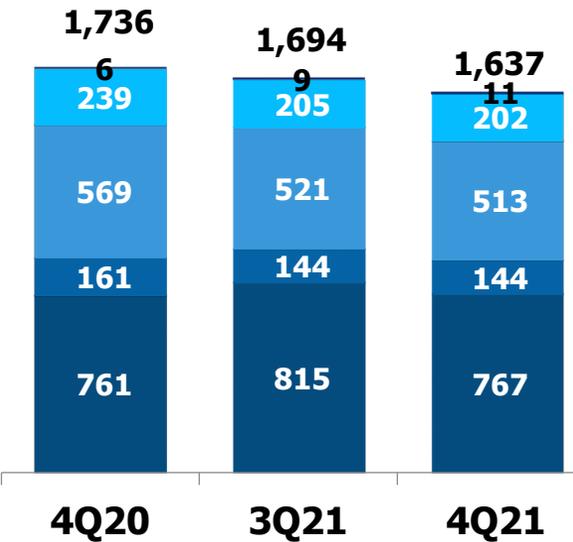
2021 vs 2020 : Outperformed GSP performance due to higher selling prices & volume as well as lower feed cost

GSP Sales Vol. & U-Rate



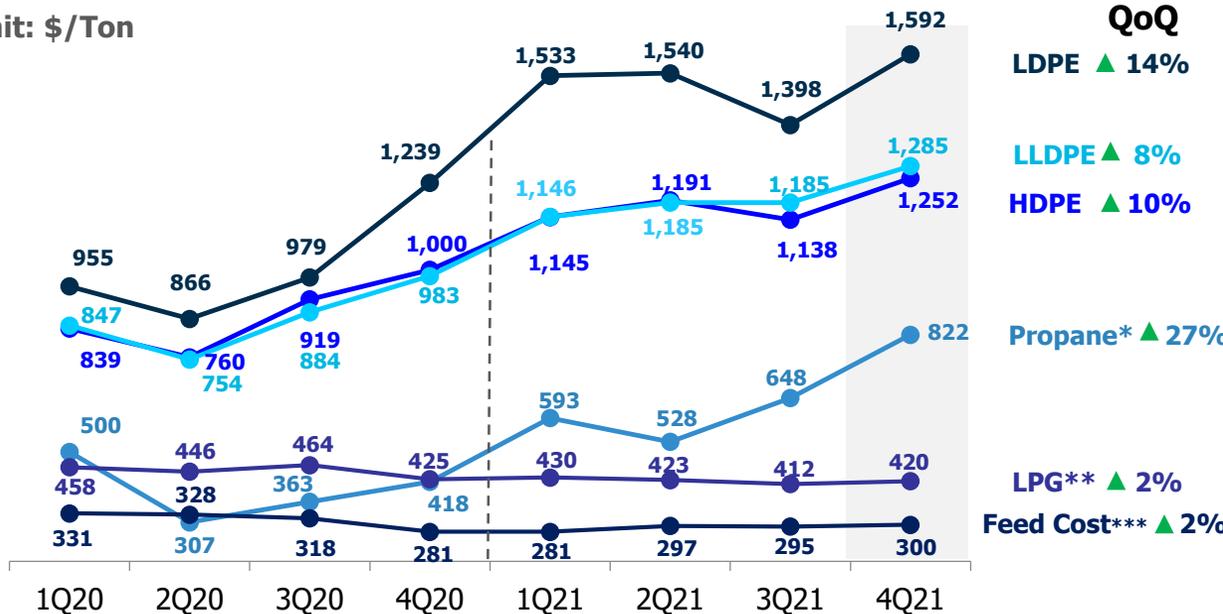
Unit : kTon

▼ 3% QoQ
▼ 6% YoY



GSP Feed Cost vs Petchem. Price

Unit: \$/Ton



* LPG price selling to Petro customers close to propane **LPG Domestic ***feed cost calculation per GSP production volume

Key Highlights

- QoQ** ▲
- + Higher average GSP's selling prices following referenced global petrochemical prices
 - Decreased sales volume due to petrochemical feed switching and lower gas supply
 - Feed cost slightly increased
- 2021 vs 2020** ▲
- + Increased GSP's selling prices following global petrochemical prices
 - + Higher sales volume according to higher petrochemical demand and lower plants' shutdown compared to 2020
 - + Lower feed gas cost

Trading Business:

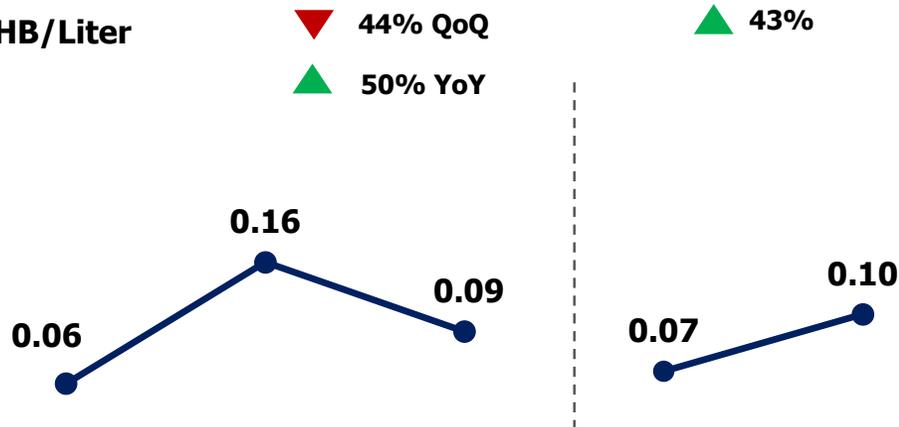
QoQ: Soften EBITDA due to lower gross margin despite increased sales volume

2021 vs 2020 : Enhanced EBITDA mainly due to improved domestic condensate margin and sales volume

Gross Margin¹

Unit: THB/Liter

▼ 44% QoQ
▲ 50% YoY



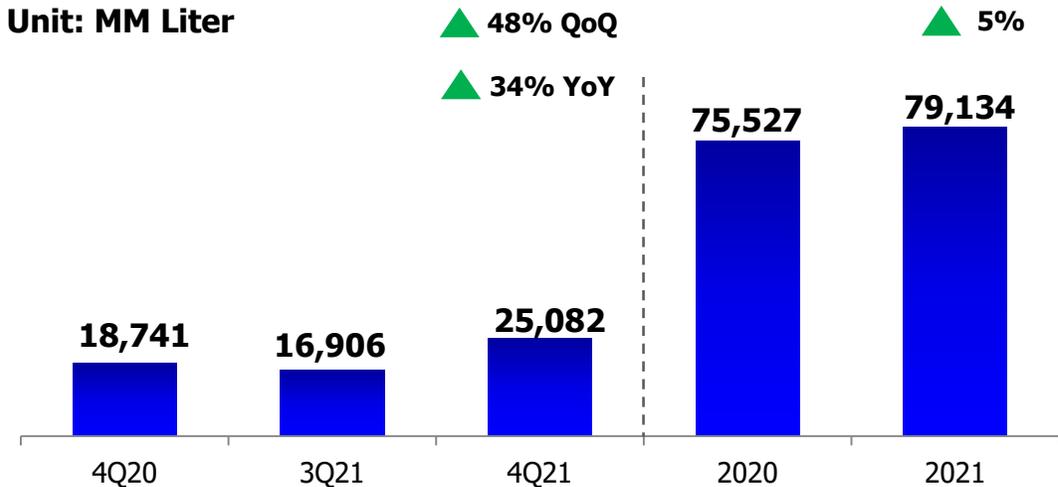
▲ 43%



Sales Volume²

Unit: MM Liter

▲ 48% QoQ
▲ 34% YoY



75,527

79,134

2020

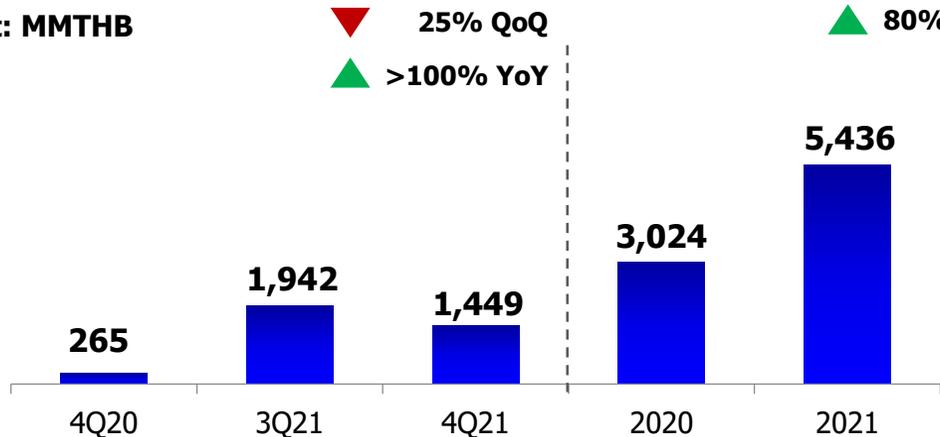
2021

▲ 5%

Trading – EBITDA³

Unit: MMTHB

▼ 25% QoQ
▲ >100% YoY



▲ 80%

3,024

5,436

2020

2021

Key Highlights

QoQ ▼

- Margin decreased due to loss on mark to market in 4Q21
- + Increased sales vol. from higher crude out-in and out-out activities following demand recovery
- EBITDA dropped following lower gross margin

2021 vs 2020 ▲

- + Higher gross margin mainly from domestic condensate as well as out-out trading products e.g., LNG, LPG, and Aromatics
- + Volume increased due to global demand recovery from the easing of lockdown
- + EBITDA improved from higher gross margin and sales volume

¹ PTT Trading BU + trading subsidiaries: FX Adjusted + gain/loss on derivatives + Joint Trade Agreement (JTA)

² PTT Trading BU + trading subsidiaries + JTA

³ PTT Trading BU + trading subsidiaries: FX Adjusted + gain/loss on derivatives

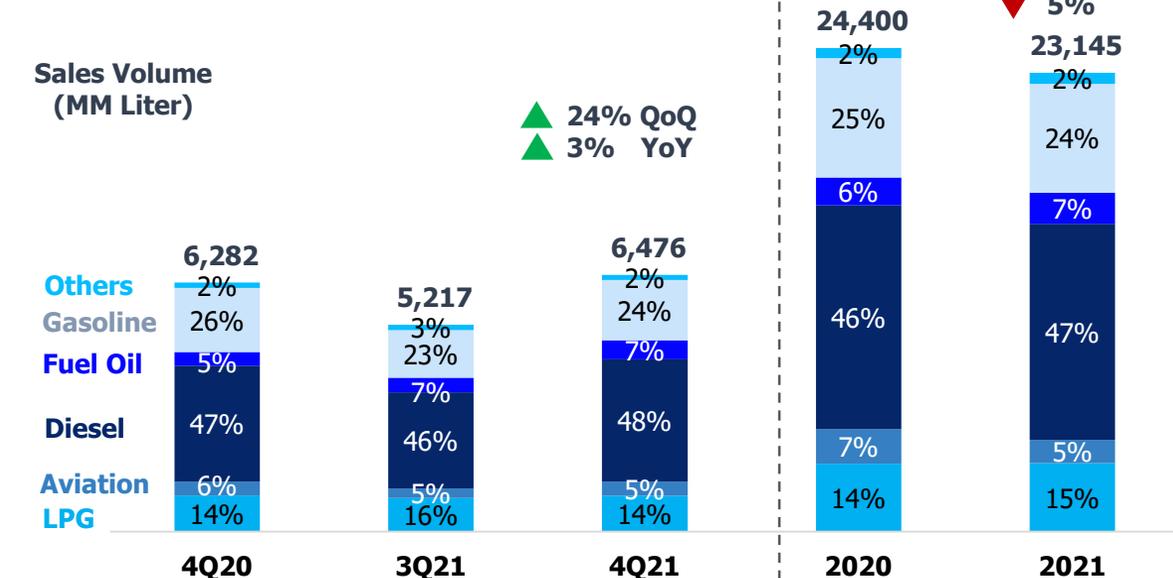
Oil Business : OR Group

QoQ : Better performance from both of Oil and Non-oil sales volume despite lower margin

2021 vs 2020 : Improved Oil performance from wider oil margin despite reduced oil sales volume and soften Non-oil performance

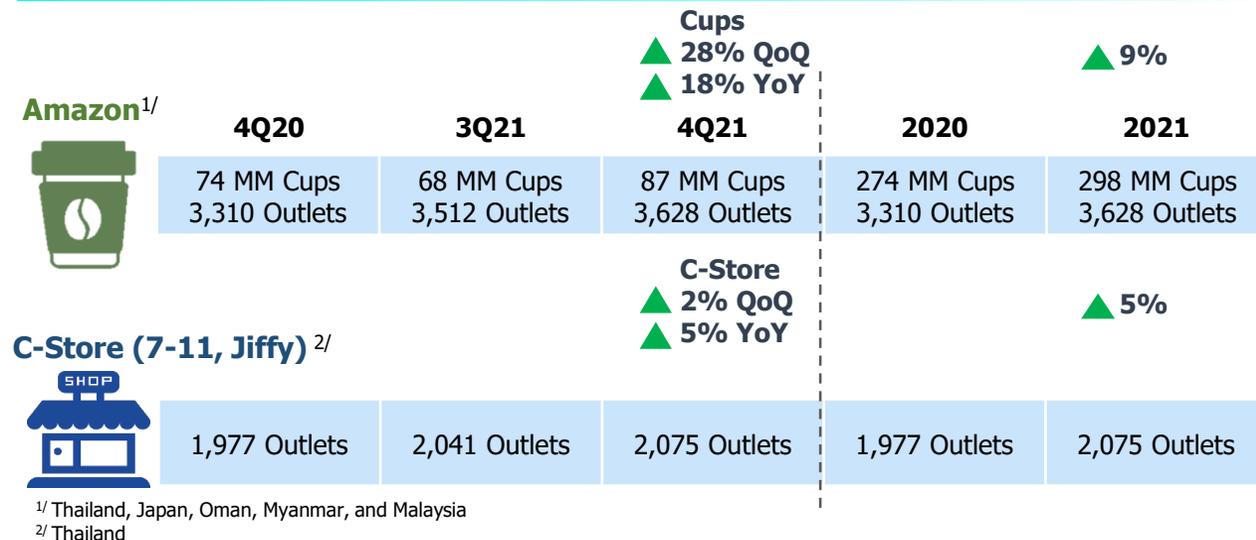


Oil Business



*Gross margin included stock gain/(loss)

Non-oil Business



Net Income



QoQ : ▲ Oil : Rising sales volume due to easing lockdown measures despite lower margin
▲ Non-Oil : Higher sales volume from resumed normal operating hours of F&B outlets and CVS

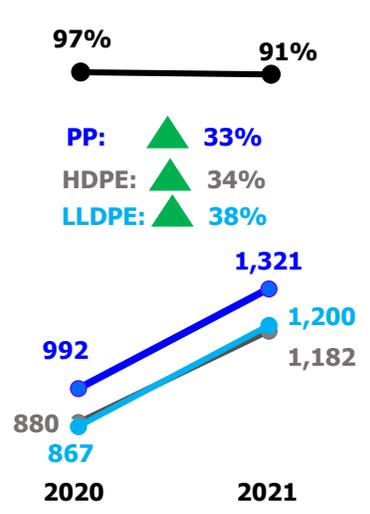
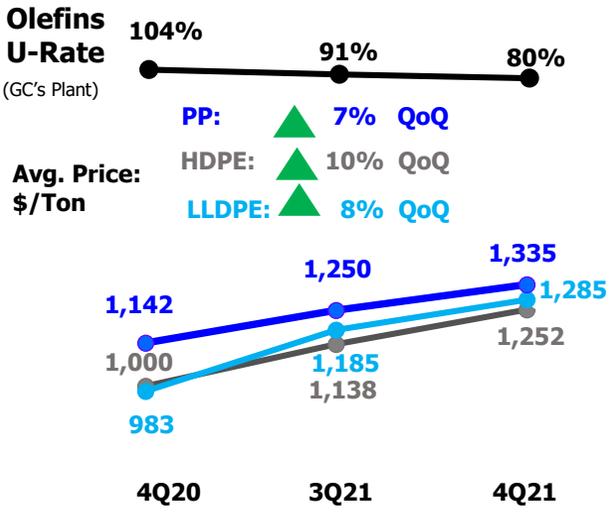
2021 vs 2020:

▲ Oil : Better margin while sales volume dropped from aviation, gasoline, and diesel
▼ Non-Oil : Soften performance from higher promotion expenses despite continued outlet expansion

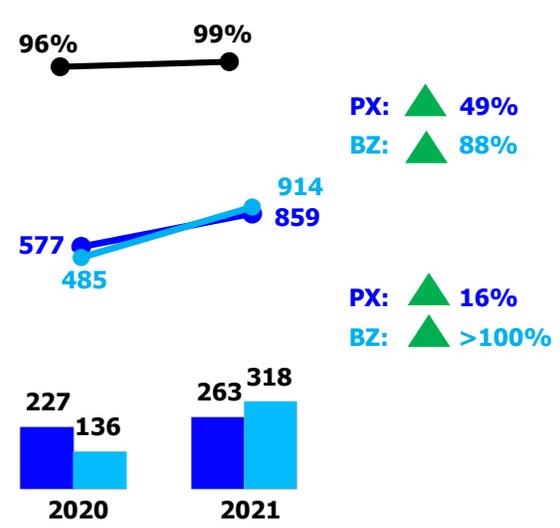
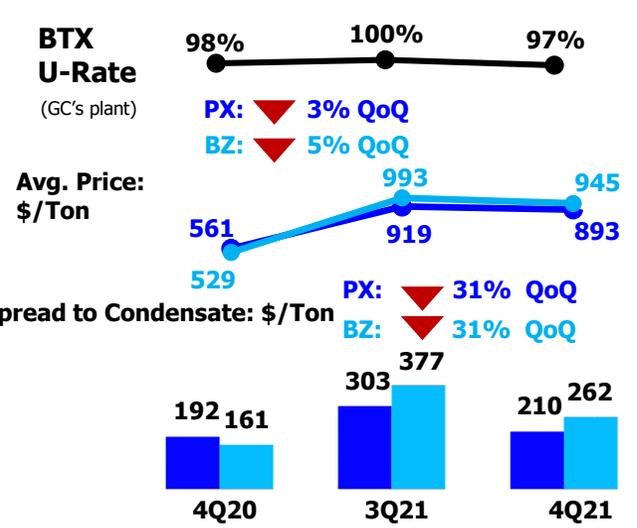
P&R Businesses

QoQ: Softer performance primarily from petrochemical business resulted from higher feed cost and lower volume
 2021 vs 2020: Robust performance from stock gain and petrochemical prices hiked following global demand recovery

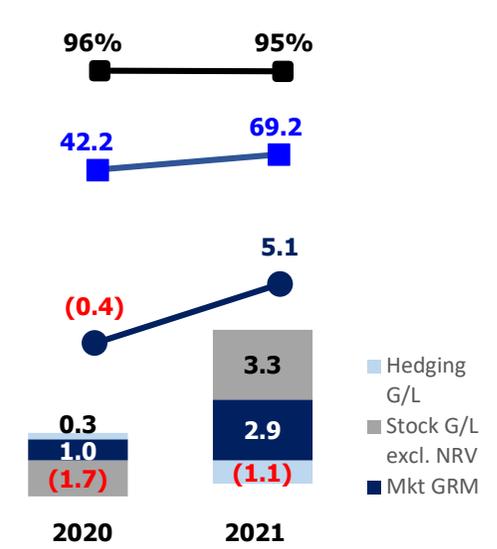
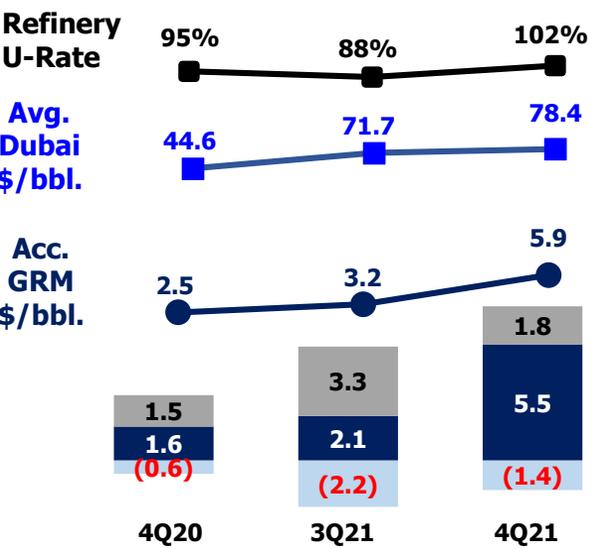
Olefins



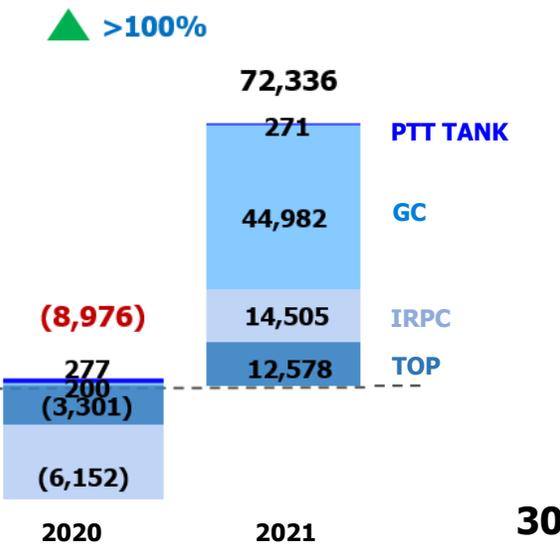
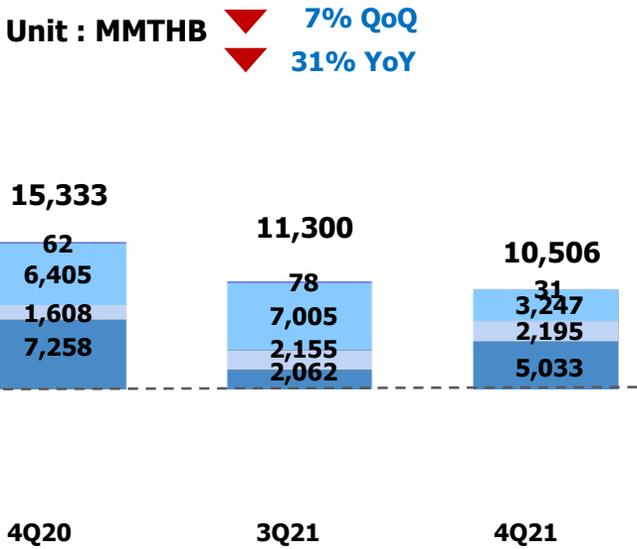
Aromatics



Refinery



Net Income (100%)



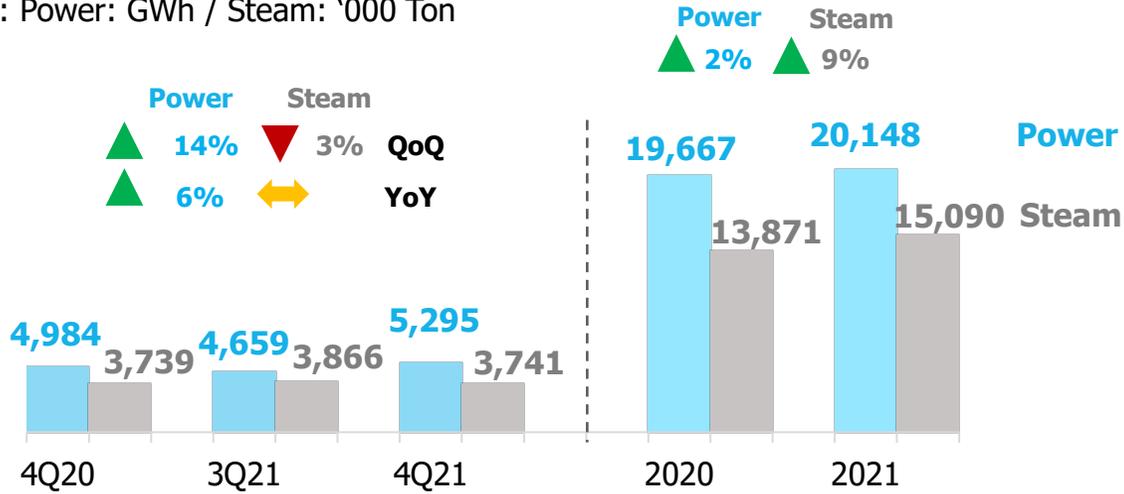
NBI: Power - GPSC

QoQ: NI decreased due to higher fuel costs affected SPP's profit and lower XPCL's contribution

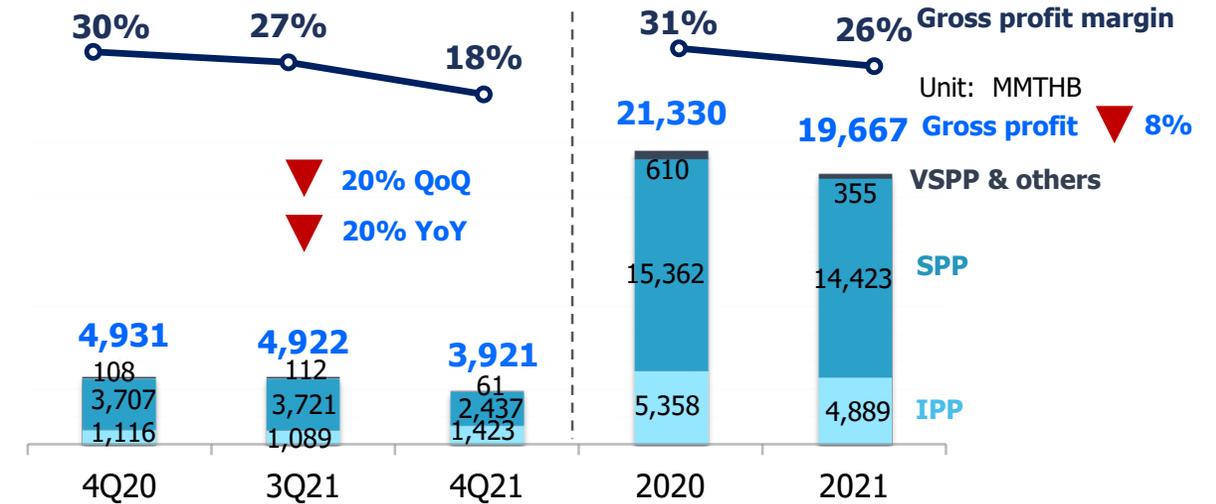
2021 vs 2020: Softer NI due to higher fuel costs and unplanned outages, despite better XPCL's performance

Sales Volume

Unit: Power: GWh / Steam: '000 Ton

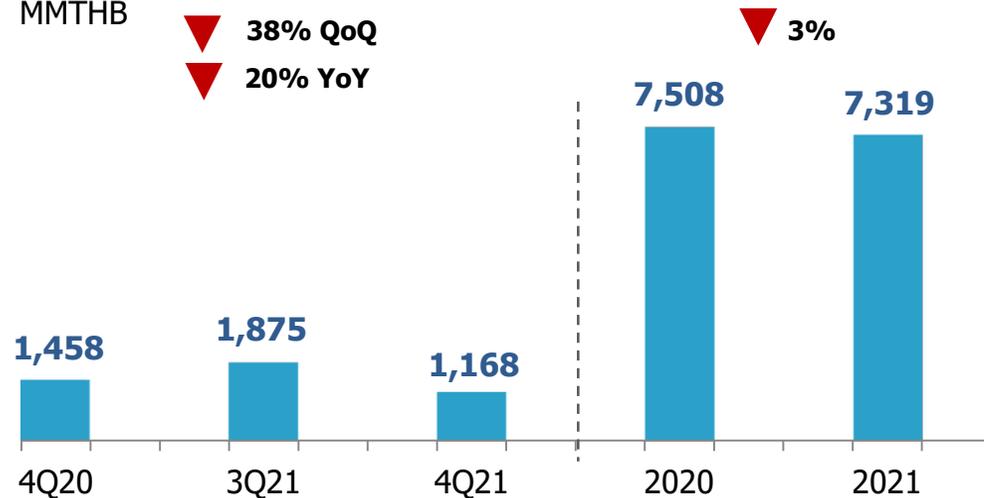


Gross profit & Gross profit margin



Net Income

Unit: MMTHB



QoQ ▼

- Lower gross profit
 - SPP: higher fuel costs, together with unplanned outage of Glow Energy Phase 5
 - + IPP: higher AP mainly from GHECO-One
- Lower shares of profit from Xayaburi Power Plant (XPCL) due to seasonality
- + Partial recognition of Glow Energy Phase 5 insurance claim

2021 vs 2020 ▼

- Lower gross profit
 - SPP: higher fuel costs and unplanned outage of Glow Energy Phase 5
 - IPP: lower AP due to planned & unplanned outage of GHECO-One in 1Q21 - 3Q21
- + Higher shares of profit from XPCL due to drought situation in 2020

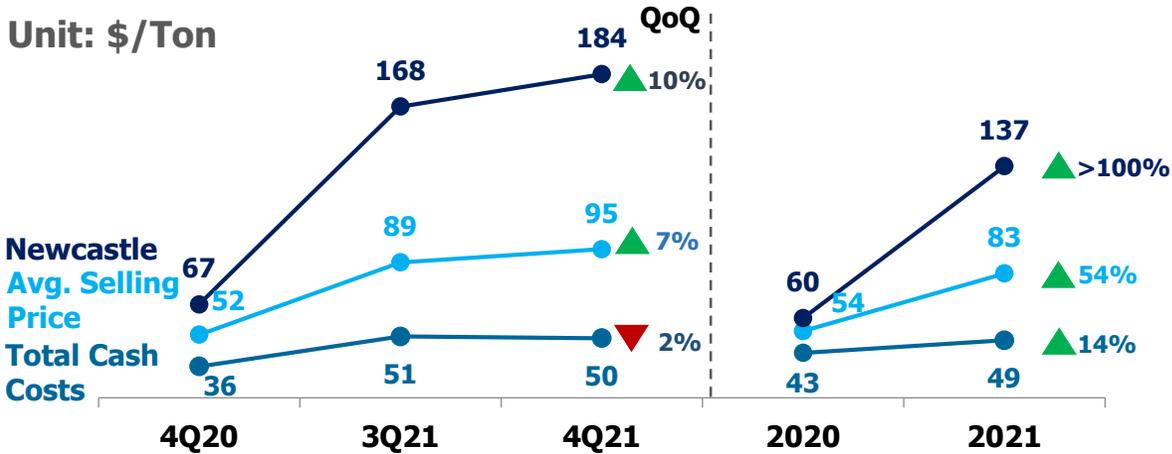
Other Business : Coal business (SAR)

QoQ: NI improved due to rising avg. selling prices and sales volume, as well as higher hedging gain

2021 vs 2020: NI increased from higher avg. selling prices referenced to Newcastle price surged, and impairment of assets in 2020

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

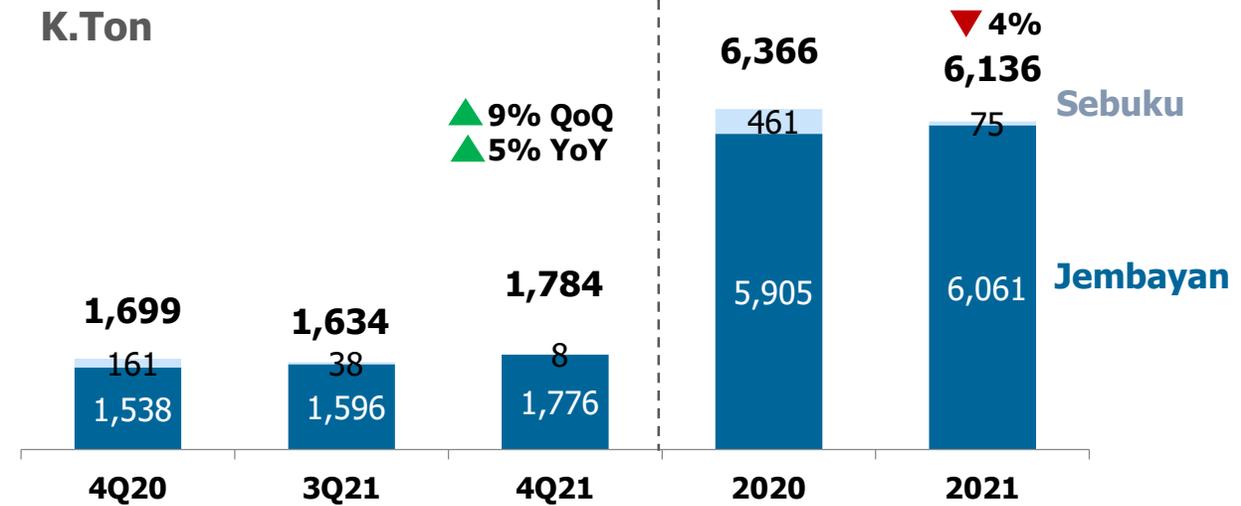
Unit: \$/Ton



^{1/} Average Calorific value ~ 5,400 kcal/kg

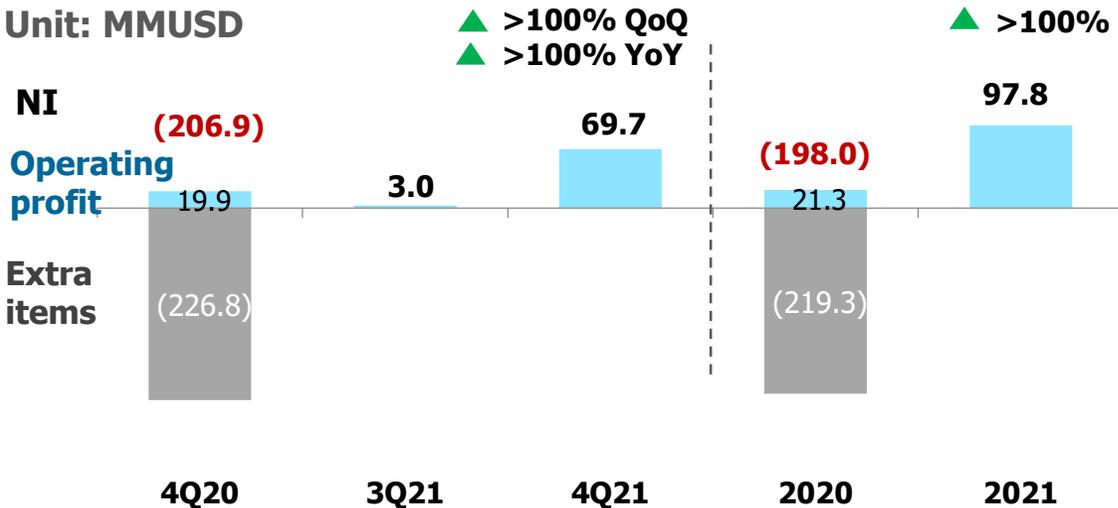
Sales Volume

K.Ton



Net Income (100%)

Unit: MMUSD



Key Highlights

QoQ ▲

- + Avg. selling prices increased due to escalated Newcastle price
- + Higher sales volume from higher China's demand due to energy shortage crisis
- + NI improved mainly from increased avg. selling prices and sales volume with higher commodity hedging gain (3Q21 = hedging loss)

2021 vs 2020 ▲

- + Avg. selling prices largely improved following referenced Newcastle price
- Sales volume dropped from lower production plan and ceased operation of the Sebuku coal mine
- + NI improved mainly from sharply increased avg. selling prices, and there was impairment of assets in 2020

Dividend Policy & Historical Payments

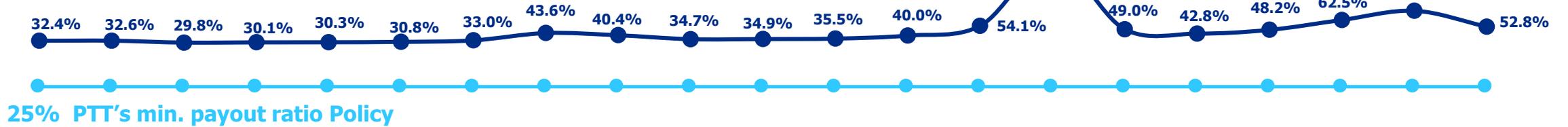


2021 Dividend payout at 52.8%

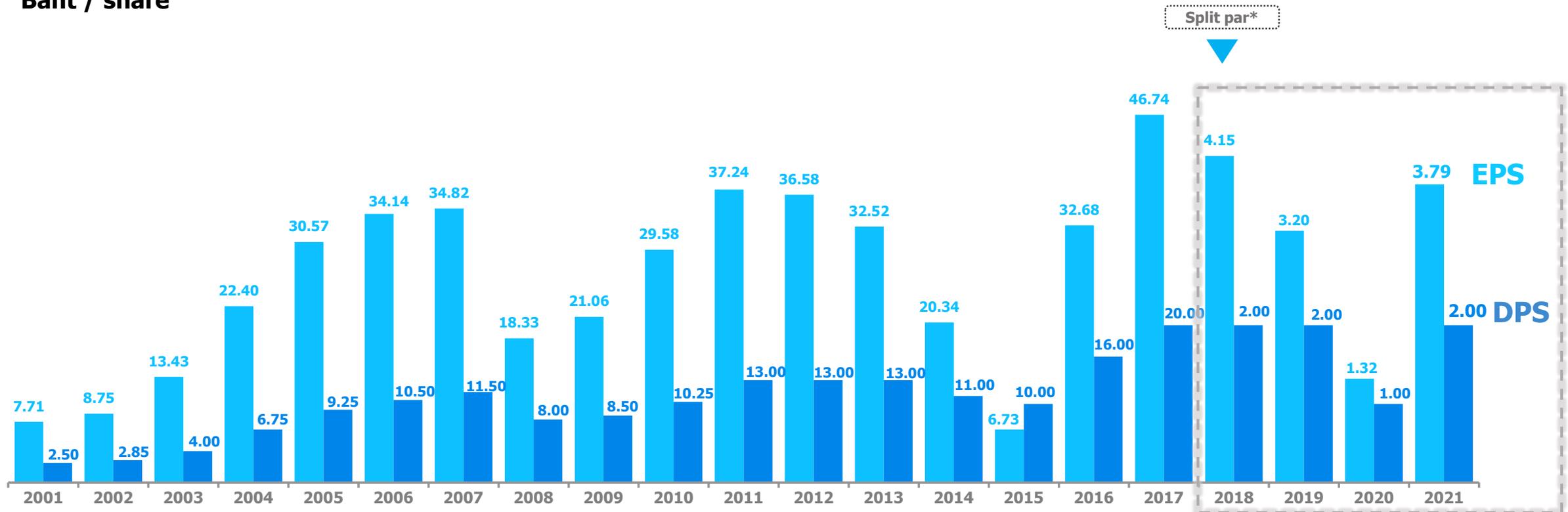
Avg. since IPO
46%

10-Year Avg.
61%

Dividend payout

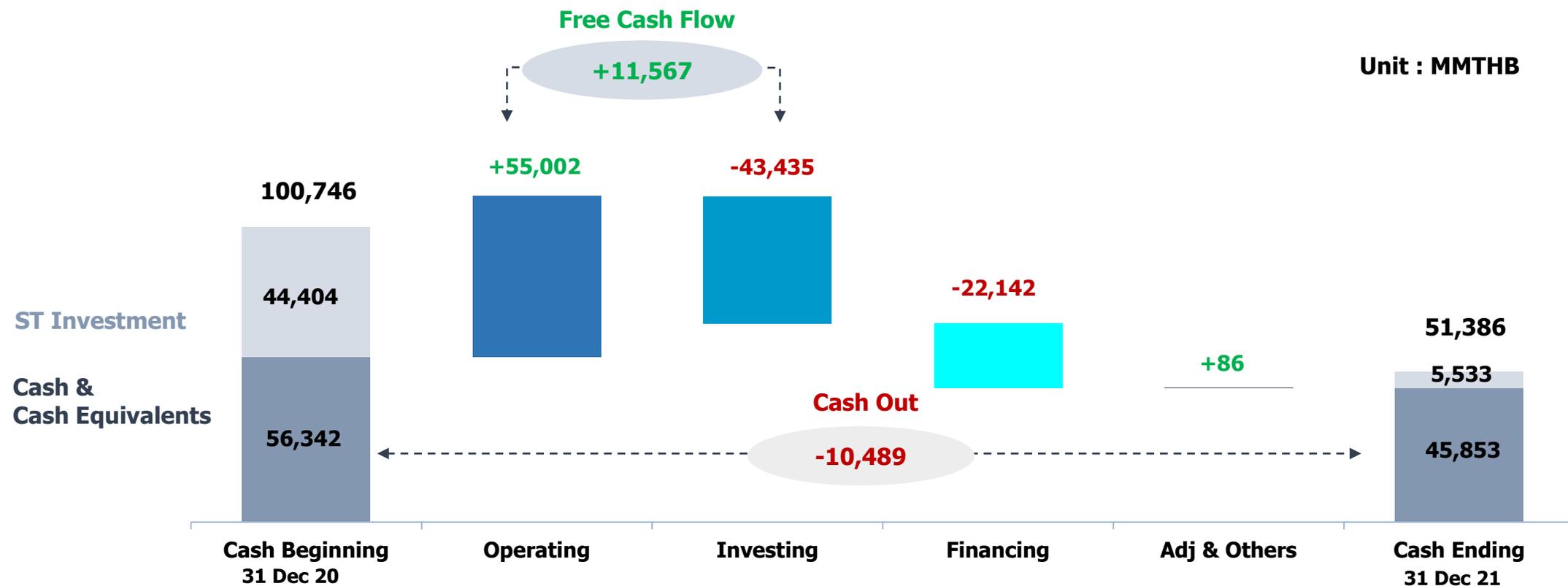


Baht / share



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

PTT Only Cash Flows 2021



Operating	55,002
Net Income	67,325
Non-Cash Adjustment	8,592
Changes in Assets & Liabilities	(13,623)
Income Tax	(7,292)

Investing	(43,435)
Others*	(75,163)
Investment (Sub. & Affiliates)	(31,196)
CAPEX	(9,738)
Dividend/Interest Received	36,921
Current Investment	35,741

Financing	(22,142)
Dividend Paid	(57,694)
Loan Repayment	(11,138)
Finance Cost Paid	(6,175)
Others	(88)
Received from loans/Bonds	52,953

*Investment in financial assets, ST/LT lending loans

PTT Group Performance : 4Q2021 (QoQ & YoY)



Unit : MMTHB	Performance 100%					% PTT holding	Equity Method % PTT				
	4Q20	3Q21	4Q21	QoQ	YoY		4Q20	3Q21	4Q21	QoQ	YoY
PTT Net Operating Income	8,351	8,248	7,683	-7%	-8%		8,351	8,248	7,683	-7%	-8%
E&P - PTTEP	2,527	9,545	10,646	12%	>100%	65.29%	1,623	6,231	6,950	12%	>100%
Petrochemical	6,467	7,083	3,278	-54%	-49%		2,885	3,545	1,064	-70%	-63%
- GC	6,405	7,005	3,247	-54%	-49%	48.18%	2,824	3,467	1,033	-70%	-63%
- Other	62	78	31	-60%	-50%		61	78	31	-60%	-49%
Refining	8,866	4,217	7,228	71%	-18%		1,187	693	4,070	>100%	>100%
- TOP	7,258	2,062	5,033	>100%	-31%	48.03%	455	(337)	3,000	>100%	>100%
- IRPC	1,608	2,155	2,195	2%	37%	48.05%	732	1,030	1,070	4%	46%
Oil - OR	2,923	1,893	2,353	24%	-20%	75.00%	3,035	1,410	1,699	20%	-44%
NBI - GPSC/TP/DCAP/PTTES/PTTDIGITAL/ENCO	2,104	2,263	1,534	-32%	-27%		587	974	645	-34%	10%
Others Business	(4,448)	3,344	5,705	71%	>100%		(4,538)	2,552	5,423	>100%	>100%
Inter - PTTER/PTTGM	(5,799)	538	3,298	>100%	>100%	100.00%	(6,010)	36	3,348	>100%	>100%
Gas - PTTLNG/PTTNGD/PTTGL/TTM(T)/TTM(M)	1,037	2,412	2,316	-4%	>100%		1,157	2,118	1,971	-7%	70%
Other - PTTT/Others^{1/}	314	394	91	-77%	-71%		315	398	104	-74%	-67%
Shared of Net Income from Affiliates	18,439	28,345	30,744	8%	67%		4,779	15,405	19,851	29%	>100%
Tax Adjustment for Gain on Disposal of Investment and Asset	17	-	10	100%	-41%		17	-	10	100%	-41%
PTT Consolidated Net Income	26,807	36,593	38,437	5%	43%		13,147	23,653	27,544	16%	>100%

1/Including PTTGE,BSA, and PTT TCC

PTT Group Performance : 2021 vs 2020



Unit : MMTHB	Performance 100%			% PTT holding	Equity Method % PTT		
	2020	2021	2021 VS 2020		2020	2021	2021 VS 2020
PTT Net Operating Income	17,631	34,024	93%		17,631	34,024	93%
E&P - PTTEP	22,664	38,864	71%	65.29%	14,783	25,369	72%
Petrochemical	477	45,253	>100%		374	10,753	>100%
- GC	200	44,982	>100%	48.18%	97	10,482	>100%
- Other	277	271	-2%		277	271	-2%
Refining	(9,453)	27,083	>100%		(7,457)	12,170	>100%
- TOP	(3,301)	12,578	>100%	48.03%	(4,540)	5,284	>100%
- IRPC	(6,152)	14,505	>100%	48.05%	(2,917)	6,886	>100%
Oil - OR	8,791	11,474	31%	75.00%	8,884	8,987	1%
NBI - GPSC/TP/DCAP/PTTES/PTTDIGITAL/ENCO	10,423	23,536	>100%		2,666	3,307	24%
Others Business	2,869	15,358	>100%		1,962	13,441	>100%
Inter - PTTER/PTTGM	(6,318)	4,712	>100%	100.00%	(7,026)	3,880	>100%
Gas - PTT LNG/PTTNGD/PTTGL/TTM(T)/TTM(M)	7,153	9,265	30%		6,953	8,157	17%
Other - PTTT/Others^{1/}	2,034	1,381	-32%		2,035	1,404	-31%
Shared of Net Income from Affiliates	35,771	161,568	>100%		21,212	74,027	>100%
Tax Adjustment for Gain on Disposal of Investment and Asset	(1,077)	312	>100%		(1,077)	312	>100%
PTT Consolidated Net Income	52,325	195,904	>100%		37,766	108,363	>100%

1/Including PTTGE,BSA, and PTT TCC

PTT Group Accounting Structure



Data as of 31 Dec 2021

E&P and Gas Business Group			International Trading Business Group			Petrochemicals & Refining Business Group								
Subsidiaries PTT Exploration & Production Plc. PTTTEP PTT Natural Gas Distribution Co., Ltd. PTTNGD PTT LNG Co., Ltd. PTTLNG PTT Global LNG Co., Ltd PTTGL			Consolidate 65.29% ^{2/} 58.00% 100.00% 50.00%			Subsidiaries PTT International Trading Pte. PTTT PTT International Trading London Ltd. PTTT LDN PTT International Trading USA Inc. PTTT USA			Consolidate 100.00% 100.00% 100.00%					
Joint Ventures Trans Thai-Malaysia (Thailand) Co., Ltd. TTM (T) Trans Thai-Malaysia (Malaysia) Sdn. Bhd. TTM (M) Map Ta Phut Air Products Co., Limited MAP			Equity 50.00% 50.00% 49.00%			Oil Business Group			Petrochemical Subsidiaries PTT Global Chemical Plc. ^{1/} GC PTT Tank Terminal Co., Ltd. PTTTANK			Consolidate 48.18% ^{2/} 100.00%		
			Subsidiaries PTT Oil & Retail Business Plc.			OR			Refining Subsidiaries Thai Oil Plc. ^{1/} TOP IRPC Plc. ^{1/} IRPC			Consolidate 48.03% ^{2/} 48.05% ^{2/}		
Consolidate 75.00%														
New Business & Infrastructure Business Group			International Investment Business Group			Others								
Subsidiaries Global Power Synergy Co., Ltd. ^{1/} GPSC PTT Digital Solutions Co., Ltd. ^{1/} PTT DIGITAL PTT Energy Solutions Co., Ltd. ^{1/} PTTES Energy Complex Co., Ltd. EnCo			Consolidate 75.23% ^{2/} 20.00% 40.00% 50.00%			Subsidiaries PTT Energy Resources Co., Ltd. PTTER PTT Green Energy Pte. Ltd PTTGE PTT Global Management Co., Ltd. PTTGM			Consolidate 100.00% 100.00% 100.00%					
Joint Ventures District Cooling System and Power Plant			Equity DCAP 35.00%											
Others Baania (Thailand) Co., Ltd. Baania HG Robotics Plc. HG Robotics Innospace (Thailand) Innospace Sunfolding, Inc. Sunfolding Luminar Technologies, Inc. Luminar Technologies Ample, Inc. AMPLE			Fair value 2.73% 9.47% 13.61% 5.59% 0.07% 1.13%											
						Subsidiaries Business Service Alliance Co., Ltd. ^{1/} BSA PTT Treasury Center Co., Ltd. PTT TCC			Consolidate 25.00% ^{3/} 100.00%					
						Joint Ventures Suez Environmental Services Co., Ltd. SES			Equity 40.00%					
						Others Sarn Palung Social Enterprise Co., Ltd. SPSE Dhipaya Group Holdings Plc. TIPH			Fair value 20.00% 13.46%					

Remark : ^{1/}Subsidiaries that PTT holds less than 50% but being consolidated because PTT has the power to control the financial and operating policies.

^{2/} Holding portion of PTT Group (direct & indirect)

^{3/} PTT holds 100.00% of BSA's ordinary shares, PTT's ownership interest in BSA is 100%

Debt Profile : Control Cost & Manage Risk



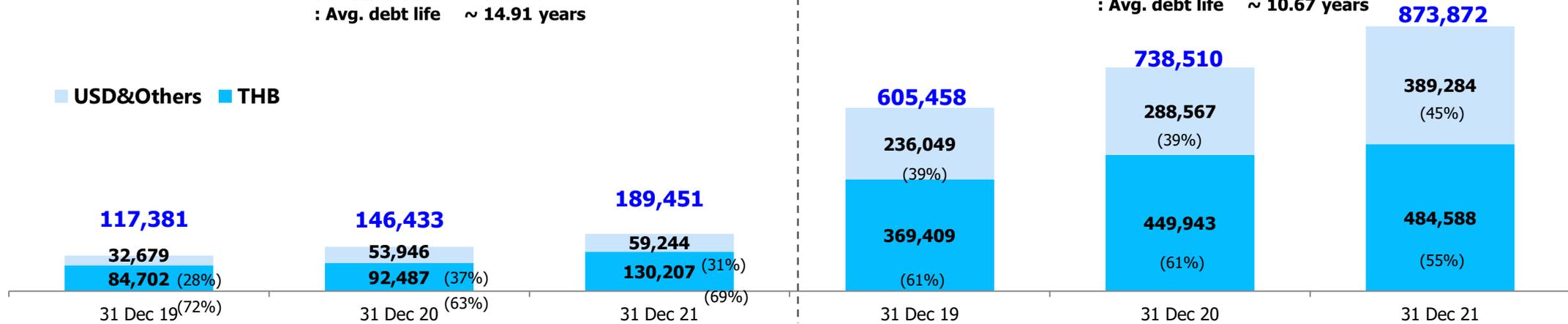
Managed debt according to financial risk and policy

Debt Portfolio

Unit : MMTHB

PTT Only : Cost of debts ~ 3.70%
 : % fixed-rate ~ 76.59%
 : Avg. debt life ~ 14.91 years

Consolidated : Cost of debts ~ 3.22%
 : % fixed-rate ~ 67.88%
 : Avg. debt life ~ 10.67 years



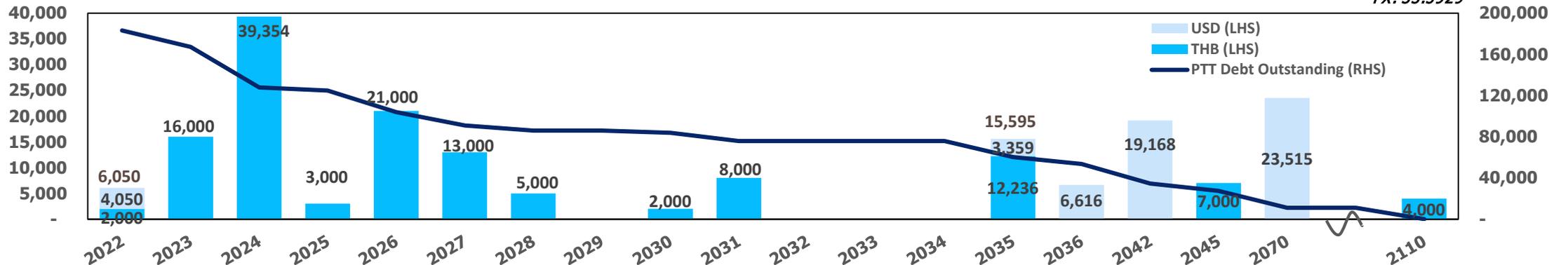
Note : 1. PTT Data as of 31 Dec 21 (THB/USD = 33.5929 THB/JPY = 0.2944) excluding liabilities from finance leases.
 2. Debt Outstanding represents amount and portion before derivative swaps, and reconciled with accounting.
 3. Cost of debts, % fixed rate, and avg. debt life took into account the derivative transactions, including withholding tax (update as of 31 Dec 21).

PTT Only : Debt Outstanding and Repayment Profile

Unit : MMTHB

As of 31 Dec 21

FX: 33.5929



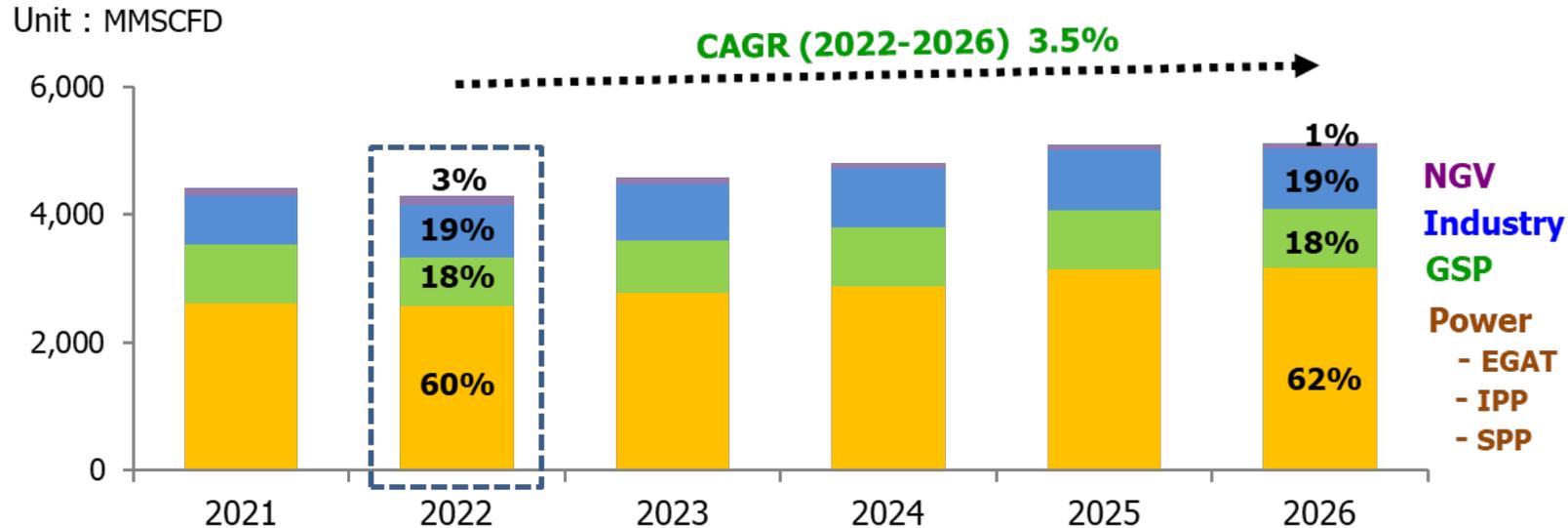
Note: 1. Debt Outstanding for Repayment Profile represents financial data and portion after derivative swaps
 2. Bond repayment amounting 4,050 MB in 2022 is THB swaps to USD and amounting 6,236 MB in 2035 is USD swaps to THB

*PTTC10DA (Century Bonds) is due on 2 Dec 2110

Gas Business Roadmap

Short term Gas Demand growth be maintained

Thailand Gas Demand Outlook (Short Term – 5 year plan)



New Supply Additional capacity (mmscfd)	Bongkot 200 Erawan 250-300	Bongkot 700	Erawan 800
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Major Project : COD & Capacity/ Accumulate Pipeline distance	RA#6 Pipeline	5th pipeline 4,702 KM LNG Terminal 2 +7.5 MTA	GSP#7* 460 mmscfd	GSP#8 BPK-SB** pipeline ~74 KM 4,776 KM
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*Replace GSP#1

**Bang Pakong- South Bangkok Power Plant

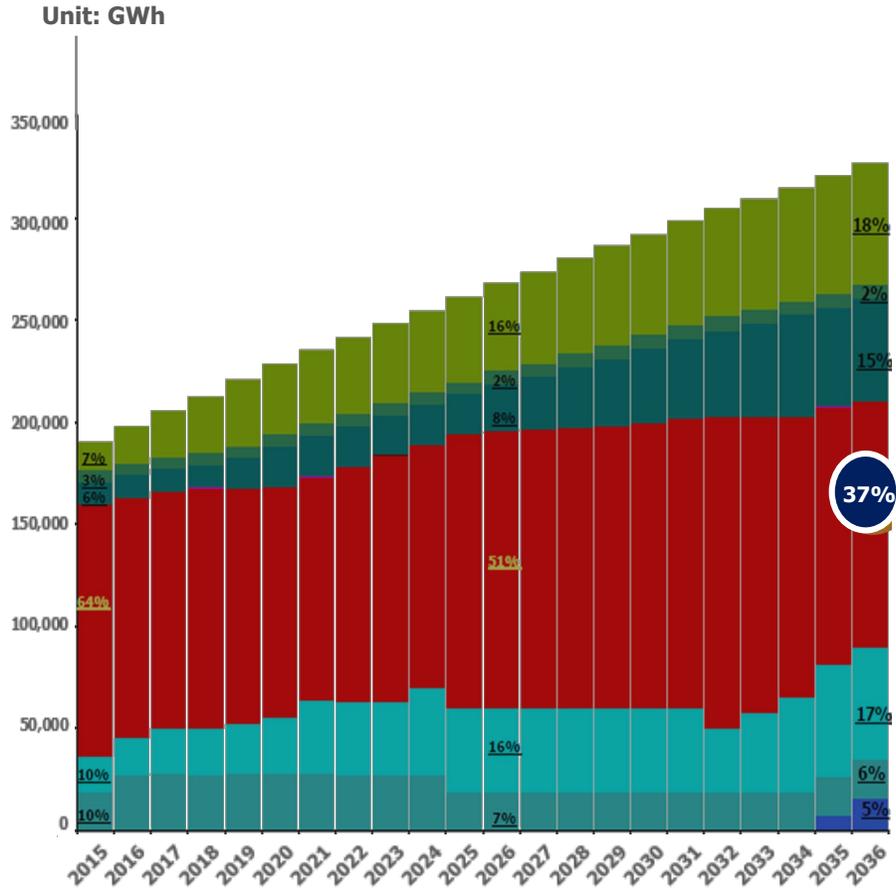
Newly Thailand Power Development Plan



Stronger demand of NG for power plants

PDP 2015*

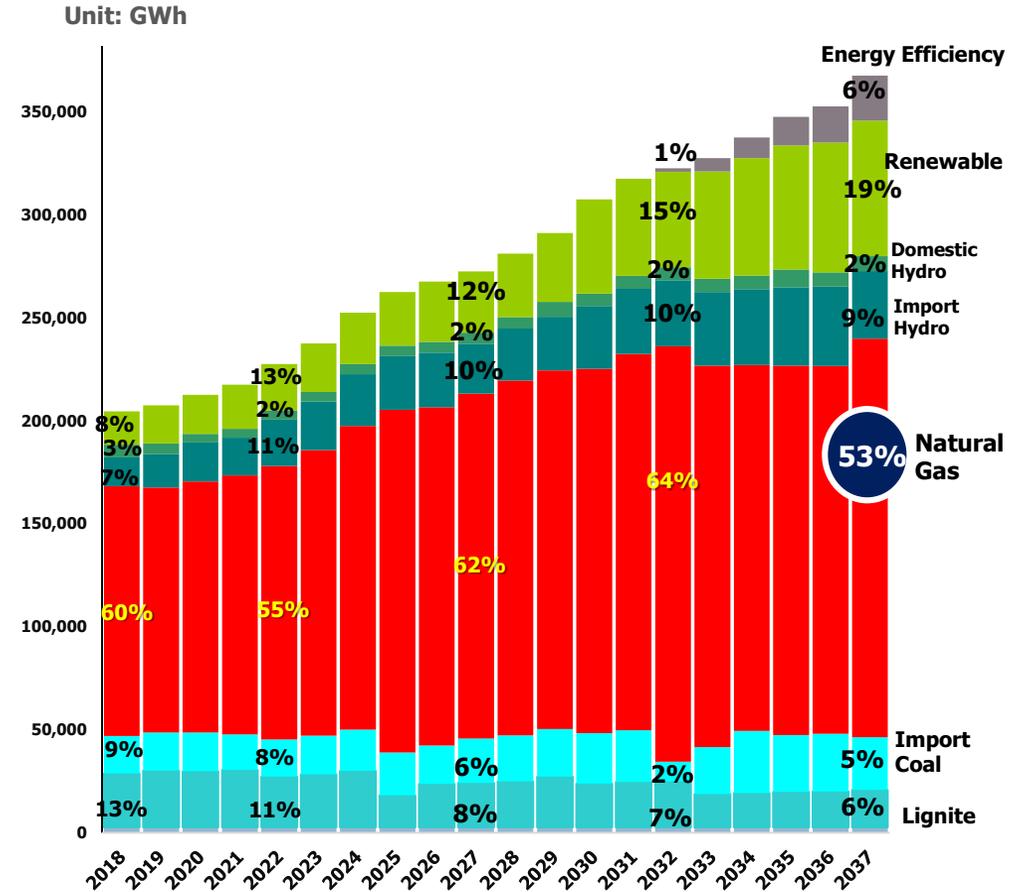
Natural Gas growth upon Government fuel diversification policy for power generation



*Source: Ministry of Energy

PDP 2018 Rev.1**

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



** Source : EPP0 (Public Hearing presentation)

Natural Gas Demand

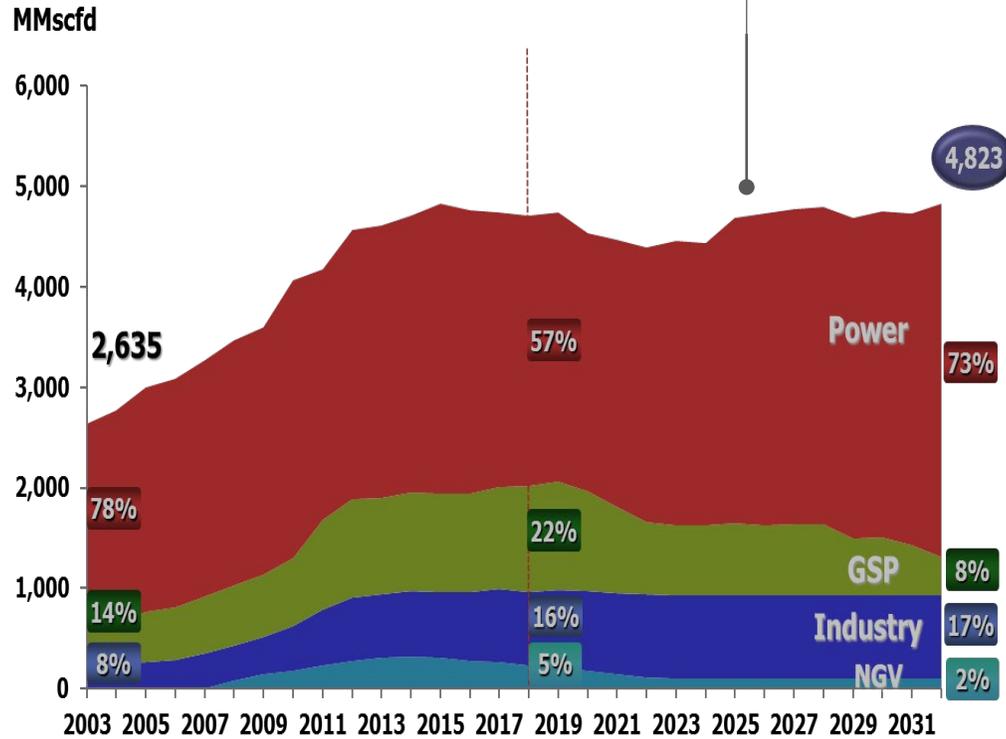


Growth of natural gas upon Government fuel diversification policy for power generation

Old*

Thailand Gas demand forecast (CAGR during 2018-2032)

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

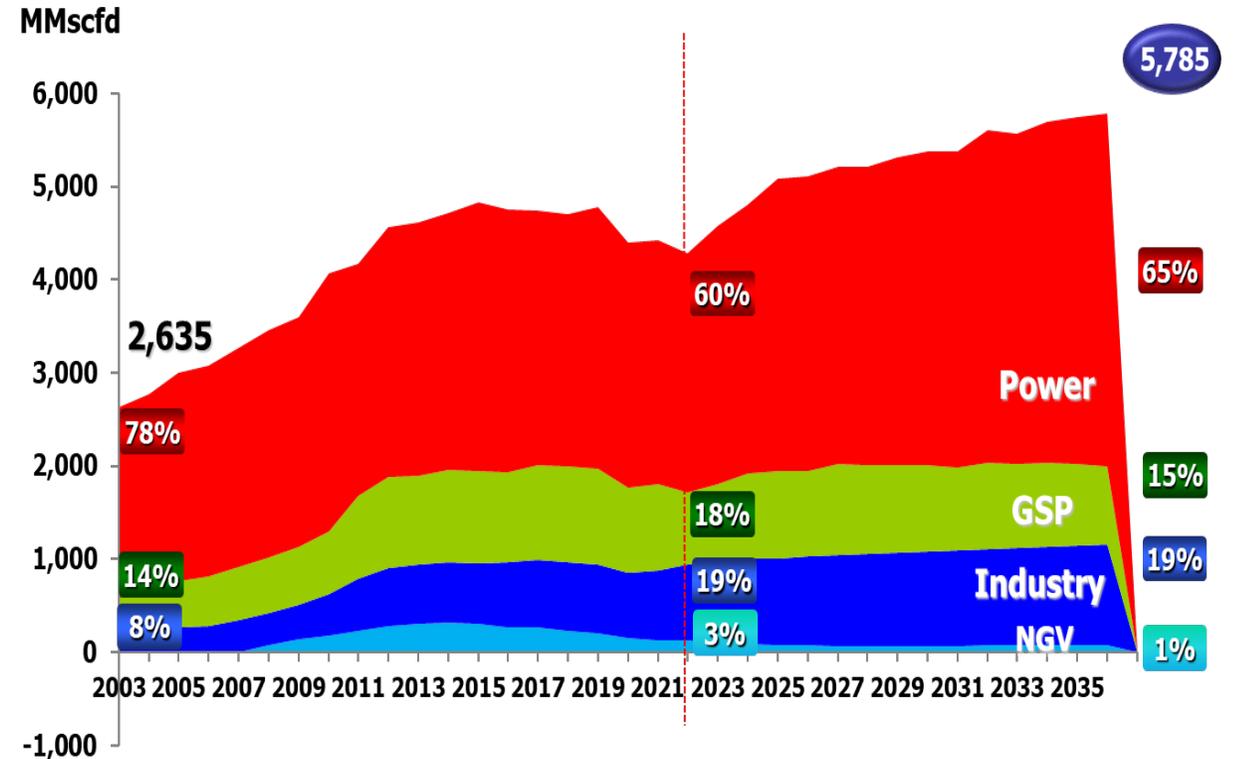


*Source: Ministry of Energy

NEW**

Thailand Gas demand forecast (CAGR during 2022-2036)

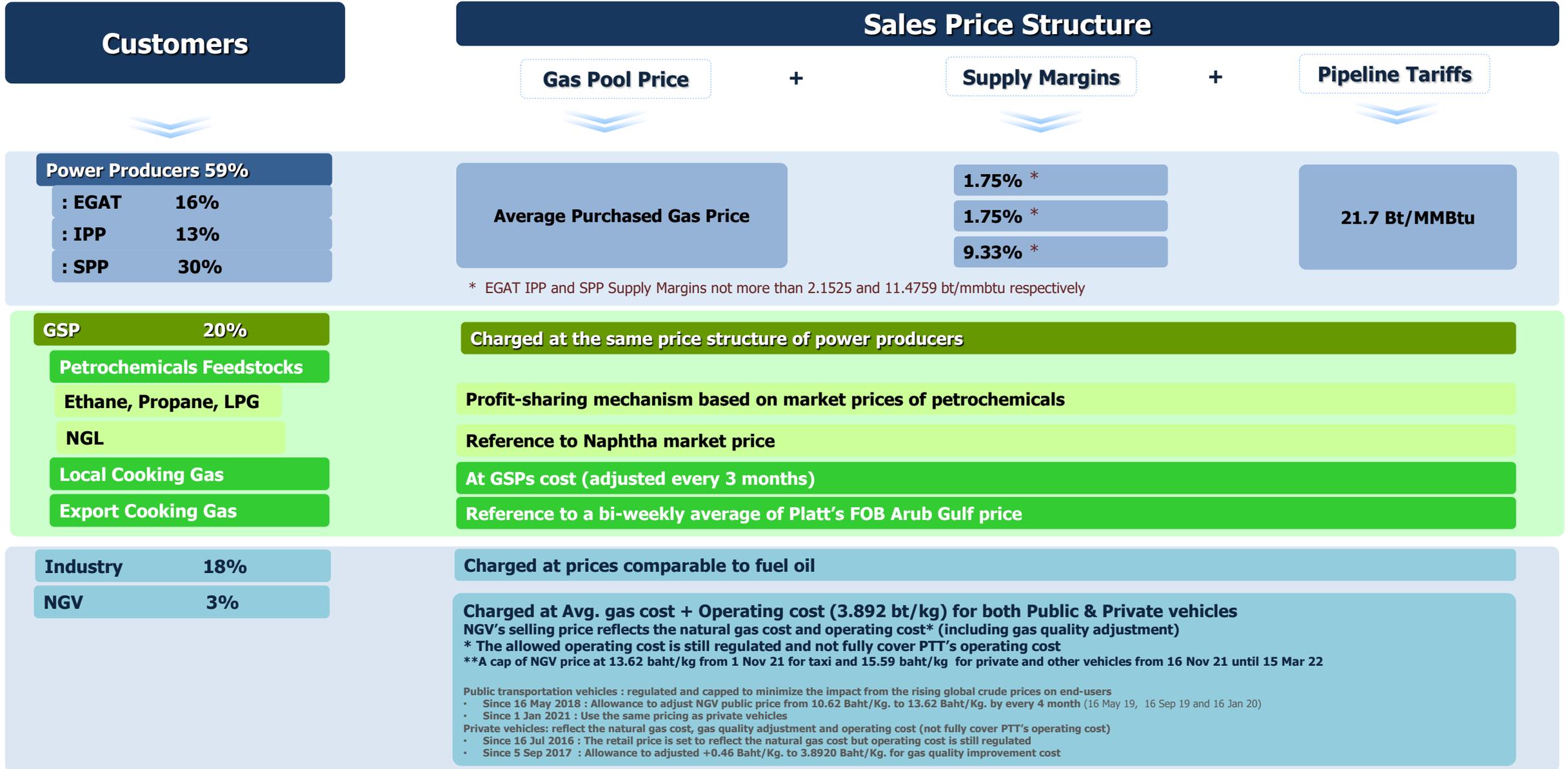
: Total	~	2%
: Power	~	3%
: GSP	~	1%
: Industry	~	3%
: NGV	~	-4%



** Source : PTT Business plan 2022 approved by BOD on 16 Dec 2021

Natural Gas Price Structure : As of Dec 2021

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



Overview

- ✔ 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

Gas transmission pipeline capacity

