



# Investor Update

## April 2024



# Contents

01 Overview

02 4Q & 2023 Performance

03 PTT Group Strategy

04 Outlook/Guidance

05 ESG

06 Supplementary Information

Overview

4Q & 2023  
Performance

PTT Group  
Strategy

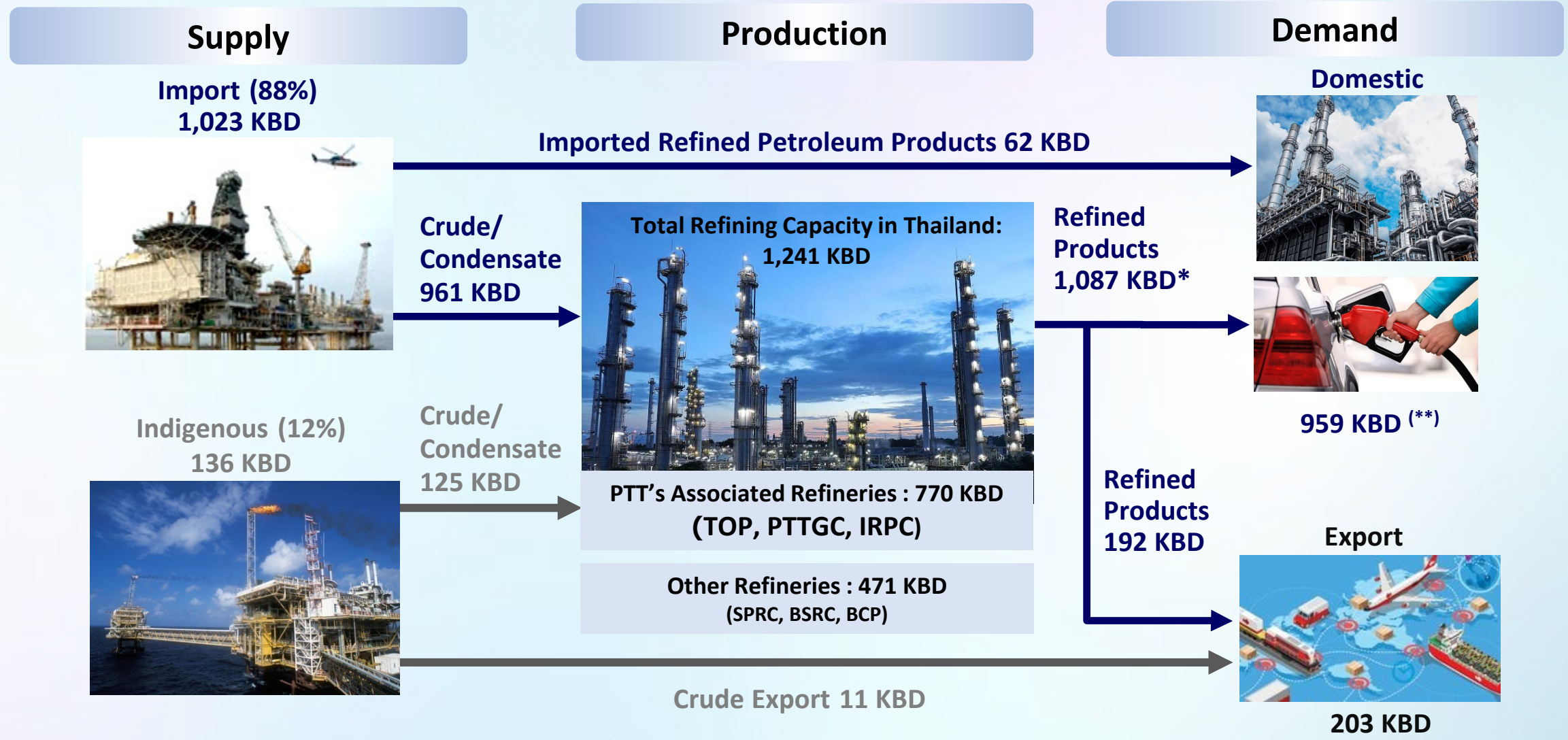
Outlook/Guidance

ESG

Supplementary

# Oil Balance Thailand: Jan – Dec 2023

Adequate refining capacity maintains the stability of country supply



Source: PTIT

Remark : (\*)Refined product from refineries = 1,006 KBD, including domestic supply of LPG from GSPs and Petrochemical Plants = 81 KBD

(\*\*) Included Inventory

KBD = Thousand Barrels per day

# Natural Gas Balance: Jan – Dec 2023

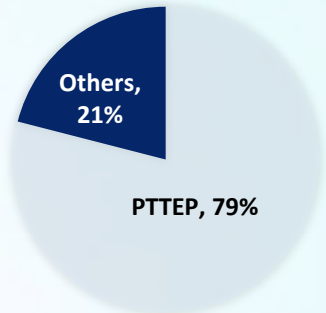
Main driver of the Thai economy

## Supply

## Production

## Sales

Gulf of Thailand (50%)



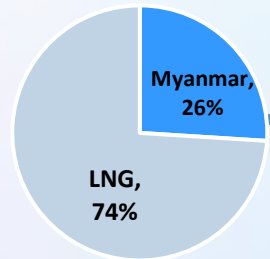
2,220  
MMSCFD

Onshore (2%)



100 MMSCFD

Import (48%)



2,110 MMSCFD



6 GSPs  
Total Capacity  
2,870 MMSCFD @ Actual Heat

Ethane/ Propane/  
LPG/NGL

783 MMSCFD  
(18%)

LPG

Petrochemical  
Feedstock  
(10%)

Industry  
Household  
Transportation  
(8%)

Bypass Gas  
189 MMSCFD

Methane  
1,248 MMSCFD

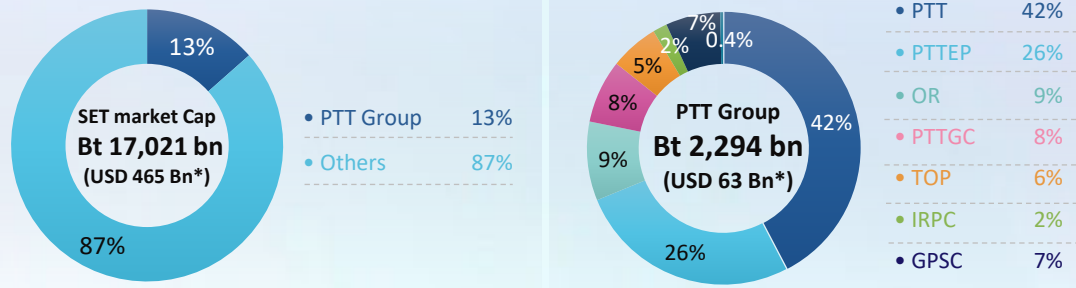
Power (62%)  
Industry (17%)  
NGV (3%)

Remark: MMSCFD = Million Cubic Feet @ Heating Value 1,000 Btu/ft<sup>3</sup>

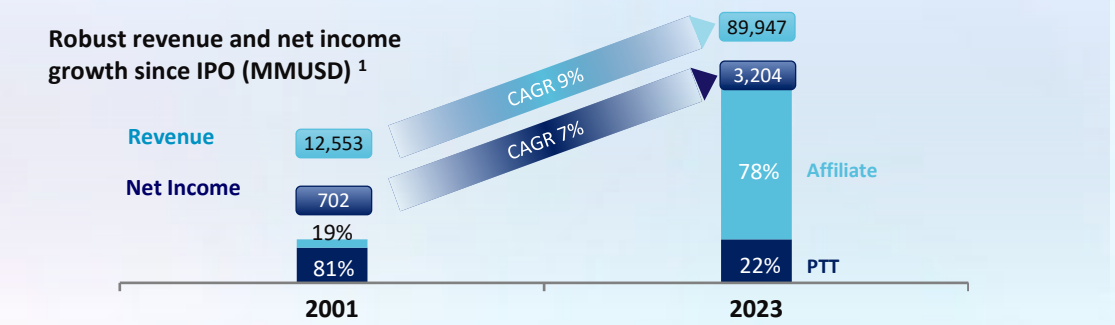
# PTT's Strategic Importance to Thailand

## Market Cap : SET & PTT Group Unit: MB

Note: As of Mar 29, 2024

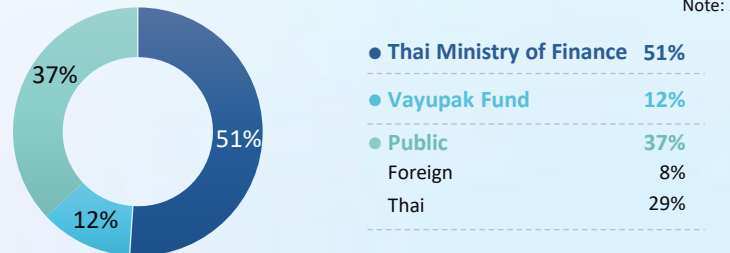


\* As of Mar 29, 2024, BOT selling rate USD/THB of 36.6318 (End rate)



## Ministry of Finance holds majority stake in PTT

Note: As of Mar 1, 2024



## PTT Ratings at Sovereign Level

	Moody's	STANDARD & POOR'S	FitchRatings
FC	Baa1	BBB+	BBB+
PTT-FC	Baa1	BBB+	BBB+
PTT-LC	Baa1	BBB+	BBB+

## International and local recognition

**#238<sup>th</sup>**  
in 2023  
232<sup>nd</sup> in 2022  
234<sup>th</sup> in 2021

**2012-2023**  
(12<sup>th</sup> consecutive years)

**#110<sup>th</sup>**  
in 2023  
177<sup>th</sup> in 2022  
206<sup>th</sup> in 2021

**Rating AA**

## Fully integrated & highly diversified over entire O&G value chain

- International E&P business**  
1,436 mmboe proved reserves  
or 6.2 years in 2023
- Sole operator & owner of gas transmission pipelines and Gas Separation Plants (GSPs) in Thailand**  
Largest refinery group in Thailand  
3 of 6 refineries
- Largest petrochemical producer group** in Thailand  
total capacity of olefins, aromatics and styrenics >18 mtpa production of
- Leading oil marketing business** in Thailand  
2,256 retail stations<sup>2</sup>  
and ~42%<sup>2</sup> of market share by sales volume
- International oil trading business** having traded 188 bn liters in 2023
- Power Plant flagship with equity power capacity of 9,315<sup>2</sup> MW**

<sup>2</sup> As of Dec 2023


### Upward Integration (PTT Operate through our subsidiaries)

### PTT Own Businesses (PTT's own operation)

### Downward Integration (PTT Operate through our subsidiaries)

#### E & P




**PTTEP** (65.29%)

- Oil, Gas, Condensate
- > 50 Projects in 12 Countries
- 1,436 mmboe proved reserves or 6.2 years in 2023

#### LNG



**ptt GLCHENG LNG** (100%)   **ptt LNG** (100%)

- LNG Value Chain
- LNG Receiving Facilities


#### Coal



Coal Mine in Indonesia **ptt GM** (100%)

(Completely divestment in Feb'23)


#### Natural Gas



- 5 gas pipelines
- 6 Gas Separation Plants
- Procurement & Marketing
- NGV


#### Trading



- Crude Procurement
- Import/Export
- Commodity Hedging
- Int'l Office: China/ Singapore/ Abu Dhabi/ London/ USA/ Thailand
- Traded 188 bn liters in 2023

#### New Business and Infrastructure



- Innovation & New business
- Engineering & Infrastructure
- Innovation Institute

#### Oil & Retail




**OR** (75%)

Market Share ~ 42%<sup>1</sup>

- Oil (2,256 stations in Thailand<sup>1</sup>)
- Non-oil Retail
- Lubricants
- International Oil & Retail

#### Refineries




**Thailand GC IRPC** (~48%)

Market Share > 50%

- Largest refinery group in Thailand : 3 of 6 refineries

#### Petrochemicals




**GC IRPC** (~48%)

Market Share > 50%

- Integrated Refineries & Petrochemical

#### Power




**GPSC** (~75%<sup>2</sup>) 9,315 MW<sup>1</sup> (equity portion)


- Electricity
- Steam & Chill Water
- Energy Storage

## New Business

#### Future Energy

#### Beyond Energy



- **Renewable Energy** **GPSC** (100%)
- **EV Chain** **ARUN+** (100%)   **me+** (100%)   **SWAP4GO** (100%)   **HORIZON+** (60%)   **NUOVO+** (51%)   **OR** (75%)   **GPSC** (~75%)

PTT Group's renewable energy portfolio is ~4.9 GW<sup>1</sup>

- EV Service platform & Electric Vehicles/ Batteries
- 705 EV Charging stations

- Life Sciences
- AI Robotics

- **Pharmaceutical** **LOTUS**   **Direct & indirect ~38%**
- **Medical device** **Inno polymed**   **JV with IRPC (PTT 40 : IRPC 60)**
- **Nutrition** **NOPT**   **JV with NRF (50:50)**

- **AI / Robotics** **PTTEP**   **RAISE** (50%)
- **Cloud service, Data center** **HECHAV** (100%)
- **Digital platform** **ECOSYS** (100%)   **REACT** (100%)

Remark: Percentage holding as of Dec 2023   <sup>1</sup> As of Dec 2023 / <sup>2</sup> Holding portion of PTT Group (direct & indirect)

Overview   Performance   PTT Group Strategy   Outlook/Guidance   ESG   Supplementary

5

# Contents

01 Overview

02 4Q & 2023 Performance

03 PTT Group Strategy

04 Outlook/Guidance

05 ESG

06 Supplementary Information

# Key Activities in 2023

## Business Growth



Strike **3** new discoveries in Malaysia  
(Chenda-1, Bangsawan-1, and Babadon-1)

Award **2** fields in gulf of Thailand  
(G1/65 and G3/65)

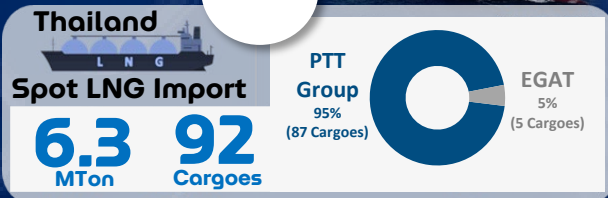


Start recognized revenue of **LMPT2** in 2023



Create Synergy Values Among PTT Group

**180** MMUSD  
(Jan - Dec 2023)



**Olefins 2 Modification**

Downstream Business's investment Progress as Planned



**CFP**



**UCF**

## Clean Growth

Exit Coal Business in Feb 2023



Pull out of coal mining business, aligned with PTT's strategy to move towards sustainable and green portfolio.

## New Growth

### Renewable Energy

Revisit RE Target 2030

**12** GW **15** GW

Avaada Energy, GPSC holds 42.93% through GRSC, awarded additional solar projects in India with total



capacity of **+5,161** MW (Equity capacity **+2,216** MW)  
Total capacity: 9,525 MW (Equity capacity: 4,089 MW)

### EV Value Chain



**NV Gotion** start production of battery for EVs and ESS in Dec 2023 (initial capacity at 2 GWh/year for Hozon Auto)



establish A C Energy Solution to operate **Cell-To-Pack** Battery assembly (COD Target of 6 GWh/year by 2025)



establish **Aionex**, a JV company with KYMCO group, to sale and produce E2W, as well as to provide battery swapping service (Ready to be launched in 2024)

### Life Science

#### Pharmaceutical



Consistently Delivering **Lenalidomide (Leukemia Medicine)** in US and having market expansion in US and South Korea

#### Nutrition

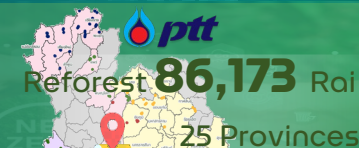


Completed Construction of the **Plant & Bean (Thailand) factory** (COD in Jan 2024 with capacity of 3Ktons/year)

### Reforestation



Target 2023 **75,000** Rai



**9%** Target of 1 million Rai by 2030





# Key Drivers



**AVG. Dubai Price**  
(\$/bbl)

- ▼ 4% QoQ
- ▼ 1% YoY
- ▼ 15% YTD



**AVG. Pool Price**  
(\$/mmbtu)

- ▲ 0.6% QoQ
- ▼ 18% YoY
- ▼ 15% YTD



**HDPE**  
(\$/ton)

- ▼ 1% QoQ
- ▼ 1% YoY
- ▼ 13% YTD



**PX**  
(\$/ton)

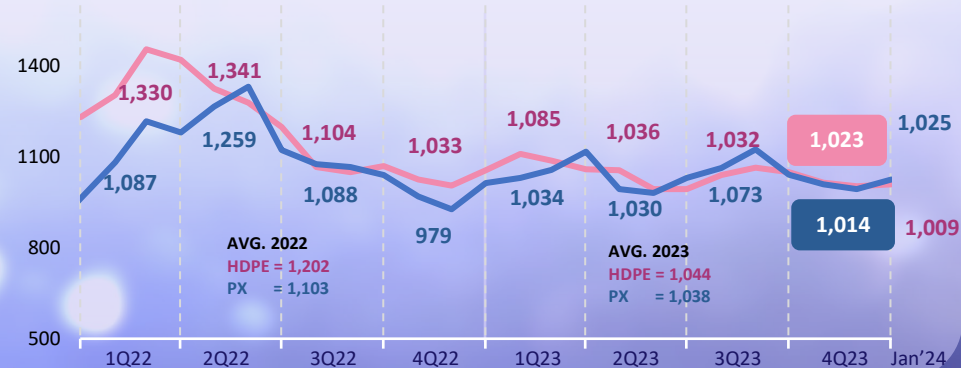
- ▼ 5% QoQ
- ▲ 4% YoY
- ▼ 6% YTD

Dubai (\$/bbl)



NG (\$/mmbtu)

Unit: (\$/ton)



## Key Performance

### QoQ



Net income  
**32,765 MB**

▲ 5%

NI increased following higher gain on FX and derivatives despite higher stock loss and soften operating performance

### YTD



Net income  
**112,024 MB**

▲ 23%

NI increased due to lower loss on derivatives and higher gain on FX despite soften operating performance

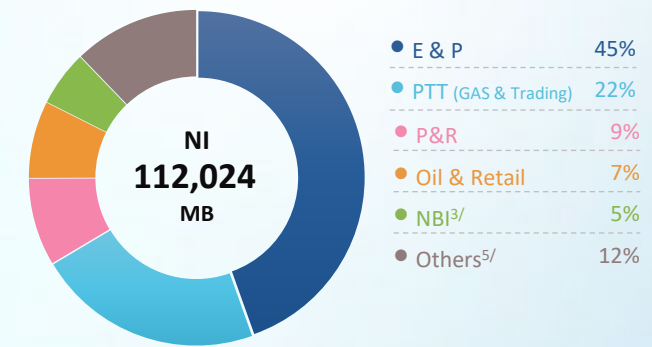
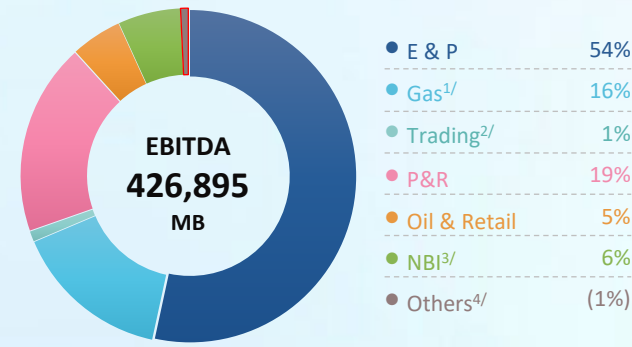
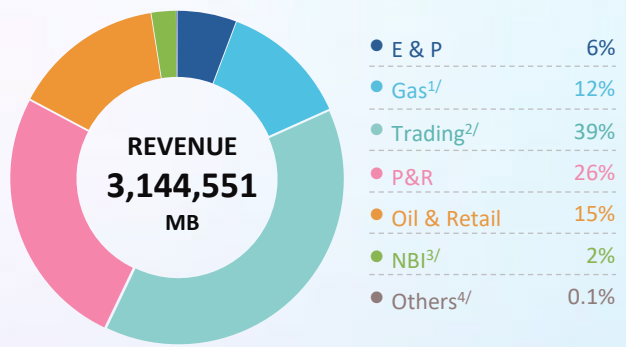
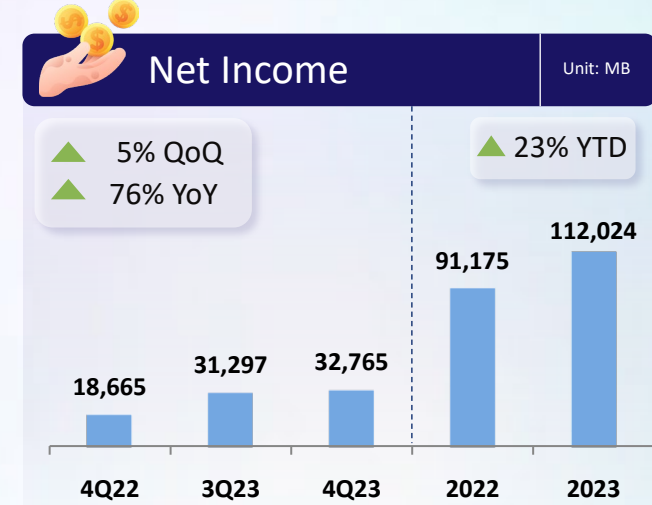
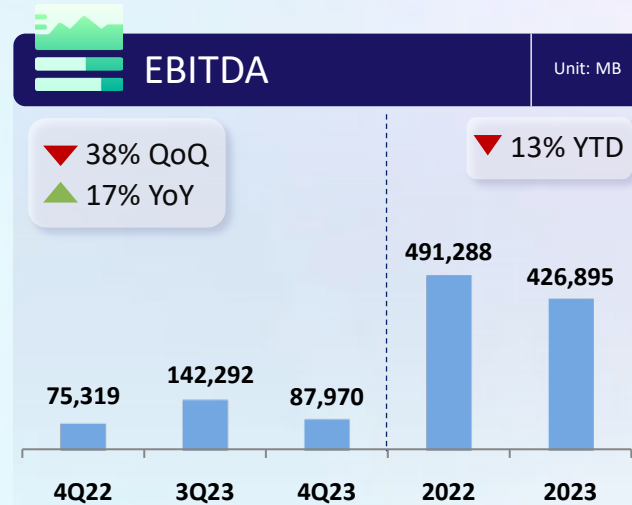
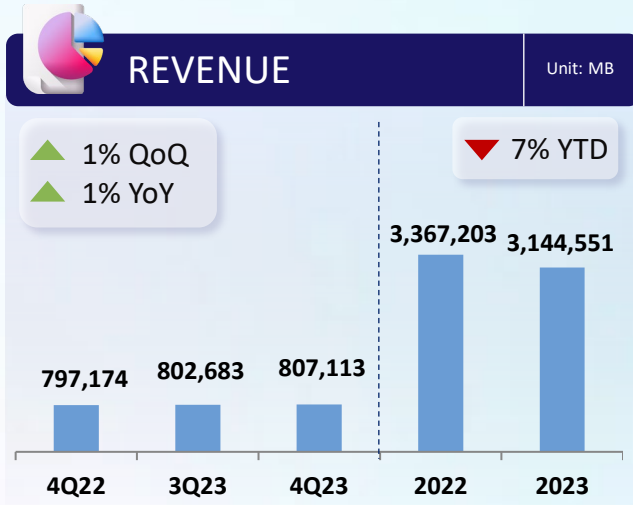
# PTT Consolidated Performance: 4Q23 & 2023

QoQ

NI increased following higher gain on FX and derivatives despite higher stock loss and soften operating performance

YTD

NI increased due to lower loss on derivatives and higher gain on FX despite soften operating performance

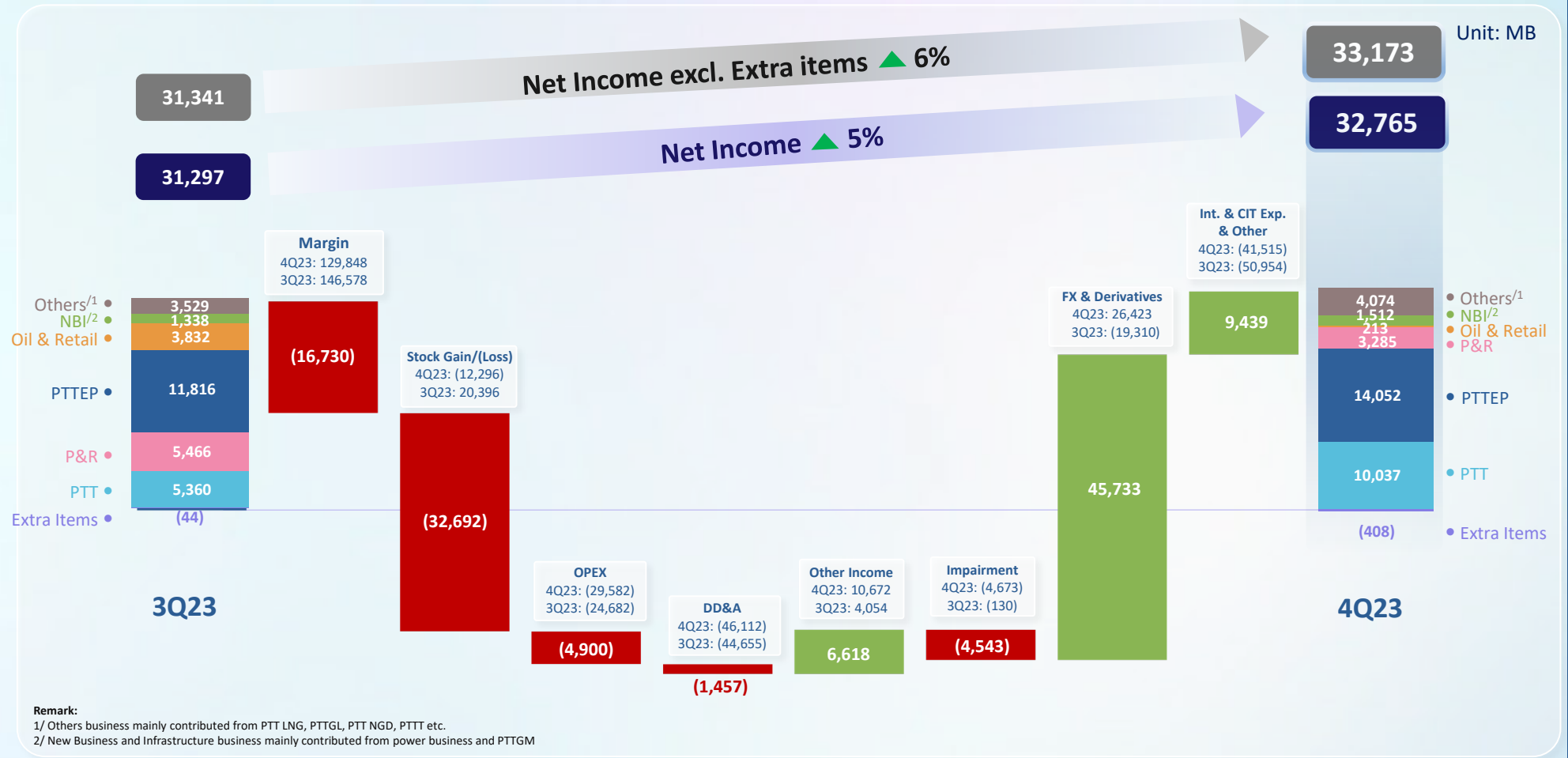


**Remark:**  
 1/ PTT Gas business and affiliates  
 2/ PTT Trading business and affiliates  
 3/ New Business and Infrastructure mainly contributed from power business and PTTGM  
 4/ Others mainly contributed from coal business which divested on 15 Feb 2023

**NOTE:** - EBITDA & NI of 2022 was restated due to the adjustment of GC's Purchase Price Allocation  
 - There are adjustments in EBITDA and Depreciation and Amortization of 3Q23 from the previous period.

# 4Q23 vs 3Q23 PTT Consolidated Performance (QoQ)

NI increased following higher gain on FX and derivatives despite higher stock loss and soften operating performance



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

▲ 87% Higher gain on foreign exchange rate and financial derivative despite soften operating performance



**Gas**

- GSP**: Decrease in sales vol. and higher gas cost based on the gulf gas price
- TM**: Higher costs mainly from maintenance expense
- NGV**: Higher gas cost + Increase in avg. selling prices + Drop in sales vol.

**Trading**

- Lower gross margin
- Higher sales vol.

▲ 19% E&P

+ Decrease in operating expense and income tax together with higher avg. sales vol.

▼ 94% Oil & Retails

- Lower overall avg. gross margin per liter mainly from diesel and gasoline
- Higher operating expense from outsource and promotion expenses

▼ 40% P&R

Loss on operation despite gain on FX and derivatives

- Refinery**: Higher stock loss, Decrease in Mkt. GRM, Increase in sales vol.
- Petrochemical**: Lower Olefin's sales vol. due to planned maintenance shutdown, Increase in product spread and sales vol. of Aromatic business

▲ 13% NBI

**Beyond Energy:** Increase in performance from beyond energy business

**GPSC:** Lower SPP's gross profit due to lower electricity and stream sales vol.

▲ 15% Others

+ Higher dividend income of PTTGL

▲ > 100% Extra Items\*

**4Q23: Net loss ~-400 MB** mainly from

- PTTEP's impairment loss on Mozambique Area 1: ~-2,800 MB
- PTTEP's write-off Oliver Project: ~-1,200 MB
- PTTEP's gain on divestment of Cash-Maple: ~+1,700 MB
- GC's gain on change in status of investment: ~+1,400 MB
- GC's gain on disposal of subsidiary: ~+600 MB

**3Q23: Net loss ~-40 MB** mainly from

- PTTGM's impairment of asset: ~-80 MB
- PTT's discount from production shortfall: ~+50 MB

(\*PTT's portion net tax amount)

# Gas Key drivers

## QoQ

### Lower NG sales vol. despite higher pool gas price

- Decreased overall NG sales vol. mainly from power customers due to lower electricity consumption during winter
- Average pool gas price slightly increased following higher prices of all gas sources despite lower vol. of imported LNG

### Dropped GSP's sales vol. and higher feed cost despite improved average selling price

- Dropped sales vol. due to petrochemical customer's planned maintenance shutdowns coupled with higher feed gas cost following increased gulf gas price
- + Improved average selling price of almost all products following higher global petrochemical referenced prices

## YTD

### Dropped pool gas price together with higher NG sales vol.

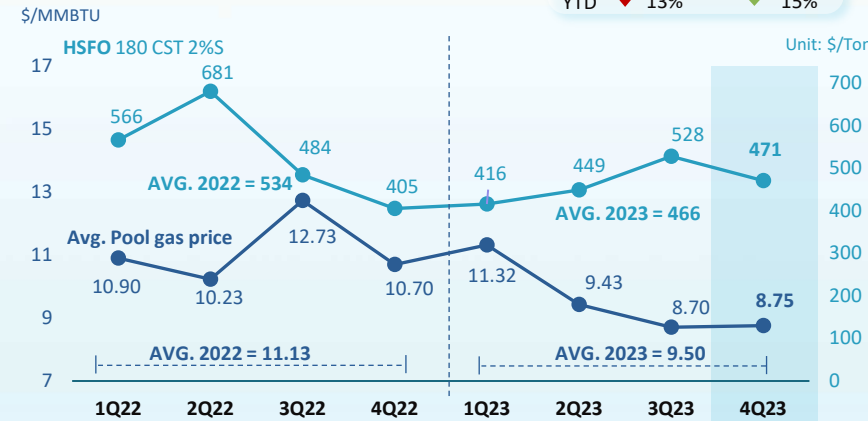
- + Dropped pool gas price from significantly decrease in spot LNG price despite higher vol. of imported spot LNG
- + Increased in overall NG sales vol. mainly from power customers due to higher electricity consumption as higher temperature and the recovery of economic activities together with the downward trend of imported spot LNG price

### Lower GSP's average selling prices and sales vol. despite lower feed cost

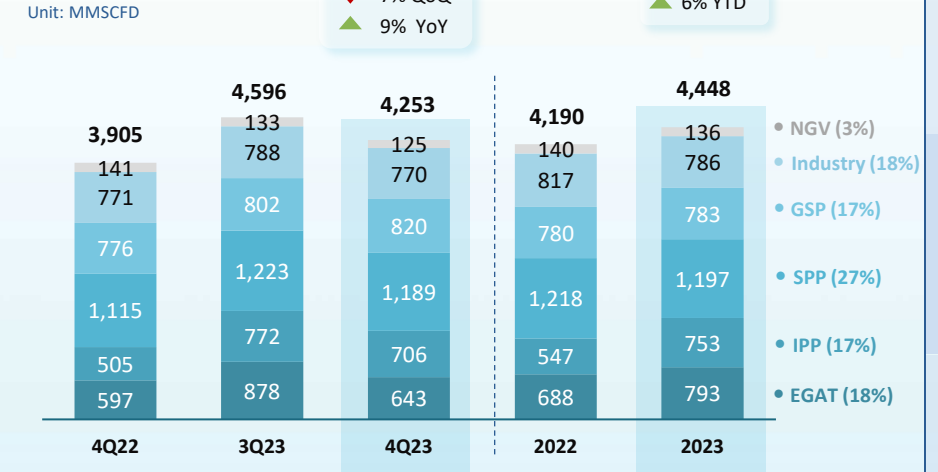
- Lower GSP's average selling prices following global petrochemical referenced prices and decreased in GSP's sales vol. due to lower demand from petrochemical customers
- + Lower feed gas cost following lower gulf gas cost

## NG Key drivers

### NG Price

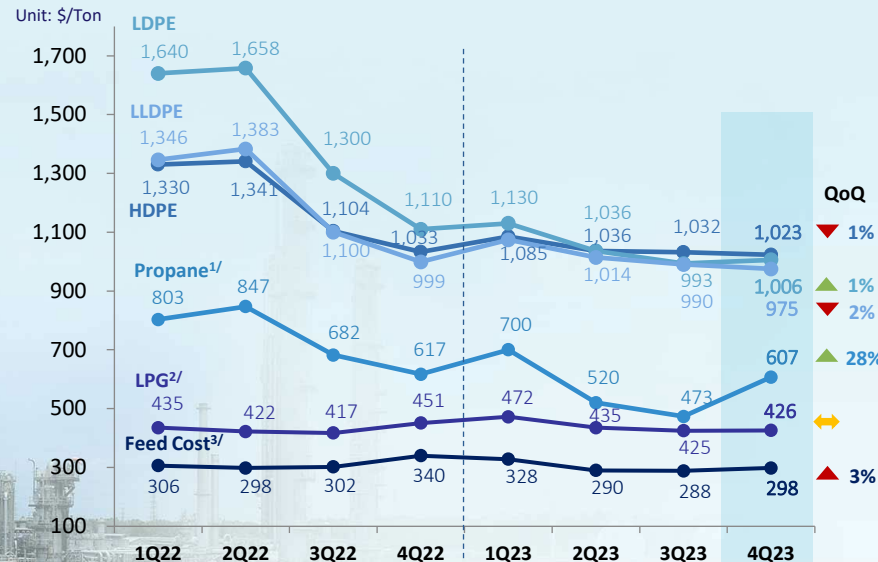


### NG Vol.



## GSP Key drivers

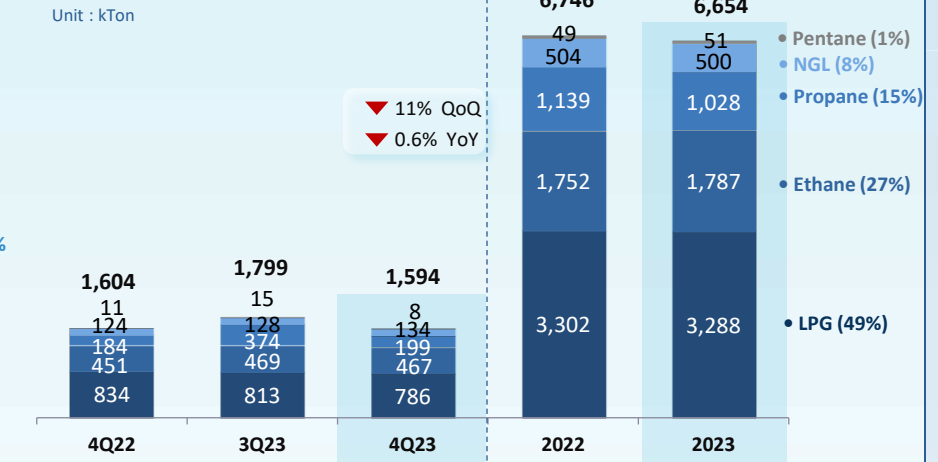
### GSP Feed Cost vs Petchem. Prices



### U-Rate<sup>4/</sup>



### GSP Sales Vol.



<sup>4/</sup>PTT adjusted the U-Rate calculation by using the GSP's nameplate capacity as a total production capacity. (1Q22 = 81.9%, 2Q22 = 78.7%, 3Q22 = 68.8%, 4Q22 = 73.1%)

<sup>1/</sup>LPG price selling to Petro customers close to propane <sup>2/</sup>LPG Domestic <sup>3/</sup>Feed cost calculation per GSP production volume

# GAS – EBITDA

QoQ



EBITDA dropped from almost business following higher gas cost and lower sales volume

- GSP decreased from lower sales volume and higher feed cost
- TM decreased mainly from higher maintenance expenses
- NGV dropped mainly from higher pool gas cost despite price uplifted
- + S&M slightly increased from recognition of production shortfall penalty despite lower operating performance
- Others decreased from PTTNGD's lower sales volume while PTTLNG increased following additional reserve volume of LNG Terminal 2

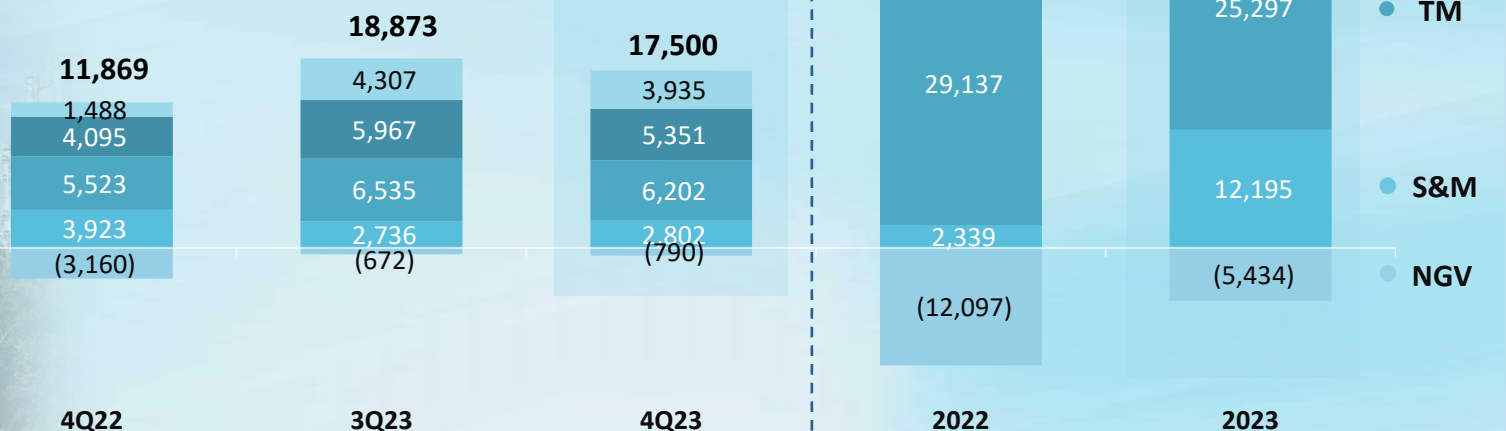
YTD



EBITDA slightly increased mainly from S&M and NGV following lower avg. pool gas cost

- + S&M increased from lower pool gas cost and higher sales volume
- + NGV improved following lower gas cost and price uplifted
- GSP decreased due to lower avg. selling prices and sales volume despite lower feed cost
- TM decreased from the revision of gas pipeline tariff since August 2022
- + Others increased from PTTLNG following additional reserve volume of LNG Terminal 2 and PTTNGD from lower gas cost

Unit: MB



▼ 7% QoQ  
▲ 47% YoY

▲ 8% YTD

# Trading Business

QoQ



Dropped EBITDA from lower margin and sales volume

- Lower margin per unit of out-out trading together with mark to market loss on inventory
- Sales volume declined mainly from LNG import due to soften customer demand during winter and lower LPG import due to customer's scheduled maintenance shutdowns as well as lower crude out-out trading

YTD



Enhanced EBITDA owing to improved sales volume

- + Higher import volume of crude and LNG following the increase in domestic demand and significantly decrease in LNG price together with higher volume of crude and refined products from out-out trading following the recovery of economic activities
- Margin per unit of crude and LNG imports decreased despite higher margin per unit of out-out trading

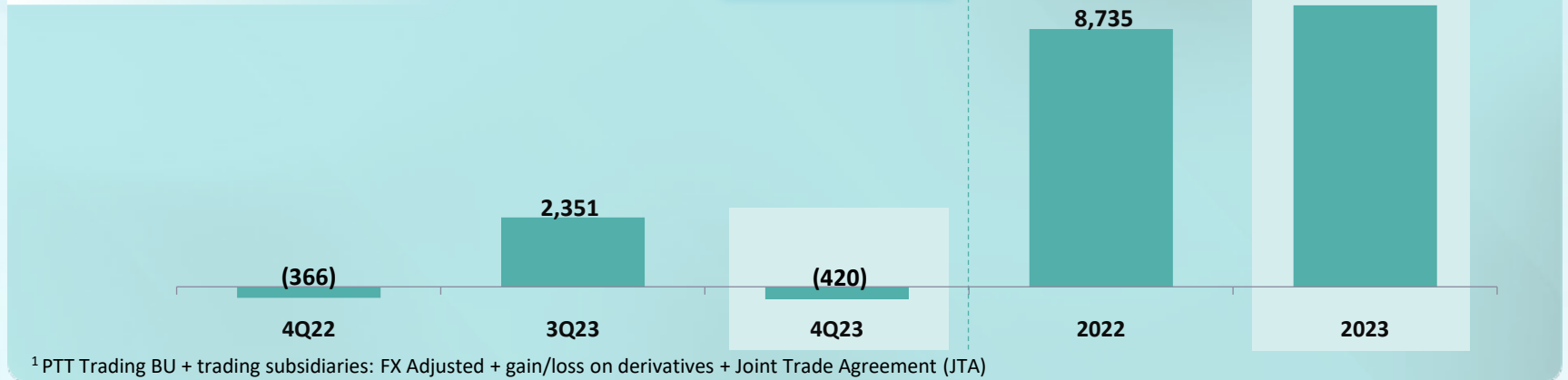


## EBITDA<sup>1</sup>

Unit: MB

▼ >100% QoQ  
▼ 15% YoY

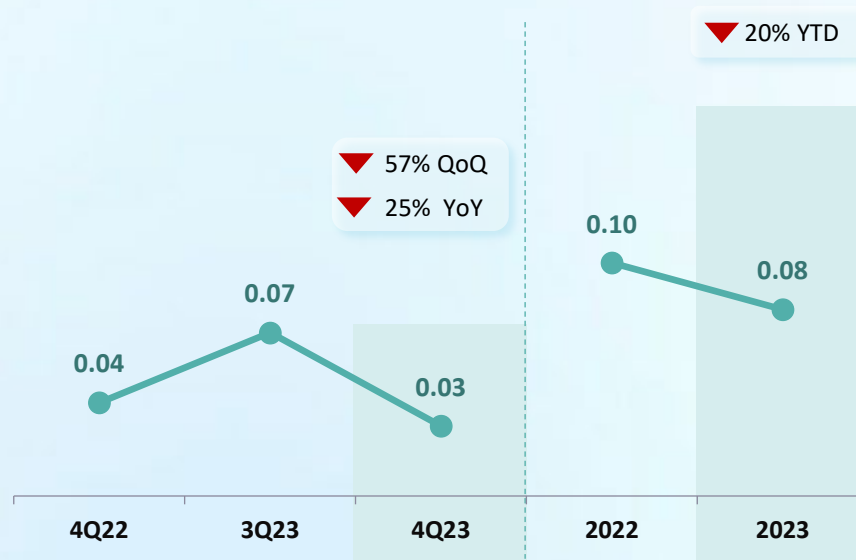
▲ 9% YTD



## Gross Margin & Sales Volume

### Gross Margin<sup>2</sup>

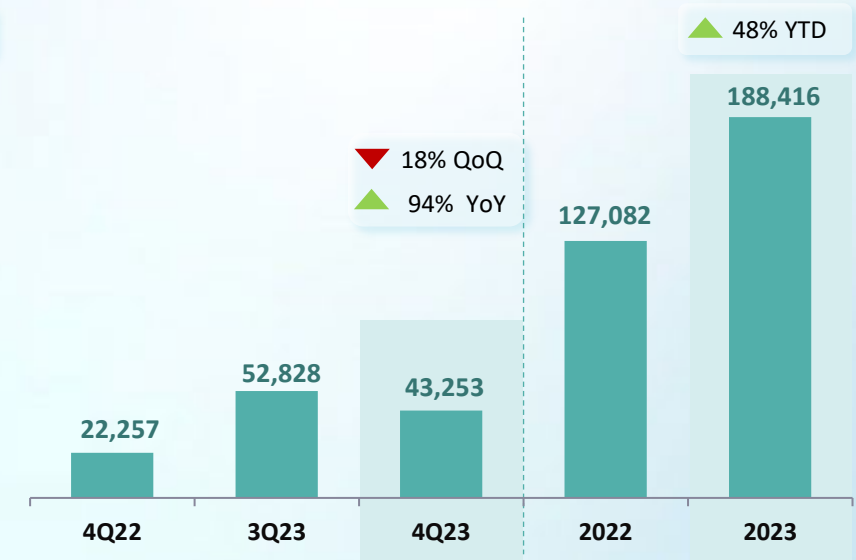
Unit: THB/Liter



<sup>2</sup> PTT Trading BU + trading subsidiaries: FX Adjusted + gain/loss on derivatives

### Sales Volume<sup>3</sup>

Unit: MM Liter

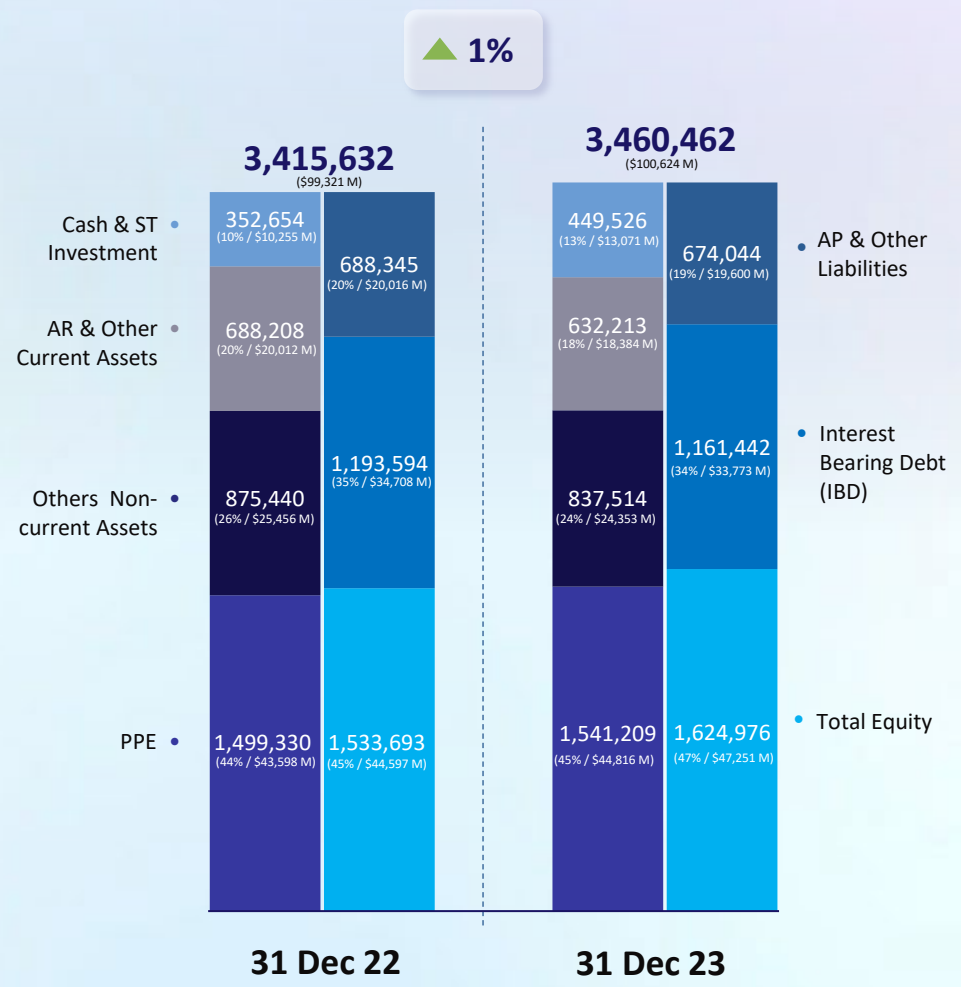


<sup>3</sup> PTT Trading BU + trading subsidiaries + JTA

# Financial Position

Robust financial position and strong credit ratings at sovereign level

## Financial Position Unit: MB



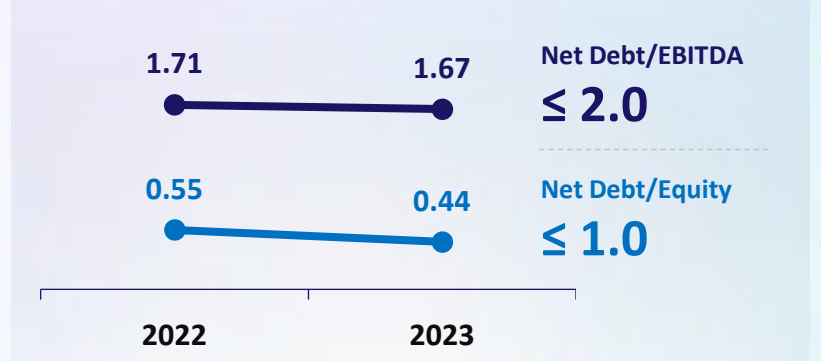
### Assets

- + Increase in cash and short-term investments mainly from PTT Group's operating performance
- + PPE increased mainly from the reclassification of PTTEP's exploration and evaluation assets of G1/61 and G2/61 Projects together with the increase in TOP's Clean Fuel Project (CFP) asset

### Liabilities & Equity

- + Increase in Equity due to PTT group's net profit and non-controlling interests
- Decrease in Liabilities mainly from a decrease in PTT's group long-term loans and debentures according to the repayment as well as a decrease in lease liabilities mainly from PTTEP

## Key Financial Ratios Unit: Times



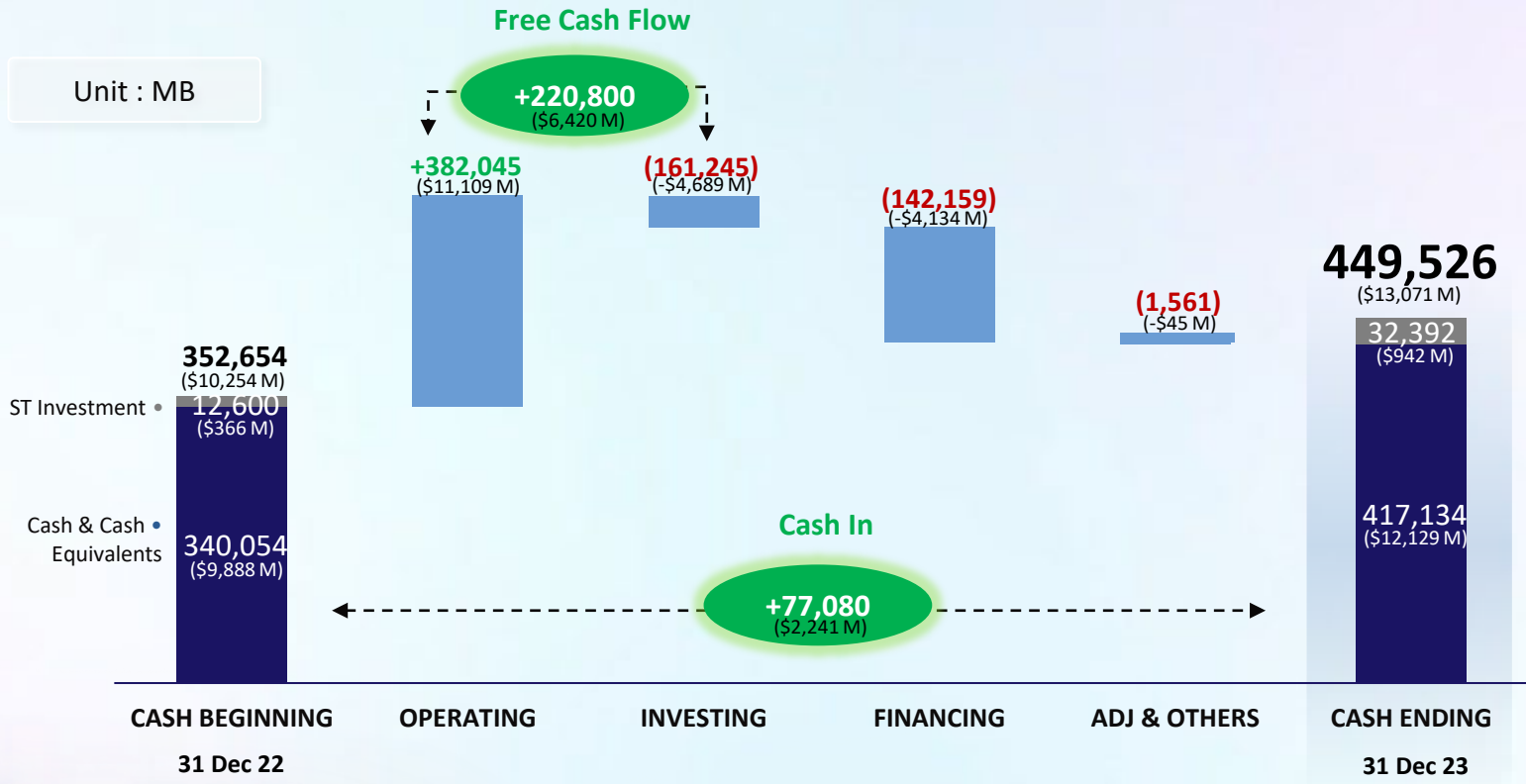
### PTT Ratings at Sovereign Level

MOODY'S	S&P Global Ratings	FitchRatings
Foreign & Local Currency	Foreign & Local Currency	Foreign & Local Currency
<b>Baa1</b>	<b>BBB+</b>	<b>BBB+</b>

\* As of Dec 31, 2023, BOT selling rate USD/THB of 34.39 (End rate)

# PTT Consolidated Cash Flows 2023

Unit : MB



**Operating**  
**382,045**  
MB

Non-Cash Adjustment	306,975
Net Income	112,024
Changes in assets & liabilities	46,247
Income Tax	(83,201)

**Investing**  
**(161,245)**  
MB

CAPEX (PPE, Intangible asset)	(165,645)
Current investment	(14,555)
Short / Long-term lending loans	(1,733)
Others	(1,076)
Dividend/Interest Received	19,304
Investment (Sub. & Affiliates)	2,460

**Financing**  
**(142,159)**  
MB

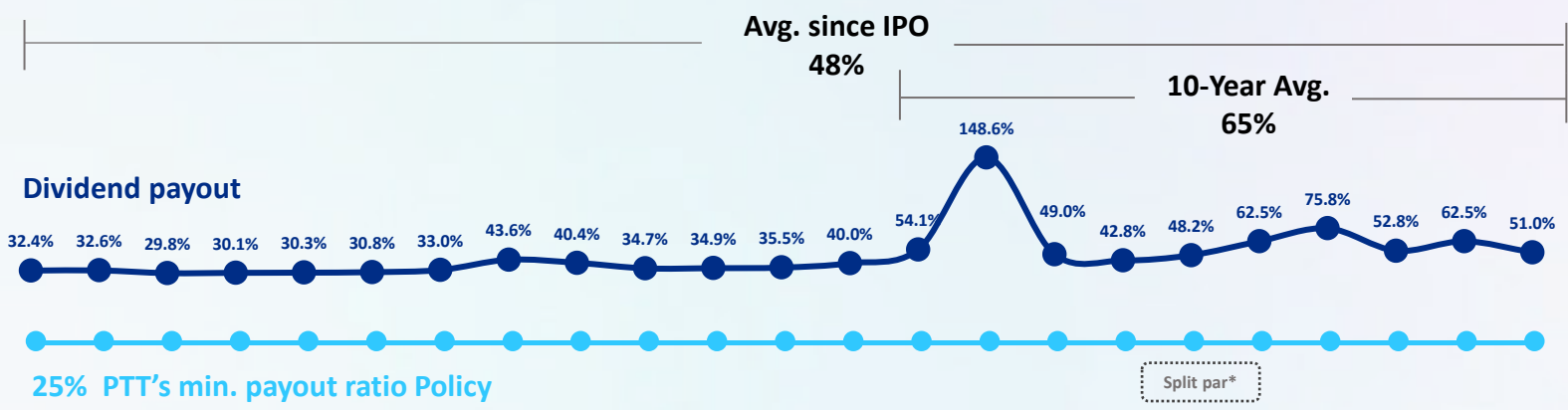
Dividend paid	(62,368)
Finance cost paid	(48,494)
Repayment for loans	(36,631)
Change in ownership in subsidiaries	5,253
Others	81



\* As of Dec 31, 2023, BOT selling rate USD/THB of 34.39 (End rate)



# Dividend Policy & Historical Payments



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

**DPS**  
**2.00** THB/Share

**Payout Ratio**  
**51.0%**

**Payment Date**  
**30 Apr.**



# Contents

01 Overview

02 4Q & 2023 Performance

03 PTT Group Strategy

04 Outlook/Guidance

05 ESG

06 Supplementary Information

Overview

4Q & 2023  
Performance

PTT Group  
Strategy

Outlook/Guidance

ESG

Supplementary

# PTT's vision is revised to set aspirations along with future trends

## PURPOSE

Conduct the businesses that power the way of living

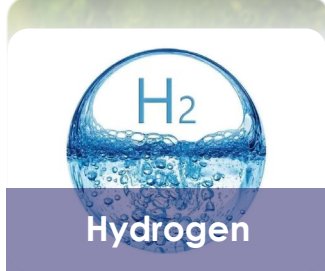
## STRATEGIC POSITIONING

Expand into future energy business and new business beyond energy industry

# Powering life with Future energy and Beyond

## ขับเคลื่อนทุกชีวิตด้วยพลังแห่งอนาคต

### Future Energy



### Beyond



- Pharmaceutical
- Nutrition
- Medical Device & Technology

- Incl. Retail Business

# Overall Strategic Direction to achieve purpose of New Vision

## Long-term target (2030) for new vision

Business growth

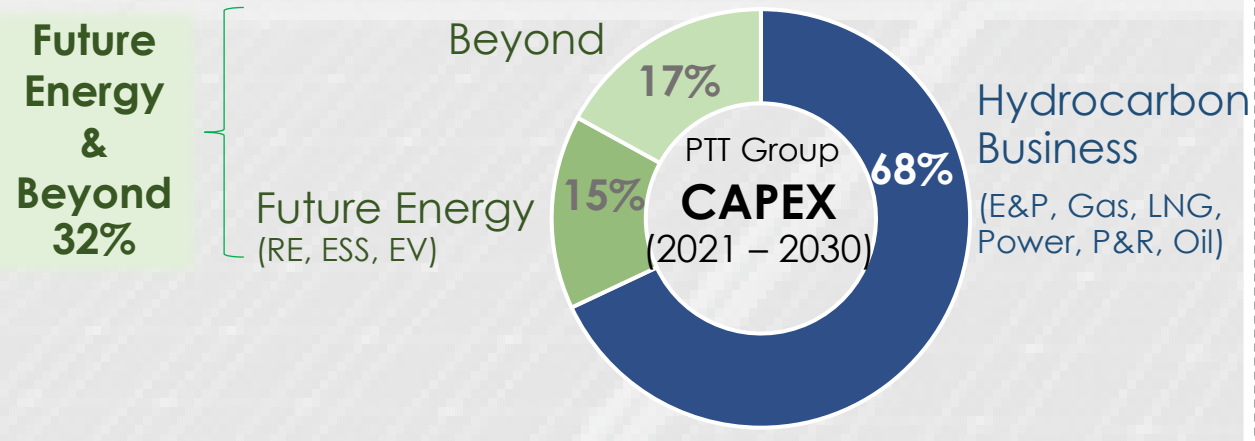
- LNG** 9 MTPA
- Power (Conventional)** 5 GW
- Renewable energy** 15 GW

New growth

**NI from Future Energy and Beyond > 30%**

Clean growth

**15% GHG reduction** from 2020



## Strategic Direction by Business

Business	Direction
E&P	<ul style="list-style-type: none"> <li>Expand towards high return &amp; gas assets</li> </ul>
Gas	<ul style="list-style-type: none"> <li>Build global LNG portfolio</li> </ul>
P&R	<ul style="list-style-type: none"> <li>Supply chain integration</li> <li>Enable value by Group Synergy</li> </ul>
Oil	<ul style="list-style-type: none"> <li>Optimize domestic value chain and expand regionally</li> </ul>
Power	<ul style="list-style-type: none"> <li>Accelerate growth in Thailand &amp; region</li> </ul>
<p><b>Future Energy and Beyond</b></p>	<ul style="list-style-type: none"> <li>Expedite growth in future energy to capture opportunities from accelerating energy transition</li> <li>Diversify beyond energy business, supporting Thailand New S-Curves</li> </ul>

# At A GLANCE : PTT Group Business Plan 2024-2028

## Upstream

“ Sustainable Growth through Integrated Gas Value Chain ”

## Downstream

“ Lasting legacies and Go beyond Downstream Business ”

## New Business & Infrastructure

“ Move PTT Forward ”

## ESG



### 3P Decarbonization Pathways



~30%

**Pursuit**  
of Lower  
Emission

เร่ง ปรับ กระบวนการผลิต



~50%

**Portfolio**  
Transformation

เร่ง เปลี่ยน ธุรกิจที่เป็นมิตรต่อสิ่งแวดล้อม



~20%

**Partnership**  
With Nature and  
Society

เร่ง ปลูก ป่าเพิ่มอีก 1 ล้านไร่

**Clean Growth**  
**15%**  
GHG reduction  
from 2020 by  
2030

**Business  
Growth**  
**RE 15 GW**  
by 2030

**Reforestation**  
PTT's New Forest  
**1,000,000**  
Rai by 2030

GHG Reduction  
Initiatives

**Green Portfolio**  
Future Energy and  
Beyond **32%**  
of CAPEX 2021 -  
2030

PTT's Existing  
Forest  
**1,115,185**  
Rai

Carbon Offset/  
RECs

Remark: 1 Rai = 0.4 Acre

# Upstream Business Growth

- Sustainable Growth through Integrated Gas Value Chain -



## Ensure Energy Security

### Secure piped gas supply



- Strengthen E&P and Pursue additional piped gas
- Pursue sanction mitigation for Myanmar operation & gas supply to Thailand

 Thailand  Myanmar  OCA

### Maintain regulated market & acquire additional market

- Provide flexible competitive supply
- Provide market optimization tool & Energy Platform



### Strengthen Infrastructure

- Provide reliable & efficient facilities
- Provide transparent & fair tariff structure



## Accelerate LNG Business



### Collaboratively build LNG value chain

- Build competitive LNG portfolio & capability in LNG shipping business
- Expand commercial domestic & international market

### Drive Thailand as “Regional LNG Hub”



- Utilize existing strength i.e., Reliable operation, synchronize LMPT1 & LMPT2
- Partnership to expedite the growth

## Enhance Competitiveness through Infrastructure



New LNG commercial tank to drive regional LNG hub & expand commercial market



LNG/LPG Terminal in Southeast Asia

## Support Decarbonization



PTT Group's Eastern CCS Hub



Blue hydrogen for lower carbon emission

# Downstream Business

Transforming Downstream along with Energy Transition

## LASTING LEGACIES

### Enhance Energy Resilience

to Enhance Competitiveness of Downstream Legacies

Ensure Cash Generation    Optimization    Group Synergy    Maximize Value

CFP    UCF    Surplus management    Facility & Infra.

### Ensure Energy Supply Stability

to Optimize Hydrocarbon Value Chain Management

Digitalization    Reinforcing

HVC    LNG Portfolio

### Expedite Downstream Portfolio Transformation

to Prepare for Energy Transition

Reshaping PTT's Refinery Portfolio for Resilience & Transformative Growth

### Enter into Sustainability

to Create Value & Support Net Zero Target

Sustainable Waste Solution    Sustainable Energy (SAF)    Sustainable Materials    Sustainable Water    Carbon Credit Trading

## GO BEYOND WITH DOWNSTREAM

### Empowering All toward Inclusive Growth in Mobility & Lifestyle

Seamless Mobility & All Lifestyle Ecosystem



### Energize HVB Expansion



Coating & Adhesive Resins    High Performance Polymers & Composites    Battery Component

allnex    Purification Filtration    Chemical for Life

# Future Energy & Beyond

## Move PTT Forward

### Renewable Energy (RE)

Focus invest in RE domestic & Expand more in target countries

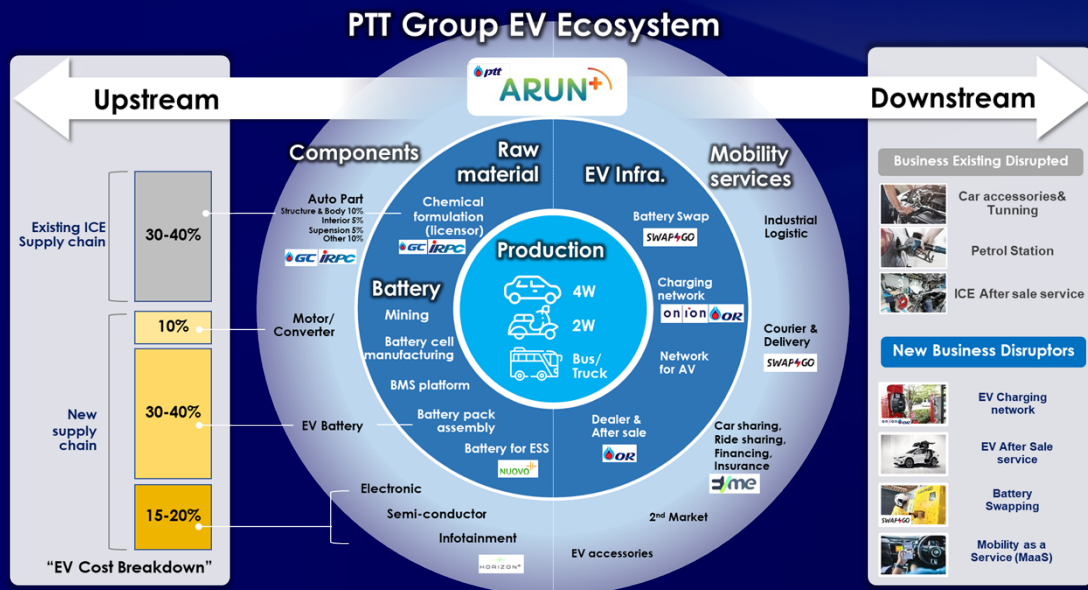


### Hydrogen

- Green H<sub>2</sub>/ammonia production in Thailand
- Demand outreach (PTT Group & External)
- Hydrogen Whitepaper proposed to Thai Government
- Financial support exploration



### EV Value Chain & Energy Storage System

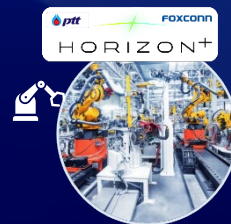


#### Battery



Battery cell manufacturing

#### EV Production



Horizon+  
COD in 2025  
Capacity: 50,000 Unts/year

#### EV Infra.



Boost up EV infrastructure

#### 4W Distribution/Dealer



JV with MGC Asia and build business collaboration

#### 2W Production/Mobility Services



Good design  
High performance  
Best service  
Set up two-wheel EV JV with Kymco from Taiwan

#### Mobility Services



Expand fleet service (B2C & B2B)



# Future Energy & Beyond

Move PTT Forward

## Life Science



*Realize Value & Strengthen Business*

for creating a wellness ecosystem through INNOBIC

## Pharmaceutical



**Leverage Lotus/ Alvogen TH as growth platform**

Rebrand to "Innobic Pharma" & Establish local presence (Bring know how R&D to TH)



**Strengthen across Pharma value chain**



Chemical Generic

Set up local manufacturing (API\*)



Biologic / Biosimilar

Identify product & explore opportunity



Personalized / advanced medicine

Collaborate local & international R&D

## Medical Technology



**Strengthen production of Medical Supply/ Consumable**

**Speed up product launch**

Medical Supply Consumable / HVPs & Implant / Medical Device / Digital Device / Diagnostic

## Nutrition



Production



R&D & Product



Marketing



Opening 6 Stores in 3 years



**Building Innobic Nutrition Brand & Expand portfolio**



# Future Energy & Beyond

## Move PTT Forward

### Logistic and Infrastructure

Powering Thailand to be Global Logistics Hub  
by Developing Modernize Infrastructure and  
Total Solution Services with Leading Technology



#### RAIL & TERMINAL

Integrated international rail transport through Thailand as a gateway



Maximize asset utilization (Container Yard) & Seek potential customers to utilize rail transportation



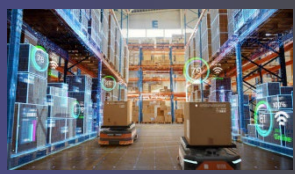
Sea Port Connection : Lam Cha Bang Phase 3

#### AIR LOGISTICS

Co-develop air logistics business with partner



Air Cargo



Smart Warehouse Business

#### COLD CHAIN

Fully integrated cold chain solutions provider



- Cold chain warehouse for fruit & Seafood
- Fruit & Seafood processing
- Logistics Related Trading Platform



#### ASSET SHARING

Develop smart & modern logistics solution business



Reefer Container Rental service



Pallet Rental Service & Manufacturing



LNG ISO tank & Dangerous Goods Transportation service

### AI Robotic & Digitalization

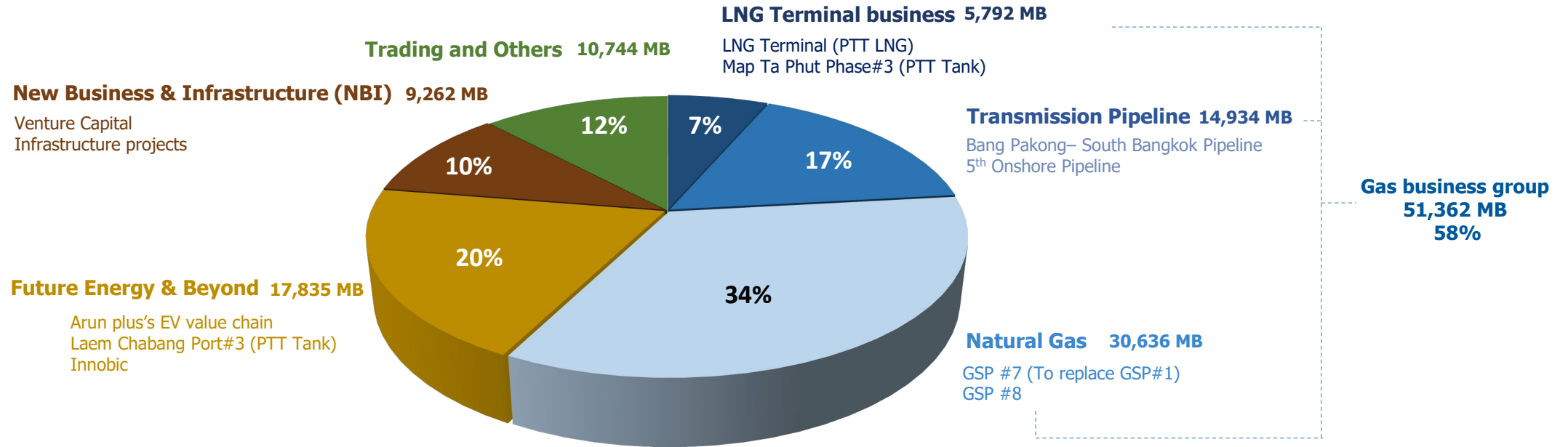
“Empowering Thailand with Intelligence Technologies for sustainable future”



<b>PowerTECH</b> RE and REC Mkt. and trading platform AI Power Monitoring & Optimization	<b>HealthTECH</b> Telemedicine Platform (pay per use) MorDee App w/ True	<b>IndustrialTECH</b> IoT monitoring platform Predictive Maintenance Factory Automation Robots & Drones	<b>MobilityTECH</b> Autonomous Vehicle and Mobility Mgt. Solutions Hardware & Software	<b>SoftPowerTECH</b> XR Arena & Studio NFT Ticketing E-Sport Organization
<b>Cloud Service Provider</b>				

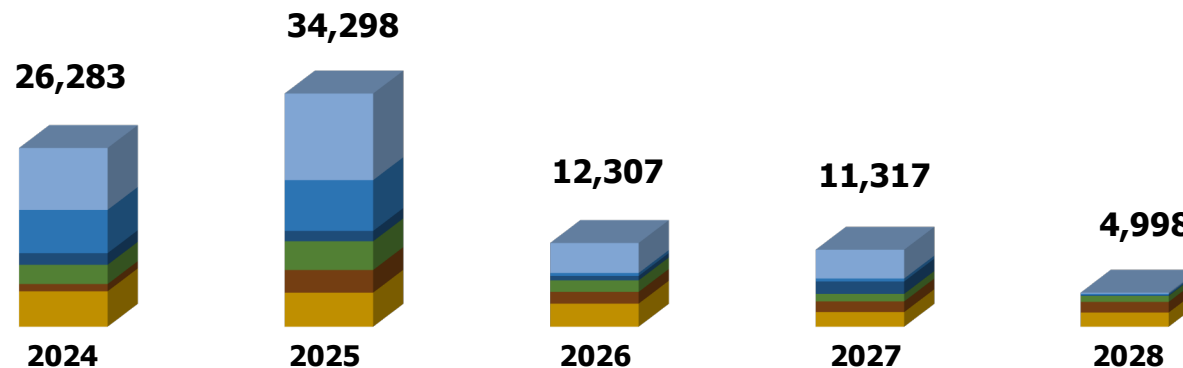
# PTT: Committed CAPEX (PTT and Wholly Owned Subsidiaries)

PTT 5-Years (2024-2028) Committed CAPEX Plan totaling Baht 89,203 million or ~ USD 2.6 bn<sup>1/</sup>



Unit: MMTHB

- Natural Gas
- Transmission Pipeline
- LNG Terminal business
- Trading and Others
- NBI
- Future Energy & beyond



Note: 2024 - 2028 budget revision approved by BOD on 21 Dec 23

<sup>1/</sup> FX rate (avg.) 34.0 Baht/USD

The Provisional CAPEX ~Bt 107 bn mainly focus on expanding of existing gas and LNG value chain businesses, and investment in Future Energy and Beyond Businesses including Life sciences (Pharmaceutical, Nutrition, Medical devices), EV value chain, AI & Robotics, as well as Logistics & Infrastructure.

# Committed CAPEX: PTT Group

Total committed CAPEX during 2024-2028 : ~Bt 1,045 bn or USD 31 bn<sup>1/</sup>

Unit: MMTHB

## Downstream Business

### Key Projects

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

## Power Business

### Key Projects

- Avaada

## PTT Business

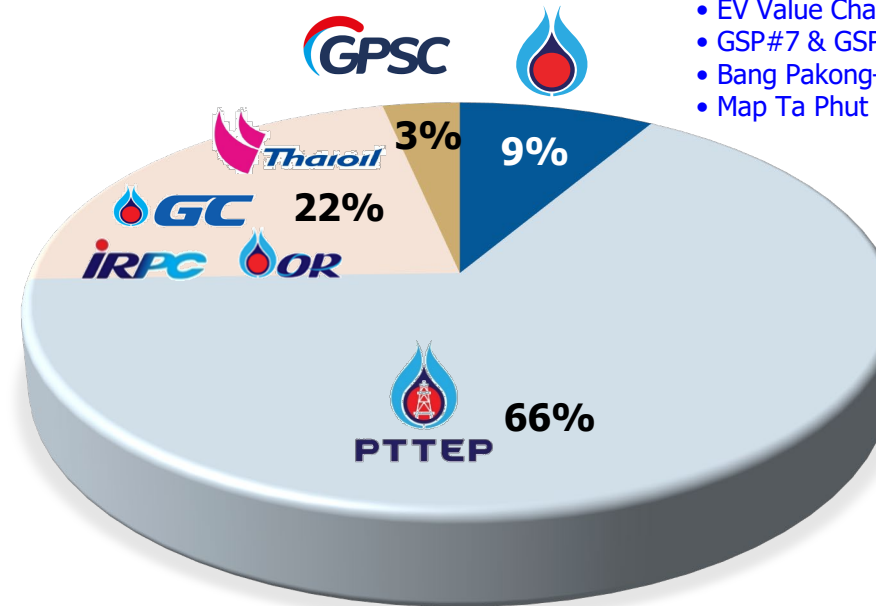
### Key Projects

- EV Value Chain
- GSP#7 & GSP#8
- Bang Pakong– South Bangkok Pipeline
- Map Ta Phut Phase#3 , Laem Chabang Port#3

## Upstream Business

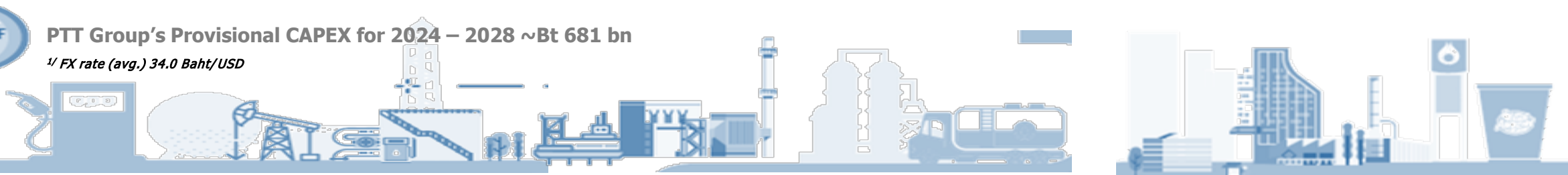
### Key Projects

- Onshore and Offshore Exploration and Production in Thailand (G1/61 etc.)
- Abu Dhabi offshore 2
- Mozambique LNG
- SK410B LLB
- Algeria HBR



PTT Group's Provisional CAPEX for 2024 – 2028 ~Bt 681 bn

<sup>1/</sup> FX rate (avg.) 34.0 Baht/USD



# Contents

01 Overview

02 4Q & 2023 Performance

03 PTT Group Strategy

04 Outlook/Guidance

05 ESG

06 Supplementary Information

Overview

4Q & 2023  
Performance

PTT Group  
Strategy

Outlook/Guidance

ESG

Supplementary

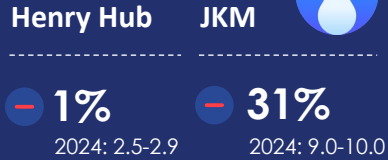
# PTT Group Guidance

## Econ & Price outlook 2024

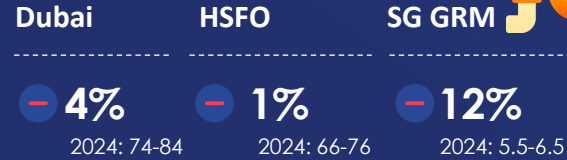
### GDP (IMF)



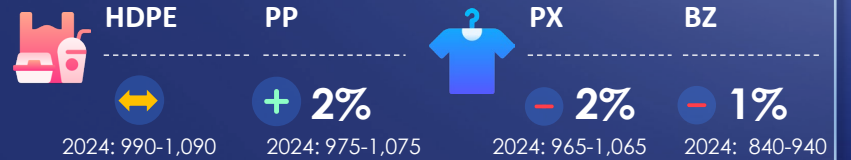
### Gas (\$/mmbtu)



### Oil (\$/bbl)



### PetChem (\$/ton)



## Business outlook 2024

### Upstream

#### E&P

+ Vol. increase



+ Maintain competitive Unit Cost

- Soften average selling price from new PSC & oil price

#### GAS

+ Thailand NG Demand increase

+ Improve domestic gas production



+ GSP's U-Rate increase in 2024

- Challenging Gas Cost after Single Pool Price Adjustment

### Downstream

Oil + Increase in Demand in line with GDP



#### P&R Refinery

- Pressure from soften Singapore GRM

- Lower U-Rate of PTT Group Refinery

#### Petchem



- Product spreads remain challenge

↔ Sluggish demand but possible to recover in 2H24

Power + Recovering domestic electricity consumption

+ Downward trend of feed costs



### Future Energy & Beyond

#### Future Energy

+ Expansion of Renewable Energy & EV value chain



#### Beyond

#### Life Science

Recognize higher contribution from upcoming project



# PTT Group Guidance

## Upcoming Projects

### Core Business

### 5<sup>th</sup> Pipeline

Phase I & III *Completed*  
Phase II *Under construction*

**COD: 2024**

### GSP#7

Replace GSP#1

**460 MMSCFD**

**COD: 2024**

### Ultra Clean Fuel

Upgrading product to meet Euro V standard

**COD: 1Q2024**

### Clean Fuel Project

Enhance capacity & Efficiency

**COD: 2024-2025**

### New Business

### Cell-to-Pack Battery Production Plant

**6,000 MWh**

**COD: 2025**

### EV Manufacturing Plant in Thailand

**50,000 cars/year**

**COD: 2025**

### Avaada Solar Power Platform in India

**9,525 MW**

**COD: 4Q2021-2026**

GPSC hold 42.9% (3,990 MW in operating / 5,535 MW in progress)

### CFXD Offshore windfarm in Taiwan

**595 MW**

**COD: 1H2024**

GPSC hold 25%

## Maintenance schedule in 2024

### Gas Separation Plants

GSP#1 TA ~ 11 days	GSP#5 TD 50% ~ 45 days
	GSP#6 TD 50% ~ 36 days

### Petrochemical & Refinery Plants

Ole 2/2 Major TA 60 days	PE Plants TA ~ 70 days
--------------------------	------------------------

# Contents

01 Overview

02 4Q & 2023 Performance

03 PTT Group Strategy

04 Outlook/Guidance

05 ESG

06 Supplementary Information

Overview

4Q & 2023  
Performance

PTT Group  
Strategy

Outlook/Guidance

ESG

Supplementary



## Risks and Challenges



**“Fast – Track Energy Transition”**

30 Nov – 12 Dec 2023

Thailand moving towards Carbon Neutrality and Net Zero Emissions



Carbon Neutrality  
**2050**

Net Zero Emissions  
**2065**

(2<sup>nd</sup> Updated NDC 40% (30+10%) from BAU by 2030)

### INVESTOR/ CREDIT RATING



### BENCHMARKING & DISCLOSURE



## Powering Life with Future Energy and Beyond

## PTT Strategy

POWERING THAILAND'S TRANSFORMATION by PARTNERSHIP & PLATFORM TECHNOLOGY FOR ALL TRANSPARENCY & SUSTAINABILITY

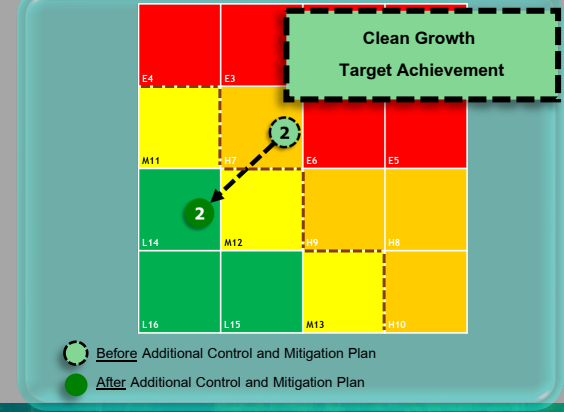
<b>1 Business growth</b> LNG : 9 MTPA Power (Conventional) : 5 GW Renewable energy : 15 GW	<b>2 New growth</b> PTT Group Net Income from Future Energy and beyond > 30%	<b>3 Clean growth</b> 15% Greenhouse Gas Reduction from 2020
---	---	---



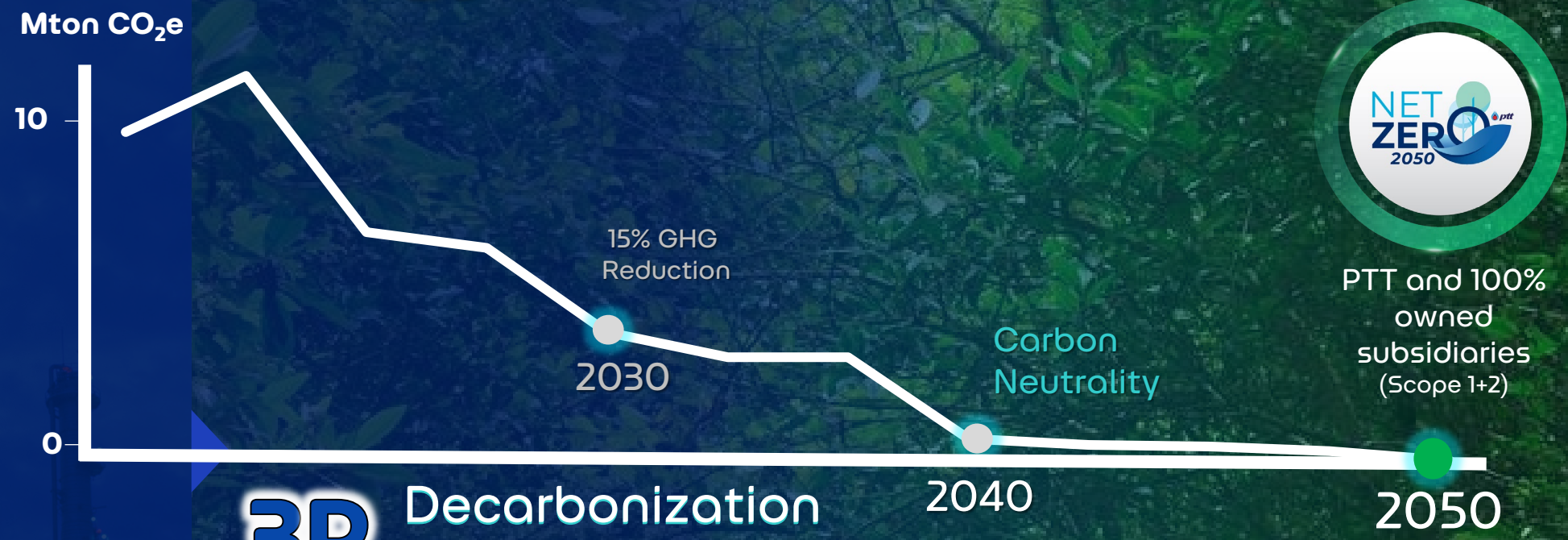
## Business Plan



## Corporate Risk Profile



# PTT's Goal and Strategy towards Net Zero Emissions



\* PTT Group GHG emissions in 2023 (Scope 1+2, domestic + international)

\*\* Direct emissions 9.93 MT + Indirect (scope 2) emissions 0.20 MT

## 3P Decarbonization Pathways



**P**ursuit of Lower Emissions  
~30 %

(Clean Growth)  
15% GHG reduction from 2020 by 2030

EE | CCS | CCU | RE | H<sub>2</sub>

**P**ortfolio Transformation  
~50 %

(Business Growth)

Exit Coal Business  
RE 15 GW by 2030

(Green Portfolio)  
Future Energy and Beyond  
32% of CAPEX 2021 - 2030

**P**artnership with Nature and Society  
~20 %

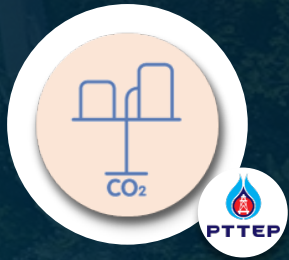
(Reforestation) PTT: 1 million Rai  
PTT Group: 1 million Rai by 2030

PTT's Existing Reforestation: 1,115,185 Rai

Remark: 1 Rai = 0.4 Acre  
**33**  
CONFIDENTIAL & PROPRIETARY

# PTT Group Decarbonization Initiatives

## Net Zero Emissions



CCS



Thailand CCUS Consortium

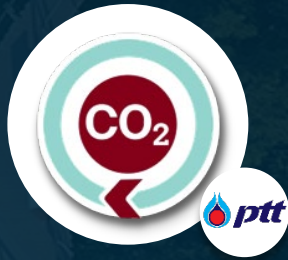


PTT Group CCS Hub Model



### ARTHIT CCS Project

The 1<sup>st</sup> CCS pilot project in Thailand by 2027



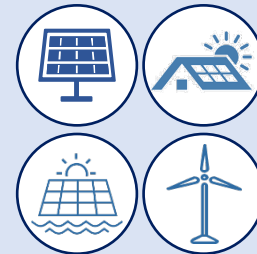
CCU

### Select potential products and technology for CO<sub>2</sub> utilization

- Sodium Bicarbonate (2025)
- Animal Protein (2026)
- Methanol (2028)
- Nano Calcium Carbonate (2027)
- Polyketone (2027)



Renewable Energy



### Install solar/wind power generators in the building and in/near the operation areas

Accumulated CO<sub>2</sub> reduction 1.0 MtCO<sub>2</sub>e by 2030



Hydrogen

### 3 focus areas

**H<sub>2</sub> Turbine & Burner**  
 Partial H<sub>2</sub> turbine/burner by 2026



**H<sub>2</sub>/NG blending**



Pilot H<sub>2</sub> blending in NG pipeline by 2025

**Fuel cell electric vehicle (FCEV)**



Prototype by 2030



Reforestation



Remark: 1 Rai = 0.4 Acre 34

CONFIDENTIAL & PROPRIETARY

Any use of this material without specific permission of PTT is strictly prohibited

# Key Achievements of sustainability management in 2023

## E Environmental: Sustainable Production and Consumption



### CCS Technology for PTT Group Net Zero & Eastern Thailand CCS Hub

- CCS Premium T-VER METH was completed, and GTO has announced on 27<sup>th</sup> Sep 2023
- PTTEP signed agreement to jointly study and evaluate the potential of geological rock layers to store carbon around Upper Gulf of Thailand area



### โครงการผลิตน้ำตาลจาก CCU

#### SODANA (Sodium Bicarbonate)

- Investment approval
- Bidding process for construction work

#### Animal Feed Protein

- Signed MOU with Partner
- Product & Market Proof process

### Kick-off "Ignite the Power of Life, Turn the Forest from 1 Seedling to the 2nd Million"



8<sup>th</sup> August 2023

### Climate Action Leading Organization or CALO



PTT is 1 of 16 organizations in the country that have received the Outstanding award at the Gold level.

### New Energy E-waste Technology for PTT Group



- MOU Feasibility study of Battery Recycling Business Project
- Kick-off meeting on goals, plans and establish working groups.

## S Social: People's Well-being

### PTT Safety Risk Assessment & Assurance

- Complete assessment as planned and prepare a report summarizing the evaluation results.

### Strengthening awareness of human rights within the organization and throughout the value chain

Received the award for being a model organization in human rights. From the Department of Rights and Freedoms Protection Ministry of Justice



### AFTER PROCESS



#### Smart Farming

Developing a new way of agriculture

- Analyze needs and assess the potential of the area
- Using PTT Group's innovations to develop agriculture raise productivity
- Develop a social business in modern agriculture
- Increase purchasing sources, have a supporting market



Integrated development of 45 areas throughout the country, covered 29 provinces

Net returns increased by 10% and were more than 5,000 baht/household/month.

#### Smart Marketing

- Develop 45 products, community tourist attractions in more than 6 areas, connecting sales channels (store and online)
- Develop two groups of community products: in-depth development of the entire process for 18 products and development focusing only on the image and packaging of 27 products.



## IN PROCESS

## G Governance: Corporate Governance and Performance Excellence

### Powering life with Future energy and Beyond

#### Future Energy



#### Beyond

Excellent CG Scoring  
15<sup>th</sup> consecutive year



Integrity and Transparency Assessment (ITA)  
"A" Level



### Listed (as) a member of DJSI

12<sup>th</sup> consecutive year in the World Index and the Emerging Market Index.

Member of

### Dow Jones Sustainability Indices

Powered by the S&P Global CSA

### PTT won Sustainability Awards of Honor 2023

and has been rated "AAA" level in SET ESG Rating



### Sustainable Development Goals (SDGs)

PTT's operations fully support 17 SDGs



# Contents

01 Overview

02 4Q & 2023 Performance

03 PTT Group Strategy

04 Outlook/Guidance

05 ESG

06 Supplementary Information

Overview

4Q & 2023  
Performance

PTT Group  
Strategy

Outlook/Guidance

ESG

Supplementary

# Supplementary Information

<b>PTT Group Performance &amp; PTT Only Cash Flow</b>	<b>P.38-41</b>
2024 Economic Outlook & Product Price Outlook	P.42-43
<b>Debt Profile</b>	<b>P.44</b>
PTT Group Accounting Structure	P.45
<b>Financial Performance by business</b>	<b>P.46-52</b>
PTT Group : Upcoming Projects	P.53
<b>Pipeline Business</b>	<b>P.54-55</b>

# PTT Group Performance : 4Q23 (QoQ & YoY)

Unit : MB	Performance 100%					% PTT holding	Equity Method % PTT				
	4Q22	3Q23	4Q23	QoQ	YoY		4Q22	3Q23	4Q23	QoQ	YoY
<b>PTT Net Operating Income</b>	6,149	5,410	10,146	88%	65%		6,149	5,410	10,146	88%	65%
<b>E&amp;P - PTTEP</b>	15,610	18,101	18,284	1%	17%	65.29%	10,219	11,816	11,765	(0.4%)	15%
<b>Petrochemical</b>	771	1,558	5,212	>100%	>100%		383	531	2,869	>100%	>100%
- GC	678	1,427	5,081	>100%	>100%	48.18%	290	400	2,738	>100%	>100%
- Other	93	131	131	0%	41%		93	131	131	0%	41%
<b>Refining</b>	(7,002)	13,267	(473)	<(100%)	93%		(1,241)	4,933	2,432	(51%)	>100%
- TOP	147	10,828	2,944	(73%)	>100%	48.00%	2,171	3,877	3,947	2%	82%
- IRPC	(7,149)	2,439	(3,417)	<(100%)	52%	48.05%	(3,412)	1,056	(1,515)	<(100%)	56%
<b>Oil - OR</b>	(744)	5,170	193	(96%)	>100%	75.00%	(552)	3,832	204	(95%)	>100%
<b>NBI - GPSC/TP/DCAP/PTTES/PTTDIGITAL/ENCO/PTTGM<sup>2/</sup></b>	(115)	3,066	2,672	(13%)	>100%		(142)	1,627	2,464	51%	>100%
<b>Others Business</b>	3,572	3,312	3,321	0.3%	(7%)		3,849	3,148	2,877	(9%)	(25%)
<b>Inter - PTTER</b>	103	25	261	>100%	>100%	100.00%	104	25	261	>100%	>100%
<b>Gas - PTTLNG/PTTNGD/PTTGL/TTM(T)/TTM(M)</b>	1,258	2,347	3,368	44%	>100%		1,149	1,995	2,887	45%	>100%
<b>Other - PTTT/Others<sup>1/</sup></b>	2,211	940	(308)	<(100%)	<(100%)		2,596	1,128	(271)	<(100%)	<(100%)
<b>Shared of Net Income from Affiliates</b>	12,092	44,474	29,209	(34%)	>100%		12,516	25,887	22,611	(13%)	81%
<b>Tax Adjustment for Gain on Disposal of Investment and Asset</b>	-	-	8	100%	100%		-	-	8	100%	100%
<b>PTT Consolidated Net Income</b>	18,241	49,884	39,363	(21%)	>100%		18,665	31,297	32,765	5%	76%

1/ Including PTTGE,BSA, coal business (before divestment), and PTT TCC

2/ Since 2023 onwards, PTTGM has moved to the NBI business group after its complete divestment of the coal business in February 2023.

# PTT Group Performance : YTD

Unit : MB	Performance 100%			% PTT holding	Equity Method % PTT		
	2022	2023	YTD		2022	2023	YTD
<b>PTT Net Operating Income</b>	<b>15,271</b>	<b>24,539</b>	<b>61%</b>		<b>15,271</b>	<b>24,539</b>	<b>61%</b>
<b>E&amp;P - PTTEP</b>	<b>70,901</b>	<b>76,706</b>	<b>8%</b>	<b>65.29%</b>	<b>46,279</b>	<b>49,904</b>	<b>8%</b>
<b>Petrochemical</b>	<b>(8,337)</b>	<b>1,515</b>	<b>&gt;100%</b>		<b>(3,832)</b>	<b>1,004</b>	<b>&gt;100%</b>
- GC	<b>(8,752)</b>	<b>999</b>	<b>&gt;100%</b>	<b>48.18%</b>	<b>(4,247)</b>	<b>488</b>	<b>&gt;100%</b>
- Other	<b>415</b>	<b>516</b>	<b>24%</b>		<b>415</b>	<b>516</b>	<b>24%</b>
<b>Refining</b>	<b>28,304</b>	<b>16,520</b>	<b>(42%)</b>		<b>4,608</b>	<b>8,509</b>	<b>85%</b>
- TOP	<b>32,668</b>	<b>19,443</b>	<b>(40%)</b>	<b>48.00%</b>	<b>6,734</b>	<b>9,845</b>	<b>46%</b>
- IRPC	<b>(4,364)</b>	<b>(2,923)</b>	<b>33%</b>	<b>48.05%</b>	<b>(2,126)</b>	<b>(1,336)</b>	<b>37%</b>
<b>Oil - OR</b>	<b>10,370</b>	<b>11,094</b>	<b>7%</b>	<b>75.00%</b>	<b>7,819</b>	<b>8,375</b>	<b>7%</b>
<b>NBI - GPSC/TP/DCAP/PTTES/PTTDIGITAL/ENCO/PTTGM<sup>2/</sup></b>	<b>2,134</b>	<b>9,275</b>	<b>&gt;100%</b>		<b>653</b>	<b>6,025</b>	<b>&gt;100%</b>
<b>Others Business</b>	<b>22,663</b>	<b>14,819</b>	<b>(35%)</b>		<b>20,315</b>	<b>13,658</b>	<b>(33%)</b>
<b>Inter - PTTTER</b>	<b>119</b>	<b>323</b>	<b>&gt;100%</b>	<b>100.00%</b>	<b>120</b>	<b>323</b>	<b>&gt;100%</b>
<b>Gas - PTTLNG/PTTNGD/PTTGL/TTM(T)/TTM(M)</b>	<b>7,737</b>	<b>9,181</b>	<b>19%</b>		<b>6,766</b>	<b>7,912</b>	<b>17%</b>
<b>Other - PTTT/Others<sup>1/</sup></b>	<b>14,807</b>	<b>5,315</b>	<b>(64%)</b>		<b>13,429</b>	<b>5,423</b>	<b>(60%)</b>
<b>Shared of Net Income from Affiliates</b>	<b>126,035</b>	<b>129,929</b>	<b>3%</b>		<b>75,842</b>	<b>87,475</b>	<b>15%</b>
<b>Tax Adjustment for Gain on Disposal of Investment and Asset</b>	<b>62</b>	<b>10</b>	<b>(84%)</b>		<b>62</b>	<b>10</b>	<b>(84%)</b>
<b>PTT Consolidated Net Income</b>	<b>141,368</b>	<b>154,478</b>	<b>9%</b>		<b>91,175</b>	<b>112,024</b>	<b>23%</b>

1/ Including PTTGE,BSA, coal business (before divestment), and PTT TCC

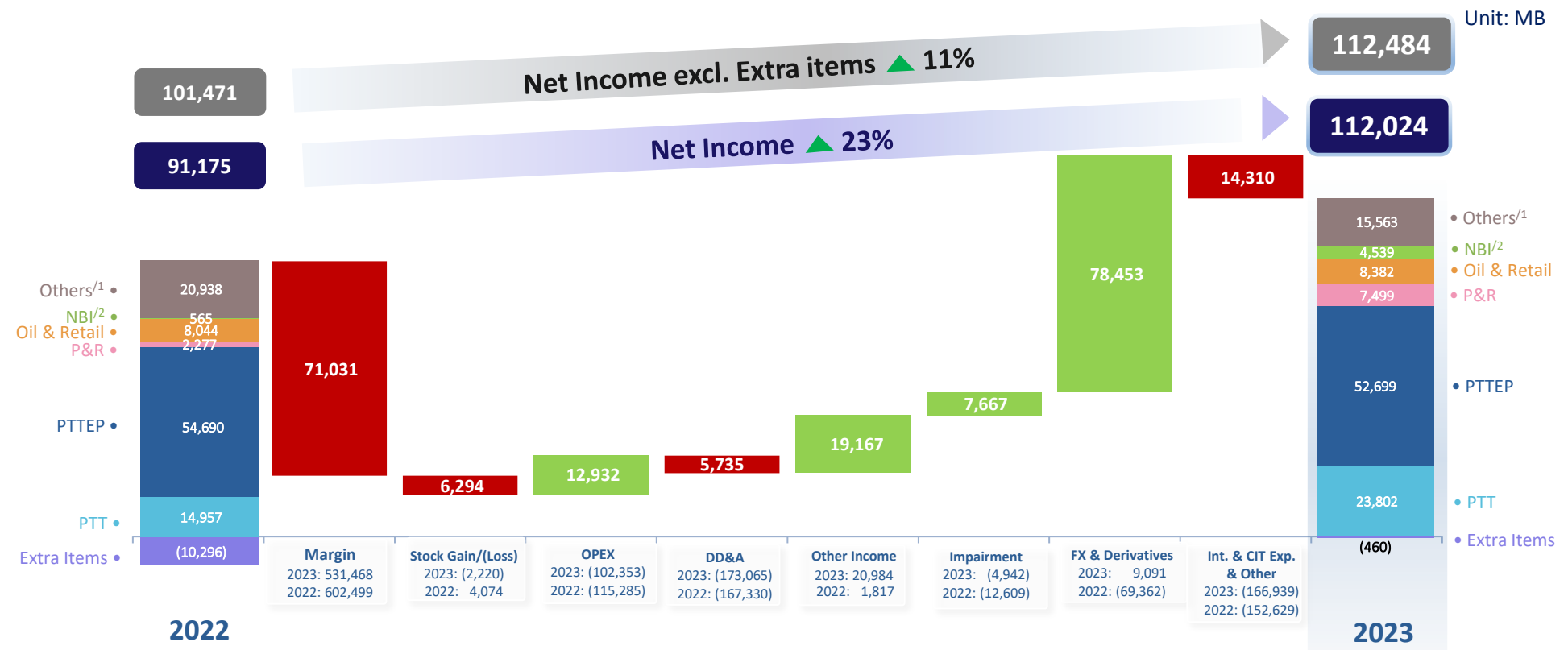
2/ Since 2023 onwards, PTTGM has moved to the NBI business group after its complete divestment of the coal business in February 2023.



# 2023 vs 2022 PTT Consolidated Performance (YTD)



Improved NI from lower loss on derivatives and higher gain on FX despite a decrease in operating performance and higher stock loss



**Remark:**  
 1/ Others business mainly contributed from PTT LNG, PTT NGD, PTTT etc.  
 2/ New Business and Infrastructure business mainly contributed from power business and PTTGM.  
 \*Since 2023 onwards, PTTGM has moved to the NBI business group after its complete divestment of the coal business in February 2023.

$\uparrow$  **59%** Higher gain on FX rate together with an increased in gross margin

**Gas**  $\uparrow$  **Trading**

**S&M**  $+$  **GSP**

- + Lower pool gas cost
- + Higher sales volume
- Decreased avg. selling price to industrial customers

- Decreased avg. selling price
- Lower sales volume
- + Lower feed gas cost

**Enhanced sales volume of crude and LNG**

- Lower margin per unit of crude and LNG imports

$\downarrow$  **4% E&P**

- Decreased avg. selling price
- Lower avg. sales volume

$\uparrow$  **4% Oil & Retail**

- + Higher gasoline and jet's gross margin
- Higher net operating exp.

$\uparrow$  **>100% P&R**

- + Lower loss from oil price hedging and higher gain on foreign exchange rate

**Refinery** **Petrochemical**

- Lower Mkt GRM
- Higher stock loss
- + Higher sales vol.
- Lower product spread (Phenol and Olefins)
- Lower performance chemicals performance as economic slowdown

$\uparrow$  **>100% NBI**

- + **GPSC:** Higher profit margin due to increase in Ft
- + **Innobic:** Higher revenue from pharmaceutical business

$\downarrow$  **26% Others**

- Divestment of coal business
- + **Trading Affiliates:** Increased sales volume of crude and refined product out-out trading

$\downarrow$  **96% Extra Items\***

**2023: Net loss ~-500 MB**

- PTTEP's impairment loss on Mozambique Area 1: ~-2,800 MB
- PTTEP's write-off Oliver Project: ~-1,200 MB
- PTTEP's gain on divestment of Cash-Maple: ~+1,700 MB

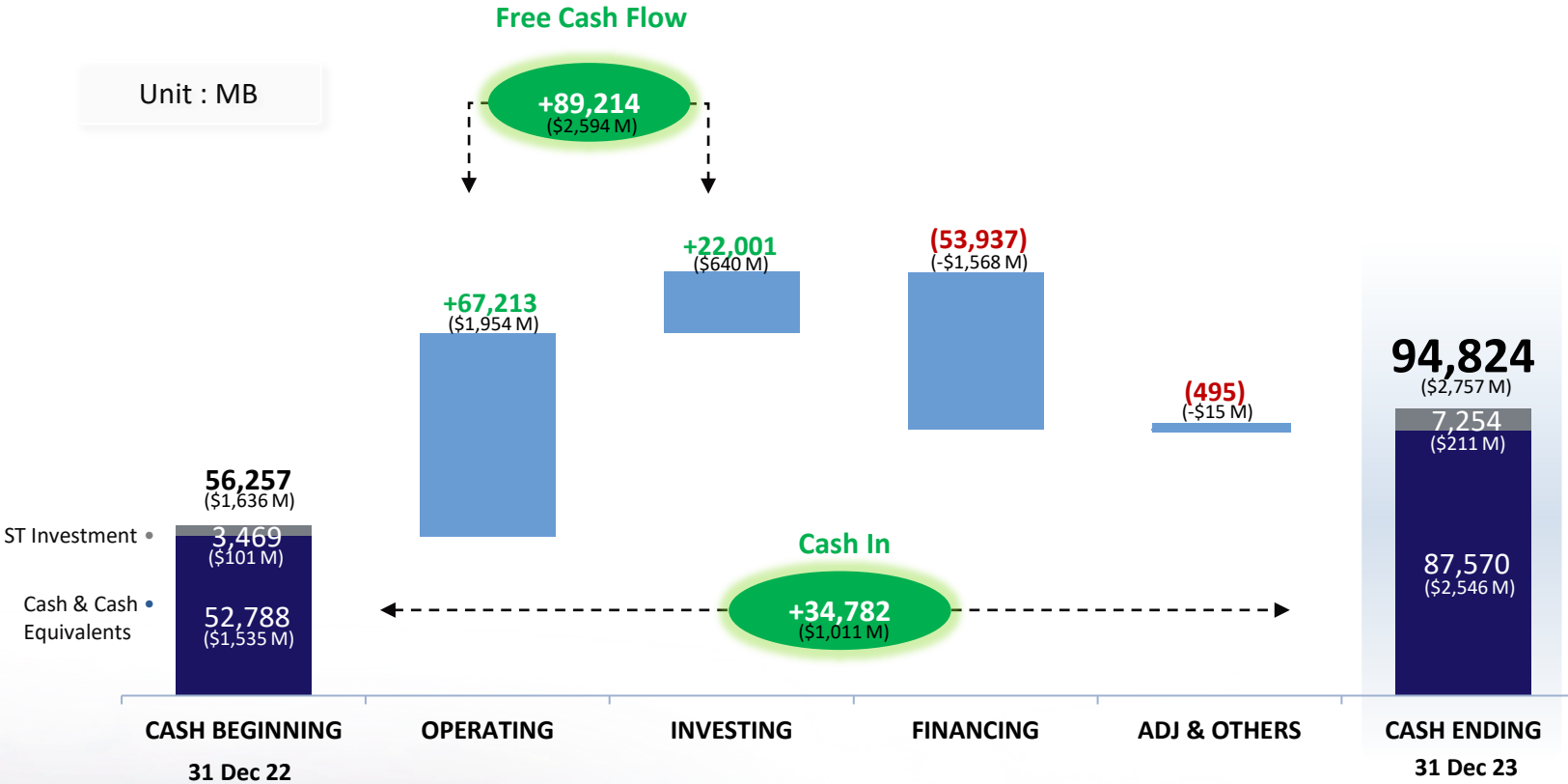
**2022: Net loss ~-10,200 MB**

- PTTEP's impairment loss on Mozambique Area 1: ~-4,300 MB
- PTTEP's Impairment loss on PTTEP BL assets: ~-2,300 MB
- PTTEP's provision for the Class Action settlement from Montara incident: ~-3,000 MB
- PTT's gas production shortfall penalty: ~+2,700 MB
- PTT's contribution to oil fund during energy crisis: ~-3,000 MB

(\*PTT's portion net tax amount)

# PTT Only Cash Flows 2023

Unit : MB



**Operating**  
**67,213**  
MB

Net Income	78,384
Changes in assets & liabilities	22,233
Non-Cash Adjustment	(23,820)
Income Tax	(9,584)

**Investing**  
**22,001**  
MB

Dividend/Interest Received	39,437
Short / Long-term lending loans	1,273
Current investment	791
CAPEX (PPE, Intangible asset)	(16,621)
Investment (Sub. & Affiliates)	(1,804)
Other	(1,075)

**Financing**  
**(53,937)**  
MB

Dividend paid	(42,847)
Finance cost paid	(16,143)
Others	(96)
Received from loans/bonds	5,149



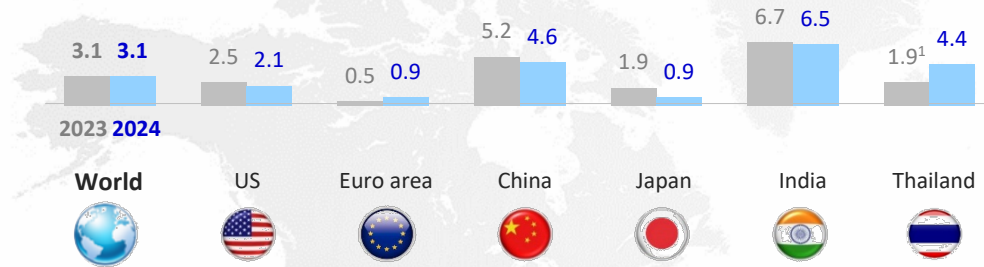
\* As of Dec 31, 2023, BOT selling rate USD/THB of 34.39 (End rate)

# 2024 ECONOMIC OUTLOOK

## World

Steady Growth & Moderating Inflation Open Path to Soft Landing

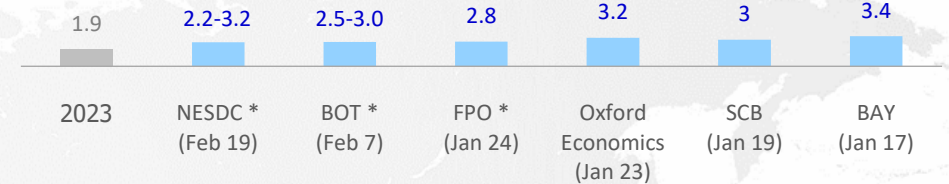
IMF Forecast – GDP Growth (%)



## Thailand

Moderate Recovery amid Potential Roadblocks Ahead

Thailand 2024 GDP Growth Forecast (%)



\* NESDC = The Office of the National Economic and Social Development Council/  
FPO = The Fiscal Policy Office/ BOT = Bank of Thailand

### Tailwinds

- Fed, ECB monetary policies to ease in 2H'24
- Inflation subsiding
- Spending for the year of elections
- Still-tight, though easing, labor markets in advanced economies

### Headwinds

- Lagged effects of monetary tightening
- Fiscal consolidation & high debt
- China slowdown amid reforms, albeit fiscal support
- Conflicts in Middle East & geopolitical uncertainty

### Tailwinds

- Improving tourism amid visa-free scheme
- Goods exports back to growth
- Consumption expansion
- Investment rebound after FY2024 budget approved

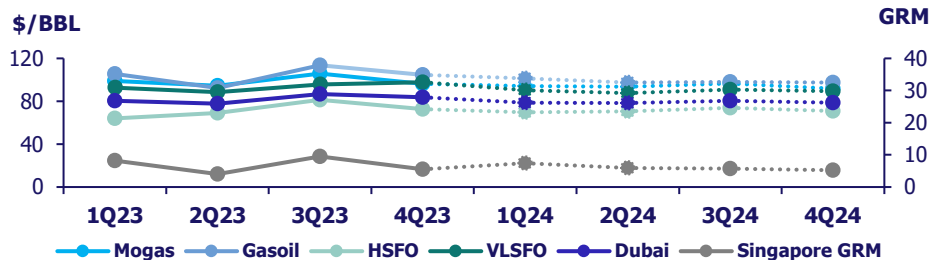
### Headwinds

- High borrowing costs amid high household debt
- Digital Wallet scheme facing legal and fiscal constraints
- Political uncertainty
- El Niño impact

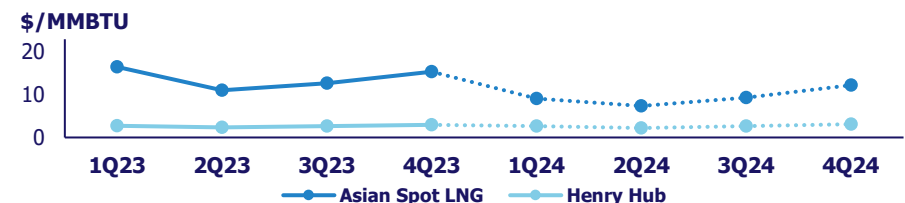
Note: 1 Real GDP in 2023 from The Office of the National Economic and Social Development Council (NESDC)  
Sources: IMF WEO (Jan 30, 2024), Blog by Pierre-Olivier Gourinchas, International Industry Research and Economics Department

# 2024 Product Prices Outlook:

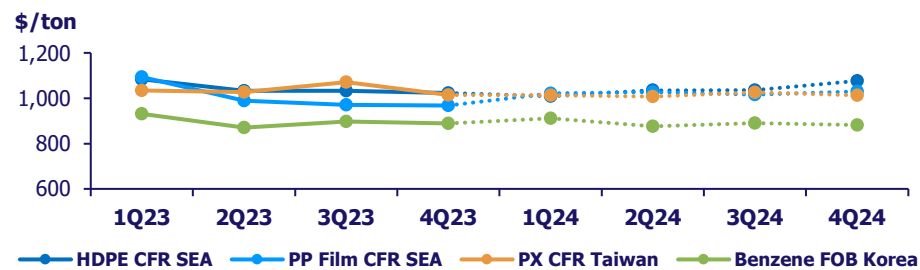
## Petroleum



## Gas/LNG



## Petrochemical



Price	3Q23	4Q23	1Q24(E)	2023	2024(E)
Dubai	86.7	83.6	73 – 83	82.1	74 – 84
Gasoline	105.6	96.1	89 – 99	98.8	89 – 99
Gasoil 10 ppm	115.5	108.0	96 – 106	106.4	93 – 103
HSFO (3.5%S)	81.4	72.5	64 – 74	71.8	66 – 76
VLSFO (0.5%S)	95.7	97.6	85 – 95	93.6	84 – 94
Singapore GRM	9.5	5.5	6.8 – 7.8	6.8	5.5 – 6.5
Asian Spot LNG	12.6	15.2	9.0	13.8	9.0 – 10.0
Henry Hub (HH)	2.7	2.9	2.6	2.7	2.5 – 2.9
HDPE	1,034	1,023	960 – 1,060	1,044	990 – 1,090
PP Film	971	968	970 – 1,070	1,006	975 – 1,075
BZ	898	889	860 – 960	897	840 – 940
PX	1,072	1,015	965 – 1,065	1,038	965 – 1,065

## MARKET FACTORS

### Bullish

- Escalating Middle East tensions causing higher freight costs and rerouting from Red Sea
- OPEC+ voluntary output cuts 2.2 MBD for 1Q24
- The Fed may cut interest rates in 2H24

### Bearish

- Market sentiment pressured by concern on economic slowdown
- Continued Non-OPEC production growth (Mainly from US)
- Higher Supply from Refinery Start-ups, especially Dangote refinery in Nigeria

---

### Gas/LNG

- Risk of maritime terrorist attacks in Red Sea
- Cold Snap in US, Europe and North Asia

- Higher solar and wind power generation replaced gas consumption in Europe
- Europe's gas demand destruction persists over 2024
- High gas inventories in Europe and Asia

---

### Petrochemical

- Potential demand recovery in 2H24
- Lower import supply as logistic disruptions caused by the Red Sea tension
- Margin improvement on the back of lower upstream costs

- Gradual recovery on end-product consumption to limit upside gains
- Additional HDPE, PP, BZ supply especially from China in 2024
- Concern on economic slowdown & geopolitical tension weighing on Asian sentiment

Source: PTT, PRISM Petroleum Rolling as of 23 January 2024, PRISM Petrochemical Rolling as of 1 February 2024, TBU Analyst as of January 2024

# Debt Profile : Control Cost & Manage Risk

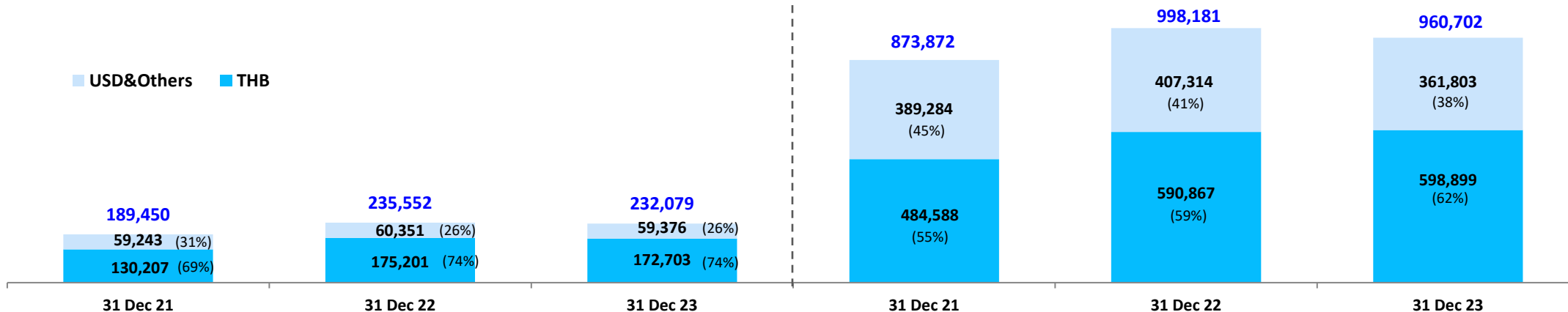
Managed debt according to financial risk and policy

## Debt Portfolio

Unit : MB

**PTT Only** : Cost of debts ~ 3.99%  
 : % fixed-rate ~ 66.01%  
 : Avg. debt life ~ 11.99 years

**Consolidated** : Cost of debts ~ 3.98%  
 : % fixed-rate ~ 67.63%  
 : Avg. debt life ~ 10.05 years

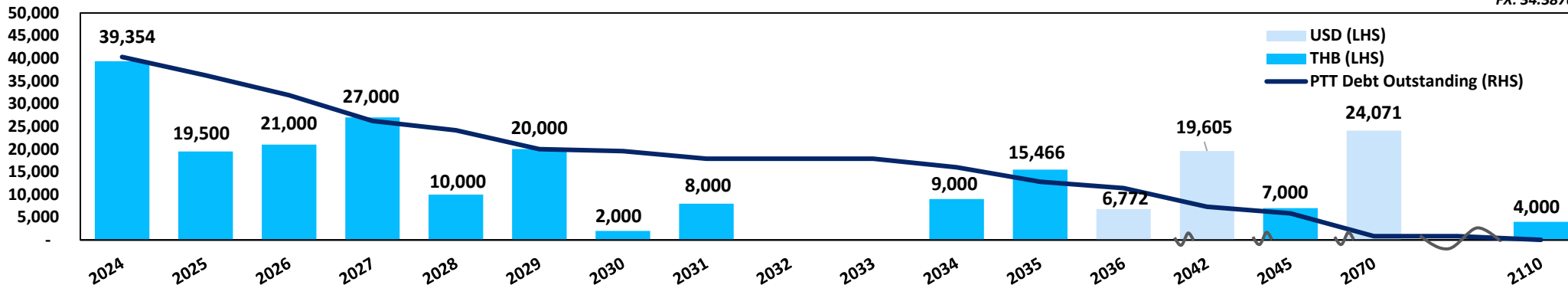


Note : 1. PTT Data as of 31 Dec 23 (THB/USD = 34.3876 THB/JPY = 0.245752) excluding liabilities from finance leases.  
 2. Debt Outstanding represents amount and portion before derivative swaps and reconciled with accounting.  
 3. Cost of debts, % fixed rate, and avg. debt life took into account the derivative transactions, including withholding tax (update as of 31 Dec 23).

## PTT Only : Debt Outstanding and Repayment Profile

Unit : MB

As of 31 Dec 23  
 FX: 34.3876



Note: 1. Debt Outstanding for Repayment Profile represents financial data and portion after derivative swaps.  
 2. Bond repayment amounting 9,466 MMTHB in 2035 is USD swaps to THB.

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

Overview

4Q & 2023 Performance

PTT Group Strategy

Outlook/Guidance

ESG

Supplementary

# PTT Group Accounting Structure

Data as of 31 Dec 2023

## E&P and Gas Business Group

Subsidiaries		Consolidate
PTT Exploration & Production Plc.	PTTEP	65.29% <sup>2/</sup>
PTT Natural Gas Distribution Co., Ltd.	PTTNGD	58.00%
PTT LNG Co., Ltd.	PTTLNG	100.00%
Joint Ventures		Equity
Trans Thai-Malaysia (Thailand) Co., Ltd.	TTM (T)	50.00%
Trans Thai-Malaysia (Malaysia) Sdn. Bhd.	TTM (M)	50.00%
Map Ta Phut Air Products Co., Ltd.	MAP	51.00% <sup>2/</sup>

## International Trading Business Group

Subsidiaries		Consolidate
PTT International Trading Pte.	PTTT	100.00%
PTT International Trading London Ltd.	PTTT LDN	100.00%
PTT International Trading USA Inc.	PTTT USA	100.00%

## Oil Business Group

Subsidiaries	OR	Consolidate
PTT Oil & Retail Business Co., Ltd.	OR	75.00%

## Petrochemicals & Refining Business Group

Petrochemical Subsidiaries		Consolidate
PTT Global Chemical Plc. <sup>1/</sup>	GC	48.18% <sup>2/</sup>
PTT Tank Terminal Co., Ltd.	PTT TANK	100.00%
Refining Subsidiaries		Consolidate
Thai Oil Plc. <sup>1/</sup>	TOP	48.00% <sup>2/</sup>
IRPC Plc. <sup>1/</sup>	IRPC	48.05% <sup>2/</sup>

## New Business and Infrastructure Business Group

Subsidiaries		Consolidate
Global Power Synergy Plc. <sup>1/</sup>	GPSC	75.23% <sup>2/</sup>
PTT Digital Solutions Co., Ltd. <sup>1/</sup>	PTT DIGITAL	20.00%
PTT Energy Solutions Co., Ltd. <sup>1/</sup>	PTTES	40.00%
Energy Complex Co., Ltd.	EnCo	50.00%
Joint Ventures		Equity
District Cooling System and Power Plant	DCAP	35.00%
VISUP Company Limited	VISUP	22.22%
Others		Fair value
Baania (Thailand) Co., Ltd.	Baania	2.63%
HG Robotics Plc.	HG Robotics	9.47%
Innospace (Thailand)	Innospace	13.61%
Sunfolding, Inc.	Sunfolding	5.81%
Luminar Technologies, Inc.	Luminar Technologies	0.08%
Ample, Inc.	AMPLE	1.13%
Shenzhen Immotor Technology Co., Ltd.	IMMOTOR	3.05%
NTG Holding Pte. Ltd.	NT	14.22%
6K Inc.	6K	1.30%
CHCJ EQ LLC.	CHCJ	43.73%

## International Investment Business Group

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
Business Service Alliance Co., Ltd. <sup>1/</sup>	BSA	25.00% <sup>3/</sup>
PTT Treasury Center Co. Ltd.	PTT TCC	100.00%
Joint Ventures		Equity
Veolia Sustainable Solution (Thailand) Co.,Ltd.	VSS	40.00%
Others		Fair value
Sarn Palung Social Enterprise Co., Ltd.	SPSE	20.00%
Dhipaya Group Holdings Plc.	TIPH	13.46%

Remark : <sup>1/</sup>Subsidiaries that PTT holds less than 50.00% but being consolidated because PTT has the power to control the financial and operating policies.

<sup>2/</sup>Holding portion of PTT Group (direct & indirect)

<sup>3/</sup>PTT holds 100.00% of BSA's ordinary shares, PTT's ownership interest in BSA is 100.00%

# E&P Performance

**QoQ**

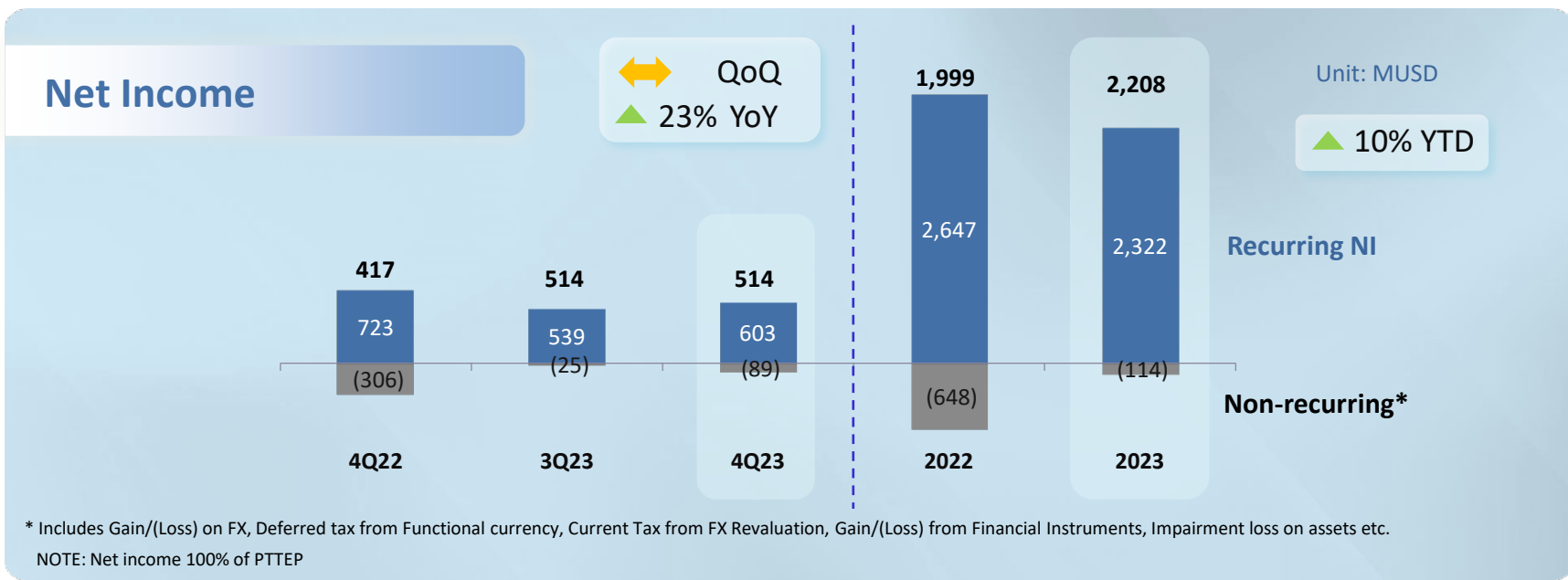
NI stable owing to decreases in operating expenses and income taxes while there was a recognition of impairment loss on Mozambique Area 1 Project

- + Normal operation: increased due to lower operating expenses and income taxes together with increase in revenue from higher avg. selling volume.
- Non-operating items: decreased due to the recognition of impairment loss on Mozambique Area 1 Project, while there was gain from oil price hedging instruments due to a downward trend of forward oil price

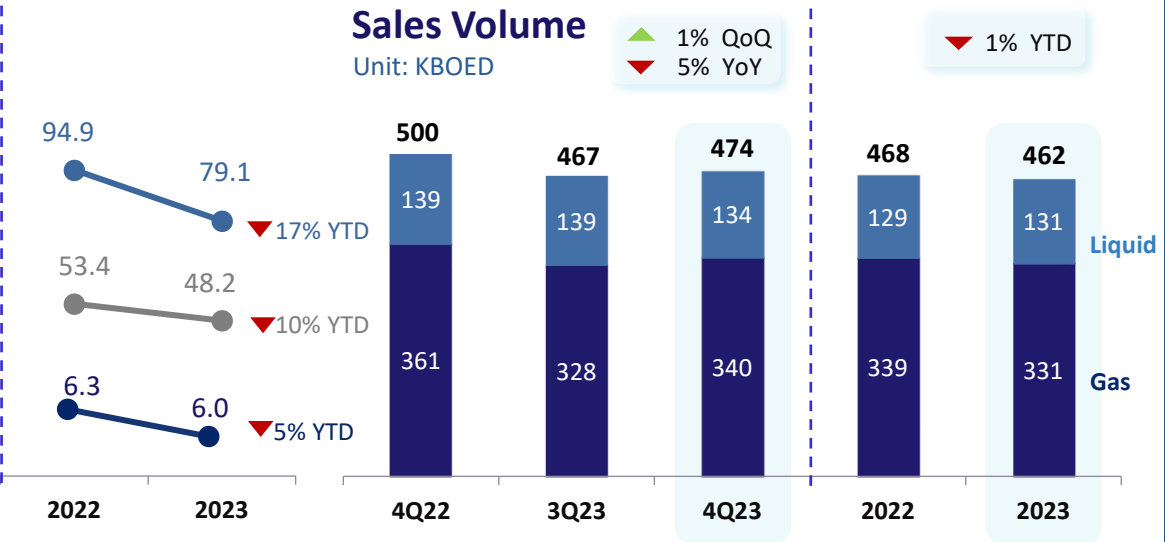
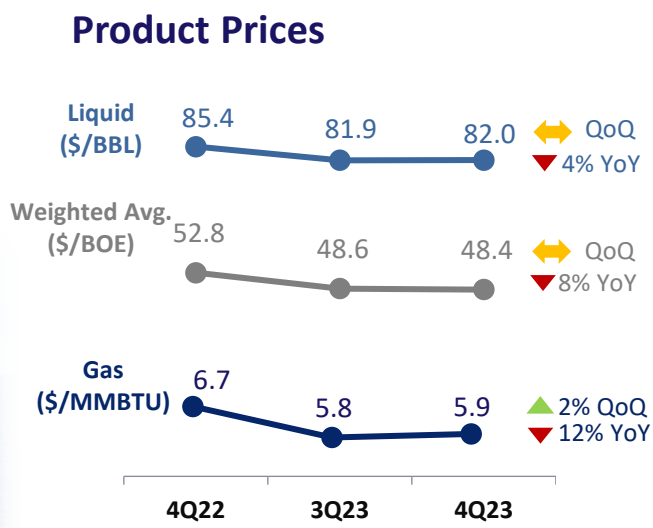
**YTD**

NI improved due lower royalty expenses and income taxes despite lower revenue

- Normal operation: decreased in revenue from lower avg. selling price and sales volume despite lower royalty expenses and income taxes
- + Non-operating items: improved primarily from lower loss on oil price hedging instruments due to less upward trend of forward oil price in 2023



## Key Drivers



# E&P: Guidance & Strategy

## Strategy Refinement

### Corporate Strategy

#### Drive Value

Energy security and Long-term supply resiliency

**Lean**  
Competitiveness in foothold areas

- Max Production
- Cost Optimization
- Expedite Development
- Expand Gas Growth



#### Decarbonize

Optimization for less emission or cleaner fossil fuels in PTTEP's operations

**Clean**  
Lower carbon for license to operate

- CCS Execution (Arthit & LLB)
- GHG Reduction Initiatives
- Offsetting Implementation



#### Diversify

New business portfolio readiness for Energy Transition

**Green**  
Readiness for Energy Transition

- AI and Robotics Ventures (ARV)
- Renewable Energy
- CCSUS, Hydrogen and Future Energy
- Commercialize the in-house Technology



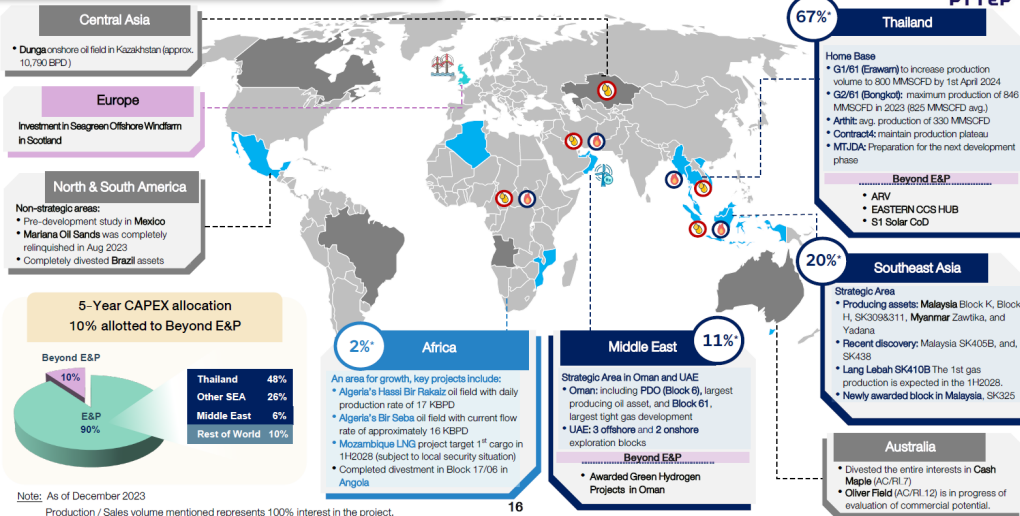
## 2024 Guidance

OUTLOOK	Q1 2024	FY 2024
Sales Volume (KBOED)	~473	~505
Gas Price (US\$/MMBTU)	~5.8	~5.7
Unit Cost (US\$/BOE)	~28-29	
Profitability (EBITDA Margin)	70-75%	

\* Based on average Dubai oil price in 2024 at 70-75 \$/BBL

## Business Update (E&P)

## Key Business Update



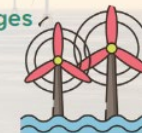
Note: As of December 2023  
Production / Sales volume mentioned represents 100% interest in the project.

## Business Update (Beyond E&P)

### Beyond E&P

#### Offshore Windfarm

- ▶ Investment in Seagreen Offshore Windfarm in Scotland
- ▶ MoU with TotalEnergies  
• Further collaboration in offshore wind investments  
• Exchange knowledges and experiences



#### Green Hydrogen Projects

Awarded Green Hydrogen Projects in Oman



#### EASTERN CCS HUB

Collaborates with INPEX, DMF & JOGMEC



#### Solar S1 CoD

Since June 2023





# Oil Business : OR Group

## QoQ

Soften performance from squeezed oil margin despite higher performance from Non-oil business while net operating expenses increased

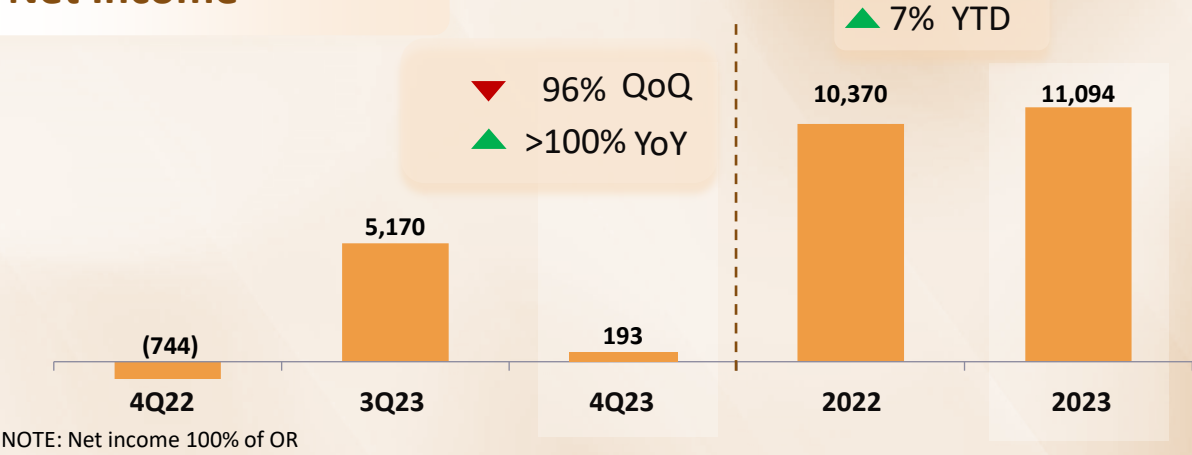
- Oil : Lower oil margin mainly from diesel and gasoline despite higher sales volume
- + Non-Oil : Higher revenue of F&B following higher sales volume and higher average sales revenue per store per day of convenient stores due to seasonal factor

## YTD

Strengthen performance from a slightly increase in oil margin as well as higher performance from Non-oil business

- + Oil : Increased in oil margin mostly from gasoline and aviation fuel from higher sales volume
- + Non-Oil : Higher revenue from F&B business due to outlet expansion

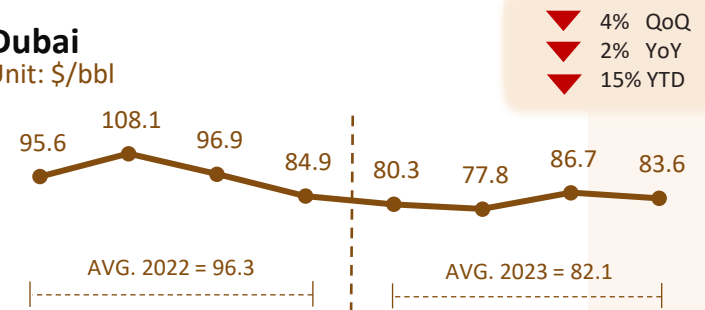
## Net Income



## Oil Business

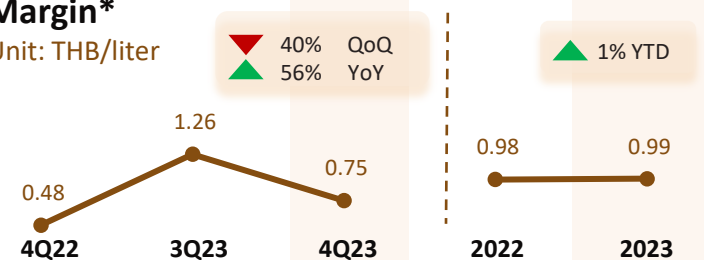
### Dubai

Unit: \$/bbl



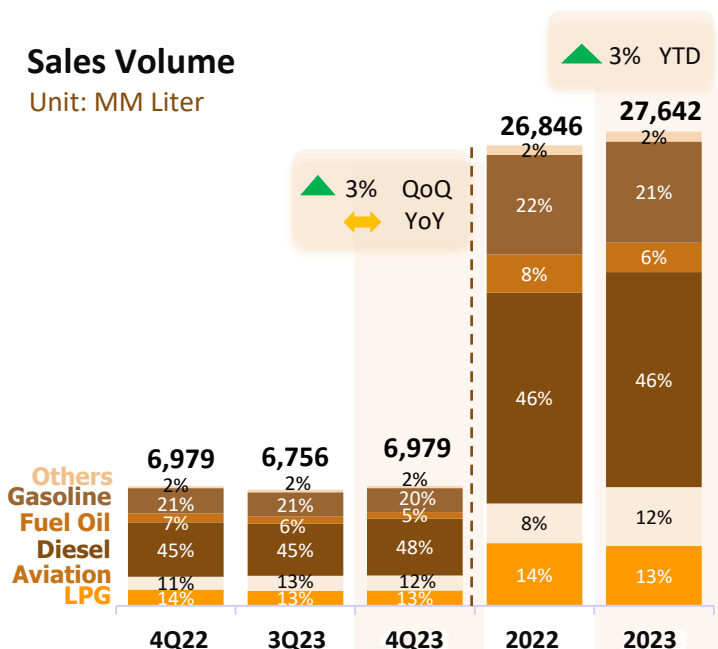
### Margin\*

Unit: THB/liter

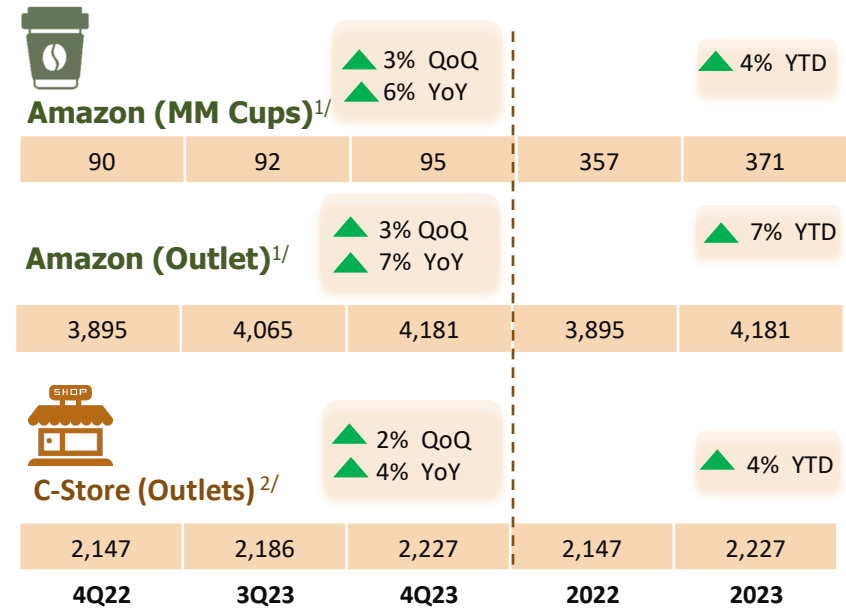


### Sales Volume

Unit: MM Liter



## Non - Oil Business



\*Gross margin included stock gain/(loss)

<sup>1/</sup> Thailand, Japan, Oman, Myanmar, Malaysia, and Saudi Arabia

<sup>2/</sup> Thailand

# P&R Business

QoQ

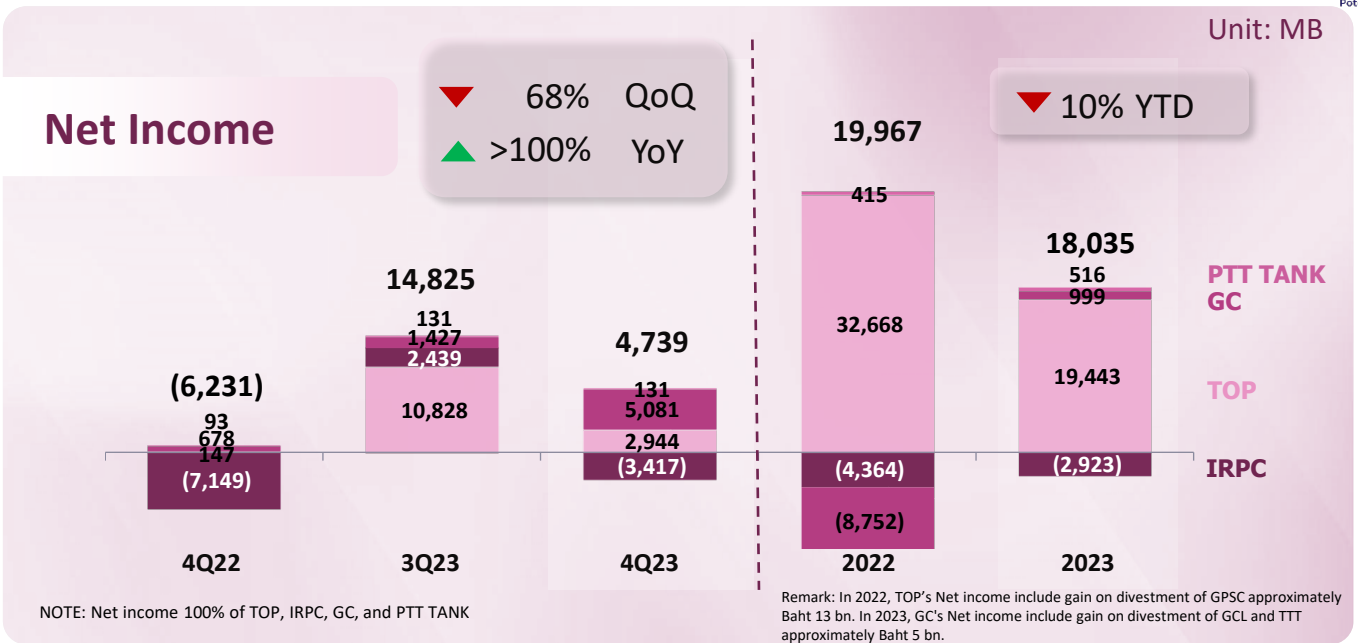
Dropped operating performance from both refinery and petrochemical business

- Refinery performance decreased from higher stock loss and lower Market GRM despite an increased in sales volume.
- Petrochemical performance decreased as lower sales volume of Olefins business due to maintenance shutdown and lower PE spread while Aromatics business increased from an increased in BZ and by products spread together with higher sales volume.

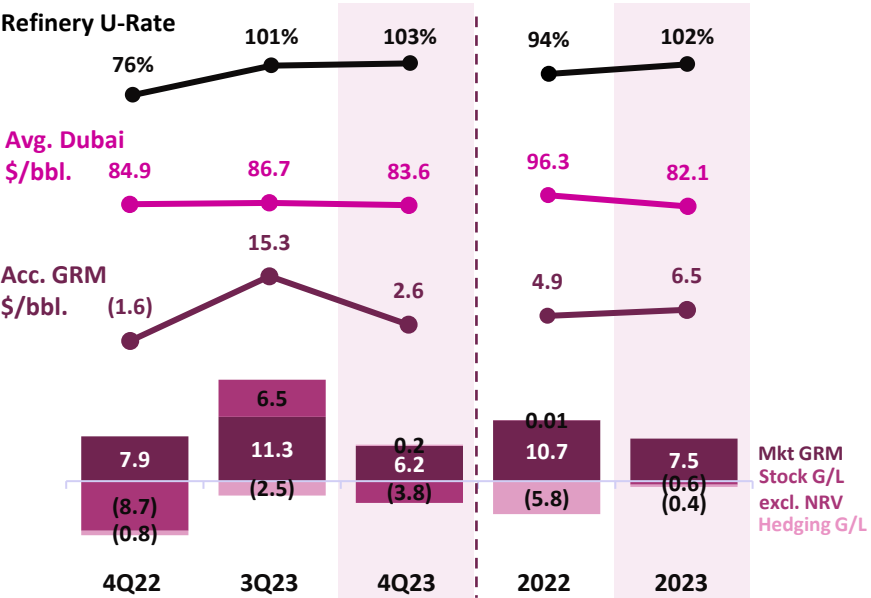
YTD

Overall performance (excluded extra items) increased due to less loss on oil price hedging and higher gain on FX despite lower operating performance

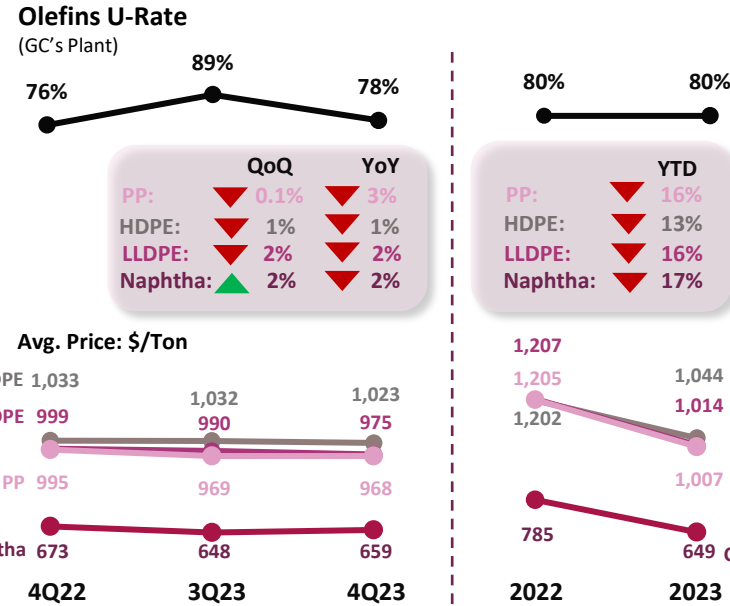
- + Significantly less loss on oil price hedging and higher gain on FX
- Refinery performance decreased from lower Market GRM and higher stock loss despite an increased in sales volume.
- Petrochemical performance decreased from Phenol and Olefins as lower product to feed, as well as Performance chemicals as economic slowdown. While, increased from Aromatics from widen PX and BZ spread despite lower sales volume.



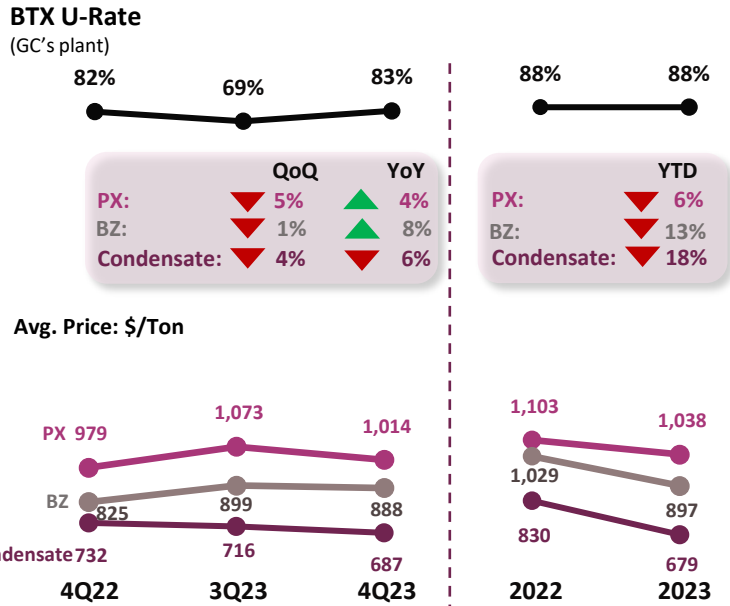
## Refinery



## Olefins



## Aromatics



Overview

4Q & 2023 Performance

PTT Group Strategy

Outlook/Guidance

ESG

Supplementary



# P&R : Projects Update

**GC**  
HVB  
(Allnex)

**Thairoil**  
Olefins investment

**GC**  
Ole 2 Modification project

**IRPC**  
Ultra Clean Fuel

**Thairoil**  
CFP

2022

2023

2024

Overview

4Q & 2023  
Performance

PTT Group  
Strategy

Outlook/Guidance

ESG

Supplementary

	High value business (HVB) Acquired 100% share of Allnex	Olefins investment (Investment in PT Chandra Asri: CAP)	Ole 2 Modification plant project	Ultra Clean Fuel	CFP (Clean Fuel Project)
Objective/ Capacity	<ul style="list-style-type: none"> <li>To diversify geographic targets in specialty chemical and expand global footprint (Basic chemical → Performance Chemicals &amp; Green Chemicals)</li> <li>Global producer of industrial coating resins and additives</li> <li>Total capacity around 1,297 KTA</li> </ul>	<ul style="list-style-type: none"> <li>Further extend Hydro- Carbon value chain to Olefins</li> <li>Use excess feedstock from CFP project (Naphtha) to create more flexibility and competitiveness.</li> <li>Investment 15.38% in petrochemical producer (Olefins) in Indonesia with total capacity around 4,232 KTA</li> </ul> <p><i>*Realized CAP contribution in 4Q21 onwards</i></p>	<ul style="list-style-type: none"> <li>To increase Propane usage as feedstock</li> <li>To enhance feedstock flexibility and long-term competitiveness</li> </ul>	<ul style="list-style-type: none"> <li>To increase refinery plant' s efficiency and upgrade diesel quality to meet the Euro 5 standard</li> <li>Increase 75 KBD of diesel capacity in Diesel hydro-treating Unit</li> </ul>	<ul style="list-style-type: none"> <li>Upgrade lower value products → higher value products</li> <li>Ability to process heavier (cheaper) crude oil</li> <li>Refining capacity 275 → 400 KBD</li> </ul>
CAPEX	€4,002 million or equivalent to 148,417 MB	not exceed 1,183 M.USD or equivalent to 39,116 MB	165 MMUSD or equivalent to 5,198 MB	13,300 MB	4.8 Bn.USD incl. ERU unit 757 MMUSD
COD	4Q2021 (Dec)	FID 2023	3Q2023	1Q2024	2024 (Fully COD in 2025)

# NBI: Power-GPSC

**QoQ**

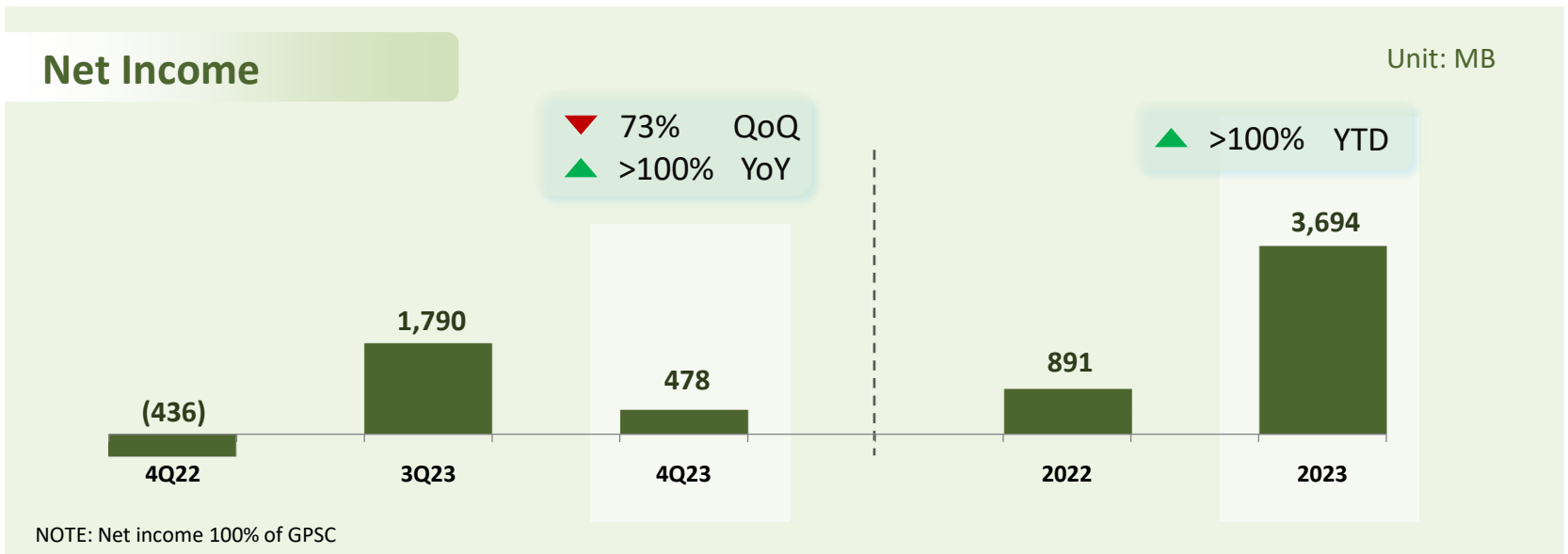
Performance decreased from lower SPP's margin mainly due to lower Ft and the decrease in power and steam sales volume

- Lower SPP's margin due to lower Ft and the decrease in electricity and steam sales volume from maintenance shutdowns of some industrial customers
- Lower contribution from XPCL due to seasonal factor
- + Insurance claim from GHECO-One and Sriracha Power Plant

**YTD**

Increased in NI due to higher SPP's margin as Ft better reflected energy prices as well as lower energy cost

- + Increase in SPP's margin as Ft better reflected fuel prices together with lower energy cost
- Higher finance cost from the increase in Long-term borrowings and debentures as well as higher tax expense following higher performance



## Key Drivers

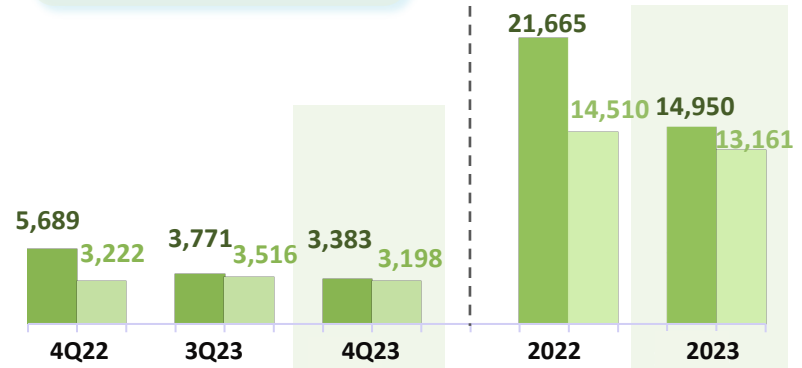
### Sales Volume

Unit: Power: GWh / Steam: '000 Ton

Category	QoQ	YoY
Power	▼ 10%	▼ 41%
Steam	▼ 9%	▼ 1%

Category	QoQ	YTD
Power	▼ 31%	▼ 31%
Steam	▼ 9%	▼ 9%

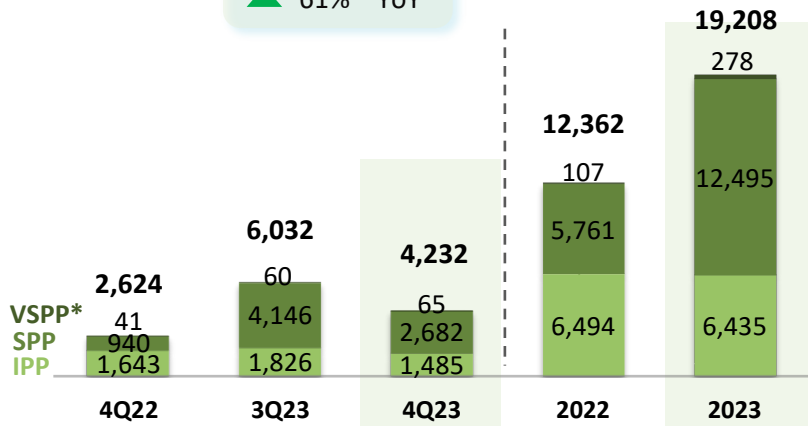


### Gross profit margin

Unit: MB

▼ 30% QoQ  
▲ 61% YoY

▲ 55% YTD



Remark: \*VSPP and others

## Upcoming Projects to Bolster Future Growth

### Avaada Energy Private Limited (AEPL)

**AVAADA**  
GPSC Hold  
**42.93%** of shares



Information	Details	
<b>Capacity (MW)</b>	Total Capacity of 10,560 MW	3,990 MW
	• Operating :	702 MW
	• Under-construction :	5,869 MW
	• Awarded bid :	

### CFXD : Progress of offshore wind in Taiwan



#### Benefits for GPSC

- Stable cash inflow project
- Establish partnership in Taiwan and expand into wind project with a very experienced wind developer
- PTT Group and CIP to explore future opportunity in target countries

- The construction reached 88%
- **Foundation installation completed 100% & Installation of 57-WTG completed** (as of 31 Jan 2024)
- **First power produced from 21 – WTG** (as of 31 Jan 2024)
- Under the process of cabling, test and commissioning

**"Target Full Operation in 1H/2024"**

### AXXIVA : Battery manufacturing business



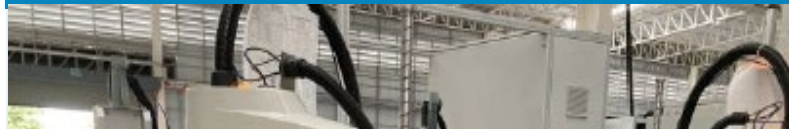
Facility

Process Equipment

- 1 GWh battery manufacturing plant for EV is expected to **SOP in Q2/2024**

- The facility installation, process equipment, product & material are ongoing

### NV Gotion



- **Module and Pack Assembly**
  - 1st Phase **2GWh SOP in Q4/2023**
  - Potential expansion to **8 GWh**
- Focusing on commercial EV, ESS etc.

### Glow SPP2

**SCOD | Q2/2024**  
Unit1 : Mar 2024 / Unit2 : Apr 2024



Projects	Electricity Capacity (MW)	Steam Production Capacity (t/h)	Contracted PPA with EGAT (MW)
Glow SPP2	98	230	60 (2 PPAs x 30 MW)

### Energy Recovery Unit (ERU)

**SCOD | 2025**



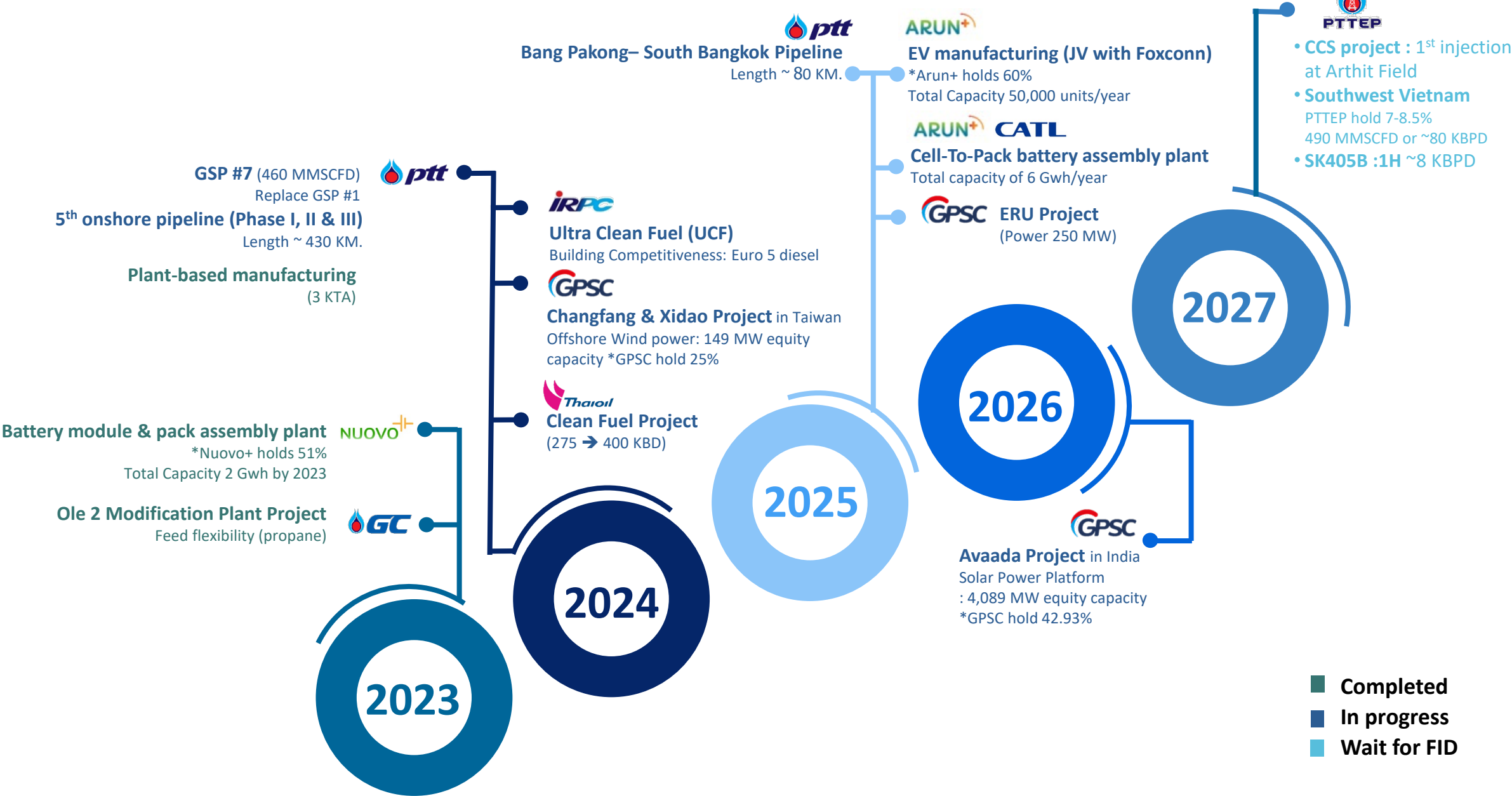
- Overall, the project has reached 93.39% and it is processing installation and testing equipment.
- The proceeding install equipment, Electrical cables and test equipment In the Substation 119 power station building.



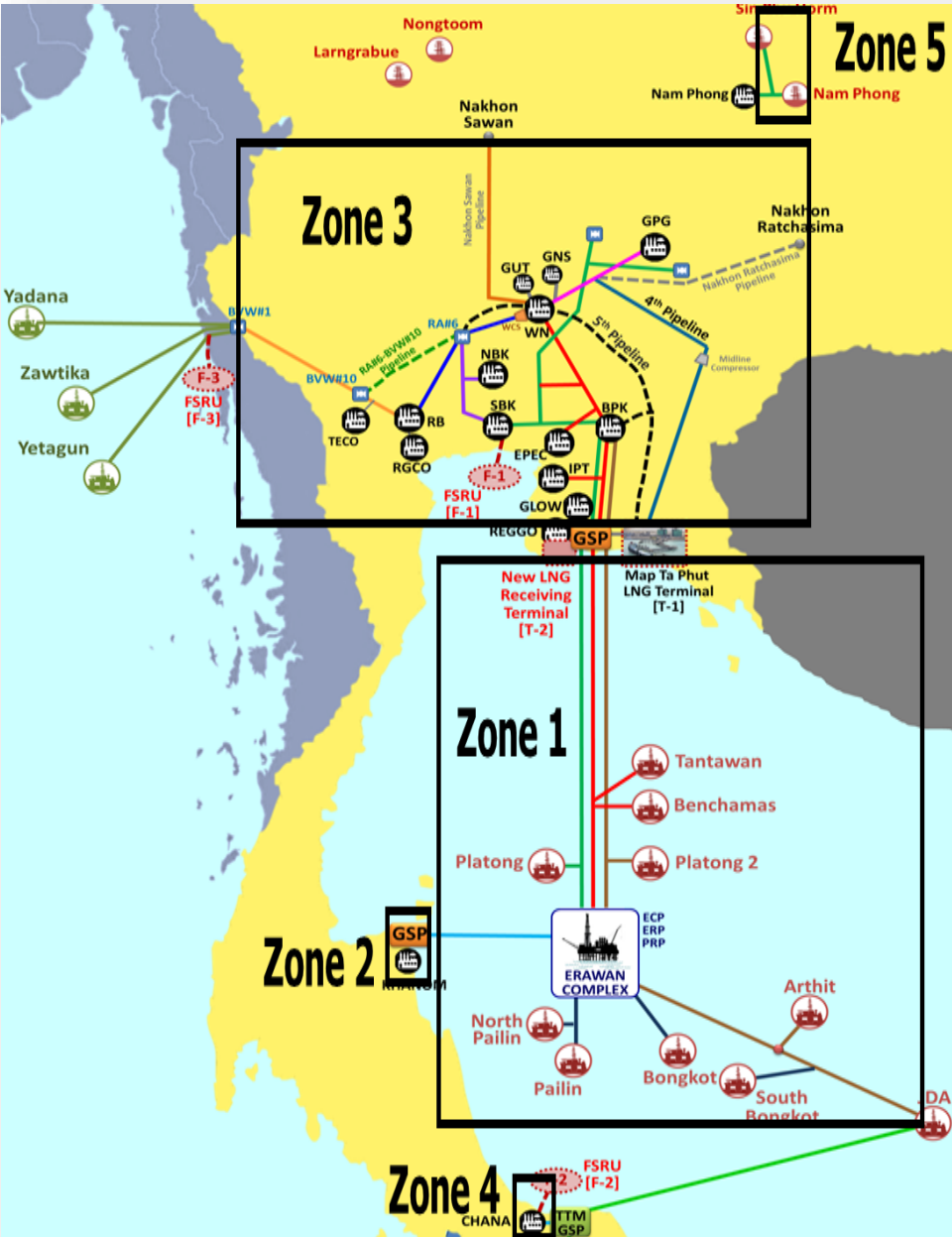
**ERU**

**Electricity (MW)** : 250  
**Steam (ton/hr.)** : 175

# PTT Group : Upcoming Projects



# Gas Transmission Tariff



- Zone 1** Offshore pipeline network (Gas separation plant)
- Zone 2** Offshore pipeline network in Chana area
- Zone 3** Onshore pipeline network
- Zone 4** Onshore pipeline network in Chana area
- Zone 5** Onshore pipeline network in Nam Phong area

## Baht/MMBTU

### Gas Transmission Tariff calculation

Zone	Tariff (Old)			Tariff (New)		
	Td	Tc	Total	Td <sup>1</sup>	Tc <sup>2</sup>	Total
1	8.59	1.04	9.63	12.89	0.22	13.11
2	14.22	1.04	15.26	2.11	0.03	2.14*
3 : Pool gas	20.66	1.04	21.70	11.69	1.93	13.62*
3 : LNG Import	12.07	1.04	13.11			
4	7.08	0.10	7.18	1.01	0.08	1.09*
5	1.13	0	1.13	0.27	0	0.27
<b>Tariff calculation</b>	<b>Discounted Cashflow : IRROE</b>			<b>Building Block : WACC ~ 6.48-7.31%</b>		

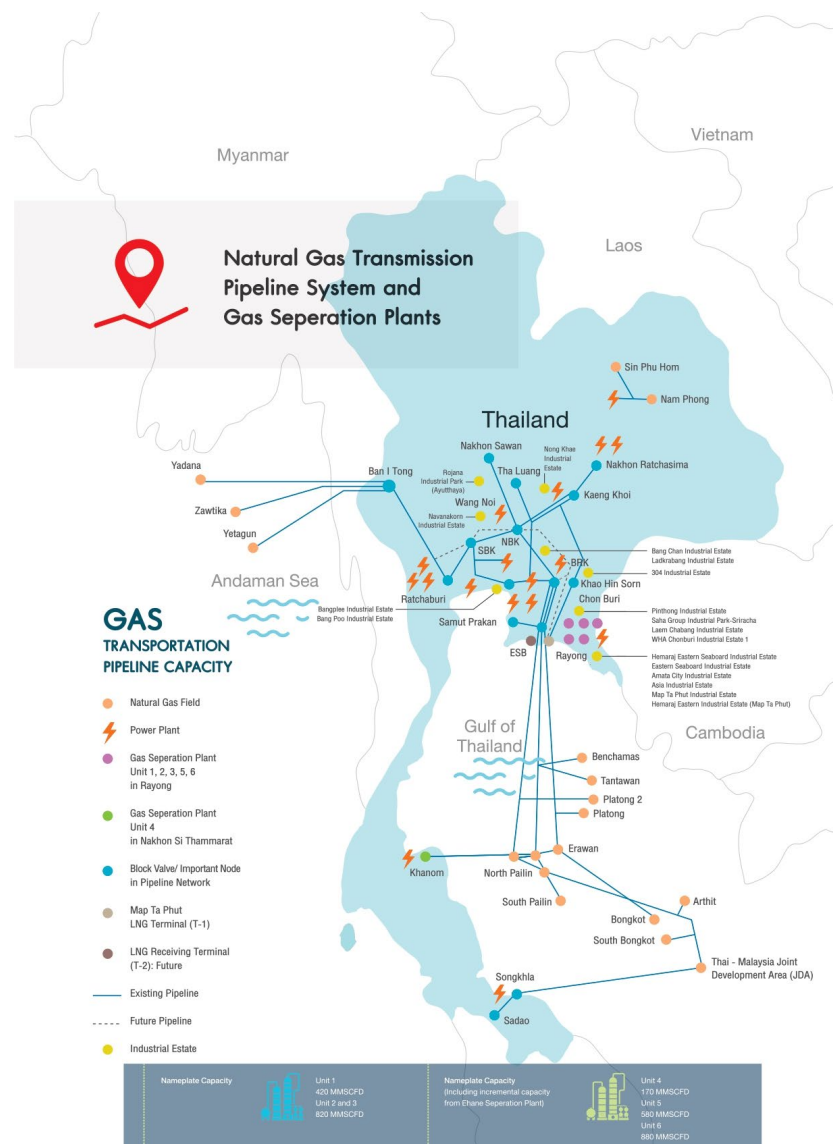
NOTE: \*Not including Zone 1 tariff / <sup>1</sup>Effective from 25 August 2022 onwards / <sup>2</sup>Effective from October 2023 until September 2024

# Gas Business Generates Stable Returns

## Overview

- ✔ **Sole owner and operator of entire gas transmission pipelines in Thailand** (~ 4,000 km), a regulated business
  - WACC ranges between 6.5% - 7.3% 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; reference to petrochemical market price

## Gas transmission pipeline capacity



### Gas Separation Plant Capacity

Unit 1	420 MMcf/d
Unit 2 and 3	820 MMcf/d
Unit 4	170 MMcf/d
Unit 5	580 MMcf/d
Unit 6	880 MMcf/d



# Thank you

PTT Public Company Limited - Investor Relations Department



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



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



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

## Disclaimer

The information contained in our presentation is intended solely for your personal reference only. Please do not circulate this material. If you are not an intended recipient, you must not read, disclose, copy, retain, distribute or take any action in reliance upon it. In addition, such information contains projections and forward-looking statements that reflect our current views with respect to future events, financial performance and result of PTT's activities. These views are based on assumptions subject to various risks and uncertainties. No assurance is given that future events will occur, that projections will be achieved, or that our assumptions are correct. Actual results may differ materially from those projected.

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.