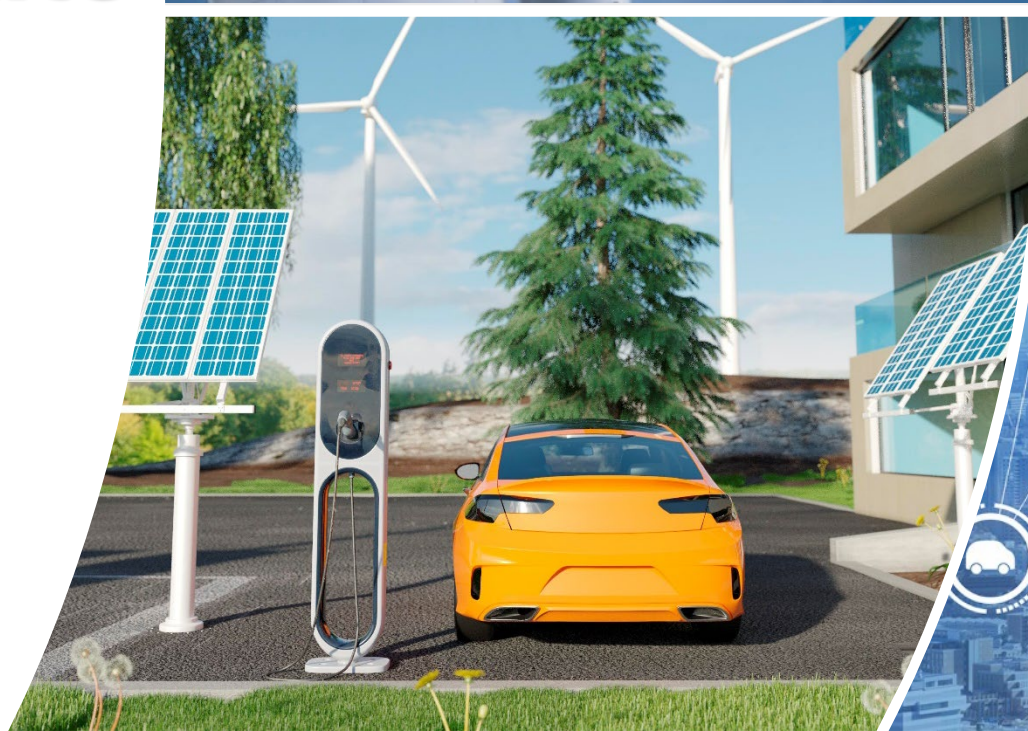




Investor Update

March 2023



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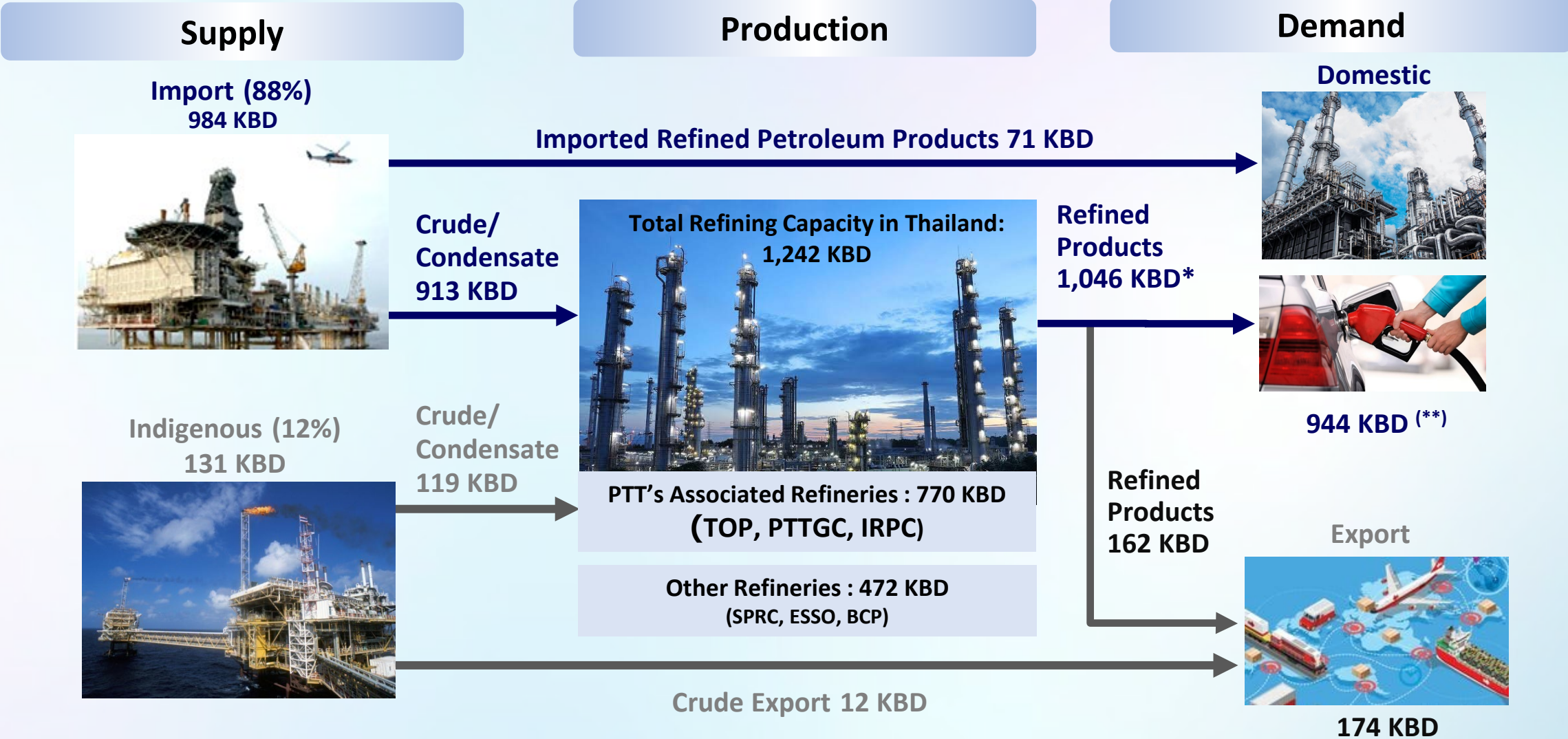
ESG

06

Supplementary Information

Oil Balance Thailand: Jan – Dec 2022

Adequate refining capacity maintains the stability of country supply



Source: PTIT

Remark : (*)Refined product from refineries = 968 KBD, including domestic supply of LPG from GSPs and Petrochemical Plants = 78 KBD

(**) Included Inventory

KBD = Thousand Barrels per day

Natural Gas Balance: Jan – Dec 2022

Main driver of the Thai economy

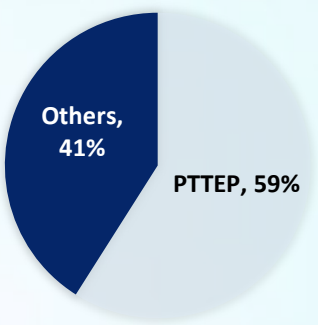


Supply

Production

Sales

Gulf of Thailand (53%)



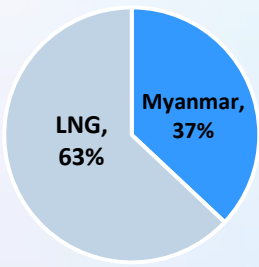
2,224
MMSCFD

Onshore (3%)



109 MMSCFD

Import (44%)



1,839 MMSCFD



Ethane/ Propane/
LPG/NGL

780 MMSCFD
(18%)

LPG/NGL

Petrochemical
Feedstock
(11%)

Industry
Household
Transportation
(7%)

Bypass Gas
213 MMSCFD

Methane
1,231 MMSCFD

Power (59%)
Industry (20%)
NGV (3%)

Remark: MMSCFD = Million Cubic Feet @ Heating Value 1,000 Btu/ft³

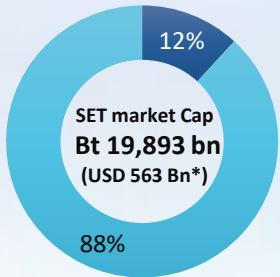
PTT's Strategic Importance to Thailand



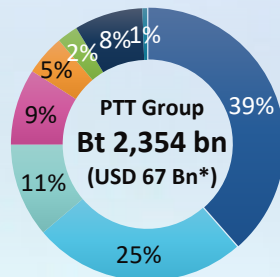
Market Cap : SET & PTT Group

Unit: MB

Note: As of Feb 28, 2023



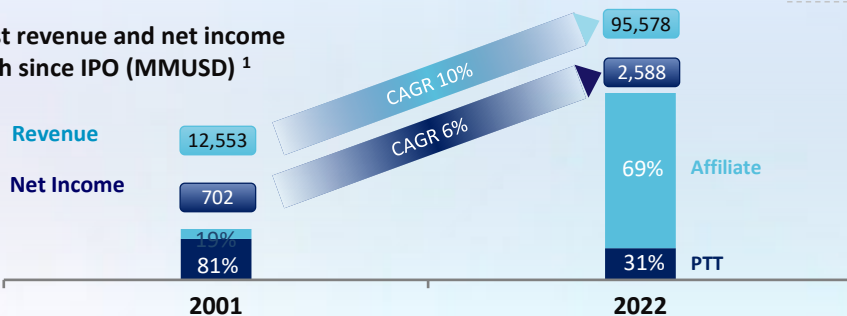
- PTT Group 12%
- Others 88%



- PTT 39%
- PTTEP 25%
- OR 11%
- PTTGC 9%
- TOP 5%
- IRPC 2%
- GPSC 8%
- GGC 1%

* As of Feb 28, 2023, BOT selling rate USD/THB of 35.3155 (End rate)

Robust revenue and net income growth since IPO (MMUSD) ¹

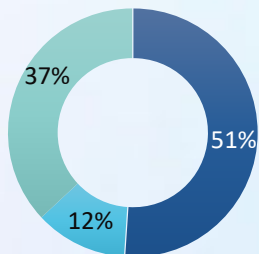


¹ 2022 Annual, BOT selling rate USD/THB of 35.23 (Avg. rate)



Ministry of Finance holds majority stake in PTT

Note: As of Sep 29, 2022



- Thai Ministry of Finance 51%
- Vayupak Fund 12%
- Public 37%
 - Foreign 9%
 - Thai 28%

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



#232nd
in 2022
234th in 2021
170th in 2020



TOP 250 GLOBAL ENERGY COMPANY RANKINGS
#36th
in 2022
45th in 2021
23rd in 2020



#177th
in 2022
206th in 2021
140th in 2020



DJSI Member
2011-2022
(11th consecutive years)

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

+ International E&P business
1,442 mmboe proved reserves
or 6.8 years in 2022

+ 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 >17 mtpa
production of

+ Leading oil marketing business in Thailand
2,551 retail stations²
and ~43%² of market share by sales volume

+ International oil trading business having traded **127.1** bn liters¹ in 2022
+ Power Plant flagship with equity power capacity of **7,225** MW²

² As of Dec 2022

PTT Group Businesses and Activities

Upward Integration (PTT Operate through our subsidiaries)

E & P



PTTEP (65.29%)

- Oil, Gas, Condensate
- > 50 Projects in 15 Countries
- 1,442 mmbbl proved reserves or 6.8 years in 2022

LNG



(100%)¹



(100%)

- LNG Value Chain
- LNG Receiving Facilities

Coal



Coal Mine in Indonesia

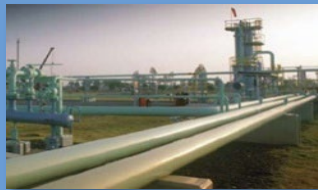


(100%)

(Completely divestment in Feb'23)

PTT Own Businesses (PTT's own operation)

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 127.0 bn liters

New Business and Infrastructure



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

Downward Integration (PTT Operate through our subsidiaries)

Oil & Retail



(75%)

Market Share ~ 43%²

- Oil (2,158 stations in Thailand²)
- Non-oil Retail
- Lubricants
- International Oil & Retail

Refineries



(~48%)

Market Share > 50%

- Largest refinery group in Thailand : 3 of 6 refineries

Petrochemicals



(~48%)

Market Share > 50%

- Integrated Refineries & Petrochemical

Power



(~ 75%³)

7,227 MW (equity portion)

- Electricity
- Steam & Chill Water
- Energy Storage

New Business



Future Energy

- Renewable Energy



PTT Group's renewable energy portfolio is ~2.8 GW²

- EV Chain



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



Beyond Energy

- Life Sciences
- AI Robotics



(100%)

- Pharmaceutical
- Medical device
- Nutrition



Direct & indirect target 37%⁴

JV with IRPC (PTT 40 : IRPC 60)

JV with NRF (50:50)

- AI / Robotics



(50%)

- Cloud service, Data center



(100%)

- Digital platform



(100%)

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

PURPOSE

Conduct business that powers
the ways of life



Powering Life

with Future Energy and Beyond



STRATEGIC POSITIONING

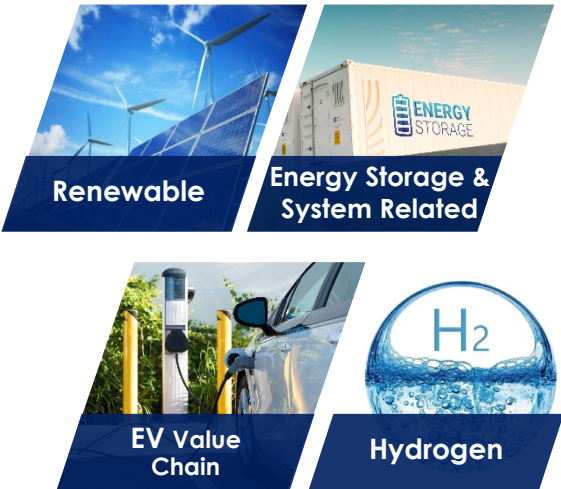
By expanding into the business of future energy
and new business beyond energy industry

Future Energy and Beyond

Strategic Positioning

*focus more on future energy trend
and new businesses that have potentials to grow*

Future Energy



Beyond

Moving toward future energy and energy technologies which are clean and environmental friendly as well as stepping into new potential businesses that support people live and drive people well-being


Long-term target (2030) for new vision



1

New growth

NI from Future Energy and Beyond > 30%



2

Business growth

LNG* 9 MTA

Power (Conventional) 8 GW

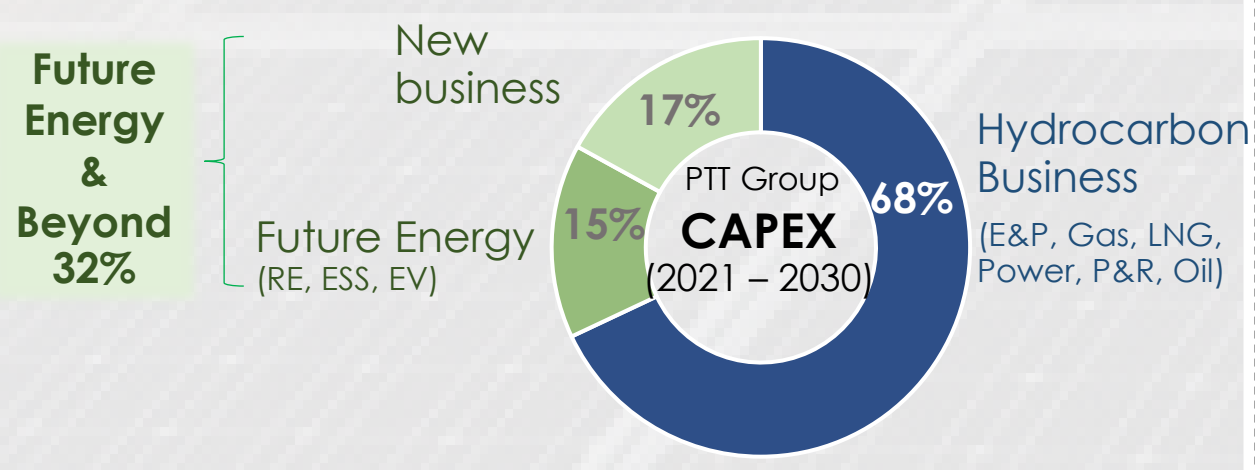
Renewable energy 12 GW



3

Clean growth

15% GHG reduction from 2020



* LNG Equity and controlling of portfolio volume

Strategic Direction by Business

Business	Direction
 E&P	<ul style="list-style-type: none">Expand growth for high return asset & mainly invest in gas assets
 Gas	<ul style="list-style-type: none">Build global LNG portfolio
 P&R	<ul style="list-style-type: none">Supply chain integrationMove to high value business
 Oil & Retail	<ul style="list-style-type: none">Grow in retail with customer-orientedMove to mobility & lifestyle
 Power	<ul style="list-style-type: none">Accelerate growth in Thailand & region
 New Energy	<ul style="list-style-type: none">Expedite growth in new energy e.g. renewable, energy storage & system related and EV value chain
 New business	<ul style="list-style-type: none">Scale up potential business e.g. life science, logistics & infrastructure

At A GLANCE : PTT Group Business Plan 2023-2027

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

GHG Reduction Initiatives

Carbon Offset/ RECs

Business Growth

RE 12 GW
by 2030

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

Reforestation

PTT
1,000,000
Rai by 2030

PTT's Existing
1,115,185
Rai

Remark: 1 Rai = 0.4 Acre

Upstream Business Growth

- Sustainable Growth through Integrated Gas Value Chain -

E&P strengthen to ensure gas supply continuity



Maximize production from existing assets
- G1, G2, Arthit, Contract4, MTJDA

Expedite development projects



Mozambique



Lang Lebah



Increase more gas supply from regional



OCA



Vietnam

Ensure competitive gas supply security



Secure natural gas from Gulf of Thailand and regional to maintain GSP
Operation as well as National security



Thailand



Myanmar



Vietnam



OCA



Malaysia



Acquire additional spot and term contract of LNG



Develop facility to create LNG Reserve model for
security and commercialize

Enhance competitiveness



Optimize Gas & NG Products supply

GSP7, GSP8 & C2 Tank

Propane, LPG Supremacy

C3/ LPG Storage Tank



LMPT-1



LMPT-2

Synchronize facilities between LMPT-1 and LMPT-2
- Interconnecting Pipeline



Sourcing supply to support Thailand partially regulated market
and international market



Expand commercial
portfolio in domestic



Expand LNG Business to international



CLMV



Enhance infrastructure to support LNG Hub activities

Downstream Business

Transforming Downstream Business along with Energy Transition



LASTING LEGACIES



Enhance Energy Resilience

Collaboration Platform



Ensure Supply Stability through Digitalization

Hydrocarbon Value Chain Collaboration Tower



Enable Energy Transition by Group Synergy

Synergy between Upstream & Downstream

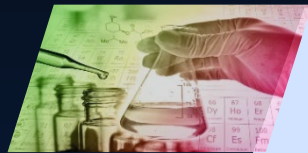


Expedite Downstream Portfolio Transformation for Sustainable Growth

Reshaping PTT's refinery portfolio



GO BEYOND WITH DOWNSTREAM



Moving forward with HVB

Sale & Marketing Collaboration of GC Group



Empowering All Toward Inclusive Growth in Mobility & Lifestyle

Seamless Mobility & All Lifestyle Ecosystem



Establish ABI as SPRINGBOARD to go BEYOND

13 Chemical Segments Prioritization for Value Chain Linkage in PTT Beyond Business



Stepping into Sustainability

1 WATER MGMT. BUSINESS

2 SAF collaboration

3 De-Carbonization
(CCUS, Green chemical/fuel)



Establish ABI as SPRINGBOARD to go BEYOND



D-GA's ROLE



Build 10% Downstream EBITDA portfolio from new business



Build Synergies & Accelerate PTT Group Supply Chain Linkage and Complete Value Chain in PTT Beyond Business

Lasting Legacies



Refinery Flagships



Integrated Refinery & Petrochemical



Petrochemical Flagship
Global Chemical for better living



Advanced Business Integration (ABI)



Mobility & Lifestyle Business
Empowering All toward Inclusive Growth



Tank & Terminal
Southeast Asia Preferred Tank Terminals Operator & Logistic Solutions Provider



Enhance **operational excellence**



Optimization & build up synergy



Keep **Resilience**

Industries Focus



Construction



Electronics



Automotive



Aerospace

Segment of Focus

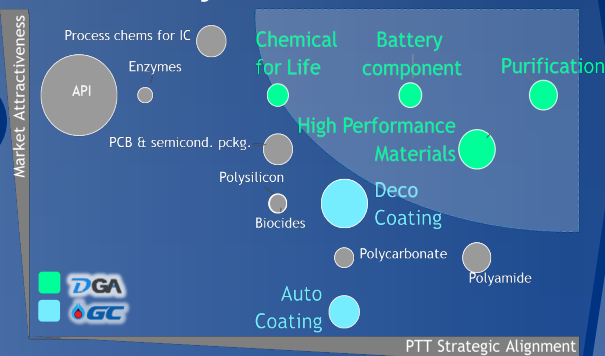


Coating & Adhesive Resins



HPPs & Composites

13 Chemical Segments Prioritization for Value Chain Linkage in PTT Beyond Business



End Use



Automotive Part



EV Battery



Membrane



Hygiene & Healthcare

Chemical & Components

End Application

Future Energy & Beyond

Move PTT Forward

Renewable Energy (RE)



Focus invest in RE domestic & Expand more in target countries



Hydrogen

- Green H₂/ammonia production in Thailand
- Demand outreach (PTT Group & External)
- Policy and regulatory driven
- Financial support exploration



Plan to establish Green H₂ & derivative production facilities in Thailand (with ACWA Power)

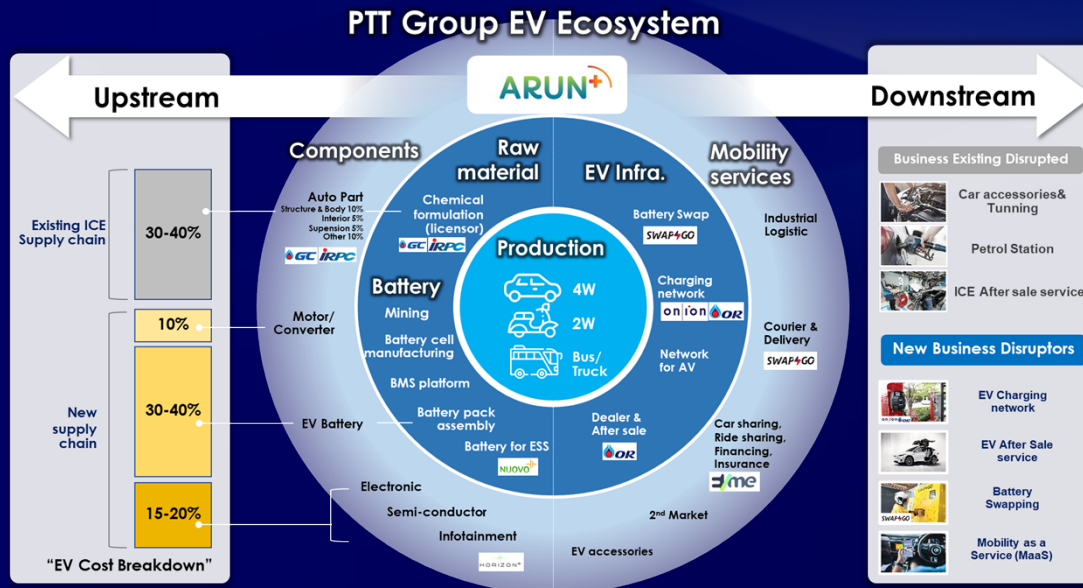


Launch Thailand's first H₂ fueling prototype station



Study H₂ blending on industry gas turbine

EV Value Chain & Energy Storage System



Battery



Battery cell manufacturing

EV Production



Horizon+ COD in 2024
Capacity: 50,000 Units/year

EV Infra.



Boost up EV infrastructure

Mobility Services



Expand fleet service (B2C & B2B)



Move from startup to commercial

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)

Lotus

Alvogen

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

PLANT&BEAN

Complete Construction
2Q2023

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

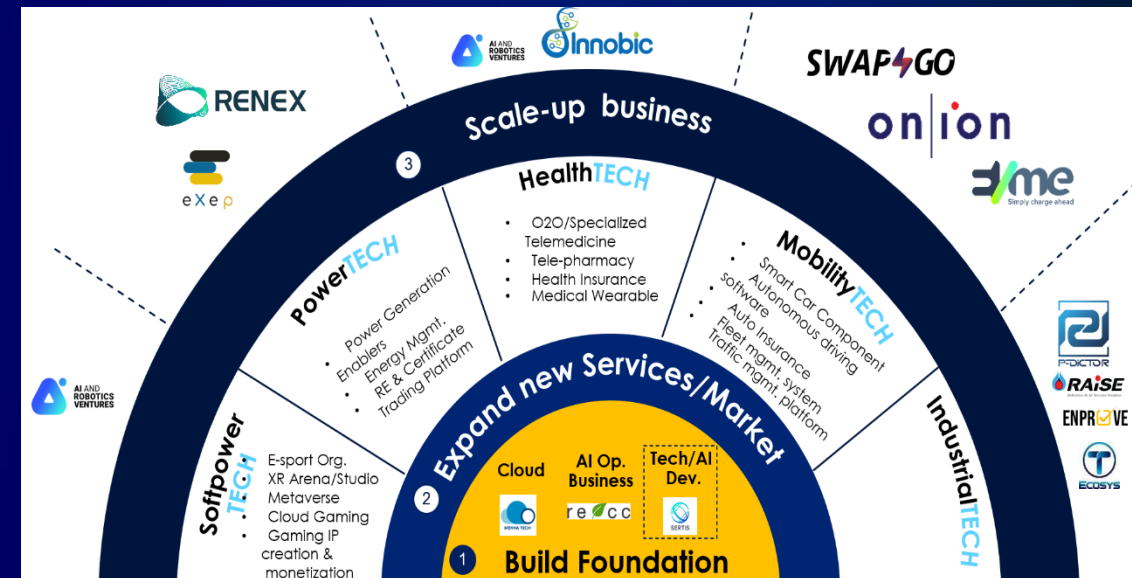


LNG ISO tank &
Dangerous Goods
Transportation service

AI Robotic & Digitalization

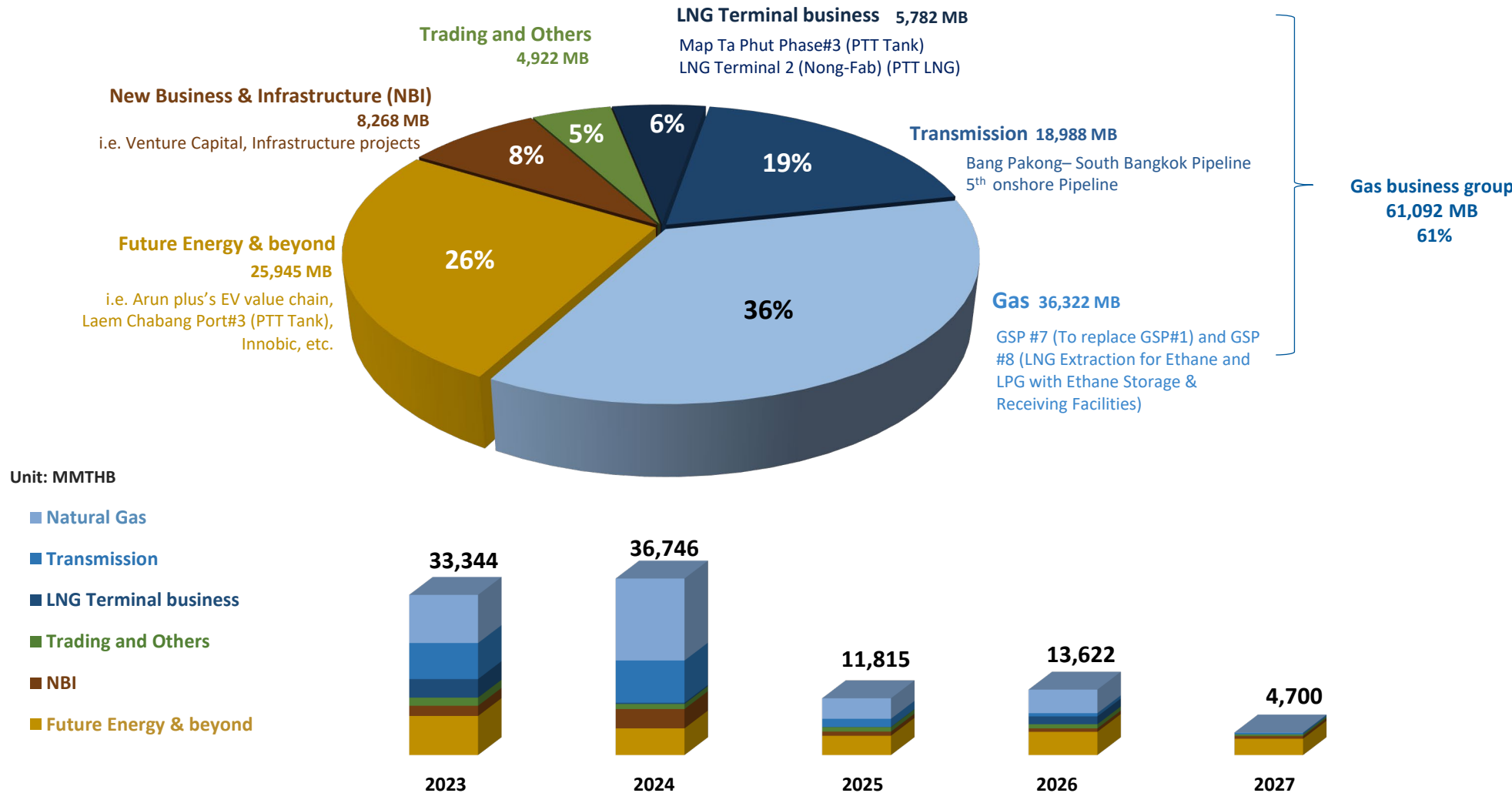


*Transform existing business and
create new s-curve focus on 5 areas*



PTT: Committed CAPEX (PTT and Wholly Owned Subsidiaries)

PTT 5-Years (2023-2027) Committed CAPEX Plan totaling Baht 100,227 million or ~ USD 2.8 bn^{1/}



Note: 2023-2027 budget approved by BOD on 15 Dec 22

^{1/} FX rate (avg.) 35.5Baht/USD

The Provisional uncommitted CAPEX ~Bt 302 bn mainly focus on Future Energy and Beyond Businesses including Electricity value chain, Logistics & Infrastructure, Life sciences (Pharmaceutical, Nutrition, Medical devices), Renewable energy, as well as existing gas and LNG value chain businesses.

Committed CAPEX: PTT Group

Total committed CAPEX during 2023-2027 : ~Bt 1,075 bn or USD 30 bn

Downstream Business

Key Projects

- **TOP**: Clean Fuel Project (CFP), CAP
- **OR**: Oil & Retail Expansion in domestic & international
- **IRPC**: Ultra Clean Fuel Project (UCF)
- **GC**: Olefins 2 Modification Project (OMP)

Power Business

Key Projects

- ERU
- SPP Replacement

PTT Business

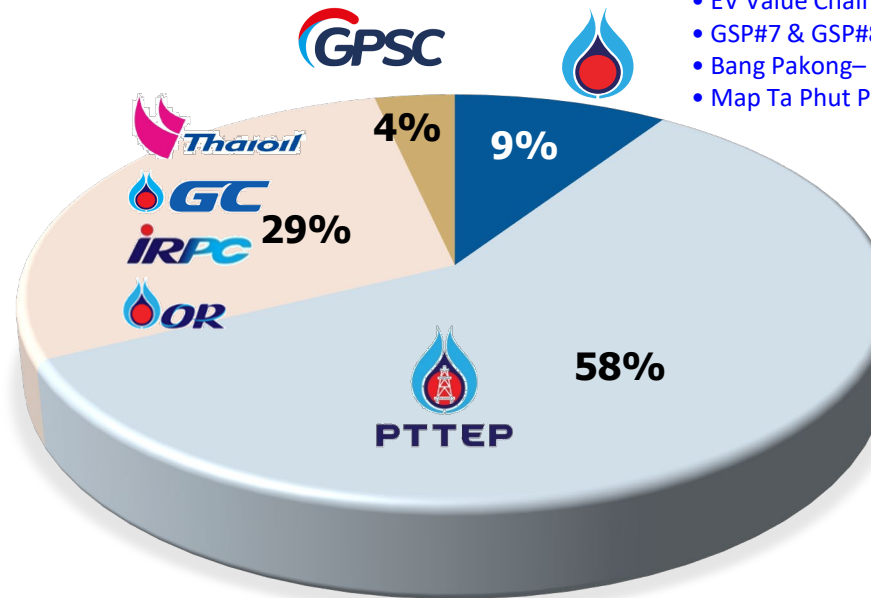
Key Projects

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

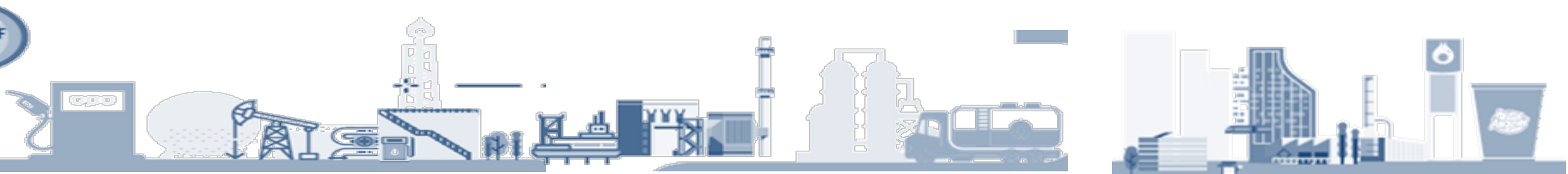
Upstream Business

Key Projects

- Onshore and Offshore Exploration and Production in Thailand (G1/61 etc.)
- SK410B
- Mozambique LNG
- Algeria HBR
- Southwest Vietnam



PTT Group's Provisional CAPEX for 2023 – 2027 ~Bt 1,094 bn



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PTT Group Guidance

Econ & Price outlook 2023

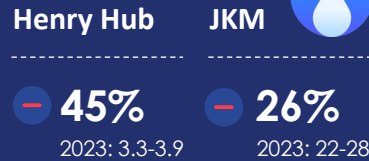
GDP

(IMF)



Gas

(\$/mmbtu)



Oil

(\$/bbl)



PetChem

(\$/ton)



Business outlook 2023

Upstream

E&P

+ Vol. increase



- Soften Average selling price from new PSC

GAS

+ NG Demand increase

+ Improve domestic gas production



+ GSP's U-Rate increase in 2023

- Pressure on gas cost from volatile Spot LNG price

Downstream

Oil

+ Increasing Demand in line with the GDP



P&R



Refinery

- Pressure from soften Singapore GRM

+ Higher

PTT Group Refinery U-Rate

Petchem

- Pressure from tighten petrochemical spreads

- Lower demand following weak-purchasing power

Power

+ Recovering domestic electricity consumption

- High energy price pressure on feed costs



Future Energy & Beyond

Future Energy

+ Expansion of EV chargers



Target EV chargers within 2023



Arun Plus

OR

3,850 units ~ 800 stations

Beyond



Life Sciences

Recognize higher contribution from upcoming project



PTT Group Guidance

Upcoming Projects

Core Biz

5th Pipeline

Phase I On Schedule
Phase II & III Postpone

COD: 2023

GSP#7

Replace GSP#1

460 MMSCFD

COD: 1Q2024



Ole 2 Modification Plant Project

Feed flexibility (propane)

COD: 1Q2023



Kuraray GC Advanced Materials

PA9T 13 KTA HSBC 16 KTA

COD: 1Q2023



New Biz



Non-Woven Fabric products

~ 5.6 KTA

COD in 1Q2023



Plant-based manufacturing Plant

3 KTA

COD: 2Q2023



Module Battery Production Plant

1,000 MWh

COD: 4Q2023



EV Manufacturing Plant in Thailand

50,000 cars/year

COD: 1Q2024



Avaada Solar Power Platform in India

4,634 MW

COD: 4Q2021-2024

GPSC hold 42.9% (3,842 MW in operating / 792 MW in progress)



CFXD Offshore windfarm in Taiwan

595 MW

COD: 1Q2024

GPSC hold 25%

Maintenance schedule in 2023

Gas Separation Plants



GSP#2 & GSP#3
Major TA

15-20 days

ESP TD 50%
~ 60 days

Petrochemical & Refinery Plants



Ole 1/2 & Ole 2/2
Major TA

~1-2 months

Oleflex TA
65 days

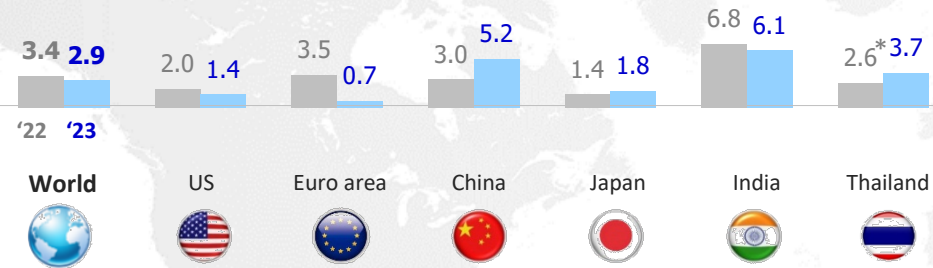
ARO II TA
37 days

ECONOMIC OUTLOOKS

World

Inflation Peaking amid Low Growth

IMF Forecast – GDP Growth (%)



Tailwinds

- Pent-up travel demand
- China's re-opening
- Still-tight labor markets in advanced economies
- Better-than-expected adaptation to energy crisis in Europe

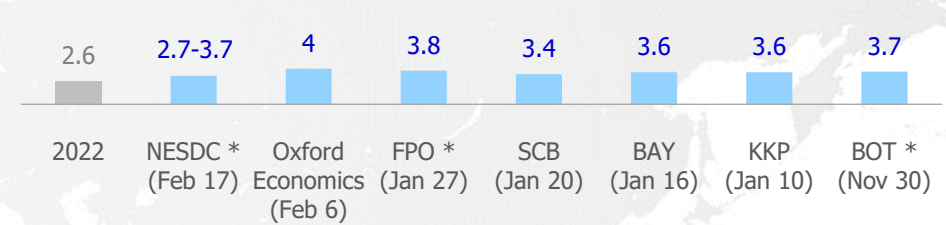
Headwinds

- Inflation persisting
- Interest rates to remain high
- Unwinding fiscal stimulus
- Russia's ongoing war in Ukraine

Thailand

Higher 2023 Growth Reflects Better Tourism Prospects

Thailand GDP Growth Forecast (%)



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

Tailwinds

- Recovery in tourism amid China's early reopening
- Improving domestic consumption
- Easing inflation
- Election stimulus and spending

Headwinds

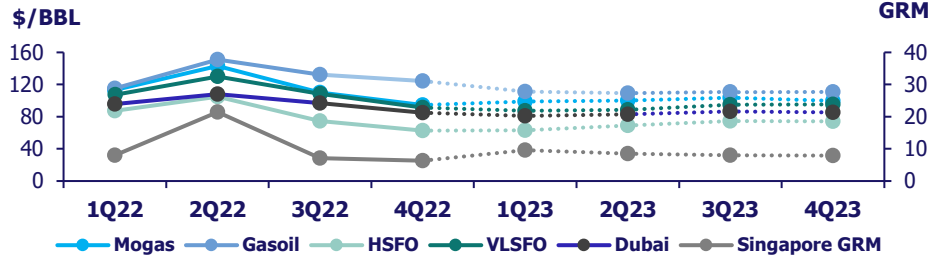
- Softening goods exports
- Higher interest rates
- Political uncertainty

Note: * Real GDP in 2022 from The Office of the National Economic and Social Development Council (NESDC)

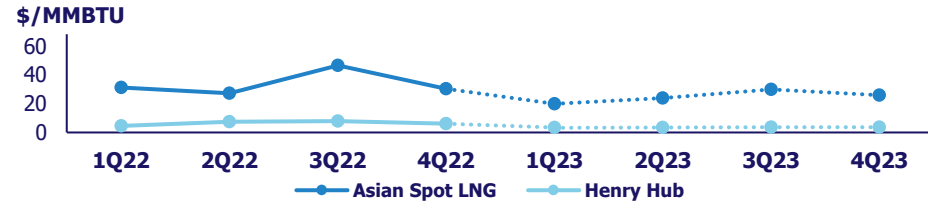
Sources: IMF WEO (Jan 30, 2023), Blog by Pierre-Olivier Gourinchas, International Industry Research and Economics Department

Economic & Product Prices Outlook:

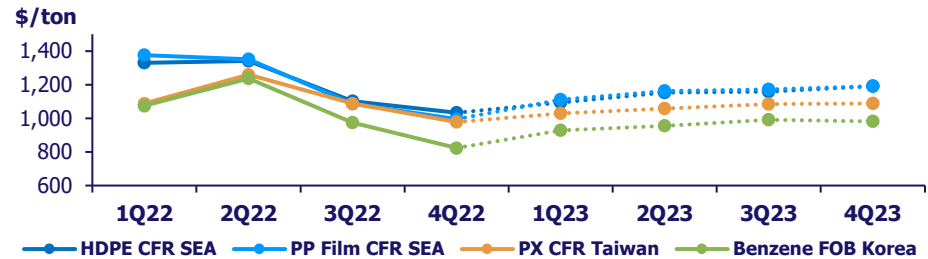
Petroleum



Gas/LNG



Petrochemical



Price	3Q22	4Q22	1Q23(E)	2022	2023(E)
Dubai	97	85	79-84	96	81-86
Mogas	110	94	96-101	115	98-103
Gasoil	132	124	109-114	131	108-113
HSFO (3.5%S)	75	62	61-66	82	68-73
VLSFO (0.5%S)	109	91	85-90	109	89-94
Singapore GRM	7.1	6.3	8.0-9.0	10.7	8.0-9.0
Asian Spot LNG	46.6	30.4	17-23	34.0	22-28
Henry Hub (HH)	7.9	6.1	3.2-3.8	6.5	3.3-3.9
HDPE	1,102	1,033	1,070-1,120	1,204	1,120-1,170
PP Film	1,085	995	1,105-1,155	1,207	1,150-1,200
BZ	974	823	900-950	1,027	940-990
PX	1,087	978	1,000-1,050	1,103	1,040-1,090

MARKET FACTORS



Petroleum

Bullish



Recovery of oil demand from China's reopening and economic recovery in 2H23



Maintained OPEC production cut to balance crude oil market in 1H23



Low gasoline and gasoil inventory level in the U.S.

Bearish



Increased Non-OPEC Production mainly from the U.S.
(US 2023E=12.5 MBD, 2022A=11.9 MBD)



Market sentiment pressured by concern on economic slowdown in 1H23



Gas/LNG

Higher European LNG imports as Russia further reduced gas supply to Europe

(In 2022, Russia supply gas via pipeline to EU at 46 MTA and it is expected to fall to 26 MTA in 2023.)



China's economic recovery from reopening.



U.S. Freeport LNG (15 MTA) reopened after maintenance.
(Freeport announced force majeure since 8 Jun'22)



Weaker heating demand due to mild weather in Europe and Asia



High gas storage in Europe
(Current storage is twice comparing with the previous year)



Petrochemical



Expected downstream demand recovery after Lunar New Year



Lower spot supply in Asia amid scheduled maintenance in Q1-2 and lower production rates



Healthy gasoline blending to support aromatics demand from tourism sector.



Additional regional supply, especially from China to pressure on global operating rate to be bottom-out at 80% for olefins and 70% for aromatics



Concern on economic slowdown in 1H23 to pressure on overall market sentiment

Thank you

PTT Public Company Limited - Investor Relations Department



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