



PTTEP

SET AWARDS 2023

Sustainability Excellence

11 September 2023



Mr. Montri Rawanchaikul
Chief Executive Officer
PTT Exploration and Production Public Company Limited



01

PTTEP Sustainability

- Sustainability Framework
- Governance Model
- Materiality Issues
- PTTEP Strategy Pillars
- 2022-2023 Highlight Projects

02

Climate Risk Management

- Climate Risk Assessment
- Decarbonization Commitment
- 2022-2023 Highlight Projects

03

Sustainable Value Creation

- Social Development
- Ocean for Life Strategy
- 2022-2023 Highlight Projects

PTTEP Sustainability

Conducting business with the "Right Balance" of economic, social & environmental considerations

Vision



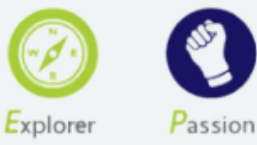
"Energy Partner of Choice" through Competitive Performance and Innovation for Long-term Value Creation

Mission



To operate globally for reliable energy supply and sustainable values to all stakeholders

Corporate Values



Sustainability Framework

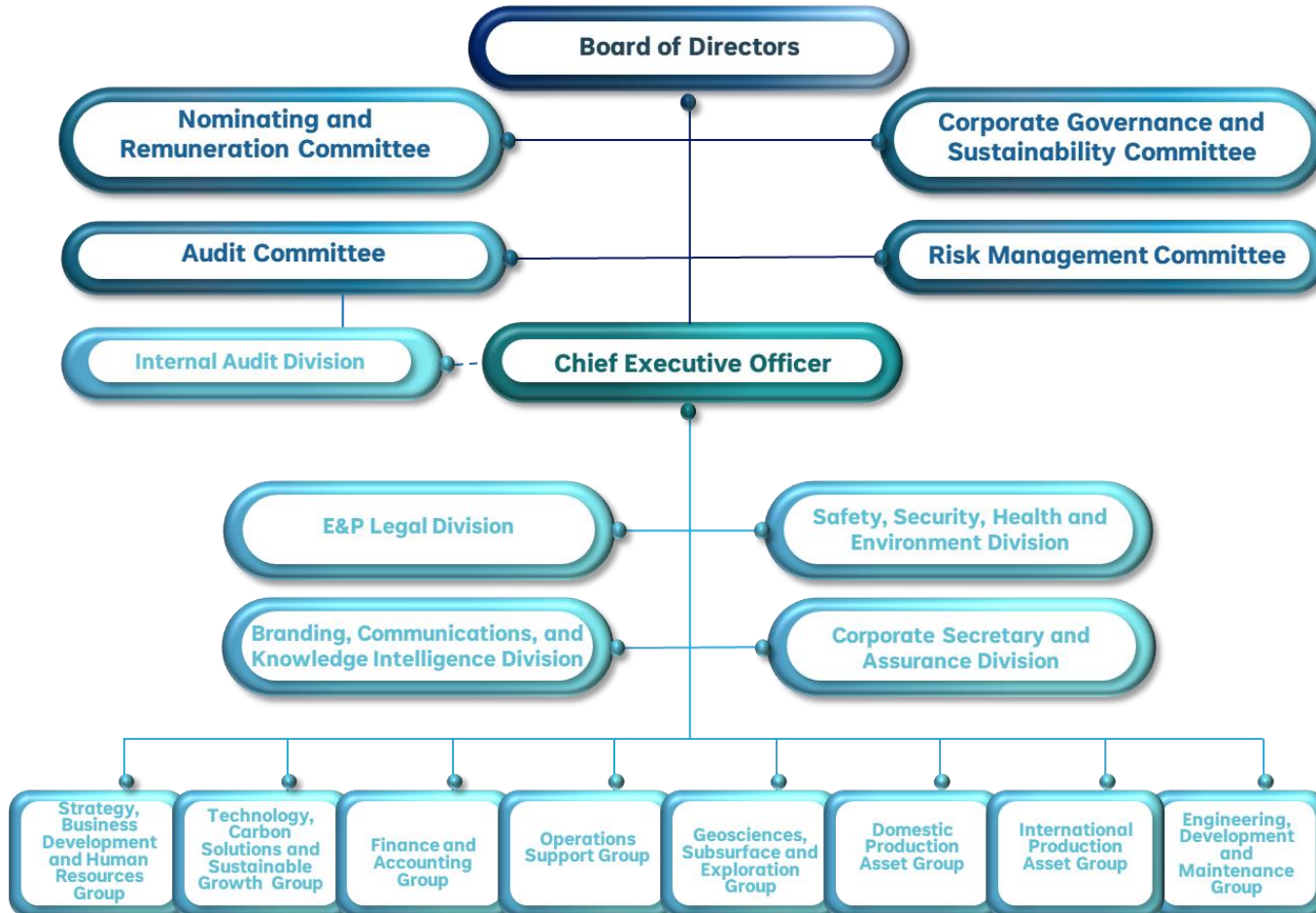


- High Performance Organization (HPO)
- Governance, Risk Management and Compliance (GRC)
- Sustainable Value Creation (SVC)

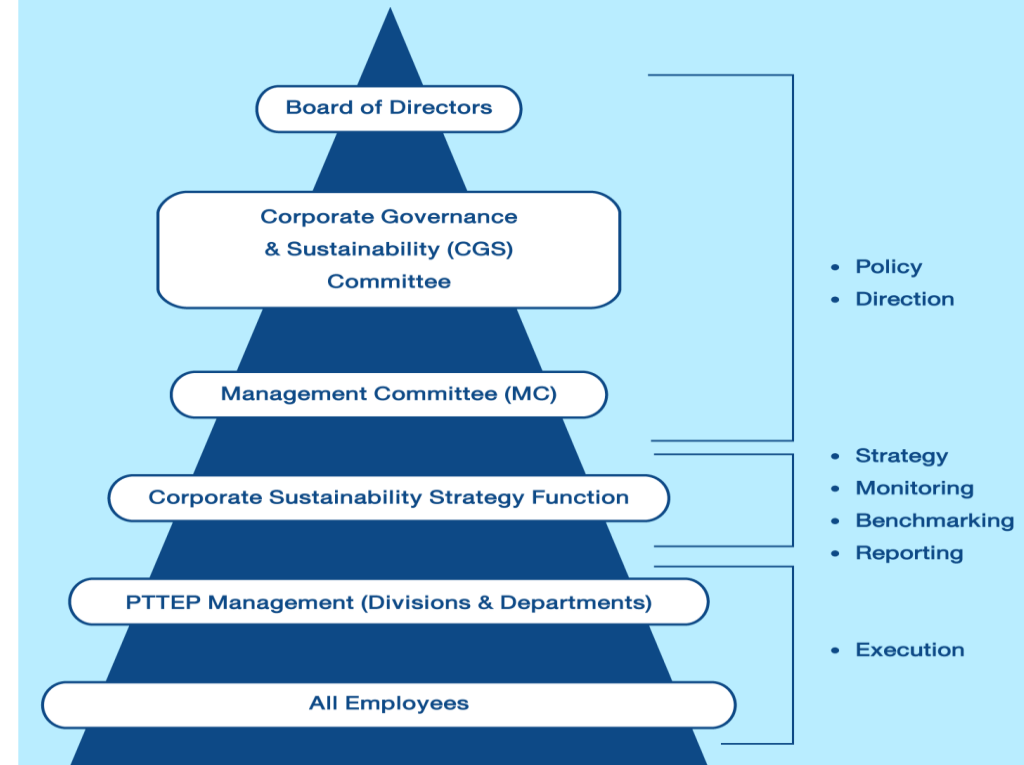
PTTEP Governance Model

Governance structure with clear accountability is key to turn our commitments into actions

PTTEP Organization Structure

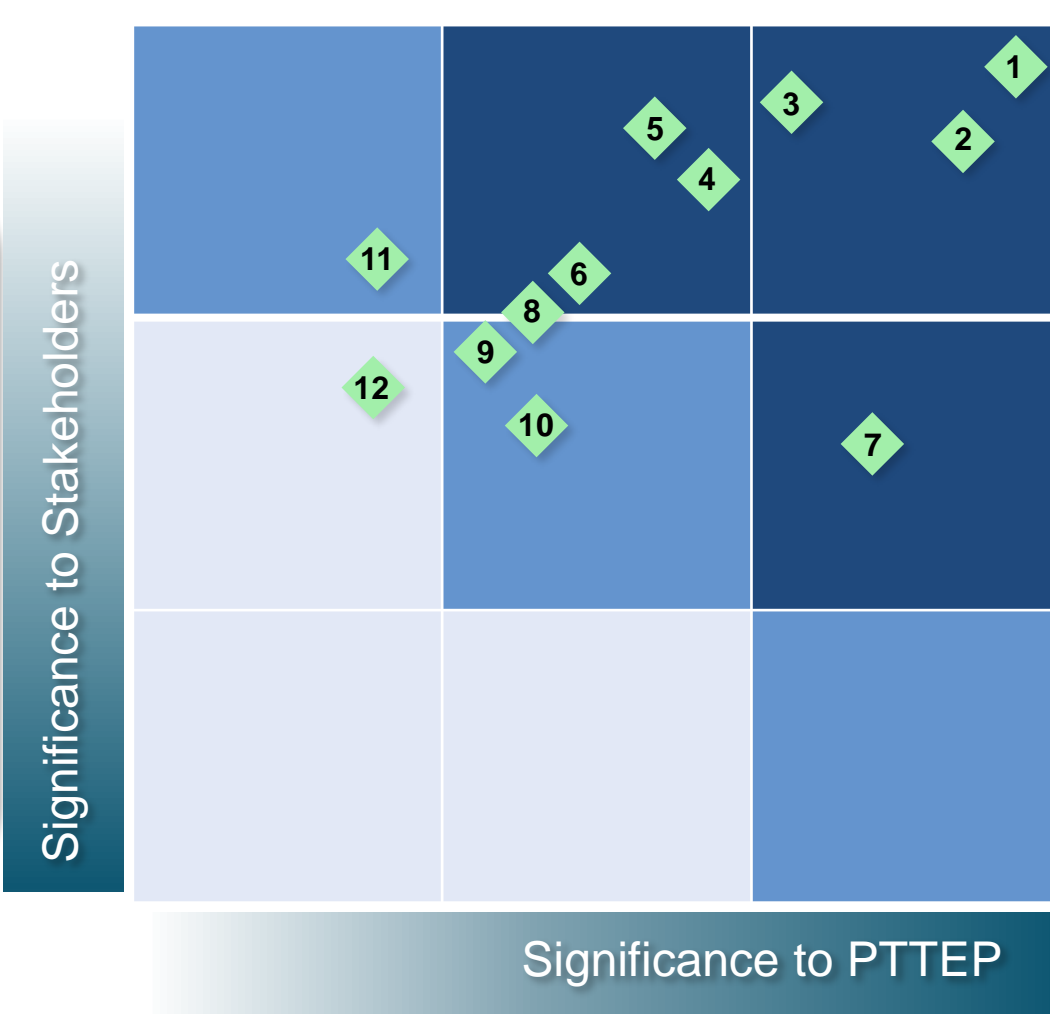


Sustainability Governance Structure



PTTEP Materiality Issues

Top 2 materiality issues are significant to our business growth and competitiveness



- 1 Energy Transition towards Net Zero
- 2 Technology and Innovations
- 3 Governance, Risk Management & Compliance
- 4 Safety, Security, Health and Environment
- 5 Contribution to Communities & Society
- 6 Human Resource Preparation
- 7 Circular Economy
- 8 Biodiversity Impact Management
- 9 Supply Chain Management
- 10 Cybersecurity
- 11 Human Rights
- 12 Stakeholder Management

PTTEP Strategy Pillars

Embracing energy transition towards Net Zero while elevating innovation and technology



Drive Value

- Ensure Thailand energy security
- Enhance cost competitiveness
- Expand gas-weighted portfolio

Strategy

- Production growth 5% CAGR
- R/P not less than 5 years
- Competitive unit cost
- Zero incident organization

Targets



Decarbonize

- Manage E&P for lower carbon portfolio
- Execute GHG reduction
- Accelerate CCS projects
- Maximize use of clean energy
- Pursue emission offsetting and Ocean for life

- Net Zero GHG emissions 2050
- Reduce GHG emissions intensity 30% by 2030 and 50% by 2040



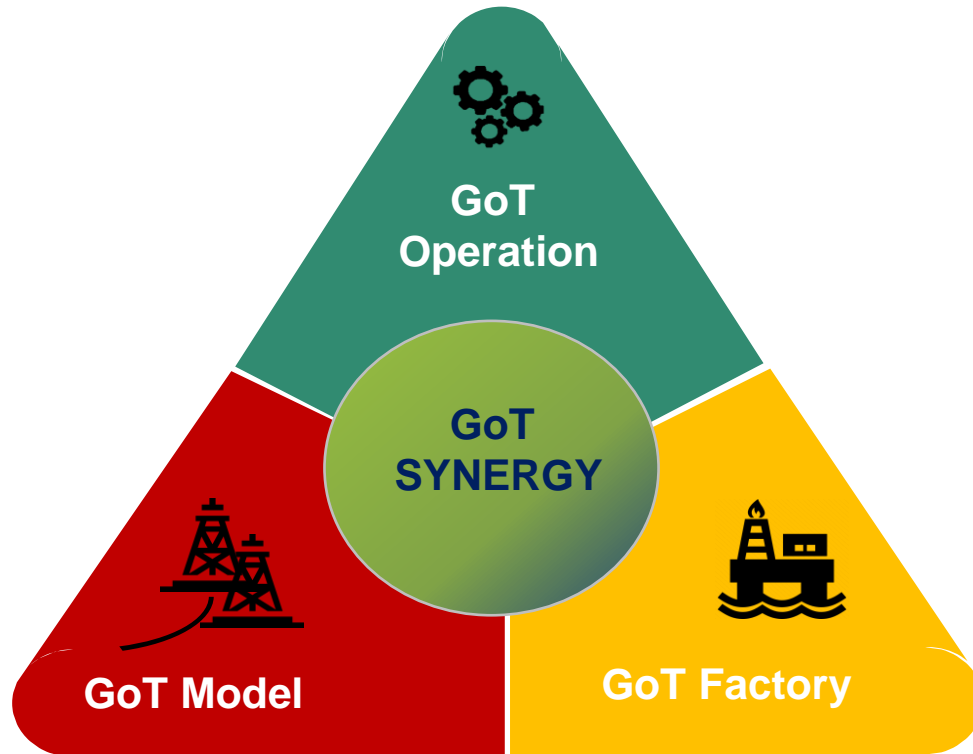
Diversify

- Scale-up AI & Robotic Ventures (ARV)
- Invest in gas-to-power and renewable energy
- Explore CCUS, H₂ and future energy
- Commercialize in-house technology

- Beyond E&P business ready for transition

Competitiveness Enhancement

Maximizing resources and cost saving through GoT Synergy and digital transformation



Maximize Reserves/ Resources

➔ *“Statistical-Based”*
Reserves/Resources Estimation

Minimize Operation Cost

➔ *“Working Model
Harmonization”*

Minimize Development Cost

➔ *“Design & Process
Standardization”*

Digital Transformation

Production optimization / Predictive maintenance / Well design & delivery / Business process improvement

Digital Transformation

Playing a pivotal role in driving performance excellence across PTTEP value chain



1 Advanced Production Optimization

2 Predictive Maintenance

3 Pipeline Integrity Management

4 Drilling Performance and Well Delivery Process Improvement

5 Automated Well Targeting and Wellhead-Platform Optimization

6 Engineering and Project Management Performance Improvement

7 Single Integrated SSHE Platform

8 GRC One Digital System

“Drive Value” Highlights

Propelling energy security while fostering business growth



G1/61



~400 MMSCFD

Ambitious Growth Agent

G2/61



~840 MMSCFD

Steady Provider

ARTHIT



~340 MMSCFD

White Knight

“Diversify” Highlights

Our key milestones in “Beyond E&P” approach



Green Hydrogen Project

Power Gen.
Solar / Wind
5 GW

Hydrogen
Production
220K TPA

Ammonia
Production
1.2M TPA

Awarded **Z1-02 Block** in Oman



AI AND
ROBOTICS
VENTURES

ROVULA
varuna

SKYLLER
CARIVA



Leader in nature-based carbon credits

Completed Series A fundraising with strategic partners

Drones and Satellite solution

AI-assisted carbon credit measurement and verification for smart farming/reforestation

Carbon credit trading platform

Marketplace to elevate standards and quality of Thailand’s carbon credit market

Solar Power Plant

The 1st Renewable project under FTEV

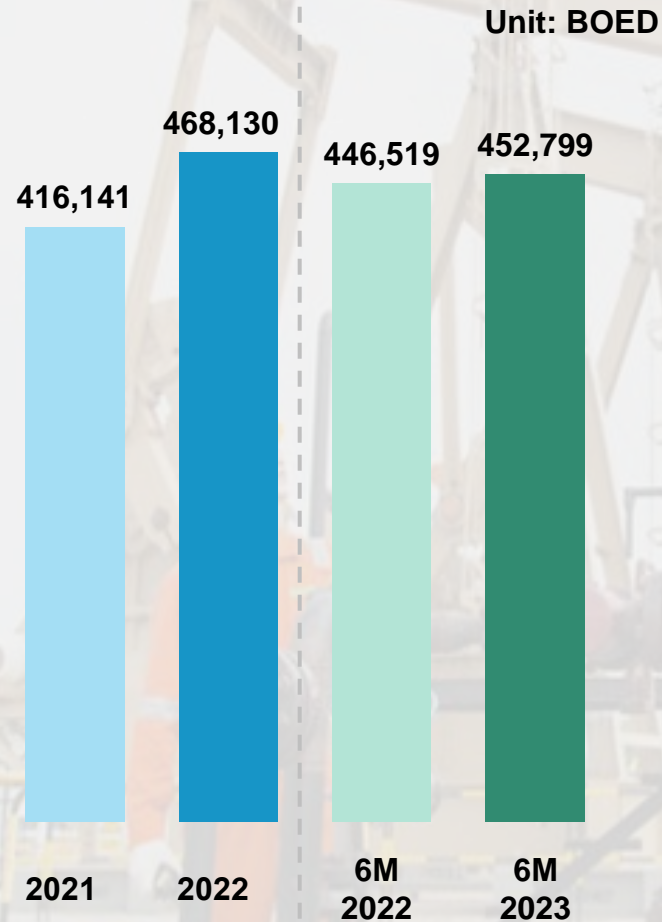
Supplied electricity to S1 since 29 June 2023

Capacity ~10 megawatts



Economic Performance

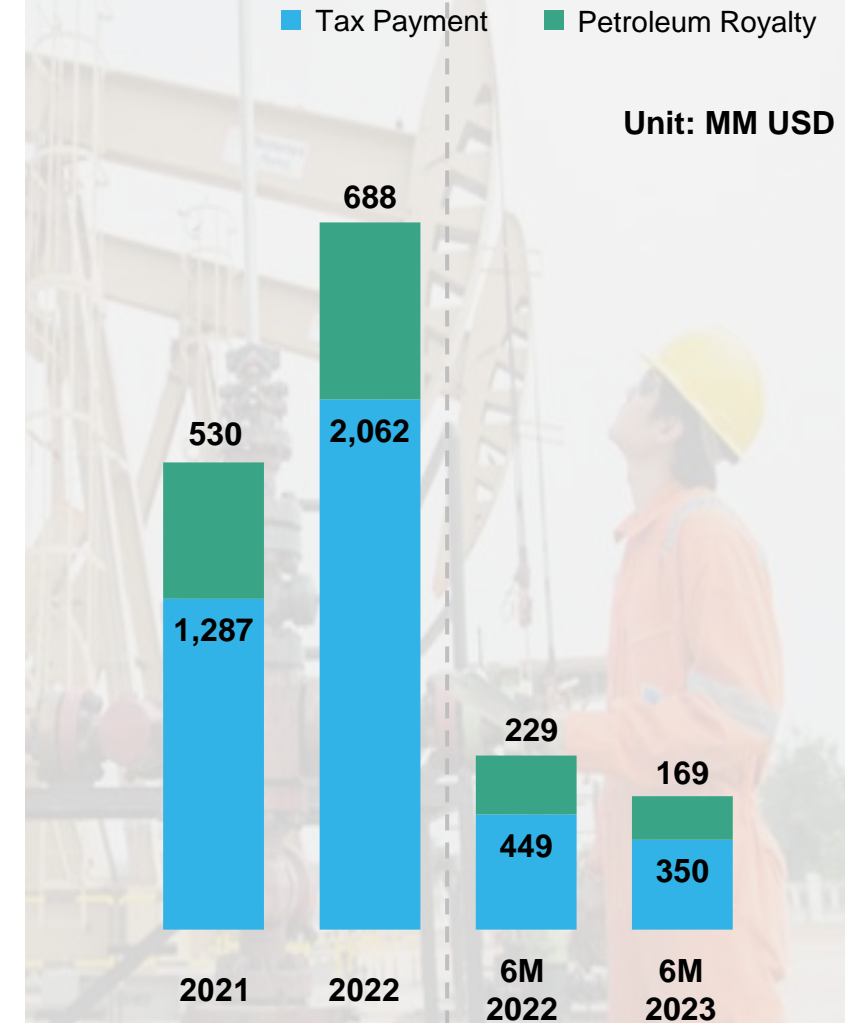
Sale Volume



Unit Cost and Revenue



Tax Payment and Petroleum Royalty



Third-party Assurance on PTTEP Performance Reporting



Having data assurance for sustainability performance and financial reports annually

Assurance Statement (ESG) by KPMG

KPMG Phoomchai Business Advisory Ltd.
48th Floor, Empire Tower
1 South Sathorn Road, Yanmawa
Sathorn, Bangkok 10120, Thailand
Tel +66 2677 2000
Fax +66 2677 2222
Website home.kpmg/th

บริษัท เคพีเอ็มซี ออดิท จำกัด
ชั้น 48 เอ็มไพร์ ทาวเวอร์
1 ถนนสาทรใต้ แขวงยานนาวา
เขตสาทร กรุงเทพมหานคร 10120
โทรศัพท์ +66 2677 2000
โทรสาร +66 2677 2222
เว็บไซต์ home.kpmg/th

- GRI 306-3 Significant spills (2016)
- GRI 306-3 Waste generated (2020)
- GRI 306-4 Waste diverted from disposal (2020)
- GRI 306-5 Waste directed to disposal (2020)
- GRI 403-9 Work-related injuries (2018)
- GRI 403-10 Work-related ill health (2018)
- GRI 405-2 Ratio of basic salary and remuneration of women to men (2016)
- OGSD - OG4 Number and percentage of significant operating sites in which biodiversity risk has been assessed and monitored (GRI 11-4)
- OGSD - OG5 Volume and disposal of formation or produced water (GRI 11-6)
- OGSD - OG6 Volume of flared and vented hydrocarbon (GRI 11-1)
- OGSD - OG7 Amount of drilling waste (drill mud and cuttings) and strategies for treatment and disposal (GRI 11-5)
- OGSD - OG13 Number of process safety events, by business activity (GRI 11-8)

Independent limited assurance report

To the Directors of PTTEP Exploration and Production Public Company Limited

Conclusion

Based on the procedures performed on the selected subject matter, we have concluded that the information presented in the consolidated financial statements and the separate financial statements for the year ended 31 December 2022, together with the disclosures, and whether the consolidated and separate financial statements represent the underlying transactions and events in a manner that achieves fair presentation.

Our Responsibilities

We have been engaged to provide a limited assurance report on the consolidated financial statements and the separate financial statements for the year ended 31 December 2022, and its related cash flows for the year then ended. Our assurance engagement is performed in accordance with the International Ethics Standards for Assurance Practitioners (IESBA) Code, which is founded on fundamental principles of integrity, objectivity, professional competence and due care, and the International Code of Ethics for Professional Accountants (including Independence Standards) (IFAC Code), which is founded on fundamental principles of integrity, objectivity, professional competence and due care.

Our Independence

We have complied with the ethical requirements of the International Ethics Standards for Accountants (International Code of Ethics for Professional Accountants including International Independence Standards) (IESBA Code), which is founded on fundamental principles of integrity, objectivity, professional competence and due care.

What I have audited

The consolidated financial statements and the separate financial statements comprise:

- the consolidated and separate statements of financial position as at 31 December 2022;
- the consolidated and separate statements of income for the year then ended;
- the consolidated and separate statements of comprehensive income for the year then ended;
- the consolidated and separate statements of changes in equity for the year then ended;
- the consolidated and separate statements of cash flows for the year then ended; and
- the notes to the consolidated and separate financial statements, which include significant accounting policies and other explanatory information.

Basis for opinion

I conducted my audit in accordance with the standards on auditing, namely the Thai Accounting Standards. My responsibilities under those standards are further described in the Auditor's responsibilities for the audit of the consolidated and separate financial statements section of my report. I am independent of the Group and the Company in accordance with the Code of Ethics for Professional Accountants including Independence Standards issued by the Federation of Accounting Professions (TFAC Code) that are relevant to my audit of the consolidated and separate financial statements and the State Audit Standards as determined by the State Audit Commission, and I have fulfilled my other ethical responsibilities in accordance with the TFAC Code and the State Audit Standards. I believe that the audit evidence I have obtained is sufficient and appropriate to provide a basis for my opinion.

Amorrat Peampoovanatanasuk
Certified Public Accountant (Thailand) No. 4599

Financial Statement by PwC

Independent Auditor's Report

To the Shareholders of PTTEP Exploration and Production Public Company Limited

My opinion

In my opinion, the consolidated financial statements and the separate financial statements present fairly, in all material respects, the consolidated financial position, the consolidated income, the consolidated comprehensive income, the consolidated changes in equity, the consolidated cash flows for the year then ended, and its related cash flows for the year then ended.

What I have audited

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- the consolidated and separate statements of changes in equity for the year then ended;
- the consolidated and separate statements of cash flows for the year then ended; and
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What I have audited

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- the consolidated and separate statements of changes in equity for the year then ended;
- the consolidated and separate statements of cash flows for the year then ended; and
- the notes to the consolidated and separate financial statements, which include significant accounting policies and other explanatory information.

My opinion

In my opinion, the consolidated financial statements and the separate financial statements present fairly, in all material respects, the consolidated financial position, the consolidated income, the consolidated comprehensive income, the consolidated changes in equity, the consolidated cash flows for the year then ended, and its related cash flows for the year then ended.

Amorrat Peampoovanatanasuk
Certified Public Accountant (Thailand) No. 4599



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Climate Risk Assessment

Reviewing climate change risk assessment every 3 years

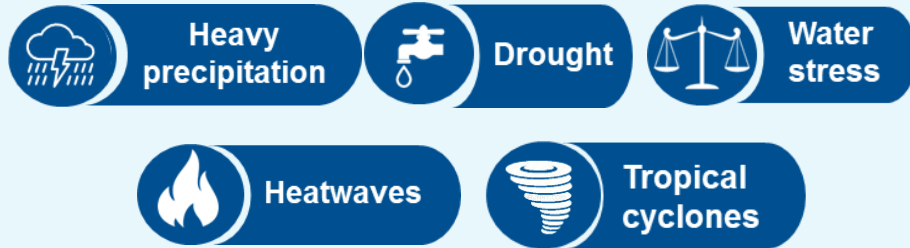
Criteria of CC Risk Assessment Across Operational Assets

Period

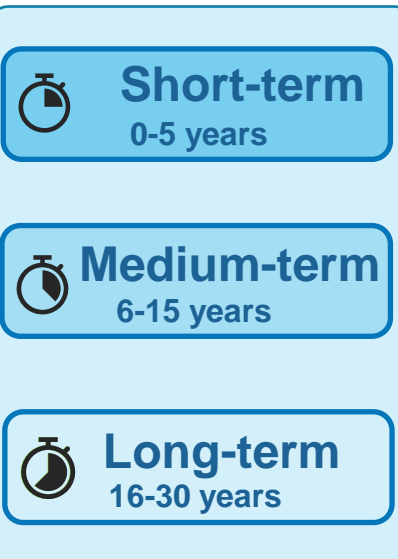
Inherent Risk "High" Level

Residual Risk "Low & Medium" Level

Physical Risks:



Transition Risks:



Physical Risks:

- ▲ Tropical Cyclones
- ▲ Heatwaves

Transition Risks:

- Policy
- Legal
- Market
- Technology
- Reputation

Climate Management Plan



Physical Risks



Decarbonize: EP Net Zero 2050

Reaching Net Zero Greenhouse Gas Emissions by 2050 with EP Net Zero 2050 concept



EP NET ZERO 2050

Exploring for Lower Carbon E&P Portfolio

- 1 Lower Carbon E&P Portfolio Management

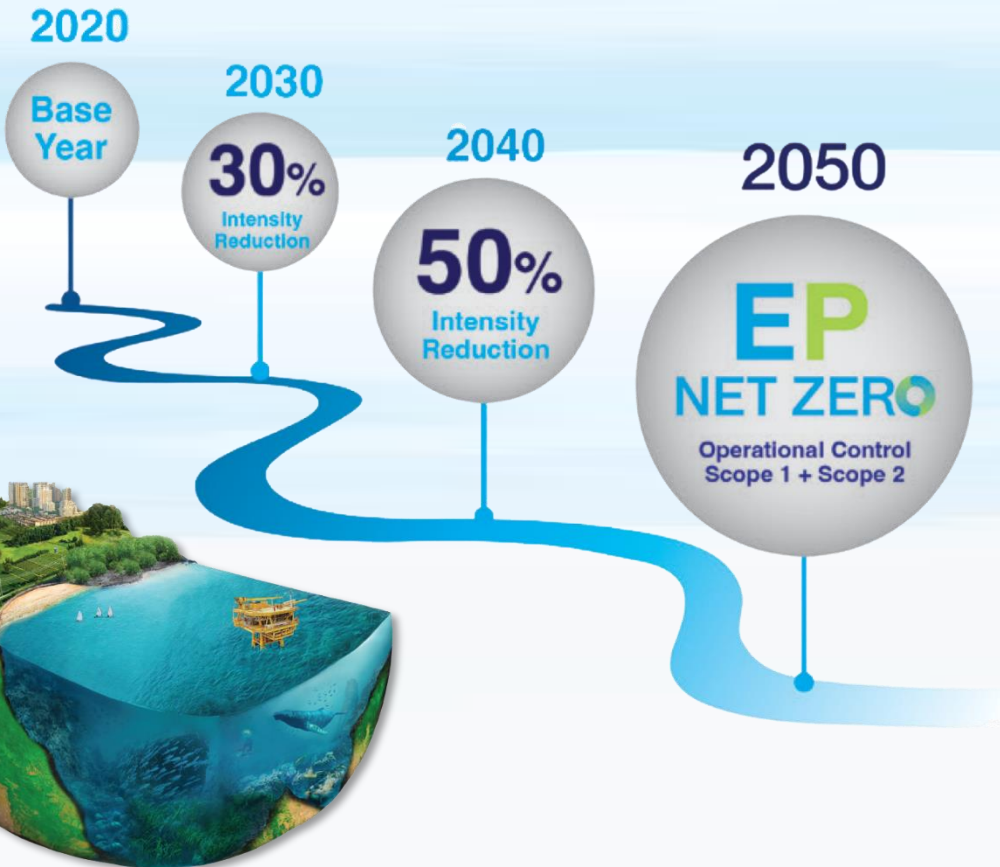
Production and Planet in Balance

Beyond Conventional Practice

- 1 Zero Routine Flare for New Assets
- 2 Carbon Capture Utilization and Storage (CCUS)
- 3 Maximization of Renewable Energy in Operations
- 4 Full Application of Circular Economy Concept
- 5 Methane Emission Reduction via Technology

Beyond Operation

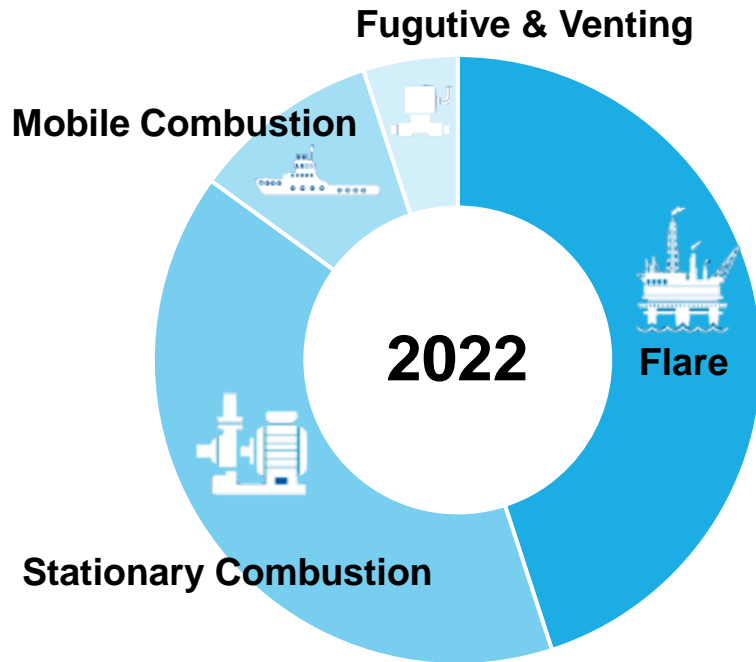
- 1 Carbon Removal Project and Carbon Credit Acquisition
- 2 Advanced Carbon Removal Technology









“Decarbonize” Highlights: GHG Reduction

Implementing various initiatives to reduce GHG emissions & enhance energy efficiency

GHG Emission Sources at PTTEP



GHG Reduction Initiative under Mitigate Concept

GHG Reduction Initiatives	Portfolio Management 
	Flare/Flash Gas Recovery and Utilization Recover gas to be flared back into production process 
	Energy Optimization Optimize fuel consumption by digitalization technology Heat Recovery Steam Generator Recover waste heat from gas turbine to generate steam 
	Smart Logistic Fleet Management Increase efficiency of marine transportation by optimizing fleet and cargo to reduce fuel consumption 
	Fugitive Leak Detection and Repair Methane leak monitoring and preventing 
	Solar Rooftop Project Install solar panels to reduce electricity purchased Wind-solar Hybrid Power Generation Integrate solar and wind energy to generate electricity on wellhead platform (WHP) 

As of Q2/2023

11.2%

Intensity Reduction from 2020

~ 1.9

Million Tonnes of CO₂ equivalent

Accumulated Reduction from 2020



Decarbonization Highlights: GHG Offsetting

Carbon credit in Thailand is a majority acquisition in portfolio during 2022-2030



Forestation	2023 Acquired Area (Rais)
Land Forestation	RFD 14,345
	DNP 6,730
Community Forestation	MFLF 20,000
Mangrove Forestation	DMCR 5,007

Total Forestation Area

46,082

rais

Approximate Carbon Credit

122,000

Tonnes

Expected to include in the carbon credit portfolio by 2027

Potential Initiatives	2023 Study Phase
Seagrass	KU, DMCR Pilot study of seagrass plantation and carbon storage baseline
Seaweed and Seashell	CU Pilot study of potential seaweed & seashell cultivation and carbon absorption rate monitoring
Peat swamp	Pidhong F. The proposal of peat swamp carbon credit methodology (T-VER) submitted to TGO

Decarbonization Performance

Implementing CCS project is majority of GHG reduction

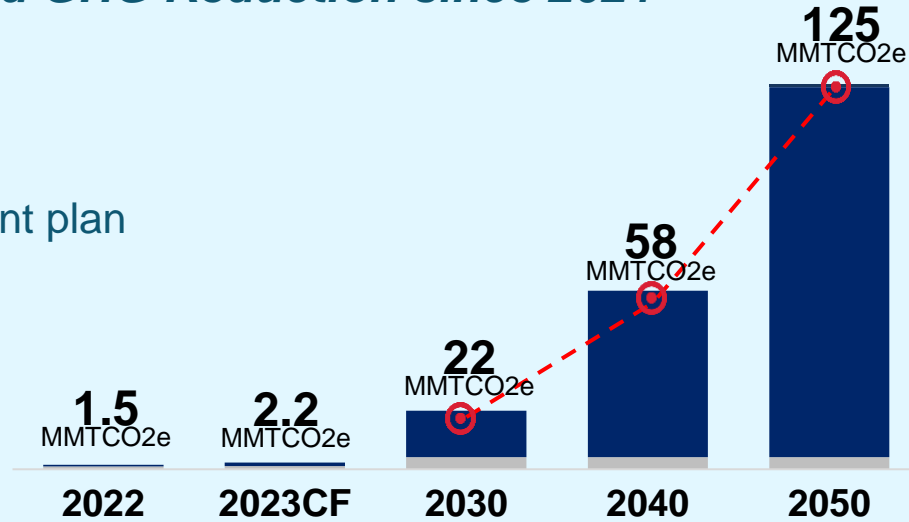


Accumulated GHG Reduction since 2021

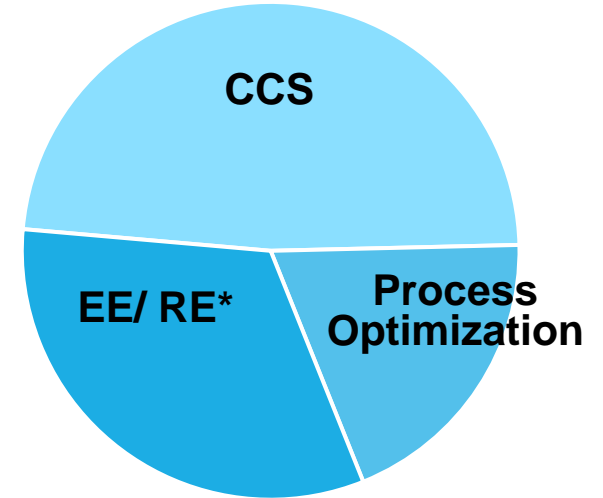
407 MMUSD

5-Year (2023-2027) Investment plan

- Avoid
- Mitigate
- Offset



2050 GHG Reduction Initiatives



* EE/RE: Energy Efficiency, Renewable Energy

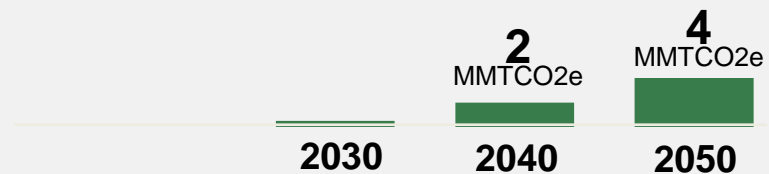


Accumulated Carbon Credit Portfolio*

52 MMUSD

5-Year (2023-2027) Investment plan

*Secure offset for net zero and use for compliance





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Social Development

Covering both domestic and international operations to support sustainable value creation



4 Aspects CSR FRAMEWORK

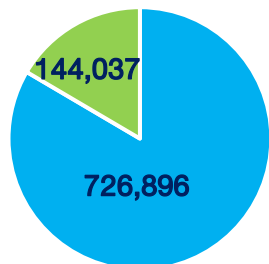


142 projects
(Thailand & Inter. Operations)



Beneficiaries of project

Total **870,933** persons



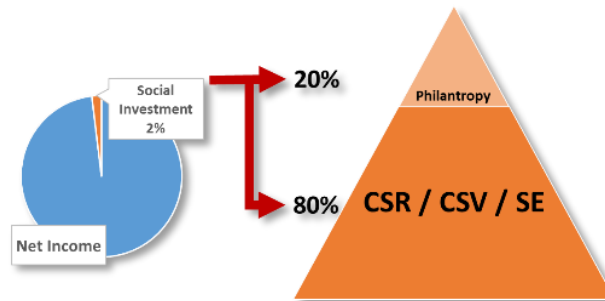
■ Thailand ■ International

Remark: Beneficiaries are an accumulated number until 2022

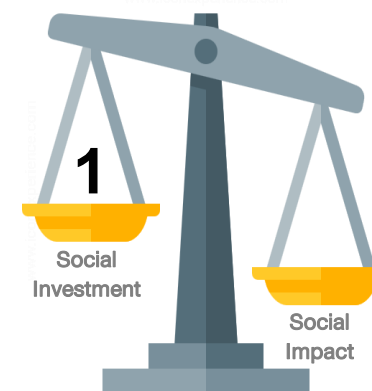


Social Investment

2023: Total **319 MM USD**



Social Return on Investment (SROI)



3.55 : 1

Average social return on investment from 28 CSR projects

Ocean for Life Strategy

Healthy oceans and coastal ecosystems are the efficient sources of carbon sink



2030 Target

14 LIFE BELOW WATER

Net Positive Impact of Biodiversity & Ecosystem Services (BES) value in Offshore Operations (2019 baseline)

≥ **50%** Increase in Local community income (before project implementation)

“The Guardian of The Ocean”



01 Sustainable Ocean-Friendly Operations



02 Sustainable Ocean Health and Blue Carbon Solutions



03 Sustainable Community around the Ocean

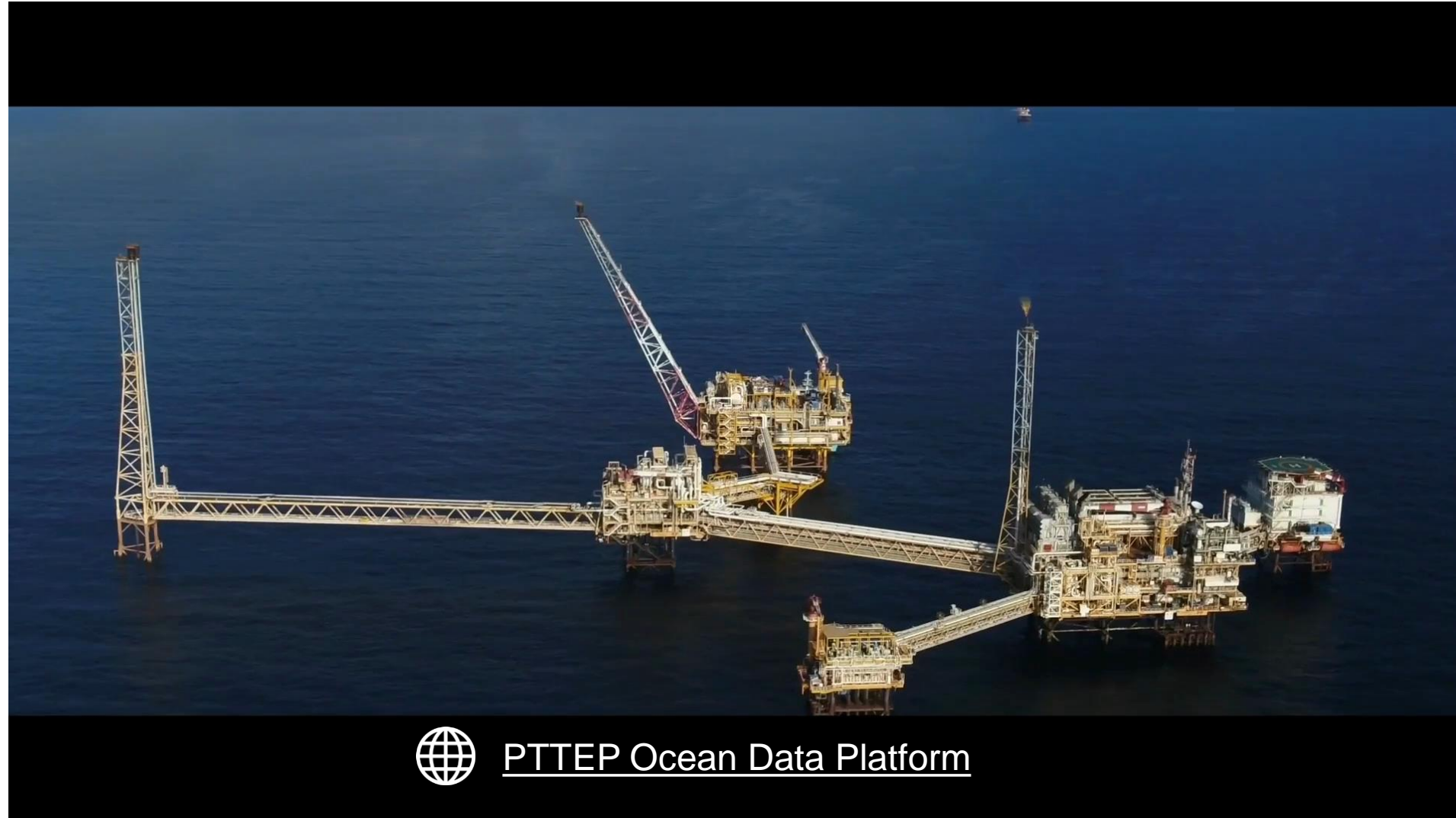
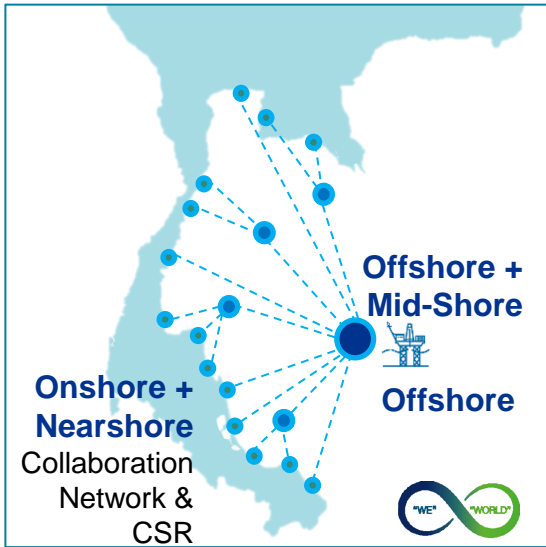


Ocean for Life Highlight: PTTEP Ocean Data Platform

Marking Thailand's first use of offshore petroleum platforms as stations for collecting scientific and ocean health data

PTTEP Strengths

- Location Advantage
- Strong & Advanced Technology and Innovation

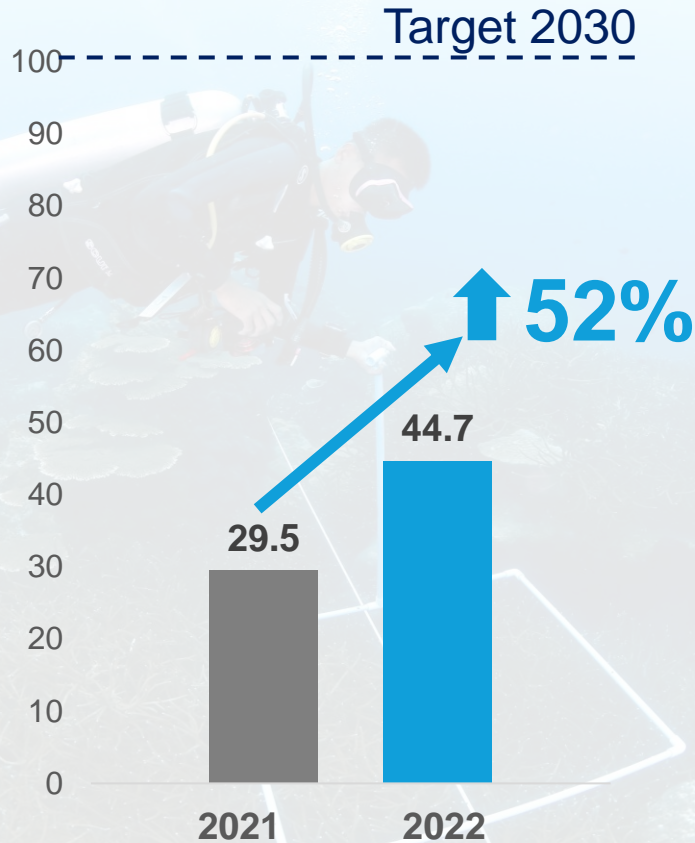


PTTEP Ocean Data Platform

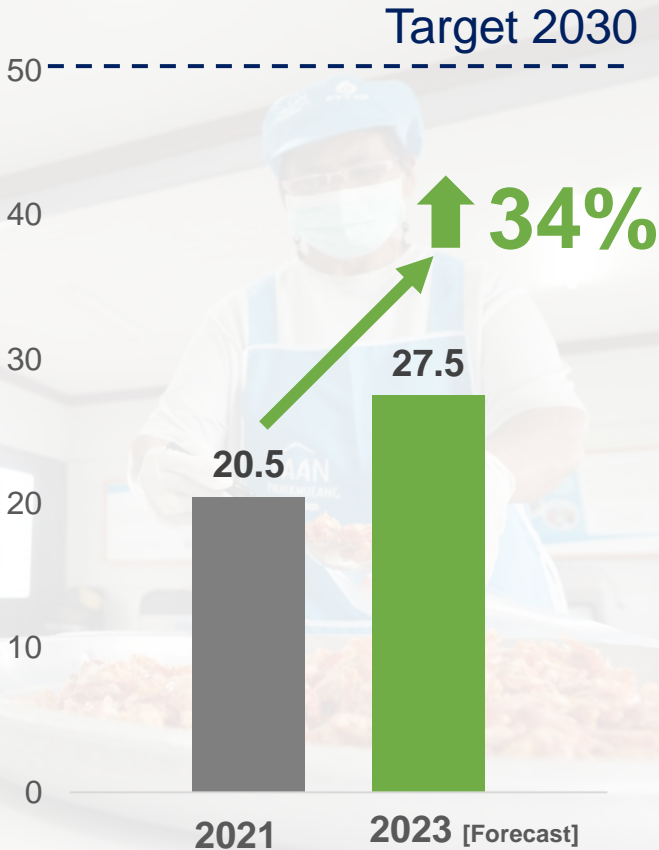
Ocean for Life Performance

Actively implementing numerous projects to achieve the 2030 targets

Net Positive Impact on ocean Biodiversity & Ecosystem Services (BES) value for all offshore operations by 2030, compared to 2019 base year

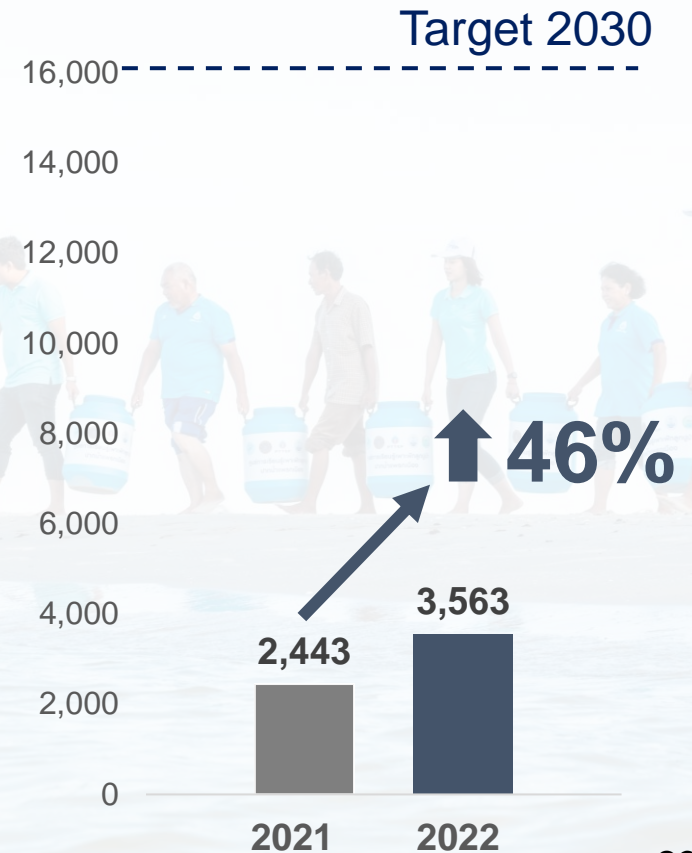


50% increase of income of focused communities by 2030, compared to baseline data before PTTEP project implementation



Remark: PTTEP conducts the income survey every 2 years

16,000 conservation networks by 2030





PTTEP

**Thank you
and Q&A**



<https://www.pttep.com/en/Sustainability.aspx>