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**Dow Jones
Sustainability Indices**

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PTTEP Virtual ESG Conference

5 July 2022

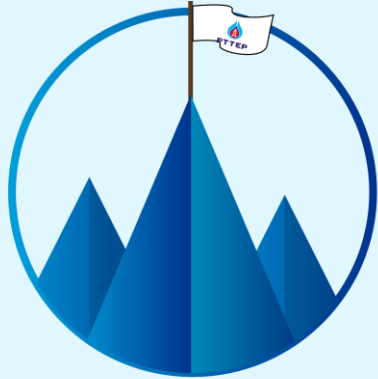


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Introduction to PTTEP Sustainability

PTTEP Vision, Mission and Corporate Values



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



Explorer



Passion



Synergy



Performance
Excellence



Innovation



Responsibility
for Society



Integrity &
Ethics



Trust &
Respect

“Energy Partner of Choice”

through Competitive Performance
And Innovation for Long-term
Value Creation



Sustainable Development (SD) at PTTEP means being a **responsible and resilient organization, embracing energy transition and creating shared value to stakeholders**. Our SD framework is based on the key aspects of High Performance Organization (HPO), Governance, Risk Management and Compliance (GRC) and Stakeholder Value Creation (SVC).

PTTEP aims to continuously **grow our business through the gas value chain and diversify into new business** in clean energy and technology. We are constantly **enhancing our E&P competitiveness** through efficiency improvement and innovation while also striving towards our safety target zero and a GRC role model to assure robust operations. We are committed to **creating value to shareholders and other stakeholders** by operating profitably and responsibly with due care for the community, society and environment through 3 areas of focus: Greenhouse Gas Reduction, Circular Model for E&P and Ocean for Life.

Approved by PTTEP Board of Directors on July 15, 2020

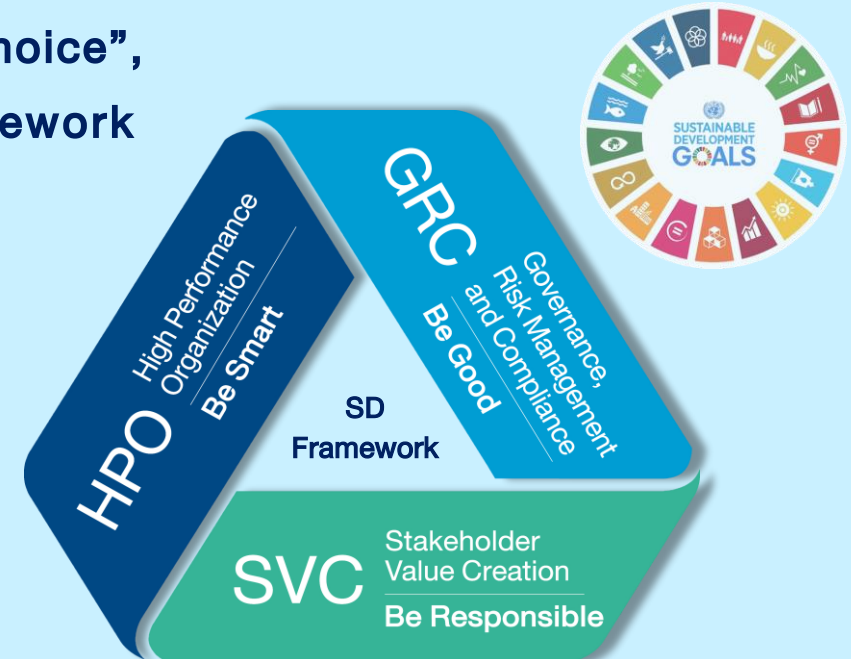
“Energy Partner of Choice”

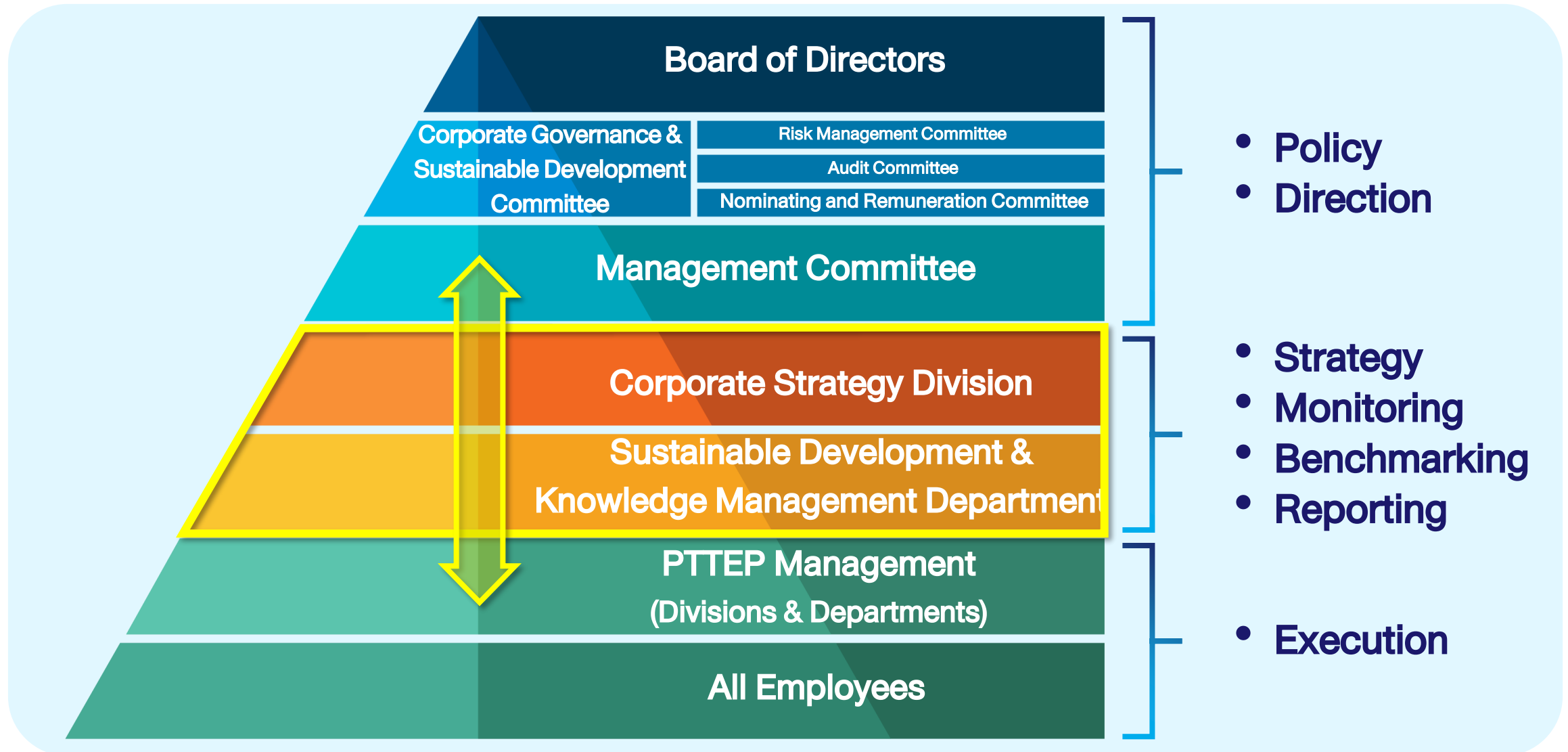
through Competitive Performance and
Innovation for Long-term Value Creation



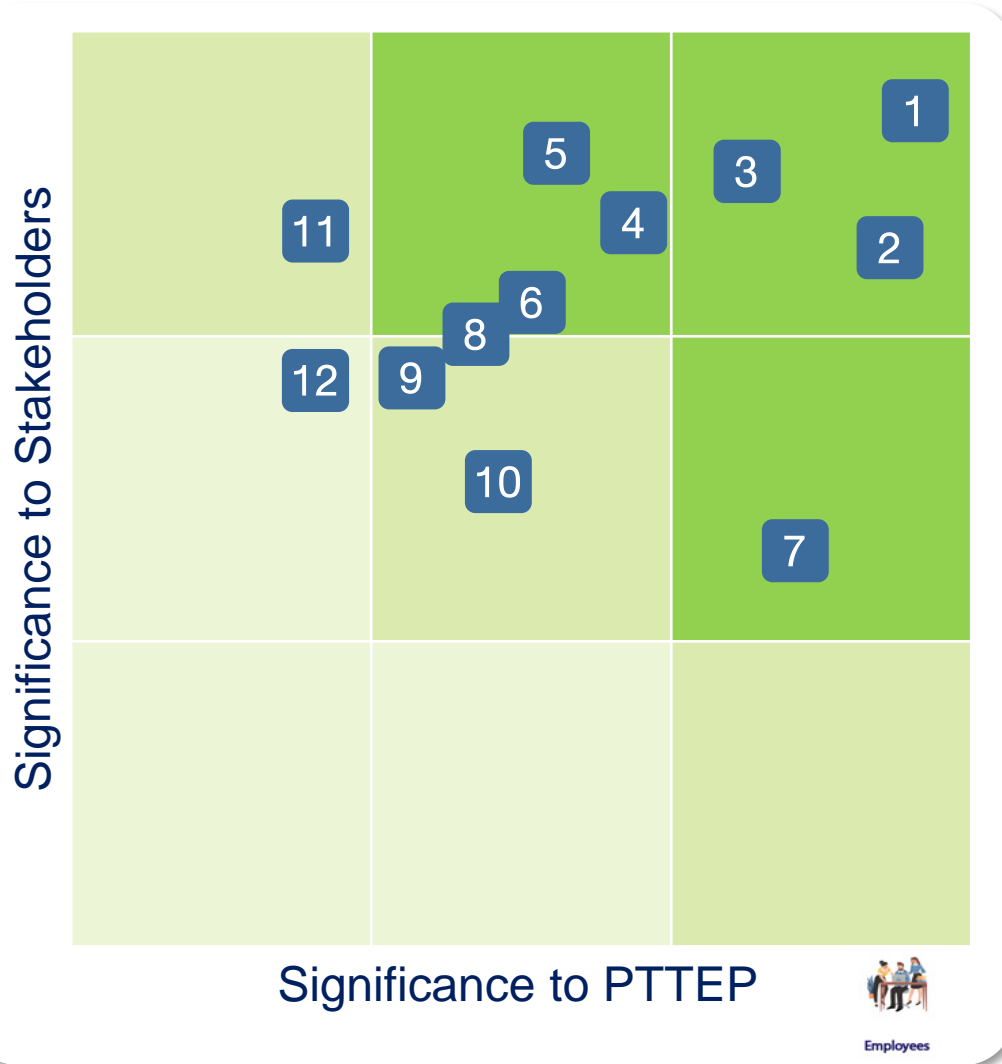
To achieve our vision of becoming the “Energy Partner of Choice”, PTTEP has developed the Sustainable Development Framework comprising:

- High Performance Organization (HPO) = Be Smart
- Governance, Risk Management and Compliance (GRC) = Be Good
- Stakeholder Value Creation (SVC) = Be Responsible





2022 PTTEP Materiality



- 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's Strategic Framework

To be Winning Company in Energy Transition



Execute & Expand towards Energy Transition

01 E&P Growth



- ✓ Value Creation from **Existing Assets**
- ✓ Maintain Competitive **Unit Cost**
- ✓ Expand **gas-weighted portfolio**
- ✓ Drive **LNG business**

- **Production CAGR**
5% in 2030, maintain @700 KBOED after 2030
- Maintain Competitive **Unit Cost**
- **R/P** > 5 years

02 Decarbonization



- ✓ Manage E&P portfolio to Net Zero
- ✓ Execute **GHG emission reduction plan**
- ✓ Accelerate **CCS projects**
Maximize **renewable energy** and explore **future energy**
- ✓ Emission **offsetting** and **ocean for life**

- **EP Net Zero 2050**
- GHG intensity reduction (2020 base year)
 - 30% by 2030
 - 50% by 2040

03 Beyond E&P



- ✓ Scale-up **AI & Robotic Ventures (ARV)**
- ✓ Explore **Power Business Opportunity**
- ✓ Explore **CCUS, H₂ and Future Energy**
- ✓ Commercialize **In-house Technology**

- **Net Income contribution** > 20% by 2030

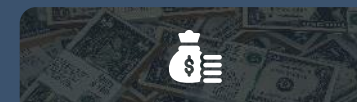
04 Resource Preparedness



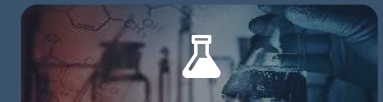
People



Business Support and
Company Activity



Finance



Research,
Development and
Technology



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E – Environment



Environmental Management Implementation

01

GHG Management

02

Circular Model for E&P

03

Biodiversity and Ecosystem Services (BES)

04

Environmental Awards and Recognitions

05

Alignment with international standards towards "Target Zero"

SSHE MS Model



SSHE Policy



- Ensure safety and health of personnel and communities including environmental protection
- Achieve highest level of SSHE culture
- Reduce environmental footprints and create positive environmental value
- Empower the right to use Stop Work Authority
- Improve SSHE performance continuously



E | Environmental Implementation via SSHE MS (examples)

Targets & Achievements

**“Zero non-compliance and ISO14001
Certification for all operating assets via
effective implementation”**

- Environmental monitoring and compliance
- GHG including Methane reduction initiatives

- Reduce environmental footprint thru low carbon pathway, circularity concept and positive BES value creation

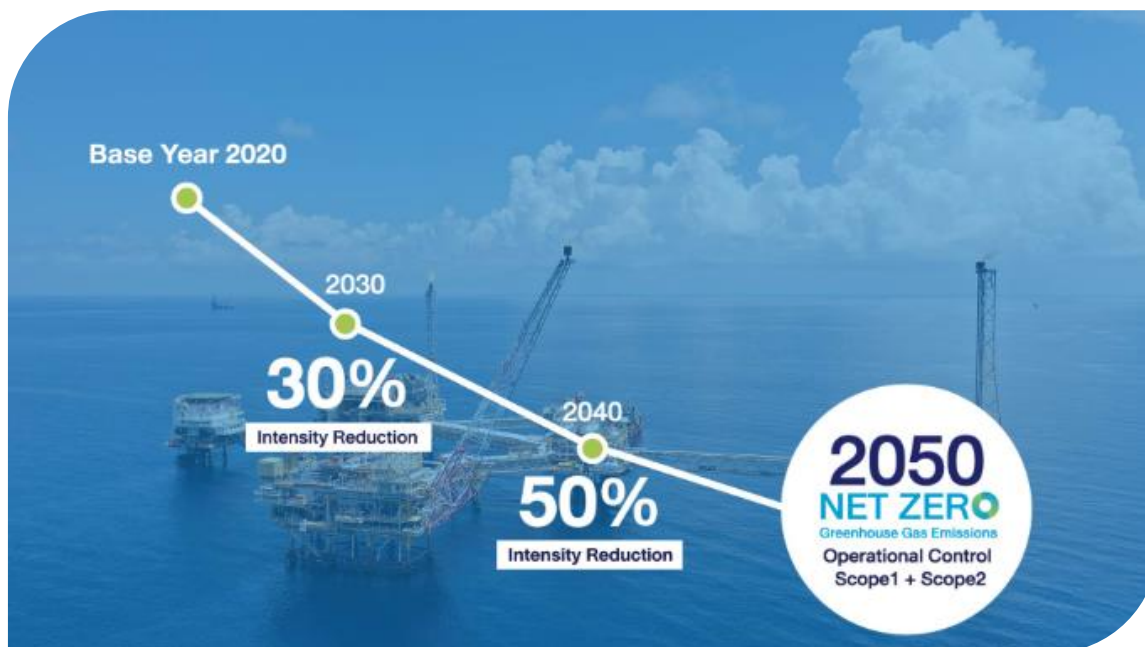


- Specific environment standards, procedures, guidelines and databases
- Environmental training & awareness programs
- Environmental Impact Assessment/Study
- Specific Risk Assessment: Climate, Water and Biodiversity
- Environment controls in operations (spill, wastes, effluents, emissions etc.)

Past achievement to new ambitious target

In 2021 Achieved 24.1% GHG Emission Intensity Reduction (from 2012 base year) and expected to achieve 25% reduction in year 2022 (8 years ahead of the target)

In Mar 2022 Establish 2050 EP Net Zero Target and Interim Targets



Scope 1 Direct emissions from sources owned or controlled by company

Scope 2 Indirect emissions from purchased energy

EP Net Zero Pathway

Exploring for Lower Carbon E&P Portfolio

Avoid

- Lower Carbon E&P Portfolio Management

Production and Planet in Balance

Mitigate

Beyond Conventional Practice

- Zero Routine Flare for New Assets
- Carbon Capture Utilization and Storage
- Maximization of Renewable Energy in Operations
- Full Application of Circular Economy Concept
- Methane Emission Reduction via Technology

Beyond Operation

Offset

- Carbon Removal Project
- Advanced Carbon Removal Technology

PTTEP Climate Management aligned with TCFD Framework

TCFD | TASK FORCE ON CLIMATE-RELATED FINANCIAL DISCLOSURES



- **Governance**

Board's oversight & roles in governing climate-related risks and opportunities

- **Strategy**

Strategy supporting climate-related risks, impacts and opportunities, including resilience pathway

- **Risk Management**

Company organization and process for climate-related risks management, including integration in the company risk profile

- **Metrics and Targets**

GHG Targets set and performance monitoring vs targets

Achievements

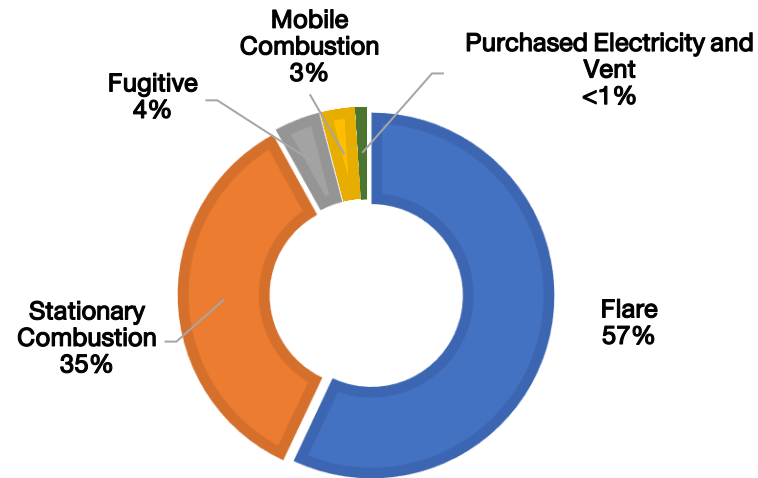


Continuous ranking score of 100 for the past three years on climate strategy.

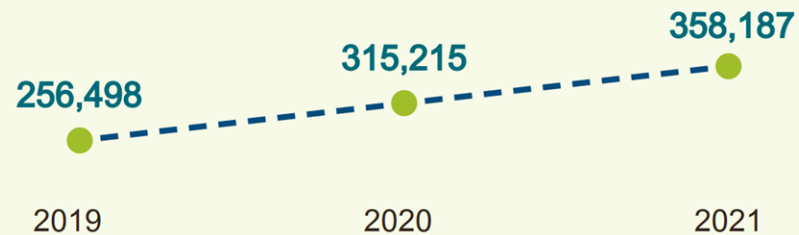


Continuous ranking as leadership level for 7th consecutive years.

Emission Sources



GHG Emission Reduction (tCO₂e)



GHG Reduction Initiatives

50% from flare gas recovery & utilization

- Recover flash gas from condensate to production process
- Recover flaring gas from remote onshore production stations via trunk flowline for production

26% from Process efficiency improvement

- Apply higher performance membranes for gas separation process to reduce flare emission
- Optimize flare gas recovery units

23% from Energy efficiency

- Recover waste heat from exhaust gas to generate steam
- Improve marine fleet management

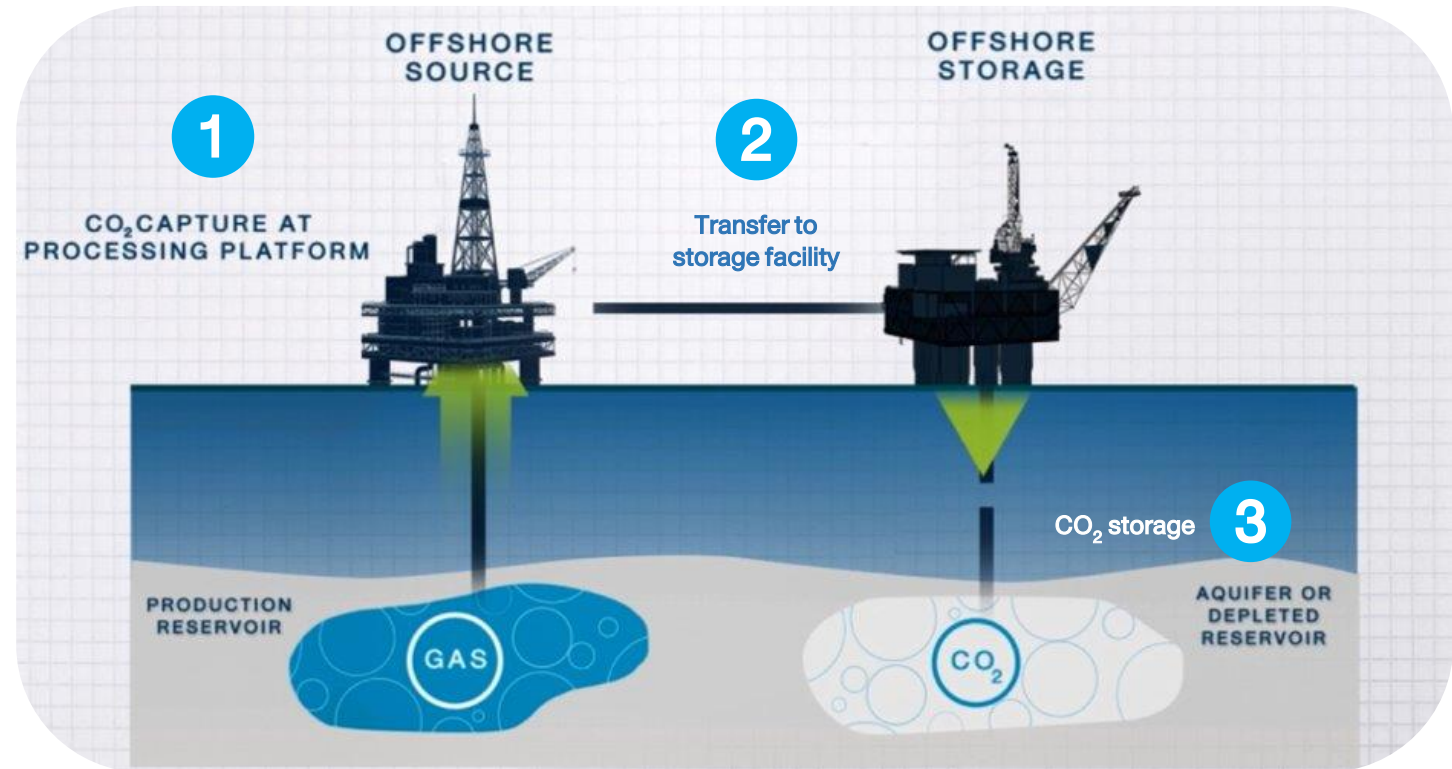
1% from Fugitive leak reduction

- Continuously detect, measure and fix leak from process equipment

CCS: key factor to large-scale GHG emissions reduction

- International Energy Agency (IEA): potential for reduced CO₂ emissions through enhanced energy efficiency and increased renewable energy production is limited
- CCS is a technology with potential for large reductions in CO₂-emissions within 10 to 20 years
- CCS helps reduce GHG emission towards Net Zero by 2050

How CCS works ?



E | GHG Management: Carbon Capture & Storage (CCS) Partnership

PTTEP's CCS collaboration with Partners

25th Apr 2022

MOU with INPEX & JGC (from Japan)
on Thailand CCS Development



1st Jun 2022

PTT Group MOU on CCS Hub Model



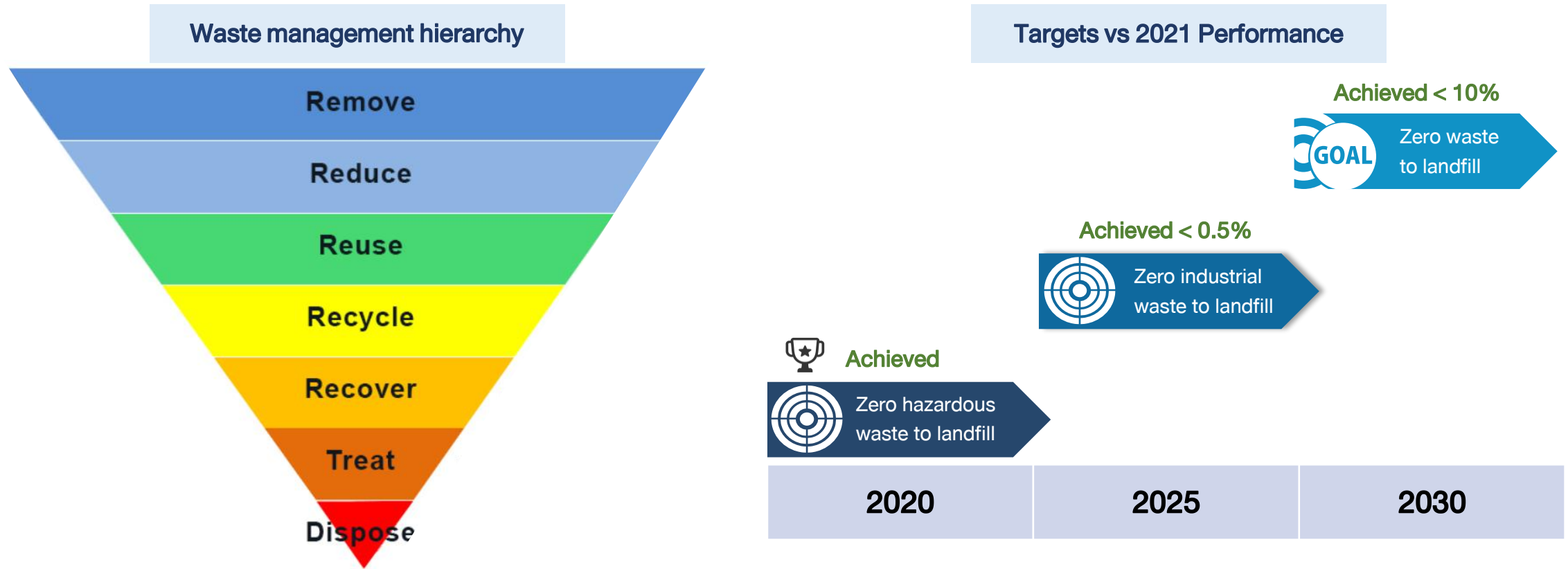
Goal

- CCS success in Thailand and international offshore operations to support PTTEP Net Zero Target
- CCS hub model in Thailand and overseas

E | Circular Model for E&P: Waste Management

Strategy

Optimize resources and mitigate environmental impacts via waste management hierarchy



Strategy

Optimize resources and upcycling waste to higher value products

2021 Highlights

Wellhead Platform Topside Reuse

1st Arthit wellhead platform topside relocation to a new location for reuse



Drilled Cuttings Utilization

Pilot of 1.2 km. road pavement at PTTEP Rapid Scale-up Center (RASC)



Strategy

Create positive environmental impact by promoting to increase BES value



Targets

01

No Gross Deforestation for E&P from 2021 onward

02

Avoid operating in world heritage sites as defined by UNESCO

03

No Net Loss in protected area defined by IUCN Cat I-IV by 2044

04

Net Positive Impact for Ocean BES Value by 2030

Achievement

Achieved 100% in 2021

No operations in world heritage sites as defined by UNESCO

Biodiversity Action Plan has been implemented for further measurement

Achieved 29.5% in 2021 (domestic offshore)

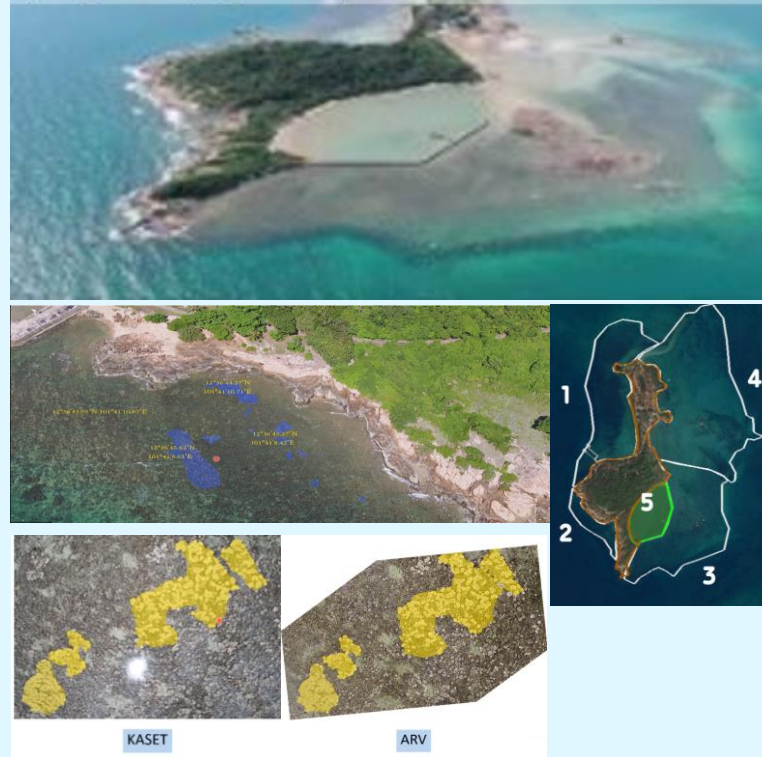
1st Microplastic Baseline Study in GoT

@ Offshore operations [GBN, GBS, ART] including Koh Tao, Koh Losin at Chumphon (Feb – Nov)



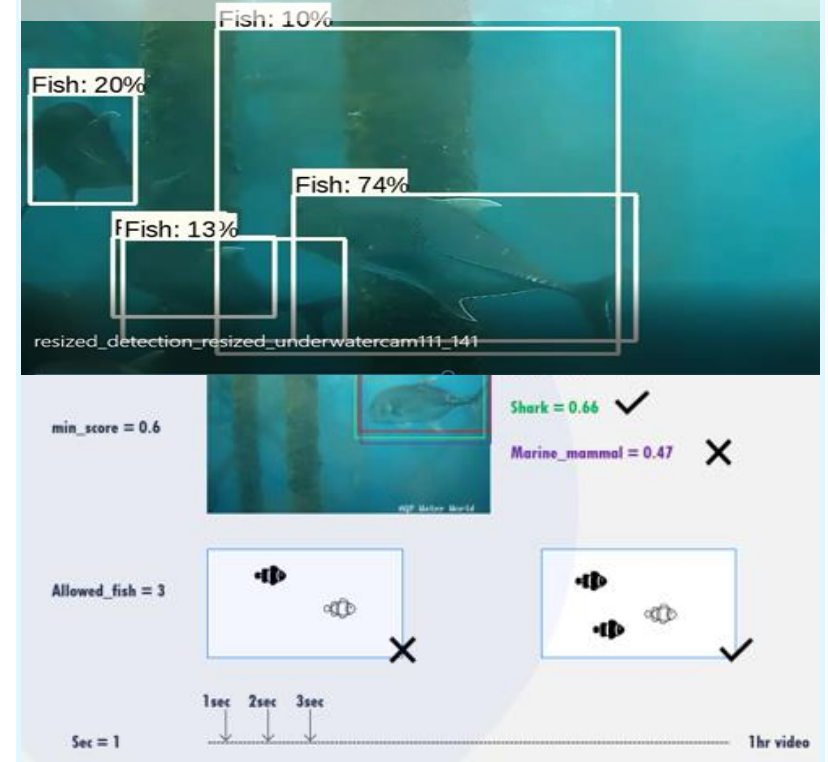
1st Coral Bleaching Baseline Study

@ Koh Mannai and Pala beach in Rayong (May – Oct) by multi-spectral drone



Underwater Camera: Aquatic Animal Motion Detection

Aquatic animal motion detection software applied in ART offshore operation



System



- First E&P company in Southeast Asia certified
- ISO14001 certification covers all operating assets

Performance



- Top Quartile DJSI ranking in environmental dimensions

Environmental Reporting

Operational Eco-Efficiency

Environmental Policy and Management Systems

Biodiversity

Water Related Risks

Climate Strategy

Infrastructure



- Green Office Award (Gold Level) by Thai Environmental Institute for PTTEP's Offices in Thailand (EnCo, S1, Petroleum Support Base (Songkhla & Ranong))



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S – Social

Ocean for Life Strategy

01

Key Achievement in 2021

02

Fight against COVID-19

03

CSR Awards 2022

04

Target (by 2030)

Achieve **Net Positive Impact** on ocean biodiversity and ecosystem services (BES) value in domestic offshore operation by 2025 and all offshore operation by 2030, compared to the 2019 base year

.....

Increase **50%** of community income of focused communities and achieve **16,000 conservation networks** by 2030, compared to the baseline data before PTTEP project implementation

1. CLEAN & FRIENDLY OPERATION

2. OCEAN HEALTH & BIODIVERSITY MONITORING

3. RAMP UP CSR AROUND OCEAN



6 Flagship Projects under Ocean for Life Roadmap 2020-2030





Ocean Waste Management

- Cleared over 64 tonnes of beach and ocean waste

Mangrove Forestation

- Trees planting on 1,000 rais, equivalent to the carbon absorption of 2,750 tonnes of CO₂

Marine Life Conservation / Rehabilitation Center

- Established 11 Aquatic Animal Hatchery Learning Centers along GoT and 42 groups of marine resource conservation network
- Released 2.9 million juvenile crabs

Coastal Conservation Area / Fish Home

- Placed 14 fish homes in 9 provinces with the conservation area covering 7.3 sq.km.



Hospital and Medical Centers Development

- Allocated 44 MTHB for construction & equipment of operating rooms and 2-bed recovery rooms at Songkhla Hospital
- Funded 27 MTHB for in-patients building construction and equipment to Lan Krabue Hospital

Stunting Prevention Program

- Implemented the program in East Nusa Tenggara, the Republic of Indonesia, to upgrade people's quality of life as well as support the national agenda on child stunting prevention. This benefited 2,668 persons in the area.



PTTEP Scholarships

- Sponsored annually about 3,000 scholarships for studies in elementary, secondary, vocational and university levels in Thailand and overseas

KVIS & VISTEC

- Supported 161 MTHB and annually granted 2 scholarships for undergraduate program

Technical capability Building & Development

- Upgraded the skill level of local artisans in Songkhla province and in Myanmar



Flare Gas Utilization for Community Agricultural Product (Nong Toom)

- Cooperative's cost saving of cooking gas (LPG) at 32 MTHB

Waste to Energy

- Cost saving as biogas substitutes LPG for household cooking by 4,200 THB/ household/year
- To date, installed 328 biogas kits in Udon Thani province and 62 kits in Myanmar



Thai Heritage, World Heritage (Nature)

- Renovated the exhibition centers at Khao Yai National Park, attracting 300K visitors per year



Seafood Product Value Enhancement

- Established 5 seafood product groups and standardized products for value added, increasing product price by 78% on average



Forest Restoration for Eco-learning at Sri Nakhon Khuean Khan Park

- Contributing carbon absorption of 335 tonnes of CO₂ equivalent per year

S | PTTEP Supports the Fight against COVID-19

2020 – 2022 Over **THB 155 million**

Donates over THB 144 million to hospitals nationwide



116 Negative pressure patient transfers



Distributed to **89** hospitals across the country



3 Xterlizer
UV Disinfection Robots

10 CARA robots
deliver supplies and medicines



THB 5 million for **Cold Chain Monitoring and Alert System**
for vaccine storage quality assurance



92 mobile negative pressure boxes

6 Negative pressure transfer wheelchairs

Valued at THB **18 million**



THB 29.3 million
For AIRVO 2 Humidifier



THB 31.5 million
to support medical operations



THB 30 million
Funded Baiya vaccine, a Thai vaccine against COVID-19



THB 4 million

to Chulalongkorn University to produce Chula COVID-19 Strip Test



THB 4.05 million

to Thammasart University Field Hospital for purchasing an ambulance and a ventilator



THB 2 million

to Vidyasirimedhi Institute of Science to develop Test kit Diagnostics

VISTEC
VIDYASIRIMEDHI
INSTITUTE OF SCIENCE AND TECHNOLOGY



PTTEP Care box
36,000 boxes

Supports the fight against COVID-19 in THB 10.7 million (International)



Myanmar

Financial support to Hospital Quarantine Center and Community
5,696,760 THB



Algeria

Surgical Face Mask
600,000 THB



Mozambique

Surgical Face Mask & PPE
578,942 THB



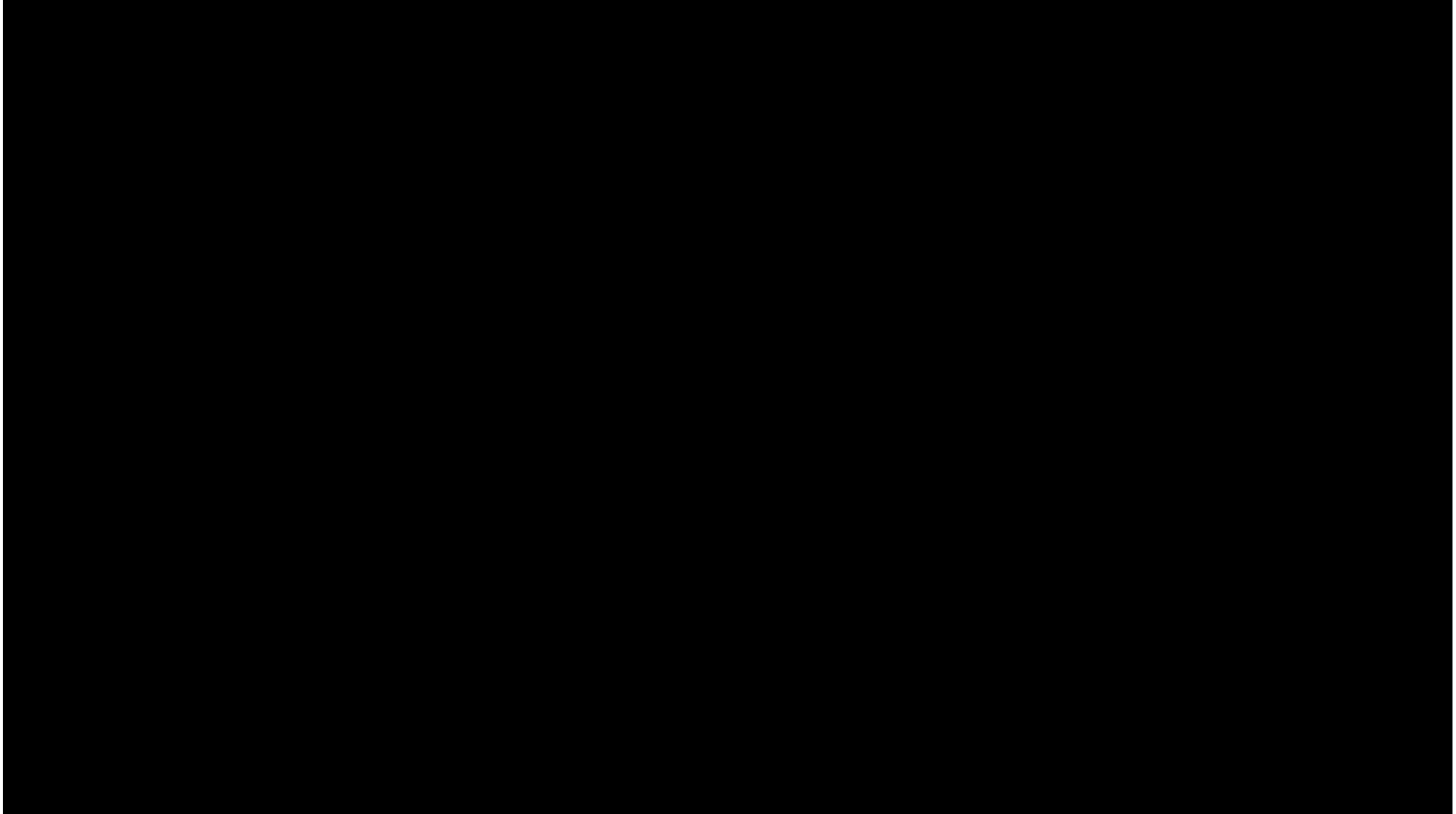
Malaysia

Financial support to Malaysia Ministry of Health & Relief and Recovery Fund by Yayasan Sejahtera, Non-Government Organization
1,471,587 THB



Indonesia

Surgical Face Mask 10,000 pcs. & PPE 1,500 set to Jakarta Governor's office & Survival bag for COVID-19 patients
2,366,500 THB



Won 4 awards from CSR projects performances



14 Feb
The Asset Awards, Hong Kong
 • **Winner** of Community Health Development Program



24 March
Global CSR Excellence & Leadership Awards, India
Award in Concern for Health from the Stunting Prevention Program in Indonesia



30 May
International CSR Excellence Award, UK
Gold Award in Best Community Development for H.T.M.S. Underwater Learning Site Project



3 June
Golden Peacock Awards, India
Winner of Overall Corporate Social Responsibility (CSR) for 3rd consecutive year

February

March

May

June

2014
 —
2021



58 + **3**
 Awards Finalists



+ **2**
 Certificates



From
20
 Institutions



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G – Governance

Good Corporate Governance and Business Ethics 01

Anti Corruption 02

Whistleblowing 03

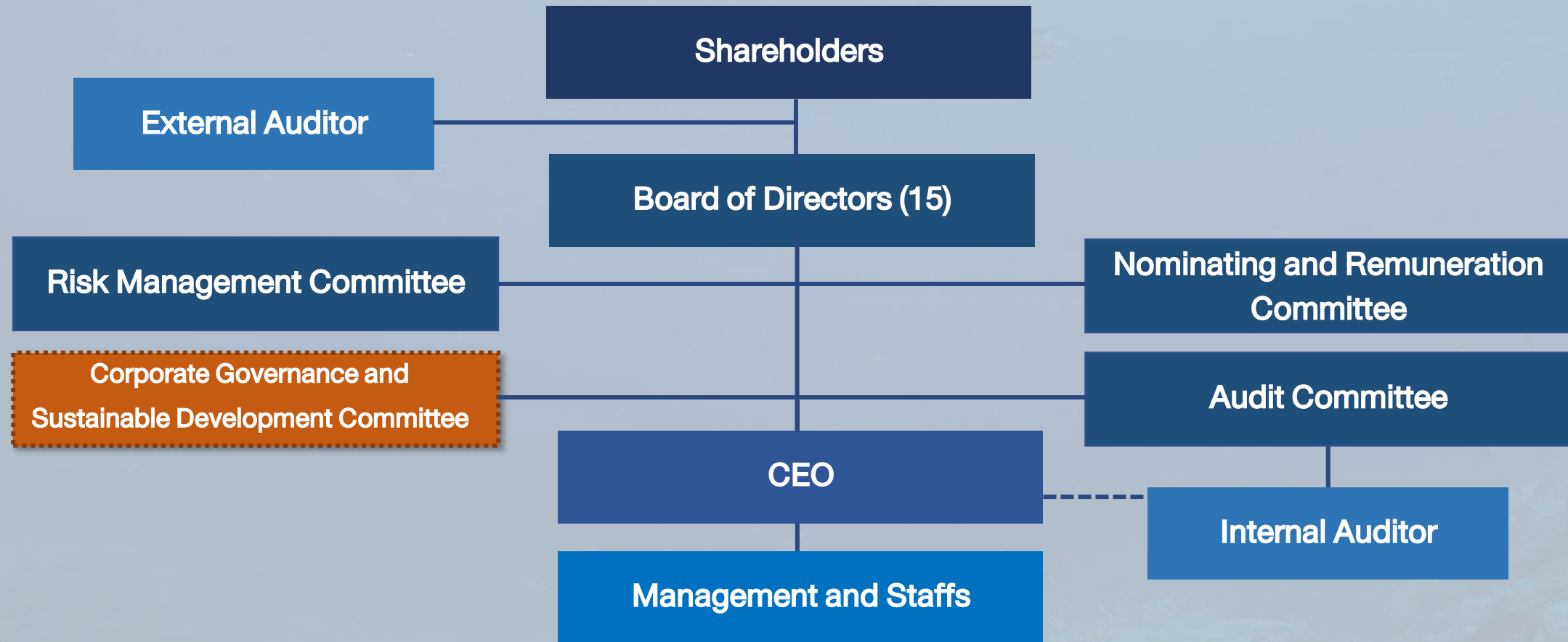
Awards and Recognitions 04

Human Rights 05



PTTEP strongly believes that conducting its business guided by rigorous good corporate governance and business ethics is vital for the efficient and sustainable success of its operations. Such an approach also helps create long-term value for Shareholders and Stakeholders; reflects PTTEP's strong commitment to its social and environmental responsibilities; and results in increased confidence and greater public acceptance.

Governance Structure



Establishing Policy



- Good Corporate Governance & Business Ethics Book (CG&BE) for all employees
- Commitment on CG&BE
- Standard of Practice for Anti-Corruption
- No Gift Policy
- Vendor Sustainable Code of Conduct



Implementation



- Continuous Communication & Training for all level of employees
- Announce the No Gift Policy publicly
- Encourage vendors/suppliers to attend anti-corruption training
- Annual Conflicts of Interest Disclosure



Monitoring



- Monitor by CG&SD Committee
- Develop application to prevent corruption e.g. GRC One Digital System



PTTEP handles the complaint with a clear procedure on a fair and transparent basis as prescribed in the Whistleblowing Regulation. Everyone can report wrongful act regarding possible violation of laws and regulations of the PTTEP Group through Whistleblowing Channels:



Letter to Directors or Corporate Governance Unit



cghotline@pttep.com



Whistleblowing Online System at www.pttep.com

Protection and remedy measures

- Allow anonymous whistleblower
- Provide appropriate protection from retaliation or unfair treatment
- Related information will be kept confidential
- Provide remedy, if the complaint causes a detrimental impact on any person

NACC Integrity Award



The 10th NACC Integrity Awards
(for the 4th time)

CAC Certified



Thai's Private Sector
Collective Action Coalition
Against Corruption CAC
(3rd consecutive term)

CGR



Being rated Excellent for
the Corporate
Governance Report (CGR)
2021 by IOD

ASEAN CG Scorecard



ASEAN Top 20 PLCs and
ASEAN Asset Class PLCs
from the 2019 ASEAN CG
Scorecard

Human Rights Issues in Oil and Gas Industry

The International Petroleum Industry Environmental Conservation Association

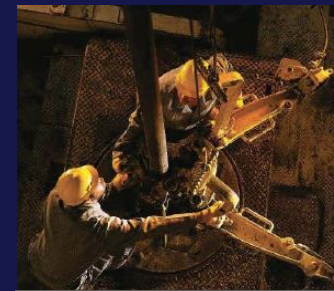
IPIECA



Workplace



SSHE



Supply Chain



Community

Respecting Human Rights is important to PTTEP as we operate in some of the most challenging locations around the world and can face complex Human Rights-related issues.

“More than 40 projects in 15 countries”



Key Elements of PTTEP Human Rights

1

Human Rights Policy & Management System

- Implemented across PTTEP
- Under the same standard

2

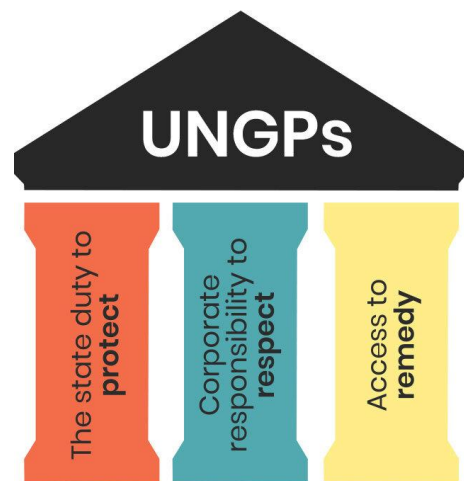
Human Rights Risk Assessment

- Fully integrated as part of annual corporate risk assessment
- Covering 100% of operating assets, non-operated joint ventures, and Tier 1 suppliers

3

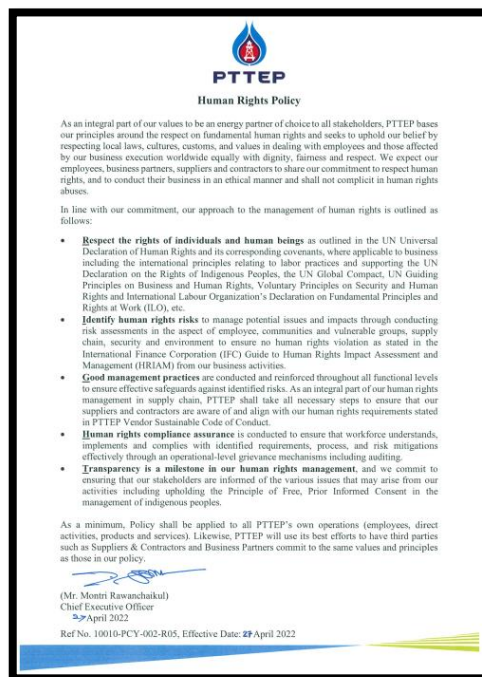
3rd Party Audit in Every 3 Years

(Latest in 2020)



Guide to Human Rights Impact Assessment and Management (HRIAM)

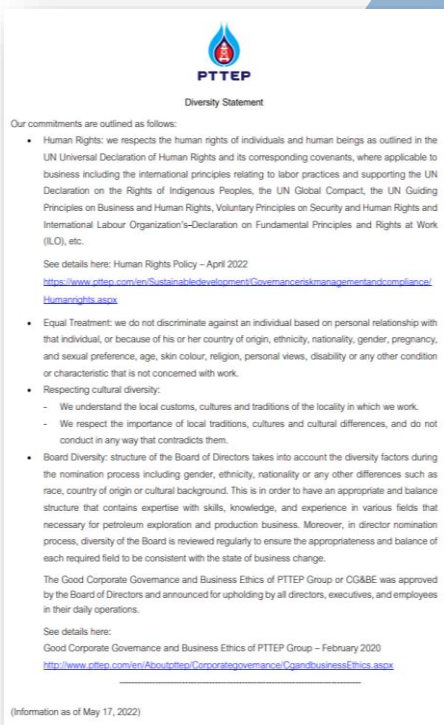
VOLUNTARY PRINCIPLES
ON SECURITY & HUMAN RIGHTS



PTTEP's Approach to Human Rights Management

- Respect the rights of individuals and human beings.
- Identify human rights risks to ensure no human rights violation from our operations.
- Reinforce good management practices to ensure effective safeguards against risks.
- Put human rights compliance assurance in place for effective implementation.
- Ensure transparency in human rights management.

PTTEP's Diversity Statement

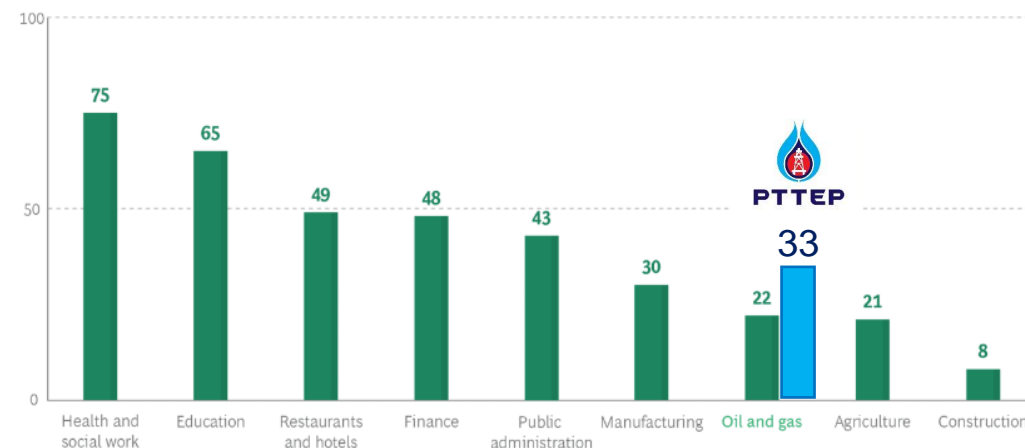


- Respect the human rights of individuals and human being
- Equal treatment of non-discrimination on country of origin, ethnicity, nationality, gender, age, skin color, religion, etc.
- Respect culture diversity in the operational area
- Consider the diversity factors for the Board of Director structure

Gender Diversity

% of women in the workforce of PTTEP is better than Oil & Gas average

Women in the workforce in different industries (%)

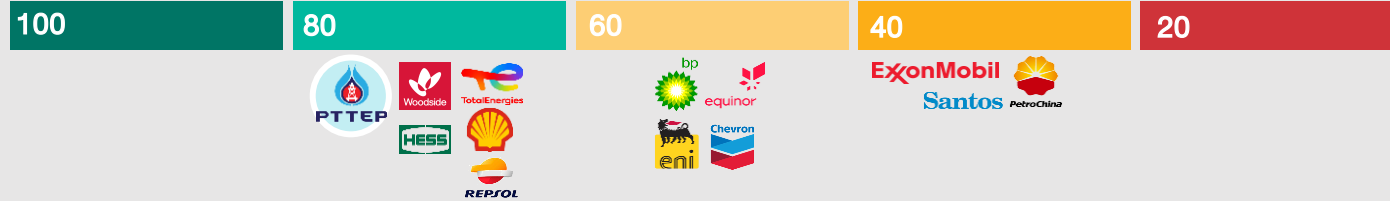


Sources: ILO Stat database, 2020; Untapped Reserves 2.0 survey.

Source: <https://www.bcg.com/publications/2021/gender-diversity-in-oil-gas-industry>

ESG Benchmarking & Recognition

S&P Global Ratings ESG Rating



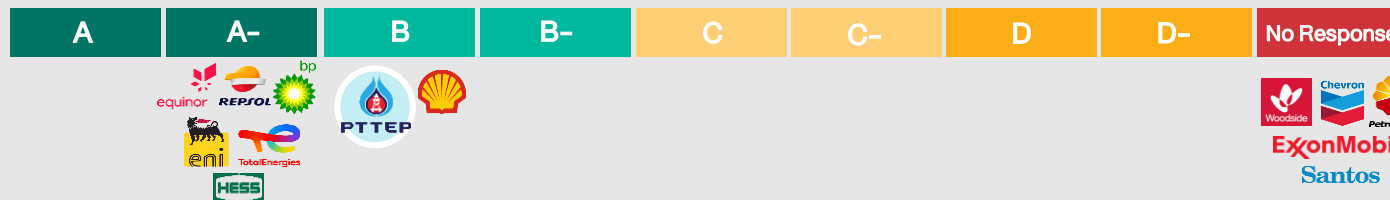
MSCI ESG Rating



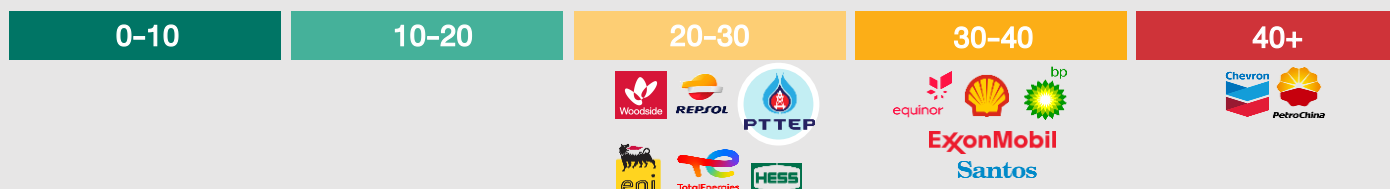
Moody's ESG Credit Impact



CDP Climate Change



SUSTAINALYTICS ESG Risk Rating



Awards

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- Member for the 8th Consecutive year



- Member for the 6th Consecutive year

FTSE4Good



- Platinum Award
- Best Initiative in Innovation
- Best Initiative in Social Responsibility
- Best Investor Relations Team Award
- Best CEO Award



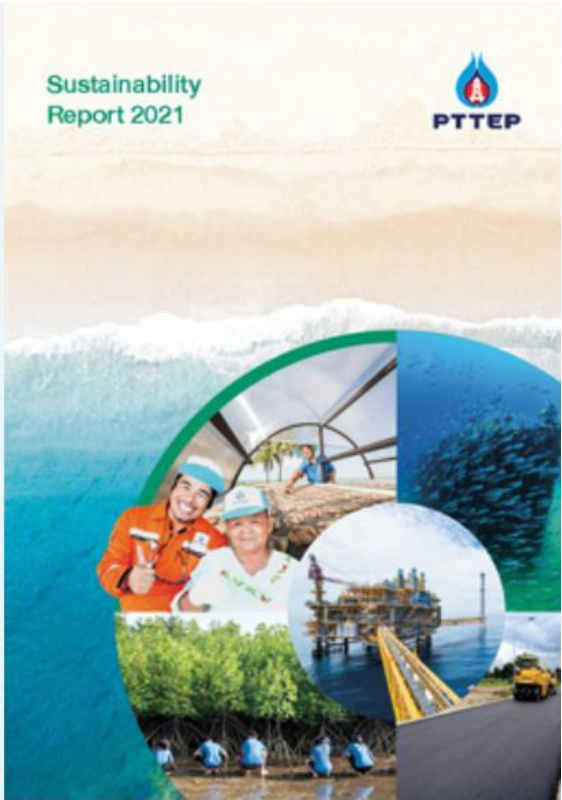
- Asia's Icon on Corporate Governance Award
- Asian Corporate Director Recognition Award
- The ESG Influencer Award



- Best Sustainability for the 2nd consecutive year
- Thailand Sustainability Investment (THIS) for the 6th consecutive year



Sustainable Report 2021



PTTEP Website



ESG Standards

GRI

Global Reporting Initiative Reporting Standards (GRI Standards)

Oil and Gas Sector Disclosures (OGSD)



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Thank you and Q&A



Scan Here
to take a survey



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<http://www.pttep.com>