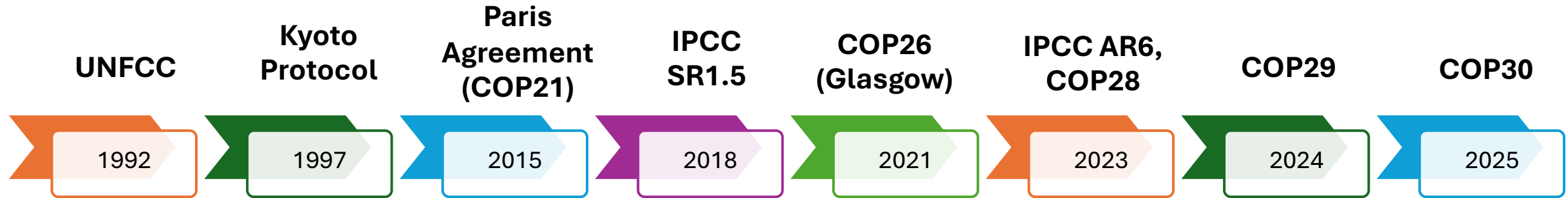


Oil and Gas Value Chain Transition Plan



- IPCC confirms that human-caused warming is intensifying physical and transition risks across the real economy and the financial system.
- Under the Paris Agreement, keeping 1.5 °C within reach with no/limited overshoot requires reduce global GHG around 43% by 2030 (vs 2019) and CO₂ net zero around 2050.
- These commitments are cascading into finance via ISSB/IFRS S2 (TCFD-aligned) disclosure, NGFS supervisory expectations, and EU/ASEAN/Thailand taxonomies shaping bank credit policy, sectoral/portfolio targets, and disclosures.
- Delivering this pathway demands large-scale reallocation of capital finance is the transmission mechanism.
- Banks must embed climate risk and real-economy alignment in credit decisions, portfolio strategy, and disclosure.



Jun-25	SEC Thailand has published a roadmap for the adoption of ISSB standards
May-25	Thailand Taxonomy phase 2
Jan-25	Environmental and climate baseline expectation of BOT
Aug-24	BOT with Thai Bank announced the green transition program "Financing the Transition program"
Jun-23	Thailand Taxonomy phase 1 officially announced
Feb-23	Internalizing Environmental and Climate Change Aspects into Financial Institution Business
Aug-22	BOT Directional Paper "Transitioning towards environmental sustainability under the new Thai financial landscape"
Aug-22	TBA ESG Declaration: TBA members agree on six shared action priorities
Aug-21	The Working Group on Sustainable Finance (WG-SF), consisting of the FPO, BOT, SEC, OIC, and SET

Sustainability Framework



3 Pillars 9 themes to support sustainability pathway

Net Zero Target by Year 2050

Pillar 1 Organization Sustainability

- **Ethical Governance** : The BOD defined the mechanism, overseen the sustainability.
- **Employee Empowerment** : Aim to raise awareness and consciousness of climate change and ESG
- **Green Organization** : Develop, improve, and monitor the decarbonization plan.

Pillar 2 Sustainable Finance

- **Responsible Finance**: Develop financial products and services to drive the shift towards low-carbon economy of the country.
- **ESG Risk Management**: Integrate environmental factors and climate change into business opportunity assessments and risk management to enable the business to effectively respond to emerging risks.
- **Innovative digital finance**: Utilize innovation and digital technology to develop financial services to be more accessible and convenient.

Pillar 3 Responsible to stakeholder

- **Community investment**: Allocate resources to create a positive and sustainable impact on stakeholder's communities.
- **Collaborative stakeholder engagement**: Develop partnerships to create a collaborative network that promotes sustainability across environmental, social, and economic dimensions.
- **Transparency disclosure**: Disclose and transparently in accordance with international standards such as GHG Protocol and TCFD Report

Sustainable Finance Framework

Use of Proceeds

 Green projects and Social Project

 Exclusionary list

Align with



Process for Project and Asset Evaluation and Selection

- Credit Review process
- Green Loan guideline
- Sustainability-Linked Loan guideline
- Environmental and Climate Risk Management Policy
- Corporate Governance Structure to support sustainable finance.

Management of Proceeds

- Balance between source of sustainable funding and using.
- Sustainable Integration Unit as core mechanism to oversee management of proceeds

Reporting

- Allocation Report
- Impact Report

External Review

- Second-Party Opinion (SPO)

The Board of Directors

Committees of the Board of Directors

Management Team

Business units

Tone from the top for integrate E&C Risk into organization

To set up Strategic direction, business goal and objectives, Bank's policies, Risk appetite, Organizational structure and allocate resources.

E&C Considerations for:

- **Credit & Investment Oversight** — Consider and approve credit/investment within delegated authority, integrating E&C risks into decisions.
- **Strategy & Policy** — Set business goals and strategic directions consistent with Board-approved frameworks that incorporate E&C risks.
- **Risk Governance** — Define and propose E&C risk appetite and KRIs to the Board; monitor control effectiveness.
- **Implementation & Performance** — Oversee and monitor execution of approved policies and sustainability initiatives against targets.
- **Reporting & Disclosure** — Oversee internal/external sustainability communications and disclosures aligned with relevant standards (e.g., TCFD/ISSB/GRI).

Embed E&C in the Three Lines of Defense roles and responsibilities and drive execution of the Sustainability Framework and Roadmap.

Objective

Support Thailand's net-zero pathway by aligning the loan portfolio's financed emissions to a science-based 1.5°C pathway and committing the Bank to net-zero by 2050, with 2035 interim targets and a sector-phased rollout.

Scope

Applies to the Bank's entire loan and investment portfolio covering, Implementation is phased by sector (appear in Implementation & Methodology).

Methodology

We will systematically measure our financed emissions using the PCAF methodology. with clearly defined scope, attribution, and data-quality scoring to ensure accurate and verifiable results. This data will then be analyzed across two key lenses amount of financed emission and financed-emissions intensity per unit of credit (Loan-to-Emissions). To identify and prioritize the sectors that are most critical for the transition. We will leverage the Thailand Taxonomy as a core framework to provide our clients with actionable guidance, helping them successfully navigate their green transition and unlock new business opportunities.

Implementation Strategy

Thailand Strategy

Thailand Long-Term Low Greenhouse Gas Emission
Development Strategy: LT-LEDS

- Carbon Neutrality 2050
- Net Zero GHG Emissions 2065
- NDC (Nationally Determined Contribution) set up
GHG Emission 30%-40% BAU within 2030

Real Economy

Incentives, subsidies and restriction

- | | |
|----------------------|------------------------------|
| ■ Climate change act | ■ Tax credits and incentives |
| ■ Thailand Taxonomy | ■ BOI Incentive |
| ■ EU CBAM | |

LH Bank Support

Products and services to support
climate related financing to achieve
below 1.5 degree Celsius

Products

- Green loan
- Sustainability linked loan
- Green Transition loan
- Green energy saving loan
- Green deposit

Services

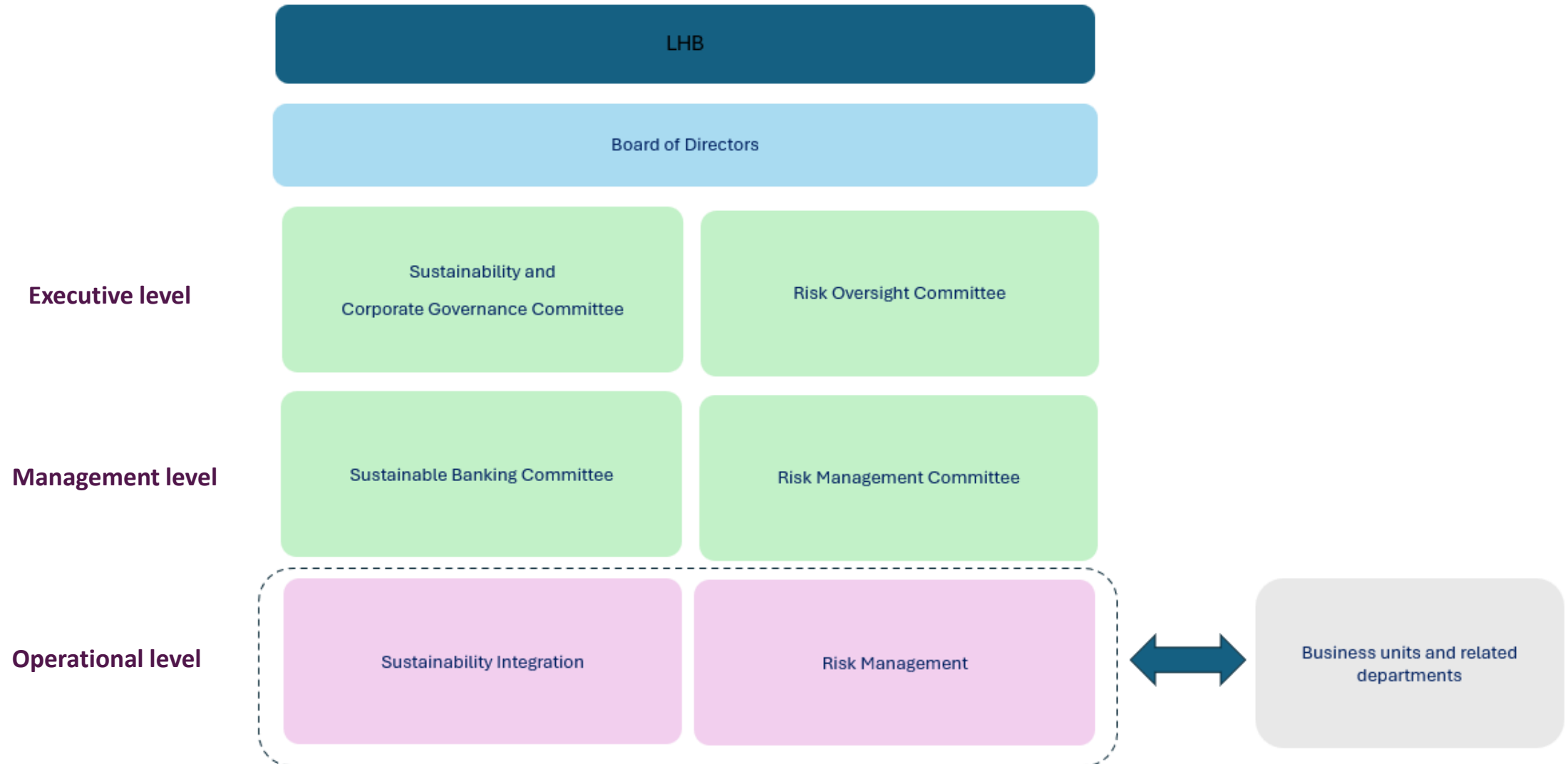
- Carbon platform
- Green advisory

Green Advisory partner and green verification for client

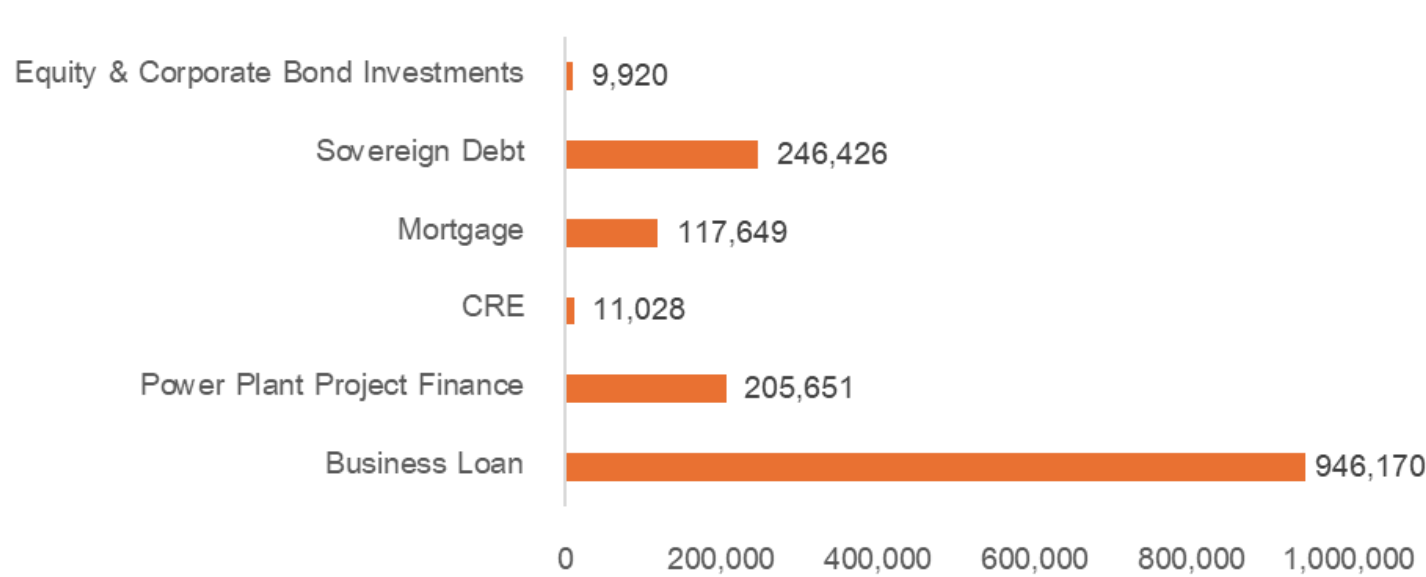


“Modular playbooks by sector; advisory partnerships for verification and client enablement.”

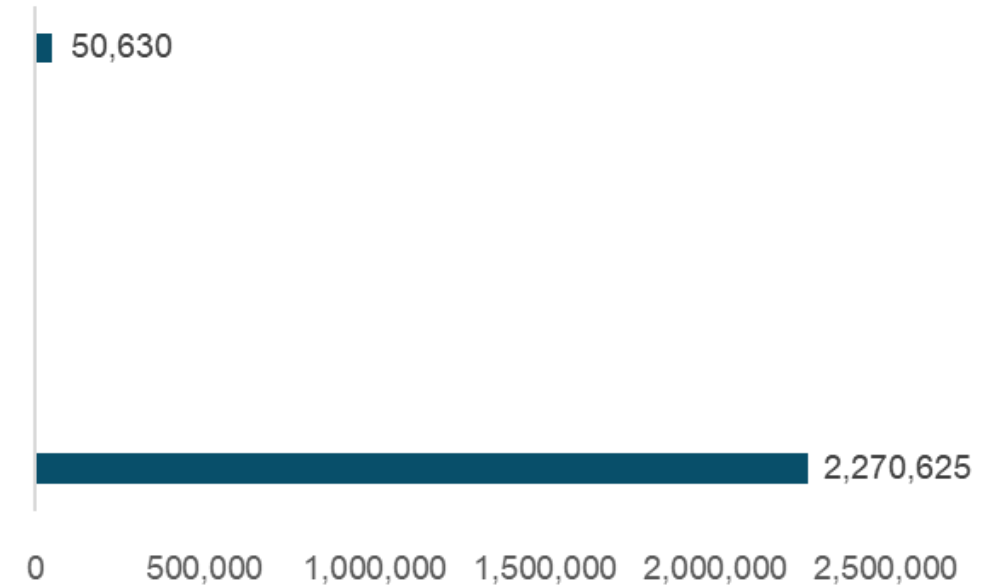
The Bank is committed to systematically adhering to ESG and sustainability risk governance guidelines, in alignment with CTBC's policies, as well as LH Bank's ESG risk management framework, sustainability policy, and strategic plan, to drive stable and sustainable growth.



Scope 1 and Scope 2 (TonCO2)



Scope 3 (TonCO2)



□ Total Financed Emission **3,858,099** TonCO2

□ Intensity **14.15** TonCO2/Million Baht loan

□ Data Quality **3**

→ Scope 1 & 2
1,536,843 TonCO2

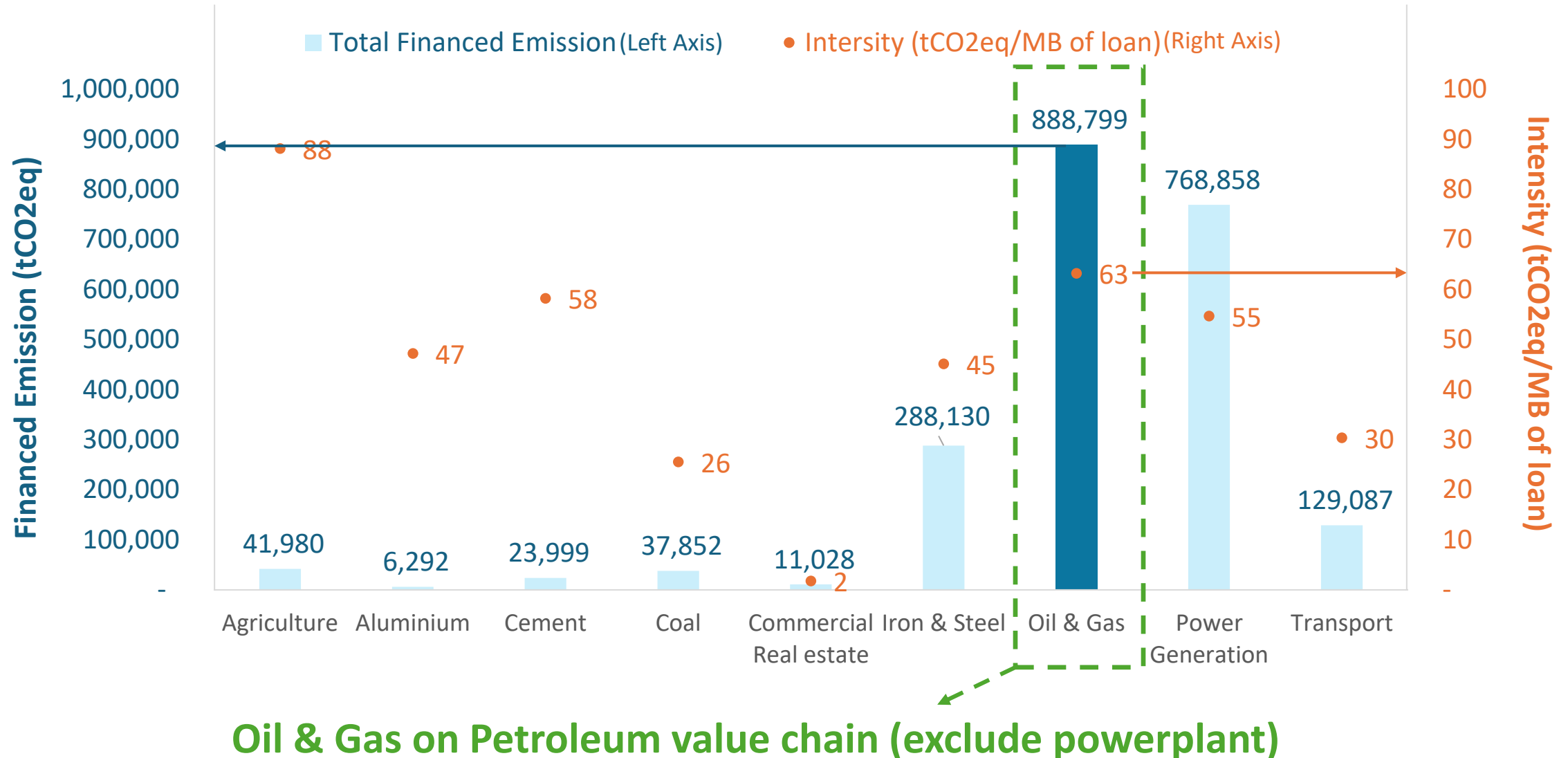
→ Scope 3
2,321,255 TonCO2

→ Scope 1 & 2
5.64 TonCO2/Million Baht loan

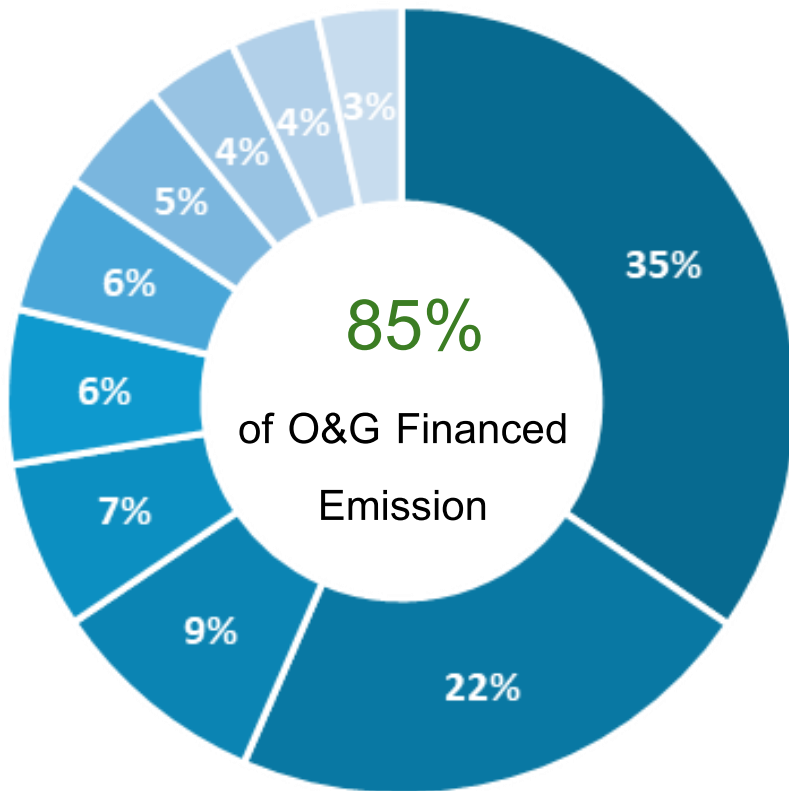
→ Scope 3
8.51 TonCO2/Million Baht loan

→ Scope 1 & 2
2.77

→ Scope 3
3.17

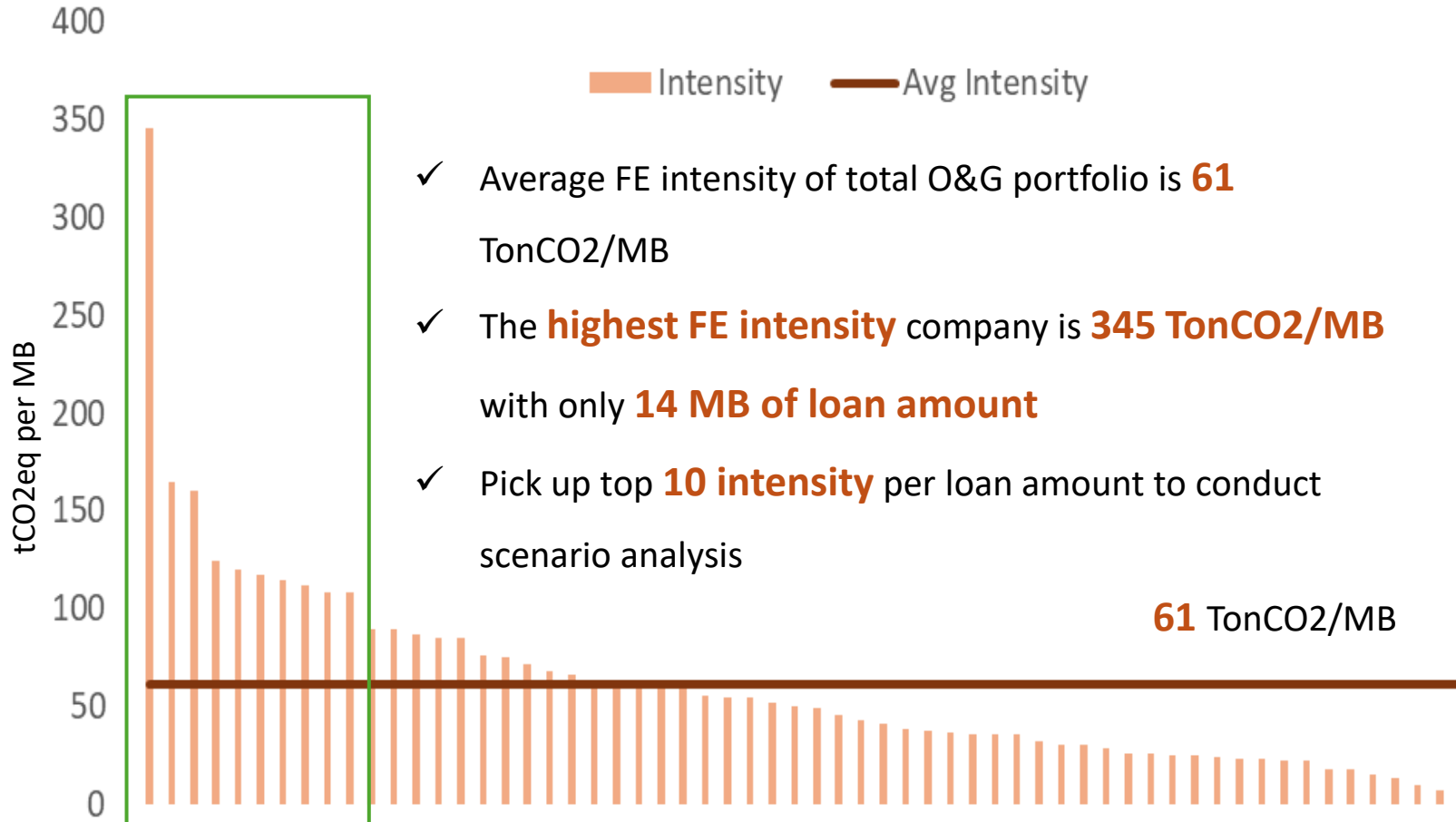


Top 10 Customers generating Highest Financed Emissions on O&G Portfolio



tCO2eq			tCO2eq/MB
S1S2 of FE	S3 of FE	Total FE	Intensity per O/S
42,179	220,406	262,585	87
32,288	134,453	166,741	68
31,840	36,564	68,404	114
3,001	49,208	52,210	85
9,334	38,868	48,201	161
20,114	23,099	43,214	109
16,741	19,225	35,966	23
13,280	15,250	28,530	62
17,485	10,085	27,570	25
12,137	13,938	26,076	72
198,399	561,096	759,495	70

FE Intensity Profile of Customers in O&G Sector



Scenario Analysis on Oil & Gas Portfolio

- To provide more financing **100-500 MB** for each company:
- Financed Emission will increase to **1,034,972** - **3,096,165 tCO₂eq**

+5,000 MB in loan amount

+4% in loan amount

+3.09 MtCO₂eq in FE

+80% in FE

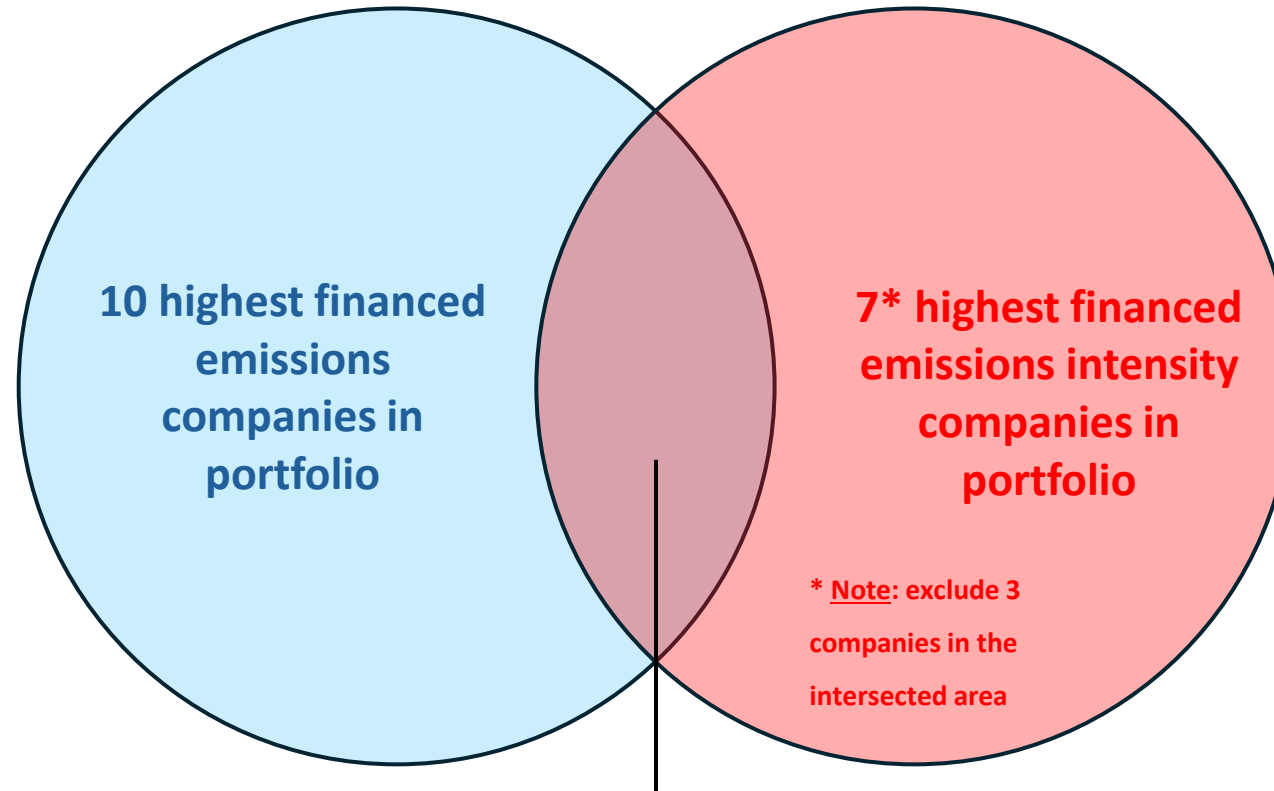
Note : FE = Financed Emissions

Scenario analysis has been conducted to quantify impacts on the group of high FE intensity companies in O&G portfolio.

Group 1:

Financed Emission
Management

Need to manage factors
impact with their emission.



Intersected Area (Management and Control)

Group 2:

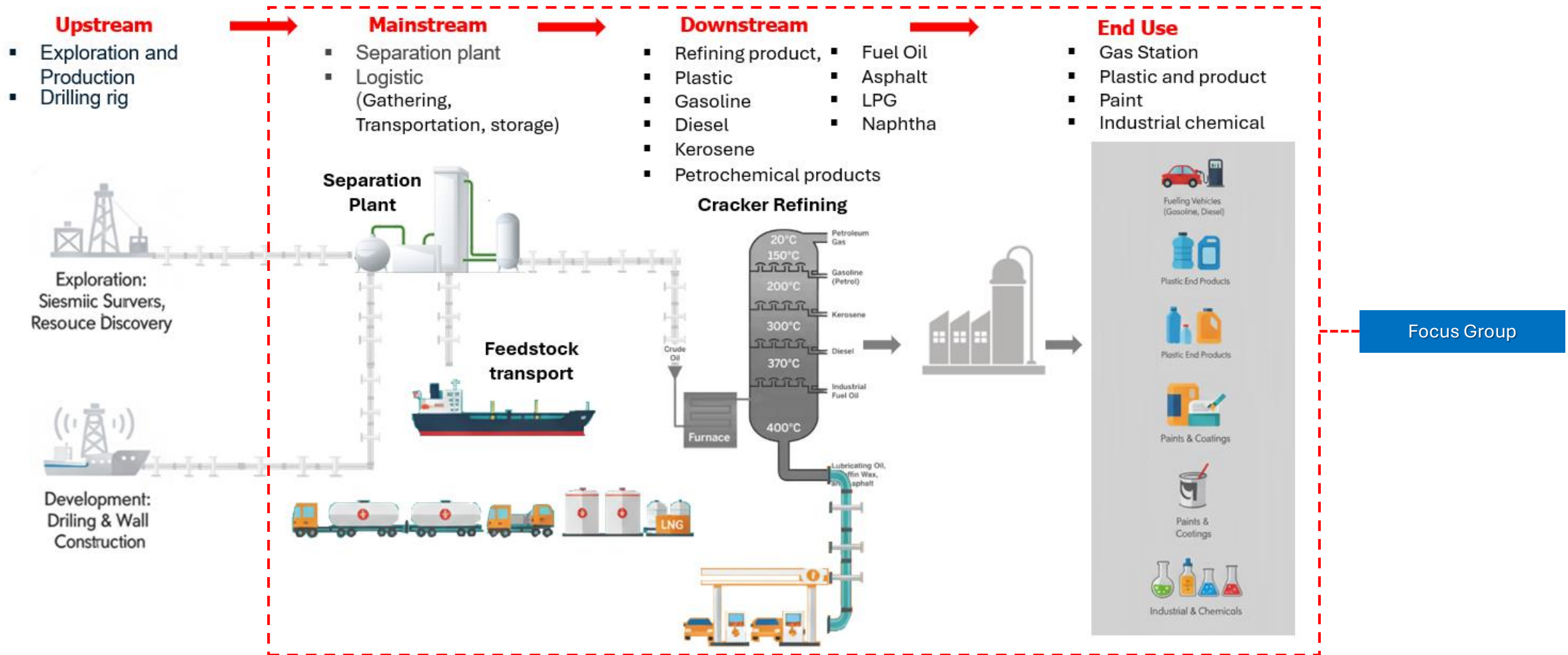
Financed Emission Control

Need to control their
emission by control
outstanding or engage them
to do reduction plan

* Note: exclude 3
companies in the
intersected area

The prioritization process to define “Focus Group” of customers (accounting 88% of oil & gas portfolio)

Oil & Gas on Petroleum Value Chain



Note: Environmental and Climate (E&C) risk management policy identifies O&G as sensitive business and activities that needs to control and avoid transaction. The KRI (Key Risk Indicator) is set at 15% for outstanding of these business to the bank's total loan outstanding and investment.

Engagement Strategy

Sectoral Context

The global transition toward net-zero emissions is reshaping the refining industry. Once reliant on fossil fuels, refineries now face growing pressure to decarbonize, thus creating both challenges and opportunities to build resilient, low-carbon business models. Accounting for around 4–5% of global CO₂ emissions, mainly from distillation, cracking, and hydrogen production, the sector must accelerate investment in clean energy and low-carbon technologies. According to the IEA, oil and gas companies need to shift from a 1:1.8 to a 1:10 fossil-to-clean energy investment ratio by 2030 to align with the Net Zero Scenario.

Transition Lever

Operational Decarbonization

Refinery decarbonization begins with the adoption of electrification and renewable energy to replace fossil fuels, e.g. electric boilers, heat pumps, green hydrogen, which can reduce CO₂ emissions by up to 30%. In parallel, mitigating methane leakage and flare gas through FGRS systems can further cut total emissions by up to 75% by 2030.

Carbon Capture, Utilization, and Storage (CCUS)

A key decarbonization pathway for refineries is the adoption of CCUS) for high-emission units such as hydrogen reformers, FCCs, and fired heaters. Captured CO₂ can be stored underground or reused for enhanced oil recovery and synthetic fuel production.



Portfolio Transformation

Refineries are expanding into renewable fuels and low-carbon chemicals, such as SAF, renewable diesel, and bio-naphtha. SAF can reduce greenhouse gas emissions by up to 80%, and many refineries are converting hydrotreating and hydrocracking units into bio-refineries, enabling a rapid, low-cost transition aligned with the circular economy.

Nuclear Energy

Nuclear energy can supply carbon-free heat, power, and hydrogen for refineries. SMRs and HTGRs provide high-temperature heat for processes like cracking and reforming, while also producing zero-carbon electricity and “pink” hydrogen. In the long term, nuclear-assisted CCUS can further cut emissions.

Sectoral Context

The petrochemical industry is a critical sector of the modern economy but emits over 2.2 gigatons of CO₂ annually. Decarbonization in this sector is complex due to the deep integration of its products in industrial and consumer applications. Achieving Net Zero therefore requires a combination of operational efficiency, technological innovation, and circular economy principles.

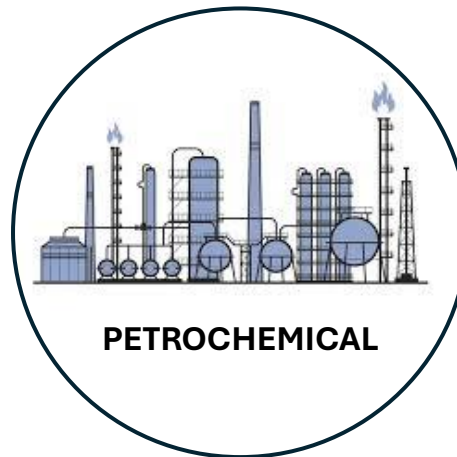
Transition Lever

Electrification of High-Temperature Processes

Decarbonization in the petrochemical sector begins with the adoption of **electric steam crackers** to replace fossil fuel combustion in steam cracking, directly reducing CO₂ emissions and improving thermal efficiency. Emerging technologies, such as **shockwave reactors**, use plasma and pulsed electric fields to achieve high-temperature chemical reactions rapidly.

Low-Carbon Feedstocks

Decarbonization in the petrochemical sector relies on the use of bio-based, recycled, and CO₂-derived feedstocks. These feedstocks can be processed in existing crackers and reformers, reducing the demand for virgin fossil resources, lowering lifecycle emissions, and supporting low-carbon, circular production.



Carbon Capture Solutions

CCUS enables the petrochemical sector to capture CO₂ from high-emission units such as steam reformers, crackers, and ammonia plants, for storage or conversion into synthetic fuels. It can reduce process emissions by up to 90% and is a critical technology for decarbonizing hard-to-abate operations.

Advanced Recycling Technologies

Advanced recycling methods, such as chemical recycling, pyrolysis, and gasification, convert plastic waste into feedstocks for steam crackers or reformers, reducing reliance on virgin fossil resources, lowering lifecycle emissions, and promoting a circular carbon economy.

Sectoral Context

Thailand's gas distribution sector plays a critical role in the country's energy system, with natural gas accounting for over 60% of electricity generation. Key challenges include reducing methane and CO₂ emissions across the value chain and adapting to electric vehicles and alternative fuels. While natural gas serves as a bridge fuel, its long-term role remains uncertain as renewable energy and hydrogen continue to expand.

Transition Lever

CH₄ Leakage Reduction

Advanced LDAR programs use infrared cameras, drones, and real-time sensors, upgrade pipelines and compressors, and deploy methane recovery systems, while digital platforms and predictive analytics help reduce leaks and enable proactive prevention.

Electrification and Efficiency in Distribution

Electrifying operations and enhancing efficiency across the gas network can reduce Scope 2 emissions through electric-driven compressors, smart grid technologies, and high-efficiency motors, while improving system reliability and supporting the transition to clean energy.



Transformation of Gas Stations

Gas stations are evolving into multi-energy hubs with EV charging, hydrogen, and biofuels, integrating solar, storage, and smart systems to cut emissions, improve efficiency, and diversify services.

Direct Power Purchase Agreements

The adoption of DPPAs enables the gas sector to decarbonize electricity used in compression and control systems by procuring renewable power directly, ensuring long-term cost stability and verifiable emission reductions.

Participation in Carbon Credit Markets and Community-Based Projects

Participation in T-VER projects enables the gas distribution sector to offset residual carbon emissions and support Net Zero goals through investments in community-based renewable energy and reforestation initiatives, generating verified carbon credits while promoting local sustainability.

Sectoral Context

Thailand's plastics and chemicals manufacturing sector plays a key role in the economy and supports multiple industries, yet it accounts for up to 7.3% of the country's greenhouse gas emissions. Manufacturers must transition to low-carbon operations, circular material use, and sustainable product design to align with the BCG model and the Net Zero 2050 target.

Transition Lever

Material Innovation and Substitution

Material innovation and substitution reduce carbon emissions in the plastics sector by replacing fossil-based polymers with bio-based or recycled alternatives, lowering lifecycle emissions. Lightweighting, material blending, and coating technologies enhance performance, enable recyclability, and minimize waste.

Circular Design and Recycling Infrastructure

Designing packaging for recyclability, reuse, and composability, combined with advanced recycling technologies and efficient collection and sorting systems, helps reduce waste, minimize the use of virgin materials, and support a circular economy, contributing to Thailand's 100% recyclable packaging target by 2027.



Decarbonizing Paints, Coatings, and Industrial Chemicals

Carbon and VOC emissions in paints, coatings, and industrial chemicals can be reduced by using water-based, bio-based, or high-solid formulations, substituting fossil-based ingredients with renewable materials, and implementing closed-loop solvent recovery and zero-VOC technologies to minimize emissions and pollution.

ERP Framework & Plastic Waste Roadmap

The ERP framework and Plastic Waste Roadmap drive Thailand's plastics sector toward Net Zero, targeting 100% recyclable packaging by 2027. They incentivize producers to take responsibility across the product lifecycle, enhance collection and recycling, reduce landfill waste, and support a low-carbon, circular economy.

LH Bank - Stakeholder Engagement Framework for Transition Plan



LH Bank adopts the AA1000 Stakeholder Engagement Standard (AA1000SES) to establish a transparent, systematic, and sustainability-aligned stakeholder engagement framework. The Bank aims to foster mutual understanding and integrate stakeholder feedback into its ESG strategy, aligned with TCFD, SDGs, and the Bank's Sustainable Finance Framework.

LH Bank classifies its stakeholders into six key groups as follows :

LH Bank Stakeholder Engagement Overview

Stakeholders	Expectations	Strategic Approaches	Engagement Initiatives
Regulators & Government Agencies	Ensure bank practices align with national sustainability policy and direction.	- Align guidelines with BOT, DEEC, FTI, TGO, TBA, ADB etc. - Participate in national decarbonization initiatives. - Collaboration on SME and Carbon Transition Initiatives	- Join policy workshops and sector working groups - Co-training on Carbon Markets & ESG Guidelines - Regular ESG compliance monitoring
Customers	- Establishment of transition pathway that strengthen long-term competitiveness. - Provide a one-stop ecosystem.	- Develop transition finance solutions tailored to sector needs. - Support Sustainable Loan - Green Finance for SMEs Programs - ESG awareness via Seminar and digital platforms.	- Transition readiness assessment for priority clients. - Technical solution Sector-specific ESG/Net Zero workshops with partners. - Deep-dive advisory on energy efficiency and carbon reduction.
Partners	- Transparent and sustainable collaboration - Co-development of green and financial innovations	- MOU and Partnership Programs - Identify sector-specific partners. - Identify technology-specific partners relevant to transition needs. - Develop co-offering packages with partners.	- Technical on-site assessments. - Pilot collaboration projects e.g. Smart Factory, Net Zero Pilot. - Create Co-brand Seminar / Roadshow.

LH Bank Stakeholder Engagement Overview

Stakeholders	Expectations	Strategic Approaches	Engagement Initiatives
Shareholders & Investors	- Stable and sustainable investment returns - Transparent and accountable governance - Effective risk management and long-term resilience	- Annual General Meeting (AGM) - Annual / Sustainability Reports - Investor Relations Meeting	- Communication and Q&A sessions - Transparent data disclosure through reports - Regular ESG materiality updates
Management & Employees	- Safe, fair, and inclusive workplace - ESG skill development - Active participation in sustainability	- Town Hall / ESG Talk - Training programs (ESG Scholarship) - Internal feedback channels	- Bottom-up feedback through surveys - ESG capability-building workshops - Recognition programs for sustainability culture
Communities & Society	- Support for local community sustainability - Financial literacy and inclusion programs - Environmental and social responsibility	- Local Community toward Sustainability” Project / Financial Literacy Sandbox - CSR and Volunteering Activities	- Local Community Workshop - Social impact measurement and beneficiary feedback

Customer Engagement Plan: Top 10 Absolute Emissions (Group 1)

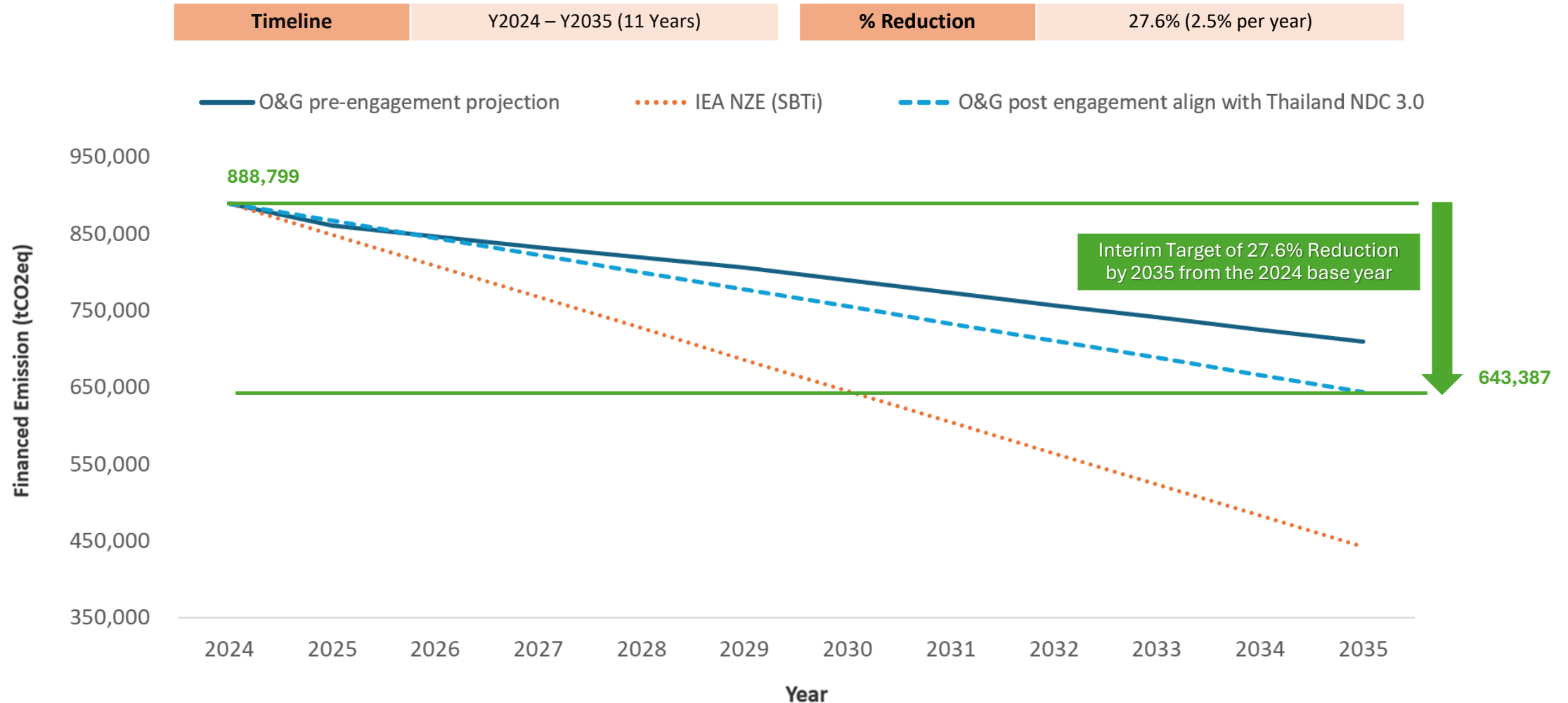
Refinery & Petrochemical	Transition Focus ☐ Operational decarbonization ☐ Support GC Group's transition toward Net Zero and Circular Economy through Green Financing	
Engagement Approach		Expected Output
Sustainable finance solutions that align with GC's group strategy in achieving their decarbonization and circular economy goals.		Green Loan projects with measurable ESG-linked KPIs to key CAPEX (e.g. Energy CCUS, Hydrogen, SAF, Advanced/Chemical Recycling)
Gas/Fuel	Transition Focus ☐ Transformation of gas/fuel stations and improving carbon efficiency, aligning Net Zero 2050 roadmap ☐ Clean energy solutions and operations, decarbonization ☐ Development of Hydrogen-Ready infrastructure for future adoption	
Engagement Approach		Expected Output
- Approach and initiation of Green / Transition Loan Projects (e.g., fleet electrification, clean fuel production, EV Charing, Battery Storage) - Conduct advisory sessions on fuel transition pathways and regulatory trends. - Partner-led assessments on hydrogen-infrastructure readiness.		- Expected GHG reduction 5–7%/year from fleet reforms and 10–15% from fuel switching and Loan-linked emission reduction (tCO₂e/year) - Gas & Fuel Sector Emission Reduction Pathway (2030/2035)
Plastics	Transition Focus ☐ Material Innovation ☐ Circular Design & Recycled Material Integration	
Engagement Approach		Expected Output
- Provide workshops to build shared understanding on circularity and low-carbon production. - Implement packaging redesign/eco-design to reduce virgin plastic. - Implement full Waste-to-Value systems in factories.		- Carbon intensity reduced by 25–35% by 2030. - Virgin plastic reduction of 10–15% through packaging redesign. - Zero process waste-to-landfill.

Customer Engagement Plan: Top 7 Intensity Emissions (Group 2)

Gas/Fuel	Transition Focus ❑ Transition from diesel and heavy fuel oil toward LNG, Bio-LPG, and Green LPG ❑ Fleet and logistics decarbonization (Euro VI trucks, EV/Hybrid vehicles) ❑ Methane leakage reduction through digital monitoring and smart detection systems ❑ Development of Hydrogen-Ready infrastructure for future adoption
Engagement Approach Near-Term Pathway 2025–2030	Expected Output
• Conduct baseline emission assessment for fleet, storage, and distribution and Set initial reduction target. • Develop Fleet Transition Plan (10–15% EV/LNG conversion annually). • Collaborate with clean energy partners.	• Annual GHG reduction of 5-7% from fleet and fuel switching projects. • Bio-LPG usage increased to ≥ 30% of total fuel mix. • EV/LNG fleet conversion of ≥ 40-50% by 2030.
Plastics	Transition Focus ❑ Transition to High-Efficiency, Low-Carbon machinery ❑ Increased adoption of renewable materials such as PCR Resin and Bio-Based Plastics ❑ Packaging redesign to reduce virgin plastic consumption (Lightweighting) ❑ Development of Product Carbon Footprint (PCF) aligned with ISO 14067
Engagement Approach Near-Term Pathway 2025–2030	Expected Output
• Conduct PCF and Energy Audit to identify key hotspots and Set initial reduction target. • Replace machinery with high-efficiency equipment. • Implement packaging redesign/eco-design to reduce virgin plastic. • Implement full Waste-to-Value systems in factories.	• Carbon intensity reduced by 25–35% by 2030. • Replacement of ≥ 50–60% of low-efficiency machinery. • Virgin plastic reduction of 10–15% through packaging redesign. • Complete PCF and scope data aligned with ISO standards. • Zero process waste-to-landfill.

Net Zero Target

- We are committed to achieving Net Zero in our financed portfolio in line with Thailand's aspiration for the NDC 3.0 and will be accelerating this journey where possible.
- Current pre-engagement projection of our Oil and Gas portfolio is slower than NDC and IEA NZE pathway, so we will implement engagement **action plans** with 17 customers in focus group to close the gap.



Engagement

- ❑ Conduct engagement by emphasizing on focus group customers (one-on-one engagement with Conglomerate segment)
- ❑ Deliver technical advisory and financing solutions

Products

- ❑ Develop and offer products & services to meet client's needs for climate financing solutions:
 - Green loan
 - Green transition loan
 - Green deposit
 - Sustainability linked loan
 - Complex product (e.g., Green trade finance program)

Evercomm

- ❑ Apply NX Plan platform to generate report and decarbonization solutions for each client



ADB

- ❑ Collaborate with ADB for the development of:
 - Blended Finance
 - Technical advisory programs
 - Complex products

FE Data Enhancement

- ❑ Elevate financed emissions data quality by targeting on action emissions data level

New Opportunities

- ❑ RM approaching new clients, focusing on listed O&G companies/subsidiaries
- ❑ Deliver green seminars