Oilbi Tanzania LNG Project:

Basic Plan

Mvua Kubwa Project

*Mvua Kubwa means ‘Heavy Rain’ in Swahili

Sep. 2025

Oilbi Ltd.

Oilbi

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I. Key Points

1. Project Introduction

A. Overview

- An integrated model LNG project led by **Oilbi Ltd**., an independent energy company headquartered in Tanzania, covering the entire process from plant construction to LNG production and sales.
- **Project Name**: Mvua Kubwa Project (Mvua Kubwa means "Heavy Rain" in Swahili).
- The project involves extracting natural gas from offshore blocks in Tanzania where Oilbi has secured 100% exploration and operation rights, constructing an onshore complex to produce **2.5 million tons of LNG annually.**
- The target for initial production is early 2030, with a planned operational period of **28 years**.

B. Oilbi's Block Reserves

- **Proven Reserves (P1):** Approximately **3.5 Trillion cubic feet (Tcf).**
- **Probable Reserves (P2): 36 Tcf.** (18.2 Tcf in Block 3R and 17.8 Tcf in Block 2R)

C. Legal Basis for Project Promotion

- The PSA is in its final stage and is ready for signing. The agreement will provide full legal certainty and protection for Oilbi's activities. The plan is to sign the PSA with the Tanzanian government in Q4 2025.
- This agreement will secure the legal rights for the exclusive exploration and development of gas resources within the designated blocks.

2. Market Analysis

A. Global LNG Market Outlook

- Projected to grow by over 60% by 2040, driven by demand from Asian markets like China and India.
- A temporary oversupply is expected due to large-scale LNG facility expansions led by the US and Qatar.
- However, analyses from sources like Shell and Woodside suggest that demand will exceed supply in the 2030s.

B. Target Markets

- Primary focus is on Asian and European markets, including South Korea.
- Plans to sign offtake agreements with Korean energy companies.

3. Proceeding Plan

A. Joint Venture (JV) with Major Korean Energy Corporations

- Oilbi will contribute its assets in-kind, while Korean partners (e.g., KOGAS, POSCO INTERNATIONAL) will provide technology and capital.
- A consortium will be formed around this JV, leading to the establishment of a Special Purpose Company (SPC)

B. Plant Construction

- Leading Korean construction companies with global LNG plant experience, such as Daewoo E&C and Hyundai E&C, are being considered as contractors.
- A consortium will be formed around this JV, leading to the establishment of a Special Purpose Company (SPC)

4. Financial Analysis

A. Estimated Total Project Cost: Approximately $3.6 billion

B. Financing Plan

- A mix of Oilbi equity sales, capital increase through the consortium, institutional investment, and debt financing.

C. Key figures (estimated)

- Annual Revenue: $1.75 billion (2.5 million tons x $700/ton).

  Total Revenue: $49 billion.
- *Price per ton is based on JKM DES at $13.5/MMBtu,

  with 1 ton = 52 MMBtu.
- Cumulative Profit (28 years): Approx. $10.9 billion (pre-tax) /

$7.6 billion (post-tax).

- Meanwhile, the total cumulative revenue that Tanzanian government will receive over 28 years is approximately $ 29.1 billion(including royalty), which average about $1 billion per year.

- Oilbi's Net Present Value (NPV): Approx. $3.5 billion.
- Internal Rate of Return (IRR): 20.88%.
- Weighted Average Cost of Capital (WACC): 5.81%

II. Project Overview

1. Background and Objectives

A. Background

This project involves the construction of an LNG complex with an annual production capacity of 2.5 million tons in the Mtwara region of southeastern Tanzania. The project proponent, Oilbi Ltd., has been involved in offshore gas exploration and development in Tanzania since 2011. The legal foundation for the project is being established through an impending Production Sharing Agreement (PSA) with the Tanzanian government for the exploration and development of natural gas in offshore Block 2R and Block 3R. Block 3R, where Oilbi holds development rights, contains proven recoverable reserves (P1) of approximately 3.5 Tcf, with the entire block estimated to hold over 30 Tcf of probable reserves (P2).

B. Objectives

The project aims for initial production in early 2030. A key success factor will be strategic partnerships with Korean companies, which have strong value chains across the entire energy industry, from upstream (production) to midstream (transport) and downstream (distribution). The combination of Oilbi's substantial gas reserves, the long-term growth of the global LNG market, Tanzania's strategic location, Korean corporate technology and capital, and Oilbi's robust local network is expected to create powerful synergies.

C. Vision and Values

Oilbi's vision is to become a leading LNG producer in East Africa, establishing Tanzania as a vital hub for the region’s energy transition and economic development.

This vision is driven by three core principles:

- **Profitability**: Oilbi is committed to generating a high rate of return for its investors through a stable and highly profitable project.
- **Sustainability**: Oilbi prioritizes environmental stewardship by integrating advanced, eco-friendly technologies like Carbon Capture & Storage (CCS) to minimize the project's ecological footprint.
- **Social Responsibility**: Oilbi believes in giving back to the community. The project is designed to create jobs, develop skills, and improve local infrastructure, ensuring benefits are shared with the people of Tanzania.

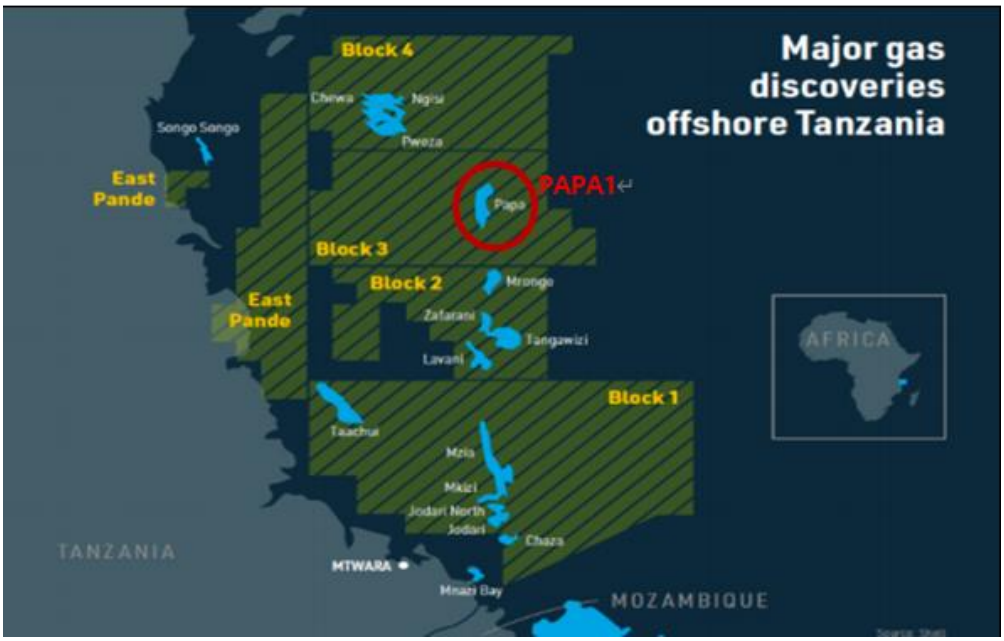
2. Company Introduction and History

A. Company Introduction

Oilbi is an independent E&P (Exploration, Development, Production) company. It began operations in the early 2000s under the name Apex Group, focusing on projects in African nations such as Namibia, the Republic of the Congo, and Tanzania. In 2011, Apex Group established the current Oilbi headquarters in Dar es Salaam, Tanzania, and changed its name to Oilbi Ltd. in 2015. The founder, Jae Lee, has over 30 years of business experience in Africa, starting with a diamond business in South Africa in his 40s and later focusing on the oil and gas sector, building extensive experience and a strong network.

B. Major Activities in Tanzania

- **2011:** Participated as a strategic investor in an exploration project through a partnership with the Tanzania Petroleum Development Corporation (TPDC) and the British multinational BG Group.
- **2012:** Partners BG Group and Ophir Energy discovered a major gas field named Papa-1 in Block 3, with recoverable reserves of approximately 3.5 Tcf.
- **2015:** Submitted a PSA application to the Tanzanian government for Block 2R and Block 3R.
- **2019:** Acquired all of Ophir Energy's shares in Block 3, securing a 100% stake. This led to the drafting of a model PSA for Block 2R and Block 3R with the government. The model PSA integrated the adjacent Block 3 into Block 3R, for which the application was filed in 2015. Following this, a preliminary feasibility study and basic design for an LNG plant were conducted.



C. Relationship between Oilbi and Oilbi Korea

1) Oilbi Korea

Oilbi Korea is the official project partner and operating entity of Oilbi, responsible for driving Oilbi's LNG development initiative in Korea and globally, and is empowered by Oilbi to negotiate, manage, and develop the LNG project through a robust legal framework and strategic cooperation.

2) Relationship between Oilbi and Oilbi Korea

Oilbi(Tanzania) and Oilbi Korea(Republic of Korea) have established a strategic partnership for the successful development of Oilbi LNG Project named 'Mvua Kubwa Project' in Tanzania, with defined roles and mutual responsibilities based on their Project Development Agreement.
Both companies are deeply committed to active collaboration, transparent communication, and good faith cooperation throughout all phases ensuring the project's goals are achieved efficiently and substantially

a) Oilbi's Roles and Responsibilities

- **Strategic Leadership**: Sets the overall strategic direction for the project.
- **Government Negotiations**: Leads all negotiations with Tanzanian government authorities and TPDC.

- **Stakeholder Management**: Establishes and manages relationships with key local stakeholders and global energy partners.
- **Regulatory Oversight**: Oversees compliance with national regulations and maintains principal rights under PSA.

b) Oilbi Korea's Roles and Responsibilities

- **Master Plan Development**: Develops the project's Master Plan including detailed strategies for each phase.
- **Investment Leadership**: Leads investment attraction, forms consortium, and partners with leading Korean corporations.
- **External Relations**: Manages public relations, investor relations, and supports financial planning for the project.

D. Executive Leadership

- **Oilbi Ltd.**

Executive	Background & Experience	Key Contributions & Strategic Value
Jae Lee *Founder & Chairman* **Born:** 1952, Seoul, Korea **Education:** High School graduate, moved to United States	**Professional Timeline** **40s:** Diamond business in South Africa with Maurice Tempelsman (renowned Belgian jeweler) **50s:** Expanded to oil & gas sector in Namibia and Republic of Congo **Since 2011:** Dedicated focus on Tanzanian energy sector development	• **Local Expertise:** Over 30 years of African business experience • **Government Relations:** Strong relationships with Tanzanian authorities • **Cross-border Connections:** Extensive network across African energy sector • **Strategic Vision:** Long-term commitment to Tanzania's energy development since 2011
Makongoro Nyerere *Board Member* **Born:** 1959, Tanzania **Heritage:** Son of Julius Nyerere, Founding President	**Career Background** **Political:** Prominent figure in Tanzanian politics **Military:** Retired army officer **Business:** Respected leader in business and civil society **Personal:** Longtime friend of Jae Lee	• **Political Access:** Direct connections to highest levels of government • **Legacy Network:** Father's reputation as "Father of the Nation" provides unparalleled credibility • **Stakeholder Relations:** Facilitates partnerships with government authorities and local investors • **Cultural Bridge:** Ensures project alignment with local priorities and national interests

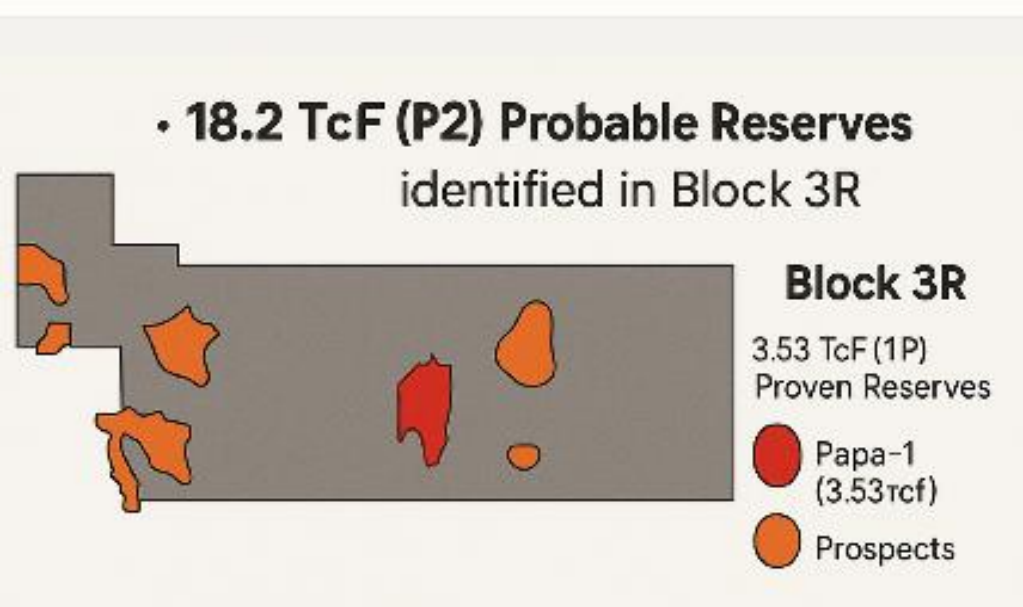
- **Oilbi Korea**

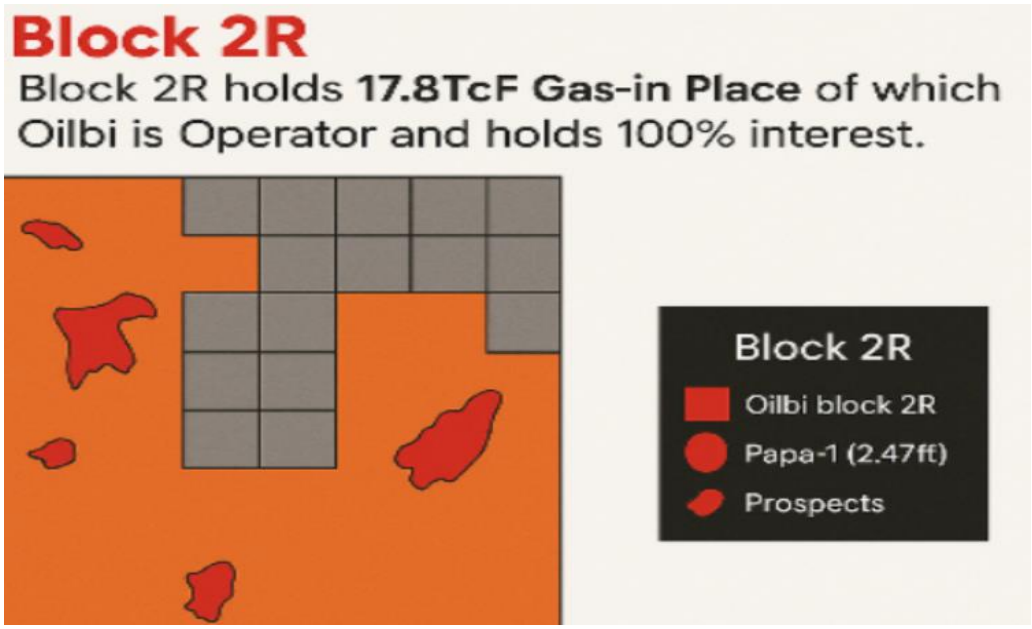
Executive	Background & Experience	Role & Responsibilities
Jae Gook Yang *Representative & CEO/Board Member* **Born:** 1961, Korea **Career:** Former diplomat (1991-)	**Diplomatic Postings** Served in various international posts: • Italy • Jordan • Egypt • Argentina • Brazil • Japan • Slovakia	• **Corporate Structuring:** Leads cross-border business development • **Global Partnerships:** Leverages diplomatic experience for international relations • **Project Navigation:** Manages complex international project requirements • **Strategic Leadership:** Oversees Korean operations and partnerships
Kim Seong-bin *CMO/Board Member* **Born:** 1966 **Education:** Hankuk University of Foreign Studies	**Professional Experience** Various roles at Samsung Group, bringing corporate experience from one of Korea's leading conglomerates	• **Marketing Strategy:** Leads marketing activities and brand development • **External Communications:** Manages investor relations and public communications • **Corporate Experience:** Applies Samsung Group best practices to Oilbi operations
Kim Young-ho *CSO/Board Member* **Born:** 1965 **Education:** Seoul National University	**Industry Experience** Extensive career in advertising, branding, and performing arts industry	• **Strategic Planning:** Responsible for cooperative strategy and business planning • **Partnership Development:** Develops strategic alliances and joint ventures • **Creative Strategy:** Applies branding expertise to project positioning

3. Reserve Information for Oilbi's Blocks

- **Proven Recoverable Reserves (P1):** Papa-1 (Block 3R) holds **3.53 Tcf** of natural gas. This volume can be converted into approximately 70 million tons of LNG, sufficient for 28 years of production at a rate of 2.5 million tons per year.

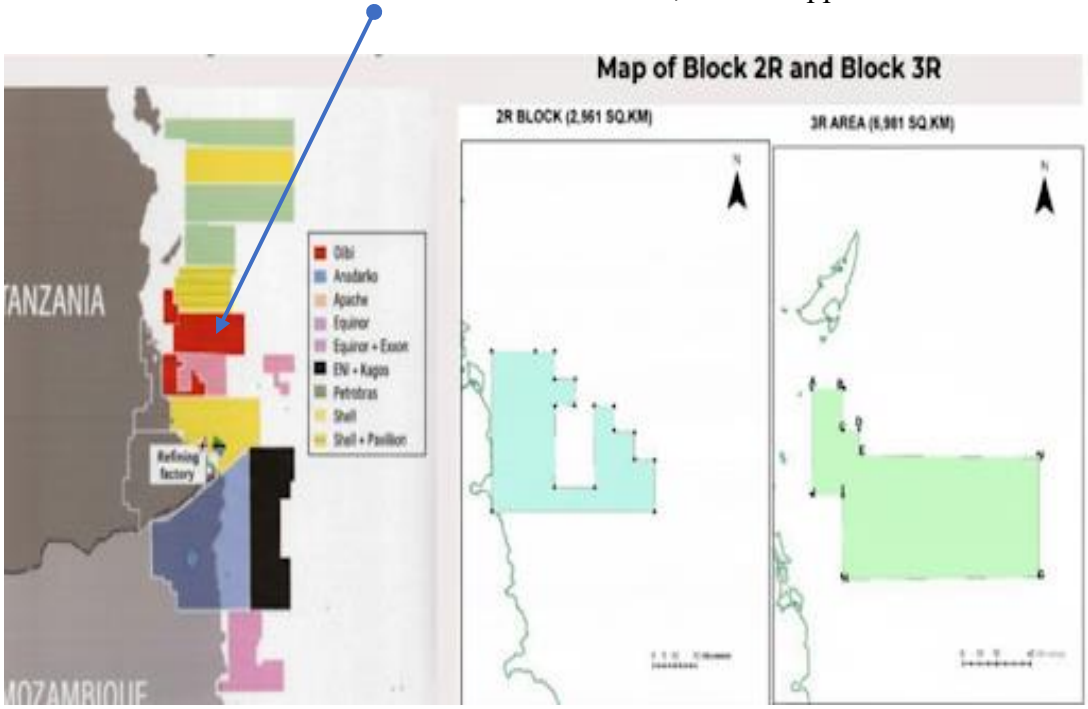
- **Probable Reserves (P2):** The probable reserves (P2) are approximately **36 Tcf** (18.2 Tcf in Block 3R and 17.8 Tcf in Block 2R), with the potential for further expansion through additional exploration.





- **Location and area of the Blocks**

The two red blocks are: the lower one is Block 2R, and the upper one is Block 3R.



The offshore region of Tanzania has shown a relatively high success rate in gas exploration and drilling due to its promising geological characteristics. Detailed information on Oilbi's gas block exploration and drilling is maintained by the global energy services company, Schlumberger.

4. Production Sharing Agreement (PSA)

A. The Current Status

- The process is in the final stage, awaiting signature.

B. Key Contents

1) Purpose

To operate optimal long-term crude oil/gas resource development projects based on international environmental, social, and sustainable economic principles.

2) Contracting Parties

- Ministry of Energy, Tanzania
- Tanzania Petroleum Development Corporation (TPDC)
- Oilbi Ltd.

3) Contract Period

Divided into exploration and development phases. The exploration period is 4 years, extendable twice.

4) Exclusive Exploration and Development Rights

Oilbi Ltd. holds exclusive rights for oil and natural gas exploration and development in Blocks 2R and 3R.

5) Royalty: 7.5%

6) Cost Recovery Limit: Up to 75% of Total Production

This is a critical item and has been analyzed in detail.

a. Overview

- **Ratio to Total Production**

This amounts to approximately 69.4% of total production, calculated as 75% of the remaining production (92.5%) after deducting the 7.5% royalty.

"Profit Gas" constitutes 92.5% - 69.4% = 23.1%. Of this, Oilbi's pure share is 23.1% x 30% = 6.9%.

The total share distributed to the investor from the entire production is approximately 69.4% + 6.9% = 76.3%.

- **Eligible Cost Recovery Items (in order)**

Most costs are covered, including exploration and drilling costs, operating costs, capital expenditures (CapEx), and financing costs.

Recovery occurs in the following order: operating costs, exploration costs, and development costs.

b. Comparison with International Standards

- **General Practice**

According to analysis by The Oxford Institute for Energy Studies, most PSA contracts have a cost recovery limit of approximately 50%.

The investor's (oil/gas company's) share of total production is generally about 40%.

- **Comparative Analysis**

If the cost recovery limit is 50%, even if the production split between the investor and the resource-owning government is 50:50, the investor's share would still be approximately 70% of the total production.

c. Significance of the Cost Recovery Rate

* This represents the maximum recoverable investment, a crucial factor for a project's economics and cash flow. * A high recovery limit is fundamentally a strategy to mitigate investment risk, providing a larger safety net and playing a vital role in reducing initial investment risk.

7) Gas Revenue Distribution Ratio

300-449.999 MMSCFD: TPDC 70%, Oilbi 30% (for annual production of 2.5 Mt)

600-749.999 MMSCFD: TPDC 80%, Oilbi 20% (for annual production of 5.0 Mt)

Over 750 MMSCFD: TPDC 85%, Oilbi 15% (for annual production of 7.5 Mt)

MMSCFD (Million Standard Cubic Feet per Day) is a daily production unit. Assuming a confirmed reserve of 3.53 Tcf (approx. 70 million tons) converted at 52 MMBtu per ton (S&P Global standard), an annual production of 2.5 million tons is approximately 345.5 MMSCFD.

8) Development Costs

TPDC may bear a minimum of 25% of development costs, which would necessitate a joint operating agreement.

9) Assignment of Rights

Oilbi's rights and obligations, in whole or in part, can be assigned or transferred to third parties, including affiliates, with the prior written consent of the Minister of Energy.

10) Dispute Resolution

If disputes cannot be resolved through discussions between the parties or third-

party intervention, they will be resolved in accordance with the International Chamber of Commerce's (ICC) rules on conciliation and arbitration.

11) Local Content and Technology Transfer Obligation

Prioritize the use of local businesses and personnel, and commit to investment in training and technology transfer.

12) Freedom of Foreign Exchange and Remittance

Guarantees the freedom to open foreign currency accounts and remit dividend profits.

13) Restrictions on Unilateral Termination by the Tanzanian Government

14) Environmental, Social, and Governance (ESG)

Establish environmental and safety management systems, adhere to international standards, and mandate Environmental Impact Assessments (EIAs).

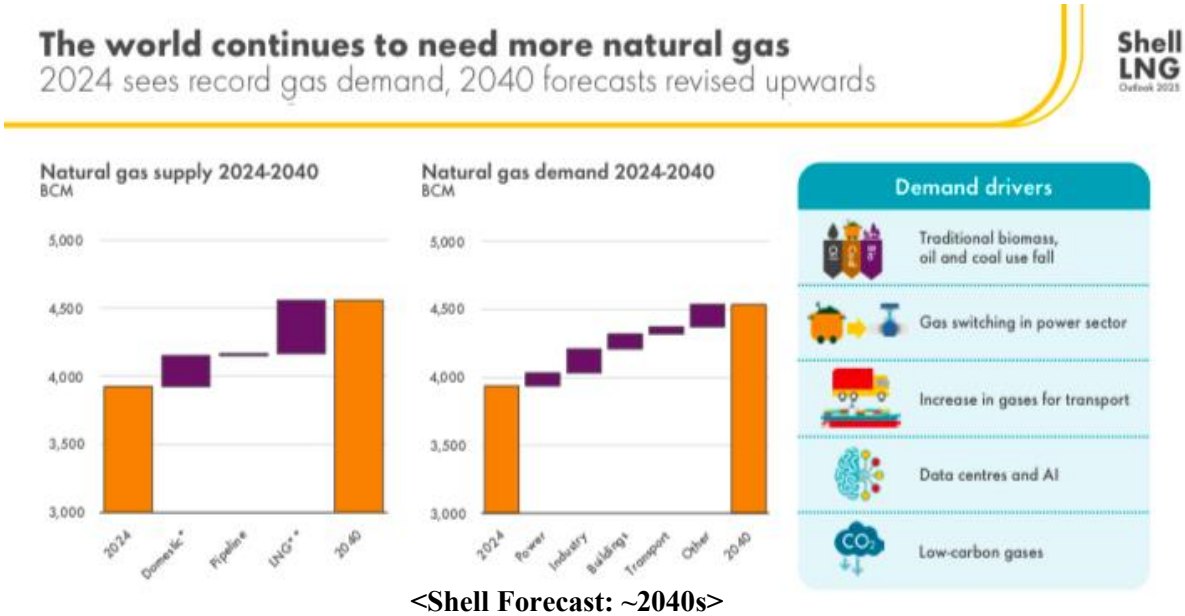
C. Significance of the PSA Signing

1) **Securing Exclusive Rights:** Oilbi has secured exclusive rights for the exploration and development of natural gas reserves in Blocks 2R and 3R, establishing a legal basis for resource development without competition.
2) **Competitive Royalty Rate:** The 7.5% royalty is relatively low compared to PSAs in other African and Latin American countries (e.g., Nigeria 10%, Brazil 12%), although rates vary by country and conditions (onshore/offshore, shallow/deepwater).
3) **Expedited Cost Recovery:** The 75% cost recovery clause allows for early recovery of investment and a rapid achievement of the breakeven point.
4) **Predictable Financial Outlook:** Clear revenue distribution rates between Oilbi and the Tanzanian government enable predictable short- and long-term financial forecasting for the project.
5) **International Dispute Resolution:** Contract provisions aligned with international standards allow for dispute resolution through international arbitration if issues arise.
6) **Gateway to Project Advancement:** Establishes a foundation for the full-scale advancement of the project, including the potential for partnerships with global companies.
7) **Long-Term Expansion:** The potential for additional exploration and drilling opens up long-term expansion opportunities through resource development.

III. Market Analysis

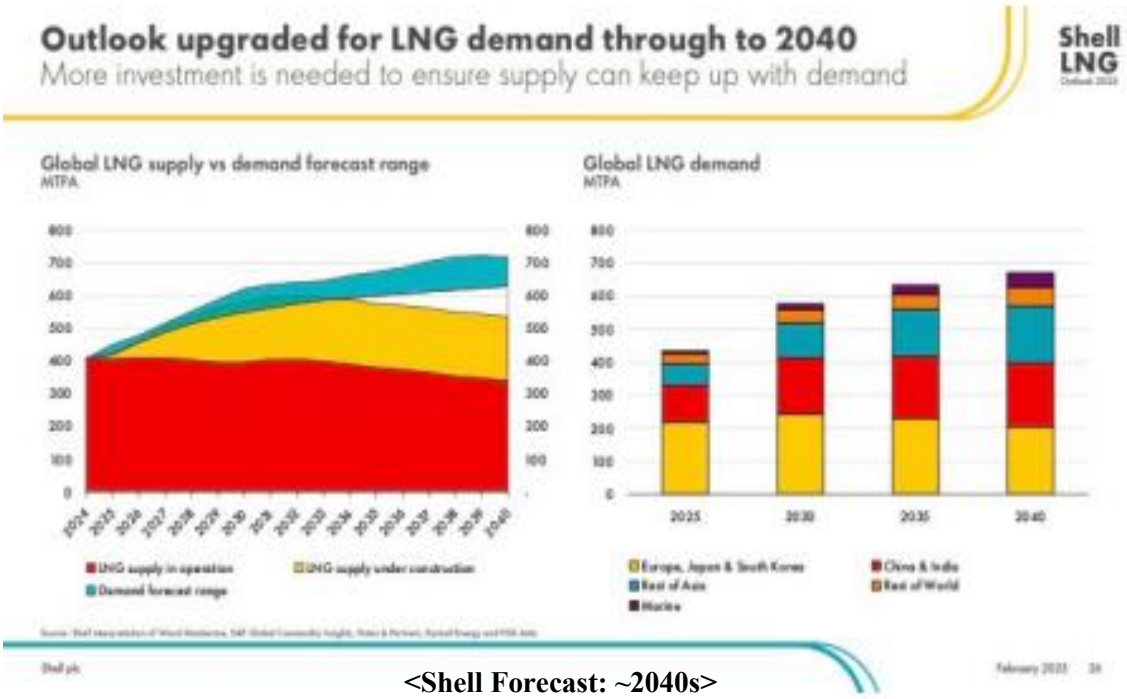
1. Global LNG Market Trends and Outlook

A. Overall Demand Growth



<Shell Forecast: ~2040s>

- According to Shell's 2025 LNG Outlook, global LNG demand is projected to **increase by approximately 60% by 2040**, driven by economic growth in Asia and the industrial sector's need to reduce greenhouse gas emissions.
- Global demand is forecast to reach **630 to 718 million** tonnes per annum.



<Shell Forecast: ~2040s>

B. Key Market Outlooks

1) Asian Market

According to Shell and energy data analytics firm Mackenzie, Asia's LNG demand is projected to **nearly double** from 270 million tonnes in 2024 to 510 million tonnes by 2050.

By 2050, global LNG trade is estimated to reach approximately 850 million tonnes, with the **Asian market expected to account for about 63%**.

2) China

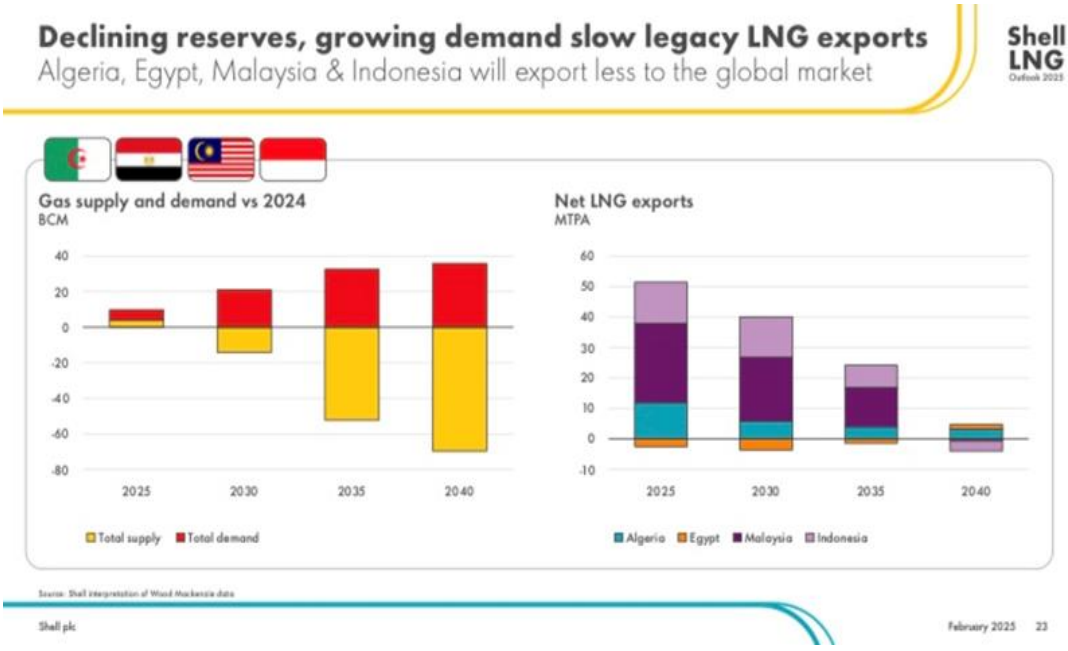
China is anticipated to maintain its position as Asia's largest importer.

However, while strong growth will continue until the 2030s, LNG demand is expected to slow down around 2040 due to factors such as increased pipeline imports Russia.

3) India and Southeast Asia

India's LNG demand is projected to **increase gradually until the 2030s**, then **accelerate rapidly in the 2040s** driven by economic growth (expected to exceed 88 million tonnes per annum by 2050).

Along with India, **Southeast Asia (especially Vietnam and the Philippines)** is forecast to emerge as a central hub for global energy demand, while traditional LNG exporters like Malaysia and Indonesia are gradually transitioning to become importers.



4) **Japan, South Korea, Taiwan**

These countries will **remain major traditional importers**, but their import volumes are expected to **gradually decrease or stagnate**.

5) **Europe**

LNG demand in Europe is projected to **stagnate or decline** due to ongoing energy transition policies, including the expansion of renewable energy, and enhanced energy efficiency.

The policy aims to achieve **'zero' imports of Russian gas** (including both pipeline and LNG), which was previously Europe's largest source (40%). In the medium to long term, the influence of Russian gas on the European market is expected to effectively diminish as alternative import sources like the United States are expanded and energy security policies are implemented.

C. Carbon Neutrality Goals and the Long-Term Sustainability of the LNG Business

1) Many countries have set **carbon neutrality targets for 2050**, and they're expected to continuously reduce carbon emissions until that year. The long-term viability of the LNG business will hinge on key factors like its **ability to reduce CO2 as a cleaner fuel**, carbon pricing policies, and the interplay between technological innovation and investment costs.
2) Recent advancements in **Carbon Capture, Utilization, and Storage (CCUS) technology** have significantly improved the ability to meet environmental regulations for greenhouse gas emission control. When applied to LNG liquefaction facilities, CCUS can achieve up to a **90% reduction in emissions**. This technological progress allows for the **extension of LNG facility and gas field lifespans**, thereby securing the **economic viability, competitiveness, and long-term sustainability** of LNG projects.
3) Balancing initial investment costs for carbon reduction technologies with economic feasibility is crucial. In the mid-to-long term, as technology advances and adoption costs decrease, **sufficient economic viability is anticipated**.
4) Meanwhile, with the accelerated global push for renewable energy expansion, it's essential to develop long-term survival strategies. These include the commercialization of CCUS and the adoption of **hybrid systems like energy mixes**. This could involve:
    - Establishing a **clean LNG ecosystem using solar power** and other renewables.
    - Commercializing **hydrogen and ammonia co-firing technologies** to transform LNG infrastructure into **blue hydrogen hubs**.

- Implementing **digital monitoring systems to reduce methane emissions**.

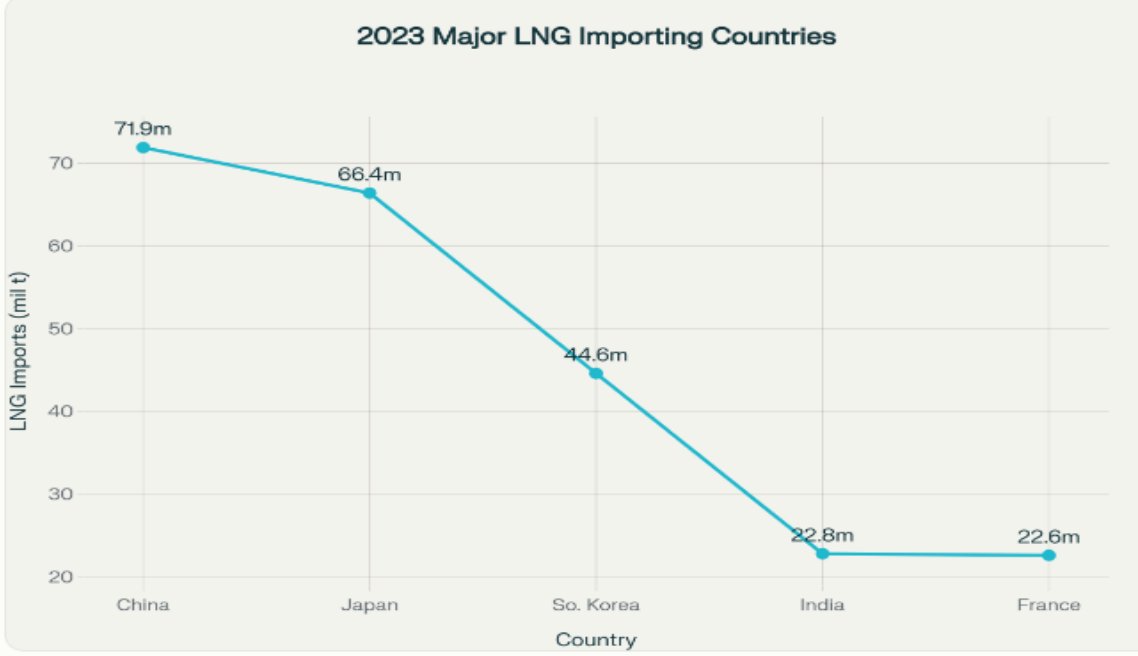
D. LNG Import and Export Ranking

- **Export Rankings (as of 2024)**

  United States > Australia > Qatar > Russia > Malaysia

- **Import Rankings (as of '23)**

  China > Japan > South Korea > India > France



E. Global Natural Gas Benchmark Spot Market Price Trends

* This information was compiled from various online sources.
(2024/25 Price Trends per 1 MMBTU / LNG Price per Ton based on 52 MMBTU)

1) **JKM (Japan Korea Marker / Asia Market):** $10-15 USD

- LNG Price per Ton: $520-780 USD

2) **TTF (Title Transfer Facility / European Market):** $11-14 USD

- LNG Price per Ton: $572-728 USD

3) **Henry Hub (North American Market):** $3.5-4.5 USD

- LNG Price per Ton: $182-234 USD

4) **SEAM (Southeast Asia Market / Southeast Asia Market):** $11-14 USD

- LNG Price per Ton: $572-728 USD

- *SEAM was introduced in October 2023 and is expected to gain increasing prominence in the global LNG market in the future.*

2. 2030s LNG Price Outlook (Based on JKM Benchmark Prices)

A. Analyzing Entities: Shell, Woodside, and McKinsey

B. Summary of Analysis and Outlook (Common to all three companies)

- The market is expected to exhibit **high price volatility** due to supply constraints and increasing demand.
- Prices are projected to **remain at a certain level**, driven by rising demand (primarily from Asia), delays in some projects (especially in the U.S.), geopolitical risks, and a structural environment where supply cannot keep pace with demand.

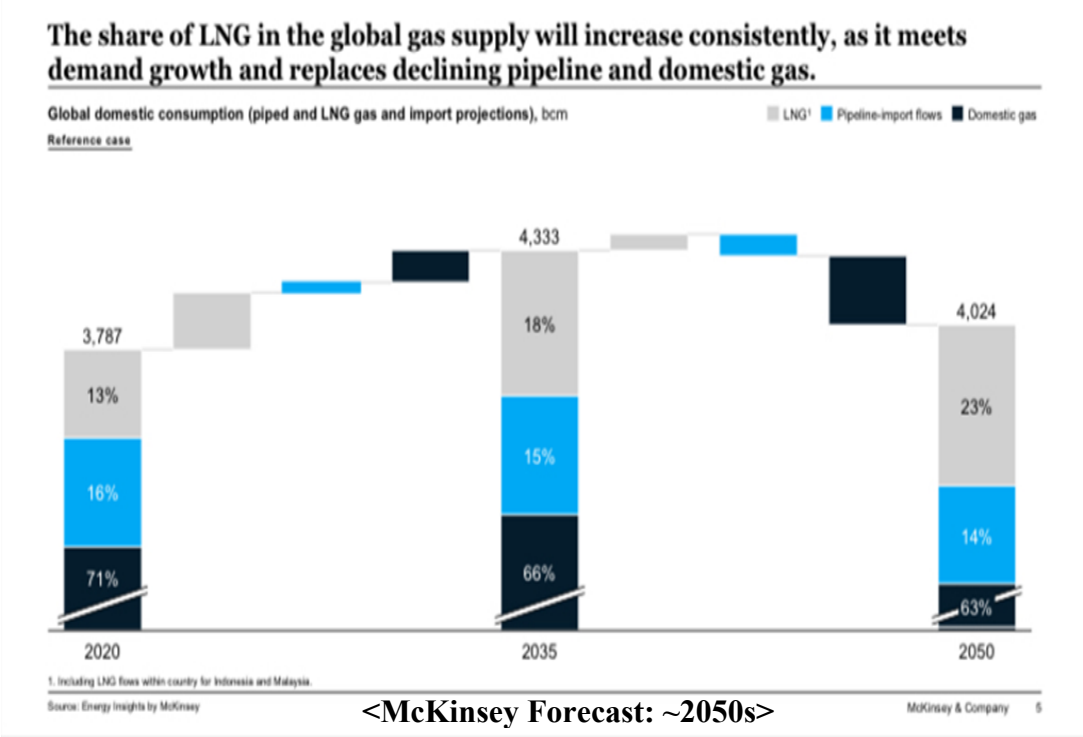
C. Price Forecasts

1) **Shell: $15~20/MMBTU**

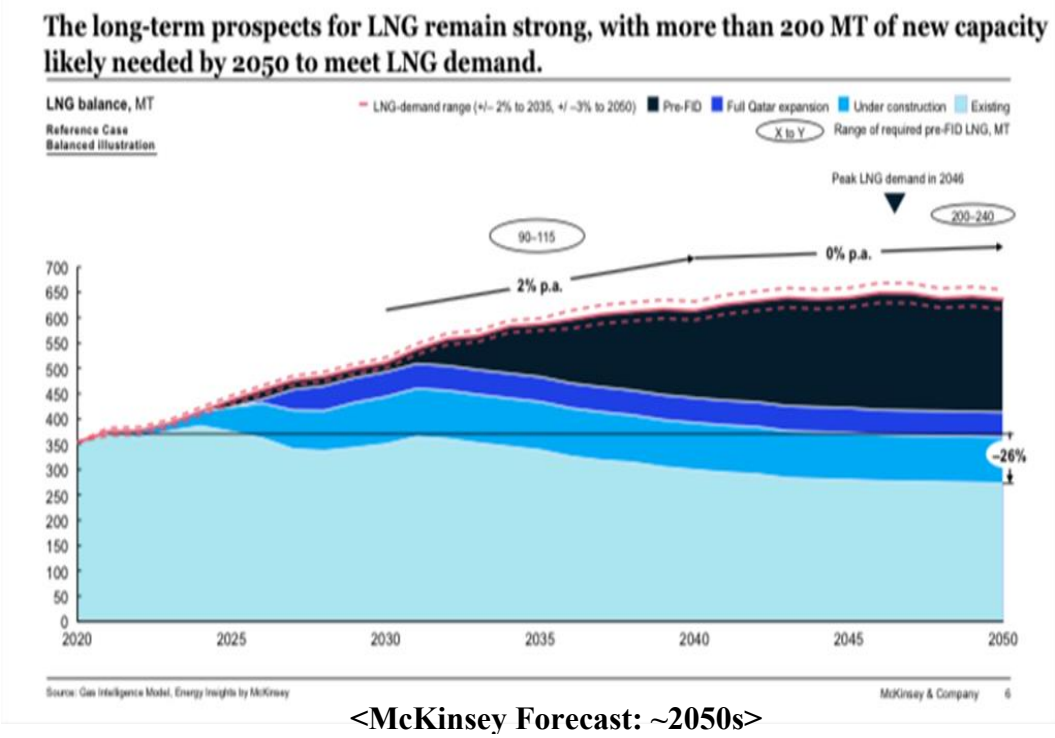
- While not Shell's official figure, this is a reasonable range derivable from their market structure analysis.

2) **McKinsey: $12~18/MMBTU**
3) **Woodside: $15~20/MMBTU**

- Although a specific price was not explicitly stated, this range is inferred from their comprehensive market analysis, investment strategies, and key contract terms.



<McKinsey Forecast: ~2050s>



<McKinsey Forecast: ~2050s>

D. Conclusion

- Although the renewable energy market is steadily expanding, the **intermittency of renewable energy**, its **complementary nature with LNG**, and the **growth trajectory of the Asian market** suggest that price stability is likely to be maintained in the mid-to-long term.
  - Even considering LNG's characteristic of having significantly higher price market volatility compared to other major energy sources, the **long-term contracting practices** within the LNG market and **sustained demand growth** are expected to ensure **price stickiness downwards**.

3. Target Market

A. Factors Considered for Target Market Selection

- Growth potential, specific characteristics, competitive landscape, potential for cooperation, and logistics costs.

B. Top Priority: South Korean Market

- Pursue long-term off-take agreements with South Korean energy companies. For companies directly participating in the project, allocate purchase volumes preferentially based on the size of their equity stake.

C. Other Markets (by Priority)

Rank	Country (Region)	Reason	Notes
1	China	High market demand and economic stability.	Shifting towards cleaner energy, phasing out coal plants.
2	India	Rapidly growing demand and high growth potential.	Projected annual growth of over 10% due to city gas expansion.
3	Southeast Asia	Potential to replace existing fuels in emerging economies.	Fast economic growth in countries like Indonesia, Philippines, Vietnam.
4	Europe & Japan	Response to environmental regulations and long-term stability.	Sustained demand for cleaner fuels.

4. Sales Strategy

A. Portfolio Optimization Principle

Market Type	Core Strategy	Portfolio %
Basic Market	Mitigate volatility risk with long-term purchase agreements.	50-60%
Futures Market	Hedge against price fluctuations using futures.	30-50%
Spot Market	Handle surplus volumes and generate additional revenue.	10-15%

B. Portfolio Structure (3 Market Segments)

1) **Basic Market: Long-term Offtake (50-60%)**

- Enter into contracts of 10 years or more with Asian utilities (e.g., South Korea, China).
- Apply a mixed pricing formula: 30% fixed price + 70% linked to JKM hub spot prices.
- Secure stable cash flow and reduce financing costs (e.g., lower interest rate premiums from financial institutions due to verified repayment capability), which can be used as financing collateral.
- Sign a binding SPA (Sale and Purchase Agreement) before the Final Investment Decision (FID).

2) **Futures Market: Hedging Market (30-50%)**

- Futures trading accounts for approximately 30% of global LNG hub volumes, such as JKM.
- Structure call options with a Floor of $600/ton and a Cap of $1,200/ton to mitigate price volatility.
- Dynamically adjust the hedging ratio based on monthly JKM fluctuations.

3) **Spot Market: Profit Market (10-15%)**

- Utilize seasonal price differences for short-term supply to Southeast Asian and European markets (spot trading accounted for approximately 26% of the global LNG market in 2024).

C. Execution Roadmap

- **Years 1-2:** Maintain approximately 70% long-term contracts while building futures market infrastructure.
- **Years 3-5:** Expand the spot market share to around 15% and launch a digital trading platform.
- **Years 6-10:** Complete the automated portfolio rebalancing system (reducing price risk by approximately 40%).

5. South Korea's Annual LNG Import Volume and Importer Status

A. Import Volume

1) **Total import volume in 2024 was 46.33 million tons.**
   - Korea Gas Corporation's (KOGAS) import volume was 34.10 million tons.
   - Private direct importers' volume was 12.23 million tons.
2) As of 2024, there are **25 private direct import companies in total**. SK Group, GS Group, and POSCO Group affiliates account for 75% of these, and their proportion is expected to increase progressively.

B. Importer Status (By Country of Origin)

1) **Korea Gas Corporation (KOGAS):**
   - Middle East (Qatar, Oman): 38%
   - Australia: 23%
   - Southeast Asia (Malaysia, Indonesia): 16%
   - United States: 12%
2) **Private Importers:**
   - Southeast Asia: 43%
   - Australia: 29%
   - United States: 17%
3) **Other Import Countries:**
   - Nigeria, Mozambique, Brunei, Algeria, Papua New Guinea, Egypt, UAE, etc.

Table: LNG Volume and Share Data (KOGAS vs. Direct Import)

(Unit: 10,000 Tonnes)

Entity	Category	2020	2021	2022	2023	2024
TOTAL	Volume	3,998	4,593	4,639	4,411	4,633
	Share	100%	100%	100%	100%	100%
KOGAS	Volume	3,084	3,731	3,901	3,486	3,410
	Share	77%	81%	84%	79%	74%
Direct Import	Volume	914	862	738	925	1,223
	Share	23%	19%	16%	21%	26%

6. Competitive Analysis

A. Global Competitors

1) Qatar

- A traditional LNG exporter, leveraging low-cost production and geographical advantages. Qatar has historically maintained its global market position through long-term contracts, typically exceeding 20 years (though due to increased market flexibility, 10 years is currently becoming the standard for long-term agreements).
- State-owned QatarEnergy boasts an annual production capacity of approximately 77 million tons. Through its North Field Expansion Project, it plans to expand this to 140 million tons by 2030, representing an 85% increase over current production.
- Recent trends, including heightened market volatility, an increase in overall LNG supply, and the emergence of competitors like the United States, have led to a reduction in long-term supply contracts. Consequently, Qatar is now adopting a flexible pricing strategy, incorporating more medium-term (3-5 years) and short-term contracts, alongside an expansion of spot trading.

2) United States

- As of 2024, the U.S. has an annual production capacity of approximately 88 million tons, securing its competitiveness through technological innovation and large-scale production facilities.
- It is continuously pursuing LNG facility expansion, targeting both the European and Asian markets, with a goal to double LNG exports by 2030.
- However, several factors pose challenges to long-term, stable supply. These include FID (Final Investment Decision) delays by developers stemming from rising construction costs, labor shortages, environmental regulatory constraints, Chinese measures to curb U.S. LNG purchases due to the US-China trade war, geopolitical tensions, and concerns about the sustained viability of shale gas production given its negative environmental and social impacts.

3) Australia

- Australia has traditionally provided stable and high-quality LNG, primarily to the Asian market, with over 90% of its exports concentrated in China, Japan, South Korea, and Taiwan.
- Recently, Australia is managing its production volumes due to domestic gas shortages, stricter environmental regulations, energy security concerns, and reduced investment linked to rising production costs.
- New projects are facing difficulties in reaching a Final Investment Decision (FID) for the aforementioned reasons. Coupled with the

possibility of early closure for existing production facilities, the long-term outlook suggests a reduction in Australia's supply to the global market.

4) **Mozambique**
   - While not yet a distinct player in the global market, Mozambique has an ambitious goal to expand its production capacity to 50 million tons, indicating significant potential to evolve into a major LNG hub within Africa.

5) Major integrated energy companies like Exxon Mobil, Shell, and Total share the global market. In contrast, the Chinese market is largely dominated by domestic firms such as CNOOC, Sinopec, and Petrochina, which collectively hold a substantial share (approximately 45%).

B. Technology and Infrastructure Competition

1) Global energy companies maintain efficiency and sustainability through digital automation and Floating LNG (FLNG) platforms.
   - The United States and Qatar are focusing on strengthening their export capabilities through large-scale LNG terminal expansions.
   - The U.S. and Qatar are engaged in an intense competition to expand large-scale LNG facilities to secure leadership in the global LNG market. This is likely to lead to a potential LNG oversupply in the short term.
   - However, according to Shell's analysis, demand is projected to exceed supply in the 2030s, necessitating further facility expansion.
   - Market Competitiveness and Differentiation Strategy
2) To compete with global energy companies in the highly competitive Asian and European markets, it is crucial to secure technological innovation and price competitiveness.
3) Establish Strategic Partnerships: By forging strategic partnerships with major South Korean energy companies, Oilbi can introduce technology, capital, and operational know-how. Furthermore, it can leverage the established value chain across all aspects of production and distribution to gain a competitive edge.
4) Differentiated Environmental Competitiveness:
   - Tanzanian natural gas is evaluated as a more environmentally friendly fuel compared to LNG produced in other countries due to its low carbon dioxide (CO2) content. This makes it advantageous for complying with CO2 regulations like Europe's Carbon Border Adjustment Mechanism (CBAM) and achieving ESG (Environmental, Social, and Governance) goals.
   - Respond to carbon neutrality demands through the adoption of CCUS (Carbon Capture, Utilization, and Storage) technology.

5) Logistics Optimization: Tanzania's strategic location, offering excellent accessibility to European and Asian markets, also contributes to maintaining price competitiveness by reducing transportation costs.
6) Cost Efficiency: The PSA's provision for cost recovery of up to 75% annually contributes to strengthening Oilbi's plant competitiveness by ensuring financial stability through early repayment of investments and facilitating the attraction of additional investment. This enables the reduction of production costs and the maintenance of a flexible pricing policy.
7) Market Diversification Strategy: Utilize a mix of long-term, medium/short-term, and spot contracts to achieve stable revenue and flexibly respond to price volatility based on market demand.
8) South Korean companies' ESG management is internationally highly regarded, which contributes to enhancing Oilbi's image and strengthening its competitiveness.

IV. Implementation Plan

1. Project Management Approach: Roles and Relationships by Entity

A. Key Stakeholders

1) Korean Side: Oilbi Tanzania Headquarters (Oilbi Ltd) and Oilbi Korea (Oilbi's Korean legal entity)
2) Tanzanian Side: Ministry of Energy and TPDC (Tanzania Petroleum Development Corporation)

B. Roles by Stakeholder

1) Oilbi Tanzania Headquarters
- Overall project operation and management in Tanzania.
- Establishing cooperative relationships with global energy companies operating in Tanzania.
- Leading direct negotiations with the Tanzanian government and TPDC, and spearheading legal and administrative procedures.
- Managing local human networks, workforce and supply chain management, and fostering community engagement.

2) Oilbi Korea
- Developing detailed strategies for each stage of project execution and conducting promotional activities.
- Building partnerships with major Korean corporations and financial institutions.
- Facilitating technology and capital procurement, investor attraction, and pursuing off-take agreements within the Korean market.

- Supporting and participating in the formation of Korean corporate consortia and Special Purpose Companies (SPCs).
- Serving as the primary communication channel for investors and stakeholders in Korea.

3) Tanzanian Side

- Providing legal and institutional support, including streamlining permitting processes.
- Managing and supporting commercial and financial regulations, such as profit sharing, royalty collection, and tax negotiations.
- Offering financial support and equity participation when necessary (up to 25%).
- Resource management, production sharing oversight, and support for public infrastructure (e.g., roads, ports).
- Promoting local employment and fostering and supporting community collaboration.

C. Cooperation System between Oilbi Tanzania Headquarters and Oilbi Korea

- Establishment of Legal Relationship: Formalizing the legal relationship through equity investment by the Tanzania Headquarters in Oilbi Korea.
- Close Communication: Building a robust communication framework across all project phases.
- Coordinated Decision-Making: Ensuring coordination and joint decision-making between both legal entities for key strategic decisions, including investment attraction and sales contract execution.
- Mutual Support: Providing reciprocal support to bridge differences in legal frameworks and business practices between South Korea and Tanzania.

2. Partnership with Korean Major Corporations

A. Phase 1: Establishment of a Joint Venture with Domestic Energy-Related Companies

1) **Targets:** Korea Gas Corporation (KOGAS), POSCO International, SK E&S
2) **Method:** Oilbi will contribute its development rights for offshore blocks, where it holds 100% operating rights, as an in-kind investment. In return, Korean companies will provide capital and technology.
3) **Process:** Preliminary Discussion > Signing of MOU/MOA > Defining Equity Structure and Roles > Conducting Joint Feasibility Study > Establishing Joint Venture (JV)

B. Phase 2: Consortium Formation

1) A consortium will be formed, centered around the aforementioned JV, among domestic and international companies interested in participating in the Oilbi project.

   - Consortium participants will join as **Strategic Investors (SIs)**, thereby increasing capital.
   - Concurrently with consortium formation, a **Special Purpose Company (SPC)** will be established with the participation of all stakeholders.

C. Review of Optimal Consortium Model

1) **Model:** Integrated Energy Value Chain Model
2) **Overview:**

   - **Leading Companies:** Oilbi, Korea Gas Corporation (KOGAS)
   - **Participating Companies:** POSCO International, SK E&S, Daewoo E&C, Local Partner (TPDC)
   - **Core Competencies:** Gas exploration, transportation, distribution, plant construction, plant operation capabilities, and local network.
   - **Applicable Case:** KOGAS's participation in the Mozambique Area4 Coral Sul project.

     - *KOGAS participated in the entire value chain: exploration, development, production, and sales.*

3) **Rationale for pursuit (Driving Factors):** Experience in overseas gas development projects, technical stability, diversification of financial risk, and maximum utilization of local adaptability.
4) **Role Allocation System:**

   - **KOGAS / POSCO International:** PSA negotiation, production and distribution strategy formulation.
   - **SK E&S:** Plant operation and maintenance.
   - **Daewoo E&C:** Overall management of onshore plant, subsea pipeline, and line construction; establishing a collaborative system with global EPC companies.
   - **Tanzanian TPDC:** Local lobbying, permitting support, local labor supply, etc.

D. Expected Benefits

1) **Maximization of Complementarity:**

   - Utilizing the extensive experience and technical expertise accumulated by Korean companies during their global business endeavors, including LNG projects.

- Leveraging Oilbi's network and local business experience accumulated over approximately 15 years in Tanzania.

2) **Establishment of a Seamless Integrated Supply Chain:**

- Maximizing the utilization of the value chain built by Korean companies across all sectors from production to distribution.

3) **Enhanced Financial Stability:**

- The participation of major domestic and international corporations will strengthen the project's financial structure and create a favorable environment for attracting additional investment.

4) **Reinforced Energy Transition and Project Sustainability:**

- Korean energy companies like KOGAS are increasingly focusing on clean energy transition, such as hydrogen energy, which contributes to the long-term sustainability of the project.

3. LNG Plant Construction

A. Plant Details

1) **Overview:** Construction of a medium-to-small scale integrated LNG complex with an annual production capacity of **2.5 million tons**.
2) **Location:** Situated in Mtwara, a southeastern region of Tanzania (site already secured).
3) **Facility Configuration:**

- **Onshore Facilities:** Gas processing facilities, liquefaction process equipment, storage and loading facilities, utilities, and support facilities.
- **Offshore Facilities:** Subsea pipeline (approximately 200 km section from gas field to onshore facility), subsea production equipment (Initial Subsea Station).
- **Power Plant:** A 50MW LNG-fired combined cycle power plant.

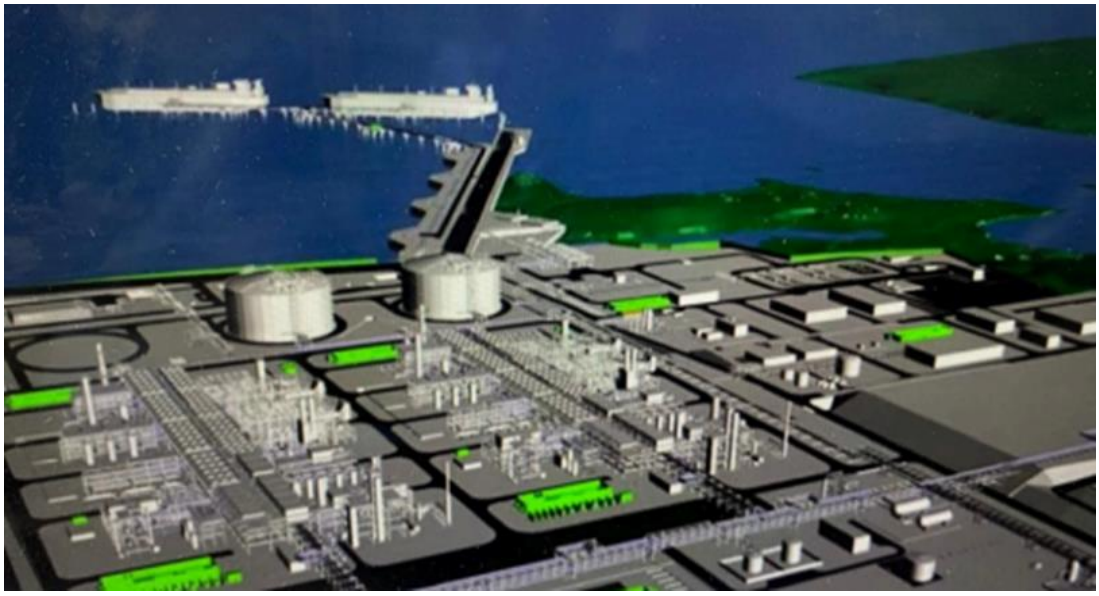
4) **Operating Period:**

- **28 years:** Calculated assuming the complete depletion of the 3.5 trillion cubic feet of reserves in the Papa-1 gas field, for which Oilbi holds development rights.
- Increased production and an extended operating period are possible if recoverable reserves are expanded through additional drilling in Oilbi's

concession areas, alongside appropriate maintenance and modernization work.

5) **Contractor and Construction Period:**

- A **Korean construction company** is expected to be selected as the contractor, with a construction period of approximately **2 to 3 years**.
- Recent advancements in LNG plant construction technology are leading to a trend of progressively shorter construction periods.



<Baker Hughes' conceptual design, engineered for an annual output of 7.5 million tons>

B. Main Contractor

1) The selection of **Korean EPC (Engineering, Procurement, and Construction) companies, such as Daewoo E&C and Hyundai E&C, as the main plant contractors** is being pursued.

- These companies are established as major players in the global LNG plant construction market, possessing extensive experience in successfully completing numerous large-scale projects based on their technological prowess and construction track record.
- **Daewoo E&C** has participated in 10 LNG projects in countries including Nigeria, Algeria, Papua New Guinea, and Indonesia.
- **Hyundai E&C** has participated in numerous LNG projects in countries such as Kuwait, Saudi Arabia, and Papua New Guinea.

2) While a Korean EPC firm will **oversee the entire project**, global engineering and technology consulting companies like **Baker Hughes (US), JGC (Japan), and Saipem (Italy)** will participate as part of a consortium, responsible for detailed design, technical support, and quality control.

4. Analysis of Suitability for Proposed Plant Site (Mtwara)

A. Utilization of Existing Infrastructure and Energy Facilities

1) **Cost Reduction through Existing Infrastructure:**

- Initial investment costs for plant construction can be reduced by leveraging existing infrastructure, such as the Mnazi Bay onshore gas field and the Madimba Gas Processing Plant.
- The 18MW Mtwara Gas Plant is already connected to the gas field, supplying electricity.
- There are plans for a 300MW combined cycle power plant, supported by Japan's JICA.
- Currently, there's insufficient capacity for additional power supply to industrial complexes and large plants.

B. Mtwara Port

1) **Logistics Capacity:**

- As of the 22/23 fiscal year, the port handled 1.63 million tons.
- The new berth has a draft of 13.5m, allowing medium-to-small LNG carriers (65,000t class, 200-230m) to berth.
- Expansion work would be required for large LNG carriers (170,000-270,000t class) to berth.

2) **Strategic Location:**

- A natural deep-water port located on major Indian Ocean shipping routes, offering an average transit time of 14 days to the Asian market (excellent market accessibility).

C. Infrastructure Development Plan

1) **Government Master Plan:**

- The Tanzanian government aims to develop Mtwara into a key import/export hub for Southern Africa by 2035, in response to natural gas and other energy developments.
- This plan includes phased development, cluster strategies, and expanded infrastructure investment.

2) **Mtwara Development Corridor:**

- Improvement of an 800km road network connecting Southern Tanzania, Northern Mozambique, Malawi, and Zambia.

D. Suitability Assessment

- Possesses **sufficient potential as an LNG plant site**.
- Requires **investment for infrastructure improvement**, particularly enhancing the inadequate road network.
- **Explore the potential utilization of EDCF (Economic Development Cooperation Fund)**, which the Korean government has pledged to Tanzania for Mtwara infrastructure development (a total of $2.5 billion over 5 years starting 2024). This possibility increases if Korean companies participate in the project.
- Key challenges include **securing social acceptance** to address past social conflicts surrounding local development (e.g., local resident opposition), and effective **environmental and regulatory management**.
- **Synergy effects are expected through collaboration with global energy companies**, such as KOGAS, which are already involved in gas field development projects in nearby Northern Mozambique.

Oilbi

V. Financial Matters

1. Estimated Total Project Cost: Approximately $3.6 billion USD, or approximately ₩5 trillion KRW (based on a ₩1,400 KRW/USD exchange rate)

Detailed Breakdown:

A. Construction Costs: $3.3 billion USD, approximately ₩4.6 trillion KRW

- *Represents 91.6% of the total project cost.*
- Onshore Plant: $2.2 billion USD + Subsea Pipeline: $1.1 billion USD

1) **Onshore Plant: $2.2 billion USD (approximately ₩3 trillion KRW)**

Category	Main Content	Budget (Million USD)	Percentage (%)
Onshore LNG Plant (Processing Facilities)	Gas pretreatment facilities, liquefaction equipment, storage and selection equipment, control and safety systems	1,518	69
Power Plant (50mw scale)	Gas turbine generator, power distribution system, control and safety systems	330	15
Existing Infrastructure	Road and traffic infrastructure, water and wastewater treatment facilities, support facilities	322	14.6
Carbon Storage Facilities	Carbon capture facilities, injection system, storage facilities, monitoring system	30	1.4
Total		2,200	100

Analysis of Appropriateness of Oilbi Onshore Plant Construction Costs (Estimate)

- **Construction Cost per Ton (based on 2.5 million tons annual production): Set at $880 USD/ton.**
- **Basis (Comparative Analysis with Other LNG Projects)**

  - **Tanzania LNG Project (TLNGP)**
    - $855/tpa based on 20 million tons annual production.
    - Onshore plant budget allocation: $17.1 billion USD out of a total project cost of $42 billion USD (Stanbic Bank analysis).

- **Nigeria LNG Plant Train 7 Project (Completion 2025, Daewoo E&C participation)**
  - $625-812/tpa based on 8 million tons annual production.
  - Estimated total construction cost: $5 billion - $6.5 billion USD (undisclosed to the press).
- **Mozambique Coral Sul FLNG Project**
  - $735/tpa based on 3.4 million tons annual production.
  - FLNG vessel construction cost: $2.5 billion USD out of a total project cost of $7 billion USD (built by Samsung Heavy Industries).
  - Other budget items include field exploration/drilling costs, subsea facility installation, and non-construction costs.
  - Direct comparison with onshore facilities is inappropriate.

- **Evaluation**

  - The estimated total construction cost of **$3.3 billion USD** reasonably reflects global trends, based on Baker Hughes' 2020 estimate of $2.5 billion USD.
  - While the Nigeria LNG project and TLNGP can achieve construction cost savings through **economies of scale**, the smaller-scale Oilbi plant faces challenges in realizing such benefits.
  - The estimated cost is deemed to be within a reasonable range, provided that cost variability risk mitigation strategies are pursued. These strategies include adopting a **Guaranteed Maximum Price (GMP)** in EPC contracts, applying **modular construction methods**, and securing **long-term contracts for key equipment and materials.**

2) Subsea Pipeline: $1.1 billion USD (approximately ₩1.5 trillion KRW)

Item	Amount (Million USD)	Percentage (%)
Pipe & Material	385	35
Offshore Construction (Installation)	308	28
Engineering/Design	132	12
Insulation Protection System	132	12
Environment, Safety, Quality Mgmt	77	7
Contingency & Others	66	6
Total	**1,100**	**100**

B. Non-Construction Costs: $300 million USD, approximately ₩420 billion KRW

Item	Main Content	Amount (Million USD)	Percentage (%)
Design & Engineering Cost	Basic and detailed design, FEED, cost control, engineering services	60	20
Project Management, Administration Cost	PMO, developer management, quality/safety/inspection/office operations	45	15
Financial Cost (Interest, etc.)	Construction period interest, financial institution fees, insurance fees	45	15
Consulting Cost	External specialist consulting, materials, technology equipment, strategic consulting, etc.	37.5	12.5
Environmental Impact & Site Survey	Environmental impact assessment, environmental team and consultative body operations	30	10
Local Community Cooperation Cost	Community support, resident cooperation, CSR, local training, local infrastructure support	30	10
Licensing, Legal, Government Cost	Licensing cost, legal consulting, government liaison, due diligence	30	10
Contingency	Exchange rate, material price fluctuation, unexpected risk mitigation	22.5	7.5
Total		**300**	**100**

C. Basic Principles for Total Project Cost Calculation

1) **Analysis of 15 Case Studies of Similarly Sized LNG Projects:** Construction costs consistently represent 85-90% of the total project cost.
2) **Application of Risk Weighting for this Project:** Considering the vulnerabilities of Tanzania's local infrastructure (e.g., road paving rate of 23%, limited port handling capacity) and the anticipated construction difficulties in the subsea pipeline section.
3) **Compliance with Environmental Regulations:** Reflecting increased engineering costs and design complexity due to the introduction of Carbon Capture, Utilization, and Storage (CCUS) technologies.

4) **Optimization of Capital Procurement Structure:** Adjusting the optimal debt-to-equity ratio to approximately 60%.
5) **Integration of ESG Factors:** Incorporating community development programs and aligning with the Tanzanian government's policy stance on renewable energy transition.

2. Project Financing Strategy (Portfolio)

A. Equity Sale (15-20%) : A minority stake (between 15% and 20%) is planned for sale to two to three domestic and international energy companies. This approach ensures that Oilbi retains management control.

B. Capital Increase via Consortium (30-35%) : A significant capital injection (between 30% and 35%) will be achieved through a consortium. This strategy targets not only energy companies but also EPC (Engineering, Procurement, and Construction) firms interested in converting a portion of their EPC costs into equity and participating in the distribution of operating profits.

C. Attracting Institutional Investors (20-25%) : Substantial funding (between 20% and 25%) will be secured by attracting long-term, stable institutional investment from global sovereign wealth funds and infrastructure funds.

D. Debt Financing (20-30%) : The remaining portion of the funding (20% to 30%) will come from debt financing, which includes:

- Obtaining guarantees and direct funding from institutions such as the Export-Import Bank of Korea (EXIM Bank), Korea Trade Insurance Corporation (K-SURE), and other international financial institutions.
- Raising long-term, fixed-rate capital through the issuance of Project Bonds.

<Financing Breakdown Table>

Category	Share (%)	Amount (Million USD)	Amount (Billion KRW)	Details
Equity Sale	15–20%	495–660	690–920	Sale of equity stakes to domestic and international energy firms (e.g., KOGAS, POSCO)
Consortium Capital Increase	30–35%	990–1,155	1,300–1,600	EPC companies other than energy firms as targets
Institutional Investor	20–25%	660–825	920–1,100	Participation by sovereign wealth and infrastructure funds
Debt Financing	20–30%	660–990	920–1,300	Funding through institutions such as Export-Import Bank of Korea, project bond issue

3. Investor Exit Strategy

A. Initial Public Offering (IPO)

An IPO is planned around **2035**, when the project is anticipated to reach maturity and achieve its break-even point (BEP). This timing aligns with the projected full-scale growth of the global LNG market and the generation of stable cash flow.

B. Exit Strategies

- **Public Market Share Sale for Premium Capture** This involves selling shares in the public market to secure a premium, aligning with the IPO timeline. Oilbi will offer corresponding benefits to its initial investors (first-movers).
- **Strategic Sale Initiatives** Share sales will target major energy companies looking to expand their LNG portfolios, infrastructure funds seeking long-term and stable cash flow, and consortium members desiring additional equity.
- **Secondary Sale to Financial Investors (FI)** This involves selling shares to long-term income-oriented financial investors, such as pension funds and sovereign wealth funds.

C. Expected Timelines

- **Strategic Sale:** Scheduled for **2-3 rounds between 2026 and 2028**.
- **Secondary Sale to FIs:** Scheduled for **2-3 rounds between 2027 and 2029**.
- **IPO:** Around **2035**.

4. Operating Cost and Revenue Analysis

A. Estimated Operating Costs

- Expected annual operating costs are $220 million USD, approximately 300 billion Korean Won.
- These costs are anticipated to be sustained throughout the plant's operational period.

Category	Main Content	Amount (Million USD)	Percentage (%)
Personnel & Welfare Expenses	Salaries, welfare benefits, **local employee hiring**, etc.	68	30.9
Facility & Pipeline Maintenance Cost	Plant, power station, substation, offshore pipeline facility maintenance, etc.	64	29.1
Insurance Fee	Liability insurance, disaster insurance, environmental pollution liability insurance, etc.	21	9.5
Utility & Energy Costs	Electricity, water, fuel for operation, energy costs, etc.	21	9.5
CCS Storage Facility Operation Cost	CCS storage operation, maintenance, monitoring, etc.	10	4.5
Environment, Safety, Administration	Environmental, safety management, crisis response, office operation management, etc.	11	5.0
Contingency	Exchange rate, fuel price, unforeseen risk response	25	11.4
Total		**220**	**100**

B. Projected Revenue Analysis (Summary) *See Appendix for details.

Category	Amount (USD)	Amount (KRW)	Notes
Annual Revenue / Total Revenue	$1.75 billion / $49 billion	KRW 2.4 trillion / KRW 68 trillion	Based on JKM (DES) price, exchange rate: KRW 1,400/USD
OILBI Total Cumulative Profit / Net Income FOR 28 years	$10.9 billion / $7.6 billion	KRW 15.2 trillion / KRW 10.2 trillion	Net income after 30% corporate tax
OILBI Net Present Value (NPV)	$3.5 billion	KRW 4.9 trillion	
Internal Rate of Return (IRR)	20.88%	-	Weighted Average Cost of Capital (WACC): 5.81%
Break-Even Point (BEP)	Year 2035	-	

** *All figures are preliminary internal estimates based on market research and benchmarking. Numbers may change after third-party audits and feasibility studies. Reference use only at this stage.*

VI. Risks and Mitigation Measures

1. Regulatory Risks

A. Risk Factors

1) **Volatility of Tanzanian Government Policies and Regulations**
   Potential for changes in the Tanzanian government's resource policies and investment/tax-related laws.
2) **Policy and Administrative Rigidity of the Tanzanian Government**
   The Host Government Agreement (HGA) for the LNG project (TLNGP) between the Tanzanian government and International Oil Companies (IOCs) has been delayed for several years.
3) **Strict Localization Requirements**
   A growing trend by the Tanzanian government to strengthen localization requirements, including local business participation, employment, and technology transfer.
4) **Increasing Environmental and Social Regulatory Trends**
   Demands for strict adherence to ESG standards, including rigorous Environmental Impact Assessments (EIA), environmental protection measures, and enhanced community consultation and participation.

B. Mitigation Measures

1) **Establishment of a Contract System Aligned with International Standards**
   Responding to regulatory and policy changes through provisions in the PSA and HGA, such as cost recovery limits, investor protection, and international arbitration clauses. If necessary, utilizing Korea-Tanzania economic agreements like Investment Protection Agreements and EDCF (Economic Development Cooperation Fund) agreements.
2) **Building Close Cooperation with the Tanzanian Government and Stakeholders**
   Establishing close communication channels with the Ministry of Energy, TPDC, PURA (Petroleum Upstream Regulatory Authority), and local governments to promptly respond to policy changes and permitting procedures. Conducting risk assessments through local policy and legal consultation.

3) **Proactive Localization Strategy Implementation**
   Adopting a proactive localization strategy that includes utilizing local businesses and personnel, and technology transfer.
4) **Strengthening ESG Standards**
   Adhering to global environmental standards, implementing Carbon Capture and Storage (CCS) systems, and developing proactive community development programs.

2. Tax Risks

A. Taxation under the PSA

1) **Royalty: 7.5%**

   - TPDC will receive this on behalf of the Tanzanian government.

2) **Additional Profits Tax (APT):** An additional **15-20%** is imposed if cumulative cash flow exceeds a certain profit rate.
3) **Other Import Duties, Value Added Tax (VAT), Local Taxes:**

   - These taxes are **exempt or reduced specifically for the oil/gas industry**.

B. Other Taxes

- **Corporate Income Tax:** 30%
- **Dividend/Interest Income Tax:** 10%

C. Analysis Compared to International Standards

1) **By Tax Rate:**

   - **Royalty:** Mid-level compared to global LNG deep-water projects.
   - **Production Sharing:** The government's share is quite high (increasing up to 85% with increased production).

   - **Additional Profits Tax (APT):** Similar to some countries (e.g., Nigeria, UK, Australia).
   - **Corporate Income Tax:** On par with the global average.

2) **Assessment:**

   - Due to the production sharing ratio and the progressive APT structure, the overall tax burden is **relatively high compared to international standards**.
   - It's generally **higher than in Mozambique and Nigeria**.

- Reflects a **resource nationalist tendency** (a structure favorable to the government).

D. Risks

- Concern over **deterioration of project economics** due to a decline in the Internal Rate of Return (IRR).
- **Reduced investment attractiveness** compared to other LNG projects due to a loss of comparative advantage.

E. Mitigation Measures

1) **Maximize Utilization of the PSA's 75% Investment Recovery Rate:**

- Ensure **stability of initial cash flow**.
- Include a maximum range of costs, such as project debt interest, in the investment recovery items (reducing pre-tax profit and easing corporate tax burden).
- Allow for the **carry-forward of unrecovered costs** (reducing long-term investment recovery risk) and leverage Tanzanian investment incentives.

2) **Propose Strategic Compromises Before Final Investment Decision (FID):**

- **Phased adjustment of the production sharing ratio** (Tanzanian government 70% / Oilbi 30%): Temporarily increase Oilbi's share during the initial investment recovery period.
- If tax rate reduction is not possible, request alternative measures such as increased Tanzanian equity participation or infrastructure investment in the plant site.
- Utilize the Amendment Clause in the PSA (regulations can be changed by mutual agreement of both parties).

3) **Devise an APT Avoidance Strategy:**

- Maintain cumulative profit below the APT application threshold through **reinvestment or dividend payouts in the initial stages**.

4) **Maximize International Tax Planning** to design the most favorable business structure.

3. Financial Risks

A. Risk Factors

1) **Cost Inflation, Including Project Cost Overruns**
   Potential for construction cost overruns during the establishment of complex infrastructure, such as onshore plants and subsea pipelines. Potential cost escalators include global supply chain instability, rising raw material prices, increased labor costs due to a shortage of skilled workers, higher expenses from stricter environmental regulations, construction delays caused by permitting issues or design changes, and unexpected site condition variations.
2) **Funding Risk**
   Strict risk assessments by potential partners and financial institutions for the Tanzania project. Increased funding costs and delays due to exchange rate fluctuations, interest rate hikes, and financial market instability.
3) **Volatility of Global LNG Market Prices**

B. Mitigation Measures

1) **Concerted Efforts by Contractors to Reduce Construction Costs**
   This involves applying standardized designs and modular construction methods, optimizing designs, introducing new technologies, streamlining the supply chain, leveraging local procurement and labor, and securing long-term contracts for key equipment. Implementing a **Guaranteed Maximum Price (GMP)** system in EPC (Engineering, Procurement, and Construction) contracts. Mitigating cost overrun factors through phased construction.
2) **Diversification of Funding Portfolio**
   Securing funding primarily through the sale of Oilbi equity and the project consortium (joint capital increase by consortium members). Distributing investment burdens by encouraging equity participation from EPC contractors. Exploring the use of venture capital (VC), convertible bonds (CB), and bonds with warrants (BW) for initial, smaller-scale funding.
3) **Attracting Strategic Investment from Sovereign Wealth Funds and Global Energy Majors**
   Some major energy companies familiar with Tanzania's conditions have expressed interest in the Oilbi project (field operations).
4) **Managing Volatility Risk and Securing Long-Term Fixed-Rate Funding** through the issuance of **Project Bonds**.
5) **Optimizing Debt Financing**
   Utilizing credit guarantees from official export credit agencies (ECAs) such as the Export-Import Bank of Korea and Korea Trade Insurance Corporation.
6) **Early Securing of Long-Term Off-take Agreements**
   This will enhance the company's creditworthiness and establish a foundation for additional financing. Securing advance payments through pre-sales based on long-term LNG sales contracts.

4. Technical and Operational Risks

A. Risk Factors

1) **Initial Production Disruptions and Increased Maintenance Costs due to LNG Purification Process Technology Instability:** Potential for issues with the core LNG refining process affecting early production and driving up maintenance expenses.
2) **Difficulty in Subsea Pipeline Installation:** Challenges associated with the complex engineering and execution of laying pipelines underwater.
3) **Potential for Malfunctions, Cooling Failures, and Process Anomalies during Commissioning and Initial Operation:** Risks inherent in the crucial startup phases of the plant.
4) **Maintenance and Long-Term Operational Risks, such as Equipment Aging:** Concerns about the sustained performance and upkeep of facilities over their operational lifespan.
5) **Safety and Environmental Risks, including High-Pressure Gas/Cryogenic Gas Leaks, Environmental Pollution, and Greenhouse Gas Emissions:** Hazards related to the handling of dangerous materials and the potential impact on the environment.

B. Mitigation Measures

1) **Adoption of Proven Technology:** The project plans to apply commercialized C3MR or DMR process technologies, ensuring operational stability through validated methods. Collaboration in design and technology with global engineering firms such as Baker Hughes, JGC, and Saipem.
2) **Technological Innovation in Subsea Pipeline Installation:** Automation of installation, maintenance, and inspection through technologies like Remotely Operated Vehicles (ROVs) and Autonomous Underwater Vehicles (AUVs). Implementation of **Smart Pipelines** integrating sensors and IoT technology for real-time monitoring. Use of **High-Strength and Corrosion-Resistant Materials**, such as high-strength alloys and composite materials, to enhance durability.
3) **Operational Stabilization through Collaboration between Korean EPC Firms and Global Engineering Companies:** Integrating accumulated technical expertise and operational know-how from global project experience. Establishing phased test operation plans, including dry-runs, load tests, and cooling tests.
4) **Implementation of Maintenance Programs:** Securing spare modules for key equipment and enhancing maintainability through modular design. Adopting Predictive Maintenance systems (e.g., from GE, Siemens) for proactive fault prevention.
5) **Safety and Environmental Risk Management:**

- Implementing safety design and quality management based on international standards (e.g., API, ASME, ISO).
- Conducting Environmental Impact Assessments (EIA) according to ESG standards and establishing carbon emission management plans.
- Building an emergency response system and risk management system (including SCADA and automatic shutdown functions).

5. Market Volatility Risks

A. Risk Factors

1) **Supply Oversupply/Shortage**

- Expansion of facilities by major producing countries like the U.S. and Qatar.
- Delays in Final Investment Decisions (FIDs) for new projects.
- Geopolitical risks.

2) **Demand Uncertainty**

- Fluctuations in demand from major markets, energy transition policies, and seasonal factors.
- Difficulty in revenue/profit forecasting, leading to potential premiums or discounts.

3) **Decreased Proportion of Long-Term Contracts, Increased Reliance on the Spot Market**
4) **Exchange Rate and Transportation Cost Fluctuations**
5) **Carbon Regulations and ESG Factors**

- The emergence of price premiums or discounts based on preference for eco-friendly LNG.

B. Mitigation Measures

1) **Secure Long-Term Off-take Agreements**

- Minimize spot market volatility through long-term contracts with energy companies in major importing countries (South Korea, China).
- Ensure stable demand by forming a project consortium with Korean companies.

2) **Implement a Price-Linking System**

- Link to the JKM benchmark while establishing price floors and ceilings to buffer against extreme volatility.

- Introduce oil-linked pricing (Brent, Dubai, etc.) or a hybrid formula.

3) **Adopt Financial Hedging Strategies**

- Hedge against price fluctuations through LNG futures and options trading (e.g., JKM, SEAM).
- Minimize financial cost volatility by securing long-term fixed-rate borrowing and attracting institutional investors.

4) **Enhance Operational Efficiency and Cost Competitiveness**

- Optimize logistics through strategic alliances with Korean shipping companies and improvements to Mtwara's infrastructure.
- Enter high-value markets and secure carbon premiums by implementing eco-friendly systems like Carbon Capture and Storage (CCS).

5) **Consider Plant Expansion**

- Increase production volume through additional exploration and drilling in the concession block.
- Respond to price fluctuations by ensuring the long-term sustainability of production.
- Reference: LNG Price Sensitivity Analysis

    - Simulation of net profit changes with a 15% decrease and a 15% increase in MMBtu benchmark price (based on JKM, DES prices)

<Sensitivity Analysis of OILBI Net Profit According to JKM Price Change Scenarios>

Scenario	Unit Price (USD/MMBtu)	Converted Unit Price (USD/Ton)	Total Sales (Million USD)	Royalty (7.5%)	Cost Recovery (70%)	Profit Share (30%)	OILBI Share (30%)	Net Profit (Million USD)
Base Case	13.5	700	1,750.0	131.25	1,225.0	393.75	118.12	118.12
15% Decrease	11.5	595	1,487.5	111.56	1,041.25	334.69	100.41	100.41
15% Increase	15.5	805	2,012.5	150.94	1,408.75	452.81	135.84	135.84

6. Supply Chain Risks

A. Risk Factors

1) **Low Supply Chain Efficiency:** This stems from the overall lack of technical expertise and capital among local companies, customs clearance delays, insufficient logistics infrastructure, and bureaucracy.
2) **Tanzanian Government's Strict Local Content Requirements:** Compliance with the "Petroleum Local Content Regulation 2017" is mandated, which includes:

    - **Semi-skilled/Unskilled Labor:** 100% local employment.
    - **Skilled Labor and Technical Professionals:** Phased increase to 50-80% local employment.
    - **Procurement:** Gradual expansion targeting over 50% local procurement for construction and service goods.
    - **Joint Venture Equity:** Minimum 25% local company equity.
    - **Insurance, Finance, Engineering, etc.:** Obligation to prioritize local companies.
    - *Exceptions and Adjustments: Exceptions can be granted with government approval if suitable local personnel or companies are difficult to find.*

3) **Local Content Regulation Risks:**

    - **Discrepancy with Reality:** A gap exists between the Tanzanian government's desire to foster domestic industry and the actual capabilities.
    - **Difficulty Sourcing Qualified Local Companies:** Challenges in finding local companies that meet the international technical and safety standards required by the oil/gas industry.
    - **Lack of Information on Local Suppliers, Low Productivity, and Inadequate Quality Control.**
    - **Duplicative and Unclear Regulatory Structure:** Multiple agencies overseeing the same areas, coupled with a lack of policy consistency, reduce predictability.
    - *Note: Strict Local Content requirements are one of the reasons for the delay in the TLNGP project between the Tanzanian government and global majors.*

B. Mitigation Measures

1) **Compliance with Local Procurement Policy:** Proactive response to key objectives such as employing local labor, expanding local company participation, and strengthening supply chain capabilities.

2) **Establishment of a Roadmap for Local Supply Chain Enhancement:** Setting local procurement ratios for each construction phase. Gradual expansion of local production and assembly ratios for key equipment and components.
3) **Local Company Capacity Building and Technology Transfer:** Providing training and consulting to local suppliers on quality, safety, and environmental standards that meet international benchmarks. Encouraging partnerships, including joint ventures (JVs) and technical alliances with local companies.
4) **Promotion of Information Sharing and Networking:** Enhancing accessibility to local companies by establishing an online information platform.
5) **Benchmarking Local Supply Chain Development Cases:** Learning from previous LNG projects in countries like Mozambique and Nigeria.
6) **Financial and Guarantee Support for Local Companies.**

7. Labor Market Risks

A. Current Status of Local Labor Force

1) **Sufficient Quantity of Labor:** Tanzania possesses a robust labor base, with approximately 32 million people as of 2023. This means a solid foundation of workers is available for plant construction sites, and most job categories can be filled by local personnel.
2) **Limited Local Supply of High-Skilled Labor in the Oil & Gas Industry:** Foreign companies typically source a significant portion of their skilled workforce from overseas during the initial phases of a project.
3) **Improving but Insufficient Vocational and Technical Education System:** While the Tanzanian government's vocational and technical education system is rapidly improving, the supply of skilled labor still falls short of industrial demand.

B. Strategies for Developing Skilled Labor

1) **Implement Vocational Training Programs for Local Personnel from the Project's Initial Stages:** Local companies will proactively pursue a phased strategy for developing skilled labor. This includes basic technical education, advanced specialized technical training, and the cultivation of high-level technical and management personnel.
2) **Establish a Systematic Education and Recruitment System:** This will involve collaboration among the Korean and Tanzanian governments, prime contractors, subcontractors, and vocational training institutions. Building a cooperative framework between the Tanzanian Ministry of Energy, Korea

International Cooperation Agency (KOICA), and Korean companies (providing budget and expert personnel support). Establishing a Korea-Tanzania Technical Education Center and operating KS-certified training programs by the Korean Standards Association (KSA).

3) **Benchmark Existing Cases:** Learn from successful skilled labor development programs in other LNG projects, such as those in Mozambique and Nigeria.

VII. ESG Strategy

1. Core Strategy

A. Environmental Strategy

1) **Low-Carbon, Eco-Friendly LNG Production**
The project plans to incorporate **Carbon Capture, Utilization, and Storage (CCUS)** technology from the LNG plant design phase to minimize greenhouse gas emissions.

2) **Enhanced Environmental Impact Assessment (EIA)**
A thorough EIA will be conducted from the project's early stages, and plans will be developed to protect local ecosystems and water resources. The project will adopt eco-friendly know-how, including benchmarking the low-carbon LNG project examples and technologies of global energy companies.

B. Social Strategy

1) **Strengthening Cooperation with Local Communities**
Establishing communication channels and building trust with residents in the Mtwara region. Operating comprehensive **Corporate Social Responsibility (CSR) programs** to support local community development, focusing on education, healthcare, and infrastructure.

2) **Transparent Stakeholder Management**
Operating information-sharing and consultation bodies with stakeholders, including the government, local communities, and investors. Establishing prompt dispute resolution procedures in accordance with international arbitration rules if conflicts arise.

C. Governance Strategy

1) **Establishing a Transparent and Accountable Management System**
Ensuring legal and financial transparency in accordance with the PSA (Production Sharing Agreement) and HGA (Host Government Agreement). Regularly reporting on performance and risks based on international accounting standards and ESG reporting guidelines.

2) **Integrating ESG Management and Setting Targets** Establishing clear ESG targets, such as carbon emission reduction goals and community contribution metrics.

3) **Risk Management and Ensuring Sustainability** Sharing technology, capital, and experience, and diversifying risks through partnerships with large Korean corporations that have internalized international ESG standards. Developing and implementing countermeasures for identified risks, including regulatory, financial, and supply chain risks.

2. Localization Strategy

A. Local Workforce Employment and Capacity Building

1) **Large-scale employment of local personnel** during LNG plant construction and operations, creating sustained job opportunities throughout the operational period.
2) **Long-term job creation** through technical training for the local workforce.

B. Utilizing Local Businesses and Supply Chains

1) **Strengthening cooperation with local companies** in sectors such as construction, transportation, equipment, and services.
2) **Increasing the local procurement ratio** for materials and components and fostering local partner companies.

C. Community and Infrastructure Development

1) **Investing in infrastructure** like roads, ports, and power near the plant site.
2) **Undertaking community development projects (CSR)** and environmental protection activities concurrently.
3) **Supporting the establishment of schools and healthcare facilities**.

D. Technology Transfer and Industrial Diversification

1) **Transferring technology** related to LNG and its derivative industries.
2) **Supporting the establishment of a local ecosystem** for energy and chemical industries.

3. Adoption of Eco-Friendly Technologies: CCS (Carbon Capture and Storage) System Construction

A. Obstacles to System Adoption

1) **High-cost structure for integrated CCS systems (capture-transport-storage):**

   - For an LNG production plant with an annual capacity of 2.5 million tons, this would entail an estimated facility investment of approximately **$500 million** and annual operating costs of **$200 million**.

2) **Technological immaturity:** Full commercialization is anticipated around the mid-2030s.

B. Alternative: Phased Introduction

1) **Prioritize the construction of CO2 storage facilities (reservoirs)**, followed by the introduction of the capture system.
2) **Integrate the pre-design of the capture system during the Front-End Engineering Design (FEED) phase** for the entire plant. This allows for coordinated construction, potentially aligning with future plant refurbishment cycles.

C. Expected Benefits

1) **Reduced Initial Investment Costs through Infrastructure Pre-construction:**

   - For Oilbi's plant size, the estimated cost for storage facility construction is approximately **$35 million**, with annual operating costs ranging from **$10 million to $15 million**.

2) **Long-Term Preparation:**

   - The construction and stabilization of storage sites can take over 10 years. Therefore, building this infrastructure in advance prepares for the future commercialization of capture technology.
   - *For example, South Korea's East Sea Gas Field CCS project plans to complete its storage facility by 2025 and connect it with the capture-transport system by 2030.*
   - *Australia's Gorgon LNG project also gradually built its capture system after establishing the storage facility.*

3) **Enhanced Flexibility in the Carbon Neutrality Roadmap:**

   - Pre-building storage infrastructure allows for flexible adaptation to various future capture technologies as they develop.

4) **Economic Benefits:**

- **Pre-emptive Carbon Credit Acquisition:** Companies with storage facilities can generate revenue through carbon credit trading when CO2 is captured.
- **Access to Low-Interest Loans:** Utilizing green programs from international financial institutions for eco-friendly infrastructure and carbon reduction projects.
- **Expected Cost Savings:** Potential for cost reduction if the storage facility is shared with other LNG projects (e.g., TLNGP).

4. TLNGP Project Environmental Impact Assessment (EIA) Results

A. Legal and Institutional Adequacy Assessment Framework

1) **Compliance with Relevant Regulations**

- Tanzania Environmental Management Act Article 17 (Mandatory Assessment of Major Development Projects)
- IFC PS6 (Biodiversity Conservation and Sustainable Management of Living Natural Resources Standards)
- UN Sustainable Development Goals (UN SDGs), among others.

2) **Ecological Sensitivity Analysis of Three Alternative Sites** (Lindi, Mtwara, Pangani).

B. Sector-Specific Environmental Adequacy Assessment

1) **Atmospheric Environment**

- Nitrogen oxide (NOx) emissions were projected at 12,500 tons/year, but the introduction of **Low-NOx Burner** technology confirmed a potential **17% reduction** against the standard.

2) **Marine Ecosystem**

- Changing the subsea pipeline route resulted in a **35% reduction** in coral reef damage area, from 12.7 km² to 8.2 km².

3) **Carbon Neutrality Assessment**

- To offset the annual 2.8 million tons of CO2 generated throughout the project's lifecycle, a plan is underway to create a **1,200-hectare mangrove forest** in the Rufiji River basin.
- **CCUS (Carbon Capture, Utilization, and Storage)** technology will be introduced to inject CO2 generated during the gas processing into the Songo Songo oilfield.

C. Socio-Economic Adequacy Review

1) Creation of **17,300 direct jobs**.
2) Incurrence of social costs due to the **forced relocation of 4,000 residents** (estimated at $120 million).

    - Cash compensation for displaced residents ($25,000 per household).
    - Establishment of three solar technology centers.
    - Development of community enterprise creation programs.

D. Assessment

1) A **model case for environmental management** in large-scale energy infrastructure projects.
2) Introduced a **Quantitative Risk Analysis (QRA) model** to quantify environmental risks for each alternative:

    - Ecosystem Impact (35%)
    - Climate Change Contribution (25%)
    - Community Capacity (25%)
    - Economic Efficiency (20%)

3) A proposal for adding **blue hydrogen production facilities** will be newly reviewed during the re-evaluation in **2026**.
4) This project serves as a **highly useful precedent** for the environmental impact assessment to be conducted for the Oilbi project.

VIII. Project Timeline

1. Overview

Disclaimer: *the project timeline presented here is an indicative estimate based on our best current assumption and planning. Actual schedules may be subject to change due to regulatory approvals, financing arrangements, partner selection, and other external factors beyond the company's control.*

It's worth noting that General Electric (GE) and Baker Hughes conducted a preliminary feasibility study and concept design a few years ago at OILBI's request.

2. Project Schedule Summary

A. 2025 Q4

• Sign the PSA with the Tanzanian government.
• Strengthening the core project team.

• Comprehensive review, and compilation of all documents.
• Preliminary meeting with KOGAS.

B. 2026 Q1

• Initiate full-scale discussion with KOGAS and other major Korean/Foreign partners.
• Consortium and Joint Venture(JV) structure negotiations.
• Intensify technical and financial feasibility studies.
• Secure key regulatory permits and advance host government negotiations.

C. 2026 Q2-Q4

• Finalize JV structure, partnership roles, and basic investment commitments.
• Complete Front-End Engineering Design (FEED).
• Launch formal Host Government Agreement (HGA) negotiations.

D. 2027

• Wrap up HGA and major permitting procedures.
• Secure long-term off-take (SPA) agreements.
• Reach Final Investment Decision(FID), finalize main project funding and EPC selection.
• Begin early infrastructure work and order long-lead items.

E. 2028-2029

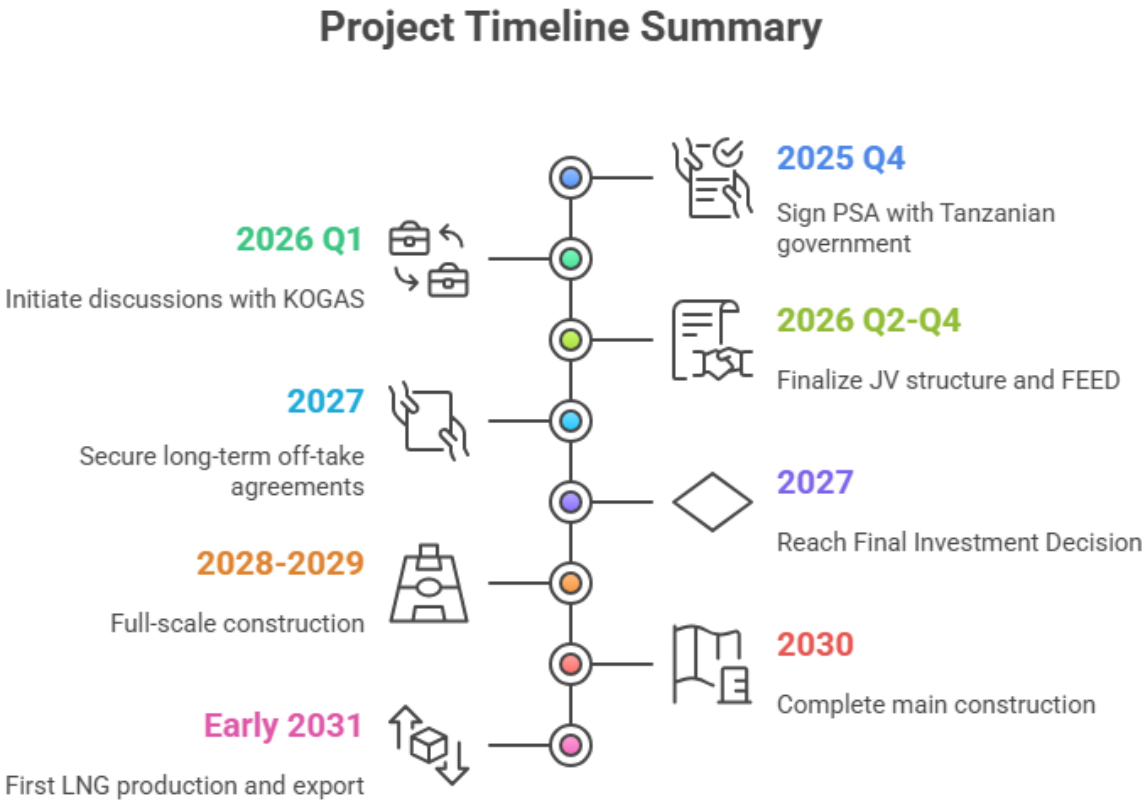
• Full-scale plant, marine, and sea-bed pipeline construction.
• Continuously monitoring local procurement, workforce training, and community programs.

F. 2030

• Complete main construction.
• Start pre-commissioning and cold testing of all systems.

G. Early 2031

• Begin commissioning of the LNG plant
• Achieve first production and export of LNG cargo
• Ramp-up to steady-state commercial operations



IX. References

1. Global LNG Supply and Demand Outlook for the 2030s

A. Global Demand Outlook: Differentiated Regional Growth

1) **Asia: Key Driver of Demand Growth**

- Asia is projected to account for over **65% of global demand**.
- China's position as the **largest importer** will be solidified.
- India and emerging Southeast Asian nations are expected to become **new pivots** in the LNG market.

2) **Europe: Structural Decline in Demand**

- The increasing share of renewable energy and the restart of nuclear power plants are key factors.

3) **New Demand Sources: AI Data Centers and Shipping Industry**

- The surge in power demand from **AI data centers** is emerging as a new variable in the LNG market (expected to exceed 1,000 TWh by 2030).
- The increasing adoption of **LNG-fueled vessels** is anticipated to create additional LNG demand (an estimated 16 million tons of additional demand annually from 2030).

B. Major Shifts in Supply: Led by the United States and Qatar

1) **United States** aims to capture **33% of the global supply chain by 2030**, targeting Asian and European markets.

- Projects include Plaquemines LNG, Golden Pass LNG (underway), and Alaska LNG.
- Policy changes since the Trump administration have eased permitting, but risks persist due to tariffs, labor shortages, reduced Chinese demand, and European decarbonization efforts.

2) **Qatar** plans to increase production to **142 million tons by 2030** through its North Field Expansion (NFE/NFS/NFW) projects.

C. Supply-Demand Balance Outlook: 2027 as a Turning Point

1) The global supply-demand dynamic is expected to **reverse in 2027**, leading to a projected **surplus of 60 million tons by 2030**.
2) However, the possibility of **short-term price spikes** remains due to climate change (extreme temperatures) and geopolitical risks (e.g., Red Sea trade route disruptions).

D. Changes in the LNG Industry Structure

1) **Emergence of FLNG (Floating LNG)**

- Offers cost savings in construction time and CapEx compared to onshore projects.
- FLNG facilities are projected to account for approximately **12% of total LNG production by 2030**.

2) **Accelerated Decarbonization and ESG Strengthening**

- Growing trend towards eco-friendly projects such as 100% renewable energy-based LNG bunkering, CCUS, and e-methane.
- The application of CCUS is expected to establish an **LNG premium pricing system**.

- A premium price of **$15-20 per ton** is anticipated for eco-friendly LNG compared to conventional LNG (projected to account for 30% of total trade volume).

3) **Adoption of AI Technology**

- The introduction of **AI-based digital twin technology** is expected to improve plant utilization rates from 92% to 97%.

E. Global Market Response Strategies

- Accelerate value chain integration.
- Establish an eco-friendly LNG ecosystem.
- Increase investment in digital infrastructure.
- Enhance the accuracy of AI-based demand forecasting.
- Invest in technology to secure carbon premiums.
- Develop flexible volume management systems (reducing the proportion of long-term contracts and adjusting volumes in conjunction with prices).

2. Tanzania LNG Project (TLNGP)

A. Overview

- A large-scale LNG production facility planned for construction in Likong'o-Mchinga village, Lindi region, southeastern Tanzania.
- Will process gas reserves from offshore Blocks 1, 2, and 4 in Tanzania (estimated recoverable reserves of approximately 40 trillion cubic feet).
- Projected capacity of 20 million tons per annum (MTPA) with a total project cost of approximately $42 billion.
- Participating companies: Shell, Equinor, and Exxon Mobil consortium.

B. Recent Developments

- As of May 2025, the **Host Government Agreement (HGA) is in the final negotiation stage.**
- The Tanzanian Ministry of Energy has expressed an intention to sign the HGA by **July 2025**, hoping to conclude it before the October presidential election.
- The HGA covers project development and operational terms, as well as updates to the Production Sharing Agreement (PSA).

B-1. HGA Negotiation Points of Contention

- **Domestic Gas Allocation:** The Tanzanian government demands 3% of produced gas be allocated for domestic demand.

- **Stricter Local Content Regulations:** Ensuring participation of Tanzanian companies and personnel in the project.
- **Mandatory Use of Tanzanian-Registered Insurance Companies**, among other requirements.

C. Future Schedule Outlook

- If the HGA is signed in 2025, the **Final Investment Decision (FID) is expected around 2027.**
- FID typically occurs after the completion of Front-End Engineering Design (FEED).
- Given the project's scale, the FEED work is projected to take about two years.
- Following FID, commercial production is anticipated to commence in **2031-2032** after a 3-4 year construction period.

D. Economic Impact and Challenges

1) **Economic Impact**

- Successful execution of the project is estimated to generate approximately **$7 billion in annual revenue for the Tanzanian government** (Standard Bank analysis).
- Accelerates infrastructure development, fosters skilled labor, promotes related industry growth, and revitalizes the local economy.

2) **Challenges**

- Potential for **contract term changes due to Tanzania's resource nationalism**.
- Operational constraints stemming from **strict localization requirements**.
- Possibility of **increased project costs**.
- Intensified market competition due to expanded LNG supply from the U.S., Qatar, etc.
- Overall **infrastructure vulnerability in Tanzania**.

E. Relationship with the Oilbi Project

- **Cost savings** due to overall regional infrastructure improvement (distance between the two project sites is approximately 90 km).
- **Strengthened supply chain** from improved related industry ecosystems.
- Creation of a **favorable regulatory environment**.
- Accumulation and sharing of **regional technology and know-how**.

F. Conclusion and Outlook

- Both the Tanzanian government and global majors are assessed to have a **strong commitment to advancing the project.**
- The **outcome of the Tanzanian presidential election in October 2025** is expected to influence the project's pace (re-election of incumbent President Hassan is anticipated to lead to smooth project progress).
- If this project is successfully implemented, Tanzania is projected to emerge as a **major LNG exporter.**
- Positive ripple effects are also anticipated for the Oilbi project.

3. Korea Gas Corporation (KOGAS) Participation Trends in Mozambique Resource Development Projects

A. Area 4 Offshore Gas Field Exploration and Development Project

- To participate in the exploration and development of gas fields within Mozambique's offshore Area 4, KOGAS acquired a **10% stake (Farm-In)** in 2007 from Italy's ENI, which held the operating rights for the block.

B. Area 4 Coral South FLNG Project Participation

1) This project aims to produce **3.37 million tons of LNG annually until 2047**. A consortium of six companies, including KOGAS, ENI (Italy), ExxonMobil (USA), CNPC (China), ENH (Mozambique), and Galp (Portugal), is participating.

- The total project cost is **$7 billion**, with KOGAS acquiring a **10% stake in 2017**.
- In 2023, a total of 2.66 million tons of LNG were produced. KOGAS secured 266 thousand tons, generating approximately **$130 million in revenue** (according to media reports).

2) This project marks the **first instance where KOGAS participated in the entire value chain**, from field exploration and gas field development to LNG production.

C. Area 4 Coral North FLNG Project Participation Trends

- In 2025, KOGAS officially announced its intent to participate in this project.
- The total investment for this project will be financed among participating companies according to their equity stakes, similar to the Coral South FLNG project.

4. Korea Companies' Participation Trends in Mozambique LNG Projects

A. Related Overview

1) Korea Gas Corporation (KOGAS), Samsung Heavy Industries, and Daewoo E&C are currently involved in offshore and onshore LNG projects within Mozambique's Rovuma Basin.
2) Should these companies participate in the Oilbi project, the experience gained from their Mozambique projects is expected to significantly contribute to the Oilbi project's successful execution.

B. Korea Gas Corporation (Refer to previous content)

C. SAMSUNG Heavy Industries

1) Samsung Heavy Industries is playing a pivotal role in the **design and construction of the Floating LNG (FLNG) vessel** for the Coral South FLNG Project, which KOGAS is also involved in, located offshore Area 4 in Mozambique.
2) Construction of this vessel began in 2018, and it was delivered to Mozambique in April 2022. Samsung Heavy Industries is also **imminent in securing the contract for the second FLNG project (Coral Norte Project)**.

D. Daewoo E&C

1) Daewoo E&C is participating as one of the contractors in the **Mozambique LNG Project, led by TotalEnergies (France).**

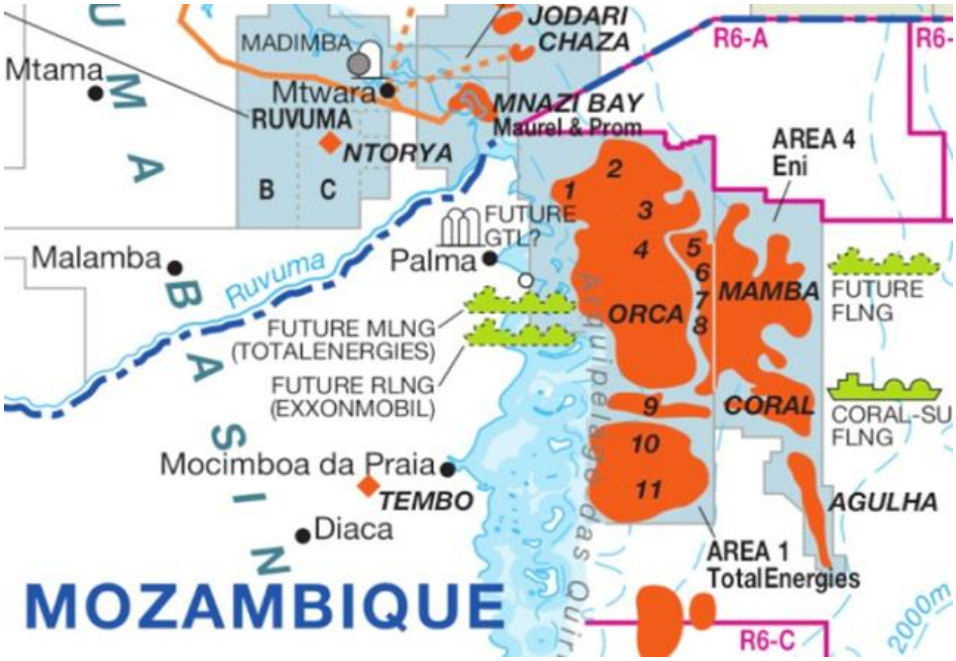
- Lead Contractors: Saipem (Italy), McDermott (USA), Chiyoda (Japan)
- Daewoo E&C's contract size: Approximately 500 billion KRW

2) This project involves establishing an **LNG production facility with an annual capacity of 13 million tons** on the Afungi Peninsula in Cabo Delgado, northern Mozambique. A consortium of five companies is participating (total project cost of $20 billion):

- TotalEnergies (France): 26.5% (Operator)
- Mitsui (Japan/20%), ENH (Mozambique National Oil Company/15%), ONGC (India/30%), PTTEP (Thailand/8.5%)
- Approximately $15 billion of the total project cost is being financed through debt (U.S. Exim Bank re-approved a $4.9 billion loan in March 2025).

3) Construction began in 2019 following the FID, but the project was **halted in March 2021** after an attack by Islamic militants on Palma town, near the project site.

- **Project resumption is expected in mid-2025**, with completion projected for 2029-2030.



5. Analysis of Key Partnerships with Korean Companies Beyond KOGAS

A. POSCO International

1) **Strengths & Capabilities**

- Currently involved in offshore gas field development projects in Myanmar, Indonesia, and Australia, demonstrating expertise in **gas block development and operation**.
- Strengthening its LNG trading business, including a 20-year contract signed in 2024 with U.S. oil and gas company Mexico Pacific for the purchase of 700,000 tons of LNG annually.
- Possesses the **Gwangyang No. 1 LNG Terminal and is constructing the No. 2 terminal**, indicating strong storage and regasification capabilities.
- Enhancing its transportation capabilities, including the introduction of its **first dedicated LNG carrier in May 2025**.

2) **Collaboration Opportunities**

- Apply its experience in overseas gas field development and operation to the **Oilbi gas block development**.
- Utilize its existing LNG terminal operation experience for the **construction of Oilbi project's onshore LNG facilities**.

B. SK Innovation E&S

1) **Strengths & Capabilities**

- Possesses an **integrated LNG value chain**, spanning from upstream (development of Australia's Barossa gas field) to midstream (transportation and terminals) and downstream (power plants).
- Has secured a usage agreement for the Freeport LNG terminal in the U.S. and a long-term purchase agreement with the Tangguh gas field in Indonesia.
- Operates the **Boryeong LNG Terminal** in South Korea and **four domestic power plants** (totaling 4.4 GW).

2) Collaboration Opportunities

- Leverage experience in Australian gas field development and its global trading network.
- Utilize SK's power plant operation expertise in the downstream sector.

C. SK GAS

1) **Strengths & Capabilities**

- Actively building an LNG value chain, leveraging **40 years of experience in the LPG business**.
- Operates **Korea Energy Terminal (KET)**, an LNG terminal, in a joint venture with Korea National Oil Corporation.
- Expanding its energy business into areas like **LNG bunkering, hydrogen, and ammonia**.
- Set a target to supply **13.7% of domestic natural gas demand by 2034**.

2) **Collaboration Opportunities**

- Apply KET terminal operation experience to the **Oilbi terminal operations**.

D. GS Energy / GS Caltex

1) **Strengths & Capabilities**

- One of the leading companies in the **direct import of LNG for self-generation**.
- Possesses experience contracting with majors like Chevron.

2) **Collaboration Opportunities**

- Participate partially in the Oilbi project, collaborate in LNG marketing, and sign off-take agreements.

E. Consortium Formation Scenarios

1) **Model 1: POSCO International-Led**

- Participating Companies: SK Gas, Daewoo E&C / Hyundai E&C / Samsung C&T (EPC)
- Features: Structured around upstream capabilities and LNG terminal operation experience.

2) **Model 2: SK E&S-Led**

- Participating Companies: GS Energy, Daewoo E&C / Hyundai E&C / Samsung C&T (EPC)

- Features: Utilizes integrated value chain and global gas field development experience.

3) **Model 3: Integrated Model**

- Participating Companies: POSCO, SK, GS, Daewoo / Hyundai / Samsung
- Features: A comprehensive approach combining the strengths of each company.

F. Evaluation

- Given Korea Gas Corporation's (KOGAS) current financial situation (over 40 trillion KRW in debt) and pre-determined projects, a standalone Joint Venture (JV) with Oilbi is assessed as difficult. However, establishing a multilateral JV or forming a consortium with other companies is considered feasible.
- Even if KOGAS's participation itself proves challenging, the possibility of advancing the Oilbi project through cooperation with other energy companies remains high.
- In particular, POSCO International and SK E&S possess experience in overseas gas field development and operation, allowing for direct contributions to the Oilbi project.
- The domestic energy companies' experience in operating LNG terminals and power plants can be appropriately leveraged for the Oilbi project's infrastructure development.

6. Korea-Tanzania Economic Cooperation Trends

Recently, South Korea and Tanzania have been strengthening their friendly relations, primarily in the economic sector. Tanzania is one of the African countries with which South Korea is most actively pursuing economic cooperation.

A. Strategic Cooperation

1) South Korea has pledged to provide **$2.5 billion in Economic Development Cooperation Fund (EDCF) loans to Tanzania over five years, from 2024 to 2028.**
2) On the occasion of President Hassan's visit to Korea in June 2024, the two countries adopted a **Joint Declaration for the conclusion of an Economic Partnership Agreement (EPA).**
3) Korean companies recognize Tanzania as a gateway to East Africa and are actively seeking investment opportunities, particularly in sectors such as **energy, construction, and infrastructure.**

B. Development Assistance

1) The **Korea International Cooperation Agency (KOICA)** leads the provision of continuous development assistance to Tanzania in areas such as technology, education, healthcare, and agriculture.

C. Energy Collaboration

1) During the Korea-Tanzania summit in June 2024, President Hassan emphasized the **necessity of cooperation between the two countries for the development of Tanzania's natural gas resources.**

2) The success of the Oilbi project is expected to significantly contribute not only to the mutual benefit of both nations but also to the promotion of **follow-up projects for Tanzania's resource development, which holds substantial potential.**

7. Tanzania: Key Political and Economic Trends

A. Political Trends

1) Political Stability

- Tanzania faces a low risk of political violence or terrorism, and its political stability index, according to the World Bank, is better than that of India and Indonesia.
- In 2023, the World Bank's 'Political Stability & Violence/Terrorism' index for Tanzania was -0.44, placing it at a medium level internationally.
- For comparison, Indonesia was at -0.51, India at -0.62, Kenya at -0.94, and Mozambique at -1.27.
- The ruling party (CCM) has maintained stable power since 1995, and political stability has continued since President Hassan took office in 2021.

- The country has maintained consistent economic growth (projected at around 6% in 2024), driven by market opening, pro-business policies, and active investment attraction.

2) **Presidential and General Elections (October 2025) Outlook**

- The prevailing analysis suggests that President Hassan will secure re-election, and the ruling party will maintain its dominance.
- If re-elected, policy continuity and political stability are expected to be maintained.

B. Geopolitical and Security Risks

- Tanzania generally exercises **restraint in regional conflicts and acts as a mediator**.
- However, some **external security risks exist**, such as Islamic extremism in neighboring countries (e.g., Mozambique).

C. Political and Policy Instability Factors

1) **Conflict between Tanzania and the Zanzibar Semi-Autonomous Government**

- Recurring conflicts arise over power distribution, economic disparities, and demands for greater autonomy.

2) **Social Discontent**

- Potential for social discontent due to poverty, unemployment, and income inequality.
- There is always a possibility that social grievances could escalate into large-scale protests depending on election outcomes or local issues.

3) **Resource Nationalism Movement**

- A growing trend, particularly in the mining and energy sectors, to expand the role of state-owned enterprises and increase government stakes.

D. Economic Trends

1) The overall economic outlook is **favorable**, with an expected economic growth rate of approximately **6% in 2025**.
2) Characterized by stable price management (around 3%), stability in trade and foreign exchange markets, and an improving trade balance.
3) The **service sector**, including tourism, finance, and telecommunications, accounts for approximately **40% of GDP**.

4) Focus on **infrastructure development** (railways, roads, ports) in accordance with the 3rd Five-Year Economic Development Plan (2022-2026).

Appendix 1:
Oilbi NPV Calculation Method

NPV Calculation: OILBI LNG Project (Approx. $3.5 Billion)

The Net Present Value (NPV) represents the present value of future cash flows. For the OILBI project, the NPV is estimated at **$3.5 billion**, based on after-tax cash flows over a 28-year period (2030-2057). This figure was derived using standard financial formulas and step-by-step calculations, aiming to provide transparency to investors.

The formula used is:

$$\text{NPV} = \sum_{t=1}^{28} \frac{CF_t}{(1+r)^t} - \text{Initial Investment}$$

Where:

- CFt: After-tax cash flow in each year
- r: Discount rate (WACC = 5.81%)
- n: Total period (28 years)
- Initial Investment: Equity contribution

Key Assumptions

- **Annual Revenue: $1,750 million** (2.5 million tons x $700/ton)
  - *Price per ton is calculated based on JKM DES price: $13.5/MMBtu, with 1 ton ≈ 52 MMBtu.*
- **Royalty: $131.25 million** (7.5%)
- **Total Project Cost: $3,600 million**
  - Debt (to be repaid): $2,600 million
  - Equity: $1,000 million
- **OpEx (Operating Expenses): $220 million/year**
- **Debt Repayment:** 70% of revenue after royalty deduction.
- **Oilbi Profit:** 30% of the remaining amount after deducting debt repayment and OpEx.
- **Taxes:** Corporate Income Tax 30%.
- **Discount Rate:** 5.81%.
- **Calculation Period:** 2030-2057 (28 years).

1. Step-by-Step Calculation Process

Step 1: Organize Annual After-Tax Cash Flow

Period	After-Tax Cash Flow (USD, million)	Description
2030 ~ 2032	101.98	Period of debt repayment
2033 ~ 2057	293.74	Debt repayment complete, profit maximization

Total revenue spans 28 years: 3 years + 25 years.

Step 2: Calculate OILBI's Annual Discount Factor (Applying WACC 5.81%)

The discount factor is calculated using the formula: $\frac{1}{(1+0.0581)^t}$

Year	Discount Factor	Applied After-Tax Cash Flow	Present Value (PV)
2030 (t=1)	0.945	101.98	96.3
2031 (t=2)	0.893	101.98	91.0
2032 (t=3)	0.844	101.98	86.0
...	...	...	...
2057 (t=28)	0.170	293.7375	≈ 50.0

Step 3: Sum All Present Values (PV)

The sum of all present values is approximately **$4,500.89 million**.

$\sum_{t=1}^{28} \frac{CF_t}{(1.0581)^t}$ ⟹4,500.89 million dollars

Step 4: Subtract Initial Investment

NPV=4,500.89−1,000=3,500.89 million dollars

2. Conclusion

The value of the Oilbi LNG project (based on present value) is approximately **$3.5 billion USD**.

- If the initial debt repayment ratio is high, initial years' profits are lower, but repayment is faster.
- Once repayment is complete, net profit is maximized, and cash flow surges.
- The Net Present Value (NPV) is the result of summing all these cash flows after discounting them by a WACC of 5.81%.

Appendix 2:
OILBI Revenue and Cumulative Revenue (Unit: Million USD)

Year	Annual Sales (USD, million)	Royalty (USD, million)	OPEX (USD, million)	Debt Repayment (incl. interest, USD, million)	Remaining Debt (USD, million)	Net Profit (USD, million)	OILBI Profit (USD, million)	OILBI Cumulative Profit (USD, million)
2030	1,750	131.25	220	913.13	1,842.88	485.63	145.69	145.69
2031	1,750	131.25	220	913.13	1,040.32	485.63	145.69	291.38
2032	1,750	131.25	220	913.13	189.62	485.63	145.69	437.06
2033	1,750	131.25	220	200.99	0	1,387.37	416.21	853.27
2034	1,750	131.25	220	0	0	1,398.75	419.63	1,272.90
2057	1,750	131.25	220	0	0	1,398.75	419.63	10,924.30

- 2035-2056: Values remain constant
- Cumulative profit of approximately $10.9 billion
- (Cumulative after-tax profit of approximately $7.6 billion

Appendix 3: BEP (Break-Even Point)

The Break-Even Point (BEP) is defined as the moment when OILBI recovers its invested capital in the project (equity of $1 billion USD) through after-tax cash earnings. In other words, it is the point at which OILBI's cumulative after-tax profit exceeds $1 billion USD.

Based on the previously calculated after-tax cumulative profit :

Cumulative Profit (Million USD)

Year	Profit
2030	101.98
2031	203.96
2032	305.94
2033	599.68
2034	893.42
2035	1,187.16

> Year of BEP Attainment: 2035

Significance: OILBI is projected to fully recover its $1 billion investment by the 5th year, and thereafter, the project will enter a phase of pure profit realization.

Appendix 4: IRR (Internal Rate of Return) - *Equity IRR*

Step 1: Calculation Formula

The Internal Rate of Return (IRR) is the discount rate (r) that makes the Net Present Value (NPV) of all cash flows from a particular project equal to zero. In this case, it is the Equity IRR, meaning it focuses on the return to the equity investors.

$$NPV = -\text{Initial Investment} + \sum_{t=1}^{28} \frac{\text{After-tax Profit}_t}{(1+r)^t} = 0$$

Where:

- **Initial Investment:** $1,000M (Equity)
- **Revenue:** After-tax profit attributable to Oilbi
- **Discount Rate (r):** The value to be found through calculation, representing the IRR

Step 2: Annual Cash Flow (After-Tax Profit)

Year / Period	After-Tax Profit (Million USD)	Description
2030–2032	101.98	During debt repayment
2033	291.35	Immediately after debt repayment
2034–2057	293.74	Maximized net profit after debt repayment

Step 3: Generate Cash Flow Sequence for IRR Calculation

Since IRR is the "discount rate at which the Net Present Value (NPV) of future cash flows becomes 0," the following sequence is created:

Cash Flow = [−1,000, 101.98, 101.98, 101.98, 291.35, 293.74, …(28 values)]

This sequence includes the initial investment of **−1,000** (representing $1 billion USD), resulting in a total of 29 data points.

The IRR calculation then involves finding the rate of return (r) that makes the NPV of this cash flow sequence equal to 0.

Step 4: IRR Calculation Result

Calculating this yields an **IRR of 20.88%**.

This means that the value of r for which NPV = 0 is 20.88%.

Significance: Because this IRR (20.88%) is significantly higher than the WACC (5.81%), it represents a **highly compelling rate of return for investors.**

It implies that for an initial investment of $1 billion USD, investors can expect to recover their returns at an annual rate of 20.88%.

Appendix 4-1. WACC (Weighted Average Cost of Capital)

WACC (Weighted Average Cost of Capital) represents the average cost a company incurs to raise capital, reflecting both the cost of debt and the cost of equity. This value is used as the discount rate in NPV calculations.

1. Formula for WACC:

$$WACC = \left(\frac{E}{V} \times Re\right) + \left(\frac{D}{V} \times Rd \times (1 - Tax)\right)$$

Where:

- E = Equity: $1,000 million USD
- D = Debt: $2,600 million USD
- V = Total Capital (E+D): $3,600 million USD
- Re = Cost of Equity: Assumed to be 10%
- Rd = Cost of Debt (Interest Rate): 6%
- Tax = Corporate Tax Rate: Assumed to be 30%

2. Equity Weight

This would typically be calculated as $\frac{E}{E+D} = \frac{1,000}{3,600} = 0.2778$

3. Debt Weight

This would typically be calculated as $\frac{D}{E+D} = \frac{2,600}{3,600} = 0.7222$

4. After-Tax Cost of Debt

This would typically be calculated as $r_d \cdot (1 - T) = 0.06 \cdot (1 - 0.30) = 0.042$

5. Substitution into WACC Formula

WACC=(0.2778×10%)+(0.7222×6%×(1−0.30)) WACC=2.778%+3.033%≈5.81%

Result: WACC=2.78%+3.03%=5.81%

Significance: This means the project must generate a return (IRR) of at least 5.81% to be considered economically viable.