

Oil and Gas Industry Strategy in Facing the Energy Transition Era: A Scenario Planning Approach for PT XYZ (Indonesian Natural Gas Transporter Company)

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Abstract

Energy transition has emerged as a pressing challenge for oil and gas companies, particularly those operating in midstream sectors such as PT XYZ. As demand shifts toward cleaner energy sources and regulatory frameworks evolve, strategic uncertainty has increased. This study aims to assist PT XYZ in anticipating future developments through a scenario planning approach. Using qualitative methods, the author incorporates insights from interviews with stakeholders including regulators, customers, and competitors and association along with PESTEL and Porter's Five Forces analysis to identify key drivers shaping the industry. The study identifies two critical uncertainties: the direction of oil and gas investment and the pace of low-carbon/energy transition policy implementation. These are used to construct a 2x2 scenario matrix outlining four plausible futures: Dual-Track Acceleration, Gas Stronghold, Clean Leap, and Stuck in Transition. The author emphasizes that each scenario includes early warning signals and strategic implications to support management decision-making. Rather than predicting one fixed outcome, this framework is intended to guide PT XYZ in building flexible, forward-looking strategies. Scenario planning is presented as a useful tool to manage complexity and prepare for disruption in Indonesia's energy sector.

Keywords: *Scenario Planning, Energy Transition, Strategy, Oil and Gas*

I. Introduction

The energy transition has emerged as a critical issue within the oil and gas sector. The industry's reliance on fossil fuels makes the shift toward cleaner and renewable energy sources inevitable. The energy transition aims to reduce emissions, enabling the limitation of global warming to 1.5 celcius by 2050. The energy transition is also grounded in the Paris Agreement, signed by leaders of more than 180 countries, in an effort to reduce greenhouse gas emissions and ensure that global temperatures do not rise by more than 2 celcius. The Paris Agreement plays a crucial role in guiding global energy policies to accelerate a clean and sustainable energy transition. Indonesia, in supporting the energy transition, has issued strategic policies such as Ministerial Regulation of Energy and Mineral Resources Number 6 of 2016. Oil and gas companies are challenged to adapt to the energy transition while maintaining profitability. In Indonesia, PT XYZ owns and operates more than 1,000 kilometers pipeline, transporting natural gas for domestic (Sumatera) & international market (Singapore). However, declining gas production, regulatory uncertainty, and the rising prominence of new and renewable energy sources present existential risks to its business model. This research explores strategic planning for PT XYZ by developing future scenarios based on critical uncertainties to sustain and grow in energy transition era. The author intentionally conceals the identity of The Company's name for this research due to confidentiality matters.

Background

PT XYZ has established a strong reputation as a reliable provider of gas transportation services since its inception in 2002. Despite facing significant challenges in the future, the company has demonstrated its commitment to consistently deliver high-quality and sustainable services. PT XYZ's heavy reliance on the

natural gas pipeline business presents considerable risks amid the dynamic changes in the global economy, technology, regulations, and energy markets. As a natural gas transporter, fluctuations in gas supply and demand are critical to the company's business. The development of new natural gas reserves within the company's operational areas has seen little progress in recent years, partly due to declining interest from oil and gas producers in exploring new fields, which is attributed to regulatory instability and investment climate uncertainty [Resmisari and Patria, 2021].

Additionally, as the owner of natural gas transmission pipelines, PT XYZ faces challenges associated with aging infrastructure, necessitating the development of new business models that are not solely dependent on natural gas transportation. According to a press release from the Ministry of Energy and Mineral Resources (Number 129.Pers/04/SJI/2024, issued on March 4, 2024), although Indonesia's natural gas reserves exceed its oil reserves, national gas production is projected to decline in the coming years due to the natural depletion of existing gas wells.

While the government continues efforts to discover new gas fields, these initiatives require substantial time and investment. The government remains committed to increase domestic gas utilization and gradually reducing exports to maintain energy security and independence, as well as to support economic growth. This policy aims to optimize the management and utilization of natural gas during the transition from fossil fuels to new and renewable energy. Such measures will inevitably impact PT XYZ, as gas transportation for export currently constitutes the company's largest revenue stream. To ensure the study's findings are closely aligned with its research objectives, the results address the following key research questions:

- 1) What are the key driving forces influencing the development of the oil and gas industry during the energy transition?
- 2) Which driving forces have the highest uncertainty and impact on the oil and gas industry?
- 3) What are the possible scenarios that the oil and gas ?
- 4) Based on the developed scenarios, what is the most appropriate business strategy for PT XYZ over the next five years?

II. Materials And Methods

a) Conceptual Framework

Logical structure is necessary to thoroughly explore the research problem. The conceptual framework refers to the system that outlines the concepts, activities, and relationships that the researcher will pursue throughout the study [Adom et al., 2018]

Figure-1: Conceptual Framework (Author)



In this study, the conceptual framework begins with business exploration to understand the company's strategic context and future direction. Based on this understanding, a problem statement is formulated to focus on the key strategic issues facing PT XYZ. External analysis using PESTEL and Porter's Five Forces frameworks provides insights into the external driving forces and industry competition. Simultaneously, internal analysis assesses the company's strengths and weaknesses to ensure strategic alignment with its internal capabilities. Key focal issues identified from the external and internal analyses guide the subsequent stages. The study proceeds to determine driving forces and critical uncertainties through an impact-uncertainty assessment. These critical uncertainties are mapped onto a 2x2 scenario matrix to construct four distinct future scenarios. Each scenario is further elaborated into narratives to deepen the strategic insights. Early warning signals are identified to monitor which scenario may unfold in the future. From the scenarios and early signals, strategic implications and strategic options are derived, enabling PT XYZ to prepare adaptive strategies.

b) Data Collection Method and Analysis

Data collection for this research utilized both primary and secondary sources. Primary data were obtained through in-depth interviews with PT XYZ employee, regulators (BPH Migas, Ministry of Energy and Mineral Resources) association, customers, and competitors, aiming to capture insights into current conditions and future prospects in the oil and gas industry. Secondary data were gathered from books, academic journals, articles, government reports, official websites, news media, and other relevant sources to enrich the external and internal analyses and to validate the findings from primary data

Literature Review

1) Strategy Management

Strategic management as an art and knowledge in formulating, implementing, and evaluating cross-functional decisions that enable an organization to achieve its goals" (Anggadwita et al., 2016). Grant (1995) defines strategy as a collection of ideas that assist individuals or organizations in making decisions. Given

that these decisions are long-term, complex, and future-oriented, management must be actively involved in shaping corporate strategy. To support strategy and improve business performance, a company's resources are crucial (Sutjipto et al., 2019). According to David (2009), strategic management consists of three stages :

a) Strategy Formulation

This stage involves the creation of vision and mission statements, the identification of opportunities and threats through external audits, and the recognition of strengths and weaknesses via internal audits. Strategy formulation also determines long-term objectives and selects the most appropriate strategies to achieve them.

In the context of VUCA (Volatility, Uncertainty, Complexity, and Ambiguity), scenario planning is considered a flexible and adaptive approach that helps organizations identify and mitigate risks while capitalizing on emerging opportunities.

b) Strategy Implementation

At this stage, strategies are applied across various functions, including management, marketing, accounting, finance, research and development, and management information systems.

c) Strategy Evaluation

This is the final phase of the process. It involves three key activities: evaluating internal and external factors, assessing performance, and making corrective actions if necessary. According to David (2011), strategic management enables organizations to develop more effective strategies, fostering a proactive approach toward achieving future goals.

There are three levels of strategy (Pasaribu et al., 2016);

- a) Corporate Level Strategy refers to the stage at which top management organizes the activities and operations of the organization across more than one line of business.
- b) Business Unit Level Strategy is when management focuses more specifically on a particular business unit.
- c) Functional Level Strategy is when strategies within the framework of management functions support the business unit strategy.

2) Scenario Planning

According to Garvin and Levesque scenario planning is a process that encourages creative and imaginative thinking to plan for the future of an organization. Scenario planning assists companies in preparing for and identifying various possibilities in a dynamic industry environment [7]. Riawan et al. state that managers often use scenario planning techniques to articulate mental models of the future in order to make better decisions. For over forty years, Royal Dutch Shell has utilized scenario planning as a strategic tool to anticipate uncertain situations. Shell realized that to effectively respond to changes and industry trends, it was essential to consider multiple scenarios. The development of scenario planning by Royal Dutch Shell positioned the company ahead of its competitors, particularly in oil forecasting. In the design of the scenario planning process, eight stages are identified [8] as follows:

a. Identification of Key Focal Issues

The first stage of scenario planning involves identifying the key focal factors or issues and establishing the timeframe for the scenarios. During this process, strategic uncertainties must be incorporated to enable the organization to anticipate possible future developments and plan for potential challenges and opportunities.

b. Identification of Driving Forces

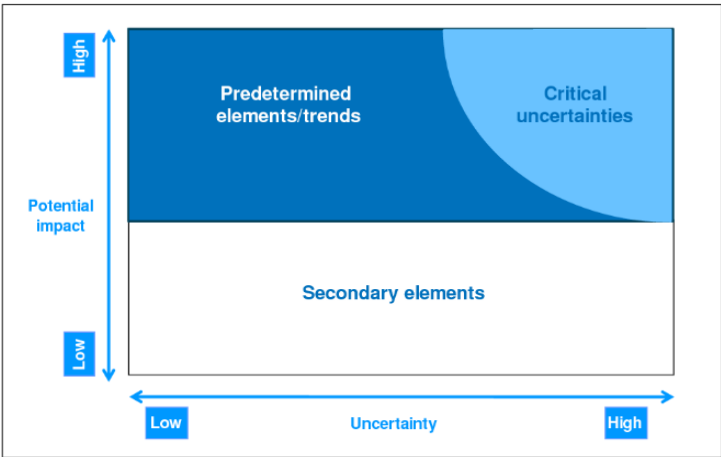
The second stage focuses on identifying the driving forces. After recognizing the main issue, the next step is to determine the internal and external forces influencing it. In this study, PESTEL analysis and Porter's Five Forces framework were utilized to identify the drivers. Once driving forces are identified, they are prioritized based on the level of uncertainty and potential impact.

c. Impact and Uncertainty Analysis

One method to analyze trends and uncertainties is the Impact-Uncertainty Grid. Secondary elements, trends, and critical uncertainties are essential components. Elements placed in the lower part of the grid (secondary elements) are not considered further due to their relatively low future impact. Important trends in the upper left quadrant represent elements that will influence the future and are used for scenario development. The upper right quadrant highlights critical uncertainties, representing elements with a high

degree of uncertainty and significant future impact. This classification process helps focus the scenario development on the most impactful and uncertain factors.

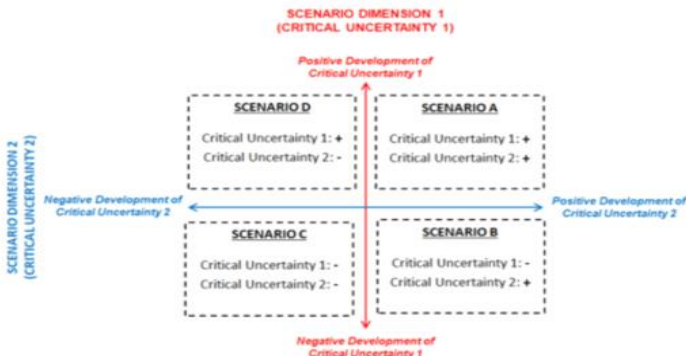
Figure-2 : Impact-Uncertainty Grid (Schwenker and Wulf, 2013)



d. Scenario Framework

Critical uncertainties are positioned along two axes of an uncertainty matrix, creating four quadrants for exploration. Each quadrant represents a distinct potential future.

Figure-3 : Scenario Matrix (Dean, 2020)



e. Scenario Development

Each quadrant leads to the development of different future plans depending on the organizational context and external conditions.

f. Narrative Development

Narratives are developed in a coherent and consistent manner, capturing key elements and dynamics within each scenario to make them realistic and actionable.

g. Determining Implications

Organizations must evaluate the strategic implications of each scenario for their business to design relevant and adaptive strategies.

h. Identification of Early Warning Signals

To reduce risks and seize opportunities, organizations must identify small changes or early signs indicating that a particular scenario may be unfolding.

3) External Analysis :

a. PESTEL

According to Vasileva (2018), PESTEL analysis is used for marketing planning, the development of new products or services, and strategy; this analysis also provides a framework for comprehensive analysis and assists in formulating possible business strategies. PESTEL analysis is a business analysis tool that considers factors such as political, economic, social, technological, environmental, and legal aspects that may impact the business environment. Walsh (2005) underlines that PESTEL analysis is an essential tool for

companies to identify relevant factors in their business environment and provides data and information that enable organizations to analyze the environment in order to predict conditions, thus allowing the organization to operate effectively in the future.

Figure-4 : PESTEL Framework (Rothaermel, 2017)



b. Porter's Five Forces

This analysis, developed by Michael E. Porter in 1979, helps to understand the level of competition within an industry and a company's potential profitability. The bargaining power of suppliers and buyers, the threat of substitution, the threat of new entrants, and rivalry among existing firms are five factors that can affect a business in the industry.

4) Internal Analysis

a) SWOT

SWOT encompasses all aspects of internal and external functions that can be integrated with PESTEL analysis to provide a comprehensive overview of a company's competitiveness (Sutjipto *et al.*, 2025). Schoemaker (1995) emphasizes that internal analysis, which involves identifying strengths and weaknesses, is necessary for scenario planning because the scenarios developed must be implementable, which depends on the internal capabilities of the organization. By understanding its strengths and weaknesses, a company can identify appropriate and effective strategies for specific situations.

b) Management Functional

According to David and David (2015), a company's internal environment is influenced by six major internal forces as follows:

- Management:** The five activities of this function are planning, organizing, motivating, staffing, and controlling.
- Marketing:** The term "marketing" refers to the process of defining, anticipating, creating, and fulfilling customer needs and wants regarding goods and services. Product, price, place, promotion, people, physical evidence, and process are all components of marketing activities.
- Finance:** Financial factors often influence implementation plans as they may alter strategies. For strategies to be effective, it is necessary to analyze the financial strengths and weaknesses of the organization.
- Operations:** Operations activities involve transforming inputs into goods or services. The operations line controls inputs, transformation, and the transfer of outputs between industries.
- Research and Development (R&D):** R&D and other business functions must collaborate strategically to be successful. R&D supports existing businesses, assists in launching new businesses, develops new products, improves quality, and increases production efficiency, in addition to deepening or expanding the company's capabilities.
- Management Information Systems:** Information guides management decisions. This function gathers data on resources such as marketing, finance, operations, and external cultural, social, environmental, political, economic, legal, technological, and competitive factors.

III. Results

a. Key Focal Issues

The key focal issue that forms the basis for exploring interviews with respondents is how the energy transition will impact the oil and gas industry over the next five to ten years.

b. Driving Forces

The second phase of scenario planning involves the identification and classification of driving forces. These driving forces consist of various factors, trends, and dynamics that may significantly affect or shape the key focal issue. The process of identifying these forces is carried out by utilizing primary data, gathered through interviews with essential stakeholders, and secondary data, obtained from a review of related documents, reports, and scholarly literature. These driving forces were analyzed and categorized into external and internal factors based on their relevance and influence on the company's strategic environment. The external forces were primarily drawn from PESTEL and Porter's Five Forces analysis, capturing broader macro-environmental and industry-level dynamics. Meanwhile, internal forces were identified from the company's internal conditions, capacities, and challenges. The complete list of driving forces identified through this process is presented in the following table, which reflects the strategic context of PT XYZ during the energy transition period.

Tab. 1 - Driving Forces for Oil and Gas Industry in Indonesia

Category	Driving Forces
Politic	Geopolitical Situation
	Government's Commitment on Net Zero Emission
Economy	Oil and Gas Demand
	Oil and Gas Investment
	Oil and Gas Production
Socio-Cultural	Qualified Human Capital in New and Renewable Energy
Technology	Low-Carbon Technology
Environment	Oil and Gas Company's Commitment on Environment Issue
Legal	Low-Carbon/Energy Transition Policy
	Tax and Incentives

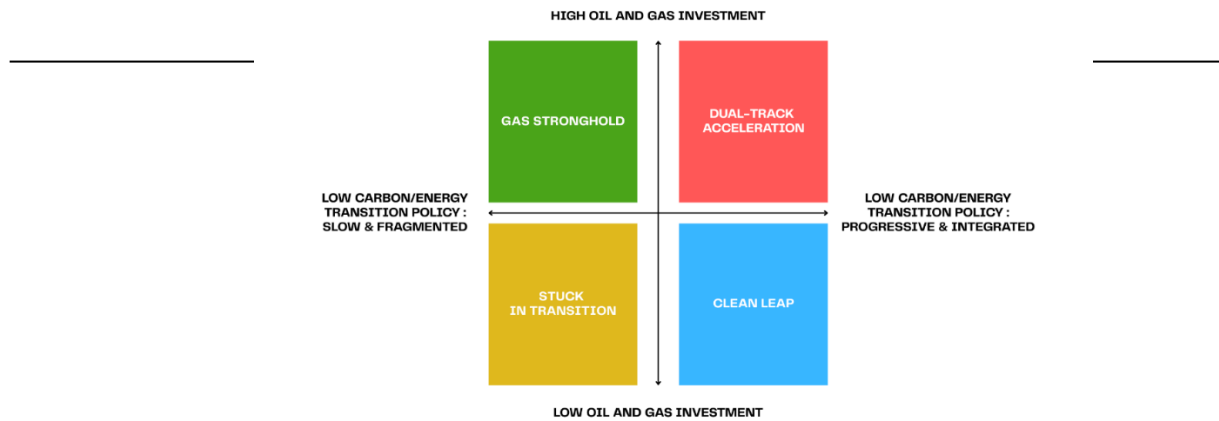
c. Critical Uncertainties

Following the identification of driving forces, the next step involved evaluating each force in terms of its potential impact and level of uncertainty related to the focal issue. This assessment was essential to distinguish which forces could be considered critical uncertainties, meaning they are both highly influential and unpredictable in shaping the future landscape of the oil and gas industry. To facilitate this evaluation, interview participants were asked to select five driving forces they deemed most relevant to the strategic future of the sector. For each selected factor, they were then requested to assign a score ranging from 1 to 5, reflecting both the perceived impact and uncertainty, where 1 represented low influence or predictability, and 5 indicated very high strategic importance and volatility. The aggregate results from these expert inputs led to the identification of two primary critical uncertainties: ***Oil and Gas Investment***, and ***Low-Carbon/Energy Transition Policy***. These two dimensions were ultimately used to construct the scenario matrix, as they represent the most volatile yet consequential elements influencing PT XYZ's strategic decisions in the energy transition era.

d. Scenario Development

A 2×2 matrix will be used to present four scenarios. Each quadrant of the following matrix will depict two important uncertainties that have been identified, namely investment in oil and gas, and low carbon/energy transition policies.

Figure-5 Scenario Framework



Scenario 1: *Dual-Track Acceleration*

Description: This scenario is characterized by high investment in the oil and gas sector and active government participation in energy transition and low-carbon policies. In this situation, PT XYZ has opportunities to develop in two areas: maintaining its strong gas infrastructure as a domestic and international gas transporter, and preparing for transformation towards low-carbon energy.

Narrative: In this scenario, PT XYZ maximizes its position as a reliable and integrated energy provider while accelerating low-carbon energy initiatives. With substantial investment in oil and gas, PT XYZ can seek opportunities to collaborate on the development of gas pipelines that are part of the Government's strategic projects, such as those in Bangkanai, Kalimantan. Additionally, new gas wells that will begin operation in the coming years, such as the Masela, Bintuni, and Andaman blocks, present opportunities for PT XYZ to participate in operations, maintenance, or the construction of new pipeline routes within existing Right of Way assets. Furthermore, low-carbon and energy transition policies enable PT XYZ to accelerate in the field of renewable energy, such as hydrogen. PT XYZ operates more than 1,000 km of pipelines on land and sea, including routes to Singapore. As a gas transporter for more than two decades, PT XYZ can offer its services to the Singapore hydrogen project in collaboration with National Electricity Company, which is currently in the study development phase, to become a hydrogen transporter from Jambi to Singapore. In addition to hydrogen, PT XYZ can also accelerate as low-carbon and energy transition policies progress. PT XYZ's onshore pipeline from Jambi to Pekanbaru passes through areas with significant palm oil plantations. The waste produced by these plantations generates methane, which can be used for biogas. PT XYZ can seize this opportunity by utilizing its existing gas pipelines to transport methane produced from palm oil waste. PT XYZ has also obtained a new business license for natural gas processing or purification to reduce mercury content, which presents an opportunity for PT XYZ to lower mercury levels in natural gas in line with low-carbon policies. PT XYZ's land assets, stretching over 1,000 km, also offer opportunities for the construction of new pipelines to transport CO₂ for injection into underground wells using Carbon Capture Storage (CCS) and Carbon Capture Utilize Storage (CCUS) technologies. By increasing the energy mix target for natural gas and advancing several renewable energy projects, PT XYZ can accelerate in both aspects simultaneously.

Scenario 2: *Gas Stronghold*

Description: This scenario involves sustained high investment in the oil and gas sector, but slow progress in low-carbon/energy transition policies. PT XYZ is likely to maintain its dominance as a domestic and international gas transporter while awaiting further regulations related to clean energy.

Narrative: With the slow advancement of low-carbon/energy transition policies, PT XYZ can focus on strengthening its infrastructure and operational efficiency. Several new gas wells that have been explored and will be operational in the coming years present opportunities for PT XYZ to add new revenue streams, whether through new pipeline construction, operation & maintenance services, or consulting services. The government's target to increase the energy mix, particularly with gas as a transitional energy source, and the gradual replacement of coal-fired power plants with gas-fired plants, provide opportunities for PT XYZ to collaborate on building new gas pipelines in Java, Kalimantan, and Sulawesi.

Scenario 3: *Clean Leap*

Description: With global pressure for emission reduction and energy transition, investment in oil and gas has declined and is no longer attractive. PT XYZ must quickly transform into a responsive energy company.

Narrative: PT XYZ must diversify its business and generate more revenue by investing in new and renewable energy as well as low-carbon technologies. Although domestic gas demand continues to increase, PT XYZ relies only on gas from existing wells, which will eventually be depleted. To maximize the potential of green energy such as hydrogen through pipelines, PT XYZ must collaborate with other companies operating in the new and renewable energy sector. Additionally, PT XYZ can develop capabilities as a provider of Mercury Removal Unit (MRU) facilities for low-carbon technology.

Scenario 4: *Stuck in Transition*

Description: This scenario describes a situation where investment in the oil and gas sector declines while energy transition policies are not progressing and tend to be half-hearted. PT XYZ faces challenges in formulating sustainability strategies as a company acting as an energy transition agent. On one hand, gas resources are diminishing, yet the transition to new and renewable energy remains unclear due to the lack of clear government policy direction.

Narrative: In this scenario, PT XYZ faces a high degree of uncertainty. The decline in investment for oil and gas exploration threatens PT XYZ's core business, compounded by the absence of clear certainty or incentives from the government for the company to shift towards the new and renewable energy sector. The lack of progressive and clear energy transition policies causes PT XYZ to hesitate in developing human resources for new and renewable energy. PT XYZ can only survive by implementing efficiency strategies and extending expiring gas transportation agreements while awaiting clarity on the direction of the national energy transition.

e. Implications and Options

Impacts will arise from each scenario; therefore, it is necessary to develop implications and options. Implications describe the impact of the scenario on the oil and gas industry, while options outline the actions that PT XYZ can take if the scenario occurs.

Table. 2 - Implications and Options

<i>Scenarios</i>	<i>Implications</i>	<i>Options</i>
Scenario 1 : <i>Dual-Track Acceleration</i>	Exploration of new gas wells. Increasing domestic gas demand for power generation sources and city gas networks. Potential demand for green energy in Singapore via pipelines (hydrogen and biomethane). Pipeline connectivity between Java and Sumatra. Implementation of CCS and CCUS projects.	1. Synergy with the parent company and/or subsidiaries to capture opportunities for natural gas pipeline development in other regions, such as Kalimantan. 2. A combination of maintenance programs for PT XYZ's infrastructure and strong relationships with stakeholders to position PT XYZ as a reliable and integrated gas distributor. 3. Diversification of PT XYZ's investment portfolio into green energy, such as hydrogen and biomethane, and advocacy to regulators to enhance the utilization

		<p>of PT XYZ's infrastructure by permitting the export of green energy, such as hydrogen and biomethane.</p> <p>4. Submission of requests to reduce dividend payments to shareholders in order to fund business options in other regions, such as the construction of gas pipelines in Kalimantan.</p> <p>5. Development of strategies to identify gaps in PT XYZ's human resource capabilities for the implementation of new technologies, such as CCS and CCUS</p>
Scenario 2 : <i>Gas Stronghold</i>	<p>Increased pipeline capacity of PT XYZ.</p> <p>Increased revenue.</p> <p>Competitive gas prices compared to new and renewable energy.</p>	<p>1. Promote infrastructure strategies for long-term gas contracts derived from new wells along the pipeline route.</p> <p>2. Increase employee productivity and loyalty by offering competitive compensation and benefits.</p> <p>3. Review gas transportation tariffs with the regulator.</p>
Scenario 3 : <i>Clean Leap</i>	<p>1. Decreasing volume of gas transportation originating from existing wells.</p> <p>2. Incentives for new and renewable energy projects.</p> <p>3. Increased gas demand for power generation as an energy transition bridge.</p> <p>4. Implementation of CCS and CCUS projects.</p>	<p>1. Seek collaboration opportunities in natural gas projects from wells in other provinces with abundant gas reserves.</p> <p>2. Conduct research and development in green energy and develop a decarbonization roadmap.</p> <p>3. Implement cost efficiencies and prioritize CAPEX.</p> <p>4. Identify new strategic partners for the development of new pipeline infrastructure for power generation and CCS/CCUS.</p>

Scenario 4 : <i>Stuck in Transition</i>	Revenue is declining due to reliance on gas transportation, which is experiencing decreasing volume. Investors adopt a wait-and-see approach. High risk of stranded assets. The company is stagnant and struggles to grow.	1. Cost efficiency and setting priority scales. 2. Review of gas tariffs with the regulator. 3. Active advocacy to the regulator regarding the company's current conditions. 4. Gradual diversification.
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f. Early Warning Signals

This stage is intended to detect early signals for each scenario. Early signals are indicators that determine the future direction of each scenario and need to be routinely monitored by PT XYZ. The following table presents the Early Warning Signals:

Tab. 3 - Early Warning Signals

Scenario	Early Warning Signals
<i>Dual-Track Acceleration</i>	Many green energy projects are being developed. Green financing is becoming increasingly widespread. Regulations on CCS, CCUS, carbon trading, and new and renewable energy are becoming clearer in their derivatives. Carbon prices are beginning to rise. Foreign investors are collaborating to support energy transition projects.
<i>Gas Stronghold</i>	Potential for new gas transportation agreements for power plants, industry, and city gas networks. Extension of existing gas transportation agreements. Expansion of domestic gas infrastructure in other regions. Exploration of new gas wells.
<i>Clean Leap</i>	Declining volume of existing gas with no discovery of new gas wells Net Zero Emissions regulations tightened into technical derivatives. Growth of the green energy market. Increased investment and collaboration in the green energy sector (hydrogen, biomethane, geothermal, solar, wind).
<i>Stuck in Transition</i>	Oil and gas projects and new and renewable energy projects are both stagnant. Few new oil and gas field projects or explorations, as well as clean energy projects. Carbon prices remain low. The oil and gas sector remains the mainstay until reserves are completely depleted, without a clear roadmap toward clean energy.

g. Strategies

The impact on PT XYZ will arise from each possible scenario. To ensure the most appropriate choices are made if any scenario occurs, it is necessary to identify PT XYZ's internal conditions. Based on internal interviews and PT XYZ's documents, the strengths and weaknesses as well as the six management functions have been identified as follows:

Tab. 4 – Strength and Weakness

<i>Strength</i>	<i>Weakness</i>
1. High availability of PT XYZ's pipelines with strong relationships with stakeholders	1. Gas pipelines older than 20 years require specific maintenance.
2. Right-of-Way assets or pipeline routes spanning more than 1,000 km and the only company with a pipeline route to Singapore.	2. Dependence on a single revenue source, namely natural gas transportation.
3. Financial performance with low debt-to-equity ratio of approximately 20%, making PT XYZ flexible in funding new investments.	3. Routine dividend distribution of 100% of net income limits PT XYZ's ability to fund new business options
	4. Limited human resource capabilities in implementing new business options and managing aging pipelines.
	5. Employee demographics with 47% aged over 45 years.

Table. 5 – Management Functional

Marketing	PT XYZ needs to market itself to international stakeholders and investors as a green energy player that can offer pipeline assets exceeding 1,000 km, which can be utilized to accelerate the energy transition from both new and renewable energy projects and CCS/CCUS decarbonization.
Human Resources	PT XYZ's human resource capabilities are still limited regarding new and renewable energy. Currently, PT XYZ's human resource capabilities are limited to natural gas operations, where new competencies are required for new and renewable energy due to its different nature.
Finance	PT XYZ's finances are very good, with a debt-to-equity ratio of 20%, making PT XYZ flexible in funding new business options. However, the distribution of 100% of dividends to shareholders is a barrier for PT XYZ, which cannot move much for investment.
Operational	PT XYZ's gas pipelines are aging, requiring specific maintenance to avoid gas flow disruptions.
Riset & Development	PT XYZ has not yet moved in terms of developing new and renewable energy or CCS/CCUS decarbonization technologies.
Information Technology	PT XYZ's IT system is still not very complex, considering that natural gas transportation does not require a complex IT system.

Based on the strengths–weaknesses table and management functions, the following is an assessment of the most appropriate strategies that can be adopted for each scenario:

Tab. 6 – Strategy for each scenario

Strategi	Scenario 1 : <i>Dual-Track Acceleration</i>	Scenario 2 : <i>Gas Stronghold</i>	Scenario 3 : <i>Clean Leap</i>	Scenario 4 : <i>Stuck in Transition</i>
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1. Ensure the availability, reliability, and utilization of PT XYZ's infrastructure.	√	√	√	√
2. Develop new business ventures in green energy by leveraging PT XYZ's pipeline network and constructing new pipelines in other regions.	√	√	√	
3. Maintain and enhance advocacy efforts with stakeholders such as Downstream Oil and Gas Regulatory Agency, Directorate General of Oil and Gas, Directorate New and Renewable Energy, and the Ministry of Environment and Forestry to obtain necessary approvals for entering new business areas and to keep gas tariffs competitive.	√	√	√	√
4. Develop the organization to identify gaps in human resource capabilities and address the high age demographics, enabling targeted recruitment in specific fields that support new business options, namely clean and renewable energy.	√		√	√
5. Foster synergy with the parent company, subsidiaries, and affiliates in the development of new pipelines in other regions and green energy projects.	√	√	√	
6. Optimize the national midstream gas business.	√	√		
7. Invest in decarbonization technologies such as CCS and CCUS.	√		√	
8. Develop investment strategies incorporating green financing.	√		√	
9. Prepare survival scenarios focused on efficiency.		√		√

Based on the table above, the strategy that PT XYZ can implement across all scenarios for the next five years is as follows:

1. Ensure the availability, reliability, and utilization of PT XYZ's infrastructure:

- Develop maintenance and reinforcement programs for PT XYZ's aging infrastructure.
- Optimize pipeline utilization through extensions of existing contracts and acquisition of new contracts.
- Proactively address operational, technical, and commercial issues related to PT XYZ's infrastructure, including obtaining the necessary permits or approvals.

2. Maintain and enhance advocacy with stakeholders such as Downstream Oil and Gas Regulatory Agency, Directorate General of Oil and Gas, Directorate New and Renewable Energy, and the Ministry of Environment and Forestry to secure approvals needed for expansion into new business areas and to keep gas tariffs competitive:

- Manage stakeholder relations with existing shippers and potential new shippers to optimize the use of PT

XYZ's pipelines.

- b) Engage with BPH Migas to uphold advocacy principles of fairness and equity in tariff reviews, and collaborate with the Directorate General of Oil and Gas and the Ministry of Environment and Forestry to support the issuance of required approvals.
- c) Expand relationships with other relevant government agencies such as EBTKE and the Ministry of Industry and Trade to support new business ventures.
- d) Increase membership networks in new and renewable energy associations to enhance potential partnerships within the new and renewable energy industry.

IV. Discussion

The findings indicate that PT XYZ confronts a strategic inflection point influenced by two countervailing factors: investment patterns in oil and gas and policy framework preparedness for low-carbon and energy transitions. Rather than projecting a singular trajectory, the scenario analysis framework demonstrates that the company's strategic pathway will probably occupy a spectrum of dynamic conditions, necessitating adaptive rather than fixed planning approaches. Key implications emerge across the four scenarios: Dual-Track Acceleration and Clean Leap underscore the imperative for proactive diversification to mitigate exposure to external policy and market disruptions. Gas Stronghold and Stuck in Transition reveal systemic risks of overreliance on legacy infrastructure amid escalating regulatory pressures. This analysis positions organizational resilience not as a binary choice between pathways but as a capacity to maintain strategic agility. By framing uncertainty as a catalyst for iterative strategy design, the study advances scenario planning beyond speculative forecasting toward operational preparedness. The methodology's distinctive value lies in its emphasis on actionable adaptation mechanisms, enabling decision-makers to convert systemic ambiguity into structured response protocols.

V. Conclusion

This study applied a qualitative approach grounded in primary insights from interviews with key stakeholders, including government regulators, customers, competitors, and internal leaders of PT XYZ. The research was supported by external and internal strategic analysis, including the application of PESTEL and Porter's Five Forces, to identify the dynamics shaping the company's position during the energy transition. From these analyses, two major critical uncertainties emerged: the trajectory of oil and gas investment and the implementation pace of low-carbon/transition energy policies. These uncertainties were mapped into a 2x2 matrix, resulting in four distinct scenarios that reflect plausible strategic environments for PT XYZ over the next five to ten years: Dual-Track Acceleration, Gas Stronghold, Clean Leap, and Stuck in Transition. Each scenario was examined in terms of its strategic implications, business risks, and potential opportunities. Furthermore, specific early warning signals were identified to help the company anticipate which scenario may unfold. Rather than selecting a single "best" scenario, the value of this framework lies in helping management recognize patterns of change early and respond with appropriate strategic options. The scenario planning presented in this study provides a forward-looking tool to guide PT XYZ in navigating complex transitions and preparing flexible, adaptive strategies. However, the findings are based on a single case study and thus may have limited generalizability. Future research could expand on this work by applying the framework to other energy companies or by incorporating quantitative validation methods.

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