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Proposed Business Strategy of Joint Operation with the Implementation of New Terms & Conditions in Pertamina EP Regional 1

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Abstract:
Indonesia's upstream oil and gas sector serves as a cornerstone of national energy security, with Pertamina EP (PEP) acting as one of the primary contributors through its extensive cooperation contract areas. In 2023, PEP achieved significant milestones, including 159.12 MMBOE in 2C contingent resource discoveries and a 217% increase in proven reserves compared to the previous year. To accelerate production and strengthen collaboration, PEP engages in Joint Operating Agreements (JOAs) with joint venture partners—structured partnerships aligned with the Production Sharing Contract (PSC) framework under the supervision of SKK Migas. While the JOA model has facilitated shared investment, expertise, and operational responsibilities, its current terms and conditions are perceived as outdated and overly stringent, thereby limiting partner eligibility, discouraging investment, and concentrating production risk on joint venture partners. This study addresses these challenges by proposing a revised business strategy for joint operations under new JOA terms and conditions designed to create a more balanced, attractive, and performance-driven framework. The research employs stakeholder analysis, internal and external business environment assessment, and strategic formulation models to identify opportunities for improvement. Data collection involves Focus Group Discussions (FGDs) with Subject Matter Experts (SMEs) and secondary sources, including operational records, internal reports, and relevant literature. Findings indicate that implementing the proposed terms and conditions—focused on fair cost recovery, equitable risk sharing, and an adjusted production split—can enhance operational efficiency, increase investor confidence, and align stakeholder interests. This study contributes a strategic roadmap for PEP to strengthen partnerships, improve production outcomes, and sustain competitiveness in Indonesia's dynamic oil and gas industry.

***Keywords**: Business Strategy; Pertamina EP; Strategic Alliance.*

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INTRODUCTION

Amid the evolving era of Indonesia's upstream oil and gas sector, Pertamina EP (PEP) intends to pursue strategic refocusing to enhance competitiveness and efficiency within its Joint Operation (JO) schemes (Arifin et al., 2024; Pandu Wijaya et al., 2025). In alignment with this objective, the company is introducing a new set of Terms & Conditions (T&C), which will take the form of a revised Joint Operating Agreement (JOA)—offering its Joint Venture (JV) partners (in Indonesia also known as Kerja Sama Operasi or KSO) what they have long sought: a fairer, more engaging, and performance-based framework. This initiative reflects PEP's commitment to accelerating collaboration, optimizing operational efficiency, and ensuring mutual value creation. To facilitate this transformation, it is essential to analyze the current business environment, identify root causes of existing misalignments, and justify the need for improvement (Greener & Martelli, 2015; Mukherjee, 2019; Rose et al., 2023). This chapter introduces the research by presenting background information, company profile,

research objectives and questions, as well as the scope and limitations of the study (Flick, 2015; Greener & Martelli, 2015; Mukherjee, 2019; Rashid et al., 2019; Rose et al., 2023).

Indonesia's upstream oil and gas industry is a cornerstone of national energy security and economic development (Permana et al., 2025; Sugiyono, 2021; 리한다, 2016). PEP, which remains the largest holder of cooperation contract areas in the country, has played a crucial role in upholding this objective. In 2023, PEP achieved remarkable milestones by discovering 159.12 million standard barrels of oil equivalent (MMBOE) of 2C contingent resources and adding 87.01 MMBOE of proven reserves (P1)—a significant increase from 27.37 MMBOE in the previous year, marking a growth rate of approximately 217%. PEP's oil and gas lifting also reached 176.37 thousand barrels of oil equivalent per day (MBOEPD), underscoring the company's operational scale and strategic importance.

To support the acceleration of national oil and gas production, PEP is authorized to form joint cooperation schemes with external partners as stipulated under Clause 4.2 of Section IV in PEP's Oil & Gas Contract Agreement with the Government of Indonesia (GOI) (Dirani & Ponomarenko, 2021; Shebubakar, 2021). These arrangements operate under a Joint Operating Agreement (JOA), establishing a strategic partnership framework between PEP and JV partners (Martin et al., 2020; Mukit Kabil, 2025; E. Pereira & Olawuyi, 2019). The JOA allows the parties to allocate operational duties, risks, and rewards among themselves across specific exploration and production areas.

This cooperation model aligns conceptually with the Production Sharing Contract (PSC) system widely adopted in Indonesia (Al Yahyai, 2023; Binsahaq et al., 2025; E. G. Pereira et al., 2022; Ruslijanto et al., 2018; 이삭 & 라티프, 2024). Under this arrangement, JV partners invest capital and operational expertise in exchange for entitlements from production and cost recovery. For PEP, the objective is to enhance efficiency, reduce capital burdens, and accelerate production through capable partnerships. For JV partners, the model offers the advantage of gaining access to production zones while sharing in revenues and project returns.

These joint operations are supervised by Indonesia's upstream regulatory agency, the Satuan Kerja Khusus Pelaksana Kegiatan Usaha Hulu Minyak dan Gas Bumi (SKK Migas), which oversees contractual compliance and operational performance in accordance with national energy goals. Within this complex yet critical ecosystem, the primary challenge remains improving the terms and conditions of the cooperation scheme to attract high-quality partners, maintain strategic competitiveness, and achieve production targets in an increasingly demanding energy landscape.

PT Pertamina EP—commonly abbreviated as PEP—is Indonesia's national upstream oil and gas company. It is a subsidiary of Pertamina Hulu Energi, operating under the Upstream Subholding, specializing in oil and gas exploration, production, and operational activities across Indonesia. Pertamina EP was established on September 17, 2005, following the signing of the Kontrak Minyak dan Gas Bumi Pertamina between PT Pertamina (Persero) and BPMIGAS (now SKK Migas). This agreement grants PEP the right to manage oil and gas working areas, as delegated under Indonesian Law No. 22 of 2001 concerning Oil and Natural

Gas, and is valid for 30 years until September 16, 2035. The company's establishment was formalized through the approval of the Minister of Law and Human Rights via Decree No. C-26007 HT.01.01.TH.2005 on September 20, 2005, with its latest amendment ratified by Deed No. 30 dated April 22, 2020, and approved under Decree No. AHU-0031474.AH.01.02.TAHUN 2020.

Indonesia's oil and gas industry has a long history, beginning in 1871 with the first exploratory drilling in Cirebon. Notable milestones include the Telaga Said well in 1883 and the formation of Royal Dutch in 1885. Following independence, Indonesia nationalized oil and gas assets previously managed by colonial powers, leading to significant discoveries during the 1950s in East Java, Sumatra, and East Kalimantan. Pertamina traces its origins to the establishment of PT PERMINA on December 10, 1957. Over time, the organization evolved into a Holding–Subholding structure to streamline asset and human resource management. Since April 2021, PEP has operated as part of the Upstream Subholding under the management of PT Pertamina Hulu Energi.

PEP manages an extensive Wilayah Kerja (working area) spanning 113.62 thousand km², from Aceh to Papua. These operations are divided into five main assets, each overseeing different regions, comprising a total of 22 producing fields and six unitization areas, including those managed under Joint Operating Agreements (JOA).

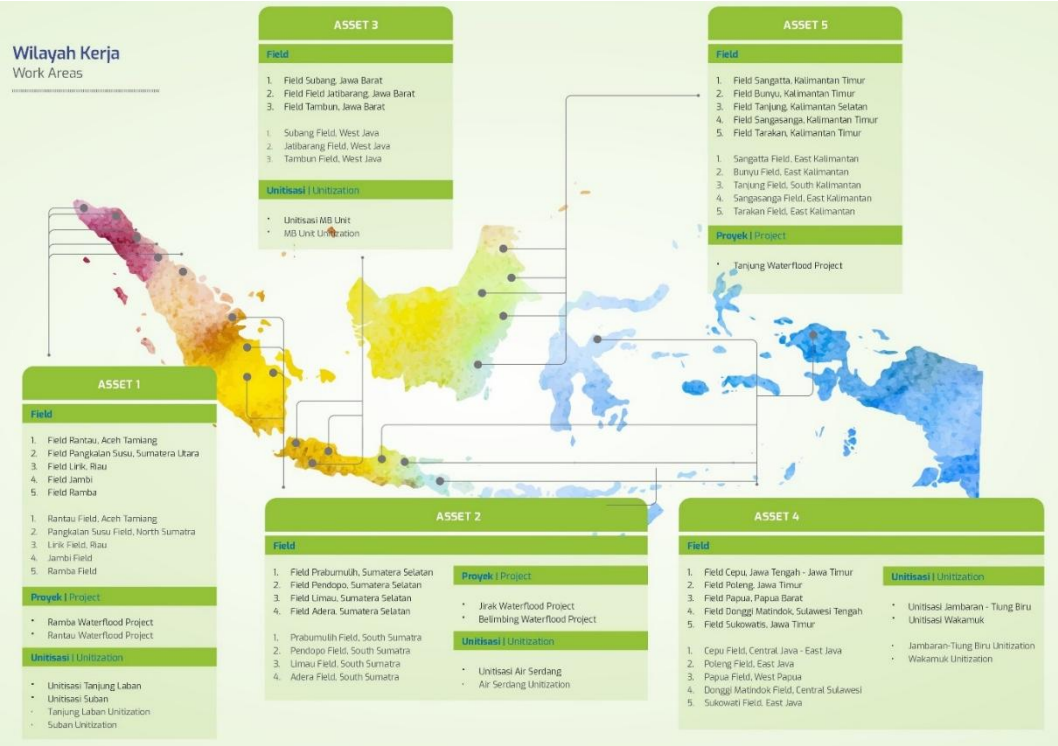

Figure 1. Working Areas of PEP
(Source: Pertamia EP Website: https://pep.pertamina.com/PetaWilayahKerja)

In particular, PEP Asset 1 and PEP Asset 2, which cover the Sumatra Region, are currently overseeing 14 active JOAs. These JOAs represent strategic partnerships designed to boost production efficiency and provide mutual benefit between PEP and its Joint Venture partners.

No	Mitra KSO	Working Area	Status
	Zona 1		
1	PT Aceh Timur Kawai Energi	Perlak	Persiapan Produksi
2	PT Tamiang Raya Energi	Kuala Simpang Timur – Bukit Tiram	Produksi
3	PT Samudra Energy BWPMeruap	Meruap	Produksi (EOR)
	Zona 4		
4	Indrillco Hulu Energy Ltd	Uno Dos Rayu	Eksplorasi-Produksi
5	PT Green World Nusantara	Kruh	Produksi
6	PT Deras Perenial Energi	Deras	Produksi
7	PT QEI Loyak Talang Gula	Loyak – Talang Gula	Persiapan Produksi
8	PT Energi Tanjung Tiga	Pandan – Petanang – Tapus	Produksi
9	PT Formasi Sumatera Energi	Tanjung Tiga Timur	Produksi
10	PT RMH Tebat Agung	Tebat Agung	Eksplorasi
11	Gunung Kampung Minyak Ltd	Singai taham – Batu Keras – Suban Jeriji	Produksi
12	Bass Oil Sukananti Ltd	Tangai – Sukananti	Produksi
13	PT Bukitapit Ramok Senabing Energy	Ramok Senabing	Produksi
14	PT Betun Selo Pali Energi	Betun – Selo	Pengelolaan Area Operasi Sementara

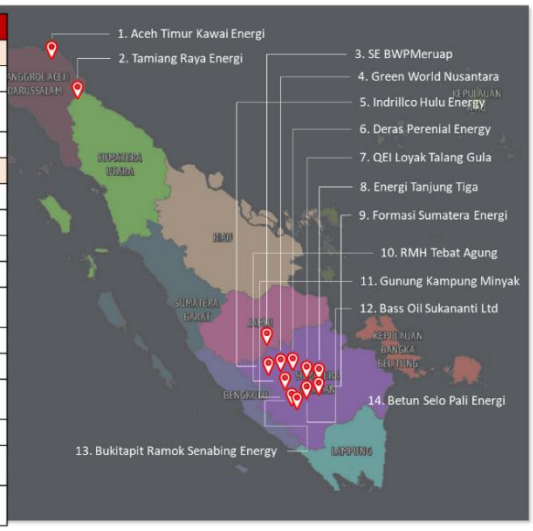

Figure 2. Join Operation Working Area in PEP Asset 1 and Asset 2
Source: Pertamina EP Internal Data, 2025

An organizational structure is essential to govern job position as well as the construction of communication and authority channels to clarify each function and the interaction between elements in a business. Based on Decree *No. Kpts 052/PHE00000/2022-S0* Regarding the Refinement of the Upstream Subholding Organization of PT Pertamina Hulu Energi dated July 15, 2022, Pertamina EP's organizational structure as of December 31, 2024, is as shown in Figure 1.4. In day to day operations, Director 1 PEP is responsible for handling the work areas under Asset 1 and Asset 2 (Sumatra area), including the JV Partners working area.

The JOA scheme currently used by PEP is considered outdated and out of step with the evolving interests and capabilities of potential JV partners. The applicable terms and conditions, particularly those related to technical and financial requirements, are considered overly restrictive. This limits the capabilities of JV partners and discourages investment. Furthermore, the operational and fiscal arrangements within the current JOA often place the entire production risk on the JV partners. If production falls below the Non-Shareable Oil (NSO) target, JV partners not only lose their rights to cost recovery and profit sharing but are also subject to significant penalties.

This structure has led to several operational and financial inefficiencies. Some partners struggle to meet work program commitments due to constrained cash flow, further exacerbated by unrecovered costs and heavy fines. These factors contribute to stagnating performance and lower investor confidence. In the end, it resulted in declining and failure to achieve oil production of JV Partners commitment as targeted in annual work and plan budgeting. The following graph shows significant drop of oil production in both target and actual of JV Partners from 2021 to 2024.

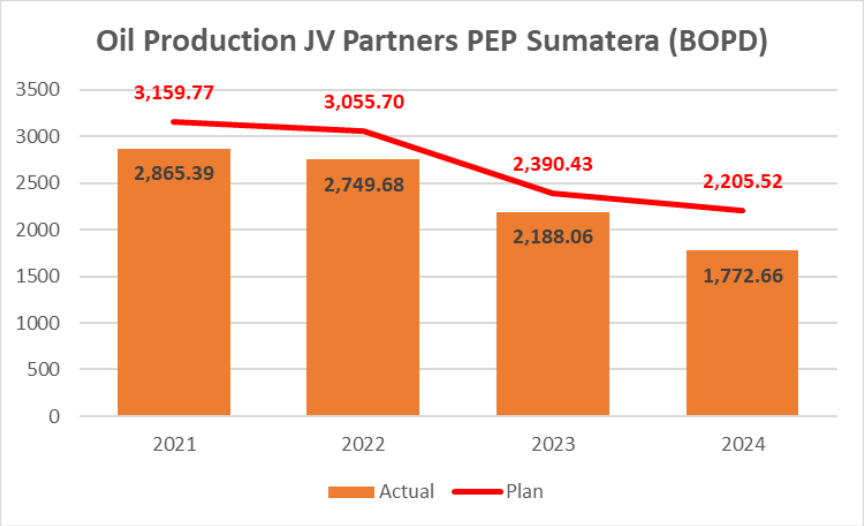

Figure 3. Oil Production of JV Partners from 2021-2024
Source: Pertamina EP Operational Report, 2025

The 5 Whys technique is a root cause analysis method that identifies an issue using the question "why" repeated five times (Ohno, 1988). It encourages firm to get to the roots of problems rather than just dealing with symptoms. Serrat (2017) adds that the method is not only simple, and economic, but also creates an environment for continual improvement. He points out that 5 Whys produce more sustainable results when practiced consistently as a team. Since this method cannot solve complex problems by itself, it should be supplemented with others.

Table 1. Five Why Issues

1st Why	Why is the performance of JV partners stagnant and tends to decline?
Because JV Partners did not fulfill the operational and production work plan	
2nd Why	Why JV Partners do not fulfill the operational and production work plans?
Because JV Partners still have financial constraints in carrying out operations	
3rd Why	Why do JV partners still have financial constraints in carrying out operations?
Because the JV Partners have NSO shortfall fine, large unrecovered costs, and also low investment due to unoptimized strategic partnership	
4th Why	Why are the strategic partnerships not optimized?
Because the current JOA's terms & conditions are based on outdated contractual frameworks that no longer align with the dynamic industry environment and stakeholder expectations	
5Th Why	Why are the contractual frameworks' T&C outdated?
Because they were designed during earlier phases of the industry with limited flexibility, lacking adaptive clauses to accommodate regulatory shifts, risk-sharing evolution, and technological advancements	

Source: Processed by author based on Focus Group Discussion with Subject Matter Experts, 2025

Based on the root cause analysis using 5 whys above, it reveals that the core issue lies in the outdated T&C framework of the JOA. These were originally crafted under a static

industry context and now lack flexibility to accommodate modern dynamics—such as regulatory shifts, evolving financial models, and the need for more adaptive and collaborative risk-sharing structures. Thus, revisiting and redesigning the JOA's terms and conditions could be a strategic move to revitalize investor interest of JV Partners, enhance operational and financial viability, attract more competitive partners, as well as increase oil and gas production from JO-managed Working Areas. To better illustrate the full scope and stakeholder dynamics of the issue, a Rich Picture (Figure 3) has been developed to map out the relationships and challenges in the current joint operation environment.

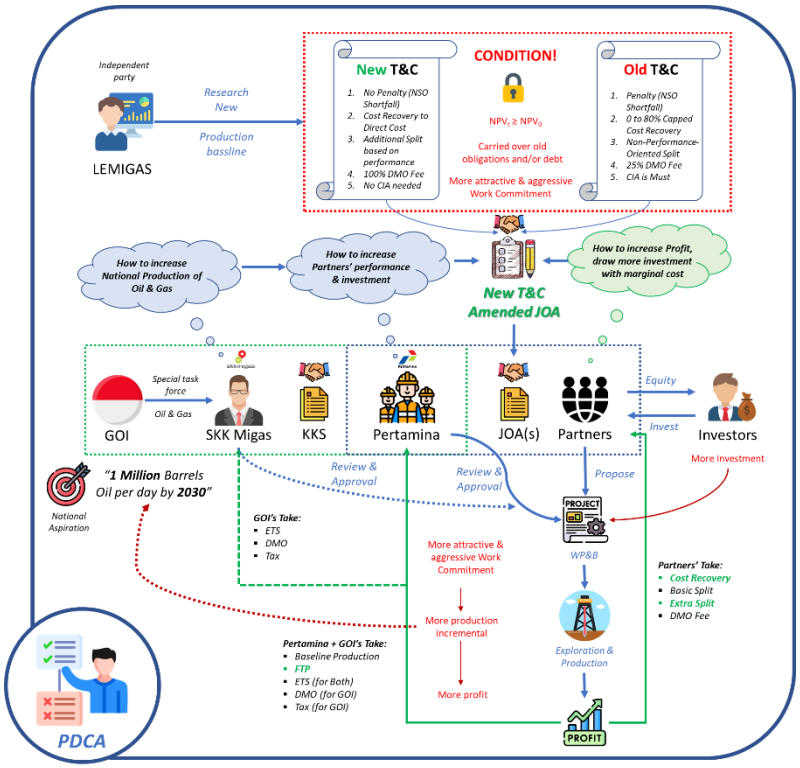

Figure 4. Rich Picture
Source: Processed by author based on stakeholder mapping, 2025

However, the JOA scheme currently used by PEP is considered outdated and out of step with the evolving interests and capabilities of potential JV partners. The applicable terms and conditions, particularly those related to technical and financial requirements, are regarded as overly restrictive, limiting partner capabilities and discouraging investment. Furthermore, the operational and fiscal arrangements within the current JOA often place the entire production risk on JV partners. If production falls below the Non-Shareable Oil (NSO) target, JV partners not only lose their rights to cost recovery and profit sharing but are also subject to significant penalties. This structure has led to several operational and financial inefficiencies, with some partners struggling to meet work program commitments due to constrained cash flow, further exacerbated by unrecovered costs and heavy fines. These factors contribute to stagnating performance and lower investor confidence, resulting in declining oil production from JV partners as targeted in annual work plans.

Several previous studies have examined the challenges and opportunities in joint operation schemes within the oil and gas industry. Research by Pramono et al. (2021) on joint operation contracts in Indonesian upstream oil and gas found that rigid contractual terms and unequal risk distribution were major factors contributing to underperformance and partner dissatisfaction. Similarly, a study by Suryanto and Wijaya (2022) on production sharing contracts in Southeast Asia highlighted that flexible risk-sharing mechanisms and performance-based incentives significantly improved partner commitment and operational outcomes. In the context of strategic alliances, research by Grant (2019) emphasized that successful partnerships require adaptive contractual frameworks that accommodate changing industry dynamics and stakeholder expectations. Furthermore, a study by Hidayat and Nugroho (2023) on Pertamina's joint operation schemes specifically identified that outdated T&C, punitive production shortfall penalties, and limited cost recovery options were key barriers to attracting quality partners and achieving production targets.

Despite these findings, there remains a research gap in understanding how the revision of JOA terms and conditions can specifically address the challenges faced by Pertamina EP in its Regional 1 Sumatera operational area. Most existing studies focus on general contract theory or broad industry analysis without providing a tailored strategic framework for a specific company context. Therefore, this study aims to fill this gap by proposing a revised business strategy for joint operations under new JOA terms and conditions that create a more balanced, attractive, and performance-driven framework. The research applies stakeholder analysis, internal and external business environment assessment, and strategic formulation models to identify opportunities for improvement. By addressing these challenges, the study contributes a strategic roadmap for PEP to strengthen partnerships, improve production outcomes, and sustain competitiveness in Indonesia's dynamic oil and gas industry.

METHOD

This study explores Pertamina EP’s Joint Operation (JO) schemes, focusing on the challenges and opportunities amidst evolving industry dynamics and regulatory changes such as Permen ESDM No.14/2025. The research highlights the role of both internal and external stakeholders, revealing that strategic influencer marketing and performance-oriented contracts can enhance the effectiveness of JO schemes. The methodology combines qualitative research with primary data collected via Focus Group Discussions (FGD) with Subject Matter Experts (SMEs) and secondary data from company reports, analyzing stakeholder perceptions and internal operational capabilities. Using thematic analysis, the study identifies patterns in the current JO framework, recommending strategies for improving transparency, trust, and long-term performance. It further emphasizes the need for adaptive, policy-driven strategies to optimize Pertamina EP’s operations and align them with national energy goals while mitigating risks associated with outdated contractual structures and performance bottlenecks. The findings conclude that Pertamina EP’s future competitiveness relies on its ability to reform the JO framework, align with regulatory frameworks, and adopt a performance-driven cooperative strategy, ensuring greater efficiency and contribution to Indonesia's energy security.

RESULTS AND DICSUSSION

This chapter presents the findings of the research and provides an in-depth discussion of their implications in relation to the business issue identified. The analysis draws upon data collected through focus group discussions (FGD), interviews with subject matter experts, and secondary company records, complemented by relevant literature. The results are structured around the stakeholder analysis, internal and external business environment assessment, and SWOT. These findings are then synthesized to formulate and evaluate the proposed business strategy for Pertamina EP's Joint Operating Agreement (JOA) framework. The discussion section further interprets the significance of the results, linking them to the research objectives and theoretical foundations, while highlighting practical implications for both Pertamina EP and its Joint Venture partners. This integrative approach ensures that the proposed strategy is not only theoretically grounded but also operationally relevant and aligned with the dynamic needs of Indonesia's upstream oil and gas sector.

Analysis

Analysis in this research consistis of internal and external analysis, as well as stakeholder analysis. To analyze external factors, it is necessary to consider the stakeholder, organization's macroeconomic, industry, and competitive environments. This may involve analyzing economic growth, changes in regulatory, technological advancements, as well as behavior and strategies of competitors. Meanwhile as for internal analysis will focus on the organizations's internal resources and capabilities as well as value chain analysis. The results of both analyses will then be grouped into a SWOT matrix to identify the company's strategic position, enabling the formulation of strategies that align with its conditions and future direction, and that can be effectively implemented.

1. Stakeholder Analysis

Stakeholder analysis is an important tool to identify, assess, and prioritize individuals or groups that influence or are influenced by an organization's activities. For PEP, as one of Indonesia's largest upstream oil and gas companies, stakeholder engagement plays a crucial role in sustaining operations, maintaining legitimacy, and aligning with national energy goals. PEP operates in a highly regulated, capital-intensive, and socially sensitive industry where multiple stakeholders ranging from government regulators, communities, employees, and business partners exert different levels of influence and expectations. To effectively manage these relationships, PEP can apply Mendelow's (1991) Power–Interest Grid, which categorizes stakeholders based on their relative power and interest in the company's activities.

Internal stakeholders of Pertamina EP (PEP) include the board of directors, management, employees, and shareholders, who are directly involved in shaping and executing the company's strategy. The board and top management make strategic decisions, ensuring long-term performance and governance, while employees and labor unions are essential for daily operations, impacting productivity and operational reliability. Shareholders, primarily Pertamina Group and the state, hold significant influence over policies and financial decisions. External stakeholders comprise government and regulators, such as the Ministry of Energy and Mineral Resources (ESDM) and SKK Migas, who set policies and quotas; local communities and NGOs concerned with environmental and social impacts; suppliers and

contractors providing crucial equipment and services; buyers/customers relying on PEP for a stable supply of crude oil and gas; competitors and industry associations influencing industry standards; and the media and general public, who shape PEP's reputation. Mapping these stakeholders using Mendelow's power–interest grid informs PEP's stakeholder management strategy.

2. External Analysis

The external analysis of Pertamina EP (PEP) reveals various factors and conditions that significantly impact its performance. Demographically, Indonesia's large and educated workforce provides opportunities for PEP, but the country's archipelagic nature adds logistical challenges that require efficient joint operation schemes. Economically, Indonesia's stable growth, with sectors like manufacturing, trade, ICT, and construction driving the economy, presents opportunities for PEP's oil and gas sector. However, the volatility of global oil prices remains a critical factor influencing investment and production decisions. Politically and legally, Indonesia's oil and gas regulations, including the new Permen ESDM No. 14/2025, offer opportunities for more flexible joint operations but also highlight challenges in aligning JV agreements with national energy goals. The sociocultural environment underscores the importance of aligning business strategies with local communities' expectations, emphasizing ESG principles and the need for sustainable practices. Technologically, innovations like waterflooding and enhanced oil recovery (EOR) present potential for increasing production, though they require significant investment and expertise. The global energy landscape, with fluctuations in oil prices and the shift toward renewable energy, further impacts PEP's strategies, requiring a balance between traditional production and sustainability goals. These external factors highlight the need for PEP to adopt adaptive, performance-driven strategies that align with both local and global trends.

Industry Analsysis

1. Threat of New Entrants

The threat of new entrants in the upstream oil and gas sector is relatively **low** due to high entry barriers. Exploration and production activities require significant capital investment, advanced technology (such as EOR and seismic imaging), and strong regulatory compliance with SKK Migas and government policies. Moreover, the sector is tightly regulated, and access to exploration acreage is controlled by the government. This makes it difficult for new players to enter the market unless they are large international oil companies (IOCs) with proven capabilities and financial strength.

2. Bargaining Power of Suppliers

Suppliers in this industry include equipment providers, service companies (e.g., drilling, seismic surveys), and specialized technology vendors. Their bargaining power is **moderate to high** because advanced technology and expertise (such as EOR chemicals or offshore rigs) are concentrated among a few global suppliers like Schlumberger, Halliburton, and Baker Hughes. Local suppliers often lack the same capabilities, increasing reliance on international players. However, Pertamina's scale and government influence can mitigate this power to some extent through long-term contracts and national content policies.

3. Bargaining Power of Buyers

In Indonesia's upstream oil and gas industry, the buyers are primarily domestic downstream players rather than external customers. For crude oil, the main buyer is Pertamina's Refinery Units (RU), which belong to Pertamina's own subholding structure. This reduces external buyer diversity but creates an internal dependency, where pricing and lifting allocations are heavily influenced by Pertamina's corporate strategy and government policy. For natural gas, the buyers are more varied, including Pertamina Gas Negara (PGN), independent oil companies, and industrial users such as power plants, fertilizers, and petrochemicals. Despite this variation, buyer power remains **strong**, as gas contracts are typically long-term and highly regulated, with prices often capped to ensure affordability and energy security. Moreover, both oil and gas sales are tightly overseen by SKK Migas and BP Migas, reinforcing the buyer's influence on volumes, pricing, and contract terms. This leaves Pertamina EP with limited flexibility in negotiating commercial arrangements, thereby strengthening the bargaining power of buyers.

4. Threat of Substitutes

The threat of substitutes is **high** as it is increasing due to the global energy transition. Renewable energy (solar, wind, geothermal, bioenergy) and electrification (e.g., EV adoption) are gradually reducing long-term dependence on fossil fuels. While oil and gas remain crucial for Indonesia's energy mix, government initiatives on decarbonization, rising ESG expectations, and international commitments to Net Zero by 2060 are accelerating the development of alternatives. This trend poses a growing risk for upstream operators like Pertamina EP, especially in attracting international investors who are shifting toward greener portfolios.

5. Rivalry among Existing Competitors

The level of rivalry in the Indonesian upstream oil and gas industry is **high**. Pertamina EP competes not only with other Pertamina subsidiaries (like Pertamina Hulu Energi) but also with international oil companies operating under PSC schemes (Chevron, ExxonMobil, Repsol, Medco, etc.). Declining reserves and maturing fields intensify competition to secure new exploration blocks and maintain production. Furthermore, cost pressures, regulatory constraints, and ambitious national production targets (1 million BOPD by 2030) increase the intensity of competition among existing players.

Table 2. Resume of Industry Analysis

Forces	Parties Involved	Competitive Pressures	Strength & Rationale
Industry Rivalry	Another Contractor (Medco Energi, Chevron, ExxonMobil, etc.)	• Competition for oil & gas blocks under SKK Migas • Pressure to meet national production targets • Limited exploration success rates	
Threat of Substitutes	Renewable energy (solar, geothermal, biofuels), LNG imports	• Global shift toward energy transition • Increasing government incentives for renewables • LNG imports as alternative to domestic gas	**Moderate**; Substitutes are growing but oil & gas remain dominant in Indonesia's energy mix.

Threat of New Entrants	Domestic & international upstream investors	• High capital requirements for exploration & production • Complex regulations & approvals from SKK Migas • High operational risks in mature fields	
Bargaining Power of Suppliers	Oilfield service companies (Schlumberger, Halliburton, local contractors), equipment vendors	• Dependence on specialized technologies (e.g., drilling, EOR) • Limited local suppliers for high-tech equipment • Long-term service contracts with large global providers	**Moderate**; Suppliers have leverage in specialized services, but PEP's scale and government backing reduce their power.
Bargaining Power of Buyers	**Oil:** Pertamina Refinery Units (RU) **Gas:** PGN, other oil companies, industrial users	• Refinery Units dominate crude oil purchases (internal buyer dependency) • Gas buyers more diverse but regulated pricing • BP Migas influence on contracts and prices	**Moderate-Strong**; Buyers have strong influence due to regulation and limited buyer pool, reducing PEP's negotiation flexibility.

Source: Processed by author based on Porter's Five Forces analysis framework, 2025

Competitor Analysis

In examining Pertamina EP's (PEP) position within Indonesia's upstream oil sector, Porter's Four Corners model provides a framework that focuses on the company's strategies, objectives, resources, and assumptions. As of May 2025, PEP ranks among the top oil producers, with competitors like BP Berau Ltd, ExxonMobil Cepu Ltd, and Medco E&P Grissik Ltd. BP Berau Ltd leads with the Tangguh LNG complex, focusing on gas production and carbon capture, aiming for long-term market share in Asia. ExxonMobil Cepu Ltd, operating the Cepu Block, prioritizes maximizing hydrocarbon recovery through advanced drilling techniques, while Medco E&P Grissik Ltd focuses on organic field development, particularly in South Sumatra, to increase gas monetization. Each of these companies has distinct strategies, leveraging resources like extensive reserves, global expertise, and partnerships to maximize production and secure long-term contracts.

BP's strategy centers on expanding its LNG capacity and implementing decarbonization technologies, particularly carbon capture, to remain competitive in the global market. ExxonMobil Cepu focuses on maintaining high recovery factors and supporting Indonesia's energy resilience through its oil production, while Medco E&P Grissik is focused on maintaining operational efficiency, particularly in gas production. These companies utilize diverse resources such as large gas reserves, technical expertise, and integrated infrastructures, and each has specific assumptions about market stability, government support, and fiscal terms. For example, BP assumes that Asian LNG demand will remain strong, while ExxonMobil Cepu anticipates ongoing demand for Cepu oil.

The competitive analysis shows that each competitor has tailored its strategy according to its resources and market dynamics, with a focus on maximizing production, securing long-term contracts, and optimizing resource use. BP's strategy emphasizes decarbonization and LNG exports, ExxonMobil Cepu's focus is on maximizing hydrocarbon

recovery, and Medco E&P Grissik is leveraging its local knowledge to maximize gas production. Despite differences, all companies aim to contribute to Indonesia's energy security while positioning themselves as key players in the national and global energy markets.

1. Internal Analysis

PEP's internal analysis highlights both tangible and intangible resources that form the basis of its competitive advantage. Tangible resources include financial strength from being part of Pertamina, extensive physical assets such as oil and gas fields across Indonesia, and advanced technological capabilities in enhanced oil recovery and digital oilfield initiatives. However, challenges such as high costs and aging infrastructure persist. Intangible resources such as a skilled workforce, strong reputation as Indonesia's national energy champion, and a growing focus on innovation through R&D collaborations are also crucial. These resources contribute to PEP's operational efficiency and sustainability in an evolving energy market.

PEP's capabilities are derived from how it integrates these resources to produce results, including strong financial management, well-developed organizational structures, and technological advancements in seismic and drilling technologies. Its capacity for large-scale operations, particularly in strategic fields, further strengthens its market position. The VRIN analysis reveals that PEP's core competencies, such as its strong government support, wide operational coverage, and robust brand reputation, offer a long-term competitive edge. These competencies are valuable, rare, costly to imitate, and non-substitutable, ensuring PEP's dominant position in the Indonesian oil and gas sector.

Value Chain Analysis

PEP's value chain consists of both primary and support activities that enhance its competitiveness in the upstream oil and gas sector. In primary activities, inbound logistics focus on securing crude oil and natural gas resources through efficient supply chain management, supported by domestic reserves and partnerships with local suppliers. Operations leverage advanced technologies like seismic imaging and enhanced oil recovery (EOR) to improve production efficiency. Outbound logistics manage the transportation of crude and gas to refineries, while marketing and sales emphasize domestic market integration, reinforcing Indonesia's energy security. The services segment focuses on after-sales support, community engagement, and CSR initiatives to enhance legitimacy and customer relationships.

In support activities, PEP's firm infrastructure benefits from Pertamina Group's centralized governance, ensuring financial stability, risk management, and regulatory compliance. Human resource management is a key strength, with continuous investment in workforce development and partnerships with global energy institutions. Technology development focuses on innovation through digital oilfields, predictive maintenance, and energy transition technologies like carbon capture and renewable integration. Procurement activities are streamlined through strategic partnerships and government-backed policies, ensuring cost efficiency and quality. These activities collectively support PEP's operational excellence and long-term competitiveness.

Business Solution

In order to strengthen PEP's competitive advantage in the upstream oil and gas industry, it is essential to design a comprehensive business solution that integrates internal resources with external opportunities. The business solution framework provides a roadmap to align Pertamina EP's operational capabilities with strategic initiatives, ensuring sustainable growth while addressing challenges in regulatory compliance, environmental stewardship, and fluctuating global oil prices. This sub-chapter explores PEP's strategic positioning through a SWOT analysis and formulates actionable strategies across cooperative, directional, and portfolio levels to secure long-term resilience, and also its implementation plan.

1. SWOT Analysis

Based on internal and external analysis, SWOT analysis can be formulated. Opportunities and Threat are identified as external environment strategic factors based on general environment analysis, industry analysis and comepetitor analysis. Meanwhile, Strengths and Weaknesses are identified as internal environment strategic factors based on resource analysis and value chain activity analysis. Table IV.6 presents the SWOT analysis of PEP.

Table 3. PEP SWOT Analysis

	Strengths	**Weaknesses**
INTERNAL	S1. Strong financial backing as a Pertamina Subholding. S2. Wide oil & gas asset portfolio across Indonesia. S3. Strong brand reputation and government support. S4. Extensive operational infrastructure and facilities. S5. Experienced workforce with majority having undergraduate and higher education S6. Competence in secondary recovery (waterflood) and ongoing trials for EOR. S7. Long-term domestic market demand guarantees	W1. Heavy reliance on aging and mature fields with declining productivity. W2. Bureaucratic organizational culture and slower decision-making. W3. Limited adoption of advanced digital oilfield technologies compared to IOC competitors. W4. High operating costs in certain fields reduce competitiveness. W5. Dependence on global oil price trends for revenue stability.
	Opportunities	**Threats**
EXTERNAL	O1. Rising domestic energy demand and economic growth (5.12% YoY Q2 2025) O2. New oil & gas exploration blocks offered by the government. O3. Diversification into gas and geothermal aligned with energy transition. O4. Implementation of Permen ESDM No. 14/2025 on *Kerja Sama Pengelolaan Bagian Wilayah Kerja* to boost production	T1. Global oil price volatility affecting profitability. T2. Geopolitical instability and supply chain disruptions impacting oil & gas operations. T3. Increasing competition from international oil companies. T4. Rising shift toward renewable energy reducing long-term fossil fuel demand.

Source: Processed by author based on internal and external analysis, 2025

2. Strategy Formulation

Strategy formulation in PEP is guided by the company's long-term vision to support national energy security while ensuring sustainable and profitable operations in an increasingly complex oil and gas environment. The process begins with analyzing both the

internal strengths and weaknesses (such as financial resources, infrastructure, and human capital quality) and the external opportunities and threats (such as regulatory changes, fluctuating oil prices, and technological disruptions). From the SWOT analysis, PEP positions itself to leverage its robust resource base, including strong financial management, operational infrastructure, and experienced workforce, while simultaneously addressing weaknesses such as inefficiencies in digital transformation and reliance on conventional processes.

The external environment also shapes strategic choices. Regulatory frameworks especially the recently introduced Permen ESDM No. 14 Tahun 2025 on cooperative management of working areas open opportunities for more dynamic partnerships to boost oil and gas production. At the same time, threats such as price volatility, tightening environmental standards, and competition from renewable energy require PEP to be more adaptive and collaborative in its business approach. Given these conditions, PEP formulates Business-Level Strategy which aligns with Integrated Cost Leadership / Differentiation Strategy, which focuses on field-level operational excellence, cost efficiency, and enhanced recovery to extend field lifespans.

Within this framework, cooperation becomes a central pillar of PEP's strategy. The complexity of oil and gas operations ranging from deepwater exploration to marginal field redevelopment requires collaboration with partners who can provide additional capital, advanced technologies, and operational know-how. Cooperative strategies such as JOAs therefore emerge not only as a legal necessity under Indonesian PSC arrangements but also as a strategic choice to mitigate risks, enhance technological adoption, and maximize production efficiency. This strategic foundation sets the stage for PEP's business-level cooperative strategy, which can be further analyzed through the lens of current JOAs and their potential improvements.

Business-Level Cooperative Strategy

At the business level, PEP's cooperative strategy is primarily embodied in its JOA with both domestic and international partners. These JOAs are designed to distribute operational risks, financial investments, and technological expertise, while ensuring compliance with Indonesia's Production Sharing Contract (PSC) framework under SKK Migas oversight. The current JOAs typically assign JV Partners as the operator under PEP monitor, with partners contributing capital, advanced technology, as well as managerial know-how. This model allows the company to sustain exploration and production activities even in technically complex or marginal fields where risk sharing is essential. However, the current framework of JOAs reflects several structural limitations that may discourage partner participation and reduce production incentives. These weaknesses are visible when comparing the current state with the desired future state, as outlined in the gap analysis.

Out of current 14 (fourteen) JV Partners in PEP Regional 1 Sumatera, author conducted an in-depth analysis to 3 (three) JV Partners regarding the existing JOA issue for each, which are PT Samudera Energy BWPMeruap ("KSO Meruap"), Bass Oil Sukananti Limited ("KSO BOSL"), and PT Green World Nusantara ("KSO GWN").

Firstly, KSO Meruap's JOA is a joint operation contract for the waterflood production area. KSO Meruap's yearly average production achievement is beyond target, reaching up to 112% in 2024. KSO Meruap also has no issues related to NSO Shortfall. The main focus of the JOA T&C conversion for KSO Meruap is a performance-driven split, as KSO Meruap feels unmotivated to gross up production beyond its target due to being limited to a constant split.

Secondly, KSO BOSL is the second-highest oil producer, with annual average production reaching 116% in 2024. The problem arises as the firm commitments have been fully implemented, eliminating the need for additional investment. This is driven by the investment risk, which is capped at only 80% of gross production. This results in a slower return on investment for JV Partner. Therefore, for KSO BOSL, the T&Cs are more focused on reimbursing direct production costs and 100% cost recovery (provided production is above the baseline).

Last but not least, KSO GWN has good operations but production achievement is still below the WP&B target, even though it exceeds the baseline production. A common problem in KSO GWN is fulfilling firm commitments due to financial constraints. KSO GWN even has a compensation debt from not fulfilling the remaining work in the firm commitment reaching USD 54,000. The hope of the JOA T&C conversion for KSO GWN is to extend the contract period and serve as a basis for a more attractive proposal (100% cost recovery, Full DMO Fee, Direct-to-Production cost recovery) for investors so that the implementation of the firm commitment can be carried out. From above common problems, author make a gap analysis to compare the current state versus the desired future state as shown in Table 4.

Table 4. Gap Analysis of Current Terms & Conditions

Current State	Desired Future State	Gap Identified	Improvement
If production falls below the Non-Shareable Oil (NSO) threshold, partners are not entitled to cost recovery and are additionally penalized through "NSO shortfall" as a form of production fine.	No production fines if production bellow the agreed production baseline. The allowance to do cost recovery at least for direct-to-production cost	Discourages investment and proactive field management because partners bear disproportionate risks when production underperforms. Misalignment of risk-sharing and fairness in cost recovery, which creates the possibility of larger unrecovered costs and lowers partner motivation due to reduced production split.	The cooperative strategy should remove production fines if output falls below the baseline, while still allowing direct-to-production cost recovery (only production-related costs are recoverable, not overheads).
Operating Cost Recovery capped at 80% of production and can only be claimed after surpassing NSO production levels.	Partners are entitled to full cost recovery (100%) of gross production	Creates inconsistency in economic parameters (e.g., Net Present Value/NPV) and discourages full cost recovery efficiency.	The cooperative strategy should allow full cost recovery (100%) of gross production, provided that clear accountability and transparent cost-auditing mechanisms are in place.

Only flat base split after production above NSO	Additional Split based on actual production performance	Lack of performance-driven incentives reduces the motivation of partners to pursue higher efficiency or advanced recovery methods	The cooperative strategy should introduce additional split mechanisms tied to actual production performance.

Source: Processed by author based on Focus Group Discussion with Subject Matter Experts, 2025

By addressing these three gaps, PEP can shift its cooperative strategy from a compliance-based arrangement toward a performance-driven partnership model. This not only enhances fairness in risk and reward allocation but also strengthens alignment between PEP and its partners in achieving the national objective of increasing oil and gas production.

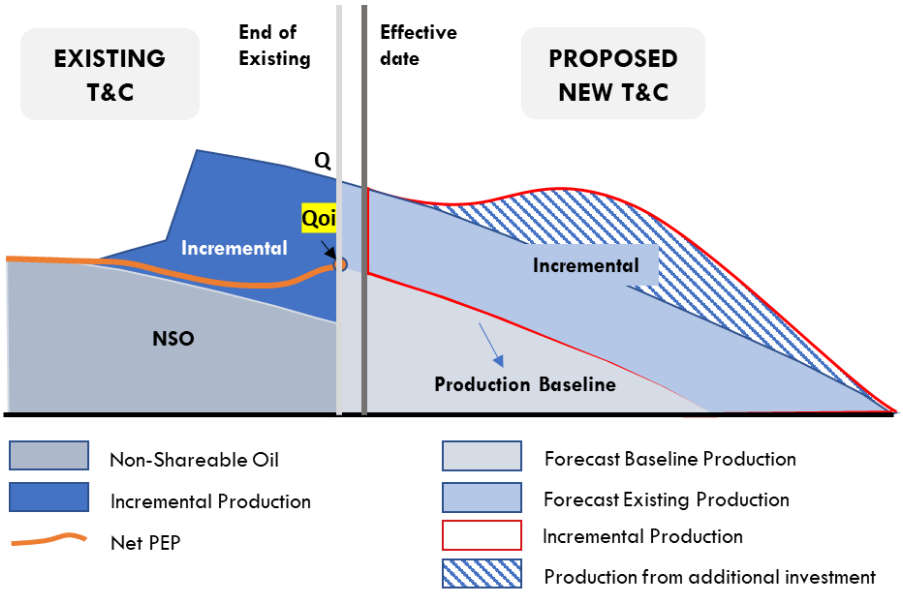

Figure 5. T&C Convertion Model
Source: Processed by author based on proposed business strategy, 2025

In this context, the new regulatory environment (Permen ESDM No. 14/2025) also provides legal room for more flexible cooperation schemes, allowing PEP to implement these improvements while ensuring compliance with government policies. Ultimately, refining the JOAs along these lines will help PEP attract high-quality partners, maximize production efficiency, and support Indonesia's energy resilience goals.

3. Implementation Plan

The successful execution of a revised Joint Operation (JO) framework at PEP requires a structured implementation plan that ensures alignment between strategic intent and operational practices. This plan translates the proposed cooperative strategies into actionable steps, providing a roadmap for addressing existing gaps such as punitive NSO clauses, rigid cost recovery mechanisms, and lack of performance-driven orientation.

Implementation must be phased to balance regulatory compliance, partner alignment, and operational readiness. Key areas of focus include (1) policy and contractual adjustments,

(2) partner engagement and communication, (3) organizational readiness and capacity building, and (4) monitoring and performance management.

Table 5. Implementation Plan Timeline

Activities	2026				2027				2028			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Policy & Agreement Revision												
Review and renegotiate JO contract terms, Align JO clauses with Permen ESDM No.14/2025												
Stakeholder Alignment & Communication												
FGD follow-ups with JV partners to finalize revised JO framework												
Engage SKK Migas and Ministry of Energy												
Internal communication to prepare PEP teams for transition.												
Organizational Readiness & Capability Building												
Train partnership, finance & legal teams on revised JO terms												
On Stream New T&C Policy												
Monitoring Performance Management												
Develop digital dashboard for real-time JO performance monitoring												
Quarterly performance reviews with JV partners												

Source: Processed by author based on implementation framework, 2025

CONCLUSION

This study examines the challenges and opportunities within Pertamina EP's Joint Operation (JO) schemes, emphasizing evolving industry dynamics and regulatory frameworks such as Permen ESDM No. 14/2025. The research reveals that while Pertamina EP has strong organizational, financial, and technical capabilities, its JO implementation faces structural inefficiencies, rigid contractual terms, and limited performance-driven mechanisms. The analysis of stakeholders shows that internal and external groups have varying levels of influence, with stakeholders such as shareholders and government regulators requiring close management. The study concludes that Pertamina EP should adopt a Business-Level Cooperative Strategy, focusing on reforming JO schemes to be more equitable, transparent, and performance-oriented. Recommendations include removing punitive NSO shortfall fines, allowing full cost recovery for partners, and introducing performance-based production splits. The study finds that Pertamina EP's future competitiveness depends on aligning with regulatory frameworks and adopting performance-driven strategies to optimize production, maintain stakeholder confidence, and contribute to Indonesia's energy security. Furthermore, short-term actions should focus on contractual reforms and aligning with government policies, while medium-term actions involve enhancing digital readiness and performance monitoring. Long-term strategies should focus on institutionalizing cooperative strategies, integrating ESG principles into JO agreements, and positioning Pertamina EP as a trusted partner in the energy sector.

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