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A Comparative Analysis of Collaborative Models between Government and Business Entity in National Asset Management: Case Study of the Cisem-1 Gas Transmission Pipelines

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ABSTRACT: Developing infrastructure for natural gas transportation requires substantial investment. The high standards of safety in its equipment material, workmanship, design, and construction methods are the reason for this. Consequently, investment in natural gas infrastructure entails significant risk when supply and demand situations are variable and immature. The Cirebon-Semarang Gas Transmission Pipeline project, awarded to Rekind in 2006, has had delays from the beginning. Following Rekind's resignation, the Government continues the project to regard the Cisem Pipeline as strategic, capable of fostering economic and industrial growth in Java, especially in Central Java. The government utilized the APBN to assume control of the Cisem project, initiating the first phase, designated as Cisem-1, in 2022. Following the completion of the Cisem-1 project in 2023, Lemigas, as the designated asset manager and user, is required to seek a partnership with a business entity that possesses the requisite capabilities and adheres to regulations governing gas transportation operations. This study proposes alternative partnership models between the government, represented by Lemigas, and the business entity, PT Pertamina Gas (Pertagas). This study evaluates and analyzes the most suitable partnership model between Lemigas and Pertagas, taking into account operational costs to maintain affordable gas prices for customers, as well as processing time for partner selection and operatorship alignment with project timelines to ensure the MEMR that the asset is utilized and not abandoned. The KSP (Kerja Sama Pemanfaatan) of BMN (Barang Milik Negara) scheme has been identified as the most suitable option.

KEYWORDS: Comparative analysis, government-business entity collaboration, national asset, partnership model, KSP

INTRODUCTION

The National Energy Policy (KEN, Kebijakan Energi Nasional) stipulates that the proportion of natural gas in the energy mix is projected to stay constant, ranging between 22% and 24% from 2015 to 2050. The ratio seems to remain unchanged, as the Government of Indonesia aims to enhance the utilization of new and renewable energy as the primary energy source to fulfill its promise to net zero emissions. Natural gas, while cleaner than other fossil fuels such as coal, cannot fully substitute coal due to coal's greater reserves and lower energy costs. Conversely, natural gas is improbable to exceed the growing number of new and renewable energy sources, as these alternatives will become much more available and accessible in the near future, making them more appealing. Therefore, the opportunity to enhance the utilization of natural gas is present in this transitional period. This aligns with the statement made by the Secretary General of The National Energy Council (DEN, Dewan Energi Nasional) in the opening remarks of the 46th IPA Convention and Exhibition 2022 that transitioning to gas provides an immediate advantage in attaining net zero emissions [1].

Utilization of natural gas energy requires a balance among three elements of the natural gas industry : supply, demand, and infrastructure. In the supply side, the Special Task Force for Upstream Oil and Gas Business Activities (SKK Migas, Satuan Kerja Khusus Pelaksana Kegiatan Usaha Hulu Migas) emphasized the Long Term Plan (LTP) strategy to accelerate development projects to support the commercialization and potential of natural gas in Indonesia. Some strategies to support LTP is to increase the value of existing assets, conduct enhanced oil recovery, and do exploration. In the demand side, the Secretary General of DEN stated that the domestic demand of natural gas is projected to increase by 6.1 percent per year until 2035. This statement also strengthens by PT Pupuk Indonesia that in order to maintain its production levels from their five main fertilizer plants spread throughout Indonesia, they confirm to use natural gas by securing gas supply as their main strategy. While in the infrastructure side, the Board of Directors of IPA pointed out that improving infrastructure and cooperation between upstream and downstream sectors are very important. Infrastructure is very important to the transmission and distribution process, by connecting gas sources to demand centers in the

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community. The future utilization of natural gas necessitates attention to infrastructure expansion, policy enhancement, and long-term planning.

Among several types of natural gas infrastructures, the gas pipeline is considered the most significant. The gas pipeline is essential to ensure the link between supply and demand. Its flexibility and capacity enable access to the wellhead, connection to the gas processing plant, establishment of a transmission network, and linkage to distribution lines for customer facilities. Pipelines are the most cost-effective method for transferring natural gas overland, particularly for extended distances and substantial quantities. Upon completion, they provide a consistent and dependable gas supply, significantly decreasing operational expenses in comparison to transportation by shipping or trucks. For gas producers, the development of pipelines is essential for implementing expansion plans or augmenting production capacity, since it ensures that the produced gas can be transported to clients. For gas demand, pipelines guarantee supply security to facilitate production optimization. The gas pipeline is crucial for the integration of natural gas into extensive energy networks, serving as a fundamental link between multiple supplies and multiple demands.

While numerous advantages are evident in the establishment of gas pipelines, the development of such infrastructure is complicated and costly. The gas pipeline necessitates a right of way that typically traverses various land uses, including plantations, communities, urban areas, industrial estates, rivers, toll roads, highways, railways, and other utilities. This situation necessitates advanced construction methods such as horizontal directional drilling and mechanical boring, which affect social and construction compensation costs. The gas pipeline project necessitates high-standard equipment and materials for safety considerations, as well as qualified and specialized people, such as welders, to ensure compliance with health, security, safety, and environmental standards. Additionally, other approvals must be obtained for the development of gas pipelines, including location and right-of-way permits, operational permits for commercialization, and environmental permits. Although the creation of gas pipelines presents various advantages, the building of this infrastructure is intricate and expensive. The gas pipeline requires a right of way that generally crosses diverse land uses, such as plantations, residential areas, urban zones, industrial parks, rivers, toll roads, highways, railways, and additional utilities. This circumstance requires sophisticated construction techniques, such horizontal directional drilling and mechanical boring, which influence social and construction compensation expenses. The gas pipeline project requires high-quality equipment and materials for safety reasons, along with skilled professionals, such as welders, to assure adherence to health, security, safety, and environmental regulations. Furthermore, additional licenses are required for the development of gas pipelines, including location and right-of-way permits, operational permits for commercialization, and environmental permits.

Therefore, before initiating gas pipeline projects, both the maturity of gas demand to absorb gas and the gas supply to produce gas must be guaranteed. The initial and subsequent projections of gas to be transported via gas pipeline must align with economic investment parameters to guarantee profitability and mitigate losses from the pipeline's development and operation. Failure to meet this criteria may result in the abandonment or stagnation of gas pipeline projects due to uncertainty around investment returns, which rely on sufficient growth in gas transmission volumes and transportation revenue. Unfortunately, it is the case of the Cirebon-Semarang Gas Transmission Pipeline Project (Cisem) that was abandoned from 2006 to 2021 since the selected bidder could not implement the project due to uncertainties in gas flow and financial non-viability. In consideration of the potential significant impacts on energy balance and economic growth in Java, the Government of Indonesia through the Ministry of Energy and Mineral Resources (MEMR), took control the project in 2021 and completed it in 2022.

A. Business Situation

According to BPH Migas [2], the Cisem Pipeline is projected to be the final section required to fill the gap of the gas transmission pipeline infrastructure in Java. Upon completed, it will enable the establishment of the Trans Java Gas Transmission Pipeline System, a fully integrated gas transmission network for the entire of Java. The Cisem Pipeline is intended to serve as the gas transportation infrastructure in Central Java and to enable gas delivery connection between East Java and West Java. The aim is to resolve the gas imbalance in Java, where demands in West Java faces gas shortages due to insufficient supplies, while East Java encounters a surplus, and simultaneously to prepare for a potential new gas market in Central Java.

As the name implies, Cisem Pipeline is an open access transmission pipeline extending approximately 230 kilometers from Semarang (Sem) to Cirebon (Ci). The upstream part in Semarang is intended to connect with the East Java Gas Transmission Pipeline Network for facilitating gas delivery from sources in East such as Pagerungan and Madura. In its downstream part in Cirebon, it is designed to connect with the West Java Gas Transmission Pipeline Network for facilitating the transfer of gas to customer facilities in West Java such as refinery unit RU VI Balongan, Pupuk Kujang Fertilizer Plant in Cikampek, and various other industries.

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The Cisem Pipeline's development started in 2006, when the Regulatory Agency for Downstream Oil and Gas (BPH Migas, Badan Pengatur Hilir Migas) initiated a bid for Special Rights regarding the Cisem Pipeline. PT Rekayasa Industri (Rekind) was later awarded the Special Rights to implement the project. Due to problems including supply chain issues and financial feasibility, Rekind was unable to execute the projects, resulting in prolonged delays and ultimately causing project stagnation. Finally, in October 2020, Rekind withdrew from the project and returned the Special Rights to BPH Migas.

Following Rekind's resignation, BPH Migas and MEMR search for alternative methods to carry out and complete the Cisem Pipeline project, given that status as the National Strategic Project (PSN, Proyek Strategis Nasional). Several alternatives had existed, such as awarding Special Rights to the second highest bidder, re-bidding the project, or assigning the project to a specific business entity by the government. However, in 2021, the MEMR finally decided to assume control of the Cisem Pipeline project with utilizing the state budget (APBN) to expedite its development, thereby mitigating potential disputes among bidders, preventing administrative and legal delays, and avoiding cost escalations. This strategy is believed can faster project execution and have more cost efficiency, hence optimizing gas consumption and fostering industrial expansion in Java.

Addressing time and cost, the Cisem Pipeline project was divided into two phases. The initial phase encompasses a section from Semarang to Batang in Central Java (Cisem-1), while the second phase includes the segment from Batang to Kandang Haur Timur, near Cirebon in West Java (Cisem-2). Cisem-1 commenced in 2022 and in fourth quarter of 2023 the pipeline was already commissioned to deliver gas to the customers. Cisem-2 is scheduled to commence in 2024 and aims for completion in 2026. Concerning the Cisem-1, following project delivery, asset management is transferred from the MEMR to Lemigas, a General Service Assembly (BLU, Badan Layanan Umum) under the MEMR. According to MEMR Decree No. 128.K/MG.04/MEM.M/2023, for the operation of Cisem-1 over a period of 30 years, Lemigas is authorized to collaborate with a national state company or its affiliate (BUMN) that meets the criteria of experience and capability in managing gas transmission pipelines and possesses a transportation business permit (IUP, Izin Usaha Pengangkutan) and Special Rights (HK, Hak Khusus) from the rightful authorities.

PT Pertamina Gas (Pertagas), the gas transportation subsidiary of PT Pertamina (Persero) and PT Perusahaan Gas Negara Tbk, which currently leads the gas transportation market in Indonesia, possesses both legal and technical qualifications to collaborate with Lemigas as the operator of Cisem-1. Upon the awarding of the pipeline operator, Pertagas and Lemigas shall determine the most suitable partnership scheme that exemplifies the collaboration between government and business entities, ensuring equitable benefits and advantages for both parties and the broader business ecosystem of Cisem-1, which encompasses gas shippers, gas producers, gas consumers, and the government.

B. Objective and Scope

This research analyzes the comparative examination of the partnership scheme between the government, particularly Lemigas, and the business entity, in this regard Pertagas, in the management and operation of the Cisem-1 Pipeline. The objective of this research is as follows:

- To identify the types of partnership schemes widely employed in government-business entity collaboration
- To comprehend the framework and evaluate the pertinent parameters in executing a benefit-cost analysis for each plan
- To evaluate the benefit and disadvantages of each scheme

The study will primarily examine the fittest partnership model for the management and operation of the Cisem-1 Pipeline with regards to the impact in delivery time and cost of operation. Therefore, the research concentrates on cost and time analysis. All data included in this research are secondary data derived from pertinent documents. The study exclusively pertains to Cisem-1 and does not encompass an examination of Cisem-2.

LITERATURE REVIEW

A. Definition

According to the Ministry of Finance (MoF), the government-business entity collaboration can be performed with scheme of KPBU (Kerjasama Pemerintah dan Badan Usaha). It is a collaboration between the government and business entities in the provision of infrastructure and/or its services for public interest, referring to specifications previously set by the government, which partially or entirely utilize the resources of the business entities while considering the distribution of risks among the parties [3]. The KPBU is planned to address and mitigate issues in the provision of public infrastructure, primarily due to budgetary constraints in planning, design, construction, operation, and maintenance. Through the implementation of KPBU, it is expected that the required

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infrastructures would be properly designed, constructed, operated, maintained, and managed to fulfill the needs of the public and industry to the greatest extent possible. KPBU governs the types of infrastructure eligible for collaboration are economic and social infrastructures such as transportation, water resources and irrigation, power, oil and gas energy, and others.

There are two primary types of KPBU:

a. Collaboration when asset ownership remains with the government, include in this type are Operation and Maintenance Contract (O&M), Build and Finance (BF), Design-Build-Finance-Maintenance (DBFM), and Design-Build-Finance-Maintenance-Operate (DBFMO)
b. Collaboration where asset ownership is transferred to the business entity, such as Concession, Build-Operate-Own (BOO) and Build-Transfer-Operate (BTO)

In the context of the Cisem-1 Pipeline, as the MEMR has previously addressed the funding, design, construction, and ownership of the project, the pertinent KPBU scheme applicable in this case is the O&M Contract and Concession.

As cited from Daliman in [4], it is stated that in the O&M Contract, asset ownership remains with the government (BMN, Barang Milik Negara). Business entities are only responsible for executing operation and maintenance (O&M) activities. The business entity receives payment from the government as the asset owner, rather than directly from customers or users. While in the Concession scheme, the asset remains government-owned (BMN), but the business entity possesses exclusive rights to administer the asset, expand operations, acquire more customers, engage directly with customers, and generate revenue through direct contracts with customers or users. Upon contract termination, the business entity shall relinquish the exclusive management rights of the asset to the government. Within the Concession scheme, a business may invest to enhance operational efficiency and revenue generation or to ensure the reliability and integrity of the assets, with the return on investment measurable for a share to the asset owner.

The O&M Contract and Concession scheme can be implemented in several ways, with the most relevant to the Cisem-1 Pipeline being the Leasing scheme and Collaboration in Asset Utilization scheme (KSP, Kerjasama Pemanfaatan), considering the needs of partnership between BLU and business entity. In the Leasing scheme, a business rents government assets for a specified duration, usually for five years and can be extended. The business entity is required to pay a specified rent or lease fees, as established by the government, on a fixed basis, in advance of the contract agreement, comprising 5% of the total rent fee, with the remaining 95% payable during the contract time. The rental or lease fee is determined not by the revenue generated by the business from the asset, but rather as a proportion of the asset's worth to guarantee investment return or account for depreciation effects. The risk associated with maintaining and operating the asset is borne solely by the business entity and is not shared with the government. In the KSP model, the business does not pay rent to the government; instead, both sides concur on the distribution of revenue and risk. The government's revenue share is determined by the percentage of gross revenue, net revenue, or net profit, adjusted according to the revenue generated at that time. Risk sharing is delineated into various scopes of work and responsibilities distributed among the parties involved.

To enhance the comparative analysis in this research, an additional scheme for managing government assets is added, utilizing the methods of State Capital Participation (PMN, Penyertaan Modal Negara). The PMN plan, as stated in [5], involves separation of state assets from the State Revenue and Expenditure Budget, or the allocation of business reserves or alternative sources to serve as capital for State-Owned Enterprises and/or other limited liability corporations, handled in a business manner. This initiative aims to enhance the capital structure or finance strategic projects intended to deliver social and economic benefits. PMN can exist as currency or monetary assets, as well as non-cash forms such as land, buildings, and infrastructure.

B. Legal and Regulatory Framework

In compliance with Presidential Regulation Number 38/2015 concerning in KPBU (PP No/38/2015) , the implementation of KPBU must adhere to the following principles: selection of partner is aligned with regulatory frameworks and the requirements of both parties, provision of socio-economic benefits to the community, fairness and transparency in the partner selection process, proper risk management through appropriate identification and mitigation strategies, an effective process that accelerates development and enhances quality, and efficient to ensure sustainability in budgetary and financing the project.

In order to comply with regulatory frameworks, Lemigas' partnership must be in line with the Minister of Finance's Regulation Number 129/PMK.05/2020 concerning Guidelines for the Management of Public Service Agencies (PMK No.129/2020), which was established to serve the community through provision of goods and/or services that are distributed without putting profit first and by

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conducting business in accordance with the principles of productivity and efficiency. The major purpose is to enhance community access to gas infrastructure at an affordable price. On the other hand, Pertagas, as an affiliate of BUMN, is governed by Law of The Republic of Indonesia Number 19/2003 on State-Owned Enterprises (UU No.19/2003), which stipulates that a primary objective of establishment BUMN is to maximize profits. This implies that while managing the Cisem-1 Pipeline, it is important to ensure the provision of affordable and accessible gas infrastructure to the community, while simultaneously generating profit for Pertagas and preventing losses. Consequently, both criteria must be integrated into the design of the partnership model for managing the Cisem-1 Pipeline.

The designation of Lemigas as BLU to manage the Cisem-1 Pipeline conforms to the Decree of the Minister of Energy and Mineral Resources Number 128.K/MG.04/MEM.M/2023 regarding the Management of the Semarang-Batang Gas Transmission Pipeline (Permen ESDM No. 128K/2023). Lemigas has been designated as BLU to oversee the Cisem-1 Pipeline, in accordance with the Decree of the Minister of Energy and Mineral Resources Number 128.K/MG.04/MEM.M/2023 concerning the Management of the Semarang-Batang Gas Transmission Pipeline (Permen ESDM No. 128K/2023). This Decree also states that the Head of Lemigas has the authority to define procedures for the utilization of the Cisem Pipeline in accordance with legislation, which also include the selection of a partnership model with the potential pipeline operator.

The use of BMN under either the Lease scheme or KSP scheme adheres to the regulations outlined in the Decree of the Minister of Finance's Number 115/PMK.06/2020 concerning the Utilization of National Assets (PMK No.115/2020). The Decree delineated the distinction between the Leasing and KSP schemes. The Leasing scheme should prioritize enhancing the utilization of unused BMN and acquiring the requisite facilities to facilitate governance and support the responsibilities of the asset user. The KSP program primarily aims to optimize the usefulness and advantages of state-owned assets to enhance state revenue and/or pay operational costs, maintenance, and/or essential repairs for these assets. In BMN, the rental fee is predicated on the basic rental rate established by the asset owner following an appraisal of the asset's value, with a 100% adjustment factor for business entities. Conversely, in KSP, the remuneration to the asset owner is contingent upon compensation and profit sharing, with its percentage determined by the value of government investment, the value of KSP partner investment, the business viability of the partner, and the risks assumed by the KSP partner.

PMN's regulatory framework pertains to Government Regulation Number 44/2005 and Number 72/2016, which outlines the Procedures for Participation and Management of State Capital in State-Owned Enterprises and Limited Liability Companies and all the changes (PP No.4/2005 and PP No.72/2016). The aim of the PMN is to enhance the capacities of state-owned enterprises and limited liability firms. The legislation stipulates that the PMN procedure involves a proposal by the pertinent ministry, followed by evaluation with the technical minister, submission to the president, and hearing from the legislature for recommendations before approval.

C. Cost Benefit Analysis

Cost Benefit Analysis (CBA) is a method used to evaluate possible costs against the expected benefits of a decision or strategy, specifically in the context of a partnership model, to assess its viability. According to [6], Cost-Benefit Analysis (CBA) can ascertain the viability of a model by aggregating all anticipated advantages from the selection and deducting the whole potential disadvantages arising from it. If the advantages above the expenses, the decision could be advantageous for the business. CBA involves comparing all current and projected costs and benefits of a project, both monetary and intangible. In determining the cost, some components may include like direct cost from investment depreciation and cost of operation, indirect cost such as overhead cost, intangible cost such as operational delay impact on delivery time and customers, opportunity cost from choosing a model instead of another, and risk cost related to regulatory risk and environmental impact. While in determining the benefit, the component might be tangible or tangible such as revenue from operation business, avoided depreciation cost, and avoided delay time of operation.

Each cost and benefit, whether tangible or intangible, is assigned a numerical cost. This can require estimating and forecasting, which should be done as accurately as possible. If the benefits greatly outweigh the costs, the decision should go ahead; otherwise, it should probably not. A cost-benefit analysis should also include the opportunity costs of missed or skipped projects. Refer to the [7], the stages of preparing a CBA include four stages, namely (1) *identifying relevant impacts*, identifying what is relevantly affected, such as the area size, people/related parties, (2) *monetizing impacts*, measuring the extent to which the cost provides fair compensation, (3) *discounting for time and risk*, calculating the present value of future costs and benefits, and (4) *choosing among policies*, selecting the policy that brings the most optimum net benefit.

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D. SWOT Analysis

SWOT Analysis is a method to evaluate the strengths, weaknesses, opportunities, and threats identified in a situation that needs for strategy and decision making. Refer to [8] mentioned definition of strengths, weaknesses, opportunities, and threats. A 'strength' is something from internal that has a positive implication. It adds value or offers to the situation. Strengths include tangible assets such as available capital, equipment, credit, established and loyal customers, existing channels of distribution, copyrighted materials, patents, information and processing systems, and other valuable resources. Weaknesses are the internal characteristics of the company's product or service that are detrimental to growth. Weaknesses are those things that detract from the value of your offering or place you at a disadvantage when compared with your competitors. Opportunities are external factors that a company can leverage. Opportunities can occur for a variety of reasons and may result from changes within the market, customer lifestyle changes, advances in technology, new production methods, etc. Threats are external factors that could harm or risk the company.

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METHODOLOGY

This research uses quantitative tools to conduct a comparative analysis of the partnership model, focusing on aspects that influence operational costs, delivery time, and risk. Using CBA method, the model with lowest operational cost, fastest delivery time, and minimal operational risk is considered to be the fittest partnership model in collaboration of Pertagas and Lemigas in managing Cisem-1 Pipeline for 30 years. This research compares three partnership models: 1) Lease of BMN scheme, 2) KSP of BMN scheme, and 3) PMN scheme.

This research utilizes secondary data sourced from regulatory and governmental documents, including relevant regulatory frameworks, contractual documents such as the Feasibility Analysis of Cisem-1 and the Contractual Agreement between Pertagas and Lemigas, as well as studies and reports on the Lease BMN scheme and PMN scheme within the oil and gas sectors, along with additional data and information. Research Flow Diagram is shown in Figure 1.

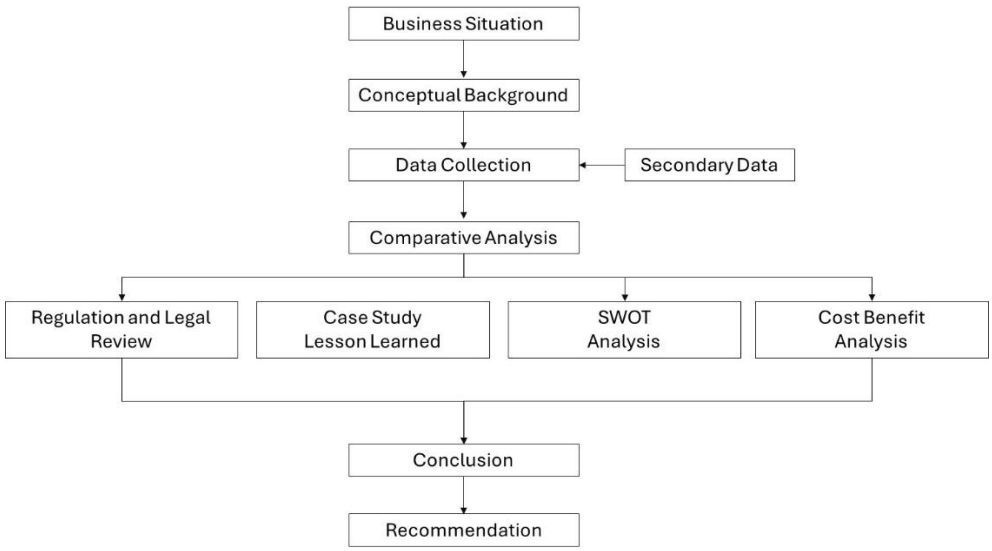

Figure 1. Research Flow Diagram

RESULTS AND DISCUSSION

A. Regulation and Legal Review

i. Lease of BMN Scheme

The Lease of the BMN Scheme refers to PMK No. 115/2020. Article 1 of the regulation defines the Lease of State-Owned Goods (BMN) as the utilization of BMN by an external entity for a designated period in return for monetary compensation. The utilization of BMN does not alter the ownership status of the Cisem-1 Pipeline asset held by Lemigas. The status of the partner in the lease scheme is designated as the lessee. This document confirms that there is no transfer of assets from Lemigas to Pertagas under the Lease plan. Pertagas may utilize the asset just within the designated timeframe.

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According to Article 13 of the regulation, the rental period is five years and may be extended. However, for infrastructure cooperation, it may extend up to fifty years. The rental period is described as a specific duration, which may be on an annual, monthly, daily, or hourly basis. The anticipated asset lifespan for Cisem-1 is 30 years, hence conforming to regulatory standards.

According to Articles 15 and 16 of the regulation, the rental charge is established by the asset user, in this case is the Head of Lemigas, with the permission of the asset manager, in this case is the Minister of Finance. In Article 17, the rental fee is determined by multiplying the base rental rate by the rent adjustment factor. The basic rental rate is determined by the appraiser or by the amount specified by the asset user. In Articles 18 and 19, the rent adjustment factor is established based on the nature of the lessee's business activities and the duration of the lease. For profit-oriented commercial entities such as Pertagas, the rent adjustment factor will be 100%. In Article 21, if the rental period exceeds one year, the adjustment factor may be determined based on the economic value of the infrastructure.

Concerning payment terms, Article 24 stipulates that the rent must be paid in full in cash prior to the execution of the agreement or upon the Minister of Finance's permission. Article 25 stipulates that, in the framework of infrastructure cooperation, leasing agreements must be documented as a notarial deed. Article 29 stipulates that for rental payments related to infrastructure provision, the initial payment must be made prior to the signing of the agreement, amounting to at least the greater of 5% of the total rental fee or the rental fee calculated for the first two years of the entire rental period. Subsequent payments of the remaining balance shall be made in accordance with the agreement.

To summarize the legal and regulatory framework of the Lease BMN Scheme as it applies to case Cisem-1:

- The contract's duration is five years, subject to extension by mutual consent between the asset user (Lemigas) and the lessee (Pertagas).
- The Minister of Finance shall approve the asset rental.
- The rental fee is calculated by multiplying the basic rental rate by the rent adjustment factor (100% for profit-oriented business companies).
- An additional adjustment factor of 120% to 135% is imposed if the lease period exceeds one year and the payment is not made in full in advance.
- Payment must be made before the contract, with the amount being the larger of 5% of the total rental price or the equivalent of the first two years of the complete rental length.

ii. KSP of BMN Scheme

Similar to the Lease of BMN scheme, the regulation of KSP under the BMN Scheme also refers to PMK No. 115/2020. Most of the regulations are similar, nonetheless, differences exist. Article 43 stipulates that the business entity does not advocate the use of BMN, instead, the asset user conducts a bidding process to identify an appropriate partner for asset operation. The bidding aims to assign the right to use state assets according to the technical standards established by the Asset Manager/User to suitable partners, facilitating the efficient, effective, and optimal use of state assets. The consent of both parties is included in the contractual arrangement. The other distinction pertains to the, as stipulated in Article 48 that the KSP Scheme defines the fee as the revenue or profit share established based on the government's investment value, the business entity's investment value, the feasibility of the business entity, and the risk undertaken by the business entity.

A share proportion can be determined from gross revenue, gross profit, net profit, or net cash flow generated from operating and investment activities. The percentage varies between 10% and 70% according to the calculations performed by team KSP. Revenue sharing payments are disbursed on a monthly or annual basis.

In Article 56 of the regulation, it is stated also that KSP scheme provides flexibility for partners, allowing KSP partners to request a reduction in the established profit-sharing throughout the implementation of KSP.

To summarize the legal and regulatory framework of the KSP of BMN Scheme as it applies to case Cisem-1:

- There is no minimum period for the contract; however, the maximum duration is 50 years.
- A partnership contract is signed between the asset user (Lemigas) and the partner operator (Pertagas).
- There is no fixed rental fee; instead, a percentage of gross sales, gross profit, or net profit is shared.
- Payments may be made monthly or annually, with no upfront or advance payment required.

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- Partner operators have the right to suggest a reduction in profit sharing.

iii. PMN Scheme

According to [9], PMN involves the transfer of ownership of state or regional assets, which were initially undivided wealth, into divided wealth to be recorded as state or regional capital/shares in BUMN, BUMD, or other state-owned legal entities. The forms of PMN include financial disbursements from the Government to BUMN, the conversion of Government receivables into PMN by transforming BUMN's debts to the Government, and the provision of shares or assets from external entities.

PMN management pertains to PP No. 40/2005, as amended by PP No. 72/2016. Article 1 of the regulation stipulates that the financial source for PMN from the state to BUMN may originate from the APBN, new budget allocations, BMN, receivables from BUMN, BUMN shares, and other state assets. Sources from APBN comprise initiatives financed by APBN, exemplified by the Cisem-1 Pipeline. Article 3 stipulates that every PMN to BUMN originating from the APBN must be articulated under Government Regulation (PP). Article 7 outlines that one purpose of PMN for BUMN is to enhance the operational capabilities of BUMN. The procedure for PMN to BUMN pertains to Article 10, which stipulates that the Minister of Finance submits a proposal for PMN to the President, following an evaluation by the pertinent technical ministers, specifically those with regulatory authority over the sector in which the BUMN operates.

Refer to [10], the extensive scope of public financing under Law No. 17 of 2003 designates the approval of the Legislative (DPR) as a crucial component. The parliamentary members comprehend that the PMN to BUMN process constitutes a component of state finances necessitating DPR approval.

To summarize the legal and regulatory framework of the PMN Scheme as it applies to case Cisem-1:

- The PMN to BUMN aims to enhance the operational capabilities of BUMN.
- The PMN to BUMN must be specified in PP.
- The transition from PMN to BUMN requires approval from both the President and the DPR.

B. Case Study Lesson Learned

i. Lease of BMN Scheme in LNG Plant in Sumatera

Since 2016, the State Asset Management Agency (LMAN, Lembaga Manajemen Aset Negara), a BLU under the MoF, has been preparing BMN accessible for leasing to BUMN or other business entities. Included among the assets is the LNG Regasification Plant located in Sumatera. LMAN and PT N, along with PT B, executed the inaugural rental agreement for the LNG Plant facilities situated at Sumatera, as reported in [11]. In accordance with that, PT AG executed the addendum and reaffirmed the rental contract for the BMN asset of the LNG Plant Regasification Facilities, as indicated in [12]. The rental assets consist primarily are regasification and terminal facilities, which encompasses refinery equipment, LPG tanks, LNG tanks, LNG trains, condensate tanks, utilities, berths and jetties, as well as ancillary facilities including vehicles, land for construction, and a community site containing residential units. According to [13], the overall asset value is around 10.8 trillion rupiah. PT AG is granted a leasing period of 15 years, with a monthly rental cost of around 50 billion, collected by LMAN as referenced in [14]. The annual rental cost payable to PT AG is approximately 0.55% of the total asset value.

ii. KSP of BMN Scheme of Land Asset for Hospital in West Java

An illustration of the KSP scheme is demonstrated by the functioning of the BMN at Pj University Hospital. This scheme, as referenced in [15], involves land located in West Java, designated for the optimization of a class B general hospital with centers of excellence in cardiology, neurology, and oncology. The duration of the alliance is 30 years. One aspect of the asset user's contribution involves the sharing of business, calculated at 1.83% of gross income annually, with a minimum contribution of 6.5 billion rupiah in the initial year, increasing by 10% each subsequent year.

iii. PMN Scheme of Jargas in Java and Sumatera

An illustrative example of the PMN plan is evident in city gas or jargas, where since 2018, the assets and management of jargas supported by the APBN have been allocated as PMN from the government to PT P. Subsequently, PT P transferred management of the asset to PT G. PT G is responsible for utilizing assets and conducting operational and maintenance activities. PT G oversees the administration of gas pipeline customers, commodity expenses, and operational expenditures

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associated with the PMN gas pipeline assets. PT G receives revenue, while it incurs costs of goods sold and operating expenses. However, PT P records the asset's depreciation upon receiving PMN from the government, rather than avoiding depreciation as the asset is financed by APBN. The implication is that there exists a new cash item to handle jargas, which will burden PT P and thus affect the rent increase payment from PT G to PT P by about 80 to 90%. The affected rental cost ranges from 0.7% to 3.15% of the whole asset value, with an average of 2.33% of the total asset value.

C. SWOT Analysis

The strengths (S), weaknesses (W), opportunities (O), and threats (T) associated with the Cisem-1 Pipeline are as follows. This SWOT analysis is employed as a point of reference for selecting the partnership model. The chosen model must leverage strengths and opportunities while simultaneously avoiding and mitigating weaknesses and dangers.

i. Strength

- Lemigas serves as the BLU of the MEMR, facilitating a supportive connection between the government and Pertagas, hence enhancing the optimization of Cisem-1. Lemigas position also guarantees the legal legitimacy necessary to assure the pipeline's operability in compliance with laws.
- Pertagas possesses the experience, competencies, and capabilities to run and manage transmission pipelines. Pertagas is also a market leader in the gas pipeline transportation sector, having and managing longest oil and gas transmission pipeline in Indonesia.

ii. Weakness

Since the asset belongs to the MEMR and Lemigas, Lemigas cannot run it independently, as they are not a transportation business company with the requisite competences and legal authorization. Consequently, a partner was necessary to operate the pipeline. However, it requires time to identify a partner and determine a collaboration strategy that aligns with the timeframe of Cisem-1, which is set to become operational by the end of 2023. Lemigas has just transferred the asset in June 2023, allowing only less than six months for the commencement of operatorship.

iii. Opportunity

- Potential gas user in Central Java to utilize Cisem-1. In Kendal Industrial Estate (KIK), current CNG consumers are drawn to utilize the gas pipeline due to its greater reliability and efficiency. In Batang Industrial Estate (KIB), certain essential businesses, such as a glass plant, are dedicated to utilizing gas supplied through the Cisem-1 Pipeline.
- Increase of transportation volume with the subsequent connection of Cisem-1 to Cisem-2 to consolidate the gas transmission system from East Java to West Java.

iv. Threat

The possibility of a delay in asset operation due to the prolonged process of operator and partnership selection, resulting in asset idleness, which is detrimental for government assets that are neglected.

D. Cost Benefit Analysis

In cost benefit analysis, several parameters are used:

- Legal reference : Decision of the MEMR Number 128.K/MG.04/MEM.M/2023
- Asset base value : Rp. 1.078.376.783.290,00, include pipeline, metering station, and its supporting equipment
- Period of contract : 30 years, time for operates and maintain Cisem-1 Pipeline
- Revenue Formula : TF x 1000 x Volume of Gas x Delivery Day x Currency Rate
- O&M Cost : 3,5% x Asset base value, refer to Regulation of Head of BPH Migas Number 1/2023
- Rental Fee : 0,55% x Asset base value, refer to case of Lease BMN in LNG Plant in Sumatera
- Upfront Payment : 5% x total rental fee 30 years or rental fee for 2 years, whichever is greater
- Revenue Sharing : 10% x Gross Revenue, refer to (Lemigas partnership contract)
- Transportation Fee (TF) : USD 0,279/MSCF, refer to Decree of the Head of BPH Migas on the tariff determination for Cisem-1 Pipeline
- Delivery Day : 350 days in a year

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- Volume of Gas : 2,33 MMscfd (scenario low volume, refer to transportation contract with gas shipper)
  12 MMscfd (scenario medium volume, refer to demand analysis by gas shipper)
  28 MMscfd (scenario high volume, refer to demand analysis by gas shipper)
- Currency Rate : US$ 1 = Rp. 15.500,00

Following Table 1and

Table 2 shows comparison of cost of operation and partnership processing time among three partnership model.

Table 1. Comparison of Revenue, Cost and Expenses of Operation

Component of Revenue and Cost	**Lease of BMN (Rp)**	**KSP of BMN (Rp)**	**PMN (Rp)**
Revenue			
Revenue from Operational • *If volume 2,33 MMscfd (Low)* • *If volume 12 MMscfd (Medium)* • *If volume 28 MMscfd (High)*	 3.526.629.750 18.162.900.000 42.380.100.000	 3.526.629.750 18.162.900.000 42.380.100.000	 3.526.629.750 18.162.900.000 42.380.100.000
Cost & Expenses			
Capex of Cisem-1	0 *(asset is funded by APBN)*	0 *(asset is funded by APBN)*	0 *(asset is funded by APBN)*
Depreciation of Asset (per year)	0	0	35.933.333.333 *(assumed straight line method)*
O&M Cost (per year)	37.730.000.000	37.730.000.000	37.730.000.000
Rental Fee (per year)	5.929.000.000	0	0
Upfront Payment (before contract)	327.442.500.000 *(5% of total rent fee 30 yrs)*	0	0
Revenue Sharing Lemigas (per year) • *If volume 2,33 MMscfd (Low)* • *If volume 12 MMscfd (Medium)* • *If volume 28 MMscfd (High)*	 0 0 0	 352.662.975 1.816.290.000 4.238.010.000	 0 0 0
Total Cost & Expense (per year) • *If volume 2,33 MMscfd (Low)* • *If volume 12 MMscfd (Medium)* • *If volume 28 MMscfd (High)*	 43.659.000.000 43.659.000.000 43.659.000.000	 38.082.662.975 39.546.290.000 41.968.010.000	 73.663.333.333 73.663.333.333 73.663.333.333

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Table 2. Comparison of Process & Stage and Processing Time of Partner Selection and Operatorship

Lease of BMN	KSP of BMN	PMN
Process and Stage		
1) The lessee submits a proposal to Lemigas or the Ministry of Energy and Mineral Resources (MEMR) as the asset user. 2) Lemigas or the MEMR advances to DJKN of the MoF as the asset manager. 3) DJKN will verify the asset registration. 4) DJKN solicits an appraiser to evaluate the asset's value. 5) DJKN procedure to the Minister of Finance. 6) The Minister of Finance approved the proposal. 7) Lessee provides the upfront payment. 8) The lessee and the asset user or asset manager sign a rental agreement.	1) Lemigas, as the asset user, conducts a bidding process to select a partner operator. 2) Bidder submits tender proposal 3) Lemigas will assess the proposal and identify the winning bidder. 4) The bidding winner and Lemigas to establish and sign a contractual partnership agreement.	1) A business entity submits a PMN to the relevant technical ministries. 2) Technical ministries advance to the MoF. 3) The MoF, in conjunction with technical ministries, performs evaluations and analyses about objectives, outcomes, and impacts on the PMN. 4) Upon approval, the MoF shall proceed to the President. 5) Concurrently, the DPR will seek hearings and presentations. 6) Upon examination, the DPR approved the proposal. 7) The President approved the proposal. 8) Government issued a regulation about the proposed PMN. 9) The PMN is conveyed to the corporate entity. 10) Novation of the corporate entity to a designated business unit or affiliation for the management of PMN
Processing Time		
The appraisal procedure and approval by the Minister of Finance typically result in a delivery time of one year for the Lease program until the asset becomes operational.	Collaboration requires only Lemigas as the asset user and Pertagas as the business entity to execute a partnership agreement, allowing the KSP scheme's delivery time until asset operation to be less than one year.	Approval resides with the President and the DPR, and as the PMN involves asset transfer from the state to the corporate entity, the timeframe for the PMN scheme until the asset becomes operational may exceed one year, and in rare instances, extend to two to three years.

Summary of the comparison analysis result is shown in Table 3.

Table 3. Summary of Comparison Analysis

Partnership Model	Lease of BMN	KSP of BMN	PMN
Type of Asset	Fixed, as per needs proposal by the lessee	Flexible, the partner can invest new asset or improved asset to enhance utilization, broaden offerings, and seize opportunities.	Fixed, as per needs proposal by the business entity or technical ministries as the proposer
Financing	APBN	APBN, with flexibility that the partner can chip-in	APBN
Asset Ownership	Remain by the state	Remain by the state	Transferred to business entity
Processing Time for Selection of Partner and Operatorship of The Asset	Medium, typically around 1 year	Quick, under one year	Prolonged, exceeding one year, potentially extending to two to three years

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Approval Level	To the Minister of Finance	To the Head of BLU (Lemigas)	Subject to the President and the DPR
Selection Process of Operatorship of The Asset	No selection: the proposal is submitted by the lessee without the necessity for screening criteria	Selection via bidding enhances fairness and transparency	No selection: the proposal is submitted by the lessee without the necessity for screening criteria
Business Risk Allocation	Consider solely by the business entity as the lessee	Equitable allocation to both parties according to their roles and competencies	Recognized solely by the business entity as the new asset proprietor
Role of Government (Lemigas)	Passive, solely receive revenue from rental fee	As an active partner to Pertagas, they can engage in initiatives that enhance asset utilization, such as facilitating forum group discussions with stakeholders	Inactive following asset transfer to business entity
Costs and Expenses of Operation	Medium, it incurs weight due to the upfront payment and fixed fee structure, which is critical when the volume is low to medium.	Low, as it pertains to actual revenue generation at that moment, rendering it more equitable and flexible, with no initial payment required.	High, due to the effect of asset depreciation

CONCLUSION AND RECOMMENDATION

The KSP scheme presents the lowest operational costs in contrast to BMN and PMN across all gas volume scenarios, based on an analysis of revenue, costs, and operational expenses. A concept of revenue sharing, as opposed to a fixed rental fee, along with the impact of depreciation in the KSP scheme, offers advantages primarily when gas transportation volumes are minimal and unable to generate revenue sufficient to cover operating and asset ownership costs. By reducing operational costs, it can maintain low gas prices for customers while simultaneously preventing losses.

In comparing the processing times of partnership and operatorship, KSP is the most efficient relative to the other two. In situations like the Cisem-1 Pipeline, when the timeframe for selecting an operator partner is strictly limited and the MEMR mandates that the pipeline be operational at project completion, the KSP provides a benefit via quicker processing times. The approach is the most direct, requiring solely the permission and signing of the Head of Lemigas for the partnership contract, in contrast to the other that necessitates approval from the minister, president, and DPR.

In the scenario when a business is initiated from zero and experiences slow growth yet necessitating a partner and operator within a constrained timeframe, the KSP scheme appears to be the most suitable solution. It is advisable to create a more flexible revenue-sharing model, wherein the proportion is derived from net revenue and net profit, to equitably pay by both parties for any risks incurred.

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