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**PT PERTAMINA GAS' STRATEGIC ROLE IN SUPPORTING SDGS:  
FOCUS ON CLEAN ENERGY TRANSITION AND CLIMATE  
RESILIENCE**

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**Abstract**

Clean energy transition and climate resilience are two main pillars that support the achievement of the Sustainable Development Goals (SDGs), especially SDG 7 (Affordable and Clean Energy) and SDG 13 (Addressing Climate Change). PT Pertamina Gas (Pertagas), a subsidiary of PT Pertamina (Persero), plays a strategic role in the development of natural gas infrastructure and distribution as a cleaner and more efficient transition energy. Pertagas strengthens its commitment to reducing greenhouse gas emissions and increasing national energy resilience through decarbonization programs, natural gas network development, and renewable energy use initiatives. This study highlights various strategic efforts made by Pertagas, the challenges faced in their implementation, and real contributions to the SDGs targets. The results of the analysis show that synergy between corporate policies and national development directions is the key to success in accelerating a sustainable energy transition that is responsive to the climate crisis.

**Keywords:** *PT. Pertamina gas, clean energy transition, climate resilience, SDGs, decarbonation, natural gas.*

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**INTRODUCTION**

The issues of climate change, dependence on fossil energy, and environmental damage have reached a global level and require responses involving various sectors and countries. In 2015, the United Nations (UN) set the Sustainable Development Goals (SDGs) as part of the 2030 Agenda to address these challenges. The SDGs include 17 main goals and 169 targets that aim to balance economic, social, and environmental aspects in Long-term development (Walsh et al., 2022). These goals are universal and encourage states, the private sector, and civil society to collaborate to create a more sustainable and inclusive world.

Two of the 17 goals that are in the spotlight in the context of the energy transition and sustainability are:

1. SDG 7: Affordable and Clean Energy, which aims to ensure access to affordable, reliable, sustainable and modern energy for all.

2. SDG 13: Climate Action, which emphasizes the need for urgent action to address climate change and its impacts.

Indonesia, a developing country with a large population and increasing energy needs, is facing a major challenge in creating sustainable economic growth. According to the (Kementrian ESDM et al., 2015), fossil fuels still dominate national energy consumption, and account for the majority of greenhouse gas emissions in the country. Therefore, the government has made the transition to clean energy one of the priorities to support the achievement of the Nationally Determined Contributions (NDC) and SDGs targets (Kementrian ESDM et al., 2015)

In this context, PT Pertamina Gas (Pertagas) functions as a subsidiary of PT Pertamina (Persero) Gas Subholding and has an important role in supporting the national energy transition. Pertagas operates in the transportation, infrastructure management, and natural gas distribution sectors, which are cleaner and more efficient fossil energy compared to coal and oil. Natural gas is classified as a transition energy because it has lower emissions, making it a bridge to the full use of renewable energy (Calabria, 2019).

By building gas pipeline infrastructure, developing LNG terminals, and optimizing the use of domestic natural gas, Pertamina Gas contributes to national energy security and helps reduce dependence on more polluting energy sources. In addition, initiatives to reduce emissions, improve operational efficiency, and use clean technology are part of the company's strategy in supporting the sustainable development agenda.

With this strategic approach, it is shown how the energy sector, especially the natural gas sub-sector, can make a real contribution to achieving SDG 7 and SDG 13. Therefore, to understand the synergy between national policies, energy businesses, and global targets in facing the climate crisis and encouraging a just and sustainable energy transition, it is necessary to conduct a more in-depth study of the role of PT Pertamina Gas.

## **METHOD**

This study uses a descriptive qualitative method to understand PT Pertamina Gas's strategic role in supporting the Sustainable Development Goals (SDGs), especially in the clean energy transition (SDG 7) and resilience to climate change (SDG 13). This approach is used because it allows researchers to dig deep into information about the sustainability policies, programs, and practices that companies run. The object of this study is PT Pertamina Gas as a company engaged in the energy sector, especially in the management and distribution of natural gas. The research subjects were selected using the purposive sampling technique, which is the deliberate selection of informants based on their knowledge and involvement in the issue being researched. The selected informants include internal parties of companies involved in sustainability programs, energy regulators, as well as observers or academics who understand energy and environmental issues. Data was collected through in-depth interviews, focus group discussions (FGDs), and document analysis, such as

annual reports, sustainability reports, and official documents related to energy policy and SDGs. Interviews were conducted to explore the understanding and experiences of informants related to the company's strategy in supporting the energy transition and emission reduction. The data results are then analyzed thematically to find patterns and meanings that are relevant to the research objectives..

## **RESULTS AND DISCUSSION**

### **1. Profile of PT. Pertamina Gas**

PT Pertamina Gas (Pertagas) is a subsidiary of PT Perusahaan Gas Negara Tbk (PGN) and operates under the Gas Subholding of PT Pertamina (Persero). This subholding was established as part of the national energy business transformation which aims to strengthen governance and efficiency in natural gas management. Established on February 23, 2007, Pertagas has a strategic role in transportation, infrastructure management, and natural gas trade in Indonesia. Pertagas' organizational structure is designed to support operations in the field of gas transmission, management of gas processing facilities, LNG terminals, and gas distribution networks in various regions in Indonesia (*Profil Dan Layanan PT Perusahaan Gas Negara Tbk*, 2017).

Pertagas' role in the energy sector is very vital, considering that natural gas is considered a clean and efficient transitional energy source. Compared to coal and petroleum, natural gas produces lower carbon emissions, so it is considered more environmentally friendly and suitable to support Indonesia's decarbonization targets ((IEA), n.d.). Pertagas, with a pipeline network that stretches more than 4,000 kilometers and is equipped with a wide range of compression and regasification facilities, has enabled cleaner energy distribution to the industrial, commercial and household sectors.

From a sustainability perspective, Pertagas plays an active role in supporting the achievement of the Sustainable Development Goals, especially SDG 7 (Clean and Affordable Energy) and SDG 13 (Climate Change Management). Pertagas plays a role in expanding energy access by building a household gas network infrastructure (jargas) that aims to be cost-efficient and create a healthier environment. In addition, the company also implements initiatives to reduce greenhouse gas emissions by improving energy efficiency and collaborating in the development of alternative energy sources, such as green hydrogen((Pertagas), 2025).

Pertagas' participation in the national energy transition strategy is also seen in the National Energy General Plan (RUEN), where natural gas is used as the backbone of Indonesia's energy transition to achieve net zero emissions by 2060. Therefore, the existence of Pertagas not only contributes to energy security at the national level, but also plays an important role in sustainable development that prioritizes Environmental, Social, and Governance (ESG) principles (Dixon, 1891).

### **2. PT Pertamina Gas' Policy and Commitment to the SDGs**

PT Pertamina Gas (Pertagas), which is part of the Gas Subholding of PT Pertamina (Persero), shows a strong commitment to support the achievement of the Sustainable Development Goals, especially SDG 7 (Clean and Affordable Energy) and SDG 13 (Climate Change Management). The company's vision of "becoming a world-class and sustainable national gas company," as well as its mission to provide reliable, efficient, and environmentally friendly natural gas infrastructure and services (Tbk), 2023) reflect this commitment.

Pertagas actively aligns its operational activities with sustainability principles. In the PGN Sustainability Report 2022, which also includes Pertagas as a subsidiary entity, it is stated that:

*"Pertamina's Gas Subholding is committed to supporting the goals of SDG 7 and SDG 13 through the development of natural gas infrastructure that expands access to clean energy, as well as the application of low-carbon technology throughout business processes to reduce greenhouse gas emissions."* (Tbk), 2022)

One tangible manifestation of this commitment is Pertagas' involvement in the household gas network program (jargas) as well as the development of gas services for industrial sectors that previously depended on solid fossil fuels, such as coal. The company is also implementing various measures to improve energy efficiency and monitor emissions, to support the national decarbonization target.

In terms of reducing emissions, Pertagas participates in the development of alternative energy and long-term strategies towards green energy, such as a joint study with Pertamina Geothermal Energy (PGE) on the potential for green hydrogen development as part of the decarbonization initiative (Gas), 2025). This initiative confirms that Pertagas not only supports the use of gas as a transition energy, but also contributes to sustainable future energy innovation.

In terms of management, Pertagas adopts Environmental, Social, and Governance (ESG) principles as the foundation of its operations, with sustainable reporting as one way to be accountable to the public. All of these efforts show the company's seriousness in linking sustainability with its core business strategy.

With this approach, Pertagas not only contributes to energy security and gas infrastructure development, but is also active in reducing carbon emissions and encouraging a national energy transition in line with the 2030 SDGs Agenda.

### **3. Implementation of Clean Energy Strategy**

PT Pertamina Gas (Pertagas) has implemented various concrete strategies and programs to support the national energy transition to cleaner, affordable, and sustainable energy sources. This strategy directly supports the achievement of SDG 7 (Clean and Affordable Energy) and SDG 13 (Climate Change Management).

#### **a. National Gas Network Infrastructure Development**

The natural gas transmission and distribution network in Indonesia is one of the main implementations built and operated. Pertagas manages a gas pipeline network that stretches more than 4,000 kilometers and covers areas in Sumatra, Java, and Kalimantan. This network links gas sources to energy demand locations, such as industrial and household areas.

In PGN's 2022 Annual Report, it is stated that:

*"Through the construction of a wide and reliable gas network, Pertamina's Gas Subholding has succeeded in distributing more than 900 natural gas fuels, reducing dependence on fuel and directly reducing GHG emissions in the end-user sector." (Tbk), 2022).*

The impact of this project is significant, including a reduction in carbon emissions due to the switch from fuel oil and coal to natural gas, which results in approximately 30–50% lower CO<sub>2</sub> emissions per unit of energy.

b. Energy Conversion Program for Households and MSMEs

Pertagas contributes to the energy conversion program by encouraging the use of the household gas network (jargas). Pertagas distributes gas directly to thousands of households and small and medium enterprises (MSMEs) through subsidiaries and partnerships with the government. This program not only lowers energy costs for the community, but also reduces emissions generated from the use of LPG and firewood.

Based on data from (Kementrian ESDM et al., 2015), a single household gas network connection can save about 1.5 LPG cylinders per month and reduce emissions by up to 0.75 tons of CO<sub>2</sub> per year in each home.

c. Utilization of LNG and CNG for Transportation and Industry

Pertagas participates in the development of Liquefied Natural Gas (LNG) and Compressed Natural Gas (CNG) projects for the transportation and industrial sectors. In some regions, trials have been carried out using LNG as an alternative fuel for heavy vehicles and ships, to replace fossil-based diesel.

The company distributes LNG to off-pipeline areas through LNG terminals and mini-LNG plants, expanding access to clean energy to remote areas. These initiatives contribute to reducing emissions and creating a more inclusive and efficient energy system.

d. Digitization and Automation of Operations

Pertagas implements automation and digitalization to improve energy efficiency in its operations, including gas pressure management, energy consumption monitoring, and emission control. The implementation of smart pipeline monitoring systems contributes to the reduction of leak risk, increased system reliability, and reduction of potential methane emissions.

Through these various projects, PT Pertamina Gas has shown active involvement in accelerating the energy transition in Indonesia towards a cleaner and more sustainable system. This strategy not only results in a reduction in greenhouse gas emissions, but also strengthens national energy security and improves people's quality of life.

**4. Contribution to Climate Resilience**

PT Pertamina Gas (Pertagas), as part of Pertamina's Gas Subholding, plays an important role in supporting national climate resilience by reducing greenhouse gas (GHG) emissions, improving energy efficiency, and adapting to increasing



climate risks. This commitment is part of the company's contribution in achieving Sustainable Development Goal 13 (Climate Action) and strengthening the company's strategic direction to realize sustainable operations.

Pertagas has implemented various steps to reduce emissions, one of which is by utilizing natural gas technology that is cleaner than other fossil fuels. Natural gas has a lower carbon content, and its widespread use in various industrial, transportation, and household sectors makes a significant contribution to reducing national CO<sub>2</sub> emissions ((IEA), n.d.). In addition, Pertagas actively monitors and controls methane leakage, which is one of the causes of GHG emissions from gas transmission and distribution infrastructure.

In the 2022 PGN Sustainability Report, which oversees Pertagas, it is explained that:

*"We apply emission control technology, energy efficiency equipment and intensive monitoring systems to ensure that our operations are running on low-carbon and climate-resilient principles."* (Tbk), 2022)

As a strategic step, Pertagas is developing partnerships in climate mitigation, including collaboration with Pertamina Geothermal Energy (PGE) to research the potential use of green hydrogen as a future energy solution. Green hydrogen is an emission-free energy source produced through the electrolysis process by utilizing renewable energy. This hydrogen has great potential to reduce dependence on carbon-based energy.

In terms of operational efficiency, Pertagas has implemented automation and digitalization systems to reduce energy waste and improve the reliability of gas pipeline operations. This efficiency program directly lowers internal fuel consumption and reduces indirect emissions.

The company not only mitigates, but also pays attention to the aspect of adaptation to climate change. This is done by mapping climate risks to gas infrastructure assets, such as the threat of flooding, extreme drought, and rising temperatures, which can impact operations and safety. The results of this assessment are a reference for planning to strengthen stronger infrastructure in the face of extreme weather.

Through all these efforts, Pertagas has demonstrated that sustainability is not just about complying with regulations, but is also an integral part of the company's long-term business strategy in supporting Indonesia to achieve carbon neutrality by 2060.

## **5. Critical Analysis of Impacts and Challenges**

PT Pertamina Gas has made a positive contribution to the achievement of SDG 7 (Clean and Affordable Energy) and SDG 13 (Climate Change Management) by developing natural gas infrastructure, distributing clean energy, and implementing operational efficiencies. However, when comparing national targets with company realization, there are still gaps that need to be considered.

### **a. Comparison of Targets and Realization**

Through the National Energy General Plan (RUEN), the Indonesian government targets to increase the natural gas mix to 22% by 2025. However, until 2023, the contribution of new gas is only around

19%, with most of it still focused on major industrial areas such as West Java and North Sumatra (Kementrian ESDM et al., 2015). Pertamina, which plays the role of the main manager of gas transmission infrastructure, has still not fully succeeded in increasing penetration to areas that are not yet connected to the pipeline, especially in the eastern part of Indonesia.

Meanwhile, the household gas network program managed by Pertamina and its subsidiaries also faces challenges in achieving the target of 4 million household connections by 2024. Until the end of 2023, only about 1.6 million connections have been achieved (Ministry of Energy and Mineral Resources et al., 2015), indicating that the realization is still far from expectations.

**b. Obstacles in Strategy Implementation**

Some of the factors that are the main obstacles in achieving these targets include:

**1. Regulation and Licensing**

The licensing process for building gas infrastructure, particularly pipelines, is often hampered by complicated bureaucracy and overlap between central and local governments. As a result, projects are executed more slowly and operational costs increase.

**2. Project Funding**

A large investment and a long time for its return are required to build a gas network and LNG facilities. The limitations of funding schemes and the lack of fiscal incentives make projects difficult to scale, especially in non-commercial areas.

**3. Supporting Technology and Infrastructure**

Although Pertamina has started to adopt digitalization and automation, the use of low-carbon technologies such as carbon capture & storage (CCS) or AI-based methane leak detection systems is still limited. This reduces the potential for maximum emission reduction.

**4. Market Awareness and Community Resistance**

In some areas, people and business actors still tend to use LPG or diesel because it is considered more practical. The lack of education about the long-term benefits of natural gas is a challenge in changing energy behavior.

**c. Evaluation of the Effectiveness of the Strategy on the SDGs**

In general, Pertamina's strategy is in line with the principles of the SDGs, especially in expanding access to clean energy and improving operational efficiency. Initiatives such as the use of LNG and the construction of gas networks have been shown to contribute to reducing emissions and improving local energy security. However, its effectiveness is still limited

by the scale of implementation and support from the national ecosystem, including policy incentives and multi-stakeholder collaboration.

Without strengthening regulations, support for green investment, and improving technology and energy literacy, existing strategies will

struggle to achieve maximum impact. Pertagas' strategy is already on the right track in the context of the SDGs, but there needs to be greater acceleration and synergy so that its contribution is more significant at the national level.

#### **6. Relevance to the SDG Goals**

PT Pertamina Gas (Pertagas)'s strategies and initiatives in the development of clean energy and climate resilience are closely related to several Sustainable Development Goals (SDGs), especially SDG 7 and SDG 13, and have an additional impact on SDG 9 and SDG 12.

##### **a. SDG 7: Clean and Affordable Energy**

Pertagas berkontribusi signifikan terhadap target SDG 7, khususnya:

- Target 7.1 (Ensure universal access to affordable, reliable and sustainable modern energy):  
Through the construction of a household gas network and the development of LNG in non-pipeline areas, Pertagas expands public access to clean energy that is cheaper than LPG. Until 2023, millions of people have enjoyed the benefits of a safer and more economical gas network.
- Target 7.3 (Improving energy efficiency globally):  
The implementation of digitalization in pipeline management, as well as the utilization of emission monitoring systems and fuel efficiency, helps to reduce energy loss and strengthen operational efficiency.

##### **b. SDG 13: Tackling Climate Change**

- Target 13.2 (Integrating climate change policies into national policies and planning):  
Pertagas contributes to the achievement of the greenhouse gas emission reduction target in Indonesia by switching from heavy fossil fuels to natural gas, which has lower emissions. Indirectly, the distribution of natural gas to the industrial and transportation sectors can significantly reduce national emissions.
- Target 13.3 (Increasing awareness and capacity on climate mitigation and adaptation):  
In addition to internally, the company also establishes partnerships in low-carbon energy innovations such as green hydrogen and supply chain efficiency, as well as building awareness through training and socialization to household gas users.

##### **c. Indirect Contribution to Other SDGs**

- SDG 9: Industry, Innovation and Infrastructure  
The construction of more than 4,000 km of gas transmission infrastructure, the development of LNG terminals, and CNG stations are a form of direct support for the development of innovative and climate-resilient infrastructure. It also helps local industries to operate more energy-efficiently.
- SDG 12: Responsible Consumption and Production



Natural gas used as clean energy can encourage more responsible energy consumption practices, replacing fuels with high carbon footprints such as diesel, coal, or firewood. This conversion reinforces the shift towards more sustainable production and consumption patterns.

Therefore, Pertagas' contribution is not limited to the two main SDGs (7 and 13), but also strengthens the basis for overall sustainable development through environmentally friendly energy infrastructure, production efficiency, and changes in energy consumption behavior. This action is significant to strengthen Indonesia's position in the transition to low-carbon energy and in the context of climate resilience at the national level.

## **CONCLUSION**

In a conclusion, you summarize your findings and explain the implications of your work. Conclusion contains no new data or findings. You may also include Recommendations for improvements to the apparatus or method, or suggestions for future research on the subject at hand. (Times New Roman, 12 pts, single space, justify alignment PT Pertamina Gas has a very strategic role in supporting the achievement of the Sustainable Development Goals, especially SDG 7 (Clean and Affordable Energy) and SDG 13 (Climate Change Management). Pertagas has demonstrated a real commitment to a cleaner and low-carbon energy transition through the development of natural gas infrastructure, energy conversion, operational efficiency programs, and decarbonization initiatives. In addition, support for environmentally friendly technology and cooperation between sectors also make its contribution to climate resilience at the national level even stronger.

Although there are still challenges related to regulation, funding, technology, and market awareness, the strategy implemented by Pertagas so far has had a positive impact in supporting sustainable development. Indirect contributions to other SDGs such as SDG 9 (Industrial Infrastructure and Innovation) and SDG 12 (Sustainable Consumption and Production) also expand the impact of corporate policies. PT Pertamina Gas can play an important role in encouraging Indonesia's energy transformation towards a greener and more sustainable future by continuing to strengthen the synergy between business strategies and national development agendas.

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