

Strategic Formulation Analysis of Virtual Gas Pipeline Business Development (CNG & LNG)

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ABSTRACT

The objectives of this study were 1) to identify internal and external factors that influence the company's business development; 2) analyze internal and external environmental factors that affect the company's business development and PT Pertagas Niaga's strategic position to compete in the oil and gas industry; and 3) formulating alternative strategies and priorities that can be recommended to the company in achieving its goals. This research was conducted using a qualitative method through questionnaires to three experts from the management of PT Pertagas Niaga and deliberately selecting from externals. The initial stage was to identify internal and external factors that are analyzed using The IFE Matrix and The EFE Matrix. Then in the second stage, The IE matrix and SWOT matrix analysis was carried out to determine the current condition of the company. In the last stage, QSPM analysis was carried out to determine priorities for the preparation of alternative strategies. The priority strategy recommendations for PT Pertagas Niaga were 1) market penetration strategy, 2) market development strategy, 3) product development strategy. The recommendations for the three alternative strategies were expected to be a reference for the management of PT Pertagas Niaga in developing the company's business.

Key words: IE Matrix, PT Pertagas Niaga, QSPM, SWOT Matrix, Virtual Gas Pipeline.

PRELIMINARY

In line with the increase of Gross Domestic Product (GDP) and population, fuel oil (BBM) consumption in Indonesia will continue to increase. From 1990 to

2017, fuel consumption continued to increase from year to year, or grew at around 6.1% per year. This condition has caused Indonesia to experience an oil deficit since 2003 [1]. So as a consequence Indonesia has to import crude oil and its processed products. Another alternative that can be done is to develop other energy sources besides oil.

Natural gas starting to get the attention of the Government by issuing a policy for the conversion program from BBM to natural gas. To encourage local consumption of natural gas, the government issued several regulations including the Minister of Energy and Mineral Resources Decree Number 132 K/15/MEM/2019 regarding the assignment to PT Pertamina (Persero) to carry out natural gas supply and distribution through the transmission network and/or natural gas distribution for households and small customers and their supporting infrastructure around 1 (one) million connections.

The government policy on the integrated oil and gas BUMN holding between PT Perusahaan Gas Negara Tbk and PT Pertamina Gas group as part of PT Pertamina (Persero) has been inaugurated since 2018. The result of this policy is in a business integration process, which one of them is carried out in clustering by dividing natural gas trading operation area. Responding to these policies, PT Pertagas Niaga needs to prepare several strategies to face the challenges that will come. Therefore it is necessary to evaluate and formulate right on target strategies to face

various challenges in the gas industry business and virtual gas pipeline (LNG and CNG) business development.

The objectives of this study are: 1) analyzing internal and external factors that affect virtual gas pipeline (CNG and LNG) business performance, 2) formulating alternative strategies for virtual gas pipeline (CNG and LNG) business development and their priority order, and 3) formulating a work program for virtual gas pipeline (CNG and LNG) business development as a strategy elaboration of both tactical strategies and operational strategies. This research was conducted at PT Pertamina Niaga by involving both internal management and related external parties that related to virtual gas pipeline (CNG and LNG) business.

Strategic management

Strategic management is a set of activities and managerial decisions that can establish performance of a company in future. Usually, companies that can maintain their success are companies that always update themselves with new strategies, because if they don't do that, they will be replaced by another companies that more aggressive [2].

This view is in line with Suyanto [3] which states that strategic management describes many regulations or rules and activities that aim to achieve company goals and objectives. Based on this point of view, the authors conclude that strategic management is an effort to take one or more actions to work with equipment components by determining long-term capabilities to achieve goals and objectives through the formulation, implementation and decisions consideration and management actions in an institution.

According to David [4], strategy formulation can be carried out in three stages of implementation that are input stage, matching stage and decision stage:

1. The First Stage is the Input Stage
Before the strategy is implemented, strategic planners have to identify and

analyze external environment for identifying possible opportunities and threats, as well as analyzing internal environment to determine the company's strengths and weaknesses (David 2009).

2. The second stage is the Matching Stage
IE Matrix and SWOT Matrix. The matrix describes company's current position, while the SOWT Matrix can clearly describe how external opportunities and threats that faced by company can be adjusted to company's strengths and weaknesses [5].
3. The third stage is the Decision Stage
QSPM uses input from analysis at the first level and matching results at the second level which provides information for further analysis through QSPM at the third stage [6]. The purpose of QSPM is to determine relative attractiveness of the various strategies that have been selected, to determine which strategy is considered the best to be implemented [7].

Porter's Generic Strategic

According to David [8], Porter's five forces model is widely used in many industries to formulate strategies for companies with different levels of competition. According to Porter [9], an industry can be seen as a combination of 5 strengths: 1) Competition between similar companies; 2) New competitors entrance; 3) Potential for development of substitution products; 4) Bargaining power of suppliers; and 5) Bargaining power of consumers.

SWOT

SWOT analysis is a systematic process of identifying various factors to determine the right formula and play the best role in the company's strategy. The analysis is based on the logic of maximizing strengths and opportunities while minimizing weaknesses and threats. The process of making corporate strategic decisions is always closely related to vision, mission, goals, strategies and company policies development. Therefore, strategic

planning needs to analyze the SWOT (strengths, weaknesses, opportunities, and threats) that exist in the company's current environment (David 2009).

Framework

In designing and taking strategic steps to develop the business, PT Pertamina

Niaga must have competitive ability in the oil and gas industry competition. The steps taken are presented in Figure 1. This research was conducted at the stage of providing recommendations for development of alternative business strategies for PT Pertamina Niaga and making priority scale decisions.

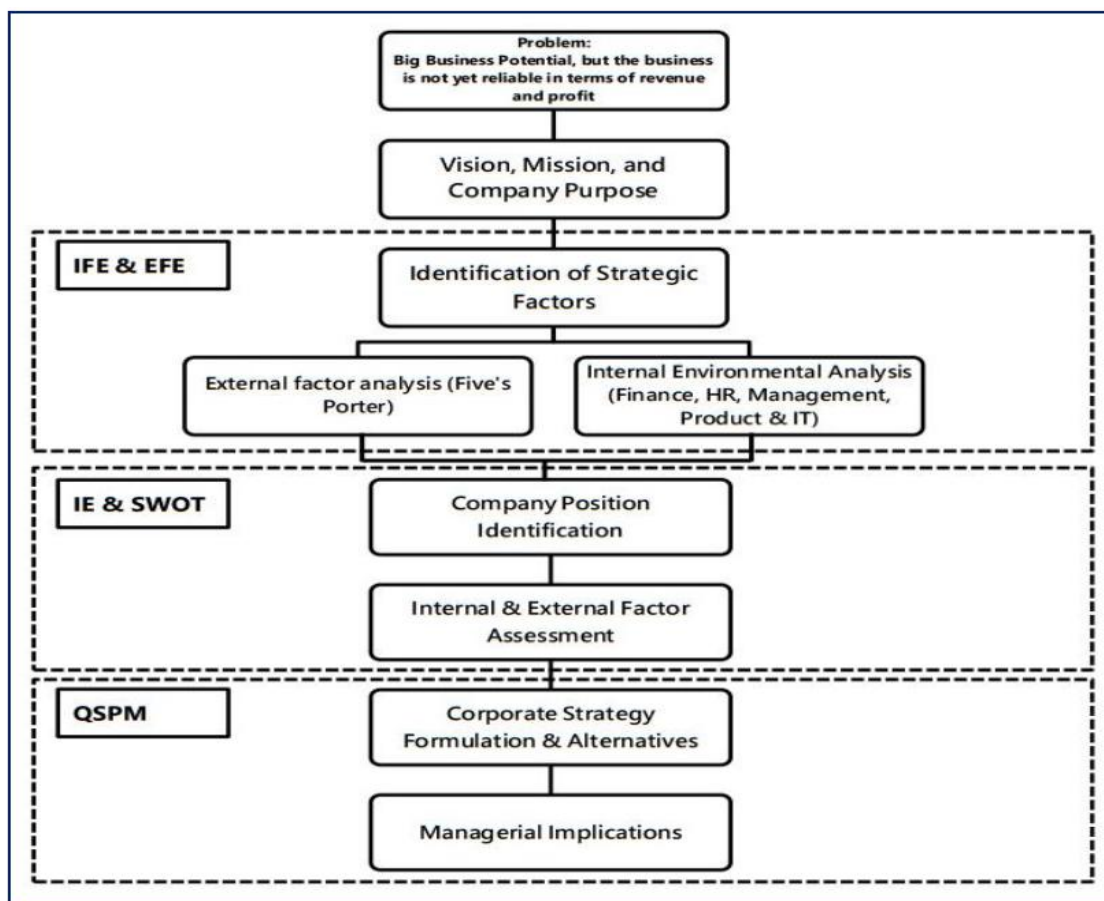


Figure 1: Research Conceptual Framework

METHOD

This research was conducted in August - October 2019 at PT Pertamina Niaga which is located at the Head Office on Jl. General Gatot Subroto, South Jakarta.

Primary and secondary data are used in this study. Basic data collection is done through interviews, discussions, observations with respondents. Additional data is collected through various published data, financial reports, related information from reports, and other supporting information.

The formulation of alternative competitive strategies and business model development is carried out in several stages:

1. External and Internal Factors Evaluation (EFE and IFE Matrix)

David (2009) explains that external factors are used to identify various factors outside the company that have an influence on company sustainability. Meanwhile, internal factors are used to identify various factors within the company that illustrate the company's ability to overcome external threats and take advantage of opportunities.

2. IE matrix

The second stage is matching by entering results from IFE-EFE into Internal External Matrix (IE) to obtain a more detailed business strategy on corporate level.

3. SWOT analysis

SWOT matrix is used to develop company strategy by integrating and adjusting company's strengths and weaknesses with opportunities and threats that company faces.

4. QSPM matrix

QSPM can be used to select the most suitable strategy to be applied in the company from various alternative strategies that have been formulated previously.

RESULTS

Identification of Internal and External Environmental Factors

Internal factors from the perspective of PT Pertamina Niaga include the advantages and disadvantages of PT Pertamina Niaga, while external factors include opportunities and threats that PT Pertamina Niaga will face.

Internal Success Factors

The key internal success factors that influence business development of PT Pertamina Niaga, consist of strengths and weaknesses. Strategic internal factors on the strengths include: 1) Company support for investment; 2) Level of trust from stakeholders; 3) Access to information and regulations and supported by government policies; 4) The available physical facilities and infrastructure, such as CNG and LNG Plant; 5) Organizational development supported by stakeholders; 6) productive and potential human resources to be developed; and 7) Good quality of CNG and LNG products.

The weakness factors that affect the success of a company include: 1) a retail business system with elaborate complexity; 2) Business development overlaps with other subsidiaries; 3) Internal system in the billing process to consumers; 4) Internal control of the company in the risk management system; 5) Organizational

governance including SOPs in running the CNG and LNG retail business; 6) CNG and LNG products that are not widely known to consumers / markets compared to BBM and LPG; and 7) Management which tends to be bureaucratic.

External Success Factors

External factors that affect PT Pertamina Niaga in business development, which consist of opportunities and threats. The factors that become opportunities include: 1) a very large market share; 2) Global market trends in accordance with this business are green (low emission); 3) CNG and LNG products that are competitive compared to LPG and BBM (fuel and LPG prices are fluctuating and expensive); 4) High stakeholder expectations of the company in terms of increasing revenue and number of consumers; 5) Increasing community economic activities, including in the energy consumption sector; 6) Support from gas sources to ensure continuity of supply; and 7) Innovative transport for CNG and LNG.

The factors on threats that affect a company's success include: 1) The location of the CNG and LNG Plants that have not yet approached the market/consumer; 2) The price of crude oil which affects the price of LNG; 3) The possibility of obtaining investment funds from banks to support the CNG and LNG businesses (new business); 4) Fluctuating currency rates (CNG and LNG prices in dollars); 5) The level of collectivity in consumer billing; 6) Complexity of government licensing regulations; and 7) The perception in society that use of gas has a high risk of safety.

Strategy Factor Evaluation Analysis

Evaluation of strategic factors consists of Internal Factor Evaluation (IFE) and External Factor Evaluation (EFE), that are by giving value and rating for each internal factor (strengths and weaknesses) and external factors (opportunities and threats).

A. Internal Factors Evaluation

Evaluation results of internal factors can be seen in Table 1. In Table 1, it can be seen that the highest degree of importance in internal factors are organizational development supported by stakeholders with an average weight of 0.082. While the weakness factors that have the highest level of importance are CNG and LNG products that are not widely known to consumers/markets compared to BBM and LPG with an average weight of 0.085.

B. Internal Factor Evaluation Matrix Analysis

The result of average value by rating shows that total score for the IFE Matrix is 2.582. This means the number is above the average of 2.5, which means that the internal position of company is in a strong position. This result is obtained because the internal position is influenced by two strong internal factors, that are good quality of CNG and LNG products, as well as productive and potential human resources to be developed.

C. External Factors Evaluation

The results of evaluation on external factors can be seen in Table 2. The table shows that external opportunity factor which has the highest degree is support from gas sources to ensure supply continuity with an average weight of 0.074. Meanwhile, threat factor that has the highest level of importance is the fluctuating currency exchange rate (CNG and LNG prices in dollars) with an average weight of 0.087.

D. External Factors Evaluation Matrix Analysis

Based on Table 2, the EFE Matrix analysis at PT Pertagas Niaga, the total obtained score is 3.082 (above the average value of 2.50) which illustrates that PT Pertagas Niaga's response to opportunities and threats from external factors faced is quite strong or quite

responsive to existing environment in company. Based on the results of EFE Matrix analysis, the most important factor that need to immediately carried out to expand PT Pertagas Niaga's business development is to take advantage of opportunities that company has, include competitive CNG and LNG product factors compared to LPG and BBM (fluctuating and expensive fuel and LPG prices). Meanwhile, the main threat based on the highest total rating value is fluctuating currency exchange rates factors (CNG and LNG prices in dollars) which need to be caution.

IE Matrix Analysis

The analysis results that obtained are based on IE Matrix which consists of input values of IFE Matrix and EFE Matrix with a total score of 2.582 and 3.082. The matrix value is still above the average of 2.50, this shows that management is able to maximize all company's potential (strengths and opportunities), and is sufficient to respond and anticipate weaknesses and threats that come from outside, so that it has an impact on the company's profitability or profits. Although PT Pertagas Niaga's position is in the "successful" category, there are a several things that need to be fixed or improved so PT Pertagas Niaga's performance will be better than before, and can develop its business further.

In addition, the EFE and IFE matrix values indicate that the position of PT Pertagas Niaga is on map cell II. According to David (2008), the position of a company in cell chart II is a condition of a company that is experiencing a growth and development period with a strategy that can be done is a grow and built strategy. Steps that can be taken by the company, that are market penetration, market development, product development, backward integration, forward integration, and horizontal integration, are general strategies that the company includes in the cell graph II.

Table 1: Internal Factor Evaluation Matrix

No	Key Internal Factors to Success	Value (B)	Rating (R)	Score (B X R)
Strenght:				
1	Company investment support	0.074	3	0.221
2	Level of trust from stakeholders	0.071	3	0.213
3	Access to information and regulations and supported by government policies	0.070	3	0.211
4	Physical facilities and infrastructure that available for example CNG and LNG Plant	0.063	3	0.189
5	Organizational development that are supported by stakeholders	0.082	3	0.246
6	Productive and potential human resources to be developed	0.065	4	0.262
7	Good quality of CNG and LNG products	0.073	4	0.293
Weakness:				
1	A retail business system with elaborate complexity	0.069	2	0.138
2	Overlapping business development with other subsidiaries	0.077	2	0.154
3	Internal system in the consumer billing process	0.067	2	0.133
4	Internal control of company in the risk management system	0.074	2	0.148
5	Organizational governance includes SOPs in running CNG and LNG retail business	0.074	2	0.149
6	CNG and LNG products that are not widely known consumer / market compared to fuel and LPG	0.085	2	0.169
7	Management that tends to be bureaucratic	0.056	1	0.056
Total Internal Factor Evaluation Score		1.000		2.582

Table 2: External Factor Evaluation Matrix

No.	Key External Factors to be Success	Value (B)	Rating (R)	Score (BXR)
Opportunity:				
1	Huge market share	0.073	3	0.218
2	Global market trend is in accordance with this business, that are green (low emission)	0.072	3	0.216
3	CNG and LNG products are competitive compared to LPG and BBM (fuel prices and LPG is fluctuative and expensive)	0.068	4	0.273
4	High stakeholder expectations of the company in terms of increasing revenue and number of consumers	0.071	3	0.212
5	The increasing economic activities of community that are included in the energy consumption sector	0.069	3	0.207
6	Support from gas sources to ensure supply continuity	0.074	3	0.223
7	Innovative transport for CNG and LNG	0.073	3	0.218
Threat:				
1	CNG and LNG Plant locations that have not yet approached the market/consumer	0.071	3	0.214
2	The price of crude oil has an effect on LNG price	0.070	3	0.210
3	The possibility of obtaining investment funds from banking to support the CNG and LNG business (new business)	0.070	3	0.209
4	Fluctuating currency rates (CNG prices and LNG in Dollars)	0.087	4	0.347
5	The level of collectivity in consumer billing	0.064	3	0.191
6	The complexity of government licensing regulations	0.066	3	0.198
7	The perception in society that use of gas is a high risk of safety	0.073	2	0.146
Total External Factor Evaluation Score		1.000		2.082

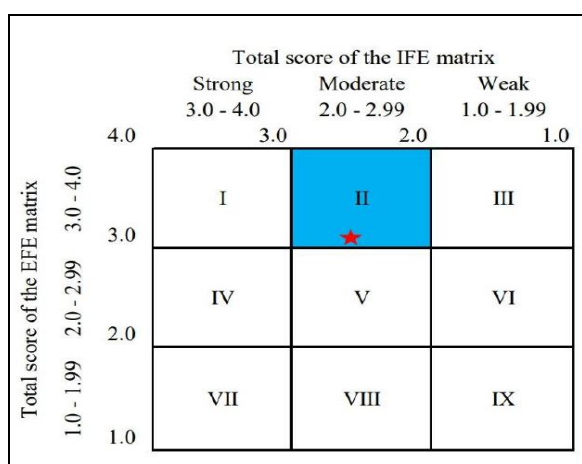


Figure 2: PT Pertagas Niaga position based on IE Matrix analysis

SWOT Matrix Analysis

SWOT analysis aims to link SWOT analysis with IE so that it can maintain

coordination between various stages of strategy analysis which are carried out and avoid significant losses from each strategy [10]

Based on the strengths, weaknesses, opportunities and threats that have been identified through the SWOT analysis, it can be formulated into 15 functional strategy details, that are 5 combined strategies of strengths and opportunities (S-O), 4 combined strategies of weakness and opportunity (W-O), 4 strategies of combined strength and threat (S-T), and 2 strategies of the combination of weakness and threat (W-T).

The recommendations results in SWOT analysis above then are grouped and

adjusted according to characteristics of alternative strategy (corporate strategy). From the results of Alternative Strategies Grouping, three alternative corporate strategies can be applied, which are the market development strategy, market penetration strategy, and product development strategy. The three alternative strategies are the most important strategies that companies need to immediately implement in order to develop their business.

Strategy Formulation in Developing Company Business

Quantitative Strategic Planning Matriks

The results illustrate that the highest value of TAS is a market penetration

strategy in order to develop PT Pertagas Niaga business. Experts have an interest in this strategy because they think that this strategy can affect the company's long-term plans and have a major influence in developing the company's existing business. This strategy received the highest score of 5.937.

Previous research that has similar results to this strategy, that are market penetration strategy, market development strategy and product development strategy in the oil and gas industry is the research of Djuwardie [11]. The results of the QSPM analysis conducted at PT Pertagas Niaga are shown in Table 4.

Table 3: PT Pertagas Niaga SWOT Matrix

SWOT MATRIX	No.	Internal Strategic Factors		
		Strength	Weaknesses	
	1	Company investment support	A retail business system with elaborate complexity	
	2	Level of trust from stakeholders	Overlapping business development with other subsidiaries	
	3	Access to information and regulations and supported by government policies	Internal system in the consumer billing process	
	4	Physical facilities and infrastructure that available for example CNG and LNG Plant	Internal control of company in the risk management system	
	5	Organizational development that are supported by stakeholders	Organizational governance includes SOPs in running CNG and LNG retail business	
	6	Productive and potential human resources to be developed	CNG and LNG products that are not widely known consumer/ market compared to fuel and LPG	
	7	Good quality of CNG and LNG products	Management that tends to be bureaucratic	
		No.	SD Strategies (Strength-Opportunities Combined Factors)	WO Strategies (Weakness-Opportunities Combined Factors)
Opportunity				
Huge market share	1			
Global market trend is in accordance with this business, that are green (low emission)	2			
CNG and LNG products are competitive compared to LPG and BBM (fuel prices and LPG is fluctuative and expensive)	3	Aggressive market penetration by developing in areas and zones with high potential and high economic activity. (S1, S2, S3, S4, S6, O1, O2, O3, O4, O5).		
High stakeholder expectations of the company in terms of increasing revenue and number of consumers	4		Take a long-term contracts with upstream / gas sources to ensure supply continuity.	
The increasing economic activities of community that are included in the energy consumption sector	5	Educate the public / consumers about the benefits of CNG and LNG, government policy support and ease of payment mechanisms. (S3, S6, S7, O2, O3, O4)		(W1, W2, O1, O2, O5, O6)
Support from gas sources to ensure supply continuity	6			
Innovative transport for CNG and LNG	7			
		No.	ST Strategies (Strength-Threat Combined Factors)	WT Strategies (Weakness-Threat Combined Factors)
Threat				
CNG and LNG Plant locations that have not yet approached the market/consumer	1			
Crude oil price has an effect on LNG price	2			
The possibility of obtaining investment funds from banking to support the CNG and LNG business (new business)	3	Prioritizing business development near to CNG and LNG Plants. (S1, S2, S3, S4, S5, T1, T3)		Developing Organizational Governance and SOPs for all divisions in order to ensure supply continuity to consumers and proper billing (W2, W3, W4, W5, T5, T6)
Fluctuating currency rates (CNG prices and LNG in Dollars)	4			
The level of collectivity in consumer billing	5	Implementing a billing system for the retail market to make easier collection. (S1, S2, S3, S4T5, T6)		Improve the company's internal control system to anticipate fluctuation of oil prices and currency exchange rates. (W1, W2, W4, W7, T2, T4, T6)
The complexity of government licensing regulations	6			
The perception in society that use of gas is a high risk of safety	7			

Table 4: The order of the TAS Value

No.	Strategy Options	TAS Value	Priority
1	Market Penetration Strategy	5.937	I
2	Market Development Strategy	5.044	II
3	Product Development Strategy	4.890	III

Managerial Implications

Based on IE matrix analysis results, SWOT matrix and alternative decision-making strategies through QSPM, it can be seen that the priority strategies are market penetration strategies, market development strategies and product development strategies. Companies can implement a penetration strategy in short term (one year before). Companies can implement a market development strategy in short terms and medium term management (one to three years ahead). At the same time, the product development strategy can be transformed into management significance in medium term and long term (the next three to five years). The main objective of the three strategies is to improve business development at PT Pertagas Niaga.

CONCLUSIONS AND RECOMMENDATIONS

Conclusion

The obtained identification results from the biggest internal strength factors that are possessed by PT Pertagas Niaga is the company's support for investment. The biggest weakness in PT Pertagas Niaga is the retail business system with elaborate complexity. Meanwhile, the identification results on external factors obtained the greatest opportunity that PT Pertagas Niaga needed to respond to, that are very large market share. The strongest threat that PT Pertagas Niaga has to respond to is CNG and LNG Plant location which have not yet approached the market/consumer.

Based on IE Matrix analysis results and SWOT analysis results recommend alternative strategies, and according to QSPM (Quantitative Strategy Planning Matrix) approaching are Market Penetration Strategy, Market Development Strategy, and Product Development Strategy.

Work programs that can be carried out on:

- a. The market penetration strategy is increase services and promotions by cooperate with related instances, and involvement assistance from PT Pertagas Niaga management.
- b. The work program market development strategy that can be done is to target new market shares in several strategic locations and have a lot of economic activities, and also recruit competent human resources.
- c. Product development strategy, a work program that can be carried out by PT Pertagas Niaga is a IT system application (PT Pertagas Niaga mobile) approaching, so that it can be used in controlling company activities both between employees and helping consumers/customers in carrying out transaction activities.

Suggestion

Pertagas Niaga can focus on providing good and different services from its competitors, as well as promoting in existing market share by cooperating with relevant instance which assisted by involvement from PT Pertagas Niaga management, so that it can increase market share and CNG and LNG users

PT. Pertagas Niaga can search for new (upstream) gas producers because PP number 79 in 2014 targets the use of gas energy to be increased, which was originally around 20% in 2014 to be increased to 25%-30% in 2025-2050. This is an opportunity for PT. Pertagas Niaga to increase sales due to government support.

From this research, further research can be carried out on the analysis of how much the impact of this strategy implementation has on company performance changing.

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