



Scenario Planning Development in Facing Future Challenge for Power Rental Industry (Case Study: SM Company)

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ABSTRACT: The diesel power rental industry is currently in an energy transition period. Policy changes in reducing the use of non-renewable fuels are factors that can reduce customer demand. Several policies, such as the Paris agreement, followed by a general plan for electricity supply, then a general plan for national energy that focuses on increasing the use of renewable energy encourages the shift from fossil fuels to renewable sources. These factors will affect the electricity rental industry which still uses fossil fuels.

Scenario planning is chosen to provide possible scenarios that may occur in the future by carrying out an analysis of implications & options. This scenario can provide an initial danger signal to be used as an indicator of movement in an industry which will help companies to act and choose the best strategy going forward. Scenario planning is used as a tool for strategic thinking that can be integrated into corporate strategic planning.

The semi-structural interview qualitative method was used to collect both primary and secondary data. Supporting analysis of both external factors such as Pestle & Porters Generic Strategies as well as internal resource-competencies was carried out to determine what factors affect uncertainty in the industry, in overcoming future uncertainties scenario planning carried out in this study. The strategic recommendations that were presented have the potential to assist in the future alignment of the company's strategy.

KEYWORDS: Generator set, Power rental industry, Renewable energy transition, Scenario planning, Strategic planning.

INTRODUCTION

The power rental business has a fairly complex business environment due to rapid change and high uncertainty. Renewable energy has become a popular issue in recent years because it offers more advantages than nonrenewable energy. Starting with energy security, economic savings and environmental preservation, future sustainable solutions are possible. The problem of climate change caused by greenhouse gas emissions is why renewable energy is the main emphasis and all aspects are required to help reduce its impact. The trend of renewable energy in Indonesia has increased from 2011-2021, shares of fossil fuel in the primary energy supply showed negative growth annual trend especially for oil and gas.

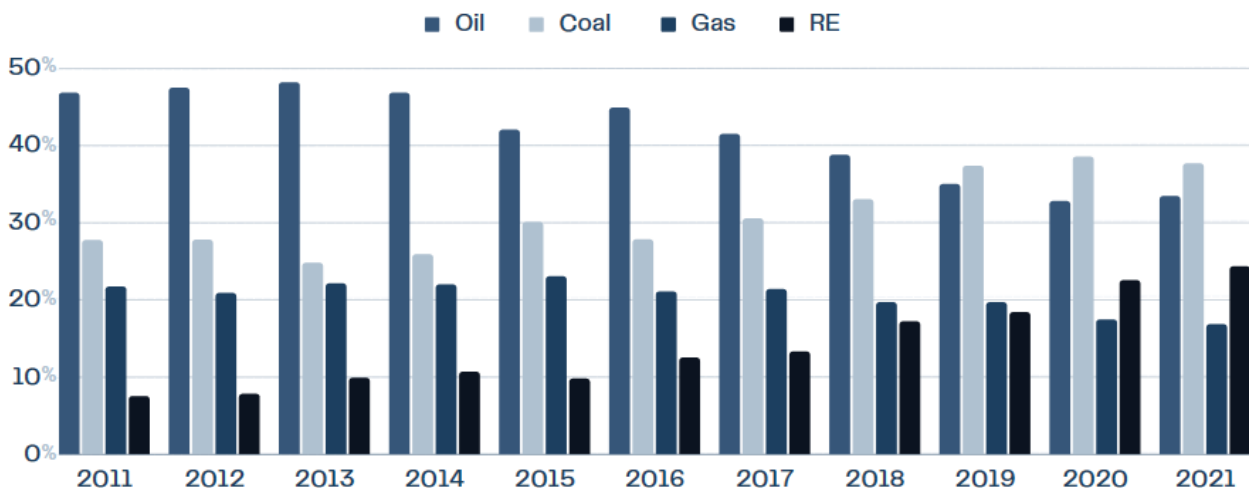


Figure 1. Shares Primary Energy Indonesia [1]



Demand will rise in next year for response to the post-pandemic situation, but international aids to shorten the duration of this condition will affect the rise in the percentage of renewable energy for the following year. Renewable energy is still more affordable than technologies based on fossil fuels, according to technological advancements; however, this will only happen if regulations allow it.

The government is lowering the electricity industry's reliance on fossil fuels through various initiatives, one of which focuses on reducing the use of diesel-powered power plants, for a company engaged in this industry and still using fossil fuels, it will experience a direct impact, strategic decision makers in electricity companies could benefit from 'futures techniques' [2].

CONCEPTUAL FRAMEWORK

The conceptual framework in this case consists of the variables that support the formation of this scenario, along with the management tools used in forming scenario planning and strategic proposals. The conceptual framework shown above adopts a modified version of the SBI approach paradigm for scenario planning. In general, it consists of two processes: scenario creation and strategy development.

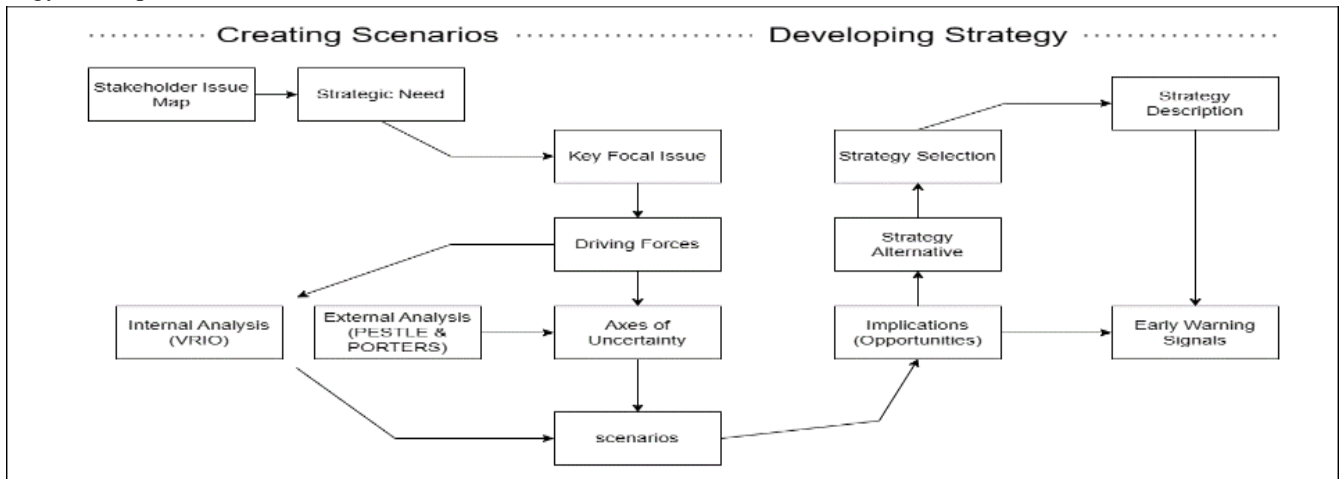


Figure II. 1. Conceptual Framework edited from SBI Approach [3]

Scenario planning is a method that have a inspiration for generating idea and as filters through which new ideas and project can be passed, According to [4] these are effective tools related to strategic planning for medium to long-term planning under uncertain conditions. Researchers argue that, in such conditions, traditional approaches to strategic planning are unable to produce high-quality strategic decisions. In addition, there is a need for scenario planning when times are uncertain. Scenarios are particularly useful when it comes to paradigmatic or non-linear change. For instance, when product categories are reaching a level of "over-maturity" and need to be replaced with something new, or when faced with rule-breaking competition that is creating a new business logic, these are both examples of situations in which new products or approaches are required. Based on the company's historical and contemporary situations, which have begun to experience the energy transition age towards the renewable energy era, scenario planning is a suitable evaluation technique for testing existing business concepts, strategies, and products. The type of scenario used in this research is a combination of prescriptive and descriptive scenarios.

The supporting analysis utilized to support the scenario planning analysis comprises of Pestle, Porters Five Forces, and Vrio. Pestle analysis is the broad macro-environment of organizations in terms of political, economic, social, technological, environmental, and legal factor [5] the analysis defines the trends, determining the development of the industry. Industrial attractiveness analysis was carried out using Porter, Porter’s five forces model to help strategic leaders understand the profit potential of different industries and how they can position their respective firms to gain and sustain competitive advantage [6]. For the internal analysis of the company is used resource-competitive based dengan vrio framework, The main aim of the VRIO analysis is to estimate the situation inside the company, to define its unique resources and capabilities that make it competitive on the market [7] his framework is implied in the resource-based model, identifying certain types of resources as key to superior firm performance [8].



RESEARCH METHODOLOGY

This research purpose is a descriptive research design to determine scenario planning for businesses in the power rental industry in facing future challenges. Based on the time horizon, this thesis is a cross-sectional design. A cross-sectional design is used for research that collects data on relevant variables one time only from a variety of people, subjects, or phenomena, the data collection process is carried out in a short time frame. The primary method to collect data used in narrative approaches is through semi-structured interviews with the source selected to be resource persons in this thesis consist of internal organizations, namely the board of directors, department governance & strategies, engineering operational team, and also from external organizations consisting of PLN & business practitioner in power rental industry with total five people. The reason for choosing these sources is because stakeholders are close to problems in the power rental industry in Indonesia for the benefit of the organization. Qualitative data are associated with such concepts and are characterized by their richness and fullness based on your opportunity to explore a subject in as real a manner as is possible [9]. In order to construct a scenario planning model, it is necessary to consider multiple perspectives from different stakeholders regarding their opinions on a certain subject.

RESULT & DISCUSSION

A. *Business Environment analysis*

1) *Pestle*

a) *Politic and legal*

The goal stated by PLN has also changed; it now calls for Indonesia's power generating capacity to reach 99.2 GW in 2030, with 30% of the capacity going toward new renewable energy power plants. This policy can be a threat to the continuity of the power rental business which still uses power generation using fossil fuels. The Minister of Energy and Mineral Resource Regulation No. 12 / 2017 state the utilization of renewable energy sources for electricity is made in order to realize national energy resilience and reduce the level of CO2 emissions. This will be a threat to the business continuity of companies that still use fossil fuels. there is still a wide distribution, which shows that there is still a market for businesses that provide power leasing services, which means that there could be an opportunity for the continuation of the company's business.

b) *Economic*

The poor rate of investment realization is largely to blame for the sluggish uptake of renewable energy. The amount of USD 3.97 billion that was realized through investments during the third quarter of 2022 was 35% lower than the target. The targets was not supported by sufficient regulatory changes, including delays in the stipulation of the New and Renewable Energy Bill and the Presidential regulation on renewable energy tariffs, resulting in a low rate of investment realization in renewable energy [10] reports that there was a general upward tendency on the demand side. However, because economic activity has begun to pick up again, the objective for the renewable energy mix in 2022 is only 12.2% lower than it was in 2021. It is clear that the rate of energy transition has not been sped up to its full potential, and this presents an opportunity for businesses to establish a power rental business that continues to make use of diesel fuel. Moreover with 88.5% of Indonesia's energy mix reliant on fossil fuels (oil and gas at 50.5% and coal at 38%), renewables compete with subsidized fossil fuels, further undermining investor trust in renewable energy. This is necessary and can be a opportunity because there is still a significant amount of industry dependence on fossil fuels. When talking about GDP that increased by 5.72% in 2022, which indicates that economic activity has returned to pre-pandemic levels. This was followed by an increase in primary energy demand and the proportion of fossil fuels in the energy supply, however, this will also result in an increase in the energy sector's greenhouse gas emissions. The fact that consumption of renewable energy will increase by 19% between 2011 and 2021 will more than make up for this discrepancy, demonstrating that renewable energy has the ability to accelerate economic growth On the basis of this, it is clear that this presents an opportunity for the continuation of the business of power rental.

c) *Social*

diesel is one of the most significant contributors to environmental pollution problems worldwide. Not only environmental but also diesel emissions contribute to the development of cancer; cardiovascular and respiratory health effects. Exhausted from diesel engines has the potential to induce cancer induce lung cancer in humans and animals and may cause acute and chronic noncancer adverse respiratory health effects. Based on the effect provided indirectly by the company but by the customer company, of course this can be a threat that endangers the environment close to the operational area. Socially, occupational health and safety is important



since the industry uses heavy machinery and high temperatures, which are accident-prone. Employee safety education and tools will reduce industry work accidents. Based on this, the corporation will have to prioritize employee safety and its operational responsibilities will reflect this. The power temporary business is now seeing this market trend in developing countries, there is a growing need for services related to electricity rental: It is anticipated that the market for power rental would expand in emerging countries as those countries engage in the construction of infrastructure and the modernization of their economies, which will increase the demand for temporary power solutions.

d) *Environment*

Diesel exhaust produces emissions that contribute to the production of ground-level ozone which can damage the environment such as pollution of air, water, soil and global climate change [11]. Climate change has become a global issue, even based on data from Our World Data, CO₂ production in Indonesia continues to increase, therefore the government has prioritized zero emission net in 2060, so that the use of non-renewable energy which has side effects on the environment will be replaced with renewable energy. Based on this, shifting towards renewable energy is one way to reduce environmental problems while still meeting human needs in the electricity sector. Based on this explanation, environmental issues will become a threat to the power rental industry in the future

e) *Technology*

The internet of things, artificial intelligence, and big data have been used to improve operational efficiency, decision-making, and safety. Digital technology is used in the energy industry, however mostly the implementation still in the early stages of digital maturity. IoT in the field of diesel generators are using the IoT platform for monitoring and control of a diesel generator phone Application (App) to control actuators [12], there are also those who use a smart online system to monitor large scale generator engines, one component of the system acquires data for online monitoring while the other recommends action to be taken by the operator with regard to the type of malfunction which occurs [13]. The energy industry is having issues with sustainability and efficiency; in order to address these issues, one way is by accelerating its digitization plan to increase resilience and keep investors interested. Digitalization can effect not only current assets but also the development of new business models. By digitizing energy data, a company can become an energy service provider. This new job has led to new ways of doing business and focusing on customers. Energy-as-a-Service, or EaaS, is a new way to run a business. Instead of just selling electricity, EaaS companies offer a wide range of energy-related services. End users can get services from ESPs that include energy consulting, asset installation, financing, and energy management. This idea is being used in Australia, China, Finland, Ireland, Italy, Japan, Sweden, the UK, and the US [14]. Another new business model development that company can review is Long duration energy storage (LDES) batteries are a type of energy storage device designed to store huge quantities of energy for extended durations, often many hours to days. LDES batteries are utilized to promote the integration of renewable energy sources into the electric grid by storing excess energy produced during periods of low demand and releasing it during periods of high demand. They can also be utilized as backup power during blackouts same system like generator set model. Long Duration Energy Storage technologies (LDES) can play a crucial role in helping create the system flexibility and stability required by an increasing renewable share in power generation, alongside other technologies such as Lithiumion (Li-ion) batteries and hydrogen turbine [15]

2) *Porters Generic Strategies*

a) *Power of buyer*

The number of customers in this industry is enormous, both from utilities and non-utilities, the power industry requires a high financial aspect so that the size of each customer's order is usually in large numbers, the price difference between competitors and what SM company offers is not much different so the price is not too high. sensitive in this industry. In general, customers will have no difficulty in choosing the products offered, so that the power of buyer industry has implication high forces.

b) *Power of Supplier*

The number and size of suppliers is not too many in this industry, because usually each supplier has a long-term cooperation contract. The product uniqueness of each customer is also not too different depending on the technology chosen, and it will be tough for competitors to sell their own power plant goods because some of the spare parts are obtained from different places. All operational and material needs for SM Company are met by the parent company. The power of supplier for this industry has implications for low forces.



c) *Threat of Substitutes*

The power rental industry offers rental products to meet electricity needs, related to the lack of replacement technology for this power product. So that competition will be very tight among competitors because they offer the same goods and each company will provide different offers to attract customers. The threat of substitutes in this industry has implications for low forces.

d) *Threat of New Entrants*

Looking at the type of goods offered, power generators are not very special for newcomers, plus the 35,000 MW policy program to meet electricity demand throughout Indonesia provided to private companies or outside PLN (Independent Power Producer) can increase interest in new entrants to compete in the power industry, but one of the advantages of the SM company is the reputation due to its long operation and strong branding as a provider of electrical solutions. This industry is straightforward to intervene by government policies that have an impact on company plans and strategies. So that the threat of new entrants has the implication of high forces

e) *Rivalry among Existing Competitors*

There are quite a lot of competitors in terms of industrial power, companies that offer things in the form of electricity are included in SM company competitors, for now there is no clear leader in this industry. This industry will continue to grow because electricity is a primary need, if the goods offered are the same then buyers will have no difficulty determining the goods they want to buy, so that technological competition will be significant in this industry. Apart from that, brand reputation can also influence the purchase factor that customers will make because this industry requires a lot of finance so that trust in a brand will increase the likelihood of being chosen by buyers. Based on this, Rivalry among competitors in this industry has the implication of high forces

According to the analysis' findings below, the power rental market is still desirable due to its greater yield component than those of the other variables. Threat from new competitors, threat from substitutes, power of consumers, strength of suppliers, and competition between current rivals all have modest impact on the market.

Table IV. 1. Summary External Analysis

<i>External Analysis</i>	<i>Politic</i>	<i>Economic</i>	<i>Social</i>	<i>Environment</i>	<i>Technology</i>
Pestle	The Minister of Energy and Mineral Resource Regulation No. 12 / 2017 RUPTL 2021-2030 RUEN / National Energy Plan	Investment in renewable energy Fluctuation fuel price Rate of energy transition.	Occupational Health Safety Risks associated with diesel exhaust.	Carbon emission management Climate Change	Hybrid generation system Data integration and IoT Energy as a service business model Battery Storage Model - LDES
<i>External Analysis</i>	<i>Power of Buyer</i>	<i>Power of Supplier</i>	<i>Threat of substitutes</i>	<i>Threat of new entrants</i>	<i>Rivalry among Competitors</i>
Porters Generic Strategies	High Forces	Low Forces	Low Forces	High Forces	High Forces

3) *Resource – Competency based analysis.*

Tangible resources consist of existing assets & sales distribution channels while intangible resources consist of organizational culture, brand values, operational systems, client relationships, expert engineering, entrepreneurial propensity of innovation, and product diversification. competency analysis is carried out based on the table below.



Table IV. 2. Summary Internal Analysis (Author Analysis)

Resource	Valuable	Rare	Costly to Imitate	Organize to capture value	Competitive Advantage
Existing Asset Power Generations	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			Parity
Sales Distribution Channel	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		Temporary
Organization Culture	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		Temporary
Brand Value	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Temporary
Operational	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Sustainable
Client Relationship	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Sustainable
Entrepreneur Propensity of Innovation	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Sustainable
Diversification Product	<input checked="" type="checkbox"/>				Parity

Based on the results of the internal analysis, resources consisting of sales distribution channels, organizational culture, brand values, operations, client relationships, and entrepreneur propensity of innovation can become the company's strengths, but the quality must be maintained. Meanwhile, resources consisting of existing power assets and product diversification are the company's weakness that can hinder the pace of business growth in the future.

B. Scenario Development Analysis

1) Key Focal Issue

The focal issues for The Company based on data collection and discussion is concluded in main questions as:

- how is the impact of power rental business to SM company in 5 years amidst the energy transition process to renewable energy?

The key focal issue will be the base of exploration during the collection data stage with pre-determined questions to develop the scenario planning of the company with all implications and options they may have in the period of the next 5 years.

2) Driving Forces & Uncertainty Analysis

Based on the outcomes of data gathering from the business environment analysis conducted in the preceding subchapter, both internally and externally, numerous aspects that become threats and opportunities are selected as driving factors that can impact future company continuity. It is composed of: Government support & policy, Indonesian economic growth, the pace of energy transition, technology advancement, environmental impact, digital transformation, market price, employee capability, business development capability.

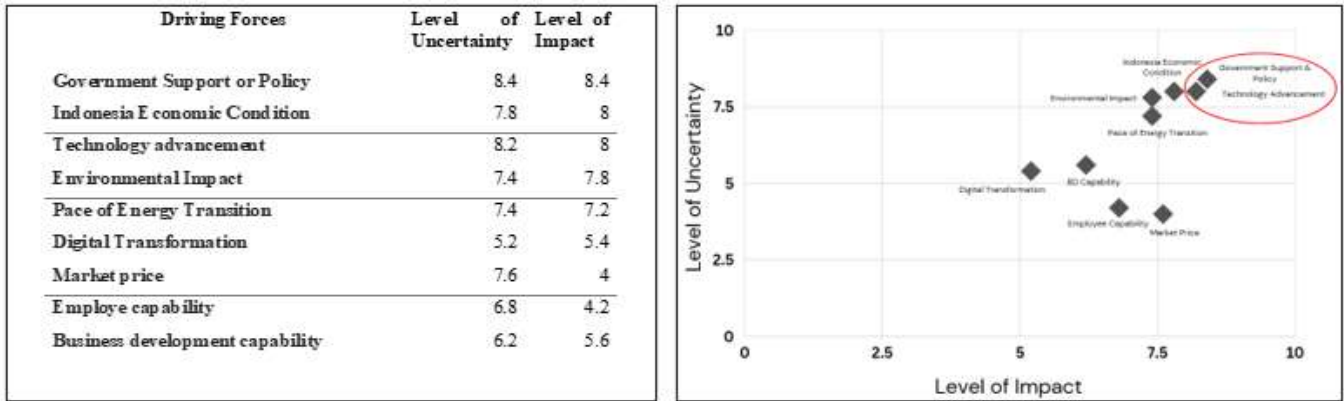


Figure IV. 1. Driving Factors & Uncertainty Analysis

3) Scenario creation & Narrative

The scenario matrix depicted in the picture below incorporates the outcomes of the two most important components above.

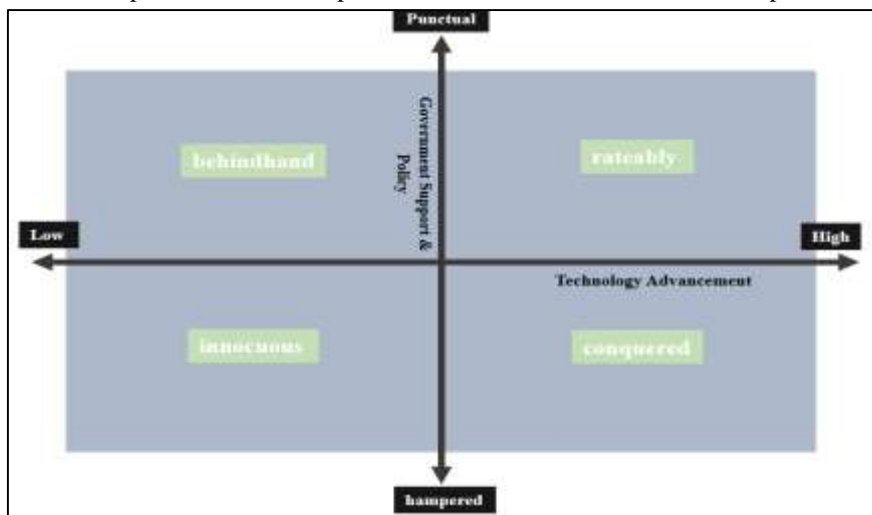


Figure IV. 2. Scenario Framework

a) *Innocuous*

Jakarta Post 2028. Indonesia finally reach green energy mix 23% at 2028. In this scenario, the government's aim of obtaining a 23% renewable energy mix by 2025 has not been realized, followed by a high demand for the use of fossil fuels, resulting in a rather delayed energy transition process. Due to disturbances in overstock, which delayed the emphasis on PLTD conversion work, the RPTUL program's policies were not implemented according to schedule. As a result of the prioritizing of priorities, the infrastructure is not prepared to meet the procurement of renewable energy, causing the planning of all plans to exceed the projected time/delays. Consequently, infrastructure is still not ideal, investment growth in the renewable energy industry is still low, and tangible progress has not yet been made because investing in the renewable energy sector requires very high prices and support in the form of renewable energy legislation and policies. On the firm side, product innovation is slow, followed by companies that have not found a solution to the transition to renewable energy technology; leased assets continue to utilize fossil fuels because demand is still high.

b) *Behindhand*

Jakarta Post 2028, achieving a 30% renewable energy mix by 2030 is not impossible! The increasing rate of economic growth, the high number of investors in the renewable energy sector, and the PLTD conversion program, which is about 80 percent complete at the installation stage, are not accompanied by technological progress. In this scenario, the government's goal of attaining a



renewable energy mix is reached and executed, followed by RPTUL obtained by decreasing the use of PLTD in Indonesia, the dedieselization program is implemented on schedule, and diesel demand has dropped. In terms of the energy transition, Indonesia's development is swift and dependent on the use of renewable energy, which comprises a greater proportion. Investment in the renewable energy sector is already underway due to the government's focus on creating infrastructure to satisfy the needs of renewable energy. Despite technological development and product innovation, businesses are still unable to employ renewable energy to power their assets and continue to rely on diesel fuel. The corporation cannot keep up with the current rate of energy transition, and several of its rivals have already begun using renewable energy in their products.

c) *Conquered*

Jakarta Post 2028, the result of joint venture with a foreign company, SM Company succes provide renewable generator. In this scenario, the rate at which the transition from traditional energy sources to renewable energy sources is typically slow, and the demand for fossil fuels is also still high or has not been able to successfully shift to renewable energy. As a consequence of these two factors, the development of the industry from the investment side and the supply infrastructure is also not ready, which means that investment in the renewable energy power sector is also still minimally planned, which causes the entire plan to take longer than anticipated or be delayed. The company is able to convert its assets from fossil fuels to renewable energy and has begun to gradually abandon fossil energy. The company also produces new products that are related to renewable energy and is able to adapt to the rapid pace of energy transition before policy makers are ready for it.

d) *Rateably*

Jakarta Post 2028, Indonesia is on track to meet its renewable energy objective in 2030 with a positive index. In this scenario, the energy development strategy connected to the renewable energy mix has been successfully accomplished, and PLN has successfully executed the RPTUL program, which has resulted in a lower usage of power generated by fossil fuels. The country of Indonesia is making strides toward a more sustainable energy future at a breakneck pace. The focus of the government, which is already under way, is on constructing infrastructure to meet the needs linked to renewable energy. As a result, technological advancements and investments in the renewable energy sector are already under way. The advancement of technology is quite significant, and a number of technologies that can compete with generators powered by power diesel have already been launched. These technologies aim to replace power diesel. Alongside the proliferation of new product ideas, there has been a concurrent decline in the demand for fossil fuels.

4) *Implications & Options*

a) *Innocuous*

<u>Implications</u>	<u>Options</u>
<ul style="list-style-type: none"> - The RPTUL program and the National energy strategy have not been fully implemented/delayed. - Transitioning slowly to renewable energy still necessitates fossil fuels. - Increasing fossil fuel demand - Carbon emmision increase - Product innovation does not occur in the company. As a result, it continues to rely on diesel-powered assets. - There is no technology that can surpass the dependability of a diesel generator. 	<ul style="list-style-type: none"> - Optimization of current assets. & starting enhancing sevicees business model. - Increase the non-unity market for the power rental business - Cost leadership strategy - Improving generator technology to enhance efficiency and reduce emissions. - Analysing and preparing for renewable energy projects, such as battery storage. - Initiate a new project business model for energy as service as main focus going forward on renewable energy

b) *Behindhand*

<u>Implications</u>	<u>Options</u>
<ul style="list-style-type: none"> - Both the national energy plan and the RPTUL program have been successfully implemented. - The transition to renewable energy is gaining momentum, and the demand for traditional forms of energy is sliding. - Carbon emission decrease. 	<ul style="list-style-type: none"> - Improving market penetration on non-utility market, Open new market segmentation. - Cost leadership strategy - Product innovation strategy installing equipment for renewable energy fuel in generator set or using gas engine.



<ul style="list-style-type: none"> - create new opportunities for investment in Renewable Energy Technology - Infrastructure for renewable energy supported by the government. - Product development has been sluggish, and there is no alternative to the dependability of a diesel power generator. 	<ul style="list-style-type: none"> - Importing technology from other countries - Trying to collaborative project about renewable energy on product - Conducting research development for the creation of new business models for renewable energy in the services industry - Initiate a new project business model for energy as service as the company's focus going forward
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c) *Conquered*

<p><u>Implications</u></p> <ul style="list-style-type: none"> - Regulations continue to emphasize fossil fuels - The RPTUL program and the National energy strategy have not been fully implemented/delayed . - Insufficient renewable energy investment - The gradual transition to renewable energy is dependent on fossil fuels. - Carbon emmision increasing - Technological progress occurs within the organization. - Product innovation occurs, and alternatives to the dependability of diesel generators are discovered. 	<p><u>Options</u></p> <ul style="list-style-type: none"> - Current corporate assets can survive as long as diesel power is required. - Diferentiation strategy - Improving market penetration on non utility market - Trying to make an colaboration with renewable energy project - Long term plan oriented initiated diversification business model on product about renewable energy - Analysing and preparing for renewable energy projects, such as battery storage
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d) *Rateably*

<p><u>Implications</u></p> <ul style="list-style-type: none"> - Both the national energy plan and the RPTUL program have been successfully implemented. - The transition to renewable energy is gaining momentum, and the demand for traditional forms of energy is sliding - Government support for renewable energy infrastructure - Create potential new entrants, competition will be tight - Increasing air quality due to greener power generation - Technological progress occurs within the organization. - Product innovation occurs, and alternatives to the dependability of diesel generators are discovered 	<p><u>Options</u></p> <ul style="list-style-type: none"> - Differentiation strategy - Add new business model energy as a services - Already converting diesel generator to biogas or biofuel - Shifting to renewable asset - Long term plant oriented trying to make significant investment on battery storage - Long term plan oriented trying make significant investment on energy as service on renewable sector
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5) *Early Warning Signals Integration*

This research provides early warning signs for the SM Company strategy & governance team and top management to consider in business orientation decisions. Early warning indicators for the concerns highlighted include: policy, technology, energy transition, economic, regulation, and environment. It is strongly recommended that early warning signals be scanned regularly, at least once a year, to ensure that any possible threats are identified and dealt with promptly.

Table IV. 3. Early Warning Signals Result

Factor	Measure	Signals	Signals	Signals	Signals
		Innocuous	behindhand	Conquered	Rateably
Policy	RUPTL & National Energy Development plan	below expectations	exceed expectations	below expectations	exceed expectations



	Program 35,000 MW installed capacity for Renewable Energy Power	still not fulfill the target	fulfill the target	still not fulfill the target	fulfill the target
	installed capacity for non-Renewable Energy Power	below than 30%	more than 30%	below 30%	more than 30%
	Power Generation Technology	Diesel generators have not been replaced.	Diesel generators can be phased out in favor of renewable energy sources.	Diesel generators have not been replaced	Diesel generators can be phased out in favor of renewable energy sources
	Energy Mix	below than 23%	more than 23%	below 23%	more than 23%
	renewable energy consumption	below than 5.77%	more than 5.77%	below 5.77%	higher than 5.77%
	renewable energy generation	growth below than 8.86%	growth of more than 8.86%	growth below 8.86%	growth of more than 8.86%
	Economic Growth	decrease	increase	decrease	increase
	Investment in RNE	low	high	low	high
	Renewable Energy Policy	No adjustment	Regulation framework investment & incentives for private sector	No adjustment	Regulation framework investment & incentives for private sector
	Environment Carbon Emission	increase	decrease	increase	decrease

In this case, product diversification is the primary issue; limited product or business types limit the organization's flexibility; a new business model must be developed based on evidence; and the author's approach to making proposed strategies is discussed in subchapter recommendation, specifically selecting a strategy and proposing a new business model that resembles the company's current business but focuses on renewable energy.

Regulation is also a factor in the development of this renewable energy transition; when regulations support renewable energy, investment in the renewable energy industry will increase, and if that occurs, so will the technological development of renewable energy, resulting in an expansion of the renewable energy market sector. Several renewable energy projects have been delayed as a result of the current rules, which include technical risk, environmental planning, fossil fuel subsidies, and insufficient investment due to the significant risk of investing in the business. Countries that have maximized their use of renewable energy, such as China, provide regulations in the form of financial sector incentives, such as tax incentives (corporate income and import taxes), low interest loans to reduce financing costs for private sector developers, and subsidies for R&D and installation of renewable projects. The attractiveness of renewable energy projects has also become RE developers' concern. According to RE developers survey, three main financial supports are needed by developers, namely FiT, fiscal incentives, and soft loan [10]

The industrial life cycle marks the maturity of the power renting industry. At market maturity, demand growth is minimal. Replacements and subsequent purchases drive demand. The market has reached its maximum size; hence, zero or negative growth is anticipated for the industry [6]. This drop in market demand heightens business competition. In the maturity stage, when businesses are attempting to reduce costs, process innovation reaches its pinnacle while incremental product innovation declines.



CONCLUSION

In general, the power rental industry will still survive amid the current onslaught of the energy transition, the decline in the demand factor shows that this industry is in the maturity phase based on industry life cycle analysis. SM Company must be prepared for changing conditions in the future by preparing diversified product lines / businesses that can compete. There are several external factors that can have a direct impact on the power rental industry which cannot be controlled and predicted, which also factors into the need for scenario planning analysis.

With the ability to analyze trends and changes in the industry based on the early warning signals given, it is expected to be able to find threats and opportunities that will advance the company going forward. This scenario planning analysis was created so that organizations can better understand the full range of possible futures and develop plans that are more flexible and adaptive to change. Several strategic proposals were also given which could be aligned with the company's strategy.

Several strategic suggestions are given in this case which can be improved by the company in the future. Optimization of presently owned assets, including raising product efficiency, expanding market share in non-utility sectors like the oil and gas industry, or mining industry by maintain strategy for expanding market penetration, monitoring customer preferences, fostering brand royalty, and exploring new market segments and technologies. The incremental innovation strategy involves balancing the business portfolio in other business unit sectors, such as service / operation maintenance, which the company already has. One of the alternative business models in the power industry is energy as a service. By developing a new business model for renewable energy services, can increase the diversification of business lines owned by the organization that are related to the desired direction.

Product innovation strategy also need to developed by company, by recombined knowledge embodied in new product. Conversion of diesel-powered generating sets to fuels derived from renewable sources such as biodiesel, During the 2022 period, biofuel production also keeps increasing this year and its trend will continue to be positive next year, with an intensive research and development in the catalyst technologies for biofuels, processes needed to produce biofuels can become cheaper and more efficient [16] . Another product innovation is converting diesel engine to gas engine, the reason are based on the most efficient method for replacing diesel generators. This step might be chosen in the transition period for a brief length of time, even though it has not yet fully reached the usage of renewable energy.

Not merely with regard to the product being created, internal organization need to maintained a system that is effective for storing, managing, and exchanging information and knowledge inside an organization in order to improve knowledge organization for business support. Reconfirm plans for financial and investment computation by using data-driven strategic calculations, company may determine future investment strategies for growing new firms and making investments.

For the type of investment that will be addressed and carried out a feasibility study regarding new development business model, Developing business segments to enhance product diversification by using renewable energy items, such as battery storage LDES batteries business model. Apart from that, you can also see energy as a service that offers various energy-related services rather than only supplying electricity such as energy advice, energy installation, and energy management [14] . By developing a new business model for renewable energy services, can increase the diversification of business lines owned by the organization that are related to the desired direction. This business model was chosen to utilize the present strengths of organizations that have been conducting business operations and maintenance for a long time and have capable employees with certifications that demonstrate professionalism. Due to the constantly changing nature of the industry, it is vital to assess and evaluate each indicator's early warning signals, changes may cause scenarios and techniques to be modified and adapted to actual conditions.

Implementation Plan

In implementing plan, the first step is after the scenario was made, is innovation roadmap ideas. In this case, there was a discussion about aligning the corporate strategy roadmap with the proposed scenario, the author also makes suggestions about the strategy that was used in in the previous chapter. The next step is the business planning activity that was chosen by the company. Next is the stage tracking indicators, an evaluation is done during the time the strategy roadmaps are made. Nest stage is analyzing and developing options, an evaluation is done to make changes to the indicators in the early warning signals. This will produce implications and new options for more accurate results due to the nature of this industry. The last is revision stage, if managers or top management receive unfavorable performance feedback or if the external environment undergoes a shift, they must decide whether to make additional adjustments to the dominant strategic plan in order to improve the performance of the company or whether to implement an alternative strategic plan.



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