

The Impact of the Formation of Petroleum Fund Policy on the Sustainability of Oil and Gas Activities in Indonesia

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Abstract

Business activities in the oil and gas sector certainly require high costs from upstream to downstream. From upstream to downstream of Indonesian oil and gas, the gap between production and consumption is getting wider, namely 616 thousand BOPD production and 1,471 MBOPD consumption and refinery capacity is still below the consumption figure, namely 1,151 million barrels per day. The need for high costs can be minimized by establishing a policy called the Petroleum Fund. This Petroleum Fund is taken from state revenues from the oil and gas sector for specific purposes to ensure the sustainability of oil and gas activities for future generations. Petroleum funds, especially in Indonesia, can be used for several important things such as investment capital on the upstream side to increase potential reserve status. On the downstream side, it can be used to increase refinery capacity so that fuel oil imports decrease. The fluctuating nature of oil prices is certainly a threat that must be overcome, this is anticipated by forming this policy so that fuel prices remain affordable for the public. Then efforts to reduce greenhouse gas emissions become an important thing that must be achieved by oil and gas companies as well as increasing human resource capacity in areas around the oil and gas industry.

Keywords: Policy, Petroleum Funds, Sustainability, Oil And Gas

INTRODUCTION

Oil and natural gas are two abundant natural resources that Indonesia has. It is known that Indonesia has reached two production peaks: 1.7 million barrels per day (bpd) in 1977 and 1.6 million barrels per day in 1995. In the same year, Indonesia's oil consumption was smaller than its production, so the surplus was used as an export commodity. As a petroleum exporting country, Indonesia is included in *Organization of the Petroleum Exporting Countries* or what is usually called OPEC. Until 2008, Indonesia left OPEC membership because of its status as net oil importer. Net oil importer is a condition where the country buys or imports more than it sells or exports petroleum.

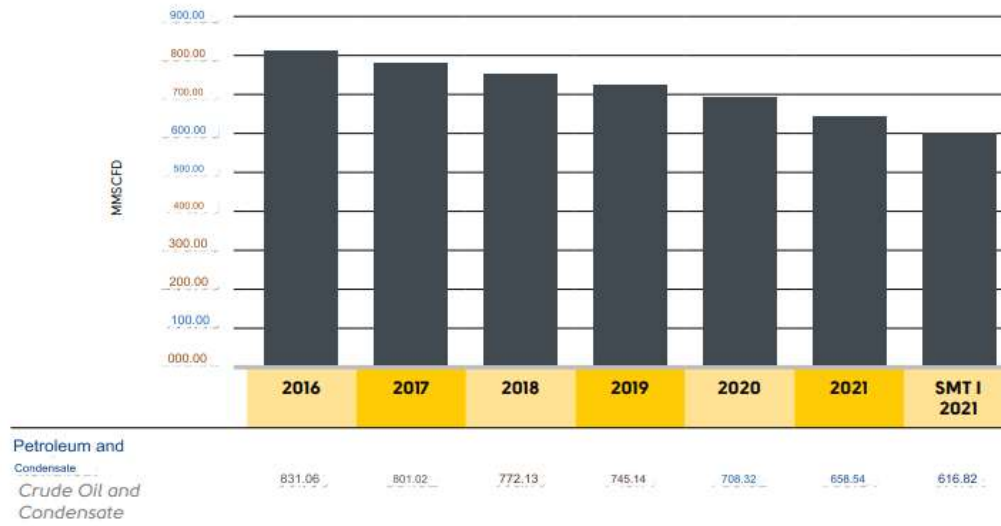


Figure 1. Crude Oil and Condensate Production
 (Directorate General of Oil and Gas, 2022)

The statistics from the Directorate General of Oil and Gas in Semester I of 2022 above show that Indonesia's oil and gas production is decreasing from year to year, while consumption continues to increase due to economic and population growth. (BP, 2022) shows that Indonesia's oil consumption in 2021 will be 1,471 MBOPD, meaning the percentage of production to consumption is 41 percent and this is a very unequal figure. Of course, if this continues, Indonesia will be overtaken by oil imports and will be far from the 2030 production target of one million barrels per day and twelve billion cubic feet of gas per day.

Figure 2 illustrates how little money is invested in oil and gas exploration, which is one of the reasons why it is difficult for Indonesia to increase production of these resources. In fact, the essence of oil and gas operations is exploration. The fact that there are still many basins that have not been explored—68 of 128 basins in Indonesia have not been drilled as of August 31, 2023, according to SKK Migas 2023 statistics-also strengthens this suspicion. However, oil and gas industry revenues in 2023 will remain positive and may even exceed the target. In the oil and gas industry, non-tax state revenues or PNBPN are estimated to reach IDR 117 trillion in 2023, exceeding the target by 13 percent. This may be a way to address the lack of funding for exploration through the Petroleum Fund program.



Figure 2. Realization of Upstream Oil and Gas Investment (SKK Migas, 2022)

A portion of state revenue from the oil and gas industry that is set aside for certain purposes is called the Petroleum Fund or oil and gas fund. The aim of its formation is to ensure a reserve/savings fund for future generations when oil and gas in the region has run out, as well as to anticipate volatility in global oil and natural gas commodity prices (Sholikin, 2019). Of course, this oil and gas fund scheme is expected to be a solution to the lack of investment in the exploration sector and increase exploration activities thereby increasing Indonesia's oil and gas reserves.

Problem Formulation

To ensure that this article does not expand and go out of context, the author limits the problem formulation so that this article is appropriate to the topic that he wants to discuss. In this article, the author wants to first outline and provide a general overview of the impact of the advantages of establishing a petroleum fund on the sustainability of the oil and gas industry as well as the impact of the disadvantages of establishing this policy in Indonesia.

RESEARCH METHODS

The research method used in this paper is a literature review. A literature review is an activity of reviewing or reviewing various literature that has been previously published by researchers. The sources for this method are various articles, journals, books and documents that are similar to the topic of discussion to answer the various problem formulations raised in this article. Then the researcher concludes and presents strategic management data to improve the quality of education (Mahanum, 2021)

RESULT AND DISCUSSION

The Kuwait Investment Authority was responsible for the development of the initial petroleum fund in 1953. Canada's Alberta Cultural Heritage Savings Trust Fund later launched a petroleum fund in 1976. Alaska also established a Permanent Fund and Government Global Pension Fund by Norway in the same year. Recently, many petroleum funds have also been

formed by petroleum producing countries, including countries in Africa such as Angola, Chad and Nigeria to manage revenues from their petroleum sector. The biggest possibility of forming this fund is because revenues from petroleum are increasing and so far have only been used for state spending. These funds have long-term positive effects on oil and gas revenues but can also have negative effects depending on who manages the funds. A striking difference can be seen from whether the institution is inclusive or extractive (Torvik, 2018). This happened because these institutions took part in the decision to establish a petroleum fund.

According to Torvik (2018), countries that have a lot of non-renewable natural resources, such as oil, often face slow economic growth, weak democracy, intense social unrest, and a decline in the quality of their institutions. This is the important reason why countries like Indonesia form a petroleum fund policy so that the abundance of petroleum resources does not become a disaster but becomes a gift for the survival of many people. Energy sustainability in the future is not only about the scarcity of natural resources and environmental damage but also concerns the economic and political situation. Then these petroleum funds are also an ability to develop fair and useful economic activities to improve people's living standards for the better and minimize the state budget deficit in one generation which results in large losses in the next generation (Takle, 2021).

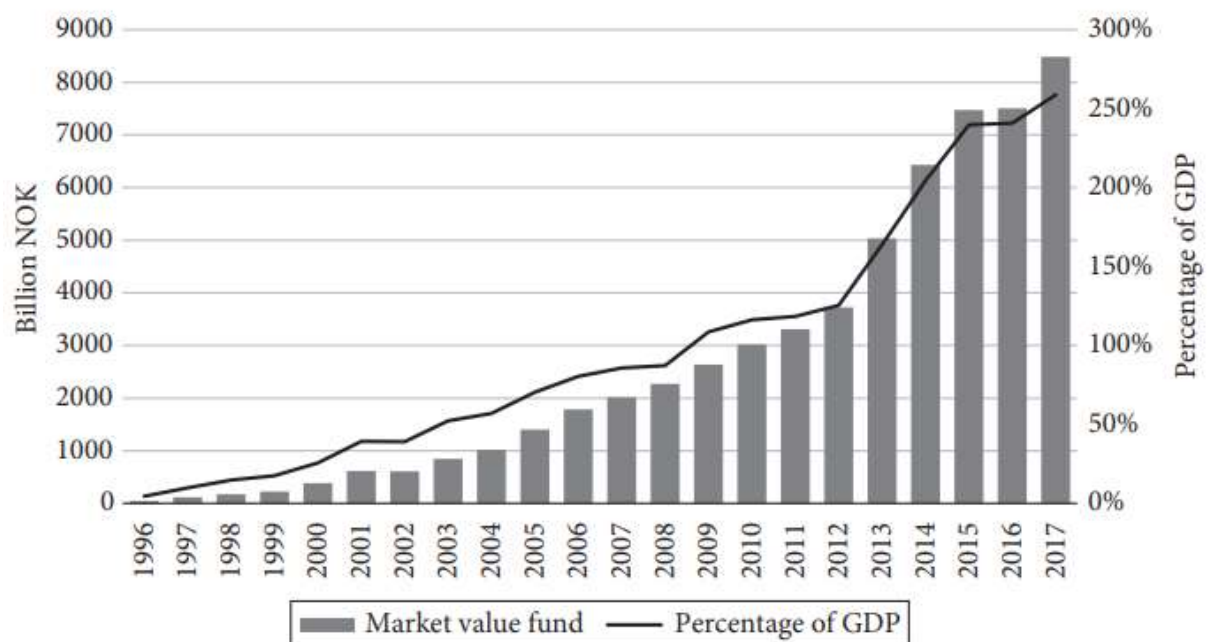


Figure 3. Global Government Pension Fund Market Value, 1996–2017
(Compton & Hart, 2019)

In 1990 when the petroleum fund was officially established, Norway had been a generous welfare state and had good export capabilities for decades. The formation of this fund was successful in motivating it to maintain and stimulate the economy and finance the state simultaneously without hindering the other. This policy is based on the theory which states that state spending is able to contribute to social outcomes that are distributed fairly and are beneficial up to certain conditions provided that all spending must be closely monitored to avoid undesirable events. The instrument used is a law where the funds are intended to maintain and build wealth for future generations (Compton & Hart, 2019).

In their research, Wowor et al (2017) suggested allocating Petroleum Funds directly from the Government. Aging production fields, higher operational costs and low oil prices have posed challenges for existing operators. Implementing an oil fund allocation from total revenues will increase the burden and further hinder the development of the Indonesian oil and gas industry.

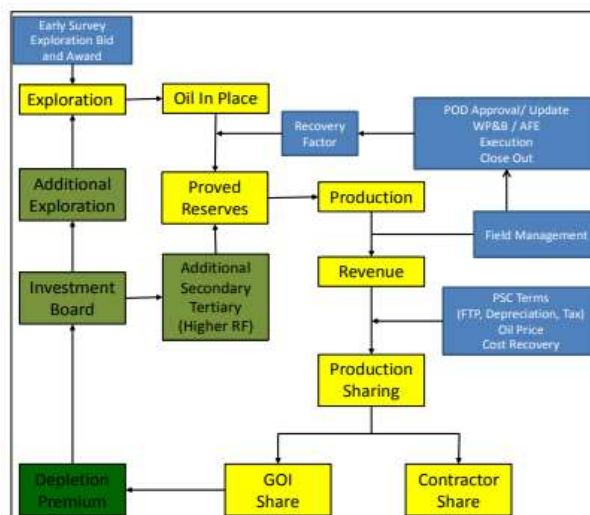


Figure 4. Allocation of Petroleum Funds in the Indonesian PSC System (Wowor et al., 2017)

Discussion

Legal Basis for Establishment *Petroleum Fund*

The legal basis includes legal provisions that form the basis for the development of statutory regulations. The legal basis includes the formal legal basis and the material legal basis. The formal legal basis is a basis formed from other legal provisions which gives authority to bodies and organizations to establish certain legal regulations, while the material legal basis is the legal basis which determines issues (objects) that require adjustment. The existence of a legal basis is very important to serve as a guideline for adjusting legal regulations so that there are no legal conflicts or contradictions with the legal provisions above (Sholikin, 2019).

The Government's plan to build energy security actually has support from the community, it's just that the Government needs to build a strong legal basis and the right formulation in building funding for energy security funds. Apart from that, the Government also needs to set specific goals and targets so that the management of energy security funds can run effectively and efficiently (Kurniawati, 2017). In PP no. 79 of 2014 Article 27 paragraph 3 and paragraph 5 states that the government encourages strengthening funding intended for (Sugiyono, 2016):

- a. Strengthen the role of national banking in financing national oil and gas production activities, developing renewable energy and implementing energy saving programs.
- b. Provide compensation for the depletion of fossil fuels that can be used for exploration and development of oil and gas resources, creation of new and renewable energy sources, increasing human resource capacity, progressing research and development initiatives, and construction infrastructure that supports energy.
- c. Provide special budget allocations to central and regional governments to accelerate equitable access to electricity and energy.

Therefore, creating a legislative framework is an important first step in creating an oil and gas fund. This includes including oil and gas funding policies in changes to the Oil and Gas Law which is currently included in the 2024 National Legislation Program (Prolegnas). Long-term implications for oil and gas, considering that the Indonesian Oil and Gas Law is the highest regulatory body that regulates the implementation of oil and gas management initiatives. Because legal certainty translated into stable regulations indicates political economic stability which is an important point as a prerequisite for investment, in addition to economic calculations with profitable rates of return and investment funding with adequate good governance standards (Rini, 2017).

As Investment Capital in the Exploration Section

Oil and gas exploration activities are an effort to find new oil and gas resources in a predetermined area. Exploration is the key to sustainable oil and gas operations because every barrel of oil or gas produced must be replaced with new discoveries. Exploration also has the aim of raising potential status to proven so that this oil and gas product can be commercialized. This commercialization is certainly able to boost national production and minimize the gap between consumption and production. This is a big first step to achieve Indonesia's target in 2030, namely 1 million BOPD and 12 BSCFD gas. The country's inability to stem the increasing use of petroleum in Indonesia is of course the solution is to increase exploration activities which are part of increasing national production.

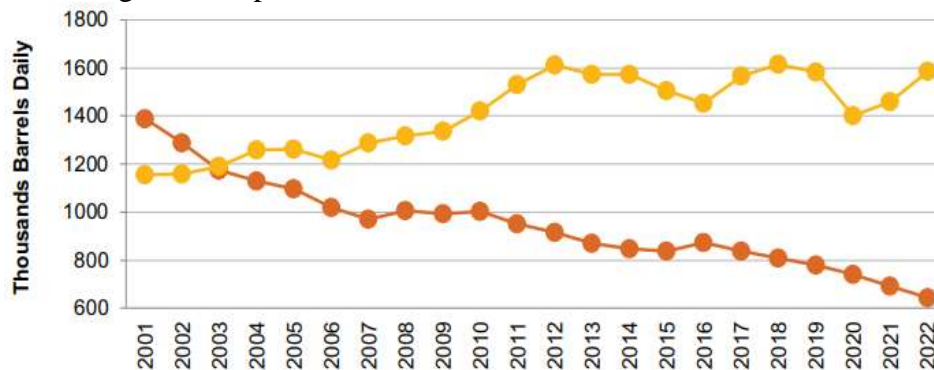


Figure 5. Indonesian Petroleum Production and Consumption
(PwC Indonesia, 2023)

Development of the Downstream Oil and Gas Sector

The downstream oil and gas sector consists of several activities such as processing, transportation, storage and trading through a business entity. Over the last few years from 2018 to 2022, investment in the downstream sector has tended to fluctuate, indicating that there are few people interested in investing in this sector. This argument is also strengthened by looking at the comparison between investment in the upstream and downstream sectors, there is a sharp imbalance in investment in these two important parts. Based on the latest data obtained, the amount of investment in the downstream sector is only around 13 percent of the total investment in the upstream sector. Of course, the funding set aside from state revenues can be used to develop refineries in Indonesia.

The 2022 Directorate General of Oil and Gas statistics states, the number of oil and gas refineries operating in Indonesia is 8 refineries which include *Refinery Unit II – VII*, TPPI Refinery and Cepu Education and Training Center Refinery with a total capacity of 1.151 million barrels per day. Even though Indonesia's oil consumption per day reaches 1.6 million barrels and production is stagnant at 600 thousand barrels per day. This means that Indonesia imports around 550 thousand barrels of crude oil per day to meet refinery needs and imports 450 thousand barrels of fuel oil products. Developing refinery capacity will certainly reduce Indonesia's dependence on imported fuel oil, which may be more expensive than importing crude oil.

Description	2018	2019	2020	2021	2022
Downstream Oil and Gas	689.65	1,066.24	2,583.08	3,820.41	1,580.98
Downstream					

Figure 6. Downstream Oil and Gas Investment
 (Directorate General of Oil and Gas, 2022)

Anticipate Petroleum Price Volatility

According to the PwC Indonesia study in 2023, there have been many changes in the oil and gas sector over the last ten years in Indonesia and around the world. Since 2012, according to the Central Bureau of Statistics (BPS), Indonesia has imported more oil and gas than it exports, and this energy trade deficit may exceed the trade surplus generated by other industries. The risk associated with world oil price instability is that an increase in oil prices could lead to an increase in fuel subsidies and a worsening of the trade balance. From IDR 152.5 trillion to IDR 502.3 trillion in energy subsidies, with an achievement of IDR 551.2 trillion in 2022, the amount has increased. In early August 2022, the Ministry of Finance announced that almost all fuel subsidies had been used, causing fuel prices to rise. Fuel use may increase. In September 2022, the president's average raise fuel prices by 30% in an effort to limit the increase in energy subsidy spending.

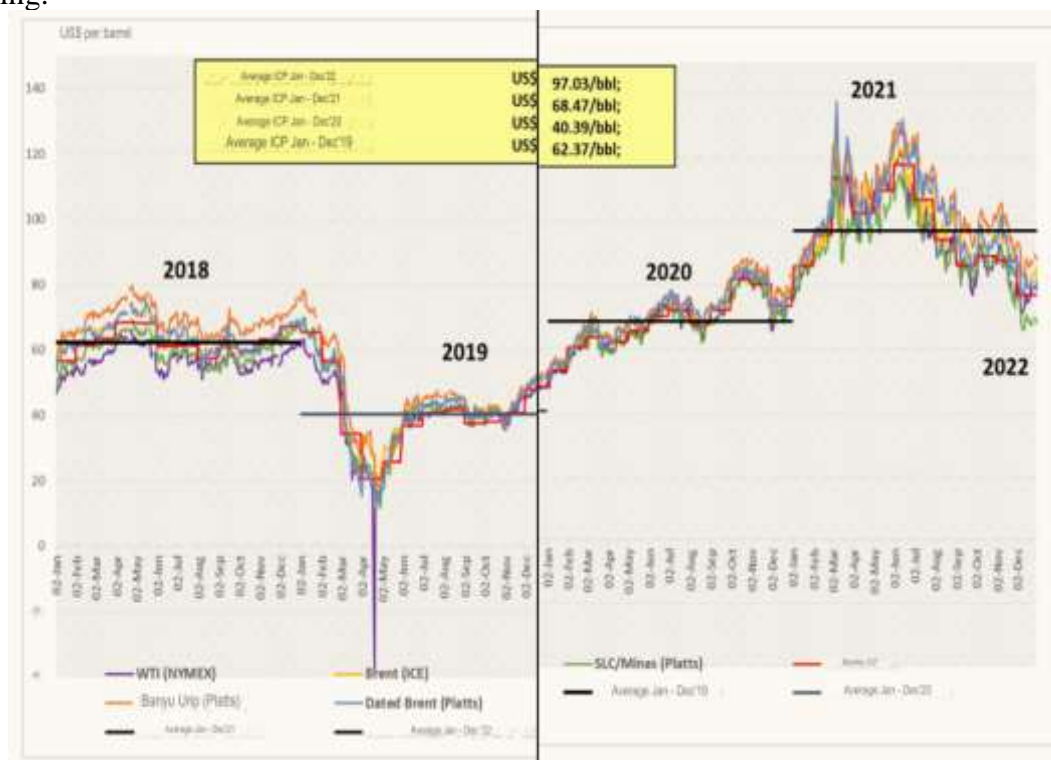


Figure 7. Crude Oil Price Statistics
 (Directorate General of Oil and Gas, 2022)

The idea to establish a fund emerged from Norwegian society in the early 1980s, primarily as a buffer between the country's ongoing turmoil in oil revenues and operational expenses (Lie, 2018). Petroleum prices have a fluctuating nature which tends to be high due to demand and supply as well as producing countries which have set daily production figures.

Petroleum prices have an influence on the non-energy sector so prices need to be kept from getting too high so as not to cause price increases for other commodities. A literature review shows that natural resource funds are one mechanism that can be taken by the state to distribute the benefits of the oil and gas industry evenly to current and future generations, while anticipating the risk of the impact of oil economic volatility on the non-oil and gas sector (Sholikin, 2019).

Decarbonization of the Oil and Gas Industry Sector

According to Romasheva & Cherepovitsyna's 2023 book, decarbonization of the fuel and energy complex and the creation of an energy mix are indicators of the global economic and energy transition towards low-carbon growth. As a result, since the beginning of the twenty-first century, efforts have increased, especially in member countries of the Organization for Economic Co-operation and Development (OECD), to optimize the use of alternative energy sources. Oil and gas companies face the difficult task of spearheading the decarbonization of the energy system at the same time. The oil and gas industry can maintain its competitiveness by prioritizing process efficiency and adopting solutions that minimize carbon emissions and utilize alternative energy sources (Cherepovitsyn & Rutenko, 2022).

Transition and decarbonization challenges will continue to be in focus due to the development of new technologies, changes in societal perceptions, investor attitudes, energy and climate regulations, and environmental difficulties. It is likely that CCS will be the last step towards reducing emissions, decarbonizing power plants and other end-user sectors. Without commercial implementation of this technology on a large scale, reducing emissions will be much more difficult and expensive (Blazquez et al., 2020). In recent years, there have been around 500 CCS projects in various stages. The difficulty of realizing CCS projects is hampered by several factors such as changes in policy direction, lack of funding, and emphasis on the energy transition (Martin-Roberts et al., 2021). However, several studies explain that the biggest obstacle to CCS is the expensive cost of CCS decarbonization technology (Kearns et al., 2021; Grant et al., 2021; Guo et al., 2022) in writing (Aryanto, 2024).

Currently, CCUS is an important option to achieve decarbonization of fossil fuel consumption. The cost of CO₂ is determined by the size of the capture and has three components: capture, compression, and transportation. Single projects are rapidly being replaced by industrial-scale projects in the CCUS sector (Wang et al., 2023). The application of many sustainable technologies for energy production and storage in oil refineries will determine the decarbonization scenario by 2025, which is the realization of sustainability goals (Maigret et al., 2022). If “bad big oil companies” take steps to revive the CCS industry, they will change their image as “climate saviors” and avoid divestment of their shares by well-intentioned entities (Hastings & Smith, 2020). Significantly reducing carbon emissions, or even immediately decarbonizing energy supplies in developed countries, will not make much difference as long as greenhouse gas emissions from other sources and prices in other countries continue to rise (Smile, 2019).

The Importance of the Role of CSR in the Lives of the Surrounding Community

The oil and gas industry's main CSR activities include community development, human rights, employee and community health and safety. This responsible initiative has a number of positive implications for various oil and gas company stakeholders, as this community development approach helps improve community relations, increase employee motivation, and maintain operational permits for participating companies (Chowdhury et al., 2019). CSR, according to PEMEX (Petróleos Mexicanos), is the willingness of the business world to implement policies, programs and activities beyond what is required by law to support the sustainable development of society and improve the social welfare and living standards of individuals and companies. their families (GarcíaChiang, 2018).

There is some variation in the results of CSR initiatives regarding community relations. More than 75% of business actors consider the following five CSR factors: 1) Participation or involvement in the community; 2) access to information; 3) preservation of cultural heritage; 4) encouragement of economic development; and 5) public health and quality of life. Businesses using this strategy will integrate and give preference to local suppliers. Creating funds to support the integration of young people or job seekers; hiring and training local workers; enter into contractual agreements with suppliers and subcontractors; offering scholarships and internships to community members; and implementing initiatives to encourage staff members to become involved in local community life (sport, culture, integration, etc.) are some examples (Rauf et al., 2014).

According to Boadi et al. (2018), the community welcomed the Newmont Gold (GH) initiative to increase access to education by renovating and building schools in Ahafo-Ano. Schools operate on a limited basis (Owusu Ansah, Adu-Gyamfi, Brenya, Sarpong, and Damtar, 2015). Similarly, Brew et al. (2015) recognized the renovation of teachers' homes, books, and educational sponsorship for rural communities in the Western, Eastern, and Ashanti regions of Ghana as corporate social responsibility projects implemented by gold mining companies.

Four main pillars form the basis of corporate social responsibility: environment, sustainable development, workers' rights, human rights, and eradicating corruption. In general, this refers to how businesses incorporate social, environmental, and economic issues and concerns into their practices, principles, and culture. The following topics are frequently addressed in CSR initiatives: sustainable development, human rights, labor rights, environmental management, health and safety, corporate governance and ethics, and working conditions, including wages, working hours, and health. The four research businesses operate in the fields of community service, sports, education, health and the environment as part of their CSR initiatives. The daily schedule of CSR activities in the four companies studied does not cover topics such as workers' rights, human rights, anti-corruption measures, corporate governance, ethics, accountability, transparency and performance reporting. The four main pillars of corporate social responsibility (CSR) include sustainable development, human rights, the environment, and anti-corruption initiatives (Kirat, 2015).

Then CSR can also be used as a training medium whose aim is identified by Armstrong in the journal (Adagbabiri & Okolie, 2020) to develop employee skills and competencies to improve performance; help people develop within the organization to be able to meet future workforce needs; reduce the learning curve of employees in hiring, transfer, promotion and ensure they become fully qualified. Effective human resource (HR) management is associated with higher employee and customer satisfaction, increased innovation, increased productivity, and improved organizational reputation.

CONCLUSION

Every year, Indonesia's oil demand increases while production decreases, and the difference between the two grows larger. This occurs due to a lack of intensive oil and gas exploration, so that proven reserves cannot keep up with production rates. Oil and gas exploration efforts are hampered by the need for large financial resources; therefore, a strategy is needed to overcome this financial problem. The idea that gave rise to this resolution is called the Petroleum Fund, and gas and oil producing countries have made extensive use of this idea. The idea behind the Petroleum Fund is to reserve a certain amount of money from oil and gas industry revenues. Law Number 22 of 2001 concerning Oil and Natural Gas provides the legal certainty necessary for the formation of this concept, so there is a need for reform of this law.

The idea of a petroleum fund can be put into practice by investing money in exploration projects to increase potential oil and gas reserves. Funds allocated for oil extraction can also be used to grow the downstream sector by increasing oil and gas refinery capacity. The idea behind this approach could also be to prepare for changes in oil prices. The oil and gas sector must use CCS or CCUS technologies to reduce carbon production to address major energy transition problems. Additionally, it is important to build human resource capabilities through CSR initiatives to ensure effective and efficient business performance.

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