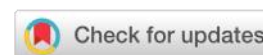




Research Article



Oil and Gas Fiscal Term Regulations Based on Ecological Justice

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Abstract: This study aims to analyze the National Fiscal-Term of Oil and Natural Gas Producer Sharing Contract (PSC) Cost Recovery and Gross Split models that are not in accordance with the principles of ecological justice. This study employs doctrinal legal approach. State control over natural resources in the Indonesian constitution emphasizes state authority to manage these resources for the prosperity of the people, reflected in various legal frameworks, including regulations regarding the PSC model used in the oil and gas sector. The results of the study show that oil and gas management in Indonesia follows Article 33 of the 1945 Constitution, with two central schemes of PSC Cost Recovery and Gross Split. This regulation ensures fair, efficient, and sustainable oil and gas management. Different countries implement diverse regulations for oil and gas exploration and production, including variations in tax periods and tariffs. In Indonesia, the exploration period is set at six years, with production rights extending up to thirty years. This contrasts with the regulations in other countries, such as China and India. To ensure that environmental impacts are duly considered and that local communities are engaged, oil and gas management in Indonesia should be guided by principles of ecological justice rooted in Pancasila. Challenges such as inadequate data, policy inconsistencies, and limited oversight capacity must be addressed through enhanced transparency and policy harmonization.

Keywords: Cost Recovery; Ecological Justice; Gross Split; Producer Sharing Contract;



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INTRODUCTION

Efforts to enforce economic restoration in Indonesia seem to be facing the struggle to grow a free market, which is a weapon for supporters of capitalism and liberalism.¹ Deregulation, privatization of state-owned enterprises, and economic liberalization—especially in the oil and gas (oil and gas) sector, as well as water resources, electricity, and food—are some of the problems that have emerged.² It shows that Indonesia does not have the independence and sovereignty to regulate its economy. Even before independence, oil and gas mining has been an important issue. It is also due to the global industrial revolution that exploited oil and gas to support industrial machines. For years, oil and gas mining has driven the Indonesian economy. Oil and

¹ Ibrahim Salahudin Mohamed and others, 'A New Progressive and Efficient Production Sharing Contract for Upstream Oil and Gas Industry', *Geoenergy Science and Engineering*, 235 (2024), 212733 <https://doi.org/https://doi.org/10.1016/j.geoen.2024.212733>

² Emma Jones and Anna Kawalek, 'Dissolving The Stiff Upper Lip: Opportunities and Challenges for The Mainstreaming of Therapeutic Jurisprudence in the United Kingdom', *International Journal of Law and Psychiatry*, 63 (2019), 76–84 <https://doi.org/https://doi.org/10.1016/j.ijlp.2018.06.007>



gas mining is a strategic non-renewable natural resource (energy) that provides industrial raw materials, meets domestic energy needs, generates foreign exchange, and provides significant employment. Therefore, in the current era of globalization, oil and gas is the country's primary source of income.³

The development of oil and gas natural resource management since Indonesia gained independence has been significantly influenced by the state's political, social, economic, and environmental components. It is reinforced by the fact that economic globalization has caused the national economic system to become an integral part of the global economic system.⁴ Economic globalization also demands that the business world be more transparent, providing opportunities for all business people based on their ability to compete. In addition, economic globalization has caused legal globalization through legal standardization and international agreements, such as the Agreement on Tariffs and Trade (GATT). Investors from developed countries also make international business contracts. Management of natural resources, especially oil and gas, in Indonesia is complex. Indonesia is faced with the challenge of ensuring that oil and gas exploitation is carried out using the principles of ecological justice and based on Pancasila justice, which is the constitutional basis of the country.⁵

Article 33 of the 1945 Constitution provides a philosophical basis for the legal and political process and the regulation of natural resource management and other economics. The 1945 Constitution determines the outline, direction, content, and form of law enforced in Indonesia. Its position as a fundamental law (legal consequence) means that every material of the legislation under it must not conflict with the material contained in the 1945 Constitution. In addition, legal globalization is caused by international business contracts brought by investors from developed countries. As a result, the Oil and Gas Law has faced many problems from the discussion stage in the legislative institution to the implementation stage. According to experts, this is legislation influenced by international interests with a touch of trade liberalization in the oil and gas industry. International financial institutions are pushing the oil and gas law along with the country's financial crisis in late 1997 and the IMF loan agenda to overcome the bankruptcy of the national banking system. The Oil and Gas Law adheres to liberalism, which the 1945 Constitution prohibits.⁶

These laws are consistent with Indonesia's post-reform political economy configuration. However, due to political agreements, almost all laws are not free from objection notes. When the laws were passed during the DPR Plenary Session,

³ Muhammad Waleed Ayub Ghouri and others, 'Provoking Buying Behaviors Amid Crises: Unfolding the Underlying Mechanisms of Psychological Impairments', *International Journal of Mental Health Promotion*, 26.4 (2024), 279–92 <https://doi.org/https://doi.org/10.32604/ijmh.2024.044759>

⁴ Cheryl R Collarini, Henry S Pettingill, and Joe L Stires, 'Chapter 20 - Economic Considerations and Market Condition Effects in Deepwater', in *Deepwater Sedimentary Systems*, ed. by Jon R Rotzien and others (Elsevier, 2022), pp. 693–722 <https://doi.org/https://doi.org/10.1016/B978-0-323-91918-0.00005-0>

⁵ Mark Cook, 'Chapter 6 - Project Cash Flow', in *Petroleum Economics and Risk Analysis*, ed. by Mark Cook, Developments in Petroleum Science (Elsevier, 2021), LXXI, 133–205 <https://doi.org/https://doi.org/10.1016/B978-0-12-821190-8.00006-X>

⁶ Soni S Wirawan and others, 'Biodiesel Implementation in Indonesia: Experiences and Future Perspectives', *Renewable and Sustainable Energy Reviews*, 189 (2024), 113911 <https://doi.org/https://doi.org/10.1016/j.rser.2023.113911>



many council members submitted minderheid notes because most laws were liberal and contradicted Article 33 of the 1945 Constitution, which regulates the national economy. Several groups then submitted laws containing minderheids notes to the Constitutional Court (MK) for legal review. The MK only annulled the Electricity Law in its entirety.⁷

The existence of an autonomous state role that can direct economic policies is fundamental in managing natural resources, especially oil and natural gas. It is considered that the state's role is to intervene and protect the interests of the community, national entrepreneurs, and the environment. Protection of infant industries in developing countries from competition with industries in developed countries is essential for the country's development. The fact that Indonesia became an oil importer in 2003 and will face excessive demand for natural gas and oil shortly shows that lack of exploration is the cause of the decline in supply. Based on Law Number 22 of 2001, the Indonesian oil and gas business began with a cooperation contract between the Government through SKK Migas and the Contractor Cooperation Contract (KKKS). Management of natural resources covers many areas that the state must protect to increase internal strength and maintain state profits and people's welfare. One of the responsibilities of the state is to provide sources of life for the community's welfare.

This change also means Pertamina no longer acts as the government party in production cooperation contracts with contractors. As the mining authority holder, the government forms an Implementing Agency to carry out upstream business activities, including signing cooperation contracts. Due to this fact, the Constitutional Court filed a legal examination of the Oil and Gas Law, and the Constitutional Court ruled that the position of BP Migas was unconstitutional. After the Constitutional Court dissolved BP Migas, 23 became an essential issue regarding Pertamina's position for a long time. The Constitutional Court's decision clearly shows that the Constitutional Court asked the government to immediately reorganize oil and gas management by focusing on "control by the state" and on efforts to "provide maximum benefits for the people." Therefore, this control must be carried out through an effective system and under the direct control of the government. As a result, it is obvious what the government must do to carry out the Constitutional Court's decision and mandate in its entirety, both during the transition and in the future. The government must create a new institutional structure to create state control over oil at the first level. Therefore, the state can directly appoint BUMN to manage and run upstream oil and gas operations.

According to the Constitutional Court, the Oil and Gas Law creates a national relationship, and the government owns Oil and Gas Natural Resources as the holder of the mining authority.⁸ BP Migas is a state-owned legal entity for upstream activities, namely exploration and exploitation. BP Migas only supervises and controls parties directly managing Oil and Gas Natural Resources. These parties include Business

⁷ Marissa Malahayati, Toshihiko Masui, and Lukytawati Anggraeni, 'An Assessment of the Short-Term Impact of COVID-19 on Economics and the Environment: A Case Study of Indonesia', *Economia*, 22.3 (2021), 291–313 [https://doi.org/https://doi.org/10.1016/j.econ.2021.12.003](https://doi.org/10.1016/j.econ.2021.12.003)

⁸ Ghouri and others.



Entities (*BUMN*, *BUMD*, cooperatives, and private companies) and Permanent Business Entities. All relationships between BP Migas and legal or permanent business entities are carried out as cooperation contracts (KKS) under certain conditions. According to the Constitutional Court, state control over Oil and Gas Natural Resources must be carried out directly by the government. BP Migas only carries out control and supervision functions, not direct management. The model of BP Migas' relationship with companies or permanent business entities in managing oil and gas degrades the meaning of state control over Oil and Gas Natural Resources. The presence of BP Migas is a constitutional violation that demands the dominance of the state that generates the most significant profit.

A significant problem is determining which branches of production are essential for the country and controlling the livelihood of many people.⁹ Until now, there have been no provisions/references, so determining a branch of production that is important for the country and controls the livelihood of many people is left to and depends on the government's view, regardless of the existence of judicial review to the Constitutional Court.¹⁰ This situation makes the principle of the state's right to control uncertain regarding implementing people's sovereignty (economic democracy), which is entrusted to the government as the holder of power on behalf of the people. Thus, there has been no official explanation of "people's sovereignty" about the formulation of "branches of production that are important for the country and control the livelihood of many people" in the 1945 Constitution²⁵. The implementation of dependency in the era of globalization is an essential issue in building people's economic sovereignty.

Indonesia is known as a pioneer of Production Sharing Contracts (PSC), and one of its PSCs is cost recovery. After being introduced in Indonesia by Ibnu Sutowo in 1966, production-sharing contracts became popular in Indonesia. Ibnu Sutowo introduced this contract assuming that although Indonesia has many oil and gas resources, the country needs more funds to invest in upstream oil and gas business activities. Based on the Regulation of the Minister of Energy and Mineral Resources Number 8 of 2017, later amended by the Regulation of the Minister of Energy and Mineral Resources Number 52 of 2018, there is a Production Sharing Contract (PSC) model with a Gross Split scheme. The Gross Split scheme replaces the previous model based on cost recovery, which is considered to have weaknesses in terms of cost monitoring and benefit distribution. This model was introduced to increase the efficiency and effectiveness of the separation of production between contractors and the government and minimize the cost burden that the state must bear.

⁹ Firera and others, 'The Impact of Purchasing and Inventory Performance on Sustainable Financial Performance with Fiscal Term as a Moderating Factor (A Case Study from Oil and Gas Industry in Indonesia)', *Journal of Open Innovation: Technology, Market, and Complexity*, 10.1 (2024), 100225 <https://doi.org/https://doi.org/10.1016/j.joitmc.2024.100225>

¹⁰ Baltazar Solano-Rodríguez and others, 'Implications of Climate Targets on Oil Production and Fiscal Revenues in Latin America and The Caribbean', *Energy and Climate Change*, 2 (2021), 100037 <https://doi.org/https://doi.org/10.1016/j.egycc.2021.100037>

Table 1. Comparison of Gross Split PSC Arrangements in several countries

Country	Basic Mechanism	Base Split	Risk Sharing	Incentives and Split Variables
Indonesia	There is no cost recovery, the contractor receives a net profit share from production.	1. Oil: 57% Government, 43% Contractors. 2. Gas: 52% Government, 48% Contractors.	The contractor bears the full risk of operating costs and price fluctuations, with no guarantee of cost recovery from the government.	Split variables depend on field location, technology, oil price, reservoir type, and other operational conditions.
Malaysia	Gross Split PSC is implemented with a tiered approach based on cumulative production volume.	Profit sharing varies depending on production volume and location, usually contractors get around 25-40% of production.	The contractor bears the cost risk, but there is a certain cost recovery ceiling to mitigate some of the risk.	Splits are adjusted based on production volume and exploration stage, with additional incentives for marginal fields.
Nigeria	Implementation of Gross Split PSC after the ratification of the Petroleum Industry Act (PIA) 2021. Gross Split is applied to deepwater blocks with a flexible system to adjust production incentives.	The government gets 60-70% depending on the contract and location, while the contractor gets 30-40%. Generally, the Nigerian government gets a larger share of the production.	Contractors bear the exploration and development risks and there are incentives and tax breaks provided to encourage investment in deepwater and marginal fields.	Incentives are awarded based on field performance, production volumes and market conditions, including protection against low oil prices.
Mozambique	Mozambique uses a flexible scheme and often adjusts contracts based on field-by-field negotiations, especially for LNG and offshore projects.	The distribution can reach 50-60% for the government, depending on the exploration results and field potential.	Contractors bear operational and cost risks, especially on large LNG projects such as Rovuma LNG.	Incentives for LNG projects, including tax breaks and reductions in the initial costs of high-risk offshore exploration.

This study has significant differences compared to previous studies. Research conducted by Marnalom (2024) discusses the change in Indonesia's upstream oil and gas management system from cost recovery to gross split, which was implemented in 2017. Cost recovery is a system where the government returns operating costs incurred by contractors, which often causes state losses. To overcome this, the government adopted a gross split, which does not include capital controls and is more straightforward in profit sharing between the government and contractors. The aim is to increase exploration, oil and gas production and attract more investors. This journal also highlights the comparison of PSC arrangements; in comparative studies, several countries use different systems in oil and gas management; for example, in terms of period, Malaysia, China, and India have an exploration duration of 5 years, while Mexico and Brazil are for seven years, and Venezuela up to 10 years.



Regarding cost recovery, China sets a limit of 50% of the gross revenue generated, while India has no limit. At the same time, Malaysia applies a limit based on Revenue/Cost, and in Mexico, Brazil, and Venezuela, there is a limit on the amount that can be claimed in a certain period. This article also discusses the comparison of PSC arrangements in these countries in terms of profit share and tax rates. In Farhani's research (2022), he focused on the distribution of oil and gas revenues in Indonesia through two central systems, namely Cost Recovery and Gross Split, in the context of maximizing the prosperity of the people as mandated by the 1945 Constitution of the Republic of Indonesia. This article explores the differences between the two models, where cost recovery allows contractors to reclaim operational costs after commercial production. At the same time, gross split does not provide a cost reimbursement mechanism, so the state gets direct profit sharing from gross income. This article also highlights the importance of choosing a model that is more profitable for the state and supports the welfare of the people, taking into account regulatory changes, such as the Regulation of the Minister of Energy and Mineral Resources Number 8 and Number 12 of 2020 which provides flexibility for contractors to choose a profit-sharing scheme.¹¹

Fajri (2020) in his research discusses the gross split contract scheme in the upstream oil and gas industry as an alternative to the cost recovery system previously used in Indonesia. Regulation of the Minister of Energy and Mineral Resources Number 8 of 2017 introduced Gross Split to overcome long bureaucracy, increase efficiency, and attract investment interest. Through this scheme, the government seeks to cut bureaucracy and provide certainty of profit sharing at the beginning of the contract (base split), with additional incentives based on variable and progressive components. This study also highlights the importance of the role of SKK Migas in supervising and controlling contractor activities, although the contractor fully bears operational costs. This scheme is expected to accelerate the exploration and exploitation of oil and gas reserves and encourage increased investment in the upstream oil and gas sector.¹²

Based on Floriantina's research (2021), which discusses the comparison between cost recovery-based PSC and gross split. Both contracts have a term of 30 years, including exploration and production periods, but the gross split is more flexible in terms of extension based on field performance. In both types of PSC systems, contractors must sell 25% of the production share they receive to the domestic market. Supervision in managing upstream oil and gas should be tightened to avoid fraud from certain parties, such as that experienced when using the cost recovery system. In addition, changing the cost recovery system to a gross split needs to be utilized as well as possible to increase oil and gas exploration and exploitation in Indonesia to maximize the profits obtained.

Intaniasari (2020) studied the legal regulations governing the upstream oil and gas sector, which have undergone many changes since the Dutch colonial era. Oil and

¹¹ Rini Astuti and others, 'Making Illegality Visible: The Governance Dilemmas Created by Visualising Illegal Palm Oil Plantations in Central Kalimantan, Indonesia', *Land Use Policy*, 114 (2022), 105942 <https://doi.org/10.1016/j.landusepol.2021.105942>

¹² Arthur Mendes and Steven Pennings, 'One Rule Fits All? Heterogeneous Fiscal Rules for Commodity Exporters When Price Shocks Can Be Persistent: Theory and Evidence', *Review of Economic Dynamics*, 55 (2025), 101239 <https://doi.org/https://doi.org/10.1016/j.red.2024.101239>



natural gas management cannot be separated from the intent and purpose of the state administration, namely achieving social welfare and justice, which, according to the Constitution, is the primary concern of national development. The state's position regarding oil and natural gas resources is the right to adopt laws, regulations, and supervision to manage, regulate, and supervise these resources. First, the government must prioritize state power, namely the management of oil and natural gas resources, for the benefit of the people.¹³ The existence of the PSC and Gross Split systems is the government's effort to improve people's welfare. However, the PSC system faces many obstacles in its implementation and is considered detrimental to the nation. Thus, Gross Split was born, which aims to strengthen the PSC system and improve the quality and productivity of the oil and gas profit-sharing pattern. Although the aggregate distribution is still flawed, this is more in line with the state's goal of providing as many benefits as possible to the community than the previous system. The greatest possible prosperity of the people is the goal of all management and utilization of the nation's natural resources. These goals are seen as interests that cannot be ignored because they are the desires of all citizens and, at the same time, constitutional obligations and responsibilities towards the state. Therefore, the production and use of natural resources will be adjusted to these goals.

The Gross Split scheme offers the potential for increased efficiency, but there are challenges related to ecological justice. In this scheme, the government takes a more significant role in overseeing operations to ensure that natural resource exploitation is carried out responsibly and provides full benefits to the community. Implementing this scheme comes with criticism, primarily concerning the potential for injustice in sharing risks between the state and the contractor. It can be seen from the situation where there is an increase in oil prices that contractors can gain greater profits compared to the PSC cost recovery scheme. However, when the price situation decreases, contractors must bear the losses themselves, which can reduce their incentives to invest optimally. SKK Migas in Indonesia uses a gross split model scheme that represents the state in oil and gas management. SKK Migas is responsible for ensuring that oil and gas management in Indonesia is based on the principles of ecological justice and strict supervision of the fairness of production costs and distribution of benefits to the community. With this background, this study will further explore the regulation of fiscal provisions in Indonesia's oil and gas industry based on the principles of ecological justice. This study will also highlight how the Gross Split model can be optimized to support environmental sustainability and the welfare of society as a whole.

METHOD

This research uses a doctrinal legal research method; it is intended that through this research, we can find the philosophy and legal theory, which is the ratio legis of the regulations and legal facts regarding the fiscal term of oil and gas models of PSC Cost Recovery and Gross Split. In addition, with prescriptive research with a statute approach and conceptual approach, the research can find out how the regulation of

¹³ B Mudford and D Stegemeier, 'Analyzing the Sensitivity of Production Sharing Contract Terms Using Simulation', in *SPE Hydrocarbon Economics and Evaluation Symposium* (Society of Petroleum Engineers (SPE), 2003), pp. 109 – 118 <https://doi.org/10.2523/82016-ms>



fiscal terms of oil and gas that are ecologically.¹⁴ This research was conducted by finding the weaknesses in the regulation and implementation of PSC Cost Recovery and PSC Gross Split and by comparing the two schemes by showing how other countries adopt these schemes to be then able to provide a prescription for how the regulation of fiscal terms of oil and gas that are ecologically.¹⁵ The sources of legal materials used include primary legal materials, such as Law Number 22 of 2001 concerning Oil and Gas, and various Regulations of the Minister of Energy and Mineral Resources Number 8 of 2017 and its amendments, which regulate the Gross Split Production Sharing contract. Secondary legal sources come from literature, seminar results, and scientific articles. Data was collected through literature studies, government documents, and clarification with officials from Pertamina, SKK Migas, and the Ministry of Energy and Mineral Resources.¹⁶

RESULT AND DISCUSSION

Indonesia Oil and Gas Fiscal-Term Regulations

One of the characteristics that distinguish the 1945 Constitution (UUD 1945) as the Indonesian constitution from most other countries' constitutions is its content, which, in addition to regulating political and constitutional issues, also regulates social, economic, and cultural life issues as contained in Articles 31, 32, 33, and 34. Jimly Asshiddiqie said that this is what distinguishes the constitution of the Republic of Indonesia from the tradition of constitutional writing in Western European and American countries, which usually contain constitutional materials that are only political. The tradition adopted by Indonesia, as far as the nature of the regulated content is concerned, appears to be influenced by the nature of constitutional writing that is commonly found in socialist countries such as countries in Eastern Europe.¹⁷

The constitution gives the state the authority to control branches of production that are important to the state and control many people's livelihoods. The issue of the state's right to control, as the center of the problem contained in Article 33 of the 1945 Constitution, refers to the words "controlled by the state." In this case, in essence, power is not sovereignty. However, state power is also not unlimited because several legal provisions bind it, such as natural law and God's law, and laws common to all nations are called *leges imperii*. So, state power over natural resources comes from the people, known as the rights of the nation. In this case, the state is seen as having the character of a general public institution, giving it the authority or power to

¹⁴ Bambang Sugeng, Pujiyono Suwadi, and Muhammad Saiful, 'The Effectiveness of Recovering Losses on State Assets Policy in Dismissing Handling of Corruption', *Journal of Human Rights, Culture and Legal System*, 4.2 (2024), 299–330 <https://doi.org/https://doi.org/10.53955/jhcls.v4i2.259>

¹⁵ Mabarroh Azizah, 'Does the Government 's Regulations in Land Ownership Empower the Protection of Human Rights?', *Journal of Human Rights, Culture and Legal System*, 4.2 (2024), 391–421 <https://doi.org/https://doi.org/10.53955/jhcls.v4i2.222>

¹⁶ Rina Arum and Ridhima Sharma, 'Establishing Consumer Trust Through Data Protection Law as a Competitive Advantage in Indonesia and India', *Journal of Human Rights, Culture and Legal System*, 4.2 (2024), 354–90 <https://doi.org/https://doi.org/10.53955/jhcls.v4i2.200>

¹⁷ A Azizurrofi and others, 'Economic Analysis of Profitability Index and Development Cost Based on Improved Oil Recovery (IOR) Projects in Indonesia', in *IOR NORWAY 2017 - 19th European Symposium on Improved Oil Recovery: Sustainable IOR in a Low Oil Price World* (European Association of Geoscientists and Engineers, EAGE, 2017) <https://doi.org/10.3997/2214-4609.201700261>



regulate, manage, and maintain (supervise) the intensive utilization of all potential natural resources in its territory.¹⁸

Fiscal-term regulation in Indonesia's oil and gas sector, which is based on the principle of ecological justice, is an effort to balance the exploitation of natural resources for economic welfare and sustainable environmental preservation. Bentham found that the most objective basis is to see whether a policy or action brings benefits, beneficial results, or losses to the people involved. If related to what Bentham stated in law, then the good and bad of the law must be measured from the good and bad consequences produced by the application of the law. A new legal provision can be good if the consequences resulting from its application are goodness, maximum happiness, and reduced suffering. Conversely, it is considered destructive if its application produces unfair consequences and losses and only increases suffering. So, it is fitting that no expert states that this utility theory is the economic basis for legal thinking. The main principle of this theory is about the purpose and evaluation of law. The law aims to ensure the best possible welfare for the majority of the people or all the people, and legal evaluation is carried out based on the consequences resulting from the process of implementing the law. Based on this orientation, the content of the law is the provision on the regulation of the creation of state welfare.¹⁹

In Mochtar Kusumaatmadja's view, the law's primary purpose is order. The need for order is a fundamental requirement for an orderly human society. In addition to the order, another purpose of the law is to achieve justice that varies in content and size according to society and era. Indonesia, which has a variety of ethnicities, cultures, and, of course, a variety of desires, must be able to minimize the barriers of difference between the various desires of individuals. The process of minimizing these barriers is carried out through the existence of laws and regulations that can provide social justice for all citizens without abandoning/ignoring existing cultural values. It can apply if the law can also provide benefits for all people.²⁰

Ecological justice demands a fair distribution of economic benefits between the government, contractors, and communities, equitable handling of environmental impacts, and proportional responsibility for damage caused by oil and gas exploitation. The implementation of the principle of ecological justice in this fiscal-term regulation is vital in providing certainty that the management of oil and gas resources does not only benefit certain parties but also does not harm the environment and affected communities.

¹⁸ Nor Aziah Abd Manaf and others, 'Effects of Fiscal Regime Changes on Investment Climate of Malaysia's Marginal Oil Fields: Proposed Model', *Procedia - Social and Behavioral Sciences*, 164 (2014), 55–61 <https://doi.org/https://doi.org/10.1016/j.sbspro.2014.11.050>

¹⁹ Sinung Adi Nugroho and Sunu Widiyanto, 'Exploring Electric Vehicle Adoption in Indonesia Using Zero-Shot Aspect-Based Sentiment Analysis', *Sustainable Operations and Computers*, 2024 <https://doi.org/https://doi.org/10.1016/j.susoc.2024.08.002>

²⁰ Grahita Chandrarin and others, 'The Response of Exchange Rate to Coal Price, Palm Oil Price, and Inflation in Indonesia: Tail Dependence Analysis', *Resources Policy*, 77 (2022), 102750 <https://doi.org/https://doi.org/10.1016/j.resourpol.2022.102750>

Table 2. State control over natural resources in the constitutions that have been in effect in Indonesia

Constitution	Chapter	Article Sound
BPUPKI Manuscript	Article 32	(1) The economy is structured as a joint venture based on the principle of family. (2) Branches of production that are important for the state and that affect the livelihoods of many people are controlled by the state. (3) The earth and water and the natural resources contained therein are controlled by the state and used for the greatest prosperity of the people.
RIS Constitution	The provision was abolished	
UUDS 1950	Article 38	(1) The economy is structured as a joint venture based on the principle of family.
1945 Constitution	Article 33	(2) Branches of production that are important for the state and that affect the livelihood of many people are controlled by the state. (3) The earth and water and the natural resources contained therein are controlled by the state and used for the greatest prosperity of the people.
1945 Constitution Amendment	Article 33, added 2 new paragraphs	(4) The national economy is organized based on economic democracy with the principles of togetherness, fair efficiency, sustainability, environmental awareness, independence, and maintaining a balance between progress and national economic unity. (5) Further provisions regarding the implementation of this article are regulated in law.

The basic concept of oil and gas mining in Indonesia refers to Article 33 paragraph (3) of the 1945 Constitution of the Republic of Indonesia, which states, "The land, water and natural resources contained therein are controlled by the State and are



used for the greatest prosperity of the people." The state's authority in This is regulated in Article 2 paragraph (2) of the UUPA, which includes regulating and organizing the allocation, use, supply, and maintenance of earth, water, and space, determine and regulate the legal relationship between individuals and the earth, water, and space and determine and regulate legal relations between individuals and legal acts related to earth, water, and space.²¹ Article 2, paragraph (3) of the UUPA states that state authority is used to achieve national prosperity, welfare, and independence in a free, sovereign, just, and prosperous Indonesian society and state based on the rule of law. Article 33 of the 1945 Constitution of the Republic of Indonesia is the basis for exploiting natural resources in Indonesia.

The context of "State Control Rights" gives the state full authority to manage Indonesia's resources, including oil and gas, which are important branches of production that control the livelihoods of many people.²² Article 4 of the Oil and Gas Law emphasizes that oil and gas are strategic natural resources controlled by the state. In the management of natural resources, there are three models of relationships between the government and business actors, the contractual model (Government to Business): In this model, the government and business actors enter into a contract, such as the Work Contract based on Law No. 11 of 1967, which has been replaced by the permit regime under Law No. 4 of 2009. In this model, the government's position is equal to that of business actors. State-Owned Enterprise Model: A state-appointed enterprise (e.g., Pertamina) contracts with contractors in this model. According to Law No. 8 of 1971, Pertamina has the authority as a regulator. However, after the Oil and Gas Law, the regulatory authority was returned to the Directorate General of Oil and Gas, Ministry of Energy and Mineral Resources. At the same time, BP Migas functions as a contractual legal entity and permit regime model: In this model, the state functions as a permit giver (concession) to contractors and business actors, with the state's position being higher than that of business actors. This is known as a permit regime, as regulated in the Mineral and Coal Law, where the state has a vertical position above business actors.²³

These three models reflect variations in the relationship and authority between the government and business actors in managing natural resources in Indonesia. The philosophy behind the formation of BUMN is based on the provisions of the 1945 Constitution of the Republic of Indonesia Article 33, paragraphs (2) and (3), which contain the meaning that essential branches of production for the state that control the livelihoods of many people are controlled by the state. Then, the earth, water, and natural resources contained therein are controlled by the state and used for the

²¹ Dhamar Yudho Aji and Utomo Sarjono Putro, 'System Dynamics Modeling of Leveraging Geothermal Potential in Indonesia towards Emission Reduction Effort: A Case Study in Indonesia State-Owned Energy Enterprise', *Renewable Energy Focus*, 51 (2024), 100612 <https://doi.org/https://doi.org/10.1016/j.ref.2024.100612>

²² Wiwiek Mardawiyah Daryanto and Arti Primadona, 'Capital Budgeting Model and Sensitivity Analysis of the Conventional Oil Production Sharing Contract (PSC) Fiscal Systems: Empirical Evidence from Indonesia', *International Journal of Engineering and Technology(UAE)*, 7.3 (2018), 5 – 9 <https://doi.org/10.14419/ijet.v7i3.21.17084>

²³ Paola D'Orazio, 'Assessing the Fiscal Implications of Changes in Critical Minerals' Demand in the Low-Carbon Energy Transition', *Applied Energy*, 376 (2024), 124197 <https://doi.org/https://doi.org/10.1016/j.apenergy.2024.124197>



greatest prosperity of the people. Thus, the first task of the state in forming a business entity is to meet all the community's needs, whereas the private sector cannot yet carry out these sectors. Such tasks, translated as a form of "pioneering" efforts by the state that make BUMN become agents of development, where public needs for electricity, fuel, clean water, telecommunications, food, and banking, which are critical sectors for the community are mainly carried out by the People's State-Owned Enterprises collectively constructed by the 1945 Constitution of the Republic of Indonesia giving a mandate to the state to make policies (*beleid*) and management actions (*bestuursdaad*), regulation (*regelendaad*), management (*beheersdaad*) and supervision (*toezichthoudensdaad*) for the greatest prosperity of the people. The management function (*bestuursdaad*) by the state is carried out by the government with its authority to issue and revoke permit facilities (*vergunning*), licenses (*licentie*), and concessions (*concessie*).

Table 3. Differences and Similarities between PSC Cost Recovery and Gross Split Models in Indonesia

Aspect	PSC Cost Recovery	Gross Split	Equality
Basic Concepts	Contractors have the right to claim operational costs (cost recovery) before sharing production results with the government.	There is no reimbursement of operating costs. Direct production is divided based on the percentage of division (gross split), without cost recovery.	Both are cooperation schemes in the oil and gas industry in Indonesia.
Refund of fees	After cost recovery is claimed, the remaining production (profit oil/gas) is shared between the government and the contractor.	No cost recovery. The contractor bears all costs and directly receives his share of production without any cost compensation.	Both schemes require operational costs to be borne by the contractor.
Production Sharing	FTP (First Trach Petroleum): 1. Oil: 85% for the government and 15% for contractors. 2. Gas: 70% for the government and 30% for contractors.	Base Split: 1. Oil: 57% Government, 43% Contractors. 2. Gas: 52% Government, 48% Contractors. This division can vary depending on the split variable.	Distribution of profits between the government and contractors after production, but with different mechanisms and distribution percentages.
Supervision Mechanism	Strict supervision by SKK Migas on costs submitted by contractors for Cost Recovery. All expenditures must be audited and approved by the government.	Supervision by SKK Migas is simpler because there is no cost recovery submission. The government focuses on monitoring production volume and compliance with the predetermined split division.	The government continues to monitor to ensure compliance with contracts and production according to provisions.
Cost Flexibility	Contractors have more freedom to determine	Operational cost control is entirely in the	Both schemes require effective cost



		operational costs because they can be claimed through cost recovery. However, this can lead to inefficiencies because there is no direct incentive to save costs.	hands of the contractor, which is expected to encourage the upstream oil and gas industry to become more agile and efficient, because costs are not returned.	management to maintain profit margins, although they have different approaches to costs.
Risk Mechanism	Sharing	The government bears part of the cost risk through the cost recovery mechanism. The contractor has a lower risk because the cost can be recovered, but the government has the risk of managing the cost recovery.	Contractors bear full risk of operating costs and oil prices, as there is no guarantee of cost recovery. The government is better protected from cost risks.	Operational and oil price risks remain in both models, but the way they are distributed is different.
Assurance Acceptance	of	The contractor's revenue value is difficult to determine at the beginning because the amount of cost recovery varies. This makes it difficult for investors to prepare the right work plan and budget.	Contractors are given certainty of acceptance at the beginning of the contract through base split. This certainty aims to allow contractors to prepare work plans and budgets effectively and efficiently.	Gross Split provides more certainty up front regarding profit sharing, while Cost Recovery is more dependent on cost fluctuations.
Incentive Mechanism		There is no additional incentive sharing mechanism, except for those related to cost recovery.	Split Variables provide additional incentives based on factors such as: 1. Field Location 2. Reservoir Types 3. Cumulative Production 4. CO₂ /H₂S content and oil price.	Both schemes provide opportunities for contractors to earn greater profits depending on operational and production performance.
Implementation Law	of	1. Law No. 22 of 2001 concerning Oil and Natural Gas. 2. Regulation of the Minister of Energy and Mineral Resources No. 2808 K/20/MEM/2012 concerning Procedures for Determining Cost Recovery	1. Regulation of the Minister of Energy and Mineral Resources No. 8 of 2017 concerning Gross Split Production Sharing Contracts. 2. Regulation of the Minister of Energy and Mineral Resources No. 52 of 2017 concerning Adjustment of Gross Split Contracts.	Both are regulated by Laws and Government Regulations within the Indonesian legal framework.



Technological Changes	Lack of flexible scheme for technology change. All technologies and costs must be submitted for verification in the cost recovery mechanism.	Split Variable provides incentives based on the type of technology used, such as enhanced oil recovery (EOR) or new technologies that can increase production.	Technology plays an important role in increasing production in both schemes, but Gross Split is more flexible towards the adoption of new technologies.
Price Risk	Contractors have lower price risks because most of the costs can be claimed through cost recovery, so the production results received are more stable.	The contractor bears the full risk of oil and gas price fluctuations. If the price drops, the contractor gets a smaller share and bears all the costs himself.	Both schemes are affected by changes in oil and gas prices in the global market, but Gross Split is riskier for contractors in terms of price.
DMO (Domestic Market Obligation)	25% of ICP (Indonesian Crude Price) in the first 5 years, after that full ICP.	Full ICP.	25% of the contractor's share.

The table above shows the psc cost recovery model is a form of cooperation where contractors are entitled to receive a refund for costs incurred during oil and gas exploration and production. This refund is made after producing oil and gas and is measured based on production volume. Although this model incentivizes contractors to spend high costs in exploration and production activities, there are concerns that this mechanism can encourage contractors to increase cost claims that are only sometimes relevant to environmentally sustainable operations. In applying ecological justice, this arrangement must be balanced with strict Government supervision of the cost reports and operational activities submitted by contractors. Without adequate supervision, there is a risk of cost manipulation that can cover up the environmental damage caused. Therefore, a policy is needed to ensure that every cost claimed by the Contractor in the Cost Recovery scheme also includes environmental mitigation and restoration costs and that an authorized institution independently verifies these costs.²⁴

The oil and gas business in Indonesia uses the PSC (Production Sharing Contract) contract system, which has long been used in the upstream oil and gas sector in Indonesia. With the implementation of this PSC system, the country cooperates with international oil and gas companies (also known as International Oil Company or IOC) so that the IOC can meet the financial needs and skills needed for oil and gas exploration. Usually, the country is represented by one of the agencies in its government that will regulate oil and gas production. In Indonesia, this cooperation is represented by Pertamina or BP Migas (when it still exists). An international oil and gas company has the right to manage (exploration or production) from a predetermined area or termed an area contract and bears the risk of production

²⁴ Tania Masi, Antonio Savoia, and Kunal Sen, 'Is There a Fiscal Resource Curse? Resource Rents, Fiscal Capacity and Political Institutions in Developing Economies', *World Development*, 177 (2024), 106532 <https://doi.org/https://doi.org/10.1016/j.worlddev.2024.106532>



operations in that area, such as the need for funds or disasters that may occur. In the discovery of commercial reserves, the IOC will receive a share as payment for its work and additional costs that are commensurate with its production results. However, the IOC will only get something if new reserves are discovered or the discovery of commercial reserves; the OC will receive a share as payment for its work and additional costs commensurate with its production results. However, if new reserves are discovered, OC gets something.²⁵

In the context of a Cost Recovery Production Sharing Contract, proportional risk and profit sharing can lead to inefficient and unwise contractor behavior in executing the work program, given that the state bears 85% of the incurred costs for oil. In certain circumstances, a profit-sharing pattern such as Cost Recovery often results in the state bearing the majority of costs incurred for unnecessary or non-priority activities.²⁶ Moreover, there are incentives in the Cost Recovery Production Sharing Contract that provide investment credit of up to 17%, so contractors tend to "take advantage" by spending as much as possible because they will get incentives from the expenditures made. Cost recovery is a polemic because the contract's principal is a government entity (BP Migas/SKK Migas), which is not an operator, so it is challenging to verify costs. In the concept of a Cost Recovery Production Sharing Contract, at a certain point, because the risk and profit sharing is done proportionally, the contractor's behavior tends to be inefficient and unwise in implementing the work program, considering that 85% (for oil) of the costs that will be incurred will be the burden of the state.²⁷

A profit-sharing pattern such as Cost Recovery, in certain circumstances, the state is often burdened by the majority of costs incurred for activities that are unnecessary or not a priority to be carried out. Moreover, there are incentives in the Cost Recovery Profit Sharing Contract that provide investment credit of up to 17%, so contractors tend to "take advantage" by spending as much as possible because they will get incentives from the expenditure. In the issuance of Law No. 22 of 2001, there is a fundamental difference from Law No. 8 of 1971 concerning Pertamina; namely, there is a mining authority holder. With the enactment of Law No. 22 of 2001, the mining authority is in the Government. The Government also formed agencies to optimize the management of oil and gas resources. SKK Migas was formed to control and supervise the upstream oil and gas sector. To regulate the downstream sector, the Government formed BPH Migas. The division of labor with Pertamina is also increasingly clear, namely by focusing Pertamina on the upstream and downstream oil and gas business. Pertamina is no longer burdened with the matter of making rules

²⁵ Teguh Dartanto, 'Reducing Fuel Subsidies and the Implication on Fiscal Balance and Poverty in Indonesia: A Simulation Analysis', *Energy Policy*, 58 (2013), 117–34 <https://doi.org/https://doi.org/10.1016/j.enpol.2013.02.040>

²⁶ Harimurti Daniel, 'Indonesian Milestone in Production-Sharing Contract in Perspective of Government Take, Contractor Take, Cost Recovery and Production Target', in *Society of Petroleum Engineers - SPE/IATMI Asia Pacific Oil and Gas Conference and Exhibition 2017* (Society of Petroleum Engineers, 2017), MMXVII-JANUARY <https://doi.org/10.2118/187008-ms>

²⁷ Petir Papilo and others, 'Palm Oil-Based Bioenergy Sustainability and Policy in Indonesia and Malaysia: A Systematic Review and Future Agendas', *Heliyon*, 8.10 (2022), e10919 <https://doi.org/10.1016/j.heliyon.2022.e10919>



and regulations. One of the strengths of this PSC is that control over oil and gas remains with the state.

The foreign companies in Indonesia, such as VICO Indonesia, Exxon Mobil Oil Indonesia Inc., and PT Chevron Pacific Indonesia, are the only investors who act as contractors. These companies work on contracts and have absolutely no right to control oil and gas in the places where they operate.²⁸ According to the Goldman Sachs Research Institute, as quoted by Widjajono Partowidagdo, Indonesia is categorized as very high risk in the management and business of oil and gas. This risk is determined based on the level of corruption, the rule of law, political stability, quality of regulation, and the human resource development index. Sutedi explained several types of risks in the mining sector: geological risk (exploration) related to the uncertainty of finding reserves (production), technological risk related to cost uncertainty, market risk related to price changes, and government policy risk related to changes in domestic taxes and prices. These risks are related to the magnitude that affects business profits, namely production, prices, costs, and taxes. Businesses that have higher risks require a higher rate of return. In developing the domestic oil and gas industry, Indonesia needs investors as contractors to explore and produce oil and gas reserves that Pertamina itself cannot run.²⁹

The Government is a regulator and supervisor responsible for ensuring that the provisions of applicable laws and regulations in the PSC Cost Recovery model carry out all oil and gas exploration and production activities. Government supervision is carried out through audit, monitoring, and evaluation mechanisms where the Government must approve every expenditure claimed by the Contractor before it can be returned through the cost recovery mechanism. Institutions that carry out supervision include the Special Task Force for Upstream Oil and Gas Business Activities (SKK Migas). SKK Migas acts as a state representative in supervising the implementation of contracts and by the Audit Board, which has the authority to audit state finances. This process aims to ensure accountability and transparency in the management of public funds and to prevent moral hazard or potential abuse of authority by the Contractor. The PSC cost recovery regulation, the SKK Migas relationship model as a representative of the state with the Contractor in the management of the oil and gas, that the state under its supervision is very weak with powerful investor interests. The PSC cost recovery regulation prioritizes the principle of a minimalist state, where the Government does not become an operator, thus causing state supervision to be weak, and the distribution of benefits is more inclined to be enjoyed by contractors.³⁰

²⁸ Hasnor Lot and others, 'Business Model of Carbon Capture and Storage (CCS) Projects for High-CO₂ Fields', in *Society of Petroleum Engineers - SPE EuropEC - Europe Energy Conference Featured at the 84th EAGE Annual Conference and Exhibition, EURO 2023* (Society of Petroleum Engineers, 2023) <https://doi.org/10.2118/214359-MS>

²⁹ Fitri Nurfatriani and others, 'Redesigning Indonesian Forest Fiscal Policy to Support Forest Conservation', *Forest Policy and Economics*, 61 (2015), 39–50 <https://doi.org/https://doi.org/10.1016/j.forpol.2015.07.006>

³⁰ Bahruddin and others, 'Scaling-up Sustainable Commodity Governance through Jurisdictional Initiatives: Political Pathways to Sector Transformation in the Indonesian Palm Oil Sector?', *World Development*, 176 (2024), 106504 <https://doi.org/https://doi.org/10.1016/j.worlddev.2023.106504>



The minimal state principle in the PSC Cost Recovery model regulation refers to an approach in which the Government seeks to minimize direct intervention in the Contractor's business operations but still maintains strict oversight to ensure that national interests are protected.³¹ The Government acts as a regulator that sets policies and regulations, while contractors are free to regulate their operations while still following the guidelines set by the state.³² This approach also accommodates the principle of non-interference in technical matters that are the Contractor's authority, as long as the activities do not conflict with applicable laws and regulations. This principle was adopted to achieve a balance between economic efficiency and protection of national interests, as well as to ensure that the exploitation of natural resources provides maximum benefits for the Indonesian people, by the mandate of Article 33 of the 1945 Constitution of the Republic of Indonesia and the doctrine of the welfare state.³³

Fiscal-term arrangements in the national oil and gas sector, mainly through the Production Sharing Contract (PSC) Cost Recovery model, reflect the state's commitment to managing natural resources through Pancasila justice and ecological justice.³⁴ In the state regime that is applied, the state, as a sovereign entity, holds complete control over natural resources and ensures that its management is carried out for the greatest prosperity of the people, as mandated in Article 33 of the 1945 Constitution of the Republic of Indonesia. The principle of Pancasila justice is reflected in the Government's active role as a regulator and supervisor that strictly supervises the implementation of oil and gas contracts, ensuring that every cost incurred by contractors for oil and gas operations is by applicable regulations and provides optimal benefits for the state. This strict supervision also reflects efforts to maintain transparency and accountability, avoid abuse of authority, and ensure that natural resource management is economically profitable and environmentally sustainable.³⁵

The principle of a minimalist state in regulating the PSC Cost Recovery model, where the Government limits direct intervention in contractor operations but still maintains oversight, aims to balance economic efficiency and protection of national interests. It also allows for applying the principle of ecological justice, whereby natural resource management is carried out by considering environmental impacts and long-term sustainability. By integrating the principle of ecological justice, this fiscal-term arrangement focuses on economic aspects, environmental protection, and community welfare. Sustainable management, which is based on the principle of social and ecological justice, ensures that the exploitation of natural resources

³¹ Nur Ezyanie Safie and others, 'Electrical Conductivity Enhancement of RGO-MoS₂ Composite Electrode for Inverted PSC by Parameter Optimization', *Results in Engineering*, 22 (2024), 102237 <https://doi.org/https://doi.org/10.1016/j.rineng.2024.102237>

³² Mohd Tarmizi Osman and others, 'Empirical Analysis on Port State Control Inspection for Foreign-Registered Ships in Malaysian Ports', *The Asian Journal of Shipping and Logistics*, 37.2 (2021), 127–39 <https://doi.org/https://doi.org/10.1016/j.ajsl.2020.10.004>

³³ Arida Turymsbayeva, 'The Regulation of Legal Protection for Poor Communities Toward Justice in Indonesia and the Netherlands', *Journal of Human Rights, Culture and Legal System*, 4.2 (2024), 331–53 <https://doi.org/https://doi.org/10.53955/jhcls.v4i2.274>

³⁴ Manaf and others.

³⁵ Abdul Wahab, Bambang Setiaji, and Magomed Tazhdinov, 'Zakat Maal Management and Regulation Practices : Evidence from Malaysia , Turki and Indonesia', *Journal of Human Rights, Culture and Legal System*, 4.2 (2024), 569–92 <https://doi.org/https://doi.org/10.53955/jhcls.v4i2.204>



provides fair and equitable benefits to all Indonesian people, both for current and future generations. It is in line with the mandate of Pancasila as the foundation of the state, which places people's welfare and environmental sustainability as the main priority in every national policy.³⁶

Over time, cost recovery became a polemic because the principal of the contract was a government entity (BP Migas/SKK Migas) which was not an operator, making it difficult to verify costs. Finally, the government issued Ministerial Regulation Number 8 of 2017 concerning PSC with a Gross Split scheme. With the issuance of the Regulation of the Minister of Energy and Mineral Resources Number 08 of 2017 concerning Gross Split PSC, this is a new chapter in the oil and gas industry, especially in the upstream sector. As an alternative to PSC Cost Recovery, the Gross Split PSC model was introduced to simplify administration and accelerate decision-making in oil and gas activities. In this model, the distribution of production results between the government and the contractor is carried out directly from gross revenue without first reducing operational costs. In theory, this model allows the government to receive more certain and stable income without being affected by cost claims from contractors. However, the implementation of Gross Split PSC poses challenges in the context of ecological justice. Without a cost recovery mechanism, contractors may be less motivated to invest in environmentally friendly technologies and practices, because all operational costs, including environmental mitigation costs, must be borne by the contractor himself. Therefore, in the Gross Split model, it is crucial that the government establishes specific incentives to encourage investment in green technologies and ensures that environmental protection remains a top priority in production activities.³⁷

Conceptually, Gross Split Production Sharing Contract encourages Contractors to be more efficient. By utilizing the additional split in local content (TKDN) through Indonesian technology and human resources, the benefits contractors will obtain will be beautiful with the Gross Split system. The more efficient they are, the better the profits and return on investment they will get. A report published in January 2019 showed appreciation for the change in the fiscal system from production sharing cost (PSC) cost recovery to gross split. According to the Wood Mackenzie report, the gross split contract system received a positive response from oil and gas investors. The fiscal policy implemented by the gross split system also provides a favorable climate for oil and gas investment in Indonesia. The appreciation given by Wood Mackenzie is proof that the gross split is very competitive in attracting oil and gas investment to Indonesia. According to the Wood Mackenzie report, Indonesia and India have

³⁶ A H Asari Taufiqurrohman, Dwi Edi, and Ong Victoria, 'The Regulation on Sexual Harassment in ASEAN Workers: Evidence from Several Countries', *Journal of Human Rights, Culture and Legal System*, 4.2 (2024), 538–68 <https://doi.org/https://doi.org/10.53955/jhcls.v4i2.198>

³⁷ Fatma Ayu, Jati Putri, and Jasurbek Rustamovich, 'The Impact of Land Reform Policies on the Sustainable Management of Natural Resources in Local Communities', *Journal of Human Rights, Culture and Legal System*, 4.2 (2024), 510–37 <https://doi.org/https://doi.org/10.53955/jhcls.v4i2.197>



completed one round under the new oil and gas production sharing scheme, namely gross split. As stated in the report, the response from investors was quite good.³⁸

Pertamina is also involved in implementing the Gross Split PSC model, one of which is in the Offshore North West Java (ONWJ) Block. After introducing this scheme in 2017, the ONWJ block switched from PSC Cost Recovery to Gross Split. In this model, Pertamina must bear all operational costs without any cost recovery from the government, and the distribution of results is based on gross revenue. The Gross Split model is expected to improve operational efficiency and provide more stable revenue for the government. However, contractors must be more careful in managing costs because they bear all financial risks. The report also shows 10 (10) Oil and Gas Blocks whose contracts ended in 2018, namely Seram Non-Bula Block, Selawati Kepala Burung, Bula, Kepala Burung, South East Sumatera, East Kalimantan-Attaka, Offshore Mahakam, Sanga-Sanga, Rimau, and NSO-NSO Extension. The ten Oil and Gas Blocks have changed their profit-sharing scheme from the previous Cost Recovery scheme to a Gross Split.³⁹

The Wood Mackenzie report only shows some of the gross split oil and gas blocks 2018. In fact, until the end of 2018, 36 (thirty-six) oil and gas working areas used the gross split profit sharing system. Changing the contract system to a gross split is necessary for Indonesia to compete with other countries in attracting investors. With a gross split system where the administrative process is simple, investment costs are efficient, and regulations provide certainty, it has increased investor trust and confidence in Indonesia's oil and gas investment climate. During 2017-2018, KESDM successfully auctioned 14 (fourteen) oil and gas work areas with a gross split system. They then extended the contract in several terminated oil and gas blocks, also with a gross split system.⁴⁰

Gross Split Production Sharing Contract, as stipulated in the Minister of Energy and Mineral Resources Regulation 8 of 2017 and its amendments, fulfills the elements in Law No. 22 of 2001 concerning Oil and Natural Gas. It is related to fulfilling the formal aspects of the cooperation contract, where the concept of Gross Split is included in the definition. Government supervision in the Gross Split PSC model must comply with the provisions of Law No. 22 of 2001, which stipulates that the management and supervision of oil and gas resources are the state's authority. Article 4 of the Oil and Gas Law states that oil and gas are strategic natural resources controlled by the state. This supervision ensures that oil and gas management align with national interests and the Constitution. The distribution of benefits from the Gross Split PSC model must evaluate its impact on public welfare. According to Jeremy Bentham, the utilitarian principle, proposes that the law should achieve the

³⁸ Abidah B Setyowati and Jaco Quist, 'Contested Transition? Exploring the Politics and Process of Regional Energy Planning in Indonesia', *Energy Policy*, 165 (2022), 112980 <https://doi.org/https://doi.org/10.1016/j.enpol.2022.112980>

³⁹ Theresia B Sumarno, Parulian Sihotang, and Widhyawan Prawiraatmadja, 'Exploring Indonesia's Energy Policy Failures through the JUST Framework', *Energy Policy*, 164 (2022), 112914 <https://doi.org/https://doi.org/10.1016/j.enpol.2022.112914>

⁴⁰ Nadhilah Reyseliani, Akhmad Hidayatno, and Widodo Wahyu Purwanto, 'Implication of the Paris Agreement Target on Indonesia Electricity Sector Transition to 2050 Using TIMES Model', *Energy Policy*, 169 (2022), 113184 <https://doi.org/https://doi.org/10.1016/j.enpol.2022.113184>



greatest benefit for the most significant number of people. In this context, the purpose of the law is to realize justice and order that supports the prosperity and happiness of society. This legal theory emphasizes that the law must prioritize social welfare and reduce suffering. This principle is in line with Article 33 of the 1945 Constitution, which affirms the state's rights over natural resources and the state's obligation to increase the people's prosperity. State control over oil and gas as national wealth must be carried out in a manner that meets the criteria of social justice and economic sustainability.⁴¹

In some cases, the implementation of Gross Split PSC has resulted in increased operational efficiency and increased state revenue. However, field studies show that fiscal incentives that are not balanced with strict environmental regulations can lead to a decline in environmental quality around production sites. This imbalance is a pressing issue that needs to be addressed, as in some exploration areas, environmental degradation due to drilling and other supporting activities has increased along with the implementation of this model, indicating that the aspect of ecological justice has not been fully met.⁴²

Comparison of Production Sharing Contract Arrangements in the Mining Sector in Several Countries

Indonesia, initially used the Work Contract System in managing oil and gas resources. This system gives contractors the right to manage and operate mines, with the government receiving royalties and taxes from production. However, this system has several weaknesses, namely the lack of government control over the operating costs and investments made by contractors. In 1966, Indonesia introduced the Production Sharing Contract (PSC) model as an alternative to the Work Contract System. The PSC model, emphasizing sovereignty, allows the government to maintain sovereignty over oil and gas resources, with contractors acting as partners who share production. The government's increased control over the operating costs and investments made by contractors ensures that these costs are reasonable and efficient, providing a sense of security and stability in the management of resources.⁴³

In terms of state shareholders, PSC allows the state to be represented by a government-owned oil and gas company, while in the Contract of Work System, the contractor holds control. Regarding mine management, PSC allows the state to supervise oil and gas contractors, while the Contract of Work System eliminates the need for the state to pay Cost Recovery. Regarding finance, PSC allows the state to gain profits and share production, while the Contract of Work System provides royalties from tax revenues. Finally, in terms of law, PSC is considered complicated in procuring goods, and the increase in cost recovery is often not offset by the increase in oil and gas lifting, while in the Contract of Work System, management is in the

⁴¹ Andri D Setiawan and others, 'Evaluating Feed-in Tariff Policies on Enhancing Geothermal Development in Indonesia', *Energy Policy*, 168 (2022), 113164 <https://doi.org/https://doi.org/10.1016/j.enpol.2022.113164>

⁴² Alin Halimatussadiah and others, 'The Country of Perpetual Potential: Why Is It so Difficult to Procure Renewable Energy in Indonesia?', *Renewable and Sustainable Energy Reviews*, 201 (2024), 114627 <https://doi.org/https://doi.org/10.1016/j.rser.2024.114627>

⁴³ Setiawan and others.



hands of the contractor and the government has no authority to control. In addition to Indonesia, there are also fiscal-term regulations regarding oil and gas management in various countries; this can be seen through the explanation in Table 4.

Table 4. Comparison of Fiscal Terms in various countries

Aspect	China	India	Malaysia	Mexico	Brazil	Venezuela
Exploration Timeframe	5 years	5 years	5 years	7 years	7 years	10 years
Production Time Frame	Up to 15 years	Up to 20 years	Up to 20 years	20-30 years	20-30 years	20-30 years
Cost Recovery	Limited to 50% of gross revenue	There is no limit	Limited by Revenue/Cost ratio	There is a limit on the number of claims	There is a limit on the number of claims	There is a limit on the number of claims
Profit Share	Based on annual gross production	Based on investment increase (investment multiple)	Based on the variation of R/C ratio	Based on the contract agreement	Based on the contract agreement	Based on the contract agreement
Tax	33%	50%	45%	Varies by regulation and agreement	Varies by regulation and agreement	Varies by regulation and agreement

In Table 4, It can be understood that there are variations in the PSC system in several countries in the exploration and production period, cost recovery mechanism, profit sharing, and tax rates. In China, the exploration period lasts five years, the same as in India and Malaysia. Meanwhile, in Mexico and Brazil, the exploration period reaches seven years, and Venezuela applies ten years. China set it up to 15 years for the production period, while India and Malaysia set it up to 20 years. The production period is more extended in Mexico, Brazil, and Venezuela, between 20 and 30 years. While India does not set a limit for cost recovery, China limits the recovery to 50% of gross revenue. The revenue/cost (R/C) ratio is used to limit the cost recovery in Malaysia.

On the other hand, the number of claims that can be received within a certain period is limited in Mexico, Brazil, and Venezuela. In China, profit share is based on annual gross production, while in India, profit sharing is based on increased income from investment. In Malaysia, the R/C ratio system is applied, while in Mexico, Brazil, and Venezuela, profit sharing is based on an agreed contract. Finally, tax rates vary from country to country. For example, China sets a rate of 33%, India 50%, and Malaysia 45%. In Mexico, Brazil, and Venezuela, rates are adjusted according to the country's regulations and agreements in force. Lower tax rates tend to increase state revenues and attract investment.⁴⁴

⁴⁴ Muchammad Toyib and Nuri Herachwati, 'Navigating Uncertainty and Policy Alignment: Assessing BRIN's Role in Indonesia's Space Program', *Space Policy*, 2024, 101632 <https://doi.org/https://doi.org/10.1016/j.spacepol.2024.101632>



Implementation of Ecological Justice on Oil and Gas Fiscal-Term Regulations

The principle of ecological justice based on Pancasila demands that fiscal-term arrangements are not only based on economic interests, but must also pay attention to social and ecological justice. In this case, Pancasila justice emphasizes that every citizen has the right to benefit from the management of natural resources, and to be protected from the negative impacts caused by exploitation activities. Therefore, fiscal-term arrangements that only prioritize economic interests without considering social and ecological impacts will be contrary to the values of Pancasila. In its implementation, public participation is not just a key element, but a crucial one in realizing Pancasila justice. This participation, which includes community involvement in the policy-making process, especially those related to natural resource management, ensures that all voices are heard and considered. Communities living around oil and gas exploration and production sites must be given the right to participate in decision-making that affects their lives, especially in determining the allocation of benefits and in the process of monitoring the environmental impacts caused.⁴⁵

Although there has been progress in implementing the principle of ecological justice in oil and gas fiscal-term regulation, challenges still need to be addressed. The first challenge is the limited availability of accurate and transparent data on the environmental impacts of oil and gas activities. Without adequate data, it is not easy to objectively assess whether the principle of ecological justice has been met. The second challenge is the consistency of policies between the central and regional governments. Often, the fiscal policies implemented by the central government are outside the local needs and conditions, which can lead to conflicts between economic interests and environmental conservation at the local level. The third challenge is the capacity for supervision and law enforcement. The supervision of oil and gas policy implementation is often weak due to limited human resources and weaknesses in the law enforcement system. It opens up opportunities for contractors to not comply with environmental regulations, ultimately harming the surrounding community and environment.⁴⁶

The government needs to urgently improve oversight capacity by strengthening institutions responsible for monitoring oil and gas activities and their impacts on the environment.⁴⁷ This includes increasing the number and quality of supervisors, as well as developing a more sophisticated technology-based monitoring system to detect and address environmental violations in real time. Transparency in data management and reporting must be improved to ensure that communities and other stakeholders have full access to information on the environmental impacts of oil and gas activities. In addition, public participation mechanisms must be strengthened, so that communities can play an active role in decision-making and monitoring of oil and gas projects in their areas. There is an immediate need to harmonize fiscal and

⁴⁵ Intan Innayaton Soeparna and Ankiq Taofiqurohman, 'Transversal Policy between the Protection of Marine Fishery Resources and Fisheries Subsidies to Address Overfishing in Indonesia', *Marine Policy*, 163 (2024), 106112 <https://doi.org/https://doi.org/10.1016/j.marpol.2024.106112>

⁴⁶ Nur Khafifah Rusni and others, 'Seawater Desalination of Arid Regions: Comparing the Policy of the Kingdom of Saudi Arabia and Indonesia', *Chinese Journal of Population, Resources and Environment*, 22.2 (2024), 204–11 <https://doi.org/https://doi.org/10.1016/j.cjpre.2024.06.012>

⁴⁷ Safie and others.



environmental policies so that the goal of increasing state revenues does not conflict with the goal of environmental conservation. This can be done through the preparation of regulations that integrate the principles of ecological justice into the fiscal-term framework, as well as the development of fiscal incentives that encourage environmentally friendly practices in the oil and gas sector. The government needs to consider revising existing regulations, including the Oil and Gas Law and its derivative regulations, to include stronger provisions on environmental protection and the implementation of ecological justice. This revision must be carried out through an inclusive process, involving various stakeholders including the government, oil and gas companies, civil society, and academics.⁴⁸

A comprehensive and harmonious regulatory framework must support fiscal-term arrangements that consider ecological justice. Law Number 32 of 2009 concerning Environmental Protection and Management, for example, stipulates that every activity that has the potential to damage the environment must undergo an environmental impact analysis (AMDAL). This provision must be strictly implemented in the oil and gas sector, where every contractor must conduct an AMDAL before starting operations and implement the necessary mitigation measures to reduce negative environmental impacts. The amendment to Law Number 32 of 2009 concerning Environmental Protection and Management (PPLH) after the issuance of the Job Creation Law (UU CK) has significantly impacted the regulation of the oil and gas sector, especially in ecological justice and fiscal-term regulation. The Job Creation Law relaxes several environmental requirements, including the AMDAL procedure, which could impact the implementation of ecological justice in the oil and gas sector. Previously, the PPLH Law required every activity that had the potential to damage the environment, including oil and gas exploration and production, to go through a strict environmental impact analysis (AMDAL). It aligns with the principle of ecological justice, which emphasizes environmental protection and the community's right to a clean and healthy environment.⁴⁹

However, with the Job Creation Law, the AMDAL procedure has been simplified and accelerated, which raises concerns about the potential for lowering environmental protection standards. In the context of fair fiscal-term arrangements, these regulations must ensure that these changes do not come at the expense of ecological justice. For example, any relaxation in regulations must be balanced with stricter supervision and strict sanctions for violations. Strict implementation of AMDAL in the oil and gas sector must remain a priority, even though the Job Creation Law provides licensing facilities. The government and business actors must ensure that the mitigation measures needed to reduce negative impacts on the environment are implemented consistently so that oil and gas exploitation is economically profitable and in line with the principles of ecological justice. Thus, a comprehensive and harmonious regulatory framework between the PPLH Law and

⁴⁸ Atikah Mardhiya Rohmy, Hartiwiningsih, and I Gusti Ayu Ketut Rachmi Handayani, 'Judicial Mafia and Ecological In-Justice: Obstacles to Policy Enforcement in Indonesian Forest Management and Protection', *Trees, Forests and People*, 17 (2024), 100613 <https://doi.org/https://doi.org/10.1016/j.tfp.2024.100613>

⁴⁹ Romal Ramadhan and others, 'Carbon Capture, Utilization, and Storage in Indonesia: An Update on Storage Capacity, Current Status, Economic Viability, and Policy', *Energy Geoscience*, 5.4 (2024), 100335 <https://doi.org/https://doi.org/10.1016/j.engeos.2024.100335>



the Job Creation Law is essential to support ecologically fair fiscal-term arrangements in the oil and gas sector. It includes strict enforcement of regulations in environmental impact analysis and mitigation and ensuring that regulatory changes do not harm existing environmental protection efforts.⁵⁰

In addition, Law Number 22 of 2001 concerning Oil and Natural Gas also provides a basis for fiscal-term arrangements that pay attention to justice aspects. This law stipulates that the management of oil and gas resources must be carried out transparently and accountable, with attention to national interests, including environmental protection interests. In this case, a revision of the oil and gas law that emphasizes ecological justice principles is essential to strengthen the existing legal framework. Consistency between sectoral regulations is one of the biggest challenges in regulating oil and gas fiscal terms based on ecological justice. There is potential for overlap or even conflict between oil and gas policies and environmental policies, which can create legal uncertainty and hinder the implementation of ecological justice. For example, fiscal policies oriented towards increasing state revenues may sometimes align with environmental policies that focus on ecosystem conservation and preservation. Therefore, regulatory harmonization is needed through coordination between related government institutions and the alignment of policy objectives between the economic and environmental sectors.⁵¹

The concept of state control or the right to control the state in our constitutional provisions does not explain what form of state control is and whether the form of state control is included in the context of direct organization or management by the state through the establishment of state enterprises (BUMN) or is it only limited to regulation alone. In addition, the explanation of what branches of production are essential for the state and which control the livelihoods of many people needs to be clarified and firm. It needs to be emphasized what kind of economic system we adopt so that it can become a framework for national economic development policies that have often tickled our sense of sovereignty, namely, is it true that the economic system that we are currently implementing or practicing is more directed towards a liberal capitalist economic system that relies on market mechanisms. Then, the very significant problem is determining which branches of production are essential for the state and controlling the livelihoods of many people. Until now, there have been no provisions/references, so determining a branch of production that is important for the state and controls the livelihoods of many people is left to and depends on the government's view, regardless of the existence of a judicial review of the law to the Constitutional Court. This situation makes the principle of the right to control the state uncertain regarding implementing the people's sovereignty entrusted to the government as the holder of power on behalf of the people.⁵²

⁵⁰ Andhy Muhammad Fathoni, N Agya Utama, and Mandau A Kristianto, 'A Technical and Economic Potential of Solar Energy Application with Feed-in Tariff Policy in Indonesia', *Procedia Environmental Sciences*, 20 (2014), 89–96 <https://doi.org/https://doi.org/10.1016/j.proenv.2014.03.013>

⁵¹ Diane Kraal, 'Petroleum Industry Tax Incentives and Energy Policy Implications: A Comparison between Australia, Malaysia, Indonesia and Papua New Guinea', *Energy Policy*, 126.March 2018 (2019), 212–22 <https://doi.org/10.1016/j.enpol.2018.11.011>

⁵² Sugeng Mujiyanto and Günter Tiess, 'Secure Energy Supply in 2025: Indonesia's Need for an Energy Policy Strategy', *Energy Policy*, 61 (2013), 31–41 <https://doi.org/https://doi.org/10.1016/j.enpol.2013.05.119>



For this reason, clarity and firmness are needed in formulating production branches that are important for the country and control the livelihoods of many people. This provision needs to be regulated by a particular law, the Natural Resources Management Law, which covers all areas of natural resources that the state must control. With clear and firm regulations in the laws and regulations in question, it is hoped that public policies implemented by the government are by the economy based on people's economic democracy as regulated in Article 33 of the 1945 Constitution of the Republic of Indonesia. Indonesia needs foreign investment in oil and gas management. However, cooperation with foreign investors (contractors) must prioritize national interests based on the 1945 Constitution of the Republic of Indonesia, namely economic democracy based on the people's economy.⁵³

Article 33 of the 1945 Constitution of the Republic of Indonesia is not anti-capital but does not mean it recognizes capitalism. Article 33 of the 1945 Constitution of the Republic of Indonesia is the basis for exploiting natural resources in Indonesia. The context of "State Control Rights" is the basis for the state to have full power to manage Indonesia's resources.⁵⁴

Oil and gas are an essential branch of production for the state and control the livelihoods of many people, including natural resources controlled by the state. State control over Oil and Gas resources is reaffirmed in Article 4 of the Oil and Gas Law: "Oil and natural gas are strategic non-renewable natural resources contained in the Indonesian mining jurisdiction which are national wealth controlled by the state." Oil and Gas management policies that are by the spirit and soul of Article 33 of the 1945 Constitution of the Republic of Indonesia with the principle of the state's right to control oil and gas natural resources as national wealth are an integral part of the concept of people's sovereignty in the economic sector. Through this sovereignty, it is hoped that oil and gas can function as expected by building oil and gas independence to support sustainable development and realize people's welfare.⁵⁵

CONCLUSION

Based on the discussion above, the fiscal regulation of Indonesia's oil and gas sector is based on Article 33 of the 1945 Constitution, which gives full authority to the state to manage natural resources for the prosperity of the people. In this management, the principle of ecological justice is an essential basis that emphasizes the balance between economic exploitation and environmental preservation. There are three models of relations between the government and business actors in oil and gas management: Contractual, State-Owned Enterprises (BUMN), and permit regimes, with each having a different role in the division of power. Indonesia implements two central oil and gas management schemes, namely PSC Cost Recovery and Gross Split. Both differ

⁵³ Muhammad Indra Al Irsyad, Anthony Halog, and Rabindra Nepal, 'Estimating the Impacts of Financing Support Policies towards Photovoltaic Market in Indonesia: A Social-Energy-Economy-Environment Model Simulation', *Journal of Environmental Management*, 230 (2019), 464–73 <https://doi.org/https://doi.org/10.1016/j.jenvman.2018.09.069>

⁵⁴ Dewa Ayu Putu Eva Wishanti, 'Alleviating Energy Poverty as Indonesian Development Policy Inputs Post-2015: Improving Small and Medium Scale Energy Development', *Procedia Environmental Sciences*, 28 (2015), 352–59 <https://doi.org/https://doi.org/10.1016/j.proenv.2015.07.044>

⁵⁵ Rajbeer Singh and Andri D Setiawan, 'Biomass Energy Policies and Strategies: Harvesting Potential in India and Indonesia', *Renewable and Sustainable Energy Reviews*, 22 (2013), 332–45 <https://doi.org/https://doi.org/10.1016/j.rser.2013.01.043>



regarding the mechanism for reimbursing operational costs and sharing production results. BUMN is essential in the strategic sector, tasked with meeting the community's needs, which the private sector cannot yet handle. These regulations are regulated in the Oil and Gas Law and other regulations to ensure fair, efficient, and sustainable oil and gas management. PSC Cost Recovery is a system where contractors recover exploration and production costs after producing oil and gas with returns based on production volume. Although this model provides incentives for extensive exploration, there is a risk of inefficient spending and excessive cost claims that can burden the state. Strict government supervision is needed to prevent abuse and ensure environmental protection. Gross Split PSC, on the other hand, replaces the cost recovery system with a direct production sharing of gross revenues without cost recovery. This model simplifies administration and increases efficiency but places the burden of operational costs, including environmental costs, entirely on the contractor.

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