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Legal Review of the Implementation of Sustainable Business Principles in the Implementation Models of Carbon Trading in Indonesian Upstream Oil and Gas Industry

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ABSTRACT

The Upstream Oil and Gas (O&G) Industry faces various challenges in the national development revolution based on Sustainable Development and Green Economy in Indonesia. The Government of Indonesia has formulated a Carbon Economic Value (NEK) policy as one form of environmental economic policy instrument that can be utilized by Upstream O&G Companies. This policy can be implemented through the implementation of Carbon Trading. This study aims to determine the model for implementing Carbon Trading in the Upstream O&G Industry and to examine it based on the principles of Sustainable Business. The research was conducted using a normative legal method with a regulatory-legal approach and a conceptual approach that resulted in a legal analysis. The results of the study stated that the implementation of Carbon Trading in the Upstream O&G Industry can be carried out through the Emission Offset mechanism and is related to Carbon Capture and Storage (CCS) business activities and Carbon Capture, Utilization and Storage (CCUS) business activities. In addition, the implementation of Carbon Trading can realize the implementation of Sustainable Business principles in line with the Triple Bottom Line (TBL) and Environmental, Social, and Governance (ESG) approaches in business activities carried out by Upstream O&G Companies.

Keywords: sustainable business; upstream oil and gas industry; carbon trading.

INTRODUCTION

Carbon Trading is one of the mechanisms for implementing the Carbon Economic Value (CEV)/carbon pricing policy in Indonesia. According to the UNFCCC, CEV is defined as follows: "Carbon pricing curbs greenhouse gas emissions by placing a fee on emitting and/or offering an incentive for emitting less." (Carbon economic value is an instrument that limits greenhouse gas emissions by imposing a fee for emissions and/or offering

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incentives for reduced emissions.)[1] In Indonesia, the CEV policy is regulated by Presidential Regulation Number 98 of 2021 concerning the Implementation of Carbon Economic Value for Achieving Nationally Determined Contribution Targets and Controlling Greenhouse Gas Emissions in National Development ("Presidential Regulation Number 98 of 2021") and Regulation of the Minister of Environment and Forestry Number 21 of 2022 concerning the Implementation Procedures for Carbon Economic Value ("Ministerial Regulation of Environment and Forestry Number 21 of 2022"). In addition, several implementing regulations derived from these regulations have also been established through legislation.

The CEV policy is one of the Indonesian Government's efforts to address climate change issues. The Indonesian Government has committed to the Paris Agreement through the Nationally Determined Contribution of the Republic of Indonesia document, which states a national emission reduction target of 29% unconditionally and 41% conditionally by 2030,[2] Furthermore, Indonesia has increased its commitment as outlined in the Enhanced Nationally Determined Contribution of the Republic of Indonesia document, which states an emission reduction target of 31.89% unconditionally and 43.20% conditionally.[3] Assigning economic value to carbon units is considered a way to achieve these targets through the implementation of climate change mitigation and adaptation actions.[4] The application of the CEV policy aims to foster climate resilience in line with Indonesia's current national development priorities.

Indonesia's national development is fundamentally focused on promoting sustainability and environmental awareness. Article 33, Paragraph (4) of the 1945 Constitution states:

> "*The national economy shall be organized based on economic democracy with the principles of togetherness, equitable efficiency, sustainability, environmental insight, independence, and by maintaining the balance of progress and national economic unity*."

This constitutional mandate requires that economic activities and development in Indonesia be carried out on the basis of sustainability and environmental consciousness. Additionally, Presidential Regulation Number 18 of 2020 on the National Medium-Term Development Plan (RPJMN) for 2019–2024 ("Presidential Regulation Number 18 of 2020") outlines seven national development agendas that incorporate the principles of

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[1] UNFCCC, "About Carbon Pricing", *UNFCCC Website,* <https://unfccc.int/about-us/regional-collaboration-centres/the-ciaca/about-carbon-pricing#How-does-carbon-pricing-work?->, [Accessed May 31, 2024]

[2] Kementerian Lingkungan Hidup dan Kehutanan, (2021), *Updated Nationally Determined Contribution Republic of Indonesia*, p. 1.

[3] Kementerian Lingkungan Hidup dan Kehutanan, (2022), *Enhanced Nationally Determined Contribution Republic of Indonesia*, p. 1

[4] Bagian Konsideran Perpres Nomor 98 Tahun 2021

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sustainability and environmental awareness.[5] In addition, several development concepts, such as Sustainable Development and the Green Economy, are also integrated into the current national development framework. These concepts serve as the foundation for the Indonesian Government in determining the direction of national development.

In implementing these national development concepts, the Indonesian Government focuses on strategic industrial sectors. The energy sector, including the upstream oil and gas industry, is one of the largest contributors to emissions in Indonesia and tends to have a negative impact on the environment.[6]

This situation necessitates that the Indonesian Government review and formulate various policies for the upstream oil and gas industry to align its business activities with sustainable and environmentally conscious national development concepts. Additionally, the Government of Indonesia has established the energy transition agenda as one of the key policies in the energy sector, outlined in the current national development plan. This energy transition agenda focuses on efforts to replace fossil fuel energy derived from oil, gas, and coal with the use of New and Renewable Energy (NRE).[7] On the other hand, the upstream oil and gas industry plays a significant role in Indonesia's economy. The energy needs of the Indonesian population are still heavily reliant on, and dominated by, fossil fuels derived from oil and gas.[8]

It is a new challenge for the Indonesian Government to balance two aspects: fulfilling national energy security while also ensuring sustainability in national energy management. This also presents a challenge for upstream oil and gas companies engaged in the exploration and exploitation of oil and gas resources in Indonesia. These companies are expected to undergo business transformation in line with the national development agenda, aligned with Sustainable Development and the Green Economy, while also being tasked with maintaining national energy security. There are several risks and challenges faced by upstream oil and gas companies as a result of the implementation of Indonesia's current national development concepts, as follows:

[5] Lampiran Peraturan Presiden Nomor 18 Tahun 2020, p. I.16.
[6] Tania Sitivani Pangestu, Edy Soesanto, (2023), "Analisis Berbagai Dampak Dari Kebijakan Sektor Migas di Perusahaan Pertamina", *Jurnal Mahasiswa Kreatif,* 1 (4), p. 27.
[7] Kiki Apriliyanti, Darlin Rizki, (2023), "Kebijakan Energi Terbarukan: Studi Kasus Indonesia dan Norwegia Dalam Pengelolaan Sumber Energi Berkelanjutan", *Jurnal Ilmu Pemerintah Widya Praja,* 49 (2), p. 186.
[8] Vita Puji Lestari, (2021), "Permasalahan dan Tantangan Program Peningkatan Kontribusi Energi Baru dan Terbarukan dalam Bauran Energi Nasional", *Pusat Kajian Akuntabilitas Keuangan Negara Badan Keahlian Dewan DPR RI*, p. 1.

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Table 1: Risks and Challenges for Upstream Oil and Gas Companies in National Development Based on Sustainable Development and the Green Economy

Risk	Challenge
Legal/Compliance Risk	National development based on Sustainable Development and the Green Economy may impose new obligations on upstream oil and gas companies, related to compliance with applicable regulations in Indonesia.
Financing Risk	National development based on Sustainable Development and the Green Economy may create new challenges in financing/investment for upstream oil and gas companies. This is due to the current focus on financing investments that support environmental sustainability in Indonesia.
Business Risk	National development based on Sustainable Development and the Green Economy may present business challenges for upstream oil and gas companies due to the energy transition agenda towards New and Renewable Energy (NRE).

Source: Author

To address these issues, an economic instrument is needed to support the business transformation of upstream oil and gas companies in the era of Sustainable Development. Based on Article 42, Paragraph (1) in conjunction with Article 1, Number 33 of Law No. 32 of 2009 concerning Environmental Protection and Management as last amended ("Environmental Protection and Management Law" or "UU PPLH"), the Government of Indonesia is developing environmental economic instruments, which are a set of economic policy tools aimed at environmental preservation. Furthermore, the provisions concerning environmental economic instruments are regulated through Government Regulation No. 46 of 2017 on Environmental Economic Instruments as last amended ("Government Regulation No. 46 of 2017"). According to Article 3 of Government Regulation No. 46 of 2017, environmental economic instruments include provisions on development planning and economic activities, environmental funding, and incentives and/or disincentives. These environmental economic instruments are implemented as part of the Green Economy concept, in line with the Sustainable Development concept within the national economy.

The CEV policy is one form of environmental economic instrument that can be implemented through various mechanisms, as outlined in Article 47, Paragraph (1) of Presidential Regulation No. 98 of 2021. These mechanisms include Carbon Trading, Performance-Based Payments, Carbon Levies, and other mechanisms in line with the

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developments in science and technology. In this context, Carbon Trading, as one of the mechanisms for implementing the CEV, becomes a form of environmental funding based on a new funding scheme regulated by the Government of Indonesia, as stipulated in Article 27, Paragraph (3) of Government Regulation No. 46 of 2017.

Based on the background, two key problems can be formulated: First, how is the model for implementing Carbon Trading in the Upstream Oil and Gas Industry (Migas) based on Indonesian law? Second, how are the principles of Sustainable Business realized in the implementation of Carbon Trading in the Upstream Oil and Gas Industry (Migas) according to Indonesian law? This research will address these issues by analyzing the application of the CEV policy, specifically concerning the implementation of Carbon Trading by upstream oil and gas companies, in order to realize Sustainable Business practices based on Indonesian law.

RESEARCH METHOD

This research employs a normative legal method, aimed at identifying legal rules, legal principles, and legal doctrines to solve the legal issues at hand.[9] This research utilizes a legislative approach and a conceptual approach in presenting the analysis. Additionally, the research uses a descriptive-analytical specification, which will examine the concepts contained within the provisions of laws and regulations and their application in legal practice.[10]

This research will examine secondary data through a literature review of the following materials: **Primary legal materials**, consisting of relevant regulations and legislation; **Secondary legal materials**, including previous legal research and scholarly legal works; **Tertiary legal materials**, consisting of non-legal research or relevant scholarly works. Once these materials are gathered and processed, a qualitative legal analysis will be conducted to provide answers to the legal issues discussed in this research.

DISCUSSION

Model for Implementing Carbon Trading in the Upstream Oil and Gas Industry Based on Indonesian Law

According to Article 1, Number 17 of Presidential Regulation No. 98 of 2021, Carbon Trading is a market-based mechanism aimed at reducing Greenhouse Gas Emissions ("GHG Emissions") conducted through the buying and selling of carbon units.

[9] Peter Mahmud Marzuki, (2005), *Penelitian Hukum: Edisi Revisi*, Jakarta: Kencana Prenada Media Group, p. 47
[10] Johnny Ibrahim, (2005), *Teori dan Metode Penelitian Hukum Normatif*, Malang: Bayumedia Publishing, p. 256-257.

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Carbon Trading is seen as one of the most beneficial ways to implement GHG emission control without harming the competitiveness of industries.[11]

The concept of Carbon Trading can simply be described as a buying and selling transaction between a seller of carbon units and a buyer of carbon units. Therefore, Carbon Trading is also referred to as a market-based mechanism because its value is influenced by market dynamics.

In order to provide legal certainty for the implementation of Carbon Trading in Indonesia, the Indonesian Government has established various provisions within a comprehensive legal framework. Several laws and implementing regulations that govern the implementation of Carbon Trading can be outlined as follows.

Table 2: Legal Framework for Carbon Trading in Indonesia

Regulation	Provision
Law No. 32 of 2009 on Environmental Protection and Management as last amended	This regulation governs the development and implementation of environmental economic instruments for environmental preservation.
Law No. 4 of 2023 on the Development and Strengthening of the Financial Sector	This regulation provides the foundation for implementing Carbon Trading through the Carbon Exchange and the organization of sustainable finance.
Government Regulation No. 46 of 2017 on Environmental Economic Instruments as last amended	This regulation governs Carbon Trading as one the environmental economic instruments, which can serve as a source of environmental funding.
Presidential Regulation No. 98 of 2021 on the Implementation of Carbon Economic Value for Achieving Nationally Determined Contributions (NDC) and Greenhouse Gas Emission Control in National Development	This regulation governs efforts to achieve Indonesia's NDC targets, general provisions on the implementation of Carbon Economic Value, transparency framework, monitoring and evaluation, as well as guidance and funding.
Minister of Environment and Forestry Regulation No. 21 of 2022 on the Implementation of Carbon Economic Value	This regulation governs the procedures for Carbon Trading, Performance-Based Payments, Carbon Levies, other mechanisms for implementing Carbon Economic Value, measurement, reporting, and verification, management of the National Registry System for Climate Change Control (SRN PPI), GHG emission reduction certification, management of Carbon Trading funds, participation of stakeholders, as well as policy monitoring and evaluation.
Financial Services Authority Regulation No. 14 of 2023 on Carbon Trading Through the Carbon Exchange (POJK No. 14 of 2023)	This regulation governs the requirements for Carbon Trading through the Carbon Exchange, including provisions on the Carbon Exchange operator, supervision of the Carbon Exchange, and sanctions. It also mandates that the Carbon Exchange operator

[11] Bruno Zeller, (2012), "Systems of Carbon Trading", *Touro Law Review*, 25 (3), p. 941.

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	(PT Bursa Efek Indonesia) regulate technical aspects of Carbon Trading through the Carbon Exchange.
Decree of the Board of Directors of the Indonesia Stock Exchange ("SK Direksi BEI")	The Decree regulates technical matters related to Carbon Trading through the Carbon Exchange, such as trading supervision, user requirements for the Carbon Exchange, registration of carbon units, and the trading of carbon units.

This table outlines the key regulations establishing the legal framework for Carbon Trading in Indonesia.

Source: Processed by the Author Based on Relevant Laws and Their Implementing Regulations.

Upon closer examination, the subject's authorised to conduct Carbon Trading is not specifically regulated at the time. According to Article 46, Paragraph (2) of Presidential Regulation No. 98 of 2021, it is stated that the implementation of the Carbon Economic Value (NEK) can be carried out by ministries/agencies, local governments, business actors, and the public. Furthermore, Article 51, Paragraph (2) of Presidential Regulation No. 98 of 2021 states that Carbon Trading is conducted through the transfer of carbon units between business actors. In the provisions concerning Emission Trading and Emission Offsets, the subject of Carbon Trading is referred to with the nomenclature "Business Actors" and "businesses/and/or activities."

Thus, it is understood that Carbon Trading can be conducted by business actors under the relevant regulations in Indonesia. However, business actors must also comply with implementing regulations that set out more specific requirements.

When discussing the fundamental mechanisms and implementation of Carbon Trading, Carbon Trading can be carried out through two main mechanisms: Emission Trading and Emission Offsetting. According to Article 50, Paragraph (1) in conjunction with Article 1, Number 18 of Presidential Regulation No. 98 of 2021, Emission Trading is conducted through a buying and selling transaction between business actors who have a determined emission cap set by the government. In the Emission Trading mechanism, transactions can be made for the Technical Approval of Emission Cap ("PTBAE") for business actors ("PTBAE-PU") at the beginning of the regulatory period, the remaining emission quota of PTBAE-PU at the end of the regulatory period, and the Greenhouse Gas Emission Reduction Certificate ("SPE-GRK") for cross-sector trading as regulated in Articles 11, 12, Paragraph (6), and 13, Paragraph (5) of the Minister of Environment and Forestry Regulation No. 21 of 2022.

Meanwhile, based on Article 52, Paragraph (1) in conjunction with Article 1, Number 19 of Presidential Regulation No. 98 of 2021, Emission Offsetting is carried out by a business/activity that does not have an emission cap by compensating the

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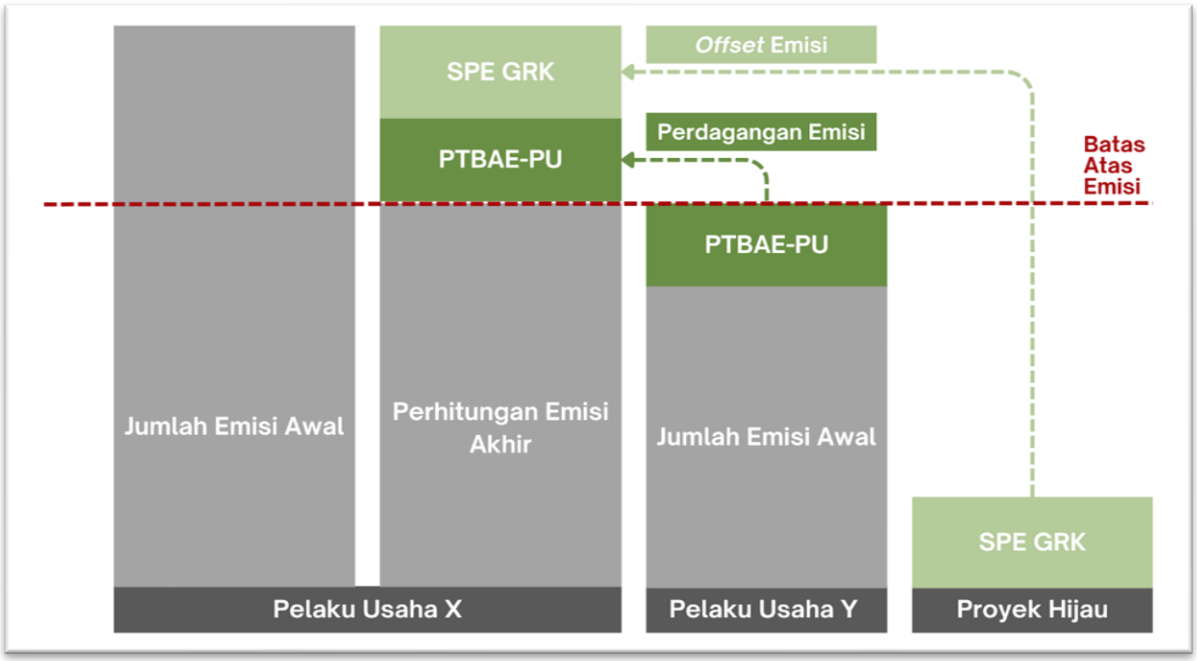
emissions generated through efforts and/or activities to reduce GHG emissions. In the Emission Offsetting mechanism, transactions are conducted through the buying and selling of SPE-GRK.

To better understand the basic mechanism of Carbon Trading, a simulation of the process can be viewed in the following image:

Figure 1: Simulation of Carbon Trading in Indonesia



Source: Processed by the Author Based on Relevant Laws and Regulations

Through this simulation, one can understand the notable differences between Carbon Trading with the mechanisms of Emission Trading and Emission Offsetting. Nevertheless, both mechanisms provide benefits to their respective parties. For the sellers of carbon units, Carbon Trading generates economic value from emission reduction performance or green projects. On the other hand, for the buyers of carbon units, it helps reduce their carbon footprint, serves as a compliance tool in environmental management, and reflects their commitment to supporting Sustainable Development.

Furthermore, Carbon Trading as one of the mechanisms for the implementation of NEK is carried out in sectors and sub-sectors as regulated in Article 46, Paragraph (1) of Presidential Regulation No. 98 of 2021. The Upstream Oil and Gas Industry (Industri Hulu Migas) is one of the industries classified under the energy sector in the implementation of NEK. The Upstream Oil and Gas Industry is now facing new challenges and opportunities in efforts to reduce its carbon footprint through Carbon

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Trading. As one of the sectors with significant environmental impact, this industry is beginning to actively participate in the Carbon Trading mechanism to offset the emissions it generates. The management of the Upstream Oil and Gas Industry is related to the management of natural resources, which necessitates the issuance of various policies by the state to primarily support and accommodate oil and gas exploration and exploitation activities.[12]

Various policies are implemented to provide legal certainty and benefits to the country, as the Upstream Oil and Gas Industry is directly linked to Indonesia's natural resources and wealth. Moreover, oil and gas are non-renewable natural resources, which further underscores the need for companies in the Upstream Oil and Gas sector to pay closer attention to environmental aspects in their operations. The increasing awareness of climate change due to the activities of the Upstream Oil and Gas Industry has raised demands for more sustainable management of oil and gas resources. In the context of conserving limited natural resources, the management of the Upstream Oil and Gas Industry must be directed towards efficient, effective, and prudent utilization.[13]

In relation to the Upstream Oil and Gas Industry, the Net Zero Emission targets, which are currently a global and national focus, are driving significant changes in the national energy investment landscape. With increasingly stringent environmental regulations and rising awareness about climate change, the Upstream Oil and Gas Industry is under pressure to reduce its carbon footprint and innovate in its operations. Upstream Oil and Gas companies are now competing with the rapidly growing Renewable Energy (EBT) sector, which offers environmentally friendly solutions and sustainability standards.[14]

In relation to the implementation of Carbon Trading in the Upstream Oil and Gas Industry, the Emission Offset mechanism is currently the most feasible option. This is because the Upstream Oil and Gas Industry does not yet have clearly defined and technically measurable emission limits. The absence of regulations regarding the Technical Emission Limit Agreement (PTBAE) for the Upstream Oil and Gas Industry means that the implementation of the Emission Trading mechanism cannot yet be carried out. Therefore, Upstream Oil and Gas companies can contribute to reducing

[12] Sahat Aditua, Aries Tri, (2011), Kebijakan Sektor Hulu dan Hilir Gas Bumi Dalam Rangka Memenuhi Kebutuhan Dalam Negeri", *Jurnal Ekonomi & Kebijakan Publik*, 2 (1), p. 535.
[13] Ibr. Supancana, (2009), *Laporan Tim Analisa dan Evaluasi Hukum Hak Penguasaan Negara Terhadap Sumber Daya Alam (UU Migas)*, Jakarta: Badan Pembinaan Hukum Nasional, p. 37.
[14] Arthur Gideon, "Tantangan Sektor Migas di Indonesia, Salah Satunya Bersaing dengan EBT", Liputan 6, <https://www.liputan6.com/bisnis/read/5086832/tantangan-sektor-migas-di-indonesia-salah-satunya-bersaing-dengan-ebt>, accessed September 18, 2024.

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GHG emissions through the Emission Offset mechanism while awaiting more specific regulations for their sector.

In addition, it is important to understand that Carbon Trading originates from global commitments to address global warming, and thus it can be implemented both domestically and internationally as regulated under Article 48 of Presidential Regulation No. 98 of 2021. This creates more complex challenges and opportunities in the implementation of Carbon Trading. Businesses need to consider provisions related to both domestic and international implementations. Particularly for international Carbon Trading, there are specific provisions regarding mutual recognition and the calculation of Indonesia's NDC achievement targets as regulated in Article 77 of Presidential Regulation No. 98 of 2021. In relation to the implementation of Carbon Trading in the Upstream Oil and Gas Industry, this could be a positive opportunity by creating a broader market potential.

Carbon Trading continues to evolve with the improvement of infrastructure and adequate facilities in Indonesia. In fact, Carbon Trading is currently conducted through two platforms: the Carbon Exchange and Direct Trading. According to Article 27 of the Minister of Environment and Forestry Regulation No. 21 of 2022, Carbon Trading through the Carbon Exchange is organized through the IDX Carbon system, which is operated by the Indonesia Stock Exchange (IDX). Meanwhile, Direct Carbon Trading is conducted directly between sellers who own carbon units and buyers who require them, as explained in the definition of Direct Trading outlined in Article 1, Paragraph 21 of the same regulation.

In relation to its implementation in the Upstream Oil and Gas Industry, Upstream Oil and Gas Companies can engage in Carbon Trading through either the Carbon Exchange or Direct Trading. Both platforms can facilitate the effectiveness and efficiency of the process; however, the choice of the appropriate method depends on the evaluation and decisions of the respective parties. By conducting careful assessments, Upstream Oil and Gas Companies can maximize the benefits of Carbon Trading and more effectively support climate change mitigation efforts, in accordance with Indonesian law.

Furthermore, to ensure the successful implementation of the NEK policy, including Carbon Trading, full transparency is required in the process of recording and reporting all actions taken.[15] This transparency is essential to maintain trust among stakeholders, ensure accountability, and enable accurate monitoring of carbon emissions reductions. It also facilitates compliance with national and international climate targets,

[15] Linda Yanti S. Louie Buana, (2023), "Legal Analysis on President Regulation on Carbon Pricing in Indonesia", *NUS Law Working Paper*, 23 (2), p. 8.

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such as Indonesia's Nationally Determined Contributions (NDCs). Additionally, clear and transparent reporting ensures that businesses, including Upstream Oil and Gas companies, can demonstrate their contributions to reducing greenhouse gas emissions, thereby enhancing their commitment to sustainability and supporting long-term environmental goals.

Based on Article 60 of Presidential Regulation No. 98 of 2021, the recording and reporting of the implementation of NEK in Indonesia are conducted through the mechanisms of Measurement, Reporting, and Verification, the recording mechanism in the National Climate Change Registry System, and the certification mechanism for Greenhouse Gas (GHG) emission reduction. Furthermore, the provisions regarding these three mechanisms for the transparency framework of NEK implementation are regulated by Presidential Regulation No. 98 of 2021 and Minister of Environment and Forestry Regulation No. 21 of 2022, as outlined below:

a. **Measurement, Reporting, and Verification (MRV)**

1) **Measurement** is carried out to obtain data on the amount of GHG emissions or GHG absorption as well as the amount of GHG emission reductions or increased GHG absorption as stipulated in Article 65 of Presidential Regulation No. 98 of 2021. In the implementation of Carbon Trading, the measurement is done on the amount of GHG emissions for each period.
2) **Reporting** is conducted by submitting the results of NEK implementation in the form of a report containing both general and technical data as stipulated in Article 66 of Presidential Regulation No. 98 of 2021. In the implementation of Carbon Trading, the measured amount of GHG emissions is reported to the relevant authorities.
3) **Verification** is conducted to examine the reports that have been submitted. In the implementation of Carbon Trading, the amount of GHG emissions must include verification by an independent validator and verifier as stipulated in Article 68 of Presidential Regulation No. 98 of 2021.

b. National Registry System for Climate Change Mitigation (SRN PPI)

After going through the MRV process, the results of NEK implementation will be recorded and reported through the SRN PPI in accordance with applicable laws and regulations. As the basis for the government's recognition of efforts to control climate change, including NEK, SRN PPI serves as a comprehensive data and information centre.[16] This system is managed by the Ministry of Environment and Forestry and ensures transparency and accountability in data reporting. All

[16] Abdul Karim, (2024), "Tinjauan Yuridis Tata Niaga Perdagangan Karbon Melalui Bursa Karbon", *Jurnal Riset Indragiri,* 3 (1), p. 16.

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information related to NEK can be accessed by the public through the website https://srn.menlhk.go.id/. SRN PPI is also used for the recording of Carbon Units in Indonesia.

c. Greenhouse Gas (GHG) Emission Reduction Certification

The implementation of NEK requires certification as accurate proof. Various administrative processes are needed for the issuance of GHG emission reduction certification. In Indonesia, the certification of GHG emission reduction is conducted through the mechanism of issuing SPE-GRK (Emission Reduction Certificate). According to Article 1, Number 18 of Presidential Regulation No. 98 of 2021, SPE-GRK is a certificate that proves the reduction of emissions from efforts and/or activities that have undergone the MRV process and been recorded in the SRN PPI. Furthermore, based on Article 61, Paragraph (1) of Minister of Environment and Forestry Regulation No. 21 of 2022, SPE-GRK is issued for the following NEK performance: (1) Performance from the remaining PTBAE-PU; and (2) Performance in reducing GHG emissions. In addition to issuing SPE-GRK, GHG emission reduction certification can also be issued by other certification bodies equivalent to SPE-GRK through the mutual recognition mechanism, as regulated in applicable laws. In the context of Carbon Trading, the certified carbon units resulting from this certification can be traded.

The transparency framework mechanism needs to be understood and adhered to by oil and gas upstream companies in the implementation of carbon trading in the upstream oil and gas industry. Carbon units in carbon trading cannot be traded indiscriminately. Therefore, the transparency framework mechanism is essential for ensuring the proper execution of carbon trading.[17]

Recently, the government has issued policies regarding environmentally friendly technology-based business activities, namely Carbon Capture and Storage (CCS) and Carbon Capture, Utilization, and Storage (CCUS). These policies are regulated through Presidential Regulation No. 14 of 2024 concerning the Implementation of Carbon Capture and Storage Activities ("Presidential Regulation No. 14 of 2024") and the Minister of Energy and Mineral Resources Regulation No. 2 of 2023 concerning the Implementation of Carbon Capture and Storage, as well as Carbon Capture, Utilization, and Storage in Upstream Oil and Gas Business Activities ("Minister of ESDM Regulation No. 2 of 2023"). The purpose of this policy is to encourage businesses in certain sectors

[17] Ach Fais, Mochammad Irfandianto, Bhim Prakoso, (2023), "Kebijakan Hukum Bursa Karbon Terhadap Perkembangan Green Investment di Indonesia", *Lex Economica Journal,* 01 (02), p. 24.

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to carry out projects with high efficiency without damaging non-renewable natural resources.[18]

CCS/CCUS business activities can be carried out by Upstream Oil and Gas Companies in their business operations. According to Article 1, Number 10 of Minister of Energy and Mineral Resources Regulation No. 2 of 2024, CCS is a business activity that includes the capture of Carbon and/or the transportation of captured Carbon, injection, and permanent storage of Carbon into the Injection Target Zone safely and in accordance with good engineering practices. Meanwhile, according to Article 1, Number 11 of Minister of Energy and Mineral Resources Regulation No. 2 of 2024, CCUS refers to a series of activities aimed at reducing GHG Emissions, including the capture of Carbon Emissions and/or the transportation of captured Carbon Emissions, utilization of captured Carbon Emissions, and storage into the Injection Target Zone safely and permanently according to good engineering practices.

The implementation of CCS/CCUS business activities in Indonesia, especially in the Upstream Oil and Gas Industry, has the potential to provide significant economic benefits by creating new business activities in the low-carbon technology sector. In addition, this technology can reduce international pressure related to climate change commitments and help Indonesia achieve its emission reduction targets.[19] Furthermore, in terms of environmental protection, CCS/CCUS technology can reduce the negative impact of industries that are heavily reliant on fossil fuels and help mitigate carbon emissions that contribute to global climate change.[20]

Returning to the discussion on the implementation of Carbon Trading in the Upstream Oil and Gas Industry, several models of implementation can be adopted. The model for Carbon Trading in the Upstream Oil and Gas Industry has become a particular focus in supporting efforts to reduce GHG emissions.[21] This relates to efforts to reduce GHG emissions and the implementation of CCS/CCUS activities by Upstream Oil and Gas Companies. Based on an analysis of the existing laws and regulations, Carbon

[18] Fiqya Fairuz Zaemi, Rian Cahya Rohmana, (2021), "*Carbon Capture, Utilization, and Storage* (CCUS) untuk Pembangunan Berkelanjutan: Potensi dan Tantangan di Industri Migas Indonesia", *Prosiding Seminar Nasional Teknik Lingkungan Kebumian III*, p. 16.
[19] Anindya Adiwardhana, (2023), "Penggunaan Teknologi CCS/CCUS Untuk Mendukung Penurunan Emisi GRK Sektor Energi", *Buletin Pertamina Energy Institute*, 9 (2), p. 133.
[20] Kementerian Energi dan Sumber Daya Mineral, "*Carbon Capture and Storage (3): Sistem Penangkapan CO2*",<https://www.esdm.go.id/id/media-center/arsip-berita/carbon-capture-and-storage-3-sistem-penangkapan-co2>, accessed September 18, 2024.
[21] Wilda Prihatiningtyas, (et al), (2023), "Perspektif Keadilan Dalam Kebijakan Perdagangan Karbon (*Carbon Trading*) di Indonesia sebagai Upaya Mengatasi Perubahan Iklim", *Refleksi Hukum: Jurnal Ilmu Hukum,* 7 (2), p. 164.

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Trading in the Upstream Oil and Gas Industry can be implemented through models that are detailed as follows:

First, Carbon Trading as a market-based mechanism allows Upstream Oil and Gas Companies to reduce their GHG emissions footprint by acting as buyers of carbon credits. To date, there is no established PTBAE (Emission Ceiling Technical Approval) for the Upstream Oil and Gas Industry, so the target for emission reductions is based on the Baseline Business as Usual (BAU) GHG emissions, which represents the estimated emissions levels in certain sectors. In this case, Upstream Oil and Gas Companies cannot engage in Carbon Trading through Emission Trading but can still participate in Offset Emission activities. Through the Offset Emission mechanism, these companies can balance their emissions by purchasing carbon credits from projects that support emission reductions or carbon sequestration, such as reforestation, renewable energy, or emission reduction projects in other sectors.[22] Offset Emissions provide flexibility for Upstream Oil and Gas Companies that face challenges in directly reducing emissions from their operations. By purchasing carbon credits, these companies can offset the emissions they produce and still comply with regulations regarding emission reductions. Upstream Oil and Gas Companies often contribute significantly to GHG emissions through their operations, which is why regulations and the Carbon Trading mechanism become important instruments in achieving better environmental targets. This allows these companies to balance their carbon footprint while contributing to the broader goal of mitigating climate change.[23] In relation to the Upstream Oil and Gas Industry, the Indonesian Government has also emphasized the importance of reducing emissions through the Carbon Trading mechanism. [24] Moreover, Upstream Oil and Gas companies must monitor and report emissions from their operations through a Sustainability Report, which is prepared annually.

[22] Antara, "Menteri ESDM Sebut Perdagangan Karbon Upaya Pemerintah Kurangi Emisi", <https://www.antaranews.com/berita/3918636/menteri-esdm-sebut-perdagangan-karbon-upaya-pemerintah-kurangi-emisi>, accessed September 18, 2024.
[23] Wilda Prhatiningtyas, *Op. Cit.,* p. 167.
[24] Hukumonline, "Kementerian ESDM Persiapkan Aturan Baru Soal Perdagangan Karbon untuk Kegiatan CCS/CCUS",<https://pro.hukumonline.com/legal-intelligence/a/kementerian-esdm-persiapkan-aturan-baru-soal-perdagangan-karbon-untuk-kegiatan-ccs-ccus-lt66cc404cd21f8/>, accessed September 18, 2024.

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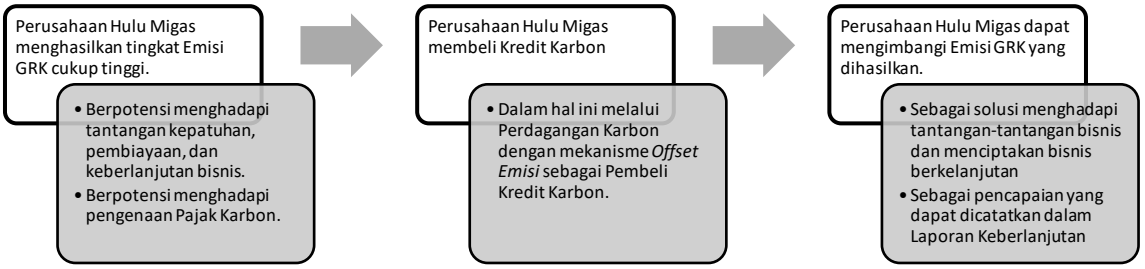
Figure 2: Carbon Trading Model in the Upstream Oil and Gas Industry as Carbon Credit Buyer."



Source: Processed by the Author Based on Applicable Laws and Regulations.

Second, Carbon Trading supports and encourages upstream oil and gas companies to invest in low-carbon technologies, such as clean energy and operational efficiency improvements, in order to reduce emissions and gain economic benefits from Carbon Trading. This is in line with the implementation of CCS/CCUS business activities. These technologies are considered one of the main solutions for reducing GHG emissions in sectors that are difficult to decarbonize, including the upstream oil and gas industry.[25] However, the implementation of CCS/CCUS faces a major challenge in the form of significant cost burdens.[26] To address this, the Carbon Trading mechanism is introduced as a solution, with the integration of CCS/CCUS technology. In the upstream oil and gas industry, Carbon Trading is linked to CCS/CCUS projects that capture and store carbon from exploration and exploitation activities. Upstream oil and gas companies that successfully reduce GHG emissions beyond the established limit can sell carbon credits to other companies. The Carbon Trading model supported by CCS/CCUS offers a solution for upstream oil and gas companies to reduce emissions while maintaining economic sustainability.[27]

[25] Ahmad Wisnu Prasetyo, Jaka Windarta, (2022), "Pemanfaatan Teknologi Carbon Capture Storage (CCS) dalam Upaya Mendukung Produksi Energi yang Berkelanjutan", *JEBT: Jurnal Energi Baru & Terbarukan*, 3 (3), p. 237.
[26] Stefanny Rizika Amina, Amanda T Deborah, Muhammad D Wajdi, (2022), "Analisis *Carbon Capture Storage* dari Eksplorasi Migas Dalam Mencapai *Sustainable Development Goals*", *JGE (Jurnal Geofisika Eksplorasi)*, 8 (1), p. 54.
[27] Anindya Adiwardhana, *Op. Cit.*

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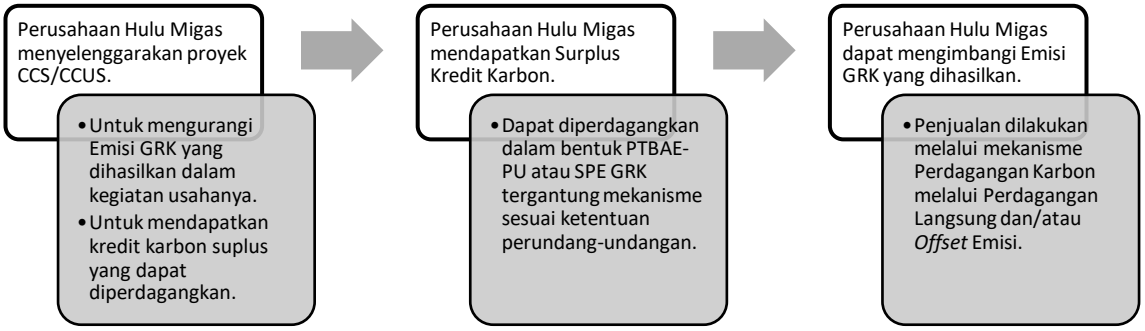
Figure 3: Carbon Trading Model in the Upstream Oil and Gas Industry as a Carbon Credit Seller.



Source: Processed by the Author Based on Legislation.

The Implementation of Sustainable Business Principles in the Carbon Trading Mechanism in the Upstream Oil and Gas Industry Based on Indonesian Law

Currently, the Indonesian government is focusing on achieving the Sustainable Development Goals ("SDGs") as a primary agenda in Indonesia's national development, representing a commitment to sustainable economic growth. According to Article 1, Paragraph (1) of Presidential Regulation Number 111 of 2022 concerning the Implementation of Achieving the Sustainable Development Goals ("Presidential Regulation No. 111 of 2022"), the Sustainable Development Goals are defined as a global development agenda aimed at ending poverty, improving well-being, and protecting the planet through the achievement of 17 (seventeen) goals by 2030. Indonesia has adopted the 17 global SDGs targets in shaping its national development policies, to enhance the economy of its people, realise sustainable social life, improve the quality of the environment, foster inclusive development, and implement sustainable governance. These global targets have also been integrated into the pillars of Indonesia's national development.

Furthermore, the Indonesian government is also in the process of realising a concept of economy known as the Green Economy a manifestation of an environmentally conscious economy in Indonesia's national development. According to the United Nations Environment Programme (UNEP), a Green Economy is defined a low-carbon, resource-efficient, and socially inclusive economy.[28]

[28] United Nation Environment Programme (UNEP), "Green Economy", <https://www.unep.org/regions/asia-and-pacific/regional-initiatives/supporting-resource-efficiency/green-economy>, accessed September 1, 2024.

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In its implementation, this concept has been integrated through various economic and development policies in Indonesia, including the Environmental Economic Instruments policy, which is regulated through legislation.

In line with Sustainable Development and the Green Economy, there is a concept in the business world known as Sustainable Business, which is a business process carried out by entrepreneurs by integrating sustainability principles.[29]Sustainable business can be defined as a company's ability to achieve business goals and enhance long-term value by integrating economic, social, and environmental factors into its business strategy.[30] A sustainable business can also be understood as a business that strives to achieve a balance between profit, social welfare, and environmental protection. [31]Currently, business actors are encouraged to implement the concept of Sustainable Business in their operations. This relates to the responsibility and position of Upstream Oil and Gas Companies, which can be outlined as follows:

a. The implementation of Sustainable Business by Upstream Oil and Gas Companies is carried out as part of fulfilling the obligation of Corporate Social and Environmental Responsibility ("TJSL"). The obligation of TJSL for companies in Indonesia is regulated through Law No. 40 of 2007 on Limited Liability Companies, as amended ("LLC Law") and Government Regulation No. 47 of 2012 on Corporate Social and Environmental Responsibility of Limited Liability Companies ("Government Regulation No. 47 of 2012"). The state imposes TJSL on companies, involving all stakeholders, including employees, customers, and surrounding communities, so that the company can build a good reputation and strengthen social ties by being required to do so. Article 1, Number 33 of the LLC Law defines TJSL as a company's commitment to participating in sustainable economic development to improve the quality of life and the environment, which benefits not only the company itself but also the local community and society at large. Article 74, Paragraph (1) of the LLC Law also stipulates that companies engaged in business activities in and/or related to natural resources are required to implement TJSL. As clarified in the explanation of Article 74, Paragraph (1) of the LLC Law, companies involved in natural resource activities are those that manage and utilize natural resources. Based on the regulations outlined, it can be understood that Upstream Oil and Gas Companies are obligated to implement

[29] Abdillah Ulil Albab, Shinta Nuria Salsabila, Moch. Isa Anshori, (2023), "Sustainable Business Exelance", *Jurnal Ilmiah dan Karya Mahasiswa,* 1 (4), p. 119.
[30] Aryati Dinta Kusumaningrum, Dhian A. Safitra, (2020), "Era Ekonomi Berkelanjutan: Studi literatur tentang Gerakan Bisnis Berkelanjutan", *Majalah Ilmiah Bijak*, 17 (1), p. 10.
[31] YuanXiaoyan, Audita Nuvriasari, (2023), "Sustainable Business Model Innovation", *Entrepreneurship, Economics, and Business International Conference* (EEBIC), (1), p. 669.

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TJSL because they are engaged in business activities in and/or related to oil and gas resources.

b. The implementation of Sustainable Business by Upstream Oil and Gas Companies is carried out as part of the accountability for environmental management and protection. Indeed, based on Article 2, letter j of the Environmental Protection and Management Law (UU PPLH), environmental management and protection in Indonesia adheres to the principle of "polluter pays." This principle emphasizes that business activities that impact or pollute the environment are required to bear the costs of environmental restoration. In this case, Upstream Oil and Gas Companies, which conduct business activities that impact the environment, are held responsible for the environmental recovery.
c. The implementation of Sustainable Business by Upstream Oil and Gas Companies is carried out as part of their involvement in realizing national development based on Sustainable Development and the Green Economy. It can be understood that the realization of Sustainable Development is not solely the responsibility of the government. Business actors, especially in the private sector, play a crucial role in shaping the future of Sustainable Development.[32] With their economic power and widespread influence, business actors can drive change towards Sustainable Development by applying sustainability principles across all aspects of their business, from sourcing raw materials to waste management. This makes Upstream Oil and Gas Companies essential contributors to national development.
d. The implementation of Sustainable Business by Upstream Oil and Gas Companies is carried out as part of the implementation of Green Investment practices. The government has developed a concept of sustainable investment known as Green Investment. Green Investment refers to the use of green capital, which comes from both the government and industries, in making investments in environmental goods and services.[33] According to Presidential Regulation No. 16 of 2012 on the General Investment Plan ("Presidential Regulation No. 16 of 2012"), Green Investment is outlined in aspects that include: (1) environmental development policies and programs; (2) the development of priority sectors, environmentally friendly technology, and the utilization of Renewable Energy potential; (3) the development of the Green Economy; (4) the provision of facilities and/or incentives for environmental preservation efforts and Carbon Trading; (5) the use

[32] Petrica Nitoaia, Gabriel Camara, (2018), "Roles of Actors in Promoting Sustainable Development", *Present Environment and Sustainable Development*, 12 (1), p. 173.
[33] Nur Afni Nurul, Etty Murwaningsari, (2023), "Pengaruh Pengungkapan Emisi Karbon dan Investasi Hijau Terhadap Nilai Perusahaan", *Jurnal Ekonomi Trisakti*, 3 (2), p. 3139.

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of environmentally friendly technology; and (6) the development and expansion of regions with spatial planning and environmental carrying capacity considerations. This has led to a shift in investor interest towards sustainability aspects. Therefore, Upstream Oil and Gas Companies need to implement Sustainable Business practices to increase their attractiveness to investors.

In order to realize sustainable business practices, Upstream Oil and Gas Companies that engage in environmentally impactful activities can implement Carbon Trading with the hope of integrating economic, social, environmental, and governance elements into their business operations. This is in line with the responsibility and position of the company within the Upstream Oil and Gas Industry.

Currently, several Upstream Oil and Gas Companies have focused on realizing Sustainable Business practices. For example, PT Pertamina Hulu Energi ("PT PHE"), one of the largest Upstream Oil and Gas Companies in Indonesia, has been reporting its sustainability performance through its annual.[34] As stated in the 2023 Sustainability Report, PT PHE has initiated and conducted Carbon Trading.[35] This is certainly a noteworthy achievement in sustainability performance, as evidenced by the various awards that PT PHE received in 2023.[36]

In the context of Indonesia's economy, there are several classifications of business sectors/industries run by business actors. Each of these industries often has distinct characteristics and business development approaches.[37] Therefore, the implementation of Sustainable Business is carried out with different approaches according to the characteristics of each industry's business sector. However, when analyzing and examining the application of Sustainable Business in the implementation of Carbon Trading in the Upstream Oil and Gas Industry, it is important to first look at the elements that form the concept of "Sustainability."[38] In this case, these elements can be derived, among other things, from the implementation of the national SDGs in Indonesia. Article 2, Paragraph (2) of Presidential Regulation No. 111 of 2022 states the goals of the national SDGs implementation as follows:

"The SDGs as referred to in paragraph (1) aim to:

a. maintain the continuous improvement of the economic welfare of society;

b. preserve the sustainability of social life in society;

c. maintain the quality of the environment and inclusive development; and

[34] PT Pertamina Hulu Energi, (2024), "Sustainability Report Tahun 2023", p. 23.
[35] *Ibid,* p. 130
[36] *Ibid,* pp. 14-17.
[37] Amanda Ayu Widarti, I Made Sudana, (2014), "Pengaruh Karakteristik Perusahaan Terhadap Keputusan Pendanaan (Perbandingan Antar Sub Sektor Industri Manufaktur)", *Jurnal Siasat Bisnis,* 18 (2), p. 191.
[38] Yuni Priskila Ginting, (et all), (2023), "Implementing Sustainable Development Goals to Achieve Community Welfare: Optimising Presidential Decree 111/2022", *Legal Brief,* 12 (4), p. 418.

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d. ensure governance that can maintain the improvement of the quality of life from one generation to the next."

Thus, the elements that form the concept of "Sustainability" can be identified as: (1) economic elements; (2) social elements; (3) environmental elements; and (4) governance elements. In relation to this, there are several approaches that incorporate these elements, which can be used to analyze and examine the application of Sustainable Business. These approaches include the Triple Bottom Line (TBL) approach and the Environment, Social, and Governance (ESG) approach. The analysis and study of the Sustainable Business concept in the implementation of Carbon Trading in the Upstream Oil and Gas Industry based on these approaches can be outlined as follows.

a. Analysis Based on the Triple Bottom Line (TBL) Approach

The TBL approach is a roadmap for implementing Sustainable Business for business actors, which requires careful balancing in its implementation.[39] This approach consists of three main principles, namely: people (society), planet (environment), and profit (economy), which are also known as the 3P principles.[40] The TBL concept emphasizes that in running a company's operations, in addition to pursuing profit, the company must also contribute to society (people) and actively participate in environmental protection (planet).[41] In line with this, when examining the definition of Sustainable Development as stated in Article 1, Number 3 of the Environmental Protection and Management Law (UU PPLH), the elements within it are aligned with the elements elaborated in the TBL approach. In this case, companies can incorporate the elements of the TBL approach into their business activities. The principles of the TBL approach are in line with the national goals in the implementation of the SDGs, which consist of improving economic welfare, preserving social life, and maintaining the quality of the environment.

In the context of implementing Carbon Trading in the Upstream Oil and Gas Industry, the fulfilment of Sustainable Business elements based on the TBL approach can be outlined as follows:

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[39] Suhas Apte, Jagdish N. Sheth, (2016), *The Sustainability Edge: How to Drive Top-Line Growth with Triple-Bottom-Line Thinking*, Toronto: University of Toronto Press, p. 34.
[39] Tracy Dathe, (et all), (2024), *Implementing Environment, Social, and Governance (ESG) Principles for Sustainable Businesses: A Practical Guide in Sustainability Management*, Germany: Springer, p. 23.
[40] Tracy Dathe, (et all), (2024), *Implementing Environment, Social, and Governance (ESG) Principles for Sustainable Businesses: A Practical Guide in Sustainability Management*, Germany: Springer, p. 23.
[41] Ni Nengah Ariastrini, I Made Trisna Semara, (2019), "Implementasi Konsep Triple Bottom Line Dalam Program Corporate Social Responsibility di Hotel Alila Seminyak", *Jurnal Ilmiah Hospitality Management*, 9 (2), p. 160.

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1) **People (Society) Element** is implemented as part of conducting a fair business that provides benefits to society.[42] Through the implementation of Carbon Trading in the Upstream Oil and Gas Industry, Upstream Oil and Gas Companies can open opportunities for collaboration with local communities and create new jobs. Additionally, this is also related to the responsibility and position of Upstream Oil and Gas Companies in the implementation of CSR through Corporate Social Responsibility (CSR) and the realization of national development. In this case, the implementation of Carbon Trading will impact the welfare of society by providing broad benefits to the community. Therefore, the **People** principle in the application of Sustainable Business using the TBL approach has been fulfilled, as it promotes fair business practices that benefit the local community.
2) **Planet (Environment) Element** is implemented as part of conducting business with environmental management practices that do not cause or reduce environmental impacts.[43] Upstream Oil and Gas companies can purchase carbon units through the Carbon Trading mechanism to mitigate the environmental impact of their business activities. Furthermore, if an Upstream Oil and Gas company engages in CCS/CCUS business operations, it will further reduce its environmental impact. Therefore, the Planet (Environmental) principle is fulfilled through preventive and/or mitigation actions in managing environmental impact, as part of the TBL (Triple Bottom Line) approach to achieving Sustainable Business.
3) The Profit (economic) element is implemented to conduct business with a focus on increasing the company's economic value. It should also be understood that the increase in economic value does not solely refer to the profits gained by the company but must also be utilized for social and environmental benefits.[44]by implementing Carbon Trading, Upstream Oil and Gas companies can generate profits from CCS/CCUS business activities, as outlined in the Carbon Trading model related to CCS/CCUS operations discussed previously. Additionally, Carbon Trading is linked to the company's responsibility and role in implementing the Green Investment concept to enhance investor appeal. Therefore, fulfilling the Profit (Economic)

[42] Luk Luk Fuadah (et. all), (2018), *Pengungkapan Sustainability Reporting di Indonesia,* Palembang, Penerbit Citrabooks Indonesia, pp. 2-3.
[43] *Ibid,* pp. 3-4.
[44] *Ibid,* pp. 5-6.

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principle can be achieved while ensuring that the profits and economic value gained are oriented toward benefiting social and environmental interests.

b. Analysis Based on the Environment, Social, and Governance (ESG) Approach

The ESG approach is a framework for evaluating a company's business activities to measure sustainability aspects in line with the Sustainable Development Goals (SDGs). The principles of sustainable business adopt the ESG framework, encompassing the principles of environmental, social, and governance (ESG).[45] Business actors can integrate ESG principles in alignment with the objectives of Sustainable Development Goals (SDGs). These principles encompass key elements of the SDGs, including enhancing economic and social welfare, preserving environmental quality, and promoting sustainable governance. Companies that incorporate ESG principles into their business operations can create long-term value, contribute to transforming the global energy landscape, build stakeholder trust, and mitigate operational risks.[46] In the context of Carbon Trading in the Upstream Oil and Gas Industry, the fulfilment of Sustainable Business elements based on the ESG approach can be described as follows:

1) **Environmental Principle**, implemented to conduct business with a focus on environmental management performance in the company's operations and its impact on air quality, biodiversity, carbon footprint and GHG emissions, as well as waste management and water quality.[47] This principle is implemented through Carbon Trading practices aimed at driving and accelerating greenhouse gas (GHG) emission reduction initiatives. Therefore, the implementation of Carbon Trading embodies the environmental principle focused on protecting the environment and mitigating its impact.
2) **Social Principle**, implemented to conduct business that manages corporate activities about social aspects, including employee relations, community engagement, human rights protection, privacy policies, and other social considerations.[48] In this regard, the implementation of Carbon Trading by Upstream Oil and Gas companies can impact these social aspects through community empowerment in the execution of Carbon Trading. Furthermore, the company needs to consider the mentioned social aspects to ensure the

[45] Ninditya Nareswari. (et all), (2023), "Analysis of Environmental, Social, and Governance Performance in Indonesia: Role of ESG on Corporate Performance", *Procedia Computer Science,* 225, p. 1750.
[46] Junaidi Hendro, Antaiwan B. Pranogyo, (2023), "Inovasi Berkelanjutan: ESG Initiatives Untuk Masa Depan Yang Bertanggung Jawab", *Jurnal Ilmu Sosial, Manajemen, Akuntansi, & Bisnis*, 4 (4), p. 151
[47] Alessio Baratta, (2023), "The Impact of ESG Practices in Industry with Focus on Carbon Emissions: Insights and Future Perspectives", *Sustainability,* 15 (6685), p. 1.
[48] *Ibid.*

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implementation of the social principle. Therefore, the application of Sustainable Business within the Social principle has been fulfilled.

3) **Governance Principle,** implemented to conduct business while considering aspects of corporate leadership, internal controls, audits, anti-corruption measures, compensation, and executive policies.[49] In the context of Carbon Trading, Upstream Oil and Gas companies must ensure the implementation of the Governance principle, which can be achieved through the establishment of internal company policies and Standard Operating Procedures (SOPs). Additionally, the implementation of this principle is also related to the disclosure of GHG emissions generated by the company's business activities. In this regard, the company can report its GHG emission reduction performance through its Sustainability Report.

Table 3: Fulfilment of Sustainable Business Principles in the Implementation of Carbon Trading in the Upstream Oil and Gas Industry

Fulfillment	Economic Element	Environmental Element	Social Element	Governance Element
Triple Bottom Line (TBL) Approach	Economic value increase, profit income, and utilization of CSR funds.	Good environmental impact management with GHG emission reduction.	Cooperation with the community, job creation, community empowerment through Corporate Social Responsibility (CSR) programs, and national development realization.	
Environmental, Social, and Governance (ESG) Approach		Good environmental management performance with efforts to reduce GHG emissions.	Community empowerment by considering social aspects.	Establishment of internal company policies and SOPs, as well as reporting GHG emission

[49] *Ibid*

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	reduction performance.

Source: Processed by the Author Based on the Analysis of Sustainable Elements Approaches.

Thus, it can be stated that the implementation of Carbon Trading fulfils the principles of Sustainable Business through the fulfilment above aspects. Upstream Oil and Gas companies can apply Sustainable Business practices in their operations in line with their responsibilities and position. The implementation of Sustainable Business also represents the contribution of Upstream Oil and Gas companies to realizing national development based on Sustainable Development and the Green Economy. This can serve as a solution for companies in the Upstream Oil and Gas industry to address the risks and challenges associated with national development based on Sustainable Development and the Green Economy.

CONCLUSION

Carbon Trading in Indonesia is implemented based on the provisions of the Environmental Protection and Management Law (UU PPLH), Law No. 4 of 2023, Government Regulation No. 46 of 2017, Presidential Regulation No. 98 of 2021, Ministry of Environment and Forestry Regulation No. 21 of 2022, and various implementing regulations. In the context of the Upstream Oil and Gas Industry, Carbon Trading can be conducted through the Emission Offset scheme via the Carbon Exchange and/or Direct Trading. Furthermore, the implementation of Carbon Trading by Upstream Oil and Gas companies is accompanied by a transparency framework that includes the implementation of the National Registry System for Climate Change Control (SRN PPI), Monitoring Reporting and Measurement (MRV), and Greenhouse Gas Emission Reduction Certification (SPE GRK) to ensure accountability and transparency. In addition, the Carbon Trading model in the Upstream Oil and Gas Industry is related to sustainability performance and the generation of economic value from CCS/CCUS project implementation. Furthermore, the implementation of Carbon Trading has fulfilled the principles of Sustainable Business based on the Triple Bottom Line (TBL) and Environmental, Social, and Governance (ESG) approaches. This demonstrates that Carbon Trading can serve as a solution for Upstream Oil and Gas companies to apply Sustainable Business practices.

Regulations governing Carbon Trading in Indonesia have been outlined in various relevant laws and regulations. However, in the context of the Upstream Oil and Gas Industry, there are certain provisions that have yet to be addressed, such as: (1) the

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technical approval for the upper limit of emissions for Upstream Oil and Gas companies; and (2) the obligation for Upstream Oil and Gas companies to engage in Carbon Trading. The government should regulate these two provisions in order to encourage participation and enhance legal certainty regarding the implementation of Carbon Trading by Upstream Oil and Gas companies. Additionally, Upstream Oil and Gas companies are encouraged to increase their contributions to the implementation of Carbon Trading in Indonesia. This could generate long-term benefits for the companies in relation to fulfilling sustainability principles in the execution of Carbon Trading.

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