CONTROL OF INNER GREENHOUSE GAS EMISSIONS NATIONAL DEVELOPMENT

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Abstract

Environmental issues such as global warming, the greenhouse effect, and drastic climate change, as well as social issues such as meeting the needs of both workers and interested parties continue to increase, and urge the development of innovative financial products. Manufacturing companies are currently in the spotlight of various interested parties, there are 8 industrial sectors that contribute large amounts of carbon emissions, namely: cement industry, steel industry, pen and paper industry, textile industry, ceramic industry, fertilizer industry, petrochemical industry, and food and beverage industry. This concern for the environment must continue to be improved seeing that the impact of company operations is very significant starting from the greenhouse gas effect which continues to increase every day. As a country committed to the climate change control agenda, Indonesia has developed regulations, action programs and systems and mechanisms to reduce GHG emissions to meet the Nationally Determined Contribution (NDC) target and control GHG emissions in national development. One of the supporting mechanisms developed is the Value of Carbon Economy.

KeyWords: Manufacturing Company, Carbon Emission, Nationally Determined Contribution, Economic Value of Carbon (NEK)

1. Introduction

The development of greenhouse gases in Indonesia has increased significantly in the last few decades. Greenhouse gases, such as carbon dioxide (CO_2), methane (CH_4), and nitrous oxide (N_2O), contribute to global warming and climate change(Fauzi et al., 2023). Several main factors influencing the increase in greenhouse gas emissions in Indonesia include deforestation, peatland burning, as well as industrial and transportation activities. Indonesia has also implemented the same thing in its Sustainable Development Goals (SDGs) efforts for 15 land ecosystems. However, the efforts that have been made are considered to be insufficient in balancing profit generation with concern for the environment. This happens because there are no accounting standards that specifically regulate environmental issues. Instead of attracting investors' interest, this became a boomerang for the company because this effort was not good enough for the company's profit returns(Syaharani & Tavares, 2020).

As a country committed to the climate change control agenda, Indonesia is building regulations, action programs and systems and mechanisms to reduce emissionsgreenhouse gases to meet Nationally Determined Contribution (NDC) targets and control greenhouse gas emissions in national development. One of the supporting mechanisms developed is the economic value of carbon(Triastuti et al., 2022). Presidential Regulation Number 98 of 2021 has regulated the Economic Value of Carbon (NEK) and the technical procedures have also been regulated in the implementing regulations of the Minister of Environment and Forestry. In Perpes 98, carbon trading procedures are regulated for both domestic and foreign trade. These trading schemes include emissions trading, carbon offsets, results-based payments, carbon levies, and other mechanisms that will be developed according to developments in science. According toIswandi & Dewata (2020), The current regulations and supporting systems are adequate as a basis for Indonesia to carry out carbon trading, both at home and abroad. It is hoped that this will have an impact on the Indonesian economy and have an impact on reducing emissions in Indonesia.

2. Research methods

1. Observation : In the research, the author made direct observations regarding the impact specifically on many manufacturing companies produce emissions.
2. Literature : In this writing the author read and listened a lot GHG developments and carbon trading from social media and from television information which is continuously updated by the Ministry of the Environment Indonesia.

3. Results and Discussion

3.1. Presidential Regulation Number 98 of 2021 has regulated the Economic Value of Carbon (NEK)

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1. Goals

This regulation aims to regulate the mechanism for the economic value of carbon as part of climate change mitigation efforts in Indonesia. This includes reducing greenhouse gas emissions to achieve contribution targets set in the Paris Agreement.

2. Carbon Economic Value Mechanism

Khoerunnisa (2024), This regulation regulates various carbon economic value mechanisms that can be implemented, including:

- **Carbon Trading (Carbon Trading)**: A system where carbon credit units can be traded between parties who produce emissions and parties who reduce emissions.
- **Carbon Tax**: Imposing a tax on greenhouse gas emissions to encourage emissions reduction.
- **Carbon Based Initiatives (Carbon Offsetting)**: Projects that aim to reduce or absorb greenhouse gas emissions, such as reforestation and renewable energy.

3. Framework and Institutions

This regulation establishes the framework and institutions for the implementation of carbon economic value, including the roles and responsibilities of ministries, institutions, regional governments and the private sector. This includes monitoring, verification and reporting of emissions and carbon credits.

4. Emission Reduction Target

This regulation supports Indonesia's efforts to achieve the target of reducing greenhouse gas emissions by 29% with its own efforts and up to 41% with international assistance by 2030, as stated in Indonesia's Nationally Determined Contribution (NDC).(Panggabean, 2021).

5. Functions and Benefits

ImplementationEconomic Value of Carbon (NEK)It is hoped that it can encourage the use of environmentally friendly technology, increase energy efficiency, and promote green investment. It also aims to integrate environmental management into economic and social development(Elsa & Utomo, 2022).

6. Monitoring and Reporting

This regulation establishes obligations for periodic monitoring and reporting of greenhouse gas emissions by entities involved in emissions-generating activities. This is to ensure transparency and accountability in emissions management.

7. Private Sector Participation

This regulation encourages active participation of the private sector in efforts to reduce emissions through schemesEconomic Value of Carbon (NEK), by providing incentives and support for carbon-based initiatives.

3.2. Carbon Trading on the Market Currently is Very Diverse, There are Various Schemes - Carbon Crediting Schemes

According toSuyanto (2023),Carbon credits are a financial instrument that represents a reduction in Greenhouse Gas (GHG) emissions by one ton of carbon dioxide equivalent (CO2e). Carbon credits can be obtained from projects that aim to reduce, eliminate, or avoid Green House Gas (GHG) emissions, such as renewable energy projects, reforestation, or energy efficiency improvements. There isMany carbon certificate schemes exist. Each of these schemes can have different standards, procedures and methodologies. In this case, as is also done or known in the context of trade in other goods and services, Mutual Recognition Agreement (MRA) in carbon trading can be used for various purposes, including increasing confidence in accreditation results, increasing trade volume, facilitating international carbon cooperation, and minimizing market barriers(Abdhy Waliad, 2023). A Mutual Recognition Agreement (MRA) can be carried out between owners of Greenhouse Gas Emission Reduction Certificate (SPE GHG) issuance schemes, both by government and non-government institutions. The regulatory modalities in implementing the Mutual Recognition Agreement (MRA) have been regulated in Presidential Decree 98 of 2021 (article 77) and Minister of Environment and Forestry Regulation 21 of 2022 (Article 70).

There are several examples of Mutual Recognition Agreements (MRA) where countries or jurisdictions have agreed to recognize each other's carbon trading schemes, such as the agreement between the European Union and Switzerland which recognize each other's carbon schemes. In this collaboration, which is often referred to as market linking, carbon units similar to PTBAE-PU from the European Union mechanism can be traded in Swiss jurisdiction, and vice versa. Meanwhile, the Mutual Recognition Agreement (MRA) for carbon trading between certification schemes has not yet been implemented comprehensively. However, several schemes provide partial and/or non-institutionalized recognition, such as the Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA) which does not provide its own certification scheme but allows the use of carbon units from several selected schemes, the Gold Standard which allows the use of Clean Development methodology. Mechanism, and several other examples.

1. Carbon Credit Mechanism

Carbon credits function in emissions trading schemes (*cap-and-trade*) and voluntary carbon markets. In a cap-and-trade scheme, the government sets a limit (cap) on the total amount of emissions permitted for a particular industry or sector. Companies that produce emissions below the limit can sell their excess carbon credits to companies that exceed the emissions limit.

2. Types of Carbon Credit

- Compliance Carbon Credits: Used by countries or entities to fulfill emissions-related legal or regulatory obligations, such as in the European Union Emissions Trading scheme (EU ETS).
- Voluntary Carbon Credits: Used by individuals, companies, or organizations who voluntarily wish to reduce their carbon footprint beyond legal obligations. This voluntary market is often used for Corporate Social Responsibility (CSR) purposes.

3. Carbon Credit Creation Process

- Project Identification: Projects that reduce emissions, such as building a wind farm or tree planting program.
- Verification: Projects must be verified by an independent third party to ensure that emissions reductions are real and measurable.
- Credit Issuance: After verification, the project can receive carbon credits equivalent to the amount of emissions reductions produced.

3.3 In the national context, are there any regulations that serve as a basis for implementation?*Mutual Recognition Agreement*(MRA). Apart from that, if there is a regulatory mandate, are there any implications for foreign carbon trading?

Presidential Decree 98 of 2021 Article 77 generally regulates that the management of mutual recognition cooperation is carried out by mutually disclosing information on the use of Monitoring, Review and Verification (MRV) standards, conducting conformity assessments on the use of international standards and/or Indonesian National Standards, stating the results of conformity assessments against international standards and/or Indonesian National Standards, create and implement mutual recognition cooperation, and record certification that is recognized by both parties in the PPI SRN. Meanwhile, the procedures for carrying out Mutual Recognition Cooperation are regulated in more detail through Ministerial Decree 21 of 2022 Article 68 and Article 70.

The concrete steps taken are to open a mutual Monitoring, Review and Verification (MRV) system, agree on the methodology, registration system and Validation Institution/ Verification (LVV) is used to guarantee and control the quality of the carbon units produced. I can conclude that the modalities and procedures are in principle complete in the regulations, so*Mutual Recognition Agreement*(MRA) can be operationalized to overcome international carbon market barriers. Business actors who already have an Emission Reduction Certificate issued by another institution can carry out foreign carbon trading after mutual recognition cooperation and registration in the National Climate Change Control Registration System (SRN PPI).

4. Conclusion

Greenhouse Gas (GHG) emissions can be a source of national problems in facing climate change, activities to reduce greenhouse gas emissions are urgent to be completed so that health, food security and scarcity can be resolved. Reforestation efforts, carbon trading which are continuously being explored and regulated by the government are the goals of a cleaner and healthier Indonesian environment. These rules are regulated in Presidential Regulation Number 98 of 2021 which regulates the Economic Value of Carbon (NEK) and the technical procedures have also been regulated in the implementing regulations of the Minister of Environment and Forestry (LHK).

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