Legal Implications of the Law on Development and Strengthening the Financial Sector Regarding the Carbon Exchange Towards Indonesia Net-zero Emission and Green Investment

Royan Siagian[1], Boy Nurdin[2]

{royan_siagian@yahoo.co.id[1], Drboynurdin_ppslaw@yahoo.com[2]}

Universitas Borobudur[1, 2]

Abstract. Global warming and climate change have become urgent global issues, prompting many countries to take concrete steps to reduce greenhouse gas emissions. One instrument considered crucial in this effort is the carbon market, which allows countries and businesses to buy and sell carbon credits as part of their emission reduction strategies. However, the implementation of carbon markets in Indonesia faces several challenges, including an immature legal framework. This raises legal issues regarding the implementation of regulations, along with the challenges and opportunities that will arise. To address these questions, the research analysis uses a normative juridical research approach. The research results show that regulations related to carbon markets in Indonesia are already regulated in the Law on the Development and Strengthening of the Financial Services Sector, along with related regulations in financial services regulations and other regulations. Regulatory strengthening has been carried out, but this still presents challenges that need to be promptly minimized by the authorities because of the many opportunities arising from carbon market activities in Indonesia.

Keywords: Carbon Market, Zero Emission, Green Economy.

1. Introduction

Climate crisis, such as the increasing temperatures occurring from year to year, is a global issue that currently has significant impacts on human life worldwide. This climate change results in greater negative impacts than positive ones, including rising temperatures, unpredictable weather fluctuations, and increased air pollution. Because human activities, such as the use of fossil fuels, organic waste incineration, and deforestation, often do not consider their decisions and actions' impact on the environment in the future.[1]

The Earth absorbs the majority of the energy it receives from the sun, with the remaining portion being reflected back into space. This radiation is trapped by greenhouse gases produced by human activity, such as CO2 and CH4. This excessive heating is referred to as global warming. The increase in Earth's temperature that has already occurred can be felt today, and controlling greenhouse gas emissions is considered crucial to maintaining a stable global temperature.[2]

ICLSSEE 2024, May 25, Jakarta, Indonesia
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DOI 10.4108/eai.25-5-2024.2348980

In Indonesia, carbon emissions have been increasing every year, with the industrial sector being the largest contributor to CO2 emissions. This is due to the high industrial activity relying on fossil fuels for production. The risks of climate change have prompted many countries to engage in various international conventions and agreements, including the Paris Agreement in 2015, as a collective effort to address global climate challenges.[3]

Indonesia, through its Enhanced Nationally Determined Contributions (ENDC), has strengthened its pledge to lower greenhouse gas emissions. Originally, the nation's target was a 29% reduction, which has been elevated to 31.89% under the ENDC. Similarly, with international support, the target has increased from 41% to 43.20%. This enhanced commitment is grounded in current national climate policies, including the FOLU Net-sink 2030 initiative, the adoption of electric vehicles, the B40 biodiesel policy, and expanded efforts in the waste management and industrial sectors.

The National Emissions Trading system is used to execute mitigation and adaptation measures for climate change in order to meet Nationally Determined Contributions (NDC) targets and limit emissions. This is governed by Presidential Regulation Number 8 of 2021 in Indonesia. Carbon Trading, Performance-based Payments, Carbon Levies, and/or other mechanisms in accordance with technological advancements are the four main mechanisms used by various sectors and sub-sectors, including ministries/agencies, local governments, businesses, and communities, to conduct Carbon Economic Value (henceforth referred to as CEV).

The CEV regulation is aimed at both domestic and international markets, providing incentives for NDC achievement and supporting climate change control efforts, including forest fire reduction, deforestation prevention, and transitioning to renewable energy. The Clean Development Mechanism (CDM) and the Joint Credit Mechanism (JCM) were used to control carbon trading prior to the Paris Agreement, but the Voluntary Carbon Mechanism (VCM) was not taken into account by the existing laws.

Indonesia initiated carbon credit trading in 2023, becoming a major participant in the global carbon market. The Indonesia Stock Exchange (IDX) is in charge of managing the Indonesian Carbon Market, which is supervised by the Financial Services Authority (OJK). The two main trading mechanisms are the Allowance Market and the Offset Market, enabling emission control and investment in carbon reduction efforts.

Climate change and carbon emissions cannot be separated. Efforts to reduce carbon emissions are steps towards mitigating the negative impacts of climate change. Developed countries have taken steps to manage carbon emissions, using multidisciplinary approaches to design optimal policies. Indonesia can learn from the experiences of developed countries in managing carbon emissions, including through carbon trading schemes, with adjustments to its own context.[4]

According to the World Research Institute (WRI), Indonesia ranks among the top ten largest carbon emitters globally. The Indonesian government faces significant challenges in reducing carbon emissions and has pursued green investments or Renewable Energy (RE) initiatives, along with participating in carbon trading. Law Number 2 of 2007 on Investment, Law Number 16 of 2016 on the Ratification of the Paris Agreement, Law Number 4 of 2023 on the Development and Strengthening of the Financial Services Sector, Presidential Regulation Number 16 of 2012 on the General Plan of Investment, and SP 104/GKBP/VIII/2023 on Carbon Trading Rules through the Carbon Market are some of the laws that regulate these efforts.

In the initial carbon trading market, 459,953 tons of Carbon Units were exchanged in 27 deals during the first round of the carbon trading market. Pertamina New and Renewable Energy, which sold carbon units from the Lahendong project, and PT Pertamina Geothermal Energy Tbk were among the companies selling carbon units in the primary market. The buyers involved were PT Bank Mandiri (Persero) Tbk, PT BCA Tbk, PT Bank CIMB Niaga Tbk, PT Bank DBS Indonesia, PT BNI Sekuritas, PT BRI Danareksa Sekuritas, PT CarbonX Bumi Harmoni, PT MMS Group Indonesia, PT Multi Optimal Riset dan Edukasi, PT Pamapersada Nusantara, PT Pelita Air Service, PT Pertamina Hulu Energi, PT Pertamina Patra Niaga, PT Truclimate Decarbonization Indonesia, and PT Udara Untuk Semua.

Regulations related to carbon trading have been established. The main concern is the degree to which the current regulations support efforts to control greenhouse gas emissions in accordance with Indonesia's commitments to lessening the impact of climate change, and how effective they are in regulating and facilitating carbon trading in the domestic market. Apart from legal concerns, the establishment of the Carbon Market in Indonesia presents intricate obstacles to guarantee business prosperity and expansion of the market; yet, encouraging prospects are present. On the other hand, there are significant opportunities to leverage the potential of the carbon market to accelerate the transition to a sustainable economy and increase green investment in Indonesia. The government and industry players need to optimize these opportunities to support the growth of the carbon market and effectively achieve greenhouse gas emission reduction goals.

This study uses a normative juridical method as part of its descriptive research design. It entails reading secondary data and literature, which includes tertiary, secondary, and basic legal documents. Legislative regulations make up the majority of the legal resources. Books, journals, and other research resources are examples of secondary legal materials. Newspapers and online publications make up tertiary legal materials.

2. Discussion

a. Regulations for implementing Carbon Trading through the Carbon Exchange in Indonesia

The increasing warming occurring year by year poses a global challenge that currently has significant impacts on human life worldwide. This climate change results in more negative than positive impacts for humans, such as rising temperatures, unstable weather changes, and increased air pollution. The main causes of this climate change are human activities and behaviors, where decisions and actions taken often do not consider their negative impacts in the future. For example, greenhouse gases like CO_2 and CH_4 emitted by motor vehicles and industrial activities hinder the atmospheric radiation process, leading to excessive global warming. These changes have been felt, with Earth's temperature continuing to rise year after year. Controlling these gas emissions is considered important as it can help maintain a stable global temperature.

The Paris Agreement superseded the Kyoto Protocol at the COP-21 conference, the twenty-first gathering of the United Nations Framework Convention on Climate Change. This agreement aims to keep the rise in the average world temperature to a maximum of 1.5°C to 2°C. Each participating country is expected to set and report its commitments and contributions through NDCs tailored to its circumstances. For example, Indonesia submitted its first NDC in

November 2016, based on Nawacita as a strategic development agenda, in line with Indonesia's commitment to climate resilience and low-carbon development. However, the Brown to Green Report Climate Transparency in 2018 stated that Indonesia's greenhouse gas emissions increased almost threefold (196%) from 1990 to 2015 and are projected to continue increasing until 2030, contrary to the Paris Agreement targets.[5] To comply with the Paris Agreement, the government regulates carbon emissions levels through carbon trading on the carbon market. The carbon market is a platform where rights to greenhouse gas emissions are traded in CO2-equivalent units. Carbon trading refers to the buying and selling of carbon emission reduction certificates from climate change mitigation effort. [6]

Prior to enacting regulations in response to the Paris Agreement, Indonesia first committed to lowering emissions by ratifying Law Number 6 of 1994, which established the United Nations Framework Convention on Climate Change. This marked the beginning of Indonesia's establishment of carbon market regulations. Later, by passing Law Number 17 of 2004, which ratified the Kyoto Protocol to the United Nations Framework Convention on Climate Change, Indonesia increased its commitment to the Kyoto Protocol. Among the advantages of the Kyoto Protocol are:

1) Reaffirming agreements made under the Climate Change Convention using the concept of differentiated common responsibility.
2) Implementing sustainable development, especially in order to maintain steady atmospheric concentrations of greenhouse gases so that they do not endanger the planet's climate.
3) Creating new investment opportunities from industrialized countries to Indonesia through the Clean Development Mechanism.
4) Promoting collaboration with industrialized nations via Clean Development Mechanisms to enhance and strengthen capacity, legislation, institutions, and technology transfer for reducing greenhouse gas emissions.
5) Speeding up the development of low-emission industries and transportation by utilizing clean, efficient technologies and renewable energy sources.
6) Enhancing the ability of forests and land to absorb greenhouse gases.

The adoption of the Paris Agreement was followed by regulations, one of which being the enactment of Law Number 16 of 2016. Presidential Regulation Number 98 of 2021, which addresses the application of carbon economic value for controlling greenhouse gas emissions in national development and achieving nationally determined targets, was released by the president in 2021. According to this legislation, the carbon market is a framework that controls the ownership status of Carbon Units, carbon trading, and the tracking of carbon reserves.[7]

In the same year, alongside these regulations, measures regarding carbon taxes were introduced under Article 13 of Law Number 7 of 2021 on Tax Regulation Harmonization. These regulations oversee carbon taxes applicable to emissions with adverse environmental impacts, aiming to incentivize economic actors to transition towards low-carbon, environmentally friendly activities. The establishment of carbon tax regulations aligns with the government's objectives to achieve a 29% reduction in domestic greenhouse gas emissions by 2030, and a 41% reduction with international assistance. The implementation of carbon tax regulations offers both domestic and international advantages. Domestically, it reinforces legal frameworks ensuring the promotion of environmentally sustainable development, integrating climate and environmental regulations consistently into national laws. Internationally, it demonstrates Indonesia's commitment to addressing global environmental challenges, particularly concerning climate change, fostering global collective awareness. Additionally, it presents opportunities for Indonesia to engage in communication and collaboration with other nations and international organizations through institutionalized information exchange facilitated by conventions

Four (four) clauses in Law Number 4 of 2023 concerning the Development and Strengthening of the Financial Services Sector particularly controlled the carbon market in 2023. A new chapter in the government's initiative to resolve legal aspects associated to carbon trading specifically through the carbon market was marked by the Financial Services Authority's issuance of Regulation Number 14 of 2023 about Carbon Trading through the Carbon Market, which allows it to be operated.

Carbon Units are affirmed to be Securities under Article 23 of the Law on the Development and Strengthening of the Financial Services Sector and Article 3 Paragraph 1 of Financial Services Authority Regulation Number 14 of 2023. Carbon Units, which are typically presented as certificates or technical approvals representing 1 (one) ton of carbon dioxide logged in the National Climate Change Control Registry System (henceforth referred to as the SRN PPI), are defined in Article 1 Paragraph 6 of Financial Services Authority Regulation Number 14 of 2023 as proof of carbon ownership. The categorization of carbon units as securities is contingent upon meeting requirements ensuring economic entitlements and the capacity for transfer and/or trading within the carbon market. The Financial Services Authority has identified specific carbon units eligible for trading on the carbon market, including Upper Emission Limit Technical Approvals for Businesses (PTBAE-PU) and Greenhouse Gas Emission Reduction Certificates. With the potential introduction of derivative carbon units, the carbon market is empowered by the Financial Services Authority to innovate new investment products based on carbon units and engage in additional activities following appropriate authorization

As explained in Financial Services Authority Circular Letter Number 12/SEOJK.04/2023 regarding Procedures for Carbon Trading Implementation via the Carbon Market in Part VII.1.C, Article 24 of the Law on the Development and Strengthening of the Financial Services Sector states that the carbon market's operational framework will be based on existing stock market frameworks with certain modifications. These adaptations chiefly concern storage and settlement institutions, managed by the Indonesian Central Securities Depository akin to the stock exchange model, and clearing and guarantee institutions, overseen by the Indonesian Clearing and Guarantee Corporation, also aligned with the stock exchange structure. The directive presents two potential scenarios: either extending the jurisdiction of existing institutions or establishing new entities with authority tailored to the requirements of the carbon market system. An imperative priority is the enhancement of the SRN PPI to authenticate carbon units traded within the market

In an agreement known as the Emission Reduction Purchase Agreement (hereinafter referred to as ERPA), a carbon trading agreement occurs. Although carbon is not recognized as an object in property law due to its intangible nature, through the ERPA agreement, carbon can be considered a valid legal object, much like electronic credits or electricity credits that have value despite being intangible. Humans can control carbon even though carbon itself is intangible. In carbon trading, where the object of buying and selling is carbon emissions, carbon becomes the object of the agreement and has a commercial value, thus transforming carbon emissions, which were initially not considered objects, into objects with value.[8]

b. Challenges and Opportunities in implementation of the Carbon Exchange in Indonesia

In the carbon market, the traded instruments include carbon quotas from eligible sectors or emission limits, as well as carbon credits. Carbon quotas are only available to companies that have reached the maximum emission limits in mandatory sectors, while carbon credits can be obtained from various emission reduction projects such as renewable energy, forest greening, and others. Although the national carbon market has been launched, its supporting infrastructure still needs further development, especially in management and pricing mechanisms. The lack of adequate technical regulations for all sectors, low market participation, and lack of market information transparency are major challenges. The importance of accurate and transparent pricing cannot be overlooked. Currently, carbon prices in the market are still below the actual market prices, making them less attractive to market participants. Accelerating participation from other sectors is expected to increase trading activity and balance supply and demand in the carbon market.

Local governments are given extensive authority to address climate change under Presidential Regulation No. 98 of 2021 and Minister of Environment Regulation No. 21 of 2022. They are not only responsible for planning and implementing climate change mitigation measures, but also for drafting planning documents and reporting on the results of NEK implementation efforts. Additionally, Local Governments are required to provide guidance to stakeholders related to NEK implementation and conduct inventory and control of greenhouse gas emissions.

Although the mandates for Local Governments are clear, local authorities currently face various challenges in fulfilling these responsibilities. For example, establishing regional emission baselines remains problematic and requires technical assistance. The baseline data for regional greenhouse gas emissions is crucial, not only for NEK implementation but also for monitoring progress towards regional emission reduction targets.

NEK implementation, particularly in the context of carbon trading, requires integrated inventory and data collection processes within the National Climate Change Control Registry System (SRN PPI). Currently, participation in this system is still limited, especially in the energy sector, and authority remains at the central level. However, in the future, there is significant potential for participation from businesses, communities, and Local Governments in other sectors such as forestry.

Although some entities at the regional level have already traded carbon credits for their emission reduction programs in the international market, concerns arise due to the lack of adequate documentation in the SRN PPI. This could result in carbon losses for Indonesia. Therefore, the Central Government needs to conduct outreach and provide technical guidance to local authorities regarding inventory and national MRV (Monitoring, Reporting, and Verification) as well as the role of Local Governments in this process.

The presence of updated NDC roadmap documents has become crucial in implementing the NEK mechanism. In accordance with Presidential Regulation No. 98 of 2021 Article 47 paragraph (2), NEK implementation is based on several foundations, including the NDC roadmap. This aligns with NEK's goal of reducing and controlling greenhouse gas emissions to achieve NDC targets. With the creation of the NDC pathway through key ministries, Indonesia revised its NDC document and uploaded it to the United Nations Framework Convention on Climate Change (UNFCCC) in September 2022.

The NDC roadmap needs to be updated periodically as it currently lacks flexibility in demonstrating clear emission reduction pathways. To support NEK implementation, the development of an integrated NEK roadmap is a crucial part of ensuring effective NEK implementation. The presence of a roadmap helps integrate various efforts and initiatives related to NEK implementation to avoid discrepancies between planning and implementation of NEK activities.

The integrated NEK roadmap includes plans and steps for implementing NEK mechanisms in each subsector and serves as the primary basis for planning and implementing NEK mechanisms in each sector. However, to date, this roadmap document is not available, and there is no mandate in the related regulations to develop an integrated NEK roadmap.

The absence of an integrated NEK roadmap can hinder the development of optimal NEK mechanisms. According to Minister of Environment Regulation No. 21 of 2022, NEK implementation, especially in trading mechanisms, must be conducted by developing roadmaps for each NEK mechanism, including carbon trading roadmaps for sectors and subsectors. Considering general and specific criteria, the establishment of solid roadmaps in each sector is essential to ensure optimal and effective NEK implementation in achieving greenhouse gas emission reduction targets.

Carbon trading has a significant potential to contribute to non-tax state revenue (PNBP), according to simulation results from the Ministry of Finance. This potential ranges from 7.5 to 26.1% of the total yearly revenue from goods and services (Agency Revenue/BLU) from 2011 to 2018, or over IDR 350 trillion. These figures are based on the assumption that the government shows high commitment to addressing deforestation and implementing policies supporting forest conservation. The maximum potential of carbon trading not only provides economic benefits but also helps Indonesia achieve emission reduction targets of 26% in 2020 and 29% in 2030.[9]

Carbon trading is a government initiative to reduce carbon emissions generated by companies. However, as a new phenomenon for the government and society, carbon trading is certainly not without challenges and issues. One of them is related to the Katingan Mentaya project, where the ecosystem restoration permit (ERC license) from the Ministry of Forestry was only issued after several years. This has caused delays in project implementation. This licensing process is regulated by Minister of Forestry Regulation No.: P.36/Menhut-II/2009, which stipulates that only parties with valid permits can carry out carbon storage and/or absorption activities.

From this issue, it is apparent that carbon trading cannot operate alone but requires strong legal, social, and environmental roles. Eugen Ehrlich's theory emphasizes that law is a living rule, originating from human relationships and awareness of the need for law in social and community life.[10] Therefore, resolving issues related to carbon trading involves not only legal aspects but also social and environmental aspects in the project area.

Changes and developments in societal social relations over time require the development and refreshment of laws to regulate social interactions among communities, especially regarding carbon trading involving investments in EBT. Carbon trading emerges as a response to climate change causing global warming due to excessive greenhouse gas emissions. These social relations involve interactions among communities, communities with governments, and states with the international community, thus necessitating regulations governing social interactions, particularly in the context of carbon trading.

Another challenge is that many companies have not fully understood or realized the importance of carbon trading. They hope there will be incentives to further reduce carbon emissions. The appropriate approach to attract companies' interest in carbon trading is to recognize the need for efficiency in reducing CO_2 emissions. These efficiency measures will ultimately benefit the companies themselves, such as improving financial performance. Although the initial conditions of carbon exchange formation may not be perfect, the presence of carbon exchanges remains essential to build an integrated carbon trading ecosystem with carbon tax regulations in the future. The ideal process of forming a carbon exchange takes quite a long time, as seen in China, which has begun trial runs of carbon trading schemes in several regions, including Shanghai and several other provinces.

Another challenge in carbon exchange implementation is ensuring transparency in meeting sustainability aspects. It is essential to ensure that companies genuinely fulfill their steps in reducing carbon emissions to qualify for Emission Reduction Certificates (SPI). Additionally, clarifying aspects of meeting ESG (Environmental, Social, and Governance) indicators, including the implementation of green initiatives or green investments, is necessary to prevent greenwashing practices where companies appear to reduce emissions but actually still significantly contribute to carbon emissions.

3. Conclusion

Law Number 6 of 1994 concerning the Ratification of the United Nations Framework Convention on Climate Change, Law Number 16 of 2016 concerning the Ratification of the Paris Agreement, and Presidential Regulation No. 98 of 2021 concerning the Implementation of Carbon Economic Value are the first three laws that set forth regulations pertaining to carbon trading in Indonesia. The Law on the Development and Strengthening of the Financial Services Sector, as well as other rules pertaining to the financial services sector and other regulations serving as Law implementing regulations, were released in 2023. These regulations are associated with the Carbon Exchange.

Despite the fact that these restrictions have been strengthened, the government still has to address certain issues. This is due to the various opportunities arising from carbon trading activities in Indonesia. Therefore, the government needs to identify and address these challenges in order to maximize the benefits of carbon trading, and ensure that existing regulations can effectively accommodate the needs and dynamics of the carbon market.

References

[1] T. Rahmadi, *Environmental Law in Indonesia*. Jakarta: Rajawali Press, 2013.

[2] E. P. Rini, F. Pratama, and M. Muslih, “Pengaruh Growth, Firm Size, Profitability dan Environmental Performance Terhadap Carbon Emission Disclosure Perusahaan Industri High Profile di Bursa Efek Indonesia,” *urnal Ilmiah Manajemen, Ekonomi, & Akuntansi (MEA)*, vol. 5, no. 3, Oct. 2021.

[3] Katadata Team Insight Center, *Indonesia Carbon Trading Handbook* . 2022.

[4] A. B. Irama, “Perdagangan Karbon di Indonesia: Kajian Kelembagaan dan Keuangan Negara,” *Info Artha*, vol. 4, no. 1, pp. 83–102, Jun. 2020, doi: 10.31092/jia.v4i1.741.

[5] D. Syabilla, A. Wijayanti, and R. Fahria, “Pengaruh Investasi Hijau dan Keragaman Dewan Direksi Terhadap Pengungkapan Emisi Karbon,” *Konferensi Riset Nasional Ekonomi, Manajemen, dan Akuntansi (KORELASI)*, vol. 2, no. 1, 2021.

[6] D. E. Hindarto, A. Samyanugraha, and D. Nathalia, *Mari Berdagang Karbon - Pengantar Pasar Karbon untuk Pengendalian Perubahan Iklim*. Jakarta: Ravindo Tower, 2018.

[7] *Article 1 Number 23 Presidential Regulation no. 98 of 2021*.

[8] M. R. S. Zaki, *Pengantar Ilmu Hukum dan Aspek Hukum dalam Ekonomi*. Jakarta: Kencana, 2022.

[9] *OJK Circular Letter Number 12/SEOJK.04/2023 Part II.2.a*.

[10] *OJK Circular Letter Number 12/SEOJK.04/2023 Part II.2.b*.