

REFORMULATING CARBON TAX IN INDONESIA: ADVANCING THE GREEN TAX REFORM IN CLIMATE CHANGE MITIGATION

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No. Telp:

Submitted 19 April 2024

Accepted 28 April 2024

Published 29 April 2024

ABSTRACT

Climate change mitigation has emerged as a pivotal global concern warranting considerable attention. In response to the escalating climate crisis, the "United Nations Framework Convention on Climate Change" (UNFCCC) has devised strategies aimed at mitigating climate change by curtailing carbon emissions. As a signatory to the UNFCCC, Indonesia has pledged to reduce carbon emissions by 29% to 41% by 2030 through collaborative efforts outlined in the Paris Agreement. Consequently, Indonesia is urged to develop an efficacious carbon tax policy to curb carbon emissions. Moreover, implementing a carbon tax could serve as the initial stride towards transitioning from fossil fuels to renewable energy sources. This research employs the normative juridical approach in its investigation. Findings reveal that Indonesia's carbon tax policy necessitates refinement to yield optimal outcomes aligned with its primary objectives. Hence, the author advocates for several reformulations of the carbon tax, offering them as potential frameworks or inspirations for enhancing the direction of the carbon tax policy.

Keywords: Carbon Tax; Carbon Emission; Law; Taxation; Green Tax Reform.

Introduction

Most people worldwide feel that the Industrial Revolution that occurred in the 18th century will now harm the environment (Magnusson, 2009). This is because, since the Industrial Revolution, the use of fossil fuels such as coal, oil, and gas for industrial activities has caused an increase in carbon dioxide (Ali Eren, 2018). Renowned scientists affiliated with the Global Carbon Project Institute, while analyzing data derived from carbon budgets that gauge human-induced CO2 emissions and the absorption of emissions by marine and land ecosystems, reach a consensus: carbon dioxide (CO2) emissions remain at their peak, surpassing even the levels observed before the pandemic (Magnusson, 2009).

This situation poses a severe threat to the long-term sustainability of life on our planet (Yoro & Daramola, 2020). In the era of the Fourth Industrial Revolution, characterized by heightened energy consumption patterns, the uneven distribution of energy requirements highlights the growing necessity for transitioning towards renewable energy sources (Elheddad et al., 2021).

Based on this fact, experts and policymakers perceive global warming as an issue that can pose an unexpected risk of major disasters (Domon et al., 2022). It is a big challenge for leaders or governments in various countries, considering that the need for development is a trade-off for the production of greenhouse gases that significantly affect global warming. In line with economic growth, an increase in economic activity will generally be followed by an increase in greenhouse gases. This situation has also long been explained in the environmental Kuznets curve, where economic growth will contribute to environmental damage.

A shared understanding between scholars and government officials has led to significant milestones in the sustainable development movement, notably the inception of concepts like the green economy and circular economy dating back to the 1980s (Tacconi & Muttaqin, 2019). Nevertheless, the pivotal moment arrived with the Kyoto Climate Change Convention in 1997, known as the Kyoto Protocol. This convention compelled developed



nations to commit to reducing greenhouse gas emissions (Tacconi & Muttaqin, 2019), introducing various emission reduction strategies, including joint implementation, carbon trading, and cleaner production initiatives (Grubb et al., 2018).

Numerous countries committed to the Kyoto Protocol have adopted a range of policies, one of which is the implementation of a carbon tax. The purpose of a carbon tax is to influence individual energy consumption patterns, a major contributor to greenhouse gas emissions. Extensive research has demonstrated that carbon taxes can effectively curtail the release of greenhouse gases (Ritchie & Roser, 2018). For instance, Japan, ranked as the sixth-largest global emitter of greenhouse gases, has embarked on implementing a carbon tax with the goal of reducing carbon emissions by 26% by 2030 (Gokhale, 2021). In crafting this carbon tax policy Japan drew inspiration from the principles established by countries like Finland, the Netherlands, Norway, and Sweden, which had previously implemented carbon taxes (Baccini et al., 2012).

Over time, internationally, the issue of increasing greenhouse gas (GHG) emissions received more attention after the United Nations Conference on Environment and Development (UNFCCC), better known as the 1992 Earth Summit According to Ridha. The UNFCCC was then brought to the UN conference and received many approvals and adoptions from 195 countries, including Indonesia, which ratified it through Law No. 6 of 1994 concerning the United Nations Framework Convention on Climate Change Ratification.

One of the crucial achievements in the convention's implementation was the formulation of the Kyoto Protocol in 1997 and the Paris Agreement in 2015 (Paramita & Kusumawardhani, 2020). The Kyoto Protocol is an obligatory agreement stipulating greenhouse gas emission reduction obligations for developed nations (Annex I countries) over a specified timeframe (2008-2012). The main focus of the Kyoto Protocol is on developed countries that must significantly reduce their greenhouse gas emissions. In contrast, developing countries have no legal obligation to reduce emissions under the Kyoto Protocol.

Unfortunately, the Kyoto Protocol, agreed in 1997 and in force from 2005 to 2012, has been judged a failure or lack of success for miscellaneous reasons. One of the main criticisms of the Kyoto Protocol is that it only applies to developed countries (Annex I countries). In contrast, developing countries do not have the same emission reduction obligations. This creates an imbalance in the global effort to address climate change, as most emissions come from developing countries. The Protocol is also considered to have a weak compliance mechanism and needs to provide significant sanctions for countries that do not fulfill their obligations to reduce emissions (Hirdanto et al., 2018).

The Paris Agreement is a voluntary (non-binding) agreement that assembles a broader framework for addressing climate change. Each country sets its own emissions reduction targets. The Paris Agreement is also more inclusive than the Kyoto Protocol, aiming to address climate change globally. All countries, including developing countries, are expected to contribute according to their capabilities (Dyarto & Setyawan, 2021).

Indonesia, as a United Nations member state deeply engaged in international collaboration, has formally ratified both the Kyoto Protocol under Law No. 17 of 2004 and the Paris Agreement. The essence of the Paris Agreement is all-encompassing, requiring the active involvement of all signatory nations in its implementation. Consequently, it necessitates that each member country develop tailored strategies and policy tools to facilitate the effective execution of climate change mitigation efforts. Some variations of policies implemented by countries committed to the Kyoto Protocol and the Paris Agreement include implementing a carbon tax. As a form of environmental tax, the application of carbon tax is aimed at changing the energy consumption behavior of individuals as a significant contributor to greenhouse gases. Several studies have proven that carbon taxes can reduce greenhouse gas emissions (Purwendah, 2018).

The environmental tax is a combination of two different terms between tax and environment, which become one unit that can be utilized as an economic instrument to overcome environmental problems. This is interesting to study because, since 2006, Indonesia has recognized environmental taxes. However, with environmental problems that are increasingly diverse and increasing every year, this policy has only been implemented now because it requires deep study and careful preparation. These two things have a significant influence on realizing the country's welfare. Where taxes are a source of state revenue obtained from individuals or bodies that are compelling based on the Law, which is used for state purposes for the greatest prosperity and welfare of the people, and the environment is a vital element of world life, and as a source of wealth in sustaining the national economy to realize people's welfare (Paramita & Kusumawardhani, 2020).

Indonesia is the latest country to include a carbon tax in Law No. 7 of 2021 concerning the Harmonization of Tax Regulations. The carbon tax policy is an alternative green economy policy option that Indonesia can implement to maintain emission reductions, which will be imposed on the use of fossil fuels according to the carbon emissions that the industrial or transportation sector produces initiative to implement carbon tax in Indonesia is motivated by the fact that Indonesia is a significant and sizable contributor to carbon emissions (Dyarto & Setyawan, 2021). It is also motivated by the fact that Indonesia is committed to implementing the mandates of the Kyoto Protocol and the Paris Agreement that target carbon emission reductions.

In the NDC, Indonesia also targets emission reductions in 2030 of 29% through its efforts and 41% through foreign assistance, with a projected base year of 2020 (Kemenprin, 2020). The NDC is a derivative of the ratification of the Paris Agreement through Law No. 16 of 2016 concerning the Paris Agreement on the United Nations Framework Convention on Climate Change (Li & Su, 2017). In addition, Indonesia has also made a National Energy General Plan (RUEN), which is the Central Government's policy related to the national level energy management plan, which is the elaboration and implementation plan of the National Energy Policy which is cross-sectoral to achieve the National Energy Policy targets in Government Regulation No. 1 of 2014 concerning the Second Amendment to Government Regulation No. 23 of 2010 concerning the Implementation of Mineral and Coal Mining Business Activities, one of the targets is that by 2025 the primary energy mix is encouraged to be optimal to achieve 23% renewable energy, 25% oil, 30% coal and 22% natural gas and efforts to reduce greenhouse gas emissions by 2025 are expected to reach 33.14%.

However, although Indonesia has included carbon tax arrangements in its legislation and blueprint for climate change mitigation and low-carbon development, Indonesia is still giddy in implementing a carbon tax (Tumiwa et al., 2015). This can be seen in the delayed carbon tax implementation schedule, originally scheduled to begin in April 2022 but postponed indefinitely due to the absence of an ideal policy model and formula. Other than that, the ambivalence of Indonesia's stance was evident from 2020 to 2022, characterized by a failure to rectify carbon emission reduction budgets while concurrently escalating carbon-producing projects (BKF). A poignant illustration lies in the development of Coal-Fired Power Plants (CFPPs) (Apresian, 2021). Research conducted in 2013 on CFPPs in Banten Indramayu, and Rembang revealed that these three alone emitted 16 thousand kilotons of carbon dioxide equivalent (Budi & Suparman, 2013). In a more recent instance, in 2022 alone, a 1-gigawatt CFPP emitted 5 million tons of carbon. Despite these staggering figures, the government remained oblivious and continued to construct 53 additional CFPP units across Indonesia. This is particularly alarming considering Indonesia's status as the world's second-largest carbon emitter, with a total carbon emission of 978 million tons in 2022 from land use change and forestry sectors (CNBC, 2022).

Given the outlined background, the author contends that there is a pressing need for an evaluation regarding the formulation and execution of carbon taxation in Indonesia, as well as the commitment to implementing green tax reform. Intrigued by this discourse, the author is compelled to conduct research concerning **REFORMULATING CARBON TAX IN INDONESIA: ADVANCING THE GREEN TAX REFORM IN CLIMATE CHANGE MITIGATION**.

Problem Formulation

Based on the explanation above, this paper will focus on two matters: (1) What are the juridical implications of the current carbon tax regulation in Indonesia?; (2) What is the ideal carbon tax policy reformulation in Indonesia's green tax reform framework?

Methodology

This research employs a normative methodology with an analytical descriptive approach to offer juridical arguments when encountering legal voids, ambiguities, and normative conflicts. There are three analytical approaches are utilized:

1. The Statutory Approach, which scrutinizes all laws and regulations pertinent to the legal issues under consideration.
2. The Conceptual Approach which explores diverse perspectives within legal scholarship that serve as the foundation for argumentation.
3. The Comparative Approach assesses the implementation of laws or concepts from various countries to compare their applicability within the Indonesian context.

The legal materials employed encompass the 1945 Constitution and legislation related to Environmental Protection and Management, Human Rights, Taxation, and Energy and Mineral Resources. Supplementary legal materials include explanatory resources such as draft legislation, research documents, academic textbooks, scholarly journals, newspapers, and online sources.

Results and Discussion

1. Development of Carbon Tax and its Juridical Implications in Indonesia

According to data from the BP Statistical Review of World Energy 2020, global carbon emissions increased by 0.5% in 2019. Indonesia became the seventh most significant contributor to carbon emissions, representing 1.8% of the world. The carbon emissions come from using fuel for industry, households, and vehicle transportation, making the energy sector the second largest contributor to carbon emissions in Indonesia after deforestation.

In response, the Government of Indonesia developed and explained the NDC implementation strategy, which will be carried out in 3 stages. The first stage is the preparation of preconditions that need to be completed before 2020. The second stage is implementing the first commitment period from 2020 until 2030. The third stage is monitoring and reviewing the NDC throughout the commitment period. However, unfortunately, until now, these strategies can be said to be stalled or not running well (Marispatin et al., 2017).

Instead, policy trends in recent years have shown an increase in the development of fossil energy, especially coal. The ratification of Revised Law No. 4 of 2009 on Mineral and Coal Mining and Law No. 11 of 2020 on Job Creation also made it more accessible through incentivizing the coal industry. Despite the potential for significant emission reductions, the government has yet to prioritize energy conservation initiatives.

Although Indonesia already has a related regulation, Government Regulation No. 70/2009 on Energy Conservation, the implementation of which still needs to be clarified, coupled with the lack of incentives to encourage energy conservation. For now, it seems complicated for Indonesia to fulfill the commitments listed in the ND, because there are many

gaps between the plan and the realization, especially in the energy sector, where there still needs to be more consistent efforts to implement the NDC implementation strategy (Kementerian Lingkungan Hidup dan Kehutanan, Republik Indonesia).

Similarly, the adoption of carbon taxation, as outlined in Law No. 7 of 2021, ratified by the House of Representatives on October 7, 2021, represents an alternative approach within Indonesia's green economic policy toolkit aimed at addressing carbon emissions. The implementation of Law No. 7 of 2021, which pertains to Taxation Harmonization, naturally bestows regulatory and collection authority upon the Government for the collection of carbon taxes.

The responsibility for levying environmental taxes in Indonesia is inferred from multiple legislations, which will be forwarded to the government agencies with taxation jurisdiction, encompassing both the Central and Local Governments. This authority for collection is grounded in the accountability framework for environmental restoration, which is outlined in environmental funding mechanisms like the policy on environmental restoration assurance funds.

Related to the authority to collect and regulate taxes, the Central Government, under national priority programs, can also intervene in tax and levy policies determined by local governments and make adjustments to change tax rates and retribution rates through the determination of both rates applied nationally. This can be seen in Article 156 A paragraph (1) of the Job Creation Law.

In addition, Carbon Tax is one of the environmental tax instrumentation under Article 42, Paragraphs (1) and (2) and Article 43 of Law No. 32 of 2009 concerning "Environmental Protection and Management (PPLH Law)," the Government is authorized to apply economic instruments, including incentives and disincentives, as well as environmental taxes.

Thus, the Environmental Protection Law shows the economic and fiscal policy principles in environmental conservation efforts. Therefore, Articles 42 and 43 of the Environmental Law can be interpreted as the basis for the Government's authority to collect environmental taxes, which in this case is a carbon tax.

Table 1. Comparison of Carbon Tax in the Draft Law on General Provisions (KUP BILL) and Tax Procedures and Law No. 7 of 2021 on Harmonization of Tax Regulations (HPP LAW)

KUP BILL	HPP LAW	Article in the HPP Law
Carbon tax: on carbon emissions that negatively impact the environment.		Article 13(1)
There is no proposal.	The carbon tax imposition is done by considering the carbon tax roadmap and/or carbon market roadmap.	Article 13(2)
There is no proposal.	The carbon tax roadmap contains carbon emission reduction strategies, priority sector targets, alignment with new and renewable energy development, and/or alignment between various other policies.	Pasal 13 ayat (3)
There is no proposal.	Carbon tax roadmap policy set by the government with DPT approval	Article 13(4)
Carbon tax subject: individuals or entities purchasing carbon-containing goods and/or conducting activities producing carbon emissions.		Article 13(5)

<p>A carbon tax is payable on the purchase of carbon-containing goods or activities that result in the emission of a certain amount of carbon in a given period. Carbon tax: on carbon emissions that negatively impact the environment.</p>	<p>Article 13(6)</p>
<p>The instances when carbon tax must be settled are as follows:</p> <ol style="list-style-type: none"> a. During the acquisition of goods containing carbon; b. Upon the conclusion of a designated period linked to activities producing specific carbon emissions; c. Additional timing stipulations are subject to further guidelines the Minister of Finance established. 	<p>The instances for carbon tax payment are as follows:</p> <ol style="list-style-type: none"> a. During the purchase of goods containing carbon; b. After the calendar year associated with activities that produce a defined level of carbon emissions; c. At times specified in government regulations or as stipulated therein. <p>Article 13(8) and 13(9)</p>
<p>Provisions regarding:</p> <ol style="list-style-type: none"> a. Determination of the carbon tax rate; b. Changes in carbon tax rate; and/or; c. The addition of tax objects subject to the carbon tax is regulated by government regulation. 	<p>Provisions regarding:</p> <ol style="list-style-type: none"> a. Determination of the carbon tax rate; b. Changes in carbon tax rate; and/or c. The tax base shall be regulated by a regulation of the minister of finance after consultation with the House of Representatives. <p>Article 13(10) and 13(11)</p>
<p>Revenue from the carbon tax can be earmarked for climate change control.</p>	<p>Provisions regarding the addition of tax objects subject to carbon tax shall be regulated by or based on government regulations after being submitted to the House of Representatives for discussion and agreement in the preparation of the Draft State Budget (RAPBN).</p> <p>Article 13(12)</p>
<p>There is no proposal.</p>	<p>Taxpayers participating in carbon emission trading and/or other mechanisms under environmental laws and regulations may be granted the following:</p> <ol style="list-style-type: none"> a. Carbon tax deduction; and/or b. Other treatment for the fulfillment of carbon tax obligations. <p>Article 13(13)</p>

<p>Provisions regarding:</p> <ul style="list-style-type: none"> a. Carbon tax subject; b. Procedures for calculation, collection, payment or deposit, reporting, and mechanism of carbon tax imposition; and c. Allocation of revenue from carbon tax for climate change control, regulated by regulation of the minister of finance, after coordinating with relevant ministries/institutions. 	<p>Provisions regarding:</p> <ul style="list-style-type: none"> a. Procedures for calculation, collection, payment or deposit, reporting, funds or mechanisms for imposing carbon tax; and b. Procedures for carbon tax reduction and/or other treatment for the fulfillment of carbon tax obligations, regulated by regulation of the minister of finance. 	<p>Article 13(14) and (15)</p>
	<p>Provisions regarding:</p> <ul style="list-style-type: none"> a. Carbon tax subject; and / or b. Allocation of revenue from carbon tax for climate change control, shall be regulated by government regulation after being submitted to the House of Representatives for discussion and agreement in the preparation of the Draft State Budget (RAPBN). 	
<p>The implementation of taxation rights and obligations related to carbon tax is carried out in accordance with the provisions of laws and regulations in the field of General Provisions of Taxation.</p>		<p>Article 13(16)</p>
<p>There is no proposal.</p>	<p>Carbon tax provisions come into force on April 1, 2022. First imposed on entities engaged in coal-fired power plants at a rate of IDR 30 per kilogram of CO₂e or an equivalent unit.</p>	<p>Article 17(3)</p>

Source: KUP Bill and HPP Law passed by the House of Representatives on October 7, 2021, processed, (DDTC Fiscal Research/DDTCNews)

Upon scrutiny, the carbon tax clauses incorporated into the HPP Law exhibit disparities compared to the government's initial proposition outlined in the General Provisions and Tax Procedures (KUP) Bill. In addition to alterations in tariff rates, a notable distinction lies in the incorporation of a carbon tax roadmap and a carbon market roadmap within the HPP Law. This scheme was absent in the government's original proposal through the KUP Bill.

The stages of carbon tax imposition are mentioned in the explanation section of the HPP Law. First, in 2021, the development of a carbon trading mechanism was carried out. Second, in 2022-2024, a tax mechanism based on emission limits (cap and tax) will be implemented for the power generation sector limited to coal-fired power plants. Third, in 2025 and after that, full implementation of carbon trading and expansion of carbon taxation sectors with phasing according to the readiness of related sectors. Sector expansion will still pay attention to economic conditions, actor readiness, impact, and/or scale.

From the glimpse of carbon tax arrangements in the HPP Law, the author states that these arrangements need to be reformulated to determine the most appropriate policy model

for implementing a carbon tax. This is based on the results of the researcher's analysis that in the HPP Law, especially regarding carbon tax, there are things that need to be improved, added, and expanded, both related to the scope, incentives for tax funds, tax rates, and the allocation of tax revenues because the arrangements are still limited and not yet arranged following the need to reduce carbon emissions.

1.1 Comparative Implementation in Various Countries

Before looking at the potential implementation and reformulation of a carbon tax in Indonesia, it is essential to study countries that have already implemented it. This study uses data from the World Bank's website to determine the implementation of carbon taxes in various countries (2022). Based on this data, 33 countries (World Bank, 2022) have taken the initiative to implement carbon tax schemes, either implemented, scheduled, or under consideration, as seen in Figure 1.

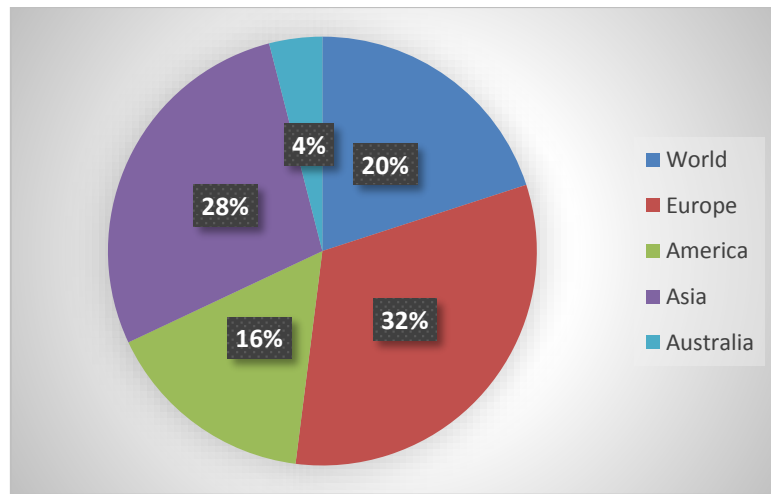


Figure 1. Carbon Tax Implementation Across Continents

Table 2. Comparison of Carbon Tax Implementation of Several Countries

Description	Argentina (2018)	Singapore (2019)	Netherland (2021)	South Africa (2019)	Japan (2012)
Affected Sectors	Fossil-fuel consumption	Industry Resources	Industry	Industry Resources Buildings Transportation	Consumption of fossil fuels, coal, petroleum, and Industry (starting in 2022 on a regular basis).
Exception	Domestic aviation; Domestic shipping; Fossil fuel exports	No exemptions apply (no exemption)	Emissions below baseline (predetermined limit)	Public Transportation Housing Electricity	Electricity Agriculture Transportation
Subject	Distributor ; Manufacturer; Importer	Operations	Operators	Consumers	Consumer

Tax Rate Reporting	Month 6	Year 3.7	Month 35.24	Semester 7	-
Tax Rate Evaluation	Every four months	2023	N/A	2022	-
Revenue	General purposes	For addressing climate change	N/A	N/A	For addressing climate change

In order to have a common perspective, this research takes samples of countries in each continent. The selected countries are the most recent in implementing a carbon tax to minimize the time lag. From the comparison table above, in the early stage of carbon tax implementation in Indonesia, there is still room for improvement. Therefore, it is vital to see the success of carbon tax implementation in other countries, especially in the experience of countries whose implementation distance is similar to Indonesia in terms of planning and implementation time of carbon tax.

2. Reformulation of Carbon Tax Policy

From the comparison of carbon tax implementation above, it can be seen that in the early stages of carbon tax implementation in Indonesia, there is still room for improvement. Therefore, it is important to look at the success of carbon tax implementation in other countries, especially in the experience of countries whose implementation distance is not much different from Indonesia in terms of planning and implementation time of carbon tax.

a. Scope Carbon Tax

This should be an important note for Indonesia to expand the scope of carbon tax implementation. In the initial stage, the carbon tax policy in Indonesia is only imposed on one of the subsectors in the energy sector, namely power generation. Indeed, carbon emissions from the energy sector are the largest contributor to carbon emissions in Indonesia. However, other subsectors, such as transportation and industry, contribute significantly to carbon emissions, especially the FOLU sector, which has historically exceeded carbon emissions in the energy sector (Dyarto & Setyawan, 2021).

In addition, in Law No.7 of 2021 concerning Harmonization of Taxation article 5, "carbon tax subjects are individuals or entities that purchase goods that contain carbon and/or carry out activities that produce carbon emissions." If we look at the subject, we have implemented indirect taxation (fuel approach) and direct taxation (direct emission approach) in our HPP Law.

Indirect taxation (fuel approach) is a tax system that imposes a certain amount of tax on fuel by weight or volume, which is taxed when it enters the economy (oil, gas, coal, and their derivatives). The imposed sectors and activities are motor fuels, transportation, and heating equipment, and the taxpayers are fuel users and end consumers in the distribution chain. Direct taxation (direct emission approach) is a form of taxation based on the carbon content of fuels, aiming to measure actual emissions. The sectors and activities are industries or large factories and oil refineries. Then, the taxpayers are entities that produce emissions (Novikasari & Mardhatillah).

However, the problem is that the imposition of fuel tax and motor vehicle tax currently existing in Law No. 1 Year 2022 on Financial Relations between the Central Government and Regional Governments (HKPD Law) has not been oriented as a carbon tax, so the fuel tax and motor vehicle tax rules must be adjusted that both are carbon taxes so that later the scope of the HPP Law needs to be expanded. Based on its

authority, the central government collects carbon taxes related to emissions generated by the industrial sector, and carbon taxes related to carbon emissions from motor vehicle taxes and fuel taxes are collected by local governments.

Later, when the government expands the implementation of the carbon tax plan in 2025, it needs to include the industrial sector, transportation that still produces carbon emissions, and the forestry sector (FOLU). Thus, if the transportation sector is included in the carbon tax scheme, there are two tax subject schemes: the power generation sub-sector at the producer/distributor level and the transportation level at the consumer level. As a result, the behavior of fuel users at the consumer level will change.

Other than that, the Harmonization of Taxation Law (HPP Law) in Article 13 paragraph (5) has also provided space for distributors and final consumers to be subject to carbon tax by allowing individuals or entities that purchase goods containing carbon or conduct activities that produce carbon emissions to be subject to carbon tax. Turning to the tax subject side of the carbon tax, the initial application stage in Indonesia focuses on coal-fired power plant operators. This condition is similar to Singapore and the Netherlands, which set the operator as the subject of a carbon tax. In the future, if Indonesia also expands the scope of carbon tax to the industrial sector, the stipulation of operators as tax subjects is still relevant. However, the carbon tax will also extend to a broader sector. In this case, the designation of distributors and end-users should also be considered, as has been implemented in Argentina and South Africa.

b. Tariff Reporting Mechanism

After determining the object and subject of the carbon tax, the reporting mechanism also needs attention. This aims to find the right combination between the convenience of carrying out obligations for taxpayers and the accuracy of the Fiscus reporting data. Carbon tax implementation in the Netherlands uses monthly reporting, making it easier for the government to monitor and evaluate. Singapore, the closest country to Indonesia, uses an annual carbon tax reporting mechanism South Africa takes the middle ground by requiring taxpayers to report quarterly carbon tax.

The Taxation Harmonization Act itself stipulates that carbon tax reporting in Indonesia is directed annually. If Indonesia has a periodic tax return reporting mechanism, the government could use a monthly cycle to maintain more intensive monitoring

c. Carbon Tax Rate

The carbon tax rate in Indonesia based on the Taxation Harmonization Law is based on the carbon price in the carbon market. Indonesia needs to consider a tax rate that is not based on the carbon price in the carbon market but can adopt schemes in other countries that adjust to inflation (CPI) and community conditions to reflect the level of public consumption better.

d. Utilization of Carbon Tax Revenues or Funds

Article 13 paragraph (12) of the HPP Law explains that "Revenue from carbon tax may be allocated for climate change control". Whereas the phrase "may" implies that the allocation of carbon tax revenue is a mere choice for the government in terms of climate change control. The openness of the norm of the phrase "may" can certainly be a legal gap in the use of carbon tax revenues with the aim of climate change control as stated in the NDC and RUENN. According to the author, the article should be amended by using the phrase "must" for the sake of maximizing the green tax reform.

Carbon taxation is not solely about imposing taxes; another crucial aspect revolves around how the government utilizes the tax revenue. The allotment and dispersal of tax revenue, in general, play a pivotal role in showcasing the equity of the taxation mechanism (IESR, 2018). According to a journal by Jeremy Carl and David Fedor, in countries with carbon taxes, there are three prevalent methods of revenue allocation: environmentally beneficial spending, inclusion in the government's general funds, and revenue recycling. Furthermore, allocation to green spending means that tax revenues are used to finance environmental expenditures, such as climate change mitigation and renewable energy infrastructure financing, which are forms of low-carbon investment.

This concept is often referred to as "earmarking" in taxation, where the revenue is explicitly dedicated to finance activities aligned with the original purpose of the carbon tax. Examples of countries that employ earmarking include Japan and Singapore, which allocate all carbon tax proceeds explicitly to environmental initiatives or government programs to address climate change. To achieve the 2030 target of a 29% reduction in emissions, allocating carbon tax revenue through earmarking is the appropriate approach. Consequently, the Indonesian government should position the carbon tax as a fiscal tool to incentivize behavior changes towards environmental enhancement. Thus, the primary objective of implementing a carbon tax is to curtail the production and consumption of goods responsible for carbon emissions, with the resulting revenue directed toward programs focused on improving environmental quality.

e. Carbon Tax Incentives

Law No.7 of 2021 on Harmonization of Taxation (HPP Law) does not explain the provision of incentives for activities that lead to decarbonization. In fact, the most appropriate policy to reduce carbon emissions by implementing a carbon tax is providing incentives for businesses, industries, and individuals to regulate or limit activities that can cause CO₂ (carbon) emissions.

Generally, the incentive approach to reducing CO₂ emissions is to impose a special tax on each ton of CO₂ emissions or each ton of carbon contained in fossil fuel products. This tax aims to motivate industries or emitters to reduce their emissions by comparing the cost of reducing emissions with the cost of the tax. As such, the tax can serve as an upper limit on the cost of reducing emissions and encourage industries/emitters to become more efficient in their use of energy resources. However, the tax can also impact the price of goods produced and the consumers who need to pay it. Therefore, implementing a carbon tax in Indonesia needs caution and consideration so that no parties are harmed.

The biggest concern from the implementation of the carbon tax is the increase in the financial burden that needs to be borne by industry or consumers for the purchase of goods containing carbon or carbon-generating activities at a certain amount, which has the potential to reduce people's purchasing power or industry competitiveness. It is feared that the carbon tax policy will shock the manufacturing industry. This is related to the potential increase in production costs driven by energy costs, which will eventually be passed on to consumers.

The government must consider the competitiveness of industries affected by the implementation of this policy. The industry must receive compensation so that it can maintain its competitiveness. Incentives can be provided through interventions in shipping costs, electricity tariff cuts, or other policies that can maintain the structure of the cost of production. The impact of increased electricity costs on people's purchasing

power can be compensated by carbon dividend policies such as those implemented by Sweden and Japan.

Following establishing a carbon tax policy, the subsequent essential step involves crafting regulations that enhance the attractiveness of investments in renewable energy (Crippa, 2016). The proceeds from the carbon tax must be reinvested into the advancement of renewable energy, ultimately enabling renewable sources to attain cost competitiveness compared to fossil fuels over the long term. To ensure transparency, a robust management framework must be in place. This transparency is crucial for the public's confidence, assuring them that the carbon tax is being applied appropriately for their benefit. The primary objectives behind implementing a carbon tax are optimizing state revenue and directing significant support towards the Green Indonesia initiative, all while curbing greenhouse gas emissions. Consequently, implementing a carbon tax will be pivotal in shaping Indonesia's future progress (Nurdiyanto & Resosudarmo, 2018).

Conclusion

1. The enactment of Indonesia's carbon tax regulation, Law No. 7 of 2021, signifies a pivotal step in the country's green economic policy framework to mitigate rising carbon emissions. This legislation grants regulatory and collection authority to the Government, emphasizing environmental restoration and carbon emission reduction efforts. While the implementation stages outlined in the law demonstrate progress, disparities between the legislation and initial proposals highlight areas for refinement. To optimize effectiveness, reforms are needed to enhance policy models, expand scope, incentivize tax funds, adjust rates, and strategically allocate revenues. This underscores the imperative for Indonesia to continue refining its carbon taxation framework to achieve meaningful carbon emission reduction targets.
2. The ideal reformulation for Indonesia's carbon tax policy within the green tax reform framework involves expanding the scope beyond the energy sector to include transportation and industry. Adopting a periodic tax return reporting mechanism, such as monthly reporting, would enhance monitoring efficiency. Adjusting tax rates based on inflation and societal conditions, rather than solely pegging them to the carbon market, is advisable. Amending legislation to mandate earmarking carbon tax revenues for climate change mitigation initiatives ensures alignment with national goals. Incorporating incentives for decarbonization activities, coupled with provisions for industry compensation, is crucial for industry buy-in and competitiveness. These adjustments will optimize Indonesia's carbon tax policy, effectively reducing carbon emissions and promoting sustainability.

Recommendation

1. Enhance legal clarity and alignment within Indonesia's carbon tax regulation to ensure consistency with environmental conservation goals and international standards. This involves reviewing existing laws to address any inconsistencies and ensuring that carbon tax regulations are effectively integrated into broader environmental legislation. Urgently reformulate the existing carbon tax framework to address gaps and inconsistencies, ensuring alignment with global best practices and Indonesia's environmental objectives.
2. Foster stakeholder engagement and transparency in the formulation and implementation of carbon tax policies. This includes establishing mechanisms for public consultation, incorporating feedback from relevant stakeholders, and ensuring transparency in the allocation of carbon tax revenues. Additionally, provide clear

guidelines and incentives for businesses to transition towards low-carbon practices, urgently addressing gaps and deficiencies in the current policy framework to accelerate the adoption of sustainable practices and mitigate environmental impact.

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