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THE IMPLEMENTATION OF A CARBON TAX WITHIN THE INDONESIAN TAX LEGAL SYSTEM: A LITERATURE REVIEW FOLLOWING THE ENACTMENT OF THE HPP ACT

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Abstract
This study examines the implementation of carbon tax within the Indonesian tax law system following the Tax Regulation Harmonisation Act. Carbon tax serves as a fiscal instrument that not only functions to increase state revenue but also to control greenhouse gas emissions through the internalisation of external costs arising from carbon-emitting activities. This study employs a literature review using a normative legal approach to examine the legal framework of the carbon tax, the challenges to its implementation, and its prospects in supporting the transition towards low-carbon development. The findings indicate that the HPP Act has provided an important initial legal foundation; however, the implementation of the carbon tax still faces obstacles in the form of unclear technical standards, institutional readiness, inter-sectoral coordination, and potential economic and social impacts. On the other hand, a carbon tax holds great promise as an environmental policy instrument if supported by clear secondary legislation, a robust monitoring system, and fair compensation mechanisms. Thus, a carbon tax has the potential to become an important part of tax reform aligned with Indonesia's sustainable development goals.
Keywords: carbon tax, HPP Act, tax law, climate change, literature review, sustainable development.

Introduction

Climate change has become an urgent global issue requiring measured and evidence-based policy responses. Rising global temperatures, rising sea levels, and the increasing frequency of hydrometeorological disasters indicate serious pressure on environmental systems and human life. Reports from the Intergovernmental Panel on Climate Change confirm that human activities, particularly greenhouse gas emissions from the energy and industrial sectors, are the primary cause of climate change (IPCC, 2023). In this context, countries are required to design policies that are not only administrative in nature, but also economic and regulatory.

As a developing country, Indonesia occupies a strategic position whilst being vulnerable to the impacts of climate change. As an archipelago, Indonesia faces direct threats such as coastal erosion, tidal flooding and changes in extreme weather patterns. On the other hand, Indonesia is also a significant contributor to carbon emissions, particularly from the coal-based energy sector and deforestation (Pigou, 2017). This situation places Indonesia in a complex position between the need for economic development and the obligation to reduce emissions.

Indonesia's commitment to tackling climate change is reflected in its ratification of the Paris Agreement through Law No. 16 of 2016. In this commitment, Indonesia has set an emissions reduction target of 29 per cent on its own and up to 41 per cent with international support. This target requires effective and integrated policy instruments, including the use of fiscal instruments such as a carbon tax. A carbon tax is viewed as a mechanism capable of internalising the external costs of carbon emissions.

A carbon tax is a form of environmental tax based on the principle of the Pigouvian tax, namely a tax levied to correct negative externalities. In this context, carbon emissions are treated as a social cost that must be borne by the economic actors responsible for generating them (Pigou, 2017). Thus, a carbon tax serves not only as a source of government revenue but also as an instrument for steering economic behaviour towards more environmentally friendly practices.

The implementation of a carbon tax is also consistent with the 'polluter pays' principle, which is recognised in international environmental law. This principle stipulates that the party causing pollution must bear the costs arising from its activities (Ridhoni et al., 2026). Within the national legal system, this principle has begun to be adopted in various environmental regulations; however, its implementation within the tax system has only recently gained a firm foundation through the Law on the Harmonisation of Tax Regulations.

Law No. 7 of 2021 on the Harmonisation of Tax Regulations marks a significant milestone in the reform of Indonesia's tax system. One of the key innovations in this law is the introduction of a carbon tax as a new fiscal instrument. The carbon tax is regulated as part of the government's efforts to reduce greenhouse gas emissions in a gradual and measured manner (Indonesian Ministry of Finance, 2022). This indicates a paradigm shift in tax policy from a purely budgetary function towards a regulatory function.

Although it has a legal basis, the implementation of the carbon tax in Indonesia still faces various challenges. One of the main challenges is the readiness of the regulatory and institutional infrastructure. Implementing regulations governing the technical mechanisms for the collection, reporting and monitoring of the carbon tax are still under development. This uncertainty has the potential to create obstacles to effective implementation (Cramton et al., 2017). Furthermore, there are concerns regarding the economic impact of introducing a carbon tax, particularly on energy-intensive industrial sectors. A carbon tax has the potential to increase production costs and reduce the competitiveness of domestic industries if not balanced by appropriate compensation policies or incentives (Aldy & Stavins, 2012). Therefore, the design of carbon tax policy must strike a balance between environmental objectives and economic stability.

From a tax law perspective, the implementation of a carbon tax must also comply with fundamental principles such as fairness, legal certainty and efficiency. Equity is a key issue because a carbon tax can have a regressive impact on low-income groups. Without adequate redistribution mechanisms, this policy has the potential to widen social inequality (Metcalf, 2019). Consequently, policy design must take into account the distributional aspects of the tax burden. In international practice, various countries have already implemented carbon taxes with mixed results. Sweden, for example, has succeeded in significantly reducing carbon emissions without hindering economic growth through the consistent application of a carbon tax since 1991 (Andersson, 2019). Meanwhile, Singapore has implemented a carbon tax using a phased approach to maintain economic stability. These experiences provide important lessons for Indonesia in designing context-specific policies.

A literature review of carbon tax implementation in Indonesia following the enactment of the HPP Act is essential to assess the extent to which the tax legal system is prepared to accommodate this instrument. This analysis covers normative, institutional and comparative aspects in relation to international practices. This approach enables the identification of gaps between legal norms and the reality of implementation on the ground.

Based on the above, this study aims to analyse the legal framework for carbon taxation within the HPP Act and to examine the challenges and prospects for its implementation within Indonesia's tax legal system. It is hoped that this study will make an academic and practical contribution to the development of tax policies that are responsive to climate change issues and oriented towards sustainability.

Research Methodology

This study employs a literature review using a normative legal approach to analyse the implementation of carbon tax within the Indonesian tax law system following the enactment of Law No. 7 of 2021 on the Harmonisation of Tax Regulations. The data used consists of secondary data comprising primary legal materials such as legislation relating to carbon tax, secondary legal materials in the form of books, scientific journal articles and reports from international organisations, as well as tertiary legal materials that support conceptual understanding (Eliyah & Aslan, 2025). Data collection was carried out through a systematic review of documents, whilst data analysis was conducted qualitatively using a descriptive-analytical approach to assess the alignment of legal norms with environmental taxation theory and relevant international practices (Snyder, 2019) .

Results and Discussion

The Legal Framework for Carbon Tax in the HPP Act

Law No. 7 of 2021 on the Harmonisation of Tax Regulations includes provisions on carbon tax as part of fiscal reform efforts to integrate environmental objectives into the national tax system (Law No. 7 of 2021; Ministry of Finance of the Republic of Indonesia, 2022). The carbon tax provisions in the HPP Law provide a legal basis for the imposition of levies on activities and transactions that generate carbon emissions;

however, the law does not detail all technical aspects of implementation, thus requiring implementing regulations to elaborate on the collection mechanisms, rates, and taxable entities (Rabe, 2018) .

Article 13 of the HPP Act stipulates that the carbon tax is levied in accordance with the carbon tax roadmap and/or the carbon market roadmap, which demonstrate the interconnection between fiscal policy and carbon pricing schemes at national and international levels (Law No. 7 of 2021; Ministry of Finance of the Republic of Indonesia, 2022). The HPP Act incorporates a carbon tax as an instrument to internalise negative externalities in the form of greenhouse gas emissions, in line with environmental economic principles such as taxes that target polluters to bear the social costs of their activities (Zhang & Baranzini, 2004) .

Although the normative basis is recognised, the formulation of the provisions in Article 13 is considered complex and combines various substantive norms with broad delegations of authority, thereby creating the potential for regulatory fragmentation and legal uncertainty for businesses and tax collectors (Klenert et al., 2018) .

The HPP Act does not include a clear operational definition of the concepts of carbon-containing goods and activities that generate carbon emissions; consequently, interpretations of the taxable objects may vary and leave scope for differing administrative interpretations amongst the relevant agencies (Ministry of Finance of the Republic of Indonesia, 2022).

The delegation of authority under the HPP Act allows the government to regulate technical details through government regulations, ministerial regulations, or other relevant regulations; however, this delegation mechanism requires inter-institutional coordination to prevent overlapping authorities and policy inconsistencies (Nuradi, 2023; Ministry of Finance of the Republic of Indonesia, 2022).

In terms of taxable entities, the HPP Act targets individual and corporate taxpayers who purchase carbon-containing goods or engage in activities that generate emissions; consequently, the scope of taxable entities is broad and encompasses various economic sectors, particularly the energy, industrial and transport sectors (Law No. 7 of 2021; Ministry of Energy and Mineral Resources, 2023). The provisions regarding the setting of carbon tax rates in the HPP Act are normative and imply that rates should be determined in line with the aforementioned roadmap; the lack of clarity regarding the formulation of rates in the Act necessitates the development of a transparent rate-setting methodology based on emissions data (Ministry of Finance of the Republic of Indonesia, 2022).

The HPP Act also recognises the interconnection between the carbon tax and carbon economic value schemes such as carbon markets and offset mechanisms; consequently, the implementation of the carbon tax must be aligned with the emissions trading system and offset initiatives already regulated in other regulations, such as the Presidential Regulation on the Implementation of Carbon Economic Value (Law No. 7 of 2021).

From the perspective of taxation principles, the structure of the carbon tax in the HPP Act must be tested against the principles of legal certainty, fairness and public benefit; ambiguity in the regulations may undermine the principle of legal certainty, whilst the potential for regressive impacts necessitates compensation mechanisms to ensure the principle of fairness is upheld (Aldy & Stavins, 2012) .

Several studies highlight that the introduction of a carbon tax without adequate provisions regarding incentives and compensation may impose a disproportionate burden on energy-intensive industries and vulnerable social groups; consequently, the design of carbon tax policy must incorporate redistributive instruments and green transition incentives (Metcalf, 2019) .

International experience demonstrates initial success in several countries through a combination of fiscal policies and carbon markets; these lessons emphasise the importance of a phased approach, clear tariff setting, and strengthening tax administration capacity for emissions measurement and verification prior to full implementation in Indonesia (Andersson, 2019) .

Overall, the legal framework for the carbon tax within the HPP Act provides an important initial normative framework; however, effective implementation requires the drafting of detailed implementing regulations, institutional coordination, transparent tariff methodologies, and social and economic mitigation policies to ensure that the objectives of emissions control and fiscal justice are achieved.

Challenges and Prospects for the Implementation of a Carbon Tax in Indonesia

The implementation of a carbon tax in Indonesia has emerged in response to the need to curb rising greenhouse gas emissions, whilst aligning the national fiscal system with the agenda for the transition to a low-carbon economy. This policy has a legal basis under the HPP Act, but its implementation is inextricably linked to the readiness of subsidiary regulations, administrative infrastructure, and adequate cross-sectoral coordination (Law No. 7 of 2021; Ministry of Finance of the Republic of Indonesia, 2022).

One of the main challenges lies in the aspect of legal certainty. Whilst the HPP Act has indeed provided a normative framework, many technical details have yet to be operationalised, particularly regarding the imposition mechanism, the scope of covered entities, emissions measurement, and the relationship between the carbon tax and carbon market instruments. This situation creates a degree of uncertainty that may hinder taxpayer compliance and the effectiveness of ' oversight.

The next challenge relates to institutional readiness and tax administration. The implementation of a carbon tax requires a monitoring, reporting and verification (MRV) system that is reliable, consistent and integrated across agencies. Without a robust MRV system, the government will find it difficult to accurately determine emission levels, set proportionate rates, and ensure that the levy truly reflects the carbon burden generated by economic activities (Rabe, 2018) .

From an economic perspective, a carbon tax has the potential to increase production costs in energy-intensive sectors such as power generation, manufacturing, transport and heavy industry. This rise in costs could affect the prices of goods and services, undermine the competitiveness of national industry , and exert pressure on economic growth if the government fails to prepare a gradual and measured transition scheme (Aldy & Stavins, 2012). Social impacts are also a significant concern. A carbon tax can be regressive as the burden may ultimately be passed on to consumers, particularly low-income groups who are more vulnerable to rises in the prices of energy, transport and basic necessities. Therefore, this policy needs to be accompanied by compensation mechanisms, social protection, or the reallocation of tax revenue to support vulnerable groups so that the principle of fairness is upheld (Metcalf, 2019) .

Another challenge arises from the fossil fuel subsidy policies still in place in Indonesia. As long as fossil fuel prices remain propped up by subsidies, the price signals provided by a carbon tax become less effective. The lack of alignment between the carbon tax, energy subsidies and energy sector policies can create policy distortions that reduce incentives to switch to clean energy (Rabe, 2018)

From an administrative law perspective, the implementation of a carbon tax also requires a clear division of powers between agencies. A carbon tax intersects with the remit of fiscal, environmental, energy and carbon trading authorities. If inter-agency coordination is weak, the resulting regulations risk being overlapping, fragmented and difficult to apply consistently in practice (Klenert et al., 2018) .

On the other hand, the political challenges of the policy cannot be ignored. A carbon tax is often perceived as an additional burden on businesses and the public; consequently, political resistance may arise if the policy is seen as hindering economic recovery or reducing national competitiveness. Therefore, transparent and phased policy communication is essential to ensure the public understands the long-term objectives of this instrument (Ministry of Finance of the Republic of Indonesia, 2022).

Nevertheless, the prospects for implementing a carbon tax in Indonesia remain wide open. A carbon tax can serve as an effective fiscal instrument to drive behavioural change among businesses, as the increased cost of emissions will encourage energy efficiency, technological innovation and a reduction in reliance on fossil fuels (Zhang & Baranzini, 2004) .

A further prospect lies in the potential for government revenue. If designed appropriately, a carbon tax can be a significant source of revenue whilst simultaneously supporting the financing of the energy transition. Such revenue can be channelled towards climate adaptation programmes, social protection, the development of renewable energy, and the financing of low-carbon technologies (Ministry of Finance of the Republic of Indonesia, 2022).

The integration of a carbon tax with the carbon market also opens up opportunities for more flexible policy. With synchronised arrangements, taxpayers can obtain reductions in their tax burden through emissions trading or offset mechanisms, ensuring that the policy is not merely repressive but also provides incentives for businesses that reduce emissions more quickly (Law No. 7 of 2021).

Experience in other countries shows that a carbon tax can be successful if implemented gradually, consistently, and accompanied by adequate social compensation. Sweden, Singapore and several European countries have demonstrated that clear policy design and robust administration can maintain a balance between emissions reduction and economic stability (Andersson, 2019) .

In the Indonesian context, the long-term prospects for a carbon tax also depend on the government's commitment to aligning this policy with net-zero emission targets and the sustainable development agenda. If carbon tax revenue is genuinely used to accelerate the energy transition, then this policy can serve as an instrument of structural transformation, rather than merely a fiscal levy (Ministry of Finance of the Republic of Indonesia, 2022).

Thus, the implementation of a carbon tax in Indonesia stands at a critical juncture. Technical, social and political challenges remain significant, but the prospects are also strong if the government is able to establish clear regulations, a reliable administration and a fair policy design. Within this framework, a carbon tax has the potential to become a key instrument for balancing environmental, economic and social justice objectives within Indonesia's tax law system.

Conclusion

The implementation of a carbon tax within Indonesia's tax legal system following the enactment of the HPP Act represents a significant step in fiscal reform that combines state revenue objectives with emissions control. Normatively, this policy has already provided a clear legal basis for the state to levy taxes on activities that generate carbon emissions, meaning that taxation is no longer understood solely as a budgetary instrument, but also as a regulatory tool to encourage more environmentally friendly economic behaviour.

However, the challenges of implementation remain considerable. The main weaknesses lie in legal certainty, the readiness of secondary regulations, inter-agency coordination, the emissions measurement system, and the potential economic and social impacts, particularly on energy-intensive industries and vulnerable communities. Consequently, the success of the carbon tax depends heavily on a policy design that is consistent, phased, and supported by fair compensation mechanisms.

Consequently, a carbon tax holds great promise as an instrument for the transition towards low-carbon development in Indonesia, but only if it is accompanied by strengthened tax administration, synchronisation with carbon market policies, and a commitment to the principles of fiscal justice. In this context, a carbon tax should not merely be positioned as a formal legal norm, but must be implemented as an effective, adaptive and sustainability-oriented public policy.

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