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The Design and Implementation of Carbon Tax In Indonesia: Some Experience And Recommendations For Vietnam

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ABSTRACT

Carbon pricing instruments (CPIs) are policy tools that use pricing to encourage economic actors to cut carbon dioxide (CO₂) emissions and engage in climate mitigation. Compared to other policy tools, CPIs are cost-effective and may help with further development goals. Currently, many Asian countries are implementing or considering the implementation of CPIs. The Indonesian Government introduced a carbon tax, while the Vietnamese Government paved the way for the carbon trading market. In this paper, the authors study Indonesia's adoption and implementation of the carbon tax. Based on the Indonesian experience, we propose some recommendations for Vietnam to adopt a carbon tax in the foreseeable future. The authors argue that Vietnam should carefully research the impact of a carbon tax, including pilot programs, and consider when to apply a carbon tax. Moreover, good tax governance and transparency are essential to gain public acceptance of carbon tax and ensure its effectiveness.

Keywords: carbon pricing instruments; carbon tax; Indonesia; Vietnam.

1. INTRODUCTION

Global warming is causing severely adverse influence on several nations. Given the significant costs involved with global warming, governments are pursuing more enthusiastic and complex agendas to promote climate mitigation, particularly market-based tools like Climate Policy Initiatives (CPIs) (United Nations, 2021).

All nations must work together to cut CO₂ emissions and mitigate climate change. The global character of carbon also creates considerable obstacles, most notably the issue of collective action. Consequently, a worldwide strategy and consensus are essential. In 2015, United Nations Member States signed three leading-edge instruments: the 2030 Agenda for Sustainable Development and its 17 Sustainable Development Goals (SDGs), the Addis Ababa Action Agenda, and the Paris Agreement. They are the cornerstone of international efforts to combat climate change and implement CPIs worldwide (Suryani, 2021; United Nations, 2021).

CPIs are policy tools that utilize pricing to incentivize economic actors to engage in climate mitigation. They are essential in promoting environmental policy and climate mitigation. Compared to other policy tools, CPIs are more cost-effective and may help with further development goals like resource mobilization ('Economists' Statement on Carbon Dividends', 2019).

In the Asia Pacific region, several nations (including China, Japan, South Korea, New Zealand, and Singapore) are familiar with CPIs. Last year, the Indonesian Government promulgated a legal framework for the carbon tax. Other countries, particularly the ASEAN Member States like Brunei, Philippines, Malaysia, Thailand, and Vietnam, are also considering such tools (Alonso & Kilpatrick, 2022).

In this paper, the authors conduct legal research on adopting and implementing the carbon tax in Indonesia. Based on the Indonesian experience of introducing a carbon tax, we propose some recommendations for Vietnam to adopt a carbon tax in the foreseeable future.

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2. LITERATURE REVIEW

2.1 *Pigou's theory of externalities*

Pigou's theory of externalities, which was expanded upon by Coase and Baumol, is the foundation for CPIs. Externalities are byproducts of economic actions that may either benefit or harm other economic actors. Whenever an economic actor produces or consumes a good or service relating to fossil fuels, it also creates an externality. Nevertheless, this economic actor does not entirely bear the environmental costs connected with production or consumption because the generation of the externality has no price. The polluter then charges society for the environmental costs of doing its business. Therefore, policy action is crucial to mitigate climate change (Pigou, 2013).

Governments have two policy tools for cutting CO₂ emissions. First, "command-and-control" policy tools provide regulations for emissions like CO₂ emission standards, reporting requirements, and CO₂ emission licenses. Second, CPIs. Although both successfully decrease CO₂ emissions, CPIs reduce pollution more efficiently and economically (United Nations, 2021).

CPIs come in a variety of forms. Emission Trading Systems (ETS) ("cap-and-trade") and carbon taxes ("cap-and-tax") are the two main tools that are most popular for achieving climate mitigation (United Nations, 2021).

2.2 *Comparison between ETS and carbon tax*

Carbon taxation is a regulatory tool where the government determines the carbon price while leaving it to the market to decide the amount of CO₂ emissions. Conversely, an ETS is a pricing mechanism where the government establishes an upper limit on CO₂ emissions while allowing the market to set the cost of CO₂ emissions. Carbon taxation and ETS are different strategies that help to accomplish the same goal of pricing CO₂ emissions (United Nations, 2021).

Hybrid systems are those that combine aspects of both. Instances include an ETS with floor and ceiling pricing or a carbon tax that accepts emission reduction initiatives to lessen the tax burden. These tools operate under the same guiding foundation: internalizing environmental harm via carbon price as a motivator to cut CO₂ emissions (United Nations, 2021).

An ETS is more complicated than a carbon tax because it needs a specific institutional framework to set the regulations for exchanging CO₂ emission permits. Since this process is sophisticated and expensive, only industrialized nations have been able to adopt this method successfully. Using a carbon tax has several apparent benefits as opposed to an ETS. It is straightforward to institute a carbon tax. It provides a cost-effective method of restricting the use of fossil fuels and lowering CO₂ emissions. It may be implemented using the current tax regimes, such as excise and environmental taxes, and does not need sophisticated monitoring, reporting, and verification (MRV) system (United Nations, 2021).

On the other hand, an ETS is often more cost-efficient than a carbon tax since it establishes an emission trading market. Businesses can explore a wider variety of possibilities to cut their emissions reduction costs. In an ETS, a company may trade with another company and purchase permits rather than cutting its CO₂ emissions if the latter is more affordable (United Nations, 2021).

However, carbon tax and ETS offer comparable incentives for cutting CO₂ emissions under similar circumstances (United Nations, 2021).

2.3 *Concept of the carbon tax*

A carbon tax is a mandatory, unrequited payment to the government that is imposed on CO₂ emissions. It may lessen CO₂ emissions in the air, thus achieving environmental objectives and impacts. By attaching a cost to these emissions, a carbon tax motivates individuals, organizations, and governments cut down on the economy's overall reliance on high-carbon fuels (such as coal, petroleum, and natural gas) and



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save the environment from the damaging consequences of excessive CO₂ emissions (Bondarenko, n.d.; Directorate, n.d.; Kagan, 2022; United Nations, 2021).

Since lower-income families spend a more significant percentage of their income on emissions-heavy products like transportation, a carbon tax is typically regressive. Policymakers may decrease income taxes or provide refunds to low-income people to make carbon tax more equitable (Suryani, 2021; United Nations, 2021).

2.4 Popularity of carbon tax

In 1973, David Gordon Wilson initially suggested a carbon tax (Berdik, 2014). In the early 21st century, several countries (such as Canada, Ireland, and Sweden) began imposing a carbon tax, which businesses must pay according to the amount of carbon in the fossil fuels they utilize for production (Bondarenko, n.d.).

On the other hand, countries in the European Union partly depend on a market exchange mechanism called the European Union Emissions Trading Scheme, where firms can buy and sell emission rights. Many OECD countries indirectly taxed CO₂ emissions through taxes on energy products and vehicles. (Bondarenko, n.d.) As of 2022, 68 CPIs, including carbon taxes and ETSs, are operating, and three more are scheduled for implementation (World Bank, 2022).

3. RESEARCH METHODOLOGY

3.1 Descriptive research

Descriptive research questions are those that focus on the current situation. Traditional legal studies tend to be descriptive, attempting to define ‘the law’ as it now stands. From a theoretical perspective, this research method may be characterized as positivism because it only considers the positive law currently effective (the *lex lata*) as an independent source of knowledge. From a global standpoint, doctrinal research remains a dominant legal study area (Lieblich, 2021).

3.2 Comparative law

The comparative legal methodology is applicable to gain insight into other legal systems, solve issues unique to one legal system, or encourage the harmonization of the law among different national legal systems. Since its emergence around the turn of the 20th century, comparative legal research has played an eminent role in examining national legal systems. The difficulties of a specific legal system may be solved using the comparative legal methodology. It can also encourage the unification of law across different national legal systems. Its methodologies include comparing various legal traditions or systems (external comparison) or legal fields inside national legal systems (internal comparison) (Hey & Mak, 2009).

4. RESULTS

4.1 Adoption of the carbon tax in Indonesia

In October 2021, the Indonesian Government passed Law No. 7/2021 (Law on Harmonization of Tax Regulations ‘HPP Law’). Different provisions of the HPP Law take effect at varying times. Article 13 of the HPP Law introduces carbon tax in Indonesia.

4.1.1 Concept of the carbon tax

A carbon tax is imposed on CO₂ emissions that harm the environment.

4.1.2 Tax subject

The subject of the carbon tax is any individual or entity that purchases goods containing carbon or carries out activities that release CO₂ emissions.

4.1.3 Tax payable

The carbon tax is payable on purchasing carbon-containing goods or activities that produce a certain amount of carbon emissions in a certain period. When the carbon tax is payable, it is calculated: (1) at the time of purchase of goods containing carbon, (2) at the end of the calendar year period the activity produces a certain amount of carbon emissions, or (3) other times which are further regulated by or based on a Government Regulation.

4.1.4 Tax rate

The carbon tax rate is set to be higher than or equal to the carbon market price per kilogram of CO₂ equivalent (CO₂e) or its equivalent unit. If the carbon price in the carbon market is lower than IDR 30 per kilogram of CO₂e or an equivalent unit, the carbon tax rate is set at a minimum of IDR 30 per kilogram of CO₂e or equivalent unit.

4.1.5 Revenue use

Revenues from the carbon tax can be assigned for climate mitigation.

4.1.6 Relationship between the carbon tax and the ETS

Taxpayers who participate in carbon emission trading, carbon emission offsets, or other mechanisms under laws and regulations in the environmental sector may be given carbon tax reductions and other treatment for the fulfillment of carbon tax obligations.

4.1.7 Further regulations by the Government

Provisions regarding (1) the addition of tax objects subject to the carbon tax, (2) the subject of the carbon tax, and (3) allocation of revenue from carbon tax for climate mitigation shall be regulated by or based on a Government Regulation.

4.1.8 Further regulations by the Minister of Finance

Provisions regarding (1) procedures for calculating, collecting, paying, or depositing, reporting, and the mechanism for imposing carbon taxes, and (2) procedures for reducing carbon tax and other treatment for the fulfillment of carbon tax obligations shall be regulated by Regulation of the Minister of Finance.

4.1.9 Relationship with the general tax law

The implementation of rights and fulfillment of tax obligations related to the carbon tax is carried out under the provisions of the legislation in the field of general provisions and taxation procedures.



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4.1.10 Implementation of the carbon tax

From 1 April 2022, the carbon tax will apply to coal-fired power plants (CFPPs) until 2024. If CFPPs release CO₂ emissions exceeding their maximum regulatory limits, they will be subject to the carbon tax of IDR 30 per kilogram of CO₂e. Instead of paying the carbon tax, CFPPs may acquire carbon credits. Beginning in 2025, the Government will fully build up the carbon trading market. The sectors subject to carbon tax will gradually broaden following their degree of preparation, considering the carbon tax's social, economic, and environmental effects (Koesmoeljana, 2021; Suryani, 2022).

4.2 Proposal to adopt CPIs in Vietnam

In 2020, the National Assembly of Vietnam passed the (new) Law on Environmental Protection 2020. Since the first legislation on environmental protection in 1993, this new law marks the most substantial upgrade of the legal framework for environmental protection in Vietnam.

On 1 January 2022, the (new) Law on Environmental Protection 2020 went into force. The Government and the Ministry of Natural Resources and Environment recently released several normative documents to implement the Law on Environmental Protection. The two most significant of these are Decree no. 06/2022/ND-CP on mitigating greenhouse gas emissions and protecting the ozone layer and Decree no. 08/2022/ND-CP. These legal documents have established an innovative and practical framework to create a low-carbon economy that should lead us to green growth and sustainable development.

According to the strategy for reducing greenhouse gas emissions, the Government will organize a domestic carbon market and develop it in two stages:

From 2022 to 2027: Establish a regulatory framework for managing and regulating the domestic carbon market, including a pilot program for exchanging carbon credits starting in 2025.

Starting in 2028: Officially commencing the carbon credit exchange that links the local and international carbon markets.

Under the (new) Law on Environmental Protection 2020, the domestic carbon market deals with the trading of greenhouse gas emissions quotas and carbon credits gained through taking part in local and international carbon credit exchange and offsetting mechanisms.

5. DISCUSSION

5.1 Commentary on the carbon tax in Indonesia

The Indonesian Government's initiative to apply a carbon tax is an excellent stepping-stone for Indonesia to reduce CO₂ emissions by up to 29% using domestic resources and 41% with international assistance in 2030 (Wuryandani & Adam, 2021). Nevertheless, there are concerns over the tax rate and the timing of implementing the carbon tax.

Firstly, the low tax rate approach. The carbon tax in Indonesia has one of the most modest tax rates worldwide. Consequently, it may not provide a compelling motivation to change market practices toward more sustainable development. Moreover, the application of carbon tax needs sufficient green energy alternatives and low-emission technologies to generate incentives to reduce CO₂ emissions (Christi, 2022).

The development of carbon tax requires patience due to its lengthy process. Still, if the Government effectively designs a carbon tax, it can speed up the reduction of CO₂ emissions while giving the Government additional revenue for sustainable development (Christi, 2022; United Nations, 2021).

Second, the delayed implementation. Following the promulgation of the HPP Law, the carbon tax in Indonesia was scheduled to go into effect in April 2022. Its goal is to cut CO₂ emissions, so the initial phase of the implementation will target CFPPs (Koesmoeljana, 2021; Maulia, 2022).

However, the Government first chose to postpone the application of carbon tax until 1 July 2022 due to the need for technical instructions (Suryani, 2022). At the end of June 2022, the Government announced that a further delay was unavoidable without offering a new deadline. Industry associations in Indonesia applauded the Government's decision to postpone the application of carbon tax, pointing out ambiguous regulatory framework and challenging economic circumstances as justifications (Maulia, 2022).

5.2 Some challenges in adopting a carbon tax in Vietnam

Based on the Indonesian experience of introducing a carbon tax, the authors identify some challenges in adopting a carbon tax in Vietnam.

Firstly, the potentially unfavorable response from consumers and businesses. The successful implementation of carbon tax depends heavily on public acceptance (United Nations, 2021). The authors predict mixed reactions from consumers and businesses. Although Vietnam has been promoting clean energy to cope with the transition of production activities when applying carbon tax, small and medium enterprises (SMEs) may need more conditions to convert their production immediately (EY, 2021). Hence, if a carbon tax is applicable, the competitiveness of SMEs will be weaker than that of large-scale businesses.

The application of carbon tax also increases the cost of living because the use of fossil fuels is still indispensable. If a carbon tax is applicable, imported gasoline will be subject to five different taxes (Giang, 2022). In the context of a substantial increase in gasoline prices, the public may not welcome the introduction of a carbon tax because higher gasoline prices mean higher risks of inflation.

Since carbon tax may create economic burdens on consumers and SMEs, an appropriate mechanism for introducing carbon tax must be crucial.

Second, the effectiveness of the tax system. The carbon tax can only achieve its best if its application is synchronized with other tax policies. Supporting policies and mechanisms can enhance the long-term effect of the carbon tax and facilitate the transition to green growth and sustainable development (Michaelowa, 2018; Suryani, 2021).

Hence, the Government needs to review the whole tax system before introducing a carbon tax. Notably, under current tax laws in Vietnam, imported gasoline is subject to four taxes: import tax, excise tax, environmental protection tax, and value-added tax (Giang, 2022). Nevertheless, since the introduction of the environmental protection tax, an excise tax on gasoline has become less convincing (The Saigon Times, 2022). Hence, if the Government wants to introduce a carbon tax on gasoline, it should be able to distinguish these types of taxes.

Third, the distributional effects of the carbon tax. The application of carbon tax may lead to tax regression. Lower-income families spend more of their income on emissions-heavy products like transportation. Hence, the economic burden of carbon tax severely rests on low- and middle-income people. The potential regressiveness of carbon may explain public reluctance against applying carbon tax (United Nations, 2021).

Hence, the Government needs to carefully design provisions for carbon tax exemption and reduction to minimize the regressive effects of the carbon tax and reduce the carbon tax's economic burden on low-income people.

5.3 Some recommendations for Vietnam

The authors analyze the current legal framework for the carbon tax in Indonesia and provide the following recommendations for Vietnam to adopt a carbon tax successfully.

First, Vietnam should carefully research the impact of a carbon tax and consider when to apply a carbon tax. In Indonesia, the Indonesian Government had to postpone the application of carbon tax due to concerns that carbon tax may create additional burdens on consumers amid rising fuel prices



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(Maulia, 2022). In the current context of Vietnam, the issuance and application of carbon tax may cause risks of adverse reactions.

Second, Vietnam should consider piloting a carbon tax in selected sectors. The pilot program should determine whether the carbon tax achieves its social, economic, and environmental goals. The pilot program should also analyze the reactions of economic actors and people toward the new carbon tax.

Third, Vietnam should consider the low tax rate approach because it may help businesses and people gradually adapt to carbon tax changes, thus minimizing criticism against a carbon tax.

Fourth, Vietnam should promote carbon tax transparency and secure financial commitments for climate mitigation.

6. CONCLUSION

A carbon tax is cost-effective in minimizing CO₂ emissions and fossil-fuel usage. (United Nations, 2021). Hence, many Asian countries are using or considering carbon tax to mitigate climate change (Alonso & Kilpatrick, 2022; World Bank, 2022).

The Indonesian initiative to apply carbon tax is highly significant to achieve its Nationally Determined Contributions (NDCs) under the Paris Agreement. The governance and transparency of the carbon tax, the public opinions towards sustainable development, and the equitable transition process are essential to successfully implementing a carbon tax, particularly in developing countries (Suryani, 2021; Wuryandani & Adam, 2021).

In Vietnam, the Government is developing CPIs, particularly the carbon trading market. Suppose the Government wants to introduce a carbon tax. In that case, it should carefully design provisions so that the carbon tax targets principal carbon emitters but does not cause excessive economic burdens on low-income people.

Indonesian experience should be helpful for Vietnam to develop its legal framework for a carbon tax. Indonesia and Vietnam have a long way toward carbon neutrality and sustainable development.

REFERENCES

- Alonso, C., & Kilpatrick, J. (2022). *The Distributional Impact of a Carbon Tax in Asia and the Pacific*. International Monetary Fund. <https://www.imf.org/-/media/Files/Publications/WP/2022/English/wpiea2022116-print-pdf.ashx>
- Berdik, C. (2014, August 10). *The unsung inventor of the carbon tax - the Boston Globe*. BostonGlobe.com. Retrieved November 13, 2022, from <https://www.bostonglobe.com/ideas/2014/08/09/the-unsung-inventor-carbon-tax/f1xFyWmaXf2XzW3nVxrNJK/story.html>
- Bondarenko, P. (n.d.). *Carbon tax*. Encyclopædia Britannica. Retrieved November 13, 2022, from <https://www.britannica.com/topic/carbon-tax>
- Christi, P. (2022, May 3). Does Indonesia's Carbon Tax Have the Power to Trigger a Sustainable Market Shift? *Monash University*. Retrieved September 5, 2022, from <https://lens.monash.edu/@environment/2022/05/03/1384628/does-indonesias-carbon-tax-have-the-power-to-trigger-a-sustainable-market-shift>
- Directorate, O. S. (n.d.). *OECD Glossary of Statistical Terms - Carbon Tax Definition*. OECD. Retrieved September 5, 2022, from <https://stats.oecd.org/glossary/detail.asp?ID=287>
- Economists' Statement on Carbon Dividends. (2019, January 17). *WSJ*. Retrieved September 5, 2022, from <https://www.wsj.com/articles/economists-statement-on-carbon-dividends-11547682910>
- EY. (2021). *Renewable Energy Country Attractiveness Index*. https://assets.ey.com/content/dam/ey-sites/ey-com/en_gl/topics/power-and-utilities/ey-recal-58th-edition-top-40-ranking-october-2021.pdf

- Giang, H. (2022, June 14). Finance Ministry Puts Forward Proposal on Environmental Tax Reduction. *Online Newspaper of the Government of the Socialist Republic of Vietnam*. Retrieved September 5, 2022, from <https://en.baohinhphu.vn/finance-ministry-puts-forward-proposal-on-environmental-tax-reduction-111220614223732184.htm>
- Hey, E., & Mak, E. (2009). Introduction: The Possibilities of Comparative Law Methods for Research on the Rule of Law in a Global Context. *Erasmus Law Review*, 2(3). http://www.erasmuslawreview.nl/tijdschrift/ELR/2009/3/ELR_2210-2671_2009_002_003_001.pdf
- Kagan, J. (2022, October 16). *Carbon tax*. Investopedia. Retrieved November 13, 2022, from <https://www.investopedia.com/terms/c/carbon-dioxide-tax.asp>
- Koesmoeljana, B. (2021, November 29). Wide Ranging Taxation Changes in Indonesia Under Tax Regulation Harmonization Law. *EY*. Retrieved September 5, 2022, from <https://www.ey.com/en-id/tax-service/wide-ranging-taxation-changes-in-indonesia-under-tax-regulation>
- Lieblich, E. (2021). How to Do Research in International Law? A Basic Guide for Beginners. *Harvard International Law Journal*. Retrieved September 5, 2022, from <https://harvardilj.org/wp-content/uploads/sites/15/How-to-do-research-in-interational-law.pdf>
- Maulia, E. (2022, June 27). Indonesia Industry Associations Welcome Further Carbon Tax Delay. *Nikkei Asia*. Retrieved September 5, 2022, from <https://asia.nikkei.com/Spotlight/Environment/Climate-Change/Indonesia-industry-associations-welcome-further-carbon-tax-delay>
- Michaelowa, A. (2018). *Opportunities for Carbon Pricing in Vietnam*. https://www.undp.org/sites/g/files/zskgke326/files/migration/vn/Opportunities-for-Carbon-Pricing-in-Vietnam_Eng.pdf
- Pigou, A. (2013). *The Economics of Welfare (Palgrave Classics in Economics)*. Palgrave Macmillan.
- Suryani, A. (2021). Carbon Tax as a Low Carbon Development Instrument in Indonesia. *Info Singkat*, 13(18). https://berkas.dpr.go.id/puslit/files/info_singkat/Info%20Singkat-XIII-18-II-P3DI-September-2021-236-EN.pdf
- Suryani, A. (2022). Preparation for Carbon Tax Implementation in Indonesia. *Info Singkat*, 14(8). https://berkas.dpr.go.id/puslit/files/info_singkat/Info%20Singkat-XIV-8-II-P3DI-April-2022-236-EN.pdf
- The Saigon Times. (2022, June 22). VCCI Proposes Erasing Excise Tax on Gasoline. *The Saigon Times*. Retrieved September 5, 2022, from <https://english.thesaigontimes.vn/vcci-proposes-erasing-excise-tax-on-gasoline/>
- United Nations. (2021). *United Nations Handbook on Carbon Taxation for Developing Countries*. United Nations. <https://desapublications.un.org/file/918/download>
- World Bank (2022). *State and Trends of Carbon Pricing 2022*. World Bank. <https://openknowledge.worldbank.org/bitstream/handle/10986/37455/9781464818950.pdf>
- Wuryandani, D., & Adam, L. (2021). Tax Reform and Carbon Tax Implementation Through the Legislation of Harmonized Tax Law. *Info Singkat*, 13(20). https://berkas.dpr.go.id/puslit/files/info_singkat/Info%20Singkat-XIII-20-II-P3DI-Oktober-2021-206-EN.pdf