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Balancing Growth and Sustainability: The Role of Carbon Tax in Malaysia

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Abstract: This concept paper examines the crucial role of the carbon tax as a novel policy tool to strike a balance between economic development and environmental sustainability in Malaysia. The primary objective of this paper is to investigate the potential of carbon taxation to curtail carbon emissions in Malaysia without compromising its economic growth. This study adopts a qualitative approach, incorporating an extensive review of existing literature on carbon taxation, its implementation experiences in other countries, and Malaysia's current environmental and economic landscape. The analysis reveals that carbon taxation has the potential to incentivize carbon-emitting industries to adopt cleaner technologies and sustainable practices while generating revenue for environmental initiatives. The findings suggest that a carefully designed and well-implemented carbon tax policy can lead to a more sustainable development path for Malaysia. This paper contributes to the body of knowledge by presenting a comprehensive analysis of the potential of carbon taxation to address climate change issues in the country. The originality lies in bridging the gap between economic growth imperatives and the need for sustainable environmental practices, particularly in the context of an emerging economy. This paper offers valuable guidance to policymakers, businesses, and other stakeholders involved in shaping Malaysia's environmental and economic policies. By understanding the potential benefits and challenges of carbon taxation, policymakers can design effective and efficient policies that foster economic growth while mitigating the adverse impacts of climate change. Moreover, businesses can strategize for a greener future, ensuring long-term competitiveness and sustainability in the global market.

Keywords: *Carbon tax, economic growth, sustainability, environmental policy, climate change*

1. Introduction

Climate change and environmental challenges have emerged as critical global issues that demand immediate attention and action. The accelerating pace of carbon emissions, primarily driven by industrialization and economic growth, has significantly contributed to the planet's deteriorating ecological balance (Smith & Johnson, 2021). The Intergovernmental Panel on Climate Change (IPCC) has consistently highlighted the consequences of rising global temperatures, including extreme weather events, sea-level rise, and biodiversity loss (IPCC, 2018). Many countries have made various efforts to minimise and control pollution (Tan et al., 2022). The green economy promotes economic activities that aim to lower pollution and carbon emissions, enhance the efficiency of energy transitions and resource use, and minimize harm to ecosystems (Sulistiyanti & Falikhatun, 2023). A key strategy for achieving the objectives of a green economy is to impose taxes on environmentally damaging practices or offer incentives for sustainable initiatives (Nobanee & Ullah, 2023).

Carbon tax has been introduced since the early 1990s in countries like Finland, Sweden, Norway and followed by 36 countries to date (see Table 1). In South East Asia, Singapore and Indonesia are leading countries in establishing carbon pricing policies, while countries like Brunei, Thailand and Vietnam have announced plans to implement carbon tax. Malaysia, like many other developing nations, is confronted with the pressing need to address these challenges while ensuring continued economic progress. As a signatory to international agreements such as the Paris Agreement, Malaysia has acknowledged the urgency to reduce its emissions intensity by 45% by 2030 (relative to its 2005 levels) as part of its Nationally Determined Contributions (NDCs) (George, 2024). In 2022's Budget, the Voluntary Carbon Market Initiative was introduced to support more carbon reduction projects evidencing a well-designed carbon market. Following this, Bursa Malaysia has launched the Bursa Malaysia Carbon Exchange, the first carbon credit auction in March 2023 as a response to more transparency in pricing mechanisms and carbon credit trading in the country. More importantly, the most recent development towards encouraging the use of low-carbon technology is the announcement to introduce a carbon tax on the iron, steel and energy industries by 2026 in the 2025 Malaysia Budget (Ikram, 2024). It is

a type of levy imposed on emissions of environmentally polluting gases from the consumption of fossil fuels such as coal, petroleum as well as natural gas (see Baumol and Oates, 1988; Koppl and Schratzenstaller, 2023). The implementation of a carbon tax will establish a monetary value for each metric ton of carbon dioxide (CO_2) emissions, beginning at an initial rate of RM45 per ton, with gradual increases anticipated over time. Revenue generated from this taxation is intended to be reinvested by the government into environmentally sustainable initiatives, thereby encouraging businesses to adopt low-carbon operational practices.

Table 1: List of countries that have implemented carbon tax globally

Region	Country	Carbon Tax Rate (USD/tCO2e)	Year Introduced
Europe	Sweden	145	1991
	Switzerland	136	2008
	Liechtenstein	136	2008
	Norway	90	1991
	Finland	85	1990
	France	49	2014
	Ireland	45	2010
	Luxembourg	43	2021
	Netherlands	46	2021
	Portugal	26	2015
	Slovenia	19	1996
	Spain	16	2014
	Estonia	2	2000
	Poland	0.1	1990
	Ukraine	1	2011
	Germany	55	2021
	Austria	55	2022
	United Kingdom	23.65	2013
Asia	Singapore	19	2019
	Japan	2.36	2012
	South Korea	18.75	2015
	Kazakhstan	1.08	2013
	Thailand	5.5	2025
Americas	Canada	80	2019
	Argentina	4.99	2018
	Chile	5	2017
	Colombia	5.01	2017
	Mexico	3.72	2014
	Uruguay	137	2019
Africa	South Africa	9	2019

Source: Compiled by authors using data from the World Bank Carbon Pricing Dashboard (World Bank, 2025) ICAP Carbon Market Reports (ICAP, 2024) and Tax Foundation (2025).

2. Literature Review

Carbon taxation is a cornerstone of climate policy, aiming to internalize societal costs of CO_2 emissions via price signals. While incentivizing reduced emissions, such a policy serves both environmental and economic

objectives as portrayed in the Pigouvian and Double Dividend theory. The Pigouvian tax concept posits that the government should impose taxes on activities that lead to negative externalities. From this perspective, a Pigouvian carbon tax is introduced to internalize the external costs of carbon emissions by pricing them appropriately. Based on Parry, Veung, and Heine (2015), a well-designed carbon tax set equal to the marginal social cost of carbon can lead to a socially optimal level of emissions. The Pigouvian approach aligns private incentives with social welfare, making it a cornerstone of environmental tax policy.

Furthermore, the Double Dividend theory states that carbon taxes can yield two types of gains (dividends): environmental dividend due to reduced greenhouse gas emissions, and economic dividend which is led by the efficiency of the tax system or reduced distortionary taxes. Previous literature reported mixed results on the double dividend hypotheses (Freire-González, 2018). Yamazaki (2017) in his study of the British Columbia revenue-neutral carbon tax reported a positive impact on employment hence supporting the double dividend hypothesis. In another study, Lin and Li (2011) conducted an empirical study on 17 OECD countries and found that carbon taxes contributed to significant reductions in per capita CO_2 emissions, with no statistically significant negative impact on GDP. Similarly, Metcalf and Stock (2020), using macroeconomic indicators from various countries, found that carbon taxes had neutral to slightly positive effects on economic growth, particularly when revenue recycling was employed to offset labor or income taxes.

Moreover, Andersson (2019), in his study of the carbon tax in Sweden, evidenced that carbon emissions declined by 11% without hindering economic development, suggesting that robust institutional frameworks and revenue recycling can support both sustainability and growth. The study further highlighted that with appropriate compensatory policies, carbon taxation can lead to increased efficiency and a gradual shift toward a low-carbon economy. In addition, Nakamura, Yang, and Watanabe (2023) posit that while short-term growth may be affected, long-term positive effects are evident when carbon tax revenues are reinvested in renewable energy and public infrastructure. This further supports the idea that carbon taxes can drive green innovation, create new economic opportunities and foster technological advancement. On the other hand, Hong, Huang, Li, and Tsai (2018) found that environmental taxes produce a short-term double dividend, but benefits decline in the medium to long run unless coupled with R&D and structural reform to sustain innovation A more recent literature, Piluso and Rau (2025) proposed a Keynesian model showing that a carbon tax can produce a triple dividend: environmental gains, employment gains, and economic stability (i.e. reduced macroeconomic instability).

In Malaysia, economic growth has been a top priority to uplift the living standards of its citizens and enhance its position in the global economy (Ministry of Finance, 2019). Rapid economic growth and urbanisation—especially driven by expansion of manufacturing and transportation sectors, are closely linked to increasing carbon emissions. Tan et al. (2020) conclude that the growth-oriented approach in ASEAN countries, including Malaysia, has led to higher energy consumption and environmental impact, reinforcing concerns about sustainability and carbon-intensive industrial development. To mitigate the adverse impacts of climate change and preserve natural resources for future generations, Malaysia must adopt strategies that reconcile economic expansion with sustainable practices. However, striking a balance between economic growth and environmental sustainability remains a complex endeavor. The primary purpose of this paper is to explore the role of carbon taxation as an innovative policy tool to address climate change and balance economic growth with environmental sustainability in Malaysia. The specific research objectives are as follows:

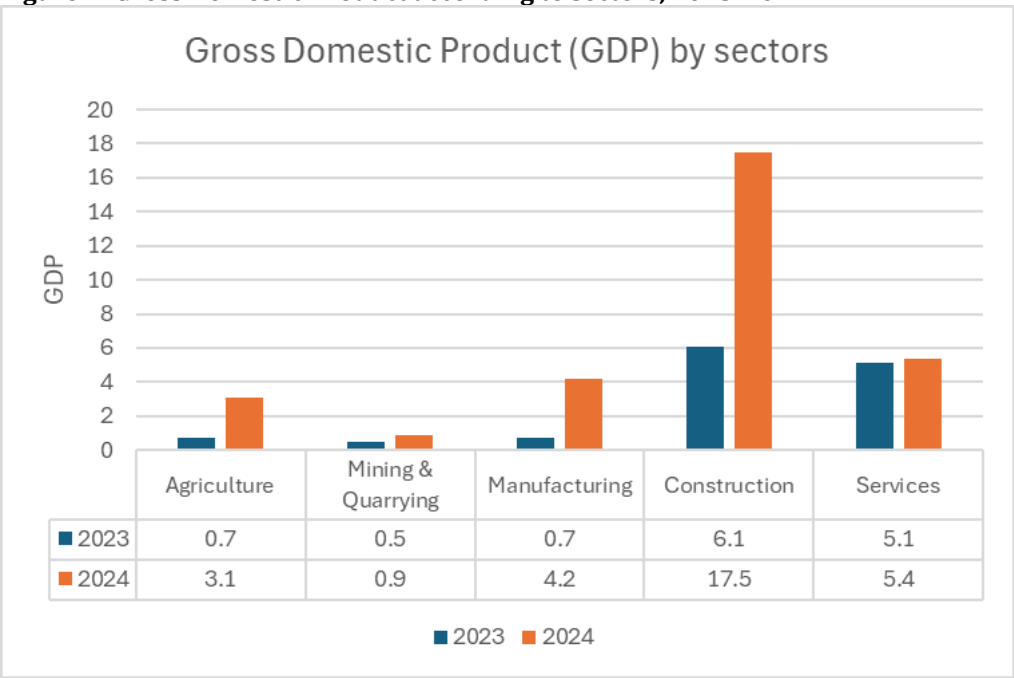
- To examine the theoretical foundations of carbon taxation and its potential implications for curbing carbon emissions in Malaysia.
- To assess the economic and environmental challenges faced by the country in the context of climate change.
- To identify barriers and opportunities for implementing carbon taxation in Malaysia, considering its unique socio-economic and political landscape.
- To propose recommendations for designing an effective and sustainable carbon tax policy that aligns with Malaysia's economic objectives and environmental goals.

Carbon Taxation and Economic Growth in Malaysia

Malaysia, a middle-income country is considered the leading economy in Southeast Asia. Its economy was traditionally driven by the exportation of raw materials including rubber, palm oil and petroleum. Yet, the nation's economic trajectory has changed into a highly industrialised and diversified economy. In 2024, Malaysia's GDP reached RM1.93 trillion at current prices and RM1.65 trillion at constant prices, positioning the country at 38th place globally. Overall, the Malaysian economy recorded a successful expansion of 5.1% in 2024, up from 3.5% in the previous year. The services and manufacturing sectors continued to serve as the main drivers of Malaysia's GDP, collectively contributing 82% to the national output. In addition, sectors such as agriculture, mining and quarrying, and construction also supported economic performance.

As illustrated in Figure 1, all key economic sectors in Malaysia recorded positive growth in 2024 compared to the previous year. The agriculture sector expanded by 3.1%, a significant improvement from 0.2% in 2023. The mining and quarrying sector also saw a modest increase, rising by 0.4 percentage points to reach 0.9% growth in 2024. Meanwhile, the manufacturing sector recorded a growth rate of 4.2%, indicating a strong rebound. The most notable increase was observed in the construction sector, which surged from 6% in 2023 to an impressive 17% in 2024. The strong growth in the construction sector was fueled by double-digit expansion across all its sub-sectors. Leading the way were specialised construction activities, which jumped by 21.0% (up from 6.6% in 2023), followed by civil engineering, which grew 16.3% (compared to 14.5% previously), and residential building, which saw a remarkable increase of 18.8%, a sharp rise from just 2.4% in the previous year.

Figure 1: Gross Domestic Product according to sectors, 2023-2024



Source: The Malaysian Economy in Figures 2024 (Ministry of Economy, 2024)

An increase in GDP is an indicator of economic expansion and more productivity of goods and services by the country. Moreover, the current GDP shows that Malaysia's economy is healthy, and it leads to many positive impacts such as greater government revenues, increased employment and higher personal income. Despite so many benefits being offered, there must be some negative sides to it.

Due to a highly industrialized economy, the environment has been impacted in terms of the emission of carbon. According to the International Energy Agency, in 2022, Malaysia ranked 10th in the regional ranking for carbon dioxide (CO2) emissions from fuel combustion. The activity of burning fossil fuels in the energy sector is identified as the major contributor to the CO2 emissions. Moreover, in 2023, the amount of carbon dioxide

(CO2) emissions from energy consumption in Malaysia had also increased from the previous year, which was approximately 284.7 million metric tons (Statista, 2024). This shows that the carbon emission in Malaysia is significantly contributed by the energy sector, as it emits the highest amount of CO2.

The industrial sector of manufacturing also contributes to the environmental issue due to its similarity to the energy industry where they use fossil fuels and natural resources to produce goods and services (Das Neves Almeida, Cruz, Barata & García-Sánchez, 2017). The other industries that commonly contribute to the large amount of CO2 emissions are the electricity and heat production industry and the transportation sector. The usage of fossil fuels such as gasoline and diesel by vehicles will lead to an increased amount of carbon emissions. Another industry that contributes to carbon emissions is the construction industry. More carbon will be released by this industry, especially during the usage of energy to power up the buildings (Liat et al., 2022). The emissions are generally from materials extraction, transportation, production, consumption, and disposal of debris (Yan, Shen, Fan, Wang, & Zhang, 2010).

All the discussed industries which are directly involved in carbon emissions are among the main active key sectors that contribute to the growth of Malaysia's GDP. Thus, it seems to align with the study by Cracolici, Cuffaro, and Nijkamp (2010) as they found a positive correlation between GDP growth and CO2 emission. Thus, it is necessary to find a balance between economic growth and the sustainability of ecosystems.

3. Environmental Sustainability and Carbon Taxation

Malaysia is among the developing countries that are committed to reducing their carbon emissions. Consistent with the Paris Agreement, Malaysia vowed to achieve its goal of net-zero carbon emissions by 2050. Currently, the Malaysian government plans the use of clean, sustainable and renewable energy (Yahoo, Salleh, Chatri, & Huixin, 2024) as part of achieving the goal of carbon intensity reduction which aims to reduce carbon emission intensity against GDP by 45% by 2030. To meet the goal. For the second goal, Tenaga Nasional Berhad will play an important role to help the government by coming out with the National Energy Transition Roadmap (NETR). This comprehensive plan was launched in 2023 where there will be a transition from fossil fuels to renewable energy sources. The goal of this roadmap is to produce 70% renewable energy by 2050.

To achieve its environmental and sustainability goals, the Malaysian government has considered adopting a carbon pricing strategy, such as the implementation of a carbon tax. A carbon tax is a relatively simple and effective policy tool that can be applied to both individuals and small businesses, requiring them to pay for the carbon emissions they produce (Carattini, Carvalho, & Fankhauser, 2018). Economists widely support this approach, as it creates a financial incentive to reduce emissions and encourages more environmentally conscious behavior (Goulder & Parry, 2008; Baranzini et al., 2017). Moreover, a carbon tax does not impose a financial burden on the government. On the contrary, it can generate additional national revenue while promoting environmental responsibility. At the same time, it serves as a practical measure to lower carbon emissions, aligning Malaysia with international best practices.

Introducing a carbon tax in Malaysia is likely to have significant economic implications. Imposing such a tax on the energy sector would increase the cost of fossil fuels, making renewable energy sources more attractive to consumers. As fossil fuel prices rise, carbon emissions are expected to decline due to a shift toward cleaner alternatives. In the transportation sector, a similar effect may occur. Higher fuel costs could lead to increased transportation expenses, prompting vehicle owners to consider electric vehicles (EVs) and encouraging commuters to utilize public transportation more frequently, both of which contribute to reducing carbon emissions. However, these benefits may come with economic trade-offs.

The carbon tax could raise overall energy prices, placing a financial burden on households and potentially leading to a higher cost of living. For the manufacturing industry, companies might respond by optimizing their use of materials and energy to minimize emissions and reduce their tax liability. This shift could encourage greater efficiency and innovation, though it may also require upfront investment and operational adjustments.

Therefore, the Malaysian government must carefully evaluate the implications of implementing a carbon tax, as such a policy could have far-reaching effects on both the national economy and the well-being of its citizens.

While the primary aim of carbon taxation is to reduce greenhouse gas emissions and promote a more sustainable future, it is crucial to recognize the potential economic burden it may impose on households and businesses, particularly in the form of increased energy prices and a higher cost of living. A useful case study can be drawn from Australia's experience. In 2012, the Australian government introduced a carbon tax with the goal of curbing emissions and encouraging greener practices. However, the policy was met with widespread public concern, mainly due to rising household expenses and increased operating costs for businesses. The tax faced intense political opposition and public backlash, ultimately leading to its repeal in 2014 (Chow, 2024). This experience highlights the importance of understanding and addressing the socioeconomic impacts of carbon taxation before implementing it on a national scale.

4. Challenges and Implementation Issues of Carbon Tax

This section identifies potential challenges and barriers in implementing a carbon tax in Malaysia, drawing insights from other countries' experiences. The introduction of a carbon tax in Malaysia is a strategic move to reduce greenhouse gas emissions and achieve sustainability goals. This policy is emphasised in the Twelfth Malaysia Plan (2021–2025) and emphasises the need for a balanced approach to revenue generation and sectoral impacts. The carbon tax is seen as a viable solution to address persistent environmental problems and improve the country's environmental performance index (Hasnu & Muhammad, 2022). Malaysia has set a target to reduce carbon emissions by 45% by 2030, which requires a robust climate policy, including a carbon tax (Ariffin, Saad, & Mustaphanin, 2024). Compared to regional competitors such as Singapore, which introduced a carbon price in 2019, Malaysia is far behind. Malaysia's carbon tax policy is still in the preparatory phase but has significant potential to drive emissions reductions while promoting sustainable development. Its success will depend on careful policy design, addressing public concerns and learning from international experiences. Modelled on successful models in Denmark, Switzerland and France, the Malaysian carbon tax is intended to reduce carbon emissions and promote the development of green technologies (Hasnu & Muhammad, 2022). Hence, carbon taxes incentivise companies to innovate and find cost-effective ways to reduce emissions. This can encourage the development of new technologies and business models that are more environmentally sustainable. However, the introduction of a carbon tax in Malaysia comes with several challenges and complexities. Overcoming these challenges is an essential prerequisite for successful policy implementation.

Public Acceptance

Malaysia faces numerous obstacles in gaining public support for the carbon tax, mainly due to trust deficits, economic concerns and communication methods. Public acceptance is a critical factor in the feasibility and success of a carbon tax policy. It refers to the extent to which individuals and communities support, tolerate or oppose the implementation of these policies. Acceptance depends on whether the policy is seen as fair and transparent. Understanding public acceptance is critical because it affects compliance, policy feasibility, and the overall effectiveness of carbon taxes in achieving environmental goals.

Furthermore, the introduction of carbon in Malaysia raises questions about trust in the government. Trust in government is critical to public acceptance of the environmental tax. Public trust in government institutions plays a crucial role in shaping attitudes towards carbon taxes. Citizens are more likely to support the measures if they believe that policymakers will use the revenues responsibly and transparently. In addition, investments in green infrastructure, such as public transport and renewable energy, can facilitate behavioural change and increase acceptance. Conversely, perceptions of corruption or mismanagement can weaken support. In Malaysia, factors such as ethnic diversity, religious values and community identity can influence attitudes towards carbon taxes.

Public trust in institutions is often fragile; hence, involving stakeholders in policy design and communicating the benefits of carbon taxes can increase legitimacy. Insufficient involvement of affected sectors in policy design can exacerbate resistance and hinder effective implementation (Wijaya, 2023). Public education campaigns that emphasise the environmental benefits of carbon taxes and the urgency of climate action can also activate these values. Public campaigns that educate citizens about how carbon taxes reduce emissions and combat climate change can increase acceptance, especially in regions with lower environmental literacy. If these campaigns are tailored to Malaysia's particular climate challenges, such as flooding and biodiversity loss, they

could resonate with the public (Muhammad, Hasnu, Ibrahim, Abdul Hamid, & Mohd Hanefah, 2022). Highlighting Malaysia's particular vulnerabilities, such as rising temperatures and flood risks, can contextualise the urgency of carbon taxes. Hence, raising awareness of Malaysia's vulnerability to climate change, such as sea level rise or extreme weather conditions, can encourage support for emission-reducing measures (Muhammad, Hasnu, & Ekins, 2021).

Public acceptance is a multi-faceted challenge that can only be met with a holistic approach. By addressing economic concerns, building trust through transparency, improving environmental knowledge and respecting cultural values, Malaysia can increase public support for a carbon tax. A carefully designed and comprehensive implementation strategy can turn opposition into advocacy and ensure that the policy makes a meaningful contribution to Malaysia's climate and sustainability goals.

Economic burden

The introduction of a carbon tax in Malaysia represents a major opportunity to combat climate change and achieve the country's sustainability goals. However, the economic burden associated with such a policy comes with challenges that need to be carefully managed to ensure successful implementation. These challenges include the financial impact on households, businesses and industry, as well as broader concerns about economic competitiveness and social equity. Carbon taxes are often criticised for their regressive effect. Companies and industries, especially energy-intensive ones, face major challenges in adapting to carbon taxation. Sectors such as manufacturing, transport and the oil and gas industry, which form the backbone of the Malaysian economy, are likely to face higher operating costs. These additional costs could affect their competitiveness in global markets, especially for export-oriented industries. In addition, small and medium enterprises (SMEs) may lack the financial resources to invest in energy-efficient technologies, making them particularly vulnerable to the impact of the tax (Pegels, 2016).

Companies could face higher costs compared to countries without a carbon tax, which could potentially cause them to relocate. Semet (2024) opined that carbon taxes can disproportionately affect low-income households, leading to public opposition and calls for equalisation strategies. In Malaysia, where socio-economic inequalities are significant, understanding economic sensitivities is critical to designing policies that do not disproportionately burden vulnerable groups. Although the economic burden of carbon taxation is a major challenge, these obstacles are not insurmountable. By introducing targeted revenue recycling mechanisms, providing financial support to businesses and ensuring transparency in revenue allocation, Malaysia can mitigate the financial impact of the policy. With a well-designed and inclusive approach, Malaysia can introduce a carbon tax that drives meaningful climate action while promoting economic growth and social equity.

To overcome these challenges, Malaysia could implement a phased approach to carbon taxation. By starting with a low tax rate and gradually increasing it over time, industries would have the opportunity to adapt and adopt cleaner technologies. The government must communicate how carbon tax revenues are allocated and ensure that funds are used for visible and effective projects such as renewable energy infrastructure, public transport improvements and healthcare initiatives. Regular public reporting and independent audits can further strengthen confidence in the integrity of the policy and encourage public support (Barker, Ekins & Foxon, 2007). Furthermore, a lack of understanding of carbon taxes and their environmental benefits often leads to resistance. Government incentives and the promotion of accountability can bridge this gap. Targeted subsidies for low-income households can offset the increased energy costs. Studies show that revenue recycling mechanisms, such as rebates or subsidies for low-income households, can allay these concerns and increase acceptance of the policy (Wang, Hubacek, Feng, Wei, & Liang, 2016).

Administrative Issues

While public acceptance and the economic burden of a carbon tax are major challenges, administrative issues are another major obstacle to its successful implementation. Creating the infrastructure, processes and legal framework for the effective administration of a carbon tax is a complex task that requires careful planning and coordination. In Malaysia, these challenges include accurate measurement of emissions, enforcement, policy integration and addressing gaps in institutional capacity. Accurate emissions data is often not available, making it difficult to enforce carbon taxes and establish effective monitoring systems (Ardhimansyah & Khaddafi, 2024; Wijaya, 2023). Without robust enforcement mechanisms, companies can evade compliance, undermining the

effectiveness of the policy.

Administrative capacity is a critical factor in the implementation and administration of a carbon tax. The administrative framework for implementing the carbon tax often lacks clarity, leading to difficulties in coordination between authorities (Ardhimansyah & Khaddafi, 2024). In Malaysia, government institutions may lack technical expertise, resources and staff, particularly in areas such as emissions verification, policy analysis and public engagement. Inadequate infrastructure for monitoring and reporting emissions can delay the effective introduction of carbon taxes (Sofiyati & Hernawan, 2023). These shortcomings may delay implementation and reduce the effectiveness of the carbon tax. Hence, the government should provide funding for training programmes to improve the skills of civil servants and industry representatives. Partnerships with international organisations and private sector experts can provide additional technical support and best practices. The establishment of regional offices or hubs can also improve accessibility and responsiveness, especially for industries in remote areas.

The administrative challenges of introducing a carbon tax in Malaysia are significant but surmountable. By investing in accurate emissions measurement systems, establishing robust enforcement mechanisms and integrating the tax into existing policies, the government can effectively address these obstacles. Strengthening institutional capacity and ensuring administrative transparency are critical to building public and industry confidence. With careful planning and collaboration, Malaysia can overcome these administrative hurdles and implement a carbon tax that promotes meaningful climate action while supporting economic growth and social equity.

The Role of Carbon Tax in Malaysia's Policy Landscape

This section examines how carbon taxation can complement and enhance existing environmental policies in Malaysia. A poorly designed tax policy could affect the competitiveness of the Malaysian economy, especially in export-oriented sectors. Malaysia's carbon tax policy is still in the preparatory phase but has significant potential to drive emissions reductions while promoting sustainable development. Its success will depend on careful policy design, addressing public concerns and learning from international experiences. In developing economies such as Malaysia, there is often tension between pursuing climate goals and maintaining economic growth. Policymakers may be reluctant to introduce carbon taxes for fear that they could slow economic activity, reduce investment and increase unemployment. This challenge is particularly pronounced in Malaysia's emissions-intensive sectors, which play a crucial role in the country's GDP. The involvement of stakeholders, including businesses, civil society and community leaders, in the policy-making process can foster a sense of shared responsibility and commitment (Olpah, Ambarwati, Suwandi, Bachtiar, & Ananda, 2023).

Carbon taxes alone cannot achieve Malaysia's climate targets. If they are integrated into a broader range of measures, their effectiveness will be enhanced. Therefore, carbon taxes should be combined with renewable energy mandates, energy efficiency programmes and investments in public transport. To balance these competing priorities, Malaysia can take a holistic approach that combines carbon taxation with broader economic and environmental strategies. For example, revenue from the tax could be used to create jobs in green sectors such as renewable energy and sustainable agriculture. By linking carbon taxes to investments in labour training and skills development, the government can facilitate a just transition and ensure that workers displaced from carbon-intensive industries are equipped for opportunities in a low-carbon economy (Wijaya, 2023).

An abrupt introduction of carbon taxes can lead to economic shocks and public backlash. A gradual approach can minimise these risks. Therefore, the carbon tax should start at a low rate and increase gradually to give businesses and households time to adjust. Before rolling it out nationwide, the government should test the policy in selected regions or sectors to identify challenges and refine the design. Incorporating fairness into policy by allocating revenue to environmental projects can increase public acceptance (Maestre-Andrés, Drews, & Van den Bergh, 2019). While these challenges are great, they also present opportunities for innovative solutions, such as incorporating evolutionary game theory to improve policy effectiveness and promote the adoption of renewable energy (Goh et al., 2023).

5. Findings and Recommendations

Examining the viability of carbon tax implementation in the long run, together with other proposed initiatives is of utmost importance. In the pipeline, the country also has other initiatives to reduce carbon emissions such as tax exemptions for carbon capture, utilisation and storage (CCUS) activities and an RM300 million allocation for the National Energy Transition Facilitation Fund (George, 2024). Although details on the carbon tax mechanisms are not ready yet, the government has established that proceeds from the tax will be used to fund green technology programmes and research (Ikram, 2024).

Setting a carbon tax at an appropriate level and ensuring well-regulated use of voluntary carbon credits is critical. An appropriately priced carbon tax provides a clear financial incentive for businesses to reduce their carbon emissions, driving innovation and investment in cleaner technologies while supporting economic growth. If the tax is too low, it may fail to alter behavior or achieve meaningful emissions reductions. Conversely, a tax set too high can burden industries and consumers, potentially leading to economic instability. Similarly, if there is a high price differential between the carbon tax and allowable carbon credits, companies may opt to purchase credits rather than pay carbon tax, potentially undermining the intended impact of the tax. Policymakers can mitigate this risk by limiting the proportion of carbon credits that can be accepted.

To summarise, an effective carbon tax policy should be well-designed, equitable and aligned with Malaysia's economic structure and development priorities. The following recommendations and mechanisms are proposed:

Table 2: Recommendations of an effective carbon tax policy in Malaysia

Recommendations	Mechanisms	Justifications
-Start with a moderate, predictable carbon price -This rate should progressively increase to incentivize innovation and emissions reduction while avoiding excessive short-term burden on businesses (World Bank, 2022).	Initial carbon pricing could be set at RM30–RM50 per tonne of CO_2, consistent with estimates from the World Bank and aligned with regional benchmarks such as Singapore.	A gradual and predictable carbon pricing schedule would minimize shocks to industries and allow time for adaptation.
Implement revenue recycling mechanisms	Reducing income or corporate tax rates to maintain competitiveness. Targeted subsidies for low-income households to offset higher energy and goods prices. Investments in green infrastructure and renewable energy to stimulate sustainable growth.	Ensuring public support and economic neutrality.
Phase-In by sector and emissions intensity	Start with large industrial emitters and electricity generation sectors under a measurable, reportable, and verifiable (MRV) system. Introduce exemptions or rebates for sectors with significant trade exposure or those investing in emissions-reducing technologies. Gradually expand to cover transportation and agriculture as administrative capacity improves.	This sectoral approach allows policymakers to balance economic priorities with environmental integrity.

Strengthen institutional capacity and governance	Establish a transparent and accountable carbon pricing authority, possibly under the Ministry of Finance and the Ministry of Natural Resources, Environment and Climate Change (NRECC), to oversee: MRV systems Carbon pricing adjustments Compliance monitoring Use of tax revenue	Enhancing public acceptance due to transparency and integrity in implementing the policy
Conduct stakeholder engagement and public awareness campaigns	Engage industries, SMEs, NGOs, and state governments early in policy formulation. Run awareness programs on the rationale and benefits of carbon taxation. Ensure that public communications emphasize long-term gains such as improved health, energy security, and innovation.	Widespread public and business sector buy-in is essential

Source: Compilation from authors' review

Conclusion

The final section summarizes the study's objectives and contributions, restates the importance of balancing growth and sustainability, and emphasizes the significance of adopting carbon taxation as a policy tool in Malaysia. Carbon taxation is a transformative policy tool that is closely linked to the Sustainable Development Goals and combats climate change while promoting equity, public health and economic growth. By using carbon tax revenues to fund sustainable projects and protect vulnerable populations, countries like Malaysia can accelerate their progress towards achieving the SDGs. A well-designed carbon tax not only supports SDG 13: Climate Action but also catalyzes systemic change that promotes resilience and sustainability across economic, social and environmental dimensions.

Designing a carbon tax policy that gains public acceptance, addresses concerns and provides long-term support requires a comprehensive approach. By focusing on equitable use of revenues, transparent administration, phased implementation and public involvement, Malaysia can overcome resistance and foster sustained support for climate action. Such an approach not only ensures the success of the carbon tax but also strengthens Malaysia's ability to achieve its long-term sustainability goals. In conclusion, the literature strongly suggests that carbon taxation, when strategically designed and accompanied by appropriate fiscal and institutional frameworks, does not inherently conflict with economic growth. Instead, it presents an opportunity to align national development strategies with environmental objectives, fostering a more sustainable and resilient economic model.

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