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The Efforts to Reduce Carbon Emissions for Economic Sector Recovery Through Carbon Tax Regulation from an Islamic Economic Perspective

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Abstract

Climate change and increasing carbon emissions have become critical global concerns, with Indonesia ranking among the world's top carbon emitters. To mitigate environmental degradation, the Indonesian government introduced a carbon tax in 2021 under the Harmonized Tax Law, initially targeting coal-fired power plants and the manufacturing sector. However, Indonesia's carbon tax rate remains one of the lowest globally, raising concerns about its effectiveness in reducing emissions. This study examines the implementation, challenges, and economic implications of carbon taxation in Indonesia while exploring its alignment with Islamic economic principles such as Maqasid al-Shariah and Maslahah. Findings indicate that industrial resistance, lack of enforcement, and economic disparities hinder the tax's impact. The study suggests integrating progressive taxation models, revenue recycling, and incentives for clean energy investments to enhance effectiveness. By incorporating Islamic finance principles, carbon tax policies can achieve environmental sustainability while ensuring social justice and economic fairness.

Keywords: *Carbon Tax, Islamic Economics, Environmental Policy, Green Finance, Maqasid al-Shariah, Renewable Energy*

A. INTRODUCTION

Climate change has become one of the most pressing global challenges of the 21st century. The increasing concentration of greenhouse gases (GHG), particularly carbon dioxide (CO_2), has significantly contributed to global warming, leading to extreme weather patterns, rising sea levels, and biodiversity loss (Khansa & Widiastuti, 2022). The Intergovernmental Panel on Climate Change (IPCC) has repeatedly emphasized the urgent need to curb carbon emissions to limit global temperature increases. In response, various countries have adopted regulatory measures such as carbon taxes to reduce carbon footprints and transition toward greener economies (Adyana, 2024).

Indonesia, as one of the world's largest carbon emitters, faces significant challenges in balancing economic growth with environmental sustainability. In 2020, Indonesia ranked among the top 21 global carbon dioxide emitters, with emissions from fossil fuel consumption, deforestation, and industrial activities reaching 368.3 million tons (Fairuz et al., 2024). Deforestation, primarily for palm oil plantations and illegal logging, has further exacerbated Indonesia's carbon footprint, contributing to 23% of global mangrove deforestation (Aptasari & Falah, 2024). While Indonesia has committed to reducing its emissions by 31.89% by 2030, achieving this goal requires strong policy interventions, particularly in the energy and industrial sectors (Halizah & Furqon, 2024).

Carbon taxation has emerged as a widely accepted market-based mechanism to address environmental degradation while generating government revenue. Countries such as Sweden, Canada, and Singapore have successfully implemented carbon taxes, resulting in significant reductions in emissions without stalling economic growth (Adyana, 2024). Sweden, for instance, has applied a carbon tax since the 1990s, leading to a 27% reduction in emissions while maintaining a 78% GDP growth rate over three decades (Halizah & Furqon, 2024). Indonesia introduced its carbon tax regulation under the Harmonized Tax Law 2021, aiming to impose a levy of IDR 30 per kilogram of CO_2 equivalent emissions. However, this tax rate is significantly lower than international benchmarks, such as Singapore's carbon tax of USD 3.74 per ton (Fairuz et al., 2024). The effectiveness of Indonesia's carbon tax remains a subject of debate, particularly in its ability to incentivize companies to transition to cleaner energy sources.

Beyond economic and environmental concerns, taxation policies should also be evaluated through ethical and social lenses. The Islamic economic perspective emphasizes fairness (*Adl*), public welfare (Maslahah), and sustainability as fundamental principles in financial regulation (Achyar & Hakim, 2023). Unlike conventional taxation, Islamic finance incorporates moral responsibility in wealth distribution, ensuring that taxes contribute to societal well-being. The implementation of carbon tax can align with Maqasid al-Shariah, particularly in protecting life (*Hifz al-Nafs*) and wealth (*Hifz al-Mal*) by addressing environmental crises (Ulliyah & Furqon, 2025). Moreover, Islamic taxation models, such as *Zakat* and *Kharaj*, emphasize proportional and fair contributions, raising the question of whether a Shariah-compliant carbon tax system could provide a more just and effective policy framework (Abdullahi, 2019).

Despite the theoretical benefits, several challenges hinder the practical application of carbon tax policies in Indonesia. Political resistance from industries reliant on fossil fuels, public skepticism about tax effectiveness, and the lack of transparent enforcement mechanisms pose significant barriers (Fairuz et al., 2024). Furthermore, concerns about economic inequality arise, as carbon taxes may disproportionately affect lower-income households who spend a larger share of their income on energy (Aptasari & Falah, 2024). To address these concerns, revenue from carbon tax should be reinvested in renewable energy projects, green infrastructure, and social assistance programs for vulnerable populations (Adyana, 2024).

This study aims to analyze the effectiveness of carbon tax regulation in Indonesia and its alignment with Islamic economic principles. By examining global best practices and comparing them with Indonesia's taxation framework, this research seeks to provide policy recommendations for a more equitable and effective carbon tax system. Additionally, this paper explores the potential integration of Islamic finance mechanisms in carbon taxation to enhance its socio-economic impact. Understanding the role of taxation in both mitigating carbon emissions and fostering economic resilience is essential for shaping sustainable policies in Indonesia and beyond.

B. LITERATURE REVIEW

Concept of Carbon Emissions and Climate Change

Carbon emissions have become a central issue in discussions on climate change, environmental sustainability, and economic development. Industrialization and rapid urbanization have led to an exponential increase in carbon dioxide (CO_2) emissions, primarily driven by fossil fuel consumption in transportation, energy production, and manufacturing sectors (Fairuz et al., 2024). These emissions

significantly contribute to the greenhouse effect, leading to rising global temperatures, extreme weather events, and habitat destruction (Khansa & Widiastuti, 2022).

One of the most alarming consequences of carbon emissions is their role in global warming. According to the Intergovernmental Panel on Climate Change (IPCC), human activities have caused an increase of approximately 1.1°C in global temperatures above pre-industrial levels, with projections indicating that this rise could exceed 1.5°C by 2050 if emissions continue at their current pace (Aptasari & Falah, 2024). In Indonesia, the environmental impact of carbon emissions is particularly severe, given the country's dependence on coal-fired power plants, deforestation for palm oil plantations, and unregulated industrial activities. The country has already experienced more frequent floods, prolonged droughts, and declining agricultural productivity as a result of climate change (Fairuz et al., 2024).

To combat climate change, international frameworks such as the Paris Agreement have been established. The agreement, signed by 196 countries, aims to limit global warming to below 2°C, with efforts to further restrict it to 1.5°C (Aptasari & Falah, 2024). Indonesia ratified this agreement through Law No. 16 of 2016, committing to a 29% reduction in carbon emissions by 2030 under a business-as-usual scenario and up to 41% with international assistance (Halizah & Furqon, 2024). However, achieving these targets remains a challenge due to weak regulatory enforcement, economic dependence on extractive industries, and resistance from major carbon-emitting corporations.

Carbon Tax: Definition and Global Implementation

A carbon tax is a market-based fiscal policy designed to internalize the external costs of carbon emissions by imposing a levy on carbon-based fuels such as coal, petroleum, and natural gas (Adyana, 2024). The purpose of this tax is twofold: to reduce greenhouse gas emissions by discouraging carbon-intensive energy use and to generate government revenue that can be reinvested into sustainable initiatives (Fairuz et al., 2024). This policy is aligned with the "polluter pays principle", which holds that those responsible for environmental damage should bear the financial costs of mitigating its effects (Halizah & Furqon, 2024).

Several countries have successfully implemented carbon taxation policies with significant environmental and economic benefits. Sweden, which introduced a carbon tax in 1991, has one of the highest rates globally at approximately USD 137 per ton of CO_2, leading to a 27% reduction in emissions while maintaining strong economic growth (Adyana, 2024). Similarly, Canada's carbon pricing framework, introduced in 2019, requires provinces to implement either a direct carbon tax or an emissions trading system, with the tax currently set at CAD 65 per ton and expected to rise to CAD 170 by 2030 (Halizah & Furqon, 2024). In Singapore, the government has gradually increased its carbon tax from SGD 5 per ton in 2019 to SGD 50-80 by 2030, ensuring that businesses have ample time to transition to cleaner technologies (Fairuz et al., 2024).

Indonesia officially introduced its carbon tax policy in 2021 as part of the Harmonized Tax Law (Undang-Undang Harmonisasi Peraturan Perpajakan/UHPP). The tax was initially set at IDR 30 per kilogram of CO_2 equivalent emissions (USD 2 per ton), making it one of the lowest carbon tax rates in the world (Fairuz et al., 2024). The policy applies to coal-fired power plants in its first phase and is expected to expand to other sectors over time. However, concerns have been raised regarding its effectiveness in reducing emissions, given the low tax rate, lack of enforcement mechanisms, and absence of clear reinvestment strategies for the revenue collected (Aptasari & Falah, 2024). Moreover, industries have lobbied for exemptions and lower rates, delaying full-scale implementation.

Islamic Economic Perspective on Taxation

The concept of taxation in Islamic economics differs significantly from conventional economic systems. While conventional taxation is primarily aimed at revenue generation for government expenditures, Islamic taxation prioritizes fairness, public welfare (*Maslahah*), and social justice (Achyar & Hakim, 2023). In this context, carbon tax can be evaluated through the lens of Maqasid al-Shariah, which seeks to preserve five essential elements of life: religion (Hifz al-Din), life (Hifz al-Nafs), intellect (*Hifz al-Aql*), lineage (*Hifz al-Nasl*), and wealth (*Hifz al-Mal*) (Ulliyah & Furqon, 2025).

One of the key principles of Islamic finance is the prohibition of harm (*Dharar*), which aligns with the need to reduce carbon emissions. The Quran repeatedly emphasizes the responsibility of humans as stewards of the Earth (Khilafah), urging the protection of natural resources and discouraging

wastefulness (Israf) (Abdullahi, 2019). The implementation of a carbon tax can therefore be justified as a policy that prevents environmental harm while ensuring sustainable economic development (Achyar & Hakim, 2023).

In Islamic fiscal systems, taxation mechanisms such as *Zakat* (charitable giving), *Jizyah* (non-Muslim tax), and *Kharaj* (land tax) are based on principles of fair contribution and redistributive justice (Ulliyah & Furqon, 2025). Some scholars argue that carbon tax revenues should be allocated toward green energy investments, reforestation projects, and social programs for low-income households to ensure a just transition to a low-carbon economy (Aptasari & Falah, 2024). In contrast, others propose a Zakat-based environmental tax system, where funds collected are used exclusively for environmental conservation and economic sustainability efforts (Halizah & Furqon, 2024).

However, challenges remain in aligning carbon tax with Islamic economic principles. A flat-rate carbon tax may disproportionately impact lower-income households and small businesses, contradicting the Islamic principle of proportionality in taxation (*Tawazun*) (Achyar & Hakim, 2023). To address this, some Islamic scholars propose a progressive carbon tax model, where higher emissions lead to exponentially higher tax rates, ensuring that wealthier corporations bear a larger share of the burden (Ulliyah & Furqon, 2025). Additionally, transparency in revenue allocation is crucial to ensure that carbon tax funds do not contribute to unethical financial practices (Abdullahi, 2019).

The literature highlights that carbon emissions remain a critical environmental and economic challenge, with Indonesia facing significant hurdles in curbing its emissions. While carbon taxation has proven effective in multiple countries, its implementation in Indonesia requires structural improvements, increased enforcement, and higher tax rates to achieve meaningful reductions. From an Islamic economic perspective, carbon tax can be justified under the principles of *Maqasid al-Shariah* and *Khilafah*, provided that revenue allocation is fair, proportional, and socially beneficial. Future research should explore hybrid taxation models that integrate Islamic finance mechanisms to enhance the effectiveness and ethical dimensions of carbon taxation in Indonesia.

C. METHODOLOGY OF RESEARCH

This study employs a qualitative research method with a document analysis approach to examine the implementation of carbon tax policies in Indonesia and their alignment with Islamic economic principles (Halizah & Furqon, 2024). The qualitative approach allows for a comprehensive exploration of existing regulations, scholarly discussions, and comparative case studies to assess the effectiveness of carbon tax implementation in reducing emissions and fostering sustainable economic growth.

The primary data sources for this study include government reports, legal documents, and academic literature related to carbon taxation. Indonesia's Harmonized Tax Law 2021 serves as a fundamental reference, outlining the legislative framework for the country's carbon tax system (Fairuz et al., 2024). Additionally, policy papers and research findings from global carbon tax implementations—including Sweden, Canada, and Singapore—are examined to identify best practices and lessons applicable to Indonesia (Adyana, 2024). The study also integrates perspectives from Islamic finance literature, particularly regarding Zakat-based taxation models and Maqasid al-Shariah, to assess how carbon tax aligns with Islamic ethical and economic values (Achyar & Hakim, 2023).

For data collection and analysis, this study conducts a comparative analysis of Indonesia's carbon tax regulations with policies from other countries that have successfully reduced carbon emissions through taxation (Halizah & Furqon, 2024). A thematic analysis is applied to extract key insights from Islamic taxation principles, such as Maslahah, Khilafah, and Hifz al-Mal, to evaluate how carbon tax policies can be structured in accordance with Islamic economic frameworks (Ulliyah & Furqon, 2025). The study aims to provide policy recommendations that enhance both the economic and ethical dimensions of carbon tax implementation in Indonesia.

D. RESULT AND DISCUSSION

Current Status of Carbon Emissions in Indonesia

Indonesia has long been recognized as a country with vast natural resources, including extensive forests, abundant mineral reserves, and a dynamic agricultural sector. However, these assets have also

become a double-edged sword, contributing significantly to the nation's carbon emissions profile. According to Fairuz et al. (2024), Indonesia is one of the top contributors to global carbon emissions, primarily due to deforestation, peatland degradation, and various industrial activities. This status is rooted in historical land-use practices, where forests have been cleared at an alarming rate for palm oil plantations, logging, and other commercial ventures. The conversion of peatlands and tropical forests into agricultural lands has significantly contributed to greenhouse gas (GHG) emissions, making Indonesia one of the world's largest emitters from land-use change (Wijedasa et al., 2018).

A critical factor exacerbating emissions lies in Indonesia's reliance on coal for power generation. Coal-fired power plants remain a major source of energy in the country, supplying the demands of its rapidly growing population and expanding industrial sector. According to Pambudi et al. (2023), Indonesia still relies on fossil fuels for over 88% of its total energy mix, with coal being the dominant source. This dependency on coal-fired electricity has led to high levels of carbon emissions, particularly from Java and Sumatra, where industrial and urban expansion is most concentrated. Industrial processes such as cement, steel, and textile production also release significant amounts of carbon dioxide (CO_2), contributing further to the nation's emissions. Meanwhile, the transportation sector, which depends heavily on petroleum, accounts for nearly 45.76% of the country's total energy consumption, further exacerbating its carbon footprint (Pambudi et al., 2023).

The environmental consequences of these emissions are increasingly apparent. Deforestation has led to biodiversity loss, habitat destruction, and soil erosion, particularly in Kalimantan and Sumatra, where logging and palm oil plantations have displaced primary forests (Wijedasa et al., 2018). This has cascading effects on agriculture, where declining soil fertility and unpredictable rainfall patterns harm crop yields, thus threatening the livelihood of farmers (Khansa & Widiastuti, 2022). The fisheries sector has also been affected, as ocean acidification and rising sea levels disrupt fish stocks and coastal infrastructure. Additionally, urban areas have been experiencing severe air pollution due to industrial and vehicular emissions, with cities like Jakarta and Surabaya reporting hazardous air quality indices. Research by Fatmah (2023) in Jakarta revealed that urban communities' carbon emissions primarily originate from household electricity use (38.6%) and transportation, significantly impacting air pollution and public health.

It is worth noting that Indonesia, through its Intended Nationally Determined Contributions (INDCs), pledged to reduce its GHG emissions by 29% by 2030 under a business-as-usual scenario and up to 41% with international assistance (Fairuz et al., 2024). However, achieving this target has faced significant challenges. Weak regulatory enforcement and inadequate monitoring mechanisms have hindered progress. Many large-scale land concessions continue to operate without stringent oversight, and illegal logging remains prevalent in remote areas. Despite the government's efforts to implement a moratorium on new palm oil plantations, deforestation continues at an alarming rate, fueled by the high global demand for palm oil and timber (Wijedasa et al., 2018).

Another dimension shaping Indonesia's high emissions profile is the extensive peatland areas scattered across Sumatra, Kalimantan, and Papua. When peatlands are drained for agriculture or plantations, the peat soil—one of the largest natural carbon sinks—becomes highly susceptible to fire. These peat fires release vast quantities of CO_2 and other greenhouse gases, contributing disproportionately to the nation's overall emissions (Wijedasa et al., 2018). According to estimates, fires in Indonesia's peatlands during El Niño years can emit more than 1.5 billion tons of CO_2, making them among the largest sources of global carbon emissions from land-use change. Additionally, these fires produce toxic haze, which has cross-border impacts on Malaysia, Singapore, and other neighboring countries, leading to severe health crises and economic losses.

The social and economic trade-offs of carbon-intensive industries in Indonesia are substantial. Many rural communities depend on agriculture, forestry, and mining for their livelihoods, making environmental protection policies politically sensitive. While a transition to low-carbon systems could mitigate long-term risks, it also poses short-term economic uncertainties for workers and businesses in carbon-intensive sectors. Research by Hidayatno et al. (2018) highlights that Indonesia's industrial sector plays a critical role in economic growth, and thus, reducing emissions must be balanced with strategies that do not hinder industrial productivity. Without proper transition mechanisms, such as

financial incentives for cleaner technologies or job retraining programs, there is a risk that workers in the coal and palm oil industries could face economic hardship.

Moreover, urbanization has also contributed to rising emissions. A study by Fatmah (2023) in Jakarta's urban villages of Jatinegara and East Cengkareng found that carbon emissions in urban areas are largely driven by household energy consumption, transportation, and waste disposal behaviors. The study revealed that higher-income households tend to have greater carbon footprints due to increased electricity usage, while employment status significantly influenced transportation choices and carbon emissions. However, knowledge about climate change and carbon emissions had no direct impact on individual emission levels, suggesting that awareness campaigns alone may not be sufficient to drive behavioral change without supporting policy measures.

Efforts to transition toward renewable energy have been slow but steadily increasing. Pambudi et al. (2023) report that Indonesia has significant renewable energy potential, including 75 GW of hydro energy, 23.7 GW of geothermal, 32.6 GW of bioenergy, 207.8 GW of solar, 60.6 GW of wind, and 19.3 GW of micro-hydro. However, actual implementation remains far below its potential, with renewable energy only accounting for 11.3% of Indonesia's total energy supply in 2020. The country aims to increase this share to 23% by 2025 and 31% by 2050, but substantial investment, infrastructure development, and regulatory reforms are needed to achieve these targets (Pambudi et al., 2023).

In summary, Indonesia's status as a leading carbon emitter is the culmination of multiple factors: deforestation, coal dependency, industrial activity, and peatland degradation. The economic cost of environmental degradation—spanning agriculture, fisheries, and public health—further underscores the urgency for robust mitigation strategies. While the government has set ambitious reduction targets, the realization of these goals will depend on decisive regulatory action, sustainable investment, and comprehensive public engagement strategies. Without a significant shift toward clean energy, strict land-use policies, and emission reduction incentives, Indonesia risks falling short of its climate commitments, which could have severe environmental, economic, and geopolitical consequences in the future.

Implementation of Carbon Tax Regulation in Indonesia

In an effort to confront mounting environmental challenges, the Indonesian government introduced carbon tax regulations in 2021. These regulations represent a pivotal step in shifting toward more sustainable energy practices by assigning a cost to activities and industries responsible for high levels of carbon emissions (Adyana, 2024). The Harmonized Tax Law (UU HPP) No. 7/2021 formally established Indonesia's carbon tax framework, making it the first country in Southeast Asia to implement such a measure (Putra et al., 2024). Specifically, the initial phase of the carbon tax targeted the coal-fired power plants, which account for more than 60% of Indonesia's electricity generation, and the manufacturing sectors, where CO_2 emissions are particularly pronounced (Saputra et al., 2023). The government aims to create a dual incentive structure through the carbon tax framework: first, penalizing high-emission industries, and second, rewarding investments in clean, renewable energy sources through reinvestment in sustainable projects (Yusoff et al., 2024).

However, Indonesia's carbon tax rate remains relatively low by international standards. The tax was initially set at IDR 30 per kilogram of CO_2 equivalent (USD 2 per ton of CO_2), significantly lower than carbon tax rates in Sweden (USD 137 per ton), Canada (USD 65 per ton), and Singapore (USD 3.74 per ton) (Putra et al., 2021). Critics argue that such a low rate may not effectively dissuade industries from polluting, nor does it generate sufficient revenue to fund major green initiatives (Fairuz et al., 2024). Moreover, Indonesia's carbon tax design lacks a clear long-term pricing trajectory, creating uncertainty for businesses planning long-term investments in clean energy (Gymnastiar, 2025).

The mechanism for evaluating and collecting carbon taxes also faces logistical challenges. Accurate emissions data collection requires comprehensive monitoring systems, advanced measurement technologies, and transparent reporting protocols—all of which may be lacking or inconsistently implemented across various industrial sectors (Yusoff et al., 2024). Andrianus et al. (2024) highlight that one of the key weaknesses of Indonesia's carbon tax system is the lack of real-time emissions monitoring, leading to potential underreporting and tax evasion by high-emission industries.

Furthermore, the absence of a robust carbon credit market limits the flexibility for industries to offset their emissions through carbon trading schemes (Putra et al., 2021).

Despite these obstacles, the carbon tax framework holds promise if accompanied by stringent enforcement and complementary policies. For instance, a well-designed monitoring and verification system, coupled with periodic reviews of the tax rate, could gradually raise the cost of emitting carbon to a level that significantly influences corporate behavior (Halizah & Furqon, 2024). According to Haptari et al. (2023), increasing carbon tax rates incrementally in line with emission reduction targets under Indonesia's Nationally Determined Contributions (NDCs) can help ensure businesses gradually transition toward cleaner operations. Furthermore, investing carbon tax revenues into public infrastructure—such as mass transit systems, clean energy technology, and reforestation projects—can reinforce the positive feedback loop where higher emissions costs directly finance solutions that reduce dependence on fossil fuels (Saputra et al., 2023).

Another critical challenge is industrial resistance, particularly from coal companies, large manufacturers, and logistics sectors reliant on fossil fuels. These sectors often wield political and economic influence, making the implementation and escalation of carbon tax rates a contentious issue. The State Electricity Company (PLN) initially opposed the tax, arguing that it would increase electricity prices and burden consumers (Putra et al., 2021). Similarly, large-scale manufacturers have lobbied for exemptions, claiming that higher operational costs could lead to reduced competitiveness in global markets (Dyarto & Setyawan, 2020). If concessions or exemptions continue to be granted under political pressure, the regulation's overall efficacy could be compromised.

Additionally, small and medium-sized enterprises (SMEs) may struggle to comply with sudden policy shifts, lacking capital to invest in clean technologies or adapt their operational processes. Haptari et al. (2023) suggest that transition strategies should gradually increase tax rates while providing financial and technical support for SMEs, such as low-interest green financing, tax credits for renewable energy adoption, and subsidies for energy-efficient equipment.

Beyond the direct enforcement of carbon taxes, economic repercussions also loom large. The cost pass-through from producers to consumers may raise the prices of goods and services, leading to inflationary pressures in certain sectors (Fairuz et al., 2024). Research by Andrianus et al. (2024) found that, under a high carbon tax scenario (above USD 10 per ton), consumer prices for energy-intensive products could increase by 5-7%, disproportionately affecting lower-income households. To address such concerns, revenue recycling—where part of the carbon tax income is distributed back to citizens in the form of rebates or used to fund social welfare programs—can help cushion the regressive effects of carbon taxes (Adyana, 2024).

From a policy design perspective, an effective carbon tax framework should incorporate regular evaluations to assess whether emission reductions align with national targets. Adjusting tax rates upward as industries demonstrate the capacity to shift toward cleaner fuels can provide a clear market signal for green innovation (Gymnastiar, 2025). Moreover, public transparency is paramount. Publishing detailed, accessible data on emissions, tax rates, and revenue allocation can build trust among citizens and businesses, ensuring that the policy serves the greater good rather than acting as a mere revenue-generating mechanism (Putra et al., 2024).

Lastly, Indonesia's experience with carbon tax will likely serve as a case study for other developing economies grappling with the trade-off between economic development and environmental stewardship. Putra et al. (2021) argue that Indonesia's policy choices today will shape its ability to meet long-term sustainability goals. While the regulation's full impact may not be immediately evident, its potential hinges on how effectively it is enforced, how revenue is managed, and how incentives are aligned to encourage industrial innovation and carbon-efficient technologies.

Islamic Economic Perspective on Carbon Taxation

The implementation of carbon tax in Indonesia can also be examined through the lens of Islamic economic principles, which highlight moral accountability, justice, and socio-economic welfare. The *Maqasid al-Shariah* framework—consisting of preserving life (*Hifz al-Nafs*), faith (*Hifz al-Din*), intellect (*Hifz al-Aql*), progeny (*Hifz al-Nasl*), and wealth (*Hifz al-Mal*)—provides a holistic foundation for policy decisions (Achyar & Hakim, 2023). In the context of environmental stewardship, preserving life and

wealth stand out as highly relevant: carbon tax policies aim to protect human health from pollution and to safeguard economic resources from the destructive effects of climate change.

The notion of "polluter pays" principle resonates with Islamic ethics, emphasizing that those who cause harm to the environment should bear the financial burden of remediation. This principle aligns with the Qur'anic injunction against creating *fasad* (mischief or corruption) on Earth, urging believers to maintain the natural balance bestowed by God. Imposing a carbon tax on polluting industries can be seen as a form of preventing harm (*Dharar*) and ensuring that business operations consider the societal cost of emissions. Moreover, such taxation can serve as a deterrent, pushing corporations to adopt cleaner technologies to avoid higher tax liabilities (Ulliyah & Furqon, 2025).

One innovative proposition is to develop a *Zakat*-based carbon tax model, wherein funds collected from carbon taxes could be allocated similarly to *Zakat*: a certain portion channeled to underprivileged communities, another portion devoted to environmental conservation, and possibly a share earmarked for developing Islamic microfinance initiatives. By adopting this structure, the carbon tax would not only penalize heavy emitters but also promote welfare and social equity (Halizah & Furqon, 2024). The Islamic principle of *Maslahah* (public interest) underlines that economic policies should yield benefits for society at large, particularly the most vulnerable segments, who disproportionately suffer the consequences of environmental degradation.

Moreover, implementing a carbon tax in an Islamic economy involves *tayseer* (facilitation), ensuring that policy design does not place undue hardship on lower-income households or small businesses. This consideration is crucial to maintaining *Adl* (justice), whereby the tax rate should be proportional to the level of emissions, and rebates or subsidies may be provided to minimize economic disparities (Achyar & Hakim, 2023). In this regard, adopting a progressive carbon tax system—where larger polluters face exponentially higher rates—can better distribute responsibilities and incentives.

Additionally, transparency and accountability in the use of carbon tax revenues are vital for complying with Islamic ethical standards. Funds derived from carbon taxation should not be siphoned off for unrelated projects or administrative inefficiencies; rather, they ought to be systematically invested in green infrastructure, reforestation, renewable energy technologies, and social programs aligned with Islamic values (Abdullahi, 2019). By publicly disclosing revenue allocation, policymakers can demonstrate their commitment to ethical governance—a key tenet of Islamic economic thought, which demands *Amanah* (trustworthiness) in handling communal resources.

Critically, the concept of *Khilafah* (stewardship) in Islam posits that humans bear the responsibility to maintain Earth's balance on behalf of the Creator. This theological premise strengthens the argument for carbon taxation as a legitimate policy measure to fulfill the collective duty of environmental protection. In line with this, community engagement becomes essential. Local religious leaders, Islamic organizations, and community mosques can disseminate information about the carbon tax's purpose, reinforcing the moral imperative of responsible resource consumption. This grassroots support can enhance policy acceptance, as people perceive the tax not merely as a financial burden but as a communal effort to safeguard God's creation (Ulliyah & Furqon, 2025).

Hence, the Islamic economic perspective offers a broader, ethically grounded rationale for carbon taxation. By weaving moral and spiritual considerations into fiscal policy, the government can leverage religious and cultural values to encourage a deeper commitment to reducing emissions and sharing the burden fairly across different societal segments. However, operationalizing these ideals necessitates careful planning, robust regulatory mechanisms, and inclusive community involvement to translate Islamic principles into tangible policy outcomes.

Economic and Environmental Implications

A properly structured carbon tax scheme holds significant potential to reshape Indonesia's economic landscape while addressing urgent environmental concerns. By assigning a price to carbon emissions, policymakers effectively internalize the environmental externalities that have historically been overlooked. This results in a market correction where goods and services with high carbon footprints become more expensive, incentivizing producers and consumers to explore alternatives (Aptasari & Falah, 2024).

One of the foremost economic benefits of carbon taxation is its capacity to spur innovation and efficiency. Industries that rely heavily on fossil fuels are compelled to invest in cleaner technologies or optimize their production processes to reduce emissions and avoid hefty tax bills. This shift can catalyze new markets for renewable energy, energy-efficient machinery, and carbon capture solutions, thereby

stimulating economic diversification. Over the long term, such developments can boost Indonesia's global competitiveness in the emerging green economy, attracting foreign investment and fostering the growth of domestic industries focused on sustainability (Abdullahi, 2019).

From an employment perspective, the transition to low-carbon technologies can create a range of green jobs. For instance, the expansion of solar, wind, and geothermal energy projects requires skilled labor in installation, maintenance, and research and development. Reforestation campaigns, another strategic area for carbon offset, can also generate employment in tree-planting initiatives and ecosystem management. By reinvesting carbon tax revenues into these sectors, the government can channel resources into job training programs and educational initiatives, supporting a just transition that minimizes disruptions for workers from carbon-intensive sectors (Halizah & Furqon, 2024).

However, without careful policy design, carbon taxes can exert inflationary pressures by raising the cost of energy and transportation. Low-income households, already vulnerable to price fluctuations, may bear a disproportionate burden if no mitigating measures are in place (Fairuz et al., 2024). To address this concern, some economists advocate revenue recycling, whereby a portion of carbon tax proceeds is disbursed back to citizens through dividends or rebates. This approach can counteract regressive effects, ensuring that essential goods remain affordable for disadvantaged communities. Additionally, strategic subsidies or tax credits can be offered to businesses adopting green technologies, facilitating a smoother and more inclusive economic transition (Adyana, 2024).

On the environmental front, successful carbon tax implementation can lead to a measurable decrease in emissions over time. Industries that modernize their equipment or switch to renewable energy sources will lower their carbon footprint, helping Indonesia meet its national targets under the Paris Agreement. Cleaner air quality, reduced deforestation, and protection of biodiversity can further be achieved if the government allocates a significant portion of the tax revenues toward reforestation projects, peatland restoration, and the establishment of protected areas (Khansa & Widiastuti, 2022). Such environmental conservation efforts can also uplift rural livelihoods, as healthy ecosystems provide natural services like pollination, clean water sources, and fertile soil for agriculture.

The integration of Islamic economic principles into carbon tax policies can strengthen the social dimension of these environmental outcomes. By ensuring that the burden of taxation aligns with the notion of Adl (justice) and that the revenues are used for *Maslahah* (public interest), policymakers can garner broader community support (Achyar & Hakim, 2023). A distribution mechanism that mirrors *Zakat*—with allocations toward the poor, environmental preservation, and sustainable economic development—can address social inequalities exacerbated by climate change (Ulliyah & Furqon, 2025). For instance, communities directly affected by deforestation or pollution can benefit from targeted social programs funded by carbon tax revenues, such as healthcare services, education, or climate adaptation projects.

However, one cannot overlook the challenges that may undermine these positive outcomes. Policy inconsistency, corruption, and lack of transparency in fund allocation are all potential pitfalls. Ensuring public accountability in how revenues are spent is paramount to maintaining trust (Halizah & Furqon, 2024). Detailed annual reports on carbon tax collection, expenditures, and project outcomes can serve as a basis for independent audits and civil society oversight. Additionally, bridging the gap between federal directives and local implementation is critical. Many environmental initiatives, particularly reforestation or peatland restoration, require coordination with regional governments, private landowners, and local communities. Without cohesive collaboration, funds may remain underutilized or be diverted to projects that do not adequately address core environmental challenges.

A significant question revolves around scaling and phasing. A sudden hike in carbon tax rates could provoke economic shockwaves, especially for industries still reliant on outdated technologies. Conversely, setting rates too low dilutes the policy's effectiveness. Therefore, a gradual escalation—coupled with long-term regulatory clarity—would allow businesses to plan and invest accordingly. Setting clear benchmarks tied to emission reduction targets can guide stakeholders in tracking progress and making necessary adjustments. This incremental approach can maintain economic stability while steadily steering the market toward cleaner practices.

Furthermore, cross-border dimensions add another layer of complexity. Indonesia's manufacturing and extractive industries often cater to global supply chains. If neighboring countries

adopt less stringent carbon policies, leakage scenarios may arise where emissions-intensive production shifts to jurisdictions with lax regulations (Fairuz et al., 2024). This underscores the need for international cooperation, where harmonized tax rates or mutual recognition of carbon pricing mechanisms across Southeast Asia could prevent leakage and create a level playing field for producers.

In conclusion, the economic and environmental implications of a well-designed carbon tax in Indonesia are far-reaching. Economic gains can manifest through the stimulation of green industries and job creation, while environmental benefits appear in the form of reduced emissions and enhanced ecosystem services. Yet, to realize these potentials fully, the government must implement additional safeguards, including revenue recycling to address social equity, robust monitoring systems to ensure compliance, and an adaptive policy framework that can respond to evolving market conditions. The integration of Islamic economic principles provides a moral and ethical underpinning, ensuring that carbon taxation serves broader societal objectives rather than narrowly focusing on revenue collection. By aligning policy design *with Maqasid al-Shariah* and involving local communities, Indonesia can chart a path toward an equitable and sustainable low-carbon future.

On balance, the carbon tax emerges not just as a regulatory tool but as a transformative mechanism capable of reshaping how Indonesia's economy interacts with its natural environment. While challenges remain—ranging from political resistance to administrative hurdles—the opportunities for innovation, community engagement, and ethical governance are immense. The ultimate success of the carbon tax policy will hinge on cohesive efforts among government agencies, businesses, civil society, and religious institutions, all of whom have roles to play in championing cleaner, fairer, and more resilient economic systems in Indonesia.

E. CONCLUSIONS

The implementation of a carbon tax in Indonesia represents a critical step toward reducing emissions and fostering a sustainable economic recovery. By incorporating Islamic economic principles, such as *Maqasid al-Shariah* and *Maslahah*, the policy can be designed to ensure fairness, social justice, and public benefit. However, its effectiveness hinges on robust enforcement, gradual tax escalation, and strategic reinvestment of revenue into renewable energy, reforestation, and social programs that support vulnerable communities. Addressing challenges such as industrial resistance, economic disparities, and policy transparency requires a multi-faceted approach that includes public awareness campaigns, regulatory improvements, and stakeholder collaboration. Future research should focus on evaluating the real-world impact of carbon taxation in Indonesia, exploring its integration with Islamic financial instruments, and identifying innovative funding mechanisms that align with both environmental sustainability and ethical governance.

REFERENCES

Abdullahi, S. I. (2019). Financing afforestation in the Organization of Islamic Cooperation countries: What role for Islamic economics and finance? *JKAU: Islamic Economics*, 32(2), 161-177. https://doi.org/10.4197/Islec.32-2.12

Achyar, M. M., & Hakim, M. F. (2023). Urgensi penerapan carbon tax di Indonesia perspektif ekonomi Islam. *LABATILA: Jurnal Ilmu Ekonomi Islam*, 7(1). https://doi.org/10.33507/lab.v4i01

Adyana, N. (2024). Penerapan pajak karbon di Indonesia: Kajian ekonomi, politik, dan sosial. *OPTIMAL: Jurnal Ekonomi dan Manajemen*, 4(1), 11-21. https://doi.org/10.55606/optimal.v4i1.2552

Andrianus, F., Handra, H., & Ayu, P. (2024). The impact of implementing a carbon tax on welfare: Case study of Indonesia and the other ASEAN member countries. *International Journal of Energy Economics and Policy, 14*(3), 647-657. https://doi.org/10.32479/ijeep

Aptasari, F. W., & Falah, M. H. (2024). Carbon incentive distribution in review of economic benefit in Islam and Lucas critique. *Accounting and Finance Studies*, 4(4), 285-305. https://doi.org/10.47153/afs44.11772024

Dyarto, R., & Setyawan, D. (2020). Understanding the political challenges of introducing a carbon tax in Indonesia. *International Journal of Environmental Science and Technology, 20*, 1-3. https://ssrn.com/abstract=3785429

Fairuz, S. P. W., Al-Khoiri, A. H., & Nurudien, M. (2024). *Penerapan regulasi pajak emisi karbon di Indonesia perspektif kaidah Ad-Dhararu Yuzalu*. Jurnal Hukum Tata Negara, Universitas Islam Negeri Maulana Malik Ibrahim Malang. https://www.academia.edu/80684009/Penerapan_regulasi_pajak_emisi_karbon_di_indonesia_perspektif_kaidah_ad_dhararu_yuzalu_

Fatmah, F. (2023). The driving factors behind urban communities' carbon emissions in the selected urban villages of Jakarta, Indonesia. *PLoS ONE, 18*(11), e0288396. https://doi.org/10.1371/journal.pone.0288396

Gymnastiar, A. (2025). Challenges and prospects of carbon tax implementation in Indonesia: A systematic literature review. *Proceedings of the 1st International Conference on Public Administration and Social Science (ICoPASS 2024)*, 50-55. https://jurnal.untirta.ac.id/index.php/ICoPASS/article/view/29659

Halizah, N. A., & Furqon, I. K. (2024). Carbon tax transformation strategy in sustainable economic development towards green economy in Indonesia. *Jurnal Lemhannas RI*, 12(3), 333-348. https://doi.org/10.55960/jlri.v12i3.951

Haptari, V. D., & Widiastuti, B. (2023). Implementation of carbon tax in Indonesia from a carbon tax design perspective. *Jurnal Ekonomi, 12*(4), 2452-2457. https://www.ejournal.seaninstitute.or.id/index.php/Ekonomi/article/view/3260

Hidayatno, A., Destyanto, A. R., & Noor, S. T. (2018). Conceptualizing carbon emissions from energy utilization in Indonesia's industrial sector. *Energy Procedia, 156*, 139–143. https://doi.org/10.1016/j.egypro.2018.11.118

Khansa, A. D. T., & Widiastuti, T. (2022). Causality of economic growth, renewable energy, and environmental degradation in Organization of Islamic Cooperation countries. *Jurnal Ekonomi Syariah Teori dan Terapan*, 9(1), 118-130. https://doi.org/10.20473/vol9iss20221pp118-130

Khansa, A. D. T., & Widiastuti, T. (2022). Causality of economic growth, renewable energy, and environmental degradation in Organization of Islamic Cooperation countries. *Jurnal Ekonomi Syariah Teori dan Terapan, 9*(1), 118-130.

Pambudi, N. A., et al. (2023). Renewable energy in Indonesia: Current status, potential, and future development. *Sustainability, 15*, 2342. https://doi.org/10.3390/su15032342

Putra, J. J. H., Nabilla, N., & Jabanto, F. Y. (2021). Comparing "Carbon Tax" and "Cap and Trade" as mechanisms to reduce emissions in Indonesia. *International Journal of Energy Economics and Policy, 11*(5), 106-111. http://dx.doi.org/10.32479/ijeep.11375

Putra, S. N., Astuti, M., & Munandar, A. (2024). Literature review: Implementation of carbon tax in Indonesia. *Indonesian Interdisciplinary Journal of Sharia Economics, 7*(1), 1488-1497. https://doaj.org/article/5cc63d2ce28e4e2ebc8b0f477f8a1bb2

Saputra, K. A. K., Dharmawan, N. A. S., Kawisana, P. G. W., & Larasdiputra, G. D. (2023). Potential carbon tax in Indonesia: A literature review. *International Journal of Environmental, Sustainability, and Social Science, 4*(6), 1670-1677. http://dx.doi.org/10.38142/ijesss.v4i6.891

Ulliyah, S., & Furqon, I. K. (2025). Carbon tax implementation in Indonesia from Sharia economic perspective and its impact on sustainable development goals. *Jurnal Ilmiah Ekonomi dan Pajak (EJAK)*, 5(1), 14-18. https://ojs-ejak.id/index.php/Ejak

Wijedasa, L. S., et al. (2018). Carbon emissions from Southeast Asian peatlands will increase despite emission-reduction schemes. *Global Change Biology*. https://doi.org/10.1111/gcb.14340

Yusoff, Y. H., Nadilah, I., & Anwar, M. K. (2024). Optimizing the implementation of carbon tax in reducing the impact of environmental pollution. *Accounting and Finance Research, 13*(2), 89-97. https://doi.org/10.5430/afr.v13n2p89