

# Indonesian Carbon Exchange (IDXCarbon): Pioneering Sustainable Prosperity on the Global Stage

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## Summary

This article explores Indonesia's strategic use of the Indonesian Carbon Exchange (IDXCarbon) to balance economic growth with environmental sustainability. IDXCarbon, launched in September 2023, is pivotal for Indonesia's goal to achieve net-zero emissions by 2050, in line with its Nationally Determined Contribution. It facilitates carbon trading, fosters economic development, and aligns with international climate commitments. The platform is expected to generate significant revenue by capitalising on Indonesia's natural ability to sequester carbon. Analysing IDXCarbon through the Environmental Economics Framework reveals its potential for economic and environmental impact, emphasising the importance of carbon markets in mitigating climate change. Additionally, IDXCarbon incentivises businesses and industries to adopt sustainable practices, thereby internalising carbon emissions. This initiative follows international trends in emissions trading, drawing inspiration from successful models like China's carbon market. Indonesia's engagement in carbon markets is crucial for meeting its ambitious climate targets and reflects its commitment to global climate diplomacy.

Indonesia, a nation known for its diverse ecosystems and abundant natural resources, grapples with a profound challenge. Balancing economic prosperity with environmental stewardship is a nuanced endeavour, and this article delves into the Indonesian Carbon Exchange (IDXCarbon) as a strategic tool to navigate this dual mission. It fosters economic growth and aligns Indonesia with international climate commitments, nurturing environmental sustainability.

The experience of Indonesia resonates with the global discourse on the pivotal role of carbon markets in mitigating climate change. As part of its climate objectives, the Indonesian government unveiled its Nationally Determined Contribution (NDC) with the visionary target of achieving net-zero emissions by 2050 (Ministry of Environment and Forestry, 2021). Carbon markets have emerged as essential mechanisms to expedite Indonesia's progress toward this ambitious goal, especially given the mounting global concerns regarding the climate crisis.

As a developing nation, Indonesia confronts distinctive challenges in achieving its NDC target. These include securing funds for transitioning to sustainable energy, preserving its vast forests, promoting sustainable agriculture, enhancing waste management, and curbing greenhouse gas emissions (Sembiring, 2022). This formidable task must be accomplished while simultaneously ensuring continued economic growth. Despite assurances of financial support from developed nations, Indonesia is proactively seeking solutions. The recent launch of carbon trading through IDXCarbon mechanisms in September 2023 signifies a pivotal moment for Indonesia, harnessing its abundant natural resources to accelerate its journey towards achieving net-zero emissions (Damayanti, 2023).

IDXCarbon emerges as a pioneering platform for carbon credit trading, strategically promoting emission reductions and sustainable practices. According to Reuters News, President Joko Widodo underscores Indonesia's competitive advantage in international carbon trading, where forests acquire economic value and revolutionise land management practices and paradigms (Sulaiman, 2023).

Government reports estimate that IDXCarbon could potentially generate revenues of up to IDR 3,000 trillion, driven by Indonesia's capacity to sequester an astonishing 139.77 million tons of carbon annually (Kurnia, 2023).

Incorporating the Environmental Economics Framework from Capra and Jakobsen (2017), IDXCarbon can be evaluated through the lens of cost-benefit analysis. This framework enables us to assess this initiative's economic and environmental impacts. It allows us to consider not only the potential economic gains from reduced emissions but also the costs associated with its implementation and enforcement (OECD, 2018).

Furthermore, within the same framework, we explore the concept of market-based instruments for environmental policy (Mazaheri et al., 2022). Carbon pricing mechanisms, of which IDXCarbon is a prime example, fall under this umbrella. This perspective provides insights into how IDXCarbon aligns with broader market-based approaches to environmental management.

Moreover, IDXCarbon creates strong incentive structures for businesses and industries to reduce emissions and adopt sustainable practices. The economic theory behind carbon markets and their effectiveness in promoting environmental conservation becomes evident in this context. Carbon emissions, essentially negative externalities, can be internalised through initiatives like IDXCarbon. This internalisation leads to more efficient resource allocation and reduced environmental harm.

The establishment of IDXCarbon follows a well-established international precedent. Emissions trading has evolved as a policy tool since the first World Climate Conference in 1979, with the Montreal Protocol and the Kyoto Protocol serving as crucial foundations.

The European Union Emissions Trading System (EU ETS) has evolved into a major cap-and-trade program, transacting approximately USD 175 billion annually (Newell et al., 2012). Many countries and regions have since adopted their carbon market mechanisms.

China's carbon market stands as a notable success story in Asia. Following its economic transformation in the late 1970s, China emerged as the world's second-largest economy in 2023. However, this growth led to a substantial increase in carbon emissions. To address this challenge, China launched its carbon market in 2021, becoming the world's largest from the developing country, covering a staggering 4 billion tons of CO<sub>2</sub> emissions in 2022, with an estimated value of about CNY 800 billion (USD119 billion) in 2022 (Busch, 2022).

China's carbon market has already achieved significant emissions reductions just a year after its establishment, with approximately 200 million tons of CO<sub>2</sub> in 2022 (Stanway, 2022). However, it represents only a fraction of the country's emissions. China has achieved significant progress in developing its national emissions trading system (ETS) through a strategic approach. According to Heggelund et al. (2022), they initiated regional pilot programs in 2013, allowing them to test the feasibility and make necessary adjustments before launching the national ETS. Their initial focus on the power generation sector, encompassing a large number of companies responsible for substantial CO<sub>2</sub> emissions, provides effective management and monitoring. China's ETS adopts a market-driven approach, offering economic incentives for businesses, investors, and market participants to contribute to decarbonisation and clean energy transition. Unlike the EU ETS, China uses an intensity-based allocation method, rewarding companies that reduce carbon intensity. Dynamic allowance prices promote market liquidity while focusing on efficient coal-fired plants encourages energy efficiency.

Local government involvement, though with some concerns, enhances accountability. Expanding sectoral coverage, improving the legal framework and monitoring systems, and exploring the potential for carbon border levies are all strategies that Indonesia could consider to adopt China's successful model for emissions trading. According to IRENA (2022), China has set ambitious goals, aiming to reduce emissions by 1 billion tons by 2025 and achieve carbon neutrality by 2060, driven by effective policies such as a national carbon emissions trading market, carbon pricing mechanisms, stringent energy efficiency standards, and ambitious renewable energy targets.

Indonesia's entry into the carbon market represents a significant development, aligning with the nation's ambitious climate objectives. Indonesia steadfastly committed to emissions reduction, targeting a 29%-32% reduction below business-as-usual levels by 2030, extending to an impressive 43.20% with conditional support (CSIS Indonesia, 2022). These targets symbolise Indonesia's alignment with international climate goals and form the bedrock of its burgeoning carbon market.

The scale and focus of Indonesia's carbon market are of paramount importance, with its initial emphasis on the power sector. This sectoral focus underscores Indonesia's strategic approach to emission mitigation. Additionally, plans to expand the market to encompass industry and forestry sectors reflect Indonesia's holistic commitment to comprehensive emissions reduction.

Effective policy implementation is integral to Indonesia's carbon market initiatives. Policies encompassing carbon pricing, emissions trading, renewable energy targets, and energy efficiency standards reflect Indonesia's adherence to global best practices. Successful policy strategies in promoting efficient emission reduction mechanisms serve as valuable sources of inspiration.

Moreover, Indonesia actively invests in capacity building and essential market infrastructure, including training programs, registries, and trading platforms. These efforts equip stakeholders for effective participation and ensure the market operates seamlessly.

In addition to its domestic initiatives, Indonesia actively engages in international carbon markets. These markets are intricate, with various stakeholders and a lack of standardised regulations across ASEAN member states. During ASEAN Business Advisory Council (BAC) chairmanship in 2023, Indonesia launched the Carbon Center of Excellence (CCoE) to address this. CCoE enhances understanding of carbon markets among business leaders, regulators, and market participants, building on Indonesia's B20 legacy initiatives (Kumara, 2023).

Indonesia's contribution includes establishing the ASEAN Alliance Carbon Market (AACM). AACM, led by the private sector, uniquely focuses on scaling Voluntary Carbon Markets (VCM) across ASEAN and supporting compliance markets. It is the first of its kind, advocating for cross-border efforts in carbon market development. AACM fosters a regional ecosystem and facilitates international partnerships, offering capacity building and technical assistance. This aligns with Indonesia's holistic approach to carbon market development. Global organisations, such as BloombergNEF, London Stock Exchange Group, Integrity Council for Voluntary Carbon Markets (ICVCM), International Emissions Trading Association (IETA), and World Business Council for Sustainable Development (WBCSD), among others, support AACM. The ASEAN Business Advisory Council (ASEAN-BAC), Kamar Dagang dan Industri Indonesia (KADIN), and Equatorial Advisory provide strategic support to AACM's secretariat (Hartono & Marcelino, 2023). AACM showcases Indonesia's climate leadership and multi-stakeholder engagement.

As a private sector-led advocate for cross-border carbon market efforts, it complements domestic initiatives and highlights Indonesia's commitment to regional collaboration in combating climate change. These efforts demonstrate Indonesia's global leadership in addressing climate challenges.

Indonesia's influential role in global climate diplomacy, marked by active participation in international agreements such as the Paris Agreement and membership in organisations like the G20 and the ASEAN, underscores the nation's commitment to addressing climate challenges on a global scale. Indonesia's diplomatic efforts focus on advocating for ambitious emissions reduction targets, supporting clean energy transitions and building resilience against climate change impacts.

IDXCarbon, as Indonesia's pioneering carbon exchange, enhances these diplomatic endeavours. It showcases Indonesia's leadership in climate action, attracts investments in clean energy and low-carbon projects, and facilitates collaboration with other nations engaged in climate mitigation.

In summary, IDXCarbon holds profound implications for Indonesia's global diplomatic efforts. Its potential as a symbol of leadership, an attractive investment opportunity, and a diplomatic catalyst underscores its significance in amplifying Indonesia's diplomatic influence, reinforcing the nation's unwavering commitment to climate action, and advancing sustainable practices worldwide.

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